United States
Department of
Agriculture

Natural
Resources
Conservation
Service

In cooperation with the United States Department of the Interior, Bureau of Land Management; the University of California, Agricultural Experiment Station; and the Upper Salinas-Las Tablas Resource Conservation District

Soil Survey of San Luis Obispo County, California, Carrizo Plain Area

How To Use This Soil Survey

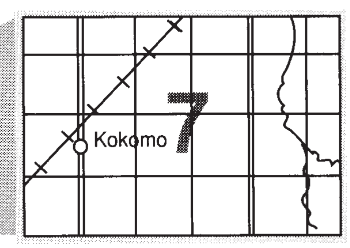
General Soil Map

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

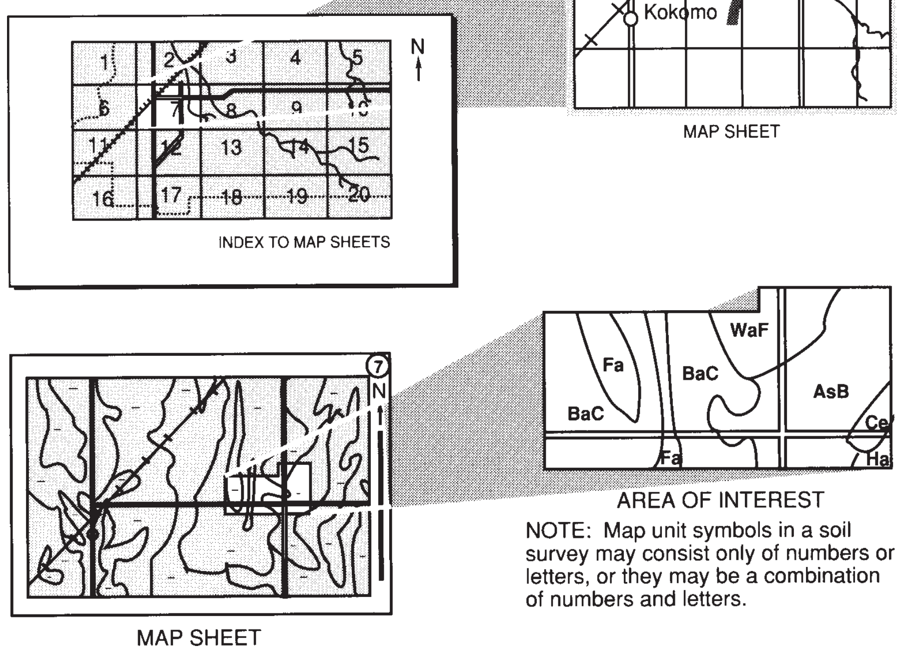
The detailed soil maps can be useful in planning the use and management of small areas.



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.



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 1991. Soil names and descriptions were approved in 2001. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1991. This survey was made cooperatively by the Natural Resources Conservation Service; the United States Department of the Interior, Bureau of Land Management; and the University of California, Agricultural Experiment Station. The survey is part of the technical assistance furnished to the Upper Salinas-Las Tablas Resource Conservation District.

Cover: A seeder in a field of daisies on a hillside on the Carrizo Plain. The Temblor Range is in the background. (Photograph by Johna Hurl, Bureau of Land Management.)

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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Issued 2003

Foreword

This soil survey has been developed by the Natural Resources Conservation Service, America's Private Lands Conservation Agency. The survey contains information that affects land use planning and other aspects of natural resources conservation 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 that affect 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.

Chuck Bell
State Conservationist
Natural Resources Conservation Service, California

Soil Survey of
San Luis Obispo County, California, Carrizo Plain Area

By Eric N. Vinson and Ken Oster

Fieldwork by Richard F. Johnson, Margy Lindquist, Eric N. Vinson, and Karen L. Wiley

United States Department of Agriculture, Natural Resources Conservation Service,
in cooperation with
the United States Department of the Interior, Bureau of Land Management; the University of California, Agricultural Experiment Station; and the Upper Salinas-Las Tablas Resource Conservation District

The survey area is in the eastern part of San Luis Obispo County (fig. 1). The survey area has a total of 563,840 acres, or about 881 square miles. It is bordered on the north and northwest by the Paso Robles Soil Survey Area in San Luis Obispo County, on the northeast and east by Kern County, on the south by Santa Barbara County, and on the southwest by the Los Padres National Forest. The Carrizo Plain Soil Survey Area includes the Carrizo Plain and parts of the surrounding Temblor, Caliente, and La Panza mountain ranges. Also included in the northwestern part of the survey area is part of the adjacent San Juan Creek watershed, bounded by the Temblor Range on the northeast and the La Panza Range on the southwest.

The spelling used in this survey follows that used by the U.S. Geological Survey on topographic maps of the area. Local spelling commonly is “Carisa,” “Carissa,” “Carrissa,” or “Carrisa.” The last spelling is the most common in local usage (USDI, 1995). “Carrizo” is the Spanish name for common reed. The name was applied to the area by 16th-century Spanish explorers because of the abundance in which the plant grew on the fringes of Soda Lake (Holland and Keil, 1995).

General Nature of the Survey Area

This section provides general information about the survey area. It describes history and development; physiography, relief, and drainage; geology; plant communities; and climate.

History and Development

Prepared by Lynn E. Moody, Ph.D., Soil Science Department, California Polytechnic State University, San Luis Obispo, California, and Karen Wiley, soil scientist, Natural Resources Conservation Service.

The Carrizo Plain Area is an isolated part of San Luis Obispo County. The area is isolated from the west by the La Panza Mountains and from the east by the Temblor Mountains. Because of the rugged topography, the early east-west transportation routes bypassed the area, passing instead through the Cholame Valley to the north and the Cuyama Valley to the south. As a result of this physical isolation and the semiarid to arid climate, the area has always been only sparsely populated.

Sites at Tulare Lake and Buena Vista Lake in the San Joaquin Valley and in the Tehachapi Mountains suggest that the human prehistory of the area began near the end of the Pleistocene epoch, about 9,000 to 11,000 years ago. The Carrizo Plain may have been near the interface of three Native American cultures: the Chumash, the Southern Valley Yokuts, and the Salinan (USDI, 1995). Apparently, none of these cultures had permanent settlements in the area. They did, however, establish seasonally occupied villages and create elaborate pictographs on Painted Rock (Piedra Pintada) near the western edge of the Carrizo Plain (Eichel, 1971).

During the Spanish and Mexican settlement of California, which began about 1769, the eastern part of what is now San Luis Obispo County remained

Figure 1.—Location of San Luis Obispo County, California, Carrizo Plain Area.

thinly populated. The centers of population were farther north and west—along the coast and in the Salinas Valley—and were associated with the missions (Eichel, 1971). After 1837, when the mission lands were secularized, people remained near the ranchos created from the mission lands. The eastern part of what is now San Luis Obispo County was used only for grazing cattle and sheep.

California became a territory of the United States in 1848 and was admitted to the Union in 1850. The California Land Act of 1851 allowed federal lands to be bought for speculation with virtually no restrictions. Public lands in California were surveyed from 1854 to 1856 and sold to the public. Most of the land in the eastern part of San Luis Obispo County was in the public domain. Huge tracts were purchased by speculators who continued to graze livestock on some tracts and were not much interested in settling the area. Acquisition of these tracts effectively removed the possibility of settlement of the land by families (Eichel, 1971).

The Atlantic and Pacific Railroad obtained land rights for much of eastern San Luis Obispo County—to the eastern edge of the Caliente and La Panza Ranges—by 1866. That land was also withdrawn from the possibility of settlement (Eichel, 1971). By 1885, most of the available and accessible land in San Luis Obispo County was occupied. Pressure was exerted on the General Land Office to declare the Atlantic and Pacific Railroad grants to be forfeited, and these lands were then opened to homesteading and settlement. Favorable lands to the north and west of the Carrizo Plain were then settled rapidly.

During the last quarter of the 1800s, a few people began to move into the area. The first ranch in the Carrizo Plain was the El Saucito Ranch. It was occupied by Chester Brumley, an employee of James M. McDonald, one of the large landowners. It was in the southwestern part of the Carrizo Plain and included a residence; land for grazing by cattle and sheep; a eucalyptus planting; and peach, apple, and cherry orchards irrigated from shallow wells. Wheat and barley were dry-farmed for hay.

Homesteads of 160 acres were made available along the northeast perimeter of the Carrizo Plain. They were quickly settled and made into self-sufficient farms. Shallow wells were not productive enough for irrigation, so dry-farming was used to produce grain for humans, pigs, cows, chickens, and horses. Salt was brought from Soda Lake for cattle and was refined in small amounts for cooking. The main forms of transportation were horseback and wagon. San Luis Obispo was a 2-day trip by wagon. Small settlements developed at Simmler and La Panza. This population increase was short-lived, however, because many of the settlers were hard hit by a drought in the 1890s and were forced to leave. On the Carrizo Plain itself, cattle predominated and grazed on the tracts owned by the large landholders. Cattle grazing, being a mobile enterprise, was little affected by the drought (Eichel, 1971).

Mining played a small part in the history of eastern San Luis Obispo County. Gold was mined from the streams flowing east into the San Juan River near La Panza. It is estimated that $10,000 worth of gold was extracted from 1877 to 1878. Sodium sulfate was mined from Soda Lake on the Carrizo Plain from the 1890s to the 1930s. A small, temporary settlement for laborers was established at Soda Lake. Lack of efficient transportation was a large obstacle to mining. McKittrick, the nearest railhead, was 16 miles away. In 1923, a narrow gauge railroad was built from Soda Lake to the McKittrick road. Exploratory drilling for oil began before 1910. Traces of good-quality oil were discovered, but not in commercial quantities (Eichel, 1971).

In the early 1900s, irrigation was developed in Camatta Canyon in the northwestern corner of the survey area. Irrigated sugar beets, alfalfa, and more recently, grapes, became important crops. In the 1920s and 1930s, advancing farm technology and improved transportation caused a shift in the agriculture of eastern San Luis Obispo County from cattle grazing to large-scale grain production. Tractors made it feasible to cultivate large acreages of dry-farmed wheat in the Carrizo Plain and barley in the north toward the Bitterwater area. The improved transportation provided a means to get the grain to market. Farming did not by any means, however, completely replace the livestock industry. Beef cattle still grazed on the hills and on the dry-farmed land after crops have been harvested. Sheep have also been a part of the livestock industry in the survey area. Sheep grazing in the Carrizo Plain area generally has been seasonal and migratory (Eichel, 1971).

In 1984, the Carrizo Plain Natural Area was established. It is a 180,000-acre reserve acquired and cooperatively managed by the Bureau of Land Management, The Nature Conservancy, the California Department of Fish and Game, the U.S. Fish and Wildlife Service, the California Energy Commission, oil companies, and other agencies and cooperators. This ecological preserve is noted for flora and fauna that are considered representative of undisturbed, pre-agricultural conditions in this and nearby California-interior valleys, including the San Joaquin Valley. Specific management objectives are preserving and enhancing habitat for threatened and endangered species, reintroducing native pronghorn antelope and tule elk, protecting cultural resources, and promoting environmental research and education. Threatened and endangered species in the area include the giant kangaroo rat, the blunt-nosed leopard lizard, the San Joaquin antelope squirrel, the San Joaquin kit fox, and several species of plants (USDI, 1995).

Today, the population of the Carrizo Plain area is greater than in the early days of California. Most of the people live on scattered ranches, farms, and small homesteads. There is a subdivision in California Valley on the Carrizo Plain where roads are laid out and lots have been surveyed, but few people live there. In the 1960s, a service area with a motel, restaurant, service station, air strip, sales office, and community center was built to encourage development in the California Valley. The area's population has grown over the years but is still far behind that of the rest of the county.

Physiography, Relief, and Drainage

Prepared by Lynn E. Moody, Ph.D., Soil Science Department, California Polytechnic State University, San Luis Obispo, California, and Eric N. Vinson, soil scientist, Natural Resources Conservation Service.

The Carrizo Plain Area is within the southern Coast Ranges physiographic region. The survey area consists of several physiographic units (fig. 2). They are the Carrizo Plain (including Soda Lake) in the middle of the survey area; the Temblor Range to the northeast; the Caliente Range to the west and southwest; the La Panza Range to the west; the Elkhorn Plain, which is a much smaller valley than the Carrizo Plain, to the southeast; the San Juan Hills; and the San Juan Valley and associated tributary canyons.

The Carrizo Plain is a bolson, a nearly level valley that has internal surface drainage (fig. 3). The valley is about 40 miles long and 8 miles wide at its widest point. Elevation of the valley ranges from 1,900 feet (578 m) at Soda Lake to 2,100 feet (638 m). Soda Lake, which is in the middle of the Carrizo Plain, is a desert-type playa and is subject to seasonal flooding.

The Temblor, La Panza, and Caliente Ranges are generally rugged mountains that have some rolling hills (fig. 4). Most slopes are steep or very steep, and runoff is rapid or very rapid. Elevations range from 1,600 to 4,300 feet. The highest point in San Luis Obispo County is Caliente Mountain, which has an elevation of 5,106 feet. The highest point in the Temblor Range is McKittrick Summit, which has an elevation of 4,332 feet. The highest point in the San Juan Hills is Freeborn Mountain, which has an elevation of 3,311 feet.

The southwestern slopes of the Temblor Range drain into the Carrizo Plain and to the north into San Juan Creek. The northeastern slopes drain into the San Joaquin Valley. The northeastern slopes of the Caliente Range and the eastern slopes of the San Juan Hills drain into the Carrizo Plain. The northeastern slopes of the La Panza Range drain into San Juan Creek. The western and southwestern slopes of the Caliente Range drain into the Cuyama River. The southwestern slopes of the La Panza Range drain into the Salinas River.

The Elkhorn Plain is a small plain in the southeastern part of the survey area. It is orientated parallel to the Carrizo Plain. It is bounded on the southwest by the Panorama Hills, Elkhorn Scarp, and Elkhorn Hills (fig. 5). It is bounded on the northeast by the Temblor Range. It has an elevation of about 2,300 to 2,800 feet. At its northwest end, it drains into the Carrizo Plain.

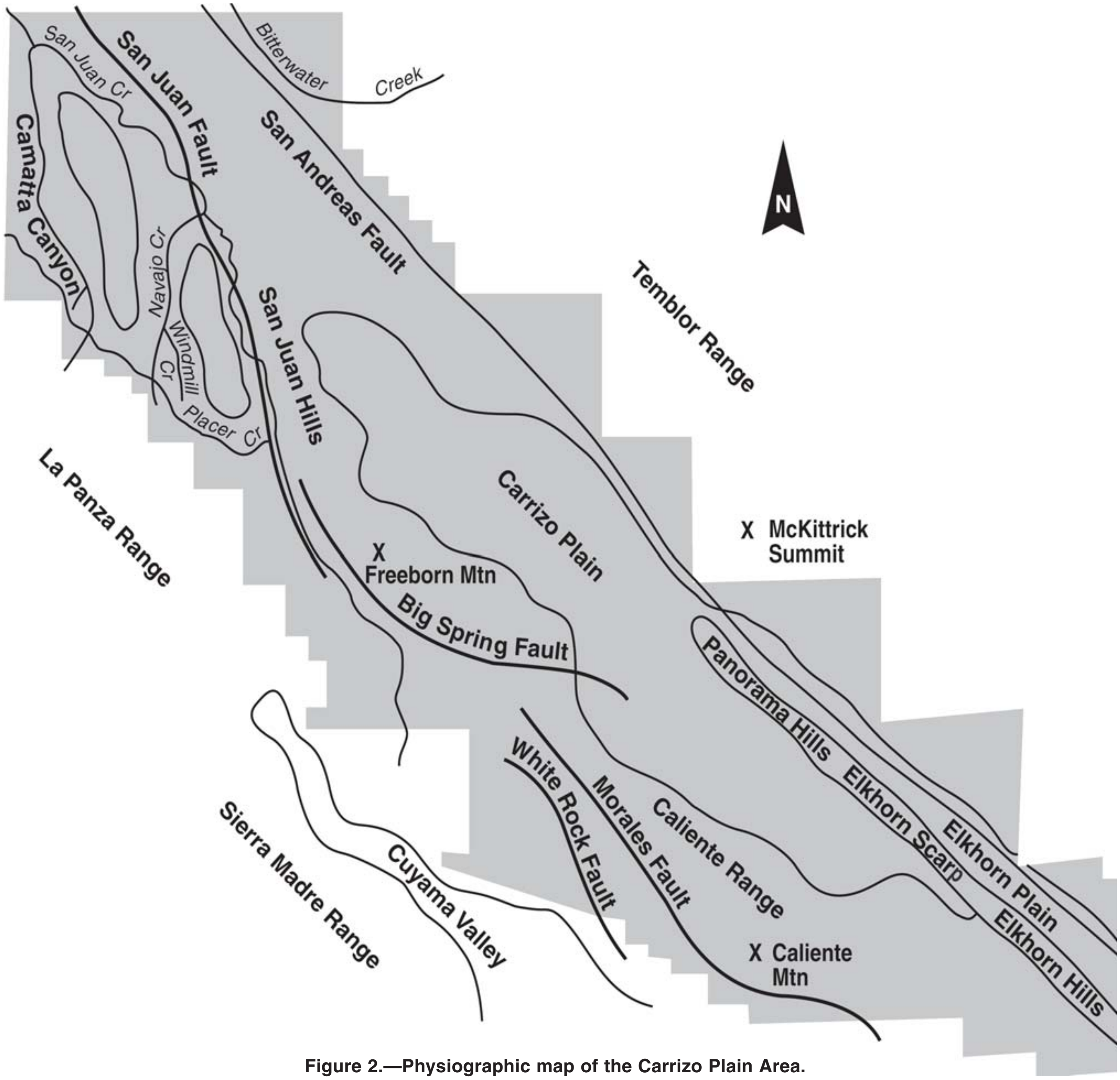

Figure 2.—Physiographic map of the Carrizo Plain Area.

The San Juan Valley is northwest of the Carrizo Plain (fig. 6). The San Juan Valley is bounded on the northeast by the Temblor Range and the San Juan Hills and on the southwest by the La Panza Range. It is separated from the Carrizo Plain by the San Juan Hills. On both sides of San Juan Creek are numerous large and small tributary canyons from the surrounding hills and mountains. Camatta Canyon is a large tributary at the west end of the survey area. San Juan Creek flows northwest and eventually joins the Estrella River near Shandon, California.

In the Carrizo Plain, aquifers containing fresh ground water are in Quaternary alluvium, the Pleistocene Paso Robles Formation, and the upper Pliocene Morales Formation (Kemnitzer, 1967). The Quaternary alluvium covers most of the basin floor and is up to several hundred feet thick, being thickest at Soda Lake. This formation consists of interbedded gravel, sands, silts, and clays. It has limited productivity. The water may be brackish and of poor quality due to dissolved sodium salts, especially near Soda Lake (fig. 7).

The Paso Robles Formation is widely distributed throughout the Carrizo Plain and in most areas is covered with the younger alluvium. It is exposed in the rolling hills at the northeast end of the plain. The Paso

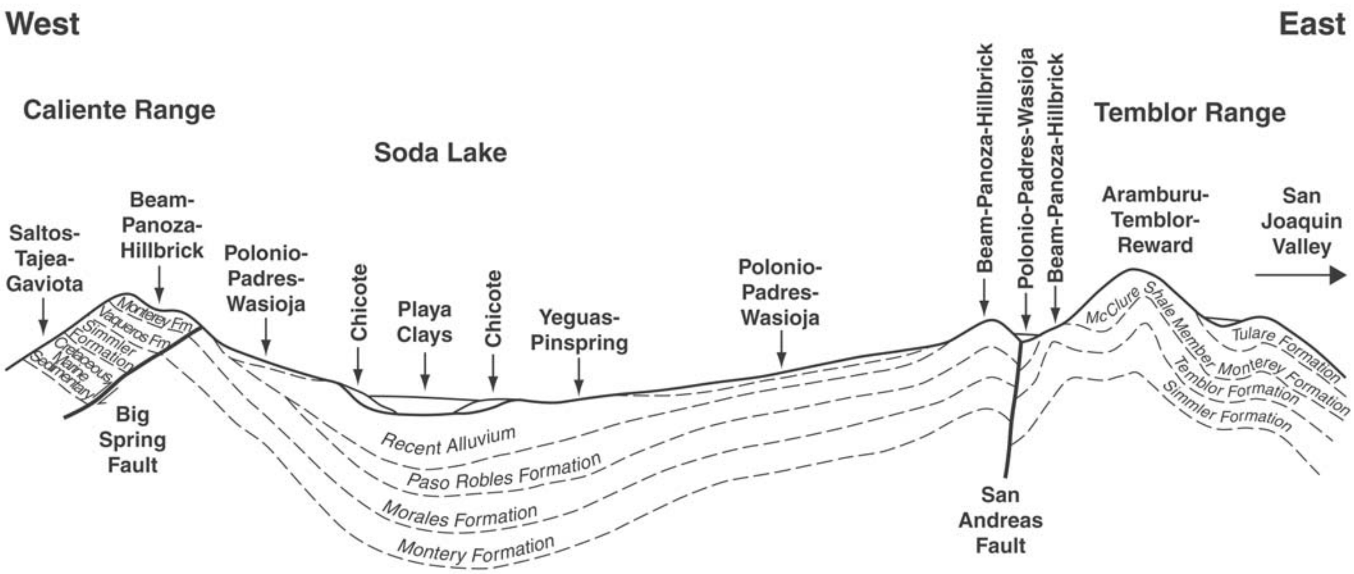

Figure 3.—Idealized cross-section of the Carrizo Plain showing soil-landscape-geology relationships.

Figure 4.—The Temblor Range in winter. (Photograph by Johna Hurl, Bureau of Land Management.)

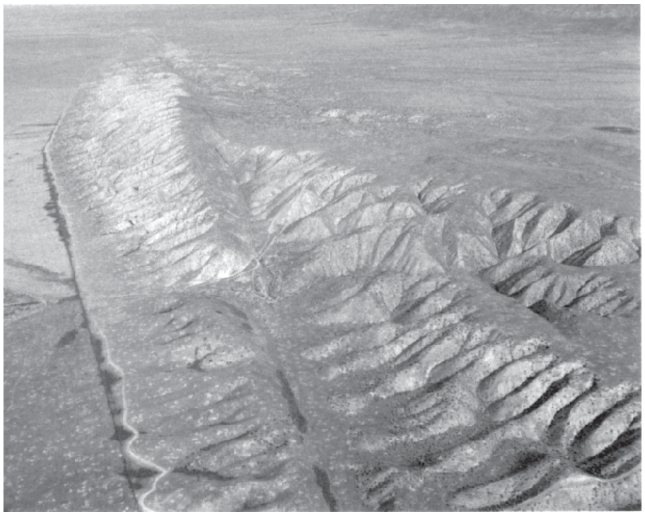

Figure 5.—Elkhorn Scarp, which was created by the San Andreas Fault.

Robles Formation is more than 3,000 feet thick near the San Andreas Fault and thins westward. It slopes from west to east and from south to north. It stores and transmits water readily, and wells which tap it have been very productive. Water contained in this formation is usually of fair to good quality.

The Morales Formation outcrops over small areas to the northwest and southeast of the Carrizo Plain. It is widespread in the subsurface. It consists of gravel, sands, and silts. It ranges in thickness from a few feet to more than 3,000 feet. Most of the ground water contained in the Morales Formation is brackish and of poor quality, but there are pockets containing fresher water that is suitable for livestock and irrigation.

Geology

Prepared by Lynn E. Moody, Ph.D., Soil Science Department, California Polytechnic State University, San Luis Obispo, California.

The most prominent and best known geological feature of the survey area is the San Andreas Fault (fig. 8). Many landforms in the survey area are associated with the San Andreas Fault and are considered textbook examples of landforms formed by earth movement (Hill, 1984). The fault passes through the foothills of the Temblor Range at the northeast boundary of the Carrizo Plain. Movement on the southwest side of the fault is in a northwest direction. The deformation of the land caused by movement along this fault has shaped the Carrizo

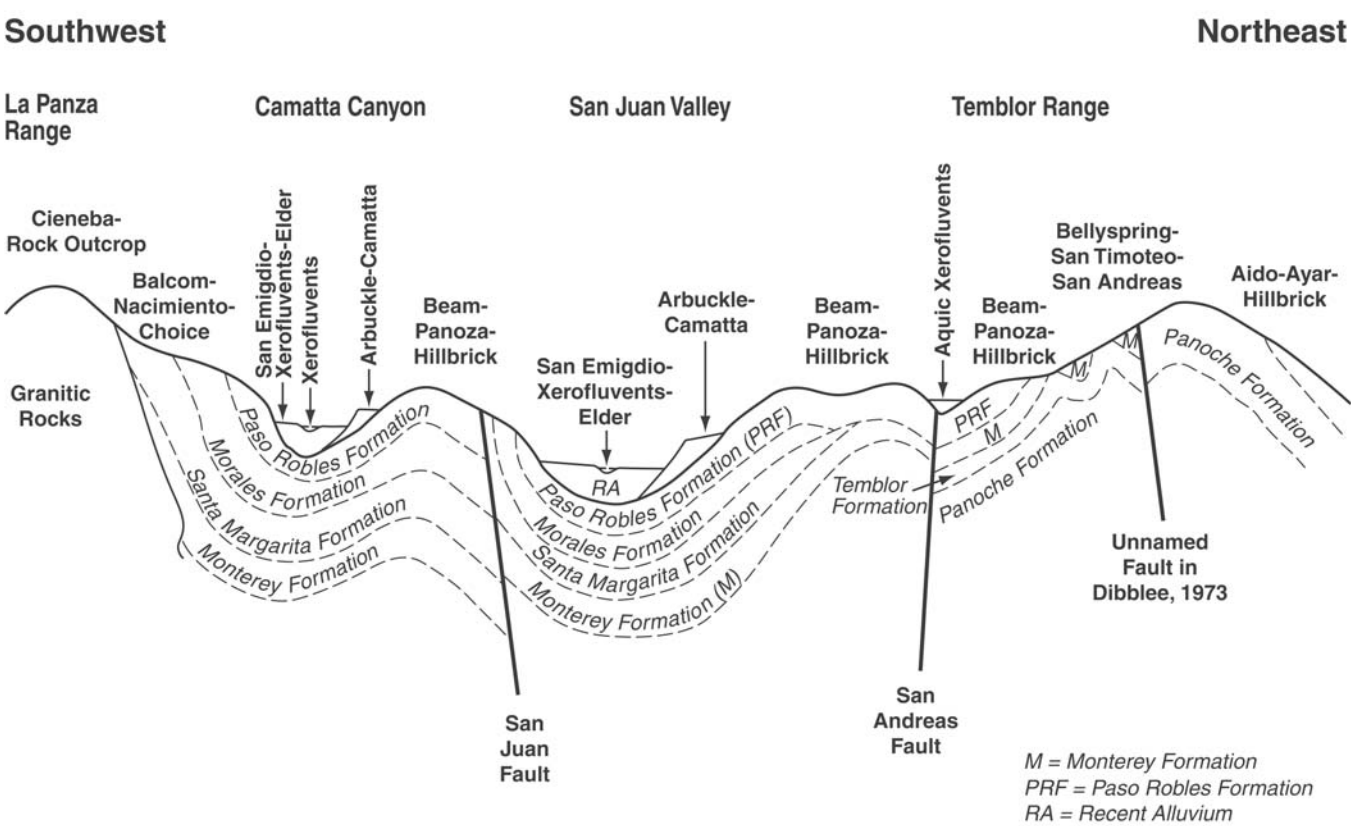

Figure 6.—Idealized cross-section of the northwestern part of the survey area, showing soil-landscape-geology relationships.

Figure 7.—View of Soda Lake from the south. Water drains across Chicote soils and into the lake. (Photograph by Johna Hurl, Bureau of Land Management.)

Plain and its bounding mountain ranges. Alignment of scarps, ridges, trenches, and valleys show the influence of the faulting on the shape of the land.

The San Juan Fault, Big Spring Fault, and Morales Fault pass through the San Juan Hills and the foothills of the Caliente Range at the southwest and west edges of the Carrizo Plain (Dibblee, 1973; Jennings, 1959). These faults are less well known than the San Andreas Fault, but they also reflect movement of land masses past each other and have been very influential in shaping the landscapes of the survey area. These faults formed the uplifts that separate San Juan Creek and the Cuyama Valley from the Carrizo Plain.

The Temblor Range and most of the Caliente Range are composed of sedimentary rocks of upper, middle, and lower Miocene age. These rocks include sandstones, shales, conglomerates, and siltstones that were originally deposited in either fresh water or ocean water (Dibblee, 1973). The northwest part of the La Panza Range is composed of granitic rocks (Dibblee, 1973; Jennings, 1959).

Deformation of the land by faulting has caused the land to be lifted upward. Subsequent water erosion has carved the uplifted land into hills and mountains. Uplift and erosion are still occurring.

The Carrizo Plain is underlain by Pleistocene aged alluvium, called the Paso Robles Formation, covered in most areas by a layer of younger alluvium. The sediments were deposited by streams and flood waters washing material out of the mountain ranges, filling in the valleys. Just as uplift and erosion of the surrounding mountains continues, the valley continues to fill in with alluvium. The Elkhorn Plain also is underlain by alluvium. The San Juan Valley and its tributary canyons are also underlain by alluvium that is washed down from slopes and transported, reworked, and deposited by streams. The valley floors are occupied by broad, flat flood plains. Some areas have stream terrace deposits, which are the remnants of ancient flood plains that are now abandoned by the steadily down-cutting streams.

Figure 8.—View of the San Andreas Fault from the north. Drainageways are offset by lateral movement of the fault. Padres sandy loam is on the Elkhorn Plain to the left. Beam loam, Panoza loam, Xerorthents, and Badlands are adjacent to the fault. (Photograph by Johna Hurl, Bureau of Land Management.)

Plant Communities

Prepared by Lynn E. Moody, Ph.D., Soil Science Department, California Polytechnic State University, San Luis Obispo, California, and Karen Wiley, soil scientist, Natural Resources Conservation Service.

Vegetation in the Carrizo Plain Soil Survey area can be divided into six natural plant communities: Valley and Southern Coastal Grassland, Foothill Woodland, Juniper-Oak Woodland, Chaparral, Desert Scrub, and Alkali Sink (Holland and Keil, 1995). These plant communities grade into one another, and islands of one type of community are commonly enclosed in another.

The Valley and Southern Coastal Grassland plant community is throughout the northern part of the survey area. It is in areas in and around Bitterwater Creek, Choice Valley, and Camatta Canyon and on the Carrizo Plain. The vegetation consists of a combination of grasses and forbs, varies widely from place to place depending on soil type and climate, and may vary from year to year as rainfall and grazing patterns change. Wild oats, soft chess, ripgut brome, and foxtail fescue are major annual grasses. Red brome is found on the more arid sites. Common forbs are California poppy, creamcups, fiddleneck, filaree, lupine, clover, tidytips, clarkia, brodiaea, turkey mullein, and vinegarweed. Scattered California buckwheat occurs in some locations. Needlegrass and other native perennial grasses originally dominated the grassland vegetation. Exotic annual grasses were introduced in the early 1800s. Heavy grazing reduced the extent of native perennial grasses and allowed the annual grasses to dominate.

The Foothill Woodlands plant community is in the hills bordering the La Panza Range and at the southern end of Camatta Canyon. The vegetation consists of open stands of trees with an understory of grass cover. The common trees are foothill pine, blue oak, and live oak on hillsides and California white oak in the lower valleys. Cottonwood and willow grow in riparian areas along and in stream channels. This plant community borders the Juniper-Oak Woodland, Chaparral, and Grassland plant communities.

The Juniper-Oak plant community is at the north end of the La Panza Range, southward along the San Juan River, and at the higher elevations in the Temblor and Caliente Ranges. It consists dominantly of an open to dense cover of California juniper. In places, it includes blue oak. California buckwheat and grasses and forbs are also members of the Juniper-Oak community.

The Chaparral plant community consists of a dense stand of woody shrubs. It is common on the hills of the La Panza Range along the western boundary of the survey area. The major shrub is chamise, which occurs either in nearly pure stands or in mixed stands including ceanothus, manzanita, California scrub oak, sage, and other shrubs. Chaparral is a fire-adapted type of plant community. It survives and even thrives after burning. Many shrub species can sprout from burls or root crowns. Some annual and a few perennial species germinate only after fire has swept the area.

The Desert Scrub plant community is along the lower slopes of the Temblor Range, especially in the south on the Elkhorn Plain and the Panorama Hills. It is also on the southern slopes of Caliente Mountain. It consists of a combination of grasses and scattered shrubs. The shrubs include Morman tea ephedra, saltbush, and California buckwheat. The grasses include red brome.

The Alkali Sink plant community is in flat areas around Soda Lake on the Carrizo Plain. It consists of salt-tolerant plants and includes iodinebush and saltgrass.

Climate

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

The climate tables were created using data collected mainly at the climate station in Maricopa, California, which is just southeast of the Carrizo Plain in Kern County. Some additional climate information was collected from the New Cuyama Fire Station climate station. Thunderstorm days, relative humidity, percent sunshine, and wind information were estimated from the First-Order station at Bakersfield, California.

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

In winter, the average temperature at Maricopa is 48.2 degrees F and the average daily minimum temperature is 38.1 degrees F. The lowest temperature on record, which occurred at Maricopa on December 6, 1978, was 15 degrees F. In summer, the average temperature is 81.0 degrees F and the average daily maximum temperature is 95.4 degrees F. The highest temperature on record, which occurred at Maricopa on July 1, 1950, was 116 degrees F. Temperatures over the Carrizo Plain are a little more extreme than at Maricopa. The average winter minimum temperatures are around freezing and record lowest temperatures are between 0 and 10 degrees F. In a typical year, the highest summer temperature is around 105 degrees F and the coldest winter temperature is between 15 and 25 degrees F.

Growing degree days are shown in Table 1. They are equivalent to “heat units.” During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (50 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The Carrizo Plain is quite dry. The mean annual precipitation is mostly between 8 and 10 inches. The areas with the highest terrain have mean annual precipitation between 10 and 14 inches. The mean annual precipitation at Maricopa is about 6.34 inches. Of this, about 4.83 inches, or 76 percent, usually falls in February through November. The growing season for most crops falls within this period. The heaviest 1-day rainfalls during the period of record were 4.15 inches at Maricopa on February 10, 1978, and 3.04 inches at New Cuyama on March 19, 1991. Thunderstorms occur on about 3 days each year.

It has snowed only about 5 times in the past 50 years at Maricopa. The heaviest 1-day snowfall on record was 6.0 inches, recorded on January 22, 1962. At New Cuyama, which is more indicative for snow on the Carrizo Plain, it snows a little in some winters, but seldom more than 1 or 2 inches at any one time. The heaviest 1-day snowfall at New Cuyama was 3.8 inches in March, 1974. Between 1986 and 1999, it snowed only once and only briefly.

The average relative humidity in mid-afternoon is about 35 percent. It ranges from around 60 percent in winter to less than 20 percent in summer. Humidity is higher at night, and the average at dawn is about 80 percent in winter and 50 percent in summer. The sun shines 96 percent of the time possible in summer and about 60 percent in winter. The prevailing wind is from the northwest. Average wind speed is highest, around 8 miles per hour, from April to June.

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 soil 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 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 field-observed 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.

This survey area was mapped at two levels of detail. At the more detailed level, map units are narrowly defined. Map unit boundaries were plotted and verified at closely spaced intervals. At the less detailed level, map units are broadly defined. Boundaries were plotted and verified at wider intervals. The following areas were mapped at the more detailed level: San Juan Valley, Camatta Canyon Valley, Shandon Area, Carrizo Plain, and Elkhorn Plain. The remaining uplands were mapped at the less detailed level.

The descriptions, names, and delineations of the soils in this survey area do not fully agree with those of the soils in adjacent survey areas, particularly the Soil Survey of the Los Padres National Forest Area, California, and the Soil Survey of Northern Santa Barbara Area, California. Differences are the result of a better knowledge of soils, modifications in series concepts, or variations in the intensity of mapping or in the extent of the soils in the survey areas.

Survey Procedures

The general procedures followed in making this survey are described in the “National Soil Survey Handbook” of the Natural Resources Conservation Service and the “Soil Survey Manual” (USDA, 1996a; Soil Survey Division Staff, 1993).

Before the fieldwork began, preliminary boundaries of slopes and landforms were plotted stereoscopically on aerial photographs taken in 1978 and enlarged to a scale of 1:24,000. Soil scientists studied U.S. Geological Survey topographic maps, at a scale of 1:24,000, to relate land and image features.

Reconnaissance was made by vehicle before the landscape was traversed on foot.

Sample areas were selected to represent the major landscapes in the survey area. These areas were investigated more closely than the rest of the survey area. Extensive notes were taken on the composition of map units in these preliminary study areas. As mapping progressed, these preliminary notes were modified and a final assessment of the composition of the individual map units was made.

As the traverses were made, the soil scientists divided the landscape into landforms or landform segments based on use and management of the soils. For example, a hill would be separated from a depression and a gently sloping summit from a very steep back slope of a ridge.

Observations of such items as landform, blown-down trees, vegetation, roadbanks, and animal burrows were made without regard to spacing. Soil boundaries were determined based on soil examinations, observations, and photo interpretation. The soil material was examined with the aid of a hand auger or a spade to a depth of about 6 feet or to bedrock within a depth of 6 feet. The pedons described as typical were observed and studied in pits that were dug with shovels, spades, or backhoes.

Samples for chemical and physical analyses and for analyses of engineering properties were taken from representative sites of several of the soils in the survey area. The chemical and physical analyses were made by the National Soil Survey Laboratory, Natural Resources Conservation Service, Lincoln, Nebraska. The results of the analyses are stored in a computerized data file at the laboratory. A description of the laboratory procedures can be obtained on request from this laboratory. The results of the studies can be obtained from the State office of the Natural Resources Conservation Service at Davis, California.

General Soil Map Units

The general soil map with 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, known as major components. 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.

Soils on the Bolson Floor

1. Chicote-Playas

Very deep, nearly level to moderately sloping, somewhat poorly drained and poorly drained soils that formed in fine textured lacustrine sediments and alluvium on the bolson floor

Setting

Landform: The bolson floor of the Carrizo Plain
Slope: 0 to 9 percent

Composition

Extent of the map unit in the survey area: 5 percent
Extent of the components in the map unit:
Chicote soils—63 percent
Playas—17 percent
Minor soils—20 percent

Soil Properties and Qualities

Chicote
Depth class: Very deep
Drainage class: Somewhat poorly drained
Position on landform: Lake plains adjacent to playas
Parent material: Alluvium from sedimentary rocks; lacustrine sediments
Texture of the surface layer: Silty clay loam and silt loam
Slope: Nearly level to moderately sloping

Playas
Depth class: Very deep
Drainage class: Poorly drained
Position on landform: Lowest areas on the bolson floor
Parent material: Alluvium from sedimentary rocks; lacustrine sediments
Slope: Nearly level

Minor soils
- Polonio soils on alluvial fans
- Yeguas soils on alluvial flats and alluvial fans
- Small areas of slick spots on the nearly level Chicote soils

Use and Management

Major uses: Livestock grazing and homesite development in areas of the Chicote soils and seasonal use by waterfowl and shore birds in areas of the Playas
Management concerns: High content of salt and alkali, frequent flooding and ponding, compaction when wet, slow permeability, and high shrink-swell potential. Also, the Playas are subject to wind erosion when the surface is dry.
Management measures: Maintain vegetation, defer use of heavy equipment and livestock grazing when the soils are wet, use special designs for house foundations and septic systems, and divert water around homesites

2. Yeguas-Pinspring

Very deep, nearly level and gently sloping, well drained soils that formed in alluvium from mixed rock types on alluvial fans and alluvial flats

Setting

Landform: Alluvial fans and flats on the bolson floor of the Carrizo Plain
Slope: 0 to 5 percent

Composition

Extent of the map unit in the survey area: 3 percent
Extent of the components in the map unit:
Yeguas soils—39 percent
Pinspring soils—39 percent
Minor soils—22 percent

Soil Properties and Qualities

Yeguas
Depth class: Very deep
Drainage class: Well drained
Position on landform: Alluvial fans and alluvial flats
Parent material: Alluvium derived from sandstone, shale, and basalt
Texture of the surface layer: Loam
Slope: Nearly level and gently sloping

Pinspring
Depth class: Very deep
Drainage class: Well drained
Position on landform: Alluvial flats
Parent material: Alluvium from mixed rock types
Texture of the surface layer: Loam
Slope: Nearly level and gently sloping

Minor soils
- Thomhill soils on alluvial flats and alluvial fans
- Polonio and Wasioja soils on alluvial fans
- Small, weakly defined channels subject to flooding during high-intensity rain storms
- Small areas of slick spots on alluvial flats

Use and Management

Major uses: Livestock grazing, dry-farmed cropland, and homesite development
Management concerns: Compaction and flooding
Management measures: Maintain vegetation, defer livestock grazing and use of heavy equipment when the soils are moist or wet, and divert water around homesites

Soils on Alluvial Flats, Alluvial Fans, Flood Plains, and Terraces

3. Polonio-Padres-Wasioja

Very deep, nearly level to moderately sloping, well drained soils that formed in alluvium from sedimentary rocks on alluvial flats and alluvial fans

Setting

Landform: Alluvial flats and gently sloping and moderately sloping alluvial fans; in the Carrizo and Elkhorn Plains
Slope: 0 to 9 percent

Composition

Extent of the map unit in the survey area: 17 percent
Extent of the components in the map unit:
Polonio soils—25 percent
Padres soils—19 percent
Wasioja soils—19 percent
Minor soils—37 percent

Soil Properties and Qualities

Polonio
Depth class: Very deep
Drainage class: Well drained
Position on landform: Alluvial fans
Parent material: Alluvium derived from calcareous sedimentary rocks
Texture of the surface layer: Loam, clay loam, and gravelly loam
Slope: Nearly level to moderately sloping

Padres
Depth class: Very deep
Drainage class: Well drained
Position on landform: Alluvial flats and alluvial fans
Parent material: Alluvium derived from sedimentary rocks
Texture of the surface layer: Sandy loam and gravelly sandy loam
Slope: Nearly level to moderately sloping

Wasioja
Depth class: Very deep
Drainage class: Well drained
Position on landform: Alluvial flats and alluvial fans
Parent material: Alluvium derived from mixed rock types
Texture of the surface layer: Loam and sandy loam
Slope: Nearly level and gently sloping

Minor soils
- Thomhill soils on alluvial flats and alluvial fans
- Capay soils on alluvial fans
- Yeguas and Pinspring soils on alluvial flats
- Gravel, sand, and borrow pits
- Small slick spots in nearly level areas on alluvial flats

Use and Management

Major uses: Dry-farmed cropland and livestock grazing
Management concerns: Water erosion and, in areas of the Polonio soil, compaction
Management measures: Till on the contour, maintain a cover crop, maintain crop residue, and defer use of heavy equipment and livestock grazing when the soils are wet

4. San Emigdio-Xerofluvents-Elder

Very deep, nearly level to moderately sloping, well drained to somewhat poorly drained soils that formed in alluvium from mixed rock types, mostly from sedimentary rocks; on alluvial fans and flood plains

Setting

Landform: Alluvial fans and flood plains in the San Juan Valley and Camatta Canyon area
Slope: 0 to 9 percent

Composition

Extent of the map unit in the survey area: 3 percent
Extent of the components in the map unit:
San Emigdio soils—29 percent
Elder soils—22 percent
Xerofluvents—10 percent
Minor soils—39 percent

Soil Properties and Qualities

San Emigdio
Depth class: Very deep
Drainage class: Well drained
Position on landform: Alluvial fans and flood plains
Parent material: Alluvium derived from calcareous sedimentary rocks
Texture of the surface layer: Sandy loam and loam
Slope: Gently sloping and moderately sloping

Xerofluvents
Depth class: Very deep
Drainage class: Somewhat poorly well drained
Position on landform: Flood plains
Parent material: Alluvium derived from mixed rock types
Texture of the surface layer: Sand, loamy sand, and gravelly sandy loam
Slope: Nearly level

Elder
Depth class: Very deep
Drainage class: Well drained
Position on landform: Alluvial fans and flood plains
Parent material: Alluvium derived from mixed rock types
Texture of the surface layer: Sandy loam and fine sandy loam
Slope: Nearly level to moderately sloping

Minor soils
- Sorrento soils on alluvial fans
- Riverwash in and along active stream channels
- Botella soils on alluvial fans and alluvial flats
- Metz soils on flood plains

Use and Management

Major uses: Dry-farmed cropland, irrigated cropland, and vineyards in areas of the San Emigdio soil and livestock grazing
Management concerns: Flooding, erosion, and, in areas of the Sorrento soil, compaction
Management measures: Maintain crop residue, maintain cover crops, and till on the contour

5. Arbuckle-Camatta

Very shallow to very deep, gently sloping to steep, well drained soils that formed in alluvium from sedimentary rocks on stream terraces

Setting

Landform: Stream terraces in the San Juan Valley and Camatta Canyon area
Slope: 2 to 50 percent

Composition

Extent of the map unit in the survey area: 5 percent
Extent of the components in the map unit:
Arbuckle soils—65 percent
Camatta soils—5 percent
Minor soils—30 percent

Soil Properties and Qualities

Arbuckle
Depth class: Very deep
Drainage class: Well drained

Position on landform: Stream terraces
Parent material: Alluvium derived from sandstone and shale
Texture of the surface layer: Sandy loam
Slope: Gently sloping to steep

Camatta
Depth class: Very shallow and shallow to indurated hardpan
Drainage class: Well drained
Position on landform: Stream terraces
Parent material: Alluvium derived from calcareous sandstone and shale
Texture of the surface layer: Loam
Slope: Moderately sloping to moderately steep

Minor soils
- Chanac soils on stream terraces
- San Emigdio, Padres, and Polonio soils on alluvial fans
- Xerofluvents on flood plains

Use and Management

Major uses: Dry-farmed cropland and livestock grazing
Management concerns: Erosion, compaction in areas of the Arbuckle soil, shallow rooting depth, and slow permeability in areas of the Camatta soil
Management measures: Maintain crop residue and defer livestock grazing and use of heavy equipment when the soils are wet

Soils on Hills and Mountains

6. Balcom-Nacimiento

Moderately deep and deep, strongly sloping to very steep, well drained soils that formed in material weathered from sandstone and shale on hills and mountain slopes

Setting

Landform: Hills and mountains, predominantly in the northwestern part of the Temblor and La Panza Ranges
Slope: 9 to 75 percent

Composition

Extent of the map unit in the survey area: 15 percent
Extent of the components in the map unit:
Balcom soils—37 percent
Nacimiento soils—24 percent
Minor soils—39 percent

Soil Properties and Qualities

Balcom
Depth class: Moderately deep
Drainage class: Well drained
Position on landform: Hills and mountains
Parent material: Residuum weathered from soft, calcareous sandstone and shale
Texture of the surface layer: Loam
Slope: Strongly sloping to very steep

Nacimiento
Depth class: Moderately deep
Drainage class: Well drained
Position on landform: Hills and mountains
Parent material: Residuum weathered from soft, calcareous sandstone and shale
Texture of the surface layer: Clay loam
Slope: Strongly sloping to steep

Minor soils
- Aido, Choice, and Calleguas soils on hills and mountains

Use and Management

Major uses: Livestock grazing and dry-farmed cropland
Management concerns: Erosion
Management measures: Maintain crop residue, till on the contour, and do not till in the steeper areas

7. Bellyspring-San Timoteo-San Andreas

Moderately deep, strongly sloping to very steep, well drained soils that formed in residuum weathered from sedimentary rocks on hills and mountains

Setting

Landform: Hills and mountains in the San Juan Hills and Temblor Range
Slope: 9 to 75 percent

Composition

Extent of the map unit in the survey area: 8 percent
Extent of the components in the map unit:
Bellyspring soils—22 percent
San Timoteo soils—17 percent
San Andreas soils—15 percent
Minor soils—46 percent

Soil Properties and Qualities

Bellyspring
Depth class: Moderately deep
Drainage class: Well drained
Position on landform: Hills and mountains

Parent material: Residuum weathered from sandstone
Texture of the surface layer: Sandy loam
Slope: Strongly sloping to very steep

San Timoteo
Depth class: Moderately deep
Drainage class: Well drained
Position on landform: Hills and mountains
Parent material: Residuum weathered from soft, calcareous sandstone
Texture of the surface layer: Sandy loam
Slope: Moderately steep to very steep

San Andreas
Depth class: Moderately deep
Drainage class: Well drained
Position on landform: Hills and mountains
Parent material: Residuum weathered from sandstone
Texture of the surface layer: Sandy loam
Slope: Strongly sloping to very steep

Minor soils
- Panoza soils on hills and mountains
- Arnold, Akad, and Saucito on hills and mountains
- Rock outcrop on hills and mountains

Use and Management

Major uses: Dry-farmed cropland and livestock grazing
Management concerns: Erosion
Management measures: Maintain plant cover and construct trails and water troughs for livestock

8. Panoza-Beam-Hillbrick

Shallow to moderately deep, strongly sloping to very steep, well drained soils that formed in residuum weathered from sedimentary rocks on hills and mountains

Setting

Landform: Hills and mountains in the Temblor Range, Caliente Range, Panorama Hills, Elkhorn Scarp, and Elkhorn Hills
Slope: 9 to 75 percent

Composition

Extent of the map unit in the survey area: 28 percent
Extent of the components in the map unit:
Panoza soils—25 percent
Beam soils—13 percent
Hillbrick soils—11 percent
Minor soils—51 percent

Soil Properties and Qualities

Panoza
Depth class: Moderately deep
Drainage class: Well drained
Position on landform: Hills and mountains
Parent material: Residuum weathered from shale, sandstone, and conglomerate
Texture of the surface layer: Loam and stony loam
Slope: Moderately steep to very steep

Beam
Depth class: Shallow
Drainage class: Well drained
Position on landform: Hills and mountains
Parent material: Residuum weathered from soft, calcareous shale, conglomerate, and sandstone
Texture of the surface layer: Sandy loam and fine sandy loam
Slope: Strongly sloping to very steep

Hillbrick
Depth class: Shallow
Drainage class: Well drained
Position on landform: Hills and mountains
Parent material: Residuum weathered from shale and sandstone
Texture of the surface layer: Loam and sandy loam
Slope: Moderately steep to very steep

Minor soils
- Calleguas, Jenks, Kilmer, San Timoteo, and Seaback soils and Xerorthents and Xeric Torriorthents; on hills and mountains
- Rock outcrop on hills and mountains
- Badlands on very steep, highly eroded hills and mountains

Use and Management

Major uses: Livestock grazing
Management concerns: Erosion and, in areas of the Beam and Hillbrick soils, shallow rooting depth
Management measures: Maintain plant cover and construct trails and water troughs for livestock

9. Aramburu-Temblor-Reward

Shallow to deep, moderately steep to very steep, well drained soils that formed in residuum weathered from sedimentary rocks on hills and mountains

Setting

Landform: Hills and mountains, at the higher elevations in the Temblor Range
Slope: 15 to 75 percent

Composition

Extent of the map unit in the survey area: 1 percent
Extent of the components in the map unit:
Aramburu soils—41 percent
Temblor soils—19 percent
Reward soils—10 percent
Minor soils—30 percent

Soil Properties and Qualities

Aramburu
Depth class: Moderately deep
Drainage class: Well drained
Position on landform: Hills and mountains
Parent material: Residuum weathered from sandstone and shale
Texture of the surface layer: Very channery clay loam
Slope: Moderately steep to very steep

Temblor
Depth class: Shallow
Drainage class: Well drained
Position on landform: Hills and mountains
Parent material: Residuum weathered from shale and sandstone
Texture of the surface layer: Very channery loam
Slope: Steep and very steep

Reward
Depth class: Deep
Drainage class: Well drained
Position on landform: Hills and mountains
Parent material: Residuum weathered from calcareous shale and sandstone
Texture of the surface layer: Channery loam
Slope: Moderately steep and steep

Minor soils
- Santa Lucia, Hillbrick, and Kilmer soils on hills and mountains
- Rock outcrop on hills and mountains

Use and Management

Major uses: Livestock grazing
Management concerns: Water erosion and, in areas of the of Temblor soil, shallow rooting depth
Management measures: Maintain plant cover and construct trails and water troughs for livestock

10. Saltos-Tajea-Gaviota

Shallow to moderately deep, moderately steep to very steep, well drained soils that formed in residuum weathered from sandstone on hills and mountains

Setting

Landform: Hills and mountains in the San Juan Hills and Caliente Range
Slope: 15 to 75 percent

Composition

Extent of the map unit in the survey area: 7 percent
Extent of the components in the map unit:
Saltos soils—23 percent
Tajea soils—19 percent
Gaviota soils—14 percent
Minor soils—44 percent

Soil Properties and Qualities

Saltos
Depth class: Very shallow
Drainage class: Well drained
Position on landform: Hills and mountains
Parent material: Residuum weathered from sandstone
Texture of the surface layer: Loam and sandy clay loam
Slope: Moderately steep to very steep

Tajea
Depth class: Moderately deep
Drainage class: Well drained
Position on landform: Hills and mountains
Parent material: Residuum weathered from hard sandstone
Texture of the surface layer: Loam and clay loam
Slope: Moderately steep and steep

Gaviota
Depth class: Very shallow and shallow
Drainage class: Well drained
Position on landform: Hills and mountains
Parent material: Residuum weathered from sandstone
Texture of the surface layer: Sandy loam
Slope: Moderately steep to very steep

Minor soils
- Bellyspring and Millsholm soils on hills and mountains
- Rock outcrop on hills and mountains

Use and Management

Major uses: Livestock grazing
Management concerns: Water erosion, shallow rooting depth in areas of the Saltos and Gaviota soils, and wildfire
Management measures: Maintain plant cover, construct trails and water troughs for livestock, construct firebreaks, and manage brush

11. Aido-Ayar-Hillbrick

Shallow to deep, moderately steep to very steep, well drained soils that formed in residuum weathered from sedimentary rocks on hills and mountains

Setting

Landform: Hills and mountains, mainly in the Temblor Range
Slope: 15 to 75 percent

Composition

Extent of the map unit in the survey area: 1 percent
Extent of the components in the map unit:
Aido soils—46 percent
Ayar soils—21 percent
Hillbrick soils—12 percent
Minor soils—21 percent

Soil Properties and Qualities

Aido
Depth class: Moderately deep
Drainage class: Well drained
Position on landform: Hills and mountains
Parent material: Residuum weathered from calcareous shale and fine-grained sandstone
Texture of the surface layer: Clay
Slope: Moderately steep to very steep

Ayar
Depth class: Deep
Drainage class: Well drained
Position on landform: Hills and mountains
Parent material: Residuum weathered from sandstone and shale
Texture of the surface layer: Clay
Slope: Strongly sloping to steep

Hillbrick
Depth class: Shallow
Drainage class: Well drained
Position on landform: Hills and mountains
Parent material: Residuum weathered from sandstone and shale
Texture of the surface layer: Loam
Slope: Strongly sloping to very steep

Minor soils
- Rock outcrop on ridgetops
- Xerorthents on hills and mountains

Use and Management

Major uses: Livestock grazing and dry-farmed cropland
Management concerns: Erosion, a high shrink-swell potential and compaction in areas of the Aido and Ayar soils, and shallow rooting depth in areas of the Hillbrick soil
Management measures: Maintain crop residue or plant cover, till on the contour, avoid tilling in the steeper areas, and defer grazing and use of heavy equipment when the soils are wet

12. Godde-Xerorthents-Rock Outcrop

Rock outcrop and shallow, steep and very steep, well drained and somewhat excessively drained soils that formed in material derived from sandstone at higher elevations on mountains

Setting

Landform: High mountains in the Caliente Range
Slope: 30 to 75 percent

Composition

Extent of the map unit in the survey area: 1 percent
Extent of the components in the map unit:
Godde soils—40 percent
Xerorthents—20 percent
Rock outcrop—15 percent
Minor soils—25 percent

Soil Properties and Qualities

Godde
Depth class: Shallow
Drainage class: Somewhat excessively drained
Position on landform: Mountains
Parent material: Residuum weathered from sandstone
Texture of the surface layer: Sandy loam
Slope: Steep and very steep

Xerorthents
Depth class: Very shallow and shallow
Drainage class: Well drained
Position on landform: Mountains
Parent material: Residuum weathered from sandstone
Texture of the surface layer: Sandy loam
Slope: Steep and very steep

Rock outcrop
- Exposures of hard sandstone and shale

Minor soils
- Gaviota, Saltos, Panoza, Aido, Nacimiento, and Beam soils on the lower, warmer mountain slopes
- Yeguas soils on alluvial fans in high mountain areas

Use and Management

Major uses: Livestock grazing
Management concerns: Water erosion and shallow rooting depth

Management measures: Maintain plant cover and construct trails and water troughs for livestock

13. Semper-Rock Outcrop-Muranch

Rock outcrop and shallow to moderately deep, steep and very steep, well drained soils that formed in residuum weathered from basalt and sandstone on hills and mountains

Setting

Landform: Mountains in the Caliente Range
Slope: 30 to 100 percent

Composition

Extent of the map unit in the survey area: 4 percent
Extent of the components in the map unit:
Semper soils—35 percent
Rock outcrop—11 percent
Muranch soils—8 percent
Minor soils—46 percent

Soil Properties and Qualities

Semper
Depth class: Moderately deep
Drainage class: Well drained
Position on landform: Mountains in the Caliente Range
Parent material: Residuum weathered from soft sandstone
Texture of the surface layer: Very fine sandy loam
Slope: Steep and very steep

Rock outcrop
- Exposures of basalt, sandstone, or shale on hills and mountains

Muranch
Depth class: Moderately deep
Drainage class: Well drained
Position on landform: Mountains in the Caliente Range
Parent material: Residuum weathered from basalt
Texture of the surface layer: Loam
Slope: Steep and very steep

Minor soils
- Xerorthents on hills and mountains
- Badlands on very steep, highly eroded hills and mountains
- Lithic Torriorthents, Hillbrick soils, and Kilmer soils on hills and mountains

Use and Management

Major uses: Livestock grazing
Management concerns: Water erosion
Management measures: Maintain plant cover and construct trails and water troughs for livestock

14. Cieneba-Rock Outcrop

Rock outcrop and shallow, steep and very steep, somewhat excessively drained soils that formed in residuum weathered from granitic rock on hills

Setting

Landform: Hills in the La Panza Range
Slope: 30 to 75 percent

Composition

Extent of the map unit in the survey area: 1 percent
Extent of the components in the map unit:
Cieneba soils—75 percent
Rock outcrop—5 percent
Minor soils—20 percent

Soil Properties and Qualities

Cieneba
Depth class: Very shallow and shallow
Drainage class: Somewhat excessively drained
Position on landform: Hills of the La Panza Range
Parent material: Residuum weathered from granite
Texture of the surface layer: Coarse sandy loam
Slope: Steep and very steep

Rock outcrop
- Exposures of granitic rock on hills and mountains

Minor soils
- Gaviota and Arnold soils on hills and mountains
- Badlands on hills

Use and Management

Major uses: Wildlife habitat and watershed
Management concerns: Water erosion and wildfire
Management measures: Maintain plant cover, construct firebreaks, and manage brush

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 soils or miscellaneous areas are components of the map units. 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 (fig. 9). They also can be used to plan the management needed for those uses. More information about each map unit is given under the heading “Use and management of Soils”.

A map unit delineation on a soil map represents an area dominated by one or more major components. A map unit is identified and named according to the taxonomic classification of the major component. 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

Figure 9.—An aerial view of Camatta Canyon from the north showing the geomorphic setting of soils. Elder sandy loam and San Emigdio sandy loam support carrots and alfalfa on the irrigated flood plain. Arbuckle sandy loam supports vineyards on the stream terraces adjacent to the flood plain. Balcom loam and Nacimiento clay loam support rangeland on the hills to the east of the canyon. Camatta loam supports rangeland on the up-lifted stream terraces sloping to the west of the canyon.

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 components for which it is named and some minor components that belong to taxonomic classes other than those of the major components.

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, Padres sandy loam, 2 to 9 percent slopes, is a phase of the Padres 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. Panoza-Beam complex, 15 to 30 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Muranch-Xerorthents-Rock outcrop association, 30 to 75 percent slopes, is an example.

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

100—Balcom loam, 50 to 75 percent slopes

Map Unit Setting

General location: Northern La Panza and Temblor Ranges
MLRA: 15
Elevation: 1,295 to 2,295 feet (396 to 701 meters)
Mean annual precipitation: 10 to 12 inches (254 to 305 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Balcom: 75 percent
Minor components: 25 percent

Characteristics of the Balcom Soil

Geomorphic setting: Mountains and hills
Parent material: Residuum weathered from soft, calcareous sandstone or shale
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 50 to 75 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 3.4 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 23 inches—loam
23 to 54 inches—weathered bedrock

Minor Components

Arbuckle sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 50 to 75 percent
Geomorphic setting: Fluvial terraces

Badlands
Composition: 0 to 5 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills

Beam fine sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 50 to 75 percent
Geomorphic setting: Mountains and hills

Nacimiento clay loam and similar soils
Composition: 0 to 5 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

San Timoteo sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Excessive slope, limited available water capacity, and water erosion
Management considerations:
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.

101—Balcom-Nacimiento complex, 15 to 30 percent slopes

Map Unit Setting

General location: Northern La Panza and Temblor Ranges
MLRA: 15
Elevation: 1,295 to 2,295 feet (396 to 701 meters)
Mean annual precipitation: 10 to 12 inches (254 to 305 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 190 to 210 days

Map Unit Composition

Balcom: 45 percent
Nacimiento: 30 percent
Minor components: 25 percent

Characteristics of the Balcom Soil

Geomorphic setting: Mountains and hills
Parent material: Residuum weathered from soft, calcareous sandstone or shale
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 15 to 30 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 3.4 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 4e
Land capability, nonirrigated: 4e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 23 inches—loam
23 to 54 inches—weathered bedrock

Characteristics of the Nacimiento Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from soft, calcareous shale or sandstone
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 15 to 30 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderately slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 5.5 inches (moderate)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 4e
Land capability, nonirrigated: 4e
Ecological site: R015XE020CA, Fine loamy 9-13" p.z.

Typical profile
0 to 10 inches—clay loam
10 to 37 inches—clay loam
37 to 42 inches—weathered bedrock

Minor Components

Arbuckle sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Geomorphic setting: Fluvial terraces

Ayar clay and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Balcom loam and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Balcom loam and similar soils
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Beam fine sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Bellyspring sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Calleguas loam and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Choice silty clay and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Polonio clay loam and similar soils
Composition: 0 to 2 percent

Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans

San Timoteo sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

San Emigdio sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 2 to 9 percent
Geomorphic setting: Flood plains

Sorrento clay loam and similar soils
Composition: 0 to 2 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans

Additional Component Properties

For additional data regarding component horizons, see table 15, "Engineering Index Properties;" table 16, "Physical Properties of the Soils;" table 17, "Chemical Properties of the Soils;" and the "Soil Properties" section of this publication. For a description of a typical soil, including a range in characteristics, see the "Classification of the Soils" section.

Use and Management

Major uses: Dry-farmed crops and livestock grazing

Dry-farmed crops
Major management factors: Limited available water capacity, excessive slope, and water erosion
Management considerations:
• Residue management and crop rotations that include summer fallow conserve soil moisture for use by crops.
• All tillage should be on the contour or across the slope.
• The hazard of erosion can be reduced by keeping as much residue as possible on the surface, seeding fall grain early, and practicing conservation tillage.

Livestock grazing
Major management factors: Water erosion, limited available water capacity, and moderately fine surface texture
Management considerations:
• Controlled grazing maintains the vegetative cover, promotes a desirable composition of plants, and reduces the hazard of erosion.
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• Trampling by livestock when the soil is too wet can cause soil compaction, which reduces productivity and increases runoff.

102—Balcom-Nacimiento complex, 30 to 50 percent slopes

Map Unit Setting

General location: Northern La Panza and Temblor Ranges
MLRA: 15
Elevation: 1,295 to 2,295 feet (396 to 701 meters)
Mean annual precipitation: 10 to 12 inches (254 to 305 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 190 to 210 days

Map Unit Composition

Balcom: 45 percent
Nacimiento: 30 percent
Minor components: 25 percent

Characteristics of the Balcom Soil

Geomorphic setting: Mountains and hills
Parent material: Residuum weathered from soft, calcareous sandstone or shale
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 30 to 50 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 3.4 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 6e

Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 23 inches—loam
23 to 54 inches—weathered bedrock

Characteristics of the Nacimiento Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from soft, calcareous shale or sandstone
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 30 to 50 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderately slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 5.5 inches (moderate)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 6e
Land capability, nonirrigated: 6e
Ecological site: R015XE020CA, Fine loamy 9-13" p.z.

Typical profile
0 to 10 inches—clay loam
10 to 37 inches—clay loam
37 to 42 inches—weathered bedrock

Minor Components

Arbuckle sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Geomorphic setting: Fluvial terraces

Ayar clay and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Beam fine sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Balcom loam and similar soils
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Bellyspring sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Calleguas loam and similar soils
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Chanac loam and similar soils
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Geomorphic setting: Fluvial terraces

Choice silty clay and similar soils
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Polonio clay loam and similar soils
Composition: 0 to 2 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans

San Timoteo sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Sorrento clay loam and similar soils
Composition: 0 to 2 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Dry-farmed crops and livestock grazing

Dry-farmed crops
Major management factors: Limited available water capacity, excessive slope, and water erosion
Management considerations:
• Residue management and crop rotations that include summer fallow conserve soil moisture for use by crops.

• All tillage should be on the contour or across the slope.
• The hazard of erosion can be reduced by keeping as much residue as possible on the surface, seeding fall grain early, and practicing conservation tillage.

Livestock grazing
Major management factors: Water erosion, limited available water capacity, excessive slope, and moderately fine surface texture
Management considerations:
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.
• Trampling by livestock when the soil is too wet can cause soil compaction, which reduces productivity and increases runoff.

103—Balcom-Nacimiento complex, 9 to 15 percent slopes

Map Unit Setting

General location: Northern La Panza and Temblor Ranges
MLRA: 15
Elevation: 1,295 to 2,295 feet (396 to 701 meters)
Mean annual precipitation: 10 to 12 inches (254 to 305 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 190 to 210 days

Map Unit Composition

Balcom: 45 percent
Nacimiento: 30 percent
Minor components: 25 percent

Characteristics of the Balcom Soil

Geomorphic setting: Mountains and hills
Parent material: Residuum weathered from soft, calcareous sandstone or shale
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 9 to 15 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 3.4 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 3e
Land capability, nonirrigated: 4e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 23 inches—loam
23 to 54 inches—weathered bedrock

Characteristics of the Nacimiento Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from soft, calcareous shale or sandstone
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 9 to 15 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderately slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 5.5 inches (moderate)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 3e

Land capability, nonirrigated: 4e
Ecological site: R015XE020CA, Fine loamy 9-13" p.z.

Typical profile
0 to 10 inches—clay loam
10 to 37 inches—clay loam
37 to 42 inches—weathered bedrock

Minor Components

Ayar clay and similar soils
Composition: 0 to 3 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills and mountains

Beam fine sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills and mountains

Choice silty clay and similar soils
Composition: 0 to 3 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills and mountains

Polonio clay loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans

San Emigdio sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Flood plains

San Timoteo sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills and mountains

Sorrento loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans

Arbuckle sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 9 to 15 percent
Geomorphic setting: Fluvial terraces

Bellyspring sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Dry-farmed crops and livestock grazing

Dry-farmed crops
Major management factors: Limited available water capacity; water erosion
Management considerations:
• Residue management and crop rotations that include summer fallow conserve soil moisture for use by crops.
• All tillage should be on the contour or across the slope.
• The hazard of erosion can be reduced by keeping as much residue as possible on the surface, seeding fall grain early, and practicing conservation tillage.

Livestock grazing
Major management factors: Water erosion, limited available water capacity, and moderately fine surface texture
Management considerations:
• Controlled grazing maintains the vegetative cover, promotes a desirable composition of plants, and reduces the hazard of erosion.
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• Trampling by livestock when the soil is too wet can cause soil compaction, which reduces productivity and increases runoff.

109—Capay clay, 0 to 2 percent slopes

Map Unit Setting

General location: Northwestern Carrizo Plain
MLRA: 17
Elevation: 1,800 to 2,095 feet (549 to 640 meters)
Mean annual precipitation: 10 to 12 inches (254 to 305 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Capay: 80 percent
Minor components: 20 percent

Characteristics of the Capay Soil

Geomorphic setting: Alluvial fans and alluvial flats
Parent material: Alluvium derived from mixed rock types
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 0 to 2 percent
Runoff: Medium
Surface features: Polygonal cracks when dry
Coarse fragments on the surface: None noted.
Restrictive feature: None noted.
Slowest permeability class: Slow
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 8.9 inches (high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 2s
Land capability, nonirrigated: 4s
Ecological site: R014XY003CA, Clayey

Typical profile
0 to 20 inches—clay
20 to 64 inches—clay

Minor Components

Balcom loam and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Geomorphic setting: Hills and mountains

Nacimiento clay loam and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Geomorphic setting: Hills and mountains

San Emigdio sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Geomorphic setting: Flood plains

Sorrento loam and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Geomorphic setting: Alluvial fans

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Dry-farmed crops and livestock grazing

Dry-farmed crops
Major management factors: Fine surface texture and restricted permeability
Management considerations:
• The soil is too sticky to cultivate when it is wet and is too hard to cultivate when it is dry.
• Returning crop residue to the soil or regularly adding other organic matter improves fertility, reduces the extent of crusting, and increases the water intake rate.

Livestock grazing
Major management factors: Fine surface texture and the shrink-swell potential
Management considerations:
• Areas of this soil are difficult to fence. Shrinking and swelling of the soil can tilt fence posts or lift them out of the soil.

110—Capay clay, 2 to 9 percent slopes

Map Unit Setting

General location: Western Carrizo Plain
MLRA: 17
Elevation: 1,800 to 2,095 feet (549 to 640 meters)
Mean annual precipitation: 10 to 12 inches (254 to 305 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Capay: 80 percent
Minor components: 20 percent

Characteristics of the Capay Soil

Geomorphic setting: Alluvial fans and alluvial flats
Parent material: Alluvium derived from mixed rock types
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 2 to 9 percent
Runoff: Medium
Surface features: Polygonal cracks when dry
Coarse fragments on the surface: None noted.
Restrictive feature: None noted.
Slowest permeability class: Slow
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 8.9 inches (high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 3e
Land capability, nonirrigated: 4e
Ecological site: R014XY003CA, Clayey

Typical profile
0 to 20 inches—clay
20 to 64 inches—clay

Minor Components

Balcom loam and similar soils
Composition: 0 to 5 percent
Slope: 2 to 9 percent
Geomorphic setting: Hills and mountains

Nacimiento clay loam and similar soils
Composition: 0 to 5 percent
Slope: 2 to 9 percent
Geomorphic setting: Hills and mountains

San Emigdio sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 2 to 9 percent
Geomorphic setting: Flood plains

Sorrento loam and similar soils
Composition: 0 to 5 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Dry-farmed crops and livestock grazing

Dry-farmed crops
Major management factors: Fine surface texture and restricted permeability
Management considerations:
• The soil is too sticky to cultivate when it is wet and is too hard to cultivate when it is dry.
• Returning crop residue to the soil or regularly adding other organic matter improves fertility, reduces the extent of crusting, and increases the water intake rate.
• Where the slope is more than 5 percent, all tillage should be on the contour or across the slope.

Livestock grazing
Major management factors: Fine surface texture and the shrink-swell potential
Management considerations:
• Areas of this soil are difficult to fence. Shrinking and swelling of the soil can tilt fence posts or lift them out of the soil.

112—Calleguas-Balcom complex, 15 to 30 percent slopes

Map Unit Setting

General location: Southern La Panza Range
MLRA: 15
Elevation: 1,295 to 2,295 feet (396 to 701 meters)
Mean annual precipitation: 10 to 12 inches (254 to 305 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Calleguas: 45 percent
Balcom: 35 percent
Minor components: 20 percent

Characteristics of the Calleguas Soil

Geomorphic setting: Mountains and hills
Parent material: Residuum weathered from unspecified sandstone
Typical vegetation: Annual grasses and forbs; scattered oaks

Component properties and qualities
Slope: 15 to 30 percent
Runoff: High
Surface features: None noted.

Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 8 to 20 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 1.6 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF038CA, Shallow fine loamy

Typical profile
0 to 2 inches—loam
2 to 9 inches—clay loam
9 to 17 inches—weathered bedrock

Characteristics of the Balcom Soil

Geomorphic setting: Mountains and hills
Parent material: Residuum weathered from soft, calcareous sandstone or shale
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 15 to 30 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 3.4 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 4e
Land capability, nonirrigated: 4e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 23 inches—loam
23 to 54 inches—weathered bedrock

Minor Components

Aido clay and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Badlands
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills

Beam fine sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Bellyspring sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Botella sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans and alluvial flats

Hillbrick loam and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Nacimiento clay loam and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Panoza loam and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Calleguas loam and similar soils
Composition: 0 to 1 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills and mountains

Calleguas loam and similar soils
Composition: 0 to 1 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Polonio loam and similar soils
Composition: 0 to 1 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans

Rock outcrop
Composition: 0 to 1 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, "Engineering Index Properties;" table 16, "Physical Properties of the Soils;" table 17, "Chemical Properties of the Soils;" and the "Soil Properties" section of this publication. For a description of a typical soil, including a range in characteristics, see the "Classification of the Soils" section.

Use and Management

Major uses: Dry-farmed crops and livestock grazing

Dry-farmed crops
Major management factors: Excessive slope, water erosion, and limited available water capacity
Management considerations:
- All tillage should be on the contour or across the slope.
- The hazard of erosion can be reduced by keeping as much residue as possible on the surface, seeding fall grain early, and practicing conservation tillage.
- Residue management and crop rotations that include summer fallow conserve soil moisture for use by crops.

Livestock grazing
Major management factors: Water erosion and limited available water capacity
Management considerations:
- Controlled grazing maintains the vegetative cover, promotes a desirable composition of plants, and reduces the hazard of erosion.
- Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.

114—Calleguas-Nacimiento complex, 9 to 30 percent slopes

Map Unit Setting

General location: Central La Panza Range
MLRA: 15
Elevation: 1,295 to 2,295 feet (396 to 701 meters)
Mean annual precipitation: 10 to 12 inches (254 to 305 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Calleguas: 55 percent
Nacimiento: 20 percent
Minor components: 25 percent

Characteristics of the Calleguas Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from unspecified sandstone
Typical vegetation: Annual grasses and forbs; scattered oaks

Component properties and qualities
Slope: 9 to 30 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 8 to 20 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 1.6 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF038CA, Shallow fine loamy

Typical profile
0 to 2 inches—loam
2 to 9 inches—clay loam
9 to 17 inches—weathered bedrock

Characteristics of the Nacimiento Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from soft, calcareous shale or sandstone
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 9 to 30 percent

Runoff: High
Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderately slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 5.5 inches (moderate)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 4e
Land capability, nonirrigated: 4e
Ecological site: R015XE020CA, Fine loamy 9-13" p.z.

Typical profile
0 to 10 inches—clay loam
10 to 37 inches—clay loam
37 to 42 inches—weathered bedrock

Minor Components

Beam fine sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 9 to 30 percent
Geomorphic setting: Hills and mountains

Bellyspring sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 9 to 30 percent
Geomorphic setting: Hills and mountains

Hillbrick sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 9 to 30 percent
Geomorphic setting: Hills and mountains

Aido clay and similar soils
Composition: 0 to 3 percent
Slope: 9 to 30 percent
Geomorphic setting: Hills and mountains

Botella sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans and alluvial flats

Nacimiento clay loam and similar soils
Composition: 0 to 4 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Panoza loam and similar soils
Composition: 0 to 2 percent
Slope: 9 to 30 percent
Geomorphic setting: Hills and mountains

Polonio loam and similar soils
Composition: 0 to 2 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans

Rock outcrop
Composition: 0 to 2 percent
Slope: 9 to 30 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Dry-farmed crops and livestock grazing

Dry-farmed crops
Major management factors: Excessive slope, limited available water capacity, and water erosion
Management considerations:
- All tillage should be on the contour or across the slope.
- Residue management and crop rotations that include summer fallow conserve soil moisture for use by crops.
- The hazard of erosion can be reduced by keeping as much residue as possible on the surface, seeding fall grain early, and practicing conservation tillage.

Livestock grazing
Major management factors: Depth to bedrock, water erosion, and moderately fine surface texture
Management considerations:
- Special design may be needed for fences in areas of shallow soils. Shallow soils also limit forage production. Species adapted to droughty conditions should be considered for seeding.
- Controlled grazing maintains the vegetative cover, promotes a desirable composition of plants, and reduces the hazard of erosion.
- Trampling by livestock when the soil is too wet can cause soil compaction, which reduces productivity and increases runoff.

120—Hillbrick-Rock outcrop complex, 15 to 50 percent slopes

Map Unit Setting

General location: Temblor Range
MLRA: 15
Elevation: 1,200 to 3,500 feet (366 to 1,067 meters)
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 250 days

Map Unit Composition

Hillbrick: 65 percent
Rock outcrop: 15 percent
Minor components: 20 percent

Characteristics of the Hillbrick Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone and shale
Typical vegetation: Annual grasses and forbs; scattered shrubs and oaks

Component properties and qualities
Slope: 15 to 50 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 0 to 15 percent coarse subangular gravel
Restrictive feature: Bedrock (lithic) at a depth of 10 to 20 inches
Slowest permeability class: Moderately rapid above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 2.1 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to 15 inches—loam
15 to 24 inches—unweathered bedrock

Characteristics of the Rock Outcrop

The rock outcrop consists of exposures of weathered sandstone or shale bedrock.

Geomorphic setting: Hills and mountains
Typical vegetation: Barren

Component properties and qualities
Slope: 15 to 50 percent
Runoff: Very high

Component hydrologic properties
Flooding: None
Ponding: None

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 8

Minor Components

Aido clay and similar soils
Composition: 0 to 5 percent
Slope: 15 to 50 percent
Geomorphic setting: Hills and mountains

Hillbrick loam and similar soils
Composition: 0 to 5 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Kilmer loam and similar soils
Composition: 0 to 5 percent
Slope: 15 to 50 percent
Geomorphic setting: Hills and mountains

San Timoteo sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 15 to 50 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Water erosion, rock outcrop, depth to bedrock, limited available water capacity, runoff, and excessive slope

Management considerations:
• The rock outcrop may limit access by equipment and some classes of livestock.
• Special design may be needed for fences in areas of shallow soils. Shallow soils also limit forage production. Species adapted to droughty conditions should be considered for seeding.
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.

121—Hillbrick-Rock outcrop complex, 15 to 75 percent slopes

Map Unit Setting

General location: San Juan Hills and Temblor Range
MLRA: 15
Elevation: 1,200 to 3,500 feet (366 to 1,067 meters)
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 250 days

Map Unit Composition

Hillbrick: 65 percent
Rock outcrop: 15 percent
Minor components: 20 percent

Characteristics of the Hillbrick Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone and shale
Typical vegetation: Grasses, forbs, and scattered shrubs and oaks

Component properties and qualities
Slope: 50 to 75 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 0 to 15 percent coarse subangular gravel
Restrictive feature: Bedrock (lithic) at a depth of 10 to 20 inches
Slowest permeability class: Moderately rapid above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 2.1 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to 15 inches—loam
15 to 24 inches—unweathered bedrock

Characteristics of the Rock Outcrop

The rock outcrop consists of exposures of sandstone or shale bedrock.

Geomorphic setting: Hills and mountains
Typical vegetation: Barren

Component properties and qualities
Slope: 15 to 75 percent
Runoff: Very high

Component hydrologic properties
Flooding: None
Ponding: None

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 8

Minor Components

Aido clay and similar soils
Composition: 0 to 5 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Beam fine sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Kilmer loam and similar soils
Composition: 0 to 5 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

San Timoteo sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, "Engineering Index Properties;" table 16, "Physical Properties of the Soils;" table 17, "Chemical Properties of the Soils;" and the "Soil Properties" section of this publication. For a description of a typical soil, including a range in characteristics, see the "Classification of the Soils" section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Water erosion, rock outcrop, depth to bedrock, limited available water capacity, runoff, and excessive slope
Management considerations:
• The rock outcrop may limit access by equipment and some classes of livestock.
• Special design may be needed for fences in areas of shallow soils. Shallow soils also limit forage production. Species adapted to droughty conditions should be considered for seeding.
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.

123—Lithic Torriorthents-Semper-Rock outcrop complex, 50 to 75 percent slopes

Map Unit Setting

General location: Caliente Range
MLRA: 15
Elevation: 2,495 to 4,195 feet (762 to 1,280 meters)
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 59 to 61 degrees F (15 to 16 degrees C)
Frost-free period: 195 to 200 days

Map Unit Composition

Lithic Torriorthents: 30 percent
Semper: 25 percent
Rock outcrop: 20 percent
Minor components: 25 percent

Characteristics of the Lithic Torriorthents

Geomorphic setting: Mountains
Parent material: Residuum weathered from sandstone
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 50 to 75 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 10 to 15 percent coarse subangular gravel
Restrictive feature: Bedrock (lithic) at a depth of 8 to 20 inches
Slowest permeability class: Moderately rapid above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 0.5 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to 5 inches—gravelly sandy loam
5 to 9 inches—unweathered bedrock

Characteristics of the Semper Soil

Geomorphic setting: Mountains
Parent material: Residuum weathered from soft sandstone
Typical vegetation: Annual grasses and forbs; scattered shrubs and juniper

Component properties and qualities
Slope: 50 to 75 percent
Runoff: Medium

Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderately rapid above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 3.3 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 5 inches—very fine sandy loam
5 to 22 inches—very fine sandy loam
22 to 26 inches—weathered bedrock

Characteristics of the Rock Outcrop

The rock outcrop consists of exposures of sandstone bedrock.

Geomorphic setting: Mountains
Typical vegetation: Barren

Component properties and qualities
Slope: 50 to 75 percent
Runoff: Very high

Component hydrologic properties
Flooding: None
Ponding: None

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 8

Minor Components

Beam fine sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Gaviota sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Kilmer loam and similar soils
Composition: 0 to 5 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Panoza loam and similar soils
Composition: 0 to 5 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Lithic Torriorthents sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Geomorphic setting: Mountains

Lithic Torriorthents sandy loam and similar soils
Composition: 0 to 1 percent
Slope: 75 to 100 percent
Geomorphic setting: Mountains

Semper very fine sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 75 to 100 percent
Geomorphic setting: Mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Water erosion, depth to bedrock, limited available water capacity, runoff, excessive slope, and rock outcrop
Management considerations:
• Special design may be needed for fences in areas of shallow soils. Shallow soils also limit forage production. Species adapted to droughty conditions should be considered for seeding.
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock

distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.

• The rock outcrop may limit access by equipment and some classes of livestock.

129—Kilmer-Hillbrick complex, 9 to 15 percent slopes

Map Unit Setting

General location: Central La Panza Range
MLRA: 15
Elevation: 895 to 2,700 feet (274 to 823 meters)
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 250 days

Map Unit Composition

Kilmer: 40 percent
Hillbrick: 35 percent
Minor components: 25 percent

Characteristics of the Kilmer Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone or shale
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 9 to 15 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 0 to 15 percent coarse subangular gravel
Restrictive feature: Bedrock (lithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderately slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 4.7 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 4e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 29 inches—loam
29 to 34 inches—unweathered bedrock

Characteristics of the Hillbrick Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone and shale
Typical vegetation: Annual grasses and forbs; scattered shrubs and juniper

Component properties and qualities
Slope: 9 to 15 percent
Runoff: Low
Surface features: None noted.
Coarse fragments on the surface: 0 to 15 percent coarse subangular gravel
Restrictive feature: Bedrock (lithic) at a depth of 10 to 20 inches
Slowest permeability class: Moderately rapid above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 2.1 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to 15 inches—loam
15 to 24 inches—unweathered bedrock

Minor Components

Aramburu very channery loam and similar soils
Composition: 0 to 3 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills and mountains

Beam fine sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills and mountains

Capay clay and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans and alluvial flats

Panoza loam and similar soils
Composition: 0 to 3 percent
Slope: 9 to 15 percent
Geomorphic setting: Mountains and hills

Rock outcrop
Composition: 0 to 3 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills and mountains

San Timoteo sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills and mountains

Temblor very channery loam and similar soils
Composition: 0 to 3 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills and mountains

Hillbrick loam and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Kilmer loam and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, "Engineering Index Properties;" table 16, "Physical Properties of the Soils;" table 17, "Chemical Properties of the Soils;" and the "Soil Properties" section of this publication. For a description of a typical soil, including a range in characteristics, see the "Classification of the Soils" section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Water erosion, limited available water capacity, and depth to bedrock
Management considerations:
- Special design may be needed for fences in areas of shallow soils. Shallow soils also limit forage production. Species adapted to droughty conditions should be considered for seeding.
- Controlled grazing maintains the vegetative cover, promotes a desirable composition of plants, and reduces the hazard of erosion.
- Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.

130—Kilmer-Hillbrick complex, 15 to 50 percent slopes

Map Unit Setting

General location: Temblor and Southern La Panza Ranges
MLRA: 15
Elevation: 1,600 to 3,795 feet (488 to 1,158 meters)
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 195 to 205 days

Map Unit Composition

Kilmer: 40 percent
Hillbrick: 35 percent
Minor components: 25 percent

Characteristics of the Kilmer Soil

Geomorphic setting: Mountains and hills
Parent material: Residuum weathered from sandstone or shale
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 15 to 50 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 0 to 15 percent coarse subangular gravel
Restrictive feature: Bedrock (lithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderately slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 4.7 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 6e

Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 29 inches—loam
29 to 34 inches—unweathered bedrock

Characteristics of the Hillbrick Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone and shale
Typical vegetation: Annual grasses and forbs; scattered shrubs and oaks

Component properties and qualities
Slope: 15 to 50 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 0 to 15 percent coarse subangular gravel
Restrictive feature: Bedrock (lithic) at a depth of 10 to 20 inches
Slowest permeability class: Moderately rapid above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 2.1 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to 15 inches—loam
15 to 24 inches—unweathered bedrock

Minor Components

Aramburu very channery loam and similar soils
Composition: 0 to 3 percent
Slope: 15 to 50 percent
Geomorphic setting: Hills and mountains

Badlands
Composition: 0 to 3 percent
Slope: 15 to 50 percent
Geomorphic setting: Hills

Beam fine sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 15 to 50 percent
Geomorphic setting: Hills and mountains

Choice silty clay and similar soils
Composition: 0 to 2 percent
Slope: 15 to 50 percent
Geomorphic setting: Hills and mountains

Gaviota sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 15 to 50 percent
Geomorphic setting: Hills and mountains

Panoza loam and similar soils
Composition: 0 to 2 percent
Slope: 15 to 50 percent
Geomorphic setting: Hills and mountains

Rock outcrop
Composition: 0 to 2 percent
Slope: 15 to 50 percent
Geomorphic setting: Hills and mountains

San Emigdio sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 2 to 9 percent
Geomorphic setting: Flood plains

San Timoteo sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 15 to 50 percent
Geomorphic setting: Hills and mountains

Temblor very channery loam and similar soils
Composition: 0 to 2 percent
Slope: 15 to 50 percent
Geomorphic setting: Hills and mountains

Unnamed noncalcareous soils
Composition: 0 to 1 percent
Slope: 15 to 50 percent
Geomorphic setting: Hills and mountains

Unnamed soils that are over soft sandstone
Composition: 0 to 1 percent
Slope: 15 to 50 percent
Geomorphic setting: Hills and mountains

Unnamed soils that have a surface layer of channery loam
Composition: 0 to 1 percent
Slope: 15 to 50 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the "Classification of the Soils" section.

Use and Management

Major uses: Livestock grazing and dry-farmed crops

Dry-farmed crops
Major management factors: Excessive slope, water erosion, and limited available water capacity
Management considerations:
• All tillage should be on the contour or across the slope.
• The hazard of erosion can be reduced by keeping as much residue as possible on the surface, seeding fall grain early, and practicing conservation tillage.
• Residue management and crop rotations that include summer fallow conserve soil moisture for use by crops.

Livestock grazing
Major management factors: Water erosion, limited available water capacity, runoff, excessive slope, and depth to bedrock
Management considerations:
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.
• Special design may be needed for fences in areas of shallow soils. Shallow soils also limit forage production. Species adapted to droughty conditions should be considered for seeding.

131—Kilmer-Hillbrick complex, 50 to 75 percent slopes

Map Unit Setting

General location: Temblor and Southern La Panza Ranges
MLRA: 15
Elevation: 1,600 to 3,795 feet (488 to 1,158 meters)
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 195 to 205 days

Map Unit Composition

Kilmer: 40 percent
Hillbrick: 35 percent
Minor components: 25 percent

Characteristics of the Kilmer Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone or shale
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 50 to 75 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 0 to 15 percent coarse subangular gravel
Restrictive feature: Bedrock (lithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderately slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 4.7 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 29 inches—loam
29 to 34 inches—unweathered bedrock

Characteristics of the Hillbrick Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone and shale
Typical vegetation: Annual grasses and forbs; scattered shrubs and oaks

Component properties and qualities
Slope: 50 to 75 percent
Runoff: Medium
Surface features: None noted.

Coarse fragments on the surface: 0 to 15 percent coarse subangular gravel
Restrictive feature: Bedrock (lithic) at a depth of 10 to 20 inches
Slowest permeability class: Moderately rapid above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 2.1 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to 15 inches—loam
15 to 24 inches—unweathered bedrock

Minor Components

Aido clay and similar soils
Composition: 0 to 3 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Aramburu very channery loam and similar soils
Composition: 0 to 3 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Beam fine sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Gaviota sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Panoza loam and similar soils
Composition: 0 to 3 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

San Timoteo sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Badlands
Composition: 0 to 2 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills

Rock outcrop
Composition: 0 to 2 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Unnamed soils that have a surface layer of channery loam
Composition: 0 to 2 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Hillbrick loam and similar soils
Composition: 0 to 1 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Kilmer loam and similar soils
Composition: 0 to 1 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Water erosion, limited available water capacity, runoff, excessive slope, and depth to bedrock
Management considerations:
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.
• Special design may be needed for fences in areas

of shallow soils. Shallow soils also limit forage production. Species adapted to droughty conditions should be considered for seeding.

134—Kilmer-Nacimiento-Aido complex, 30 to 60 percent slopes

Map Unit Setting

General location: Southern La Panza Range
MLRA: 15
Elevation: 1,800 to 4,195 feet (549 to 1,280 meters)
Mean annual precipitation: 10 to 12 inches (254 to 305 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Kilmer: 30 percent
Nacimiento: 25 percent
Aido: 15 percent
Minor components: 30 percent

Characteristics of the Kilmer Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone or shale
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 30 to 60 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 0 to 15 percent coarse subangular gravel
Restrictive feature: Bedrock (lithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderately slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 4.7 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 6e
Ecological site: R015XF011CA, Fine loamy

Typical profile
0 to 29 inches—loam
29 to 34 inches—unweathered bedrock

Characteristics of the Nacimiento Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from soft, calcareous shale or sandstone
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 30 to 60 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderately slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 5.5 inches (moderate)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 6e
Ecological site: R015XE020CA, Fine loamy 9-13" p.z.

Typical profile
0 to 10 inches—clay loam
10 to 37 inches—clay loam
37 to 42 inches—weathered bedrock

Characteristics of the Aido Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from calcareous shale or fine-grained sandstone
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 30 to 60 percent
Runoff: Very high
Surface features: Polygonal cracks when dry and soil slips
Coarse fragments on the surface: None noted.
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 4.5 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF001CA, Clayey Hills 10-14" p.z.

Typical profile
0 to 8 inches—clay
8 to 38 inches—clay
38 to 50 inches—weathered bedrock

Minor Components

Ayar clay and similar soils
Composition: 0 to 5 percent
Slope: 30 to 60 percent
Geomorphic setting: Hills and mountains

Beam fine sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 30 to 60 percent
Geomorphic setting: Hills and mountains

Hillbrick loam and similar soils
Composition: 0 to 5 percent
Slope: 30 to 60 percent
Geomorphic setting: Hills and mountains

Padres sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans and alluvial flats

Panoza loam and similar soils
Composition: 0 to 4 percent
Slope: 30 to 60 percent
Geomorphic setting: Hills and mountains

Semper very fine sandy loam and similar soils
Composition: 0 to 4 percent
Slope: 30 to 60 percent
Geomorphic setting: Mountains

Unnamed soils that have a substratum of gravelly or very gravelly loam
Composition: 0 to 2 percent
Slope: 30 to 60 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Water erosion, runoff, excessive slope, limited available water capacity, moderately fine or fine surface texture, and shrink-swell potential
Management considerations:
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• Trampling by livestock when the soil is too wet can cause soil compaction, which reduces productivity and increases runoff.
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• Because of the high shrink-swell potential, areas of this map unit are difficult to fence. Shrinking and swelling of the soil can tilt fence posts or lift them out of the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.

140—Choice silty clay, 15 to 30 percent slopes

Map Unit Setting

General location: Northern Temblor Range
MLRA: 15
Elevation: 1,400 to 3,500 feet (427 to 1,067 meters)
Mean annual precipitation: 8 to 12 inches (203 to 305 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Choice: 80 percent
Minor components: 20 percent

Characteristics of the Choice Soil

Geomorphic setting: Mountains and hills
Parent material: Residuum weathered from soft, calcareous sandstone and shale
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 15 to 30 percent
Runoff: High
Surface features: Polygonal cracks when dry and soil slips
Coarse fragments on the surface: None noted.
Restrictive feature: Bedrock (paralithic) at a depth of 40 to 60 inches
Slowest permeability class: Slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 7.0 inches (moderate)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 4e
Land capability, nonirrigated: 4e
Ecological site: R015XF001CA, Clayey Hills 10-14" p.z.

Typical profile
0 to 6 inches—silty clay
6 to 47 inches—silty clay
47 to 57 inches—weathered bedrock

Minor Components

Aido clay and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Balcom loam and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Nacimiento clay loam and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

San Emigdio sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Flood plains

Sorrento loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans

Xerorthents very gravelly loam and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Geomorphic setting: Mountains

Choice silty clay and similar soils
Composition: 0 to 1 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills and mountains

Choice silty clay and similar soils
Composition: 0 to 1 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Rock outcrop
Composition: 0 to 1 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Dry-farmed crops and livestock grazing

Dry-farmed crops
Major management factors: Excessive slope; water erosion
Management considerations:
• All tillage should be on the contour or across the slope.
• The hazard of erosion can be reduced by keeping as much residue as possible on the surface, seeding fall grain early, and practicing conservation tillage.

Livestock grazing
Major management factors: Water erosion, fine surface texture, and shrink-swell potential
Management considerations:
• Controlled grazing maintains the vegetative cover, promotes a desirable composition of plants, and reduces the hazard of erosion.
• Trampling by livestock when the soil is too wet can

cause soil compaction, which reduces productivity and increases runoff.
• Because of the high shrink-swell potential, areas of this map unit are difficult to fence. Shrinking and swelling of the soil can tilt fence posts or lift them out of the soil.

149—San Emigdio sandy loam, 0 to 2 percent slopes

Map Unit Setting

General location: San Juan Valley and Camatta Canyon
MLRA: 14
Elevation: 1,095 to 2,000 feet (335 to 610 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 195 to 205 days

Map Unit Composition

San Emigdio: 80 percent
Minor components: 20 percent

Characteristics of the San Emigdio Soil

Geomorphic setting: Alluvial fans and flood plains
Parent material: Alluvium derived from calcareous sedimentary rocks
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 0 to 2 percent
Runoff: Very low
Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: None noted.
Slowest permeability class: Moderately rapid
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 8.4 inches (high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 1
Land capability, nonirrigated: 4c
Ecological site: R014XY001CA, Loamy bottomland

Typical profile
0 to 9 inches—sandy loam
9 to 60 inches—stratified coarse sandy loam to loam

Minor Components

Metz loamy sand and similar soils
Composition: 0 to 14 percent
Slope: 0 to 2 percent
Geomorphic setting: Flood plains

Unnamed very gravelly sandy loam soils
Composition: 0 to 6 percent
Slope: 0 to 2 percent
Geomorphic setting: Alluvial fans

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Vineyards and orchards, irrigated crops, dry-farmed crops, and livestock grazing

Vineyards and orchards
Major management factors: Moderately rapid permeability in the surface layer
Management considerations:
• Cover crops maximize water infiltration, suppress dust, and minimize soil compaction.
• This map unit is suited to sprinkler and drip irrigation systems.

Irrigated crops
Major management factors: Moderately rapid permeability in the surface layer
Management considerations:
• This soil requires short, frequent irrigation cycles to keep the surface moist during seedling germination.
• This map unit is suited to sprinkler irrigation systems.

Dry-farmed crops
Major management factors: Few limitations

Livestock grazing
Major management factors: Few limitations
Management considerations:
• The hazard of erosion can be reduced by fencing livestock out of gullies and off streambanks, especially during the rainy season.

150—San Emigdio sandy loam, 2 to 9 percent slopes

Map Unit Setting

General location: San Juan Valley and Camatta Canyon
MLRA: 14
Elevation: 1,095 to 2,000 feet (335 to 610 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 195 to 205 days

Map Unit Composition

San Emigdio: 80 percent
Minor components: 20 percent

Characteristics of the San Emigdio Soil

Geomorphic setting: Alluvial fans and flood plains
Parent material: Alluvium derived from calcareous sedimentary rocks
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 2 to 9 percent
Runoff: Low
Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: None noted.
Slowest permeability class: Moderately rapid
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 8.4 inches (high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 2e
Land capability, nonirrigated: 4e
Ecological site: R014XY001CA, Loamy bottomland

Typical profile
0 to 9 inches—sandy loam
9 to 60 inches—stratified coarse sandy loam to loam

Minor Components

Metz loamy sand and similar soils
Composition: 0 to 5 percent
Slope: 2 to 5 percent
Geomorphic setting: Flood plains

Xerofluvents sand and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Geomorphic setting: Flood plains

Unnamed very gravelly sandy loam soils
Composition: 0 to 4 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans

San Emigdio sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 0 to 2 percent
Geomorphic setting: Flood plains

Unnamed soils that have a noncalcareous surface layer
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Vineyards and orchards, irrigated crops, dry-farmed crops, and livestock grazing

Vineyards and orchards
Major management factors: Slope
Management considerations:
• Vines and trees should be planted on the contour or across the slope.
• Cover crops minimize wind erosion and water erosion, maximize water infiltration, suppress dust, and minimize soil compaction.
• This map unit is suited to sprinkler and drip irrigation systems.

Irrigated crops
Major management factors: Moderately rapid permeability in the surface layer, slope, and water erosion
Management considerations:
• This soil requires short, frequent irrigation cycles to keep the surface moist during seedling germination.
• This map unit is suited to sprinkler irrigation systems, which permit the even, controlled application of water, minimize runoff, and reduce the hazard of erosion.

• All tillage should be on the contour or across the slope.

Dry-farmed crops
Major management factors: Slope and water erosion
Management considerations:
• All tillage should be on the contour or across the slope.
• The hazard of erosion can be reduced by keeping as much residue as possible on the surface, seeding fall grain early, and practicing conservation tillage.

Livestock grazing
Major management factors: Few limitations
Management considerations:
• The hazard of erosion can be reduced by fencing livestock out of gullies and off streambanks, especially during the rainy season.

154—San Emigdio loam, 0 to 2 percent slopes

Map Unit Setting

General location: San Juan Valley
MLRA: 14
Elevation: 1,095 to 2,000 feet (335 to 610 meters)
Mean annual precipitation: 10 to 11 inches (254 to 279 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 195 to 205 days

Map Unit Composition

San Emigdio: 85 percent
Minor components: 15 percent

Characteristics of the San Emigdio Soil

Geomorphic setting: Alluvial fans and flood plains
Parent material: Alluvium derived from calcareous sedimentary rocks
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 0 to 2 percent
Runoff: Very low
Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: None noted.
Slowest permeability class: Moderately rapid
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 8.4 inches (high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 1
Land capability, nonirrigated: 4c
Ecological site: R014XY001CA, Loamy bottomland

Typical profile
0 to 9 inches—loam
9 to 60 inches—stratified coarse sandy loam to loam

Minor Components

Unnamed fine-loamy soils
Composition: 0 to 15 percent
Slope: 0 to 2 percent
Geomorphic setting: Alluvial fans and flood plains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Vineyards and orchards, cropland, and livestock grazing

Vineyards and orchards
Major management factors: Few limitations
Management considerations:
• Cover crops maximize water infiltration, suppress dust, and minimize soil compaction.
• This map unit is suited to sprinkler and drip irrigation systems.

Irrigated crops
Major management factors: Few limitations
Management considerations:
• This map unit is suited to sprinkler irrigation systems.

Dry-farmed crops
Major management factors: Few limitations

Livestock grazing
Major management factors: Few limitations
Management considerations:
• The hazard of erosion can be reduced by fencing livestock out of gullies and off streambanks, especially during the rainy season.

155—San Emigdio loam, 2 to 9 percent slopes

Map Unit Setting

General location: San Juan and Bitterwater Valleys
MLRA: 14
Elevation: 1,095 to 2,000 feet (335 to 610 meters)
Mean annual precipitation: 10 to 11 inches (254 to 279 millimeters)
Mean annual air temperature: 61 degrees F (16 degrees C)
Frost-free period: 195 to 205 days

Map Unit Composition

San Emigdio: 85 percent
Minor components: 15 percent

Characteristics of the San Emigdio Soil

Geomorphic setting: Alluvial fans and flood plains
Parent material: Alluvium derived from calcareous sedimentary rocks
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 2 to 9 percent
Runoff: Low
Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: None noted.
Slowest permeability class: Moderately rapid
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 8.4 inches (high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 2e
Land capability, nonirrigated: 4e
Ecological site: R014XY001CA, Loamy bottomland

Typical profile
0 to 9 inches—loam
9 to 60 inches—stratified coarse sandy loam to loam

Minor Components

Unnamed fine-loamy soils
Composition: 0 to 15 percent
Slope: 0 to 9 percent
Geomorphic setting: Alluvial fans and flood plains

Additional Component Properties

For additional data regarding component horizons, see table 15, "Engineering Index Properties;" table 16, "Physical Properties of the Soils;" table 17, "Chemical Properties of the Soils;" and the "Soil Properties" section of this publication. For a description of a typical soil, including a range in characteristics, see the "Classification of the Soils" section.

Use and Management

Major uses: Vineyards and orchards, cropland, and livestock grazing

Vineyards and orchards
Major management factors: Slope
Management considerations:
• Vines and trees should be planted on the contour or across the slope.
• Cover crops minimize wind erosion and water erosion, maximize water infiltration, suppress dust, and minimize soil compaction.
• This map unit is suited to sprinkler and drip irrigation systems.

Irrigated crops
Major management factors: Slope
Management considerations:
• All tillage should be on the contour or across the slope.
• This map unit is suited to sprinkler irrigation systems.

Dry-farmed crops
Major management factors: Few limitations
Management considerations:
• All tillage should be on the contour or across the slope.

Livestock grazing
Major management factors: Few limitations
Management considerations:
• The hazard of erosion can be reduced by fencing livestock out of gullies and off streambanks, especially during the rainy season.

159—Sorrento loam, 0 to 2 percent slopes

Map Unit Setting

General location: Bitterwater, Choice, and San Juan Valleys
MLRA: 14
Elevation: 1,800 to 2,095 feet (549 to 640 meters)

Mean annual precipitation: 10 to 12 inches (254 to 305 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 195 to 205 days

Map Unit Composition

Sorrento: 85 percent
Minor components: 15 percent

Characteristics of the Sorrento Soil

Geomorphic setting: Alluvial fans
Parent material: Alluvium derived from sedimentary rocks
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 0 to 2 percent
Runoff: Low
Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: None noted.
Slowest permeability class: Moderately slow
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 10.3 inches (very high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 1
Land capability, nonirrigated: 4c

Typical profile
0 to 19 inches—loam
19 to 67 inches—loam and sandy clay loam

Minor Components

Capay clay and similar soils
Composition: 0 to 4 percent
Slope: 0 to 2 percent
Geomorphic setting: Alluvial fans and alluvial flats

Polonio clay loam and similar soils
Composition: 0 to 4 percent
Slope: 0 to 2 percent
Geomorphic setting: Alluvial fans

San Emigdio sandy loam and similar soils
Composition: 0 to 4 percent
Slope: 0 to 2 percent
Geomorphic setting: Flood plains

Unnamed soils that have a clay subsoil
Composition: 0 to 3 percent
Slope: 0 to 2 percent
Geomorphic setting: Alluvial fans

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Vineyards and orchards, irrigated crops, dry-farmed crops, and livestock grazing

Vineyards and orchards
Major management factors: Few limitations
Management considerations:
• Cover crops maximize water infiltration, suppress dust, and minimize soil compaction.
• This map unit is suited to sprinkler and drip irrigation systems.

Irrigated crops
Major management factors: Few limitations
Management considerations:
• This map unit is suited to furrow, flood, and sprinkler irrigation systems.

Dry-farmed crops
Major management factors: Few limitations

Livestock grazing
Major management factors: Few limitations
Management considerations:
• The hazard of erosion can be reduced by fencing livestock out of gullies and off streambanks, especially during the rainy season.

160—Sorrento loam, 2 to 9 percent slopes

Map Unit Setting

General location: Bitterwater, Choice, and San Juan Valleys
MLRA: 14
Elevation: 1,800 to 2,095 feet (549 to 640 meters)
Mean annual precipitation: 10 to 12 inches (254 to 305 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 195 to 205 days

Map Unit Composition

Sorrento: 85 percent
Minor components: 15 percent

Characteristics of the Sorrento Soil

Geomorphic setting: Alluvial fans
Parent material: Alluvium derived from sedimentary rocks
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 2 to 9 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: None noted.
Slowest permeability class: Moderately slow
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 10.3 inches (very high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 2e
Land capability, nonirrigated: 4e

Typical profile
0 to 19 inches—loam
19 to 67 inches—loam and sandy clay loam

Minor Components

Capay clay and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans and alluvial flats

Padres sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans and alluvial flats

Polonio clay loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans

San Emigdio sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Flood plains

Unnamed soils that have a clay subsoil
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Vineyards and orchards, irrigated crops, dry-farmed crops, and livestock grazing

Vineyards and orchards
Major management factors: Slope
Management considerations:
- Vines and trees should be planted on the contour or across the slope.
- Cover crops minimize wind erosion and water erosion, maximize water infiltration, suppress dust, and minimize soil compaction.
- This map unit is suited to sprinkler and drip irrigation systems.

Irrigated crops
Major management factors: Slope
Management considerations:
- This map unit is suited to sprinkler irrigation systems.

Dry-farmed crops
Major management factors: Few limitations
Management considerations:
- All tillage should be on the contour or across the slope.

Livestock grazing
Major management factors: Few limitations
Management considerations:
- The hazard of erosion can be reduced by fencing livestock out of gullies and off streambanks, especially during the rainy season.

169—Polonio loam, 0 to 2 percent slopes

Map Unit Setting

General location: Carrizo Plain southwest of Simmler; the Elkhorn Plain
MLRA: 17

Elevation: 1,495 to 2,495 feet (457 to 762 meters)
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 59 to 61 degrees F (15 to 16 degrees C)
Frost-free period: 175 to 250 days

Map Unit Composition

Polonio: 75 percent
Minor components: 25 percent

Characteristics of the Polonio Soil

Geomorphic setting: Alluvial fans
Parent material: Alluvium derived from calcareous sedimentary rocks
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 0 to 2 percent
Runoff: Low
Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: None noted.
Slowest permeability class: Moderately slow
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 9.9 inches (high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 1
Land capability, nonirrigated: 4c
Ecological site: R017XF071CA, Loamy bottomland

Typical profile
0 to 14 inches—loam
14 to 69 inches—clay loam

Minor Components

Balcom loam and similar soils
Composition: 0 to 3 percent
Slope: 0 to 2 percent
Geomorphic setting: Mountains and hills

Beam fine sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 0 to 2 percent
Geomorphic setting: Hills and mountains

Chicote silt clay loam and similar soils
Composition: 0 to 2 percent
Slope: 0 to 2 percent
Geomorphic setting: Lake plains

Hillbrick sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 0 to 2 percent
Geomorphic setting: Hills and mountains

Padres sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 0 to 2 percent
Geomorphic setting: Alluvial fans and alluvial flats

Panoza loam and similar soils
Composition: 0 to 2 percent
Slope: 0 to 2 percent
Geomorphic setting: Hills and mountains

Polonio clay loam and similar soils
Composition: 0 to 2 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans

San Emigdio sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 0 to 2 percent
Geomorphic setting: Flood plains

Thomhill loam and similar soils
Composition: 0 to 2 percent
Slope: 0 to 2 percent
Geomorphic setting: Alluvial fans and alluvial flats

Wasioja sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 0 to 2 percent
Geomorphic setting: Fan remnants

Xerofluvents sand and similar soils
Composition: 0 to 2 percent
Slope: 0 to 2 percent
Geomorphic setting: Flood plains

Yeguas loam and similar soils
Composition: 0 to 2 percent
Slope: 0 to 2 percent
Geomorphic setting: Alluvial fans and alluvial flats

Additional Component Properties

For additional data regarding component horizons, see table 15, "Engineering Index Properties;" table 16, "Physical Properties of the Soils;" table 17, "Chemical Properties of the Soils;" and the "Soil Properties" section of this publication. For a description of a typical soil, including a range in characteristics, see the "Classification of the Soils" section.

Use and Management

Major uses: Dry-farmed crops and livestock grazing

Dry-farmed crops
Major management factors: Few limitations

Livestock grazing
Major management factors: Few limitations

170—Polonio clay loam, 2 to 9 percent slopes

Map Unit Setting

General location: Bitterwater and San Juan Valleys, eastern Carrizo Plain, and Elkhorn Plain
MLRA: 17
Elevation: 1,495 to 2,495 feet (457 to 762 meters)
Mean annual precipitation: 7 to 10 inches (178 to 254 millimeters)
Mean annual air temperature: 59 to 61 degrees F (15 to 16 degrees C)
Frost-free period: 175 to 250 days

Map Unit Composition

Polonio: 65 percent
Minor components: 35 percent

Characteristics of the Polonio Soil

Geomorphic setting: Alluvial fans
Parent material: Alluvium derived from calcareous sedimentary rocks
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 2 to 9 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: None noted.
Slowest permeability class: Moderately slow
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 10.3 inches (very high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 3e
Land capability, nonirrigated: 4e
Ecological site: R017XF071CA, Loamy bottomland

Typical profile
0 to 14 inches—clay loam
14 to 69 inches—clay loam

Minor Components

Balcom loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Hills and mountains

Beam fine sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Hills and mountains

Chicote silty clay loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Lake plains

Hillbrick sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Hills and mountains

Padres sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans and alluvial flats

Panoza loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Hills and mountains

Polonio clay loam and similar soils
Composition: 0 to 3 percent
Slope: 0 to 2 percent
Geomorphic setting: Alluvial fans

San Emigdio sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Flood plains

Thomhill loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans and alluvial flats

Wasioja sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Fan remnants

Xerofluvents sand and similar soils
Composition: 0 to 3 percent
Slope: 0 to 2 percent
Geomorphic setting: Flood plains

Unnamed soils that have a surface layer of clay loam
Composition: 0 to 2 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Vineyards and orchards, irrigated crops, dry-farmed crops, and livestock grazing

Vineyards and orchards
Major management factors: Slope
Management considerations:
• Vines and trees should be planted on the contour or across the slope.
• Cover crops minimize wind erosion and water erosion, maximize water infiltration, suppress dust, and minimize soil compaction.
• This map unit is suited to sprinkler and drip irrigation systems.

Irrigated crops
Major management factors: Slope
Management considerations:
• All tillage should be on the contour or across the slope.
• This map unit is suited to sprinkler irrigation systems.

Dry-farmed crops
Major management factors: Slope
Management considerations:
• All tillage should be on the contour or across the slope.

Livestock grazing
Major management factors: Few limitations

173—Polonio gravelly loam, 2 to 9 percent slopes

Map Unit Setting

General location: Carrizo Plain east of Simmler
MLRA: 17
Elevation: 1,495 to 2,495 feet (457 to 762 meters)
Mean annual precipitation: 7 to 10 inches (178 to 254 millimeters)
Mean annual air temperature: 59 to 61 degrees F (15 to 16 degrees C)
Frost-free period: 175 to 250 days

Map Unit Composition

Polonio: 85 percent
Minor components: 15 percent

Characteristics of the Polonio Soil

Geomorphic setting: Alluvial fans
Parent material: Alluvium derived from calcareous sedimentary rocks
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 2 to 9 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 15 to 35 percent coarse subangular gravel
Restrictive feature: None noted.
Slowest permeability class: Moderately slow
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 7.1 inches (moderate)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 2e
Land capability, nonirrigated: 4e
Ecological site: R017XF071CA, Loamy bottomland

Typical profile
0 to 12 inches—gravelly loam
12 to 60 inches—gravelly loam

Minor Components

Beam sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 2 to 9 percent
Geomorphic setting: Mountains and hills

Hillbrick sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 2 to 9 percent
Geomorphic setting: Hills and mountains

Padres sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans and alluvial flats

Panoza loam and similar soils
Composition: 0 to 2 percent
Slope: 2 to 9 percent
Geomorphic setting: Hills and mountains

San Emigdio sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 2 to 9 percent
Geomorphic setting: Flood plains

Panoza clay loam and similar soils
Composition: 0 to 1 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills and mountains

Polonio clay loam and similar soils
Composition: 0 to 1 percent
Slope: 0 to 2 percent
Geomorphic setting: Alluvial fans

Wasioja sandy loam and similar soils
Composition: 0 to 1 percent
Slope: 2 to 9 percent
Geomorphic setting: Fan remnants

Xerofluvents cobbly loamy sand and similar soils
Composition: 0 to 1 percent
Slope: 0 to 2 percent
Geomorphic setting: Flood plains

Yeguas loam and similar soils
Composition: 0 to 1 percent
Slope: 2 to 5 percent
Geomorphic setting: Alluvial fans and alluvial flats

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Dry-farmed crops and livestock grazing

Dry-farmed crops
Major management factors: Slope
Management considerations:
• All tillage should be on the contour or across the slope.
• The high content of gravel in the soil reduces the amount of moisture available for plant growth and can cause rapid wear of tillage equipment.

Livestock grazing
Major management factors: Few limitations

174—Polonio-Thomhill complex, 0 to 2 percent slopes

Map Unit Setting

General location: Carrizo Plain north of Soda Lake
MLRA: 17
Elevation: 1,895 to 2,400 feet (579 to 732 meters)
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 59 to 61 degrees F (15 to 16 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Polonio: 50 percent
Thomhill: 30 percent
Minor components: 20 percent

Characteristics of the Polonio Soil

Geomorphic setting: Alluvial fans
Parent material: Alluvium derived from calcareous sedimentary rocks
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 0 to 2 percent
Runoff: Low
Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: None noted.
Slowest permeability class: Moderately slow
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 9.9 inches (high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 1
Land capability, nonirrigated: 4c
Ecological site: R017XF071CA, Loamy bottomland

Typical profile
0 to 14 inches—loam
14 to 69 inches—clay loam

Characteristics of the Thomhill Soil

Geomorphic setting: Alluvial fans and alluvial flats
Parent material: Alluvium derived from mixed rock types
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 0 to 2 percent
Runoff: Low
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: None noted.
Slowest permeability class: Moderately slow
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 10.5 inches (very high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 1
Land capability, nonirrigated: 4c
Ecological site: R017XF071CA, Loamy bottomland

Typical profile
0 to 13 inches—loam
13 to 64 inches—loam

Minor Components

Chicote clay loam and similar soils
Composition: 0 to 4 percent
Slope: 0 to 2 percent
Geomorphic setting: Lake plains

Padres sandy loam and similar soils
Composition: 0 to 4 percent
Slope: 0 to 2 percent
Geomorphic setting: Alluvial fans and alluvial flats

Unnamed gravelly soils
Composition: 0 to 4 percent
Slope: 0 to 2 percent
Geomorphic setting: Alluvial fans

Unnamed noncalcareous soils
Composition: 0 to 4 percent
Slope: 0 to 2 percent
Geomorphic setting: Alluvial fans

Yeguas loam and similar soils
Composition: 0 to 4 percent
Slope: 0 to 2 percent
Geomorphic setting: Alluvial fans and alluvial flats

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Dry-farmed crops, livestock grazing, and homesite development

Dry-farmed crops
Major management factors: Few limitations

Livestock grazing
Major management factors: Few limitations

Homesite development
Major management factors: Water erosion, low strength, shrink swell potential, and restricted permeability
Management considerations:
- Excavation for roads and buildings increases the hazard of water erosion.
- Mulching all bare ground during construction and establishing a ground cover help to prevent excessive erosion during periods of heavy rainfall.
- Buildings and roads should be designed to offset the limited ability of the soil to support a load.
- Using proper engineering designs or backfilling with material that has a low shrink-swell potential minimizes the effects of shrinking and swelling.
- The restricted permeability decreases the absorption capacity of leach fields. Increasing the size of the leach field or using a specially designed system can overcome this limitation.

175—Polonio-Thomhill complex, 2 to 9 percent slopes

Map Unit Setting

General location: Carrizo Plain east of Soda Lake
MLRA: 17
Elevation: 1,895 to 2,400 feet (579 to 732 meters)
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 59 to 61 degrees F (15 to 16 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Polonio: 50 percent
Thomhill: 30 percent
Minor components: 20 percent

Characteristics of the Polonio Soil

Geomorphic setting: Alluvial fans

Parent material: Alluvium derived from calcareous sedimentary rocks
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 2 to 9 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: None noted.
Slowest permeability class: Moderately slow
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 9.9 inches (high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 3e
Land capability, nonirrigated: 4e
Ecological site: R017XF071CA, Loamy bottomland

Typical profile
0 to 14 inches—loam
14 to 69 inches—clay loam

Characteristics of the Thomhill Soil

Geomorphic setting: Alluvial fans and alluvial flats
Parent material: Alluvium derived from mixed rock types
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 2 to 9 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: None noted.
Slowest permeability class: Moderately slow
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 10.5 inches (very high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 2e
Land capability, nonirrigated: 4e
Ecological site: R017XF071CA, Loamy bottomland

Typical profile
0 to 13 inches—loam
13 to 60 inches—loam

Minor Components

Chicote clay loam and similar soils
Composition: 0 to 4 percent
Slope: 2 to 9 percent
Geomorphic setting: Lake plains

Padres sandy loam and similar soils
Composition: 0 to 4 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans and alluvial flats

Unnamed gravelly soils
Composition: 0 to 4 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans

Unnamed noncalcareous soils
Composition: 0 to 4 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans

Yeguas loam and similar soils
Composition: 0 to 4 percent
Slope: 2 to 5 percent
Geomorphic setting: Alluvial flats and alluvial fans

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Dry-farmed crops, livestock grazing, and homesite development

Dry-farmed crops
Major management factors: Slope
Management considerations:
• All tillage should be on the contour or across the slope.

Livestock grazing
Major management factors: Few limitations

Homesite development
Major management factors: Water erosion
Management considerations:
• Excavation for roads and buildings increases the hazard of water erosion.
• Mulching all bare ground during construction and

establishing a ground cover help to prevent excessive erosion during periods of heavy rainfall.

179—Padres sandy loam, 0 to 2 percent slopes

Map Unit Setting

General location: Elkhorn Plain
MLRA: 17
Elevation: 1,895 to 2,495 feet (579 to 762 meters)
Mean annual precipitation: 7 to 10 inches (178 to 254 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Padres: 70 percent
Minor components: 30 percent

Characteristics of the Padres Soil

Geomorphic setting: Alluvial fans and alluvial flats
Parent material: Alluvium derived from sedimentary rocks
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 0 to 2 percent
Runoff: Low
Surface features: None noted.
Coarse fragments on the surface: 0 to 15 percent coarse subangular gravel
Restrictive feature: None noted.
Slowest permeability class: Moderate
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 6.5 inches (moderate)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 2s
Land capability, nonirrigated: 4s
Ecological site: R017XF071CA, Loamy bottomland

Typical profile
0 to 16 inches—sandy loam
16 to 30 inches—gravelly coarse sandy loam
30 to 62 inches—gravelly coarse sandy loam, sandy loam, and loam

Minor Components

Beam sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Geomorphic setting: Hills and mountains

Hillbrick sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Geomorphic setting: Hills and mountains

Panoza loam and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Geomorphic setting: Hills and mountains

Polonio loam and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Geomorphic setting: Alluvial fans

Wasioja sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Geomorphic setting: Fan remnants

Xerofluvents cobbly loamy sand and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Geomorphic setting: Flood plains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Few limitations

180—Padres sandy loam, 2 to 9 percent slopes

Map Unit Setting

General location: San Juan Valley, Elkhorn Plain, and southern Carrizo Plain
MLRA: 17
Elevation: 1,895 to 2,495 feet (579 to 762 meters)

Mean annual precipitation: 7 to 10 inches (178 to 254 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Padres: 65 percent
Minor components: 35 percent

Characteristics of the Padres Soil

Geomorphic setting: Alluvial fans and alluvial flats
Parent material: Alluvium derived from sedimentary rocks
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 2 to 9 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 0 to 15 percent coarse subangular gravel
Restrictive feature: None noted.
Slowest permeability class: Moderate
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 6.5 inches (moderate)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 2e
Land capability, nonirrigated: 4e
Ecological site: R017XF071CA, Loamy bottomland

Typical profile
0 to 16 inches—sandy loam
16 to 30 inches—gravelly coarse sandy loam
30 to 62 inches—gravelly coarse sandy loam, sandy loam, and loam

Minor Components

Beam sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 2 to 9 percent
Geomorphic setting: Hills and mountains

Hillbrick sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 2 to 9 percent
Geomorphic setting: Hills and mountains

Padres sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Geomorphic setting: Alluvial fans and alluvial flats

Panoza loam and similar soils
Composition: 0 to 5 percent
Slope: 2 to 9 percent
Geomorphic setting: Hills and mountains

Polonio loam and similar soils
Composition: 0 to 5 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans

Wasioja sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 2 to 9 percent
Geomorphic setting: Fan remnants

Xerofluvents cobbly loamy sand and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Geomorphic setting: Flood plains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Few limitations

182—Oceano loamy sand, 2 to 9 percent slopes

Map Unit Setting

General location: West of Camatta Canyon
MLRA: 14
Elevation: 895 to 1,095 feet (274 to 335 meters)
Mean annual precipitation: 12 to 20 inches (305 to 508 millimeters)
Mean annual air temperature: 57 to 59 degrees F (14 to 15 degrees C)
Frost-free period: 200 to 350 days

Map Unit Composition

Oceano: 50 percent
Minor components: 50 percent

Characteristics of the Oceano Soil

Geomorphic setting: Dunes
Parent material: Eolian sands
Typical vegetation: Shrubs and annual grasses

Component properties and qualities
Slope: 2 to 9 percent
Runoff: Low
Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: None noted.
Slowest permeability class: Rapid
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 4.1 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Excessively drained

Interpretive groups
Land capability, irrigated: 4s
Land capability, nonirrigated: 4e
Ecological site: R014XE033CA, Sandy bottom

Typical profile
0 to 60 inches—loamy sand

Minor Components

Metz loamy sand and similar soils
Composition: 0 to 14 percent
Slope: 0 to 5 percent
Geomorphic setting: Flood plains

Arnold loamy sand and similar soils
Composition: 0 to 10 percent
Slope: 9 to 15 percent
Geomorphic setting: Mountains and hills

Botella sandy loam and similar soils
Composition: 0 to 10 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial flats and alluvial fans

Unnamed soils that are similar to the Oceano soil but have a dark gray surface layer
Composition: 0 to 10 percent
Slope: 2 to 9 percent
Geomorphic setting: Dunes

Oceano loamy sand and similar soils
Composition: 0 to 2 percent
Slope: 9 to 15 percent
Geomorphic setting: Dunes

San Andreas sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 9 to 15 percent
Geomorphic setting: Mountains and hills

San Emigdio fine sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 0 to 9 percent
Geomorphic setting: Flood plains and alluvial fans

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Irrigated crops, livestock grazing, and homesite development

Irrigated crops
Major management factors: Slope, soil blowing, water erosion, and limited available water capacity
Management considerations:
• All tillage should be on the contour or across the slope.
• When the soil is bare, crop residue management or the establishment of a cover crop can reduce the hazard of erosion.
• A system is needed for collecting concentrated or excess water from higher-lying areas and conducting it to safe outlets in diversions or permanent grassed waterways.
• Irrigating coarse textured soils frequently at a rate proportional to the available water capacity prevents deep-percolation losses and ground-water contamination.
• Returning crop residue to the surface or adding other organic material improves fertility and increases the available water capacity.
• This map unit is suited to sprinkler and drip irrigation systems, which permit the even, controlled application of water, minimize runoff, and reduce the hazard of erosion.

Livestock grazing
Major management factors: Water erosion and limited available water capacity
Management considerations:
• Controlled grazing maintains the vegetative cover,

promotes a desirable composition of plants, and reduces the hazard of erosion.
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.

Homesite development
Major management factors: Slumping and poor filter
Management considerations:
• Cutbanks are not stable and may slump.
• Mulching all bare ground during construction and establishing a ground cover help to prevent excessive erosion during periods of heavy rainfall.
• The coarse texture of the underlying material limits the filtering capacity of septic tank absorption fields. Inadequately filtered effluent can contaminate the surface or ground water. Special design can overcome this limitation.

190—Reward channery loam, 15 to 30 percent slopes

Map Unit Setting

General location: Temblor Range
MLRA: 15
Elevation: 2,000 to 2,495 feet (610 to 762 meters)
Mean annual precipitation: 9 to 10 inches (229 to 254 millimeters)
Mean annual air temperature: 59 to 61 degrees F (15 to 16 degrees C)
Frost-free period: 200 to 225 days

Map Unit Composition

Reward: 70 percent
Minor components: 30 percent

Characteristics of the Reward Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from calcareous shale or sandstone
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 15 to 30 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 15 to 35 percent subangular channers
Restrictive feature: Bedrock (paralithic) at a depth of 40 to 60 inches
Slowest permeability class: Moderately slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 6.5 inches (moderate)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 6e
Ecological site: R015XF035CA, Shaly loam

Typical profile
0 to 24 inches—channery loam
24 to 59 inches—channery loam
59 to 65 inches—unweathered bedrock

Minor Components

Aramburu very channery loam and similar soils
Composition: 0 to 8 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Temblor very channery loam and similar soils
Composition: 0 to 8 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Hillbrick loam and similar soils
Composition: 0 to 7 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Kilmer loam and similar soils
Composition: 0 to 7 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Water erosion
Management considerations:
• Controlled grazing maintains the vegetative cover, promotes a desirable composition of plants, and reduces the hazard of erosion.

191—Reward channery loam, 30 to 50 percent slopes

Map Unit Setting

General location: Temblor Range
MLRA: 15
Elevation: 2,000 to 3,795 feet (610 to 1,158 meters)
Mean annual precipitation: 9 to 10 inches (229 to 254 millimeters)
Mean annual air temperature: 59 to 61 degrees F (15 to 16 degrees C)
Frost-free period: 200 to 225 days

Map Unit Composition

Reward: 70 percent
Minor components: 30 percent

Characteristics of the Reward Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from calcareous shale or sandstone
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 30 to 50 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 15 to 35 percent subangular channers
Restrictive feature: Bedrock (paralithic) at a depth of 40 to 60 inches
Slowest permeability class: Moderately slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 6.5 inches (moderate)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 6e
Ecological site: R015XF035CA, Shaly loam

Typical profile
0 to 24 inches—channery loam
24 to 59 inches—channery loam
59 to 65 inches—unweathered bedrock

Minor Components

Aramburu very channery clay loam and similar soils
Composition: 0 to 8 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Temblor very channery sandy loam and similar soils
Composition: 0 to 8 percent
Slope: 30 to 50 percent
Geomorphic setting: Mountains and hills

Hillbrick sandy loam and similar soils
Composition: 0 to 7 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Kilmer loam and similar soils
Composition: 0 to 7 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Water erosion, runoff, and excessive slope
Management considerations:
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.

200—Aramburu very channery clay loam, 15 to 30 percent slopes

Map Unit Setting

General location: Temblor Range
MLRA: 15
Elevation: 2,700 to 4,300 feet (823 to 1,311 meters)
Mean annual precipitation: 9 to 10 inches (228 to 254 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 175 to 225 days

Map Unit Composition

Aramburu: 70 percent
Minor components: 30 percent

Characteristics of the Aramburu Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone or shale
Typical vegetation: Annual grasses and forbs; scattered juniper

Component properties and qualities
Slope: 15 to 30 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 30 to 45 percent subangular channers
Restrictive feature: Bedrock (lithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 2.5 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 4e
Ecological site: R015XF036CA, Shaly fine loamy

Typical profile
0 to 23 inches—very channery clay loam
23 to 30 inches—unweathered bedrock

Minor Components

Hillbrick sandy loam and similar soils
Composition: 0 to 4 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Kilmer loam and similar soils
Composition: 0 to 4 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Reward channery loam and similar soils
Composition: 0 to 4 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Temblor very channery loam and similar soils
Composition: 0 to 4 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Unnamed calcareous soils
Composition: 0 to 4 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Unnamed soils that have a pale brown surface layer
Composition: 0 to 4 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Aramburu very channery loam and similar soils
Composition: 0 to 3 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills and mountains

Aramburu very channery loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing and dry-farmed crops

Dry-farmed crops
Major management factors: Water erosion and limited available water capacity
Management considerations:
• All tillage should be on the contour or across the slope.

• The hazard of erosion can be reduced by keeping as much residue as possible on the surface, seeding fall grain early, and practicing conservation tillage.
• Residue management and crop rotations that include summer fallow conserve soil moisture for use by crops.

Livestock grazing
Major management factors: Gravelly, moderately fine surface texture; water erosion; and limited available water capacity
Management considerations:
• Trampling by livestock when the soil is too wet can cause soil compaction, which reduces productivity and increases runoff.
• Controlled grazing maintains the vegetative cover, promotes a desirable composition of plants, and reduces the hazard of erosion.
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.

201—Aramburu very channery clay loam, 30 to 50 percent slopes

Map Unit Setting

General location: Temblor Range
MLRA: 15
Elevation: 2,700 to 4,300 feet (823 to 1,311 meters)
Mean annual precipitation: 9 to 10 inches (228 to 254 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 175 to 225 days

Map Unit Composition

Aramburu: 65 percent
Minor components: 35 percent

Characteristics of the Aramburu Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone or shale
Typical vegetation: Annual grasses and forbs; scattered juniper and oaks

Component properties and qualities
Slope: 30 to 50 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 30 to 45 percent subangular channers
Restrictive feature: Bedrock (lithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 2.5 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 6e
Ecological site: R015XF036CA, Shaly fine loamy

Typical profile
0 to 23 inches—very channery clay loam
23 to 30 inches—unweathered bedrock

Minor Components

Hillbrick sandy loam and similar soils
Composition: 0 to 6 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Kilmer loam and similar soils
Composition: 0 to 6 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Reward channery loam and similar soils
Composition: 0 to 6 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Temblor very channery loam and similar soils
Composition: 0 to 6 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Unnamed soils that have a pale brown surface layer
Composition: 0 to 6 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Unnamed calcareous soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, "Engineering Index Properties;" table 16, "Physical Properties of the Soils;" table 17, "Chemical Properties of the Soils;" and the "Soil Properties" section of this publication. For a description of a typical soil, including a range in characteristics, see the "Classification of the Soils" section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Moderately fine surface texture, limited available water capacity, water erosion, runoff, and excessive slope
Management considerations:
• Trampling by livestock when the soil is too wet can cause soil compaction, which reduces productivity and increases runoff.
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.

202—Aramburu very channery loam, 50 to 75 percent slopes

Map Unit Setting

General location: Temblor Range
MLRA: 15
Elevation: 2,700 to 4,300 feet (823 to 1,311 meters)
Mean annual precipitation: 9 to 10 inches (228 to 254 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 175 to 225 days

Map Unit Composition

Aramburu: 65 percent
Minor components: 35 percent

Characteristics of the Aramburu Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone or shale
Typical vegetation: Annual grasses and forbs; scattered juniper and oaks

Component properties and qualities
Slope: 50 to 75 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 30 to 45 percent subangular channers
Restrictive feature: Bedrock (lithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 2.5 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF036CA, Shaly fine loamy

Typical profile
0 to 23 inches—very channery loam
23 to 30 inches—unweathered bedrock

Minor Components

Hillbrick sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Kilmer loam and similar soils
Composition: 0 to 5 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Reward channery loam and similar soils
Composition: 0 to 5 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Rock outcrop
Composition: 0 to 5 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Temblor very channery loam and similar soils
Composition: 0 to 5 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Unnamed calcareous soils
Composition: 0 to 5 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Unnamed soils that have a pale brown surface layer
Composition: 0 to 5 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Limited available water capacity, water erosion, runoff, and excessive slope
Management considerations:
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.

204—Aramburu-Temblor complex, 30 to 50 percent slopes

Map Unit Setting

General location: Temblor Range
MLRA: 15
Elevation: 2,700 to 4,300 feet (823 to 1,311 meters)
Mean annual precipitation: 9 to 10 inches (228 to 254 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 175 to 225 days

Map Unit Composition

Aramburu: 40 percent
Temblor: 35 percent
Minor components: 25 percent

Characteristics of the Aramburu Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone or shale
Typical vegetation: Annual grasses and forbs; scattered juniper and oaks

Component properties and qualities
Slope: 30 to 50 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 30 to 45 percent subangular channers
Restrictive feature: Bedrock (lithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 2.5 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 6e
Ecological site: R015XF036CA, Shaly fine loamy

Typical profile
0 to 23 inches—very channery loam
23 to 30 inches—unweathered bedrock

Characteristics of the Temblor Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone and shale
Typical vegetation: Annual grasses and forbs; scattered oaks

Component properties and qualities
Slope: 30 to 50 percent

Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 30 to 45 percent subangular channers
Restrictive feature: Bedrock (lithic) at a depth of 10 to 20 inches
Slowest permeability class: Moderately rapid above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 1.3 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF037CA, Shallow shaly fine loamy

Typical profile
0 to 13 inches—very channery loam
13 to 20 inches—unweathered bedrock

Minor Components

Hillbrick sandy loam and similar soils
Composition: 0 to 4 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Kilmer loam and similar soils
Composition: 0 to 4 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Reward channery loam and similar soils
Composition: 0 to 4 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Unnamed soils that have a pale brown surface layer
Composition: 0 to 4 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Aramburu very channery loam and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Rock outcrop
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Unnamed calcareous soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Limited available water capacity, water erosion, runoff, excessive slope, and depth to bedrock
Management considerations:
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.
• Special design may be needed for fences in areas of shallow soils. Shallow soils also limit forage production. Species adapted to droughty conditions should be considered for seeding.

205—Aramburu-Temblor complex, 50 to 75 percent slopes

Map Unit Setting

General location: Temblor Range
MLRA: 15
Elevation: 2,700 to 4,300 feet (823 to 1,311 meters)

Mean annual precipitation: 9 to 10 inches (228 to 254 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 175 to 225 days

Map Unit Composition

Temblor: 35 percent
Aramburu: 35 percent
Minor components: 30 percent

Characteristics of the Aramburu Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone or shale
Typical vegetation: Annual grasses and forbs; scattered juniper and oaks

Component properties and qualities
Slope: 50 to 75 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 35 to 45 percent subangular channers
Restrictive feature: Bedrock (lithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 2.5 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF036CA, Shaly fine loamy

Typical profile
0 to 23 inches—very channery loam
23 to 30 inches—unweathered bedrock

Characteristics of the Temblor Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone and shale
Typical vegetation: Annual grasses and forbs; scattered oaks

Component properties and qualities
Slope: 50 to 75 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 35 to 45 percent subangular channers
Restrictive feature: Bedrock (lithic) at a depth of 10 to 20 inches
Slowest permeability class: Moderately rapid above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 1.2 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF037CA, Shallow shaly fine loamy

Typical profile
0 to 13 inches—very channery loam
13 to 17 inches—unweathered bedrock

Minor Components

Hillbrick sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Kilmer loam and similar soils
Composition: 0 to 5 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Reward channery loam and similar soils
Composition: 0 to 4 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Rock outcrop
Composition: 0 to 4 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Unnamed calcareous soils
Composition: 0 to 4 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Unnamed soils that have a pale brown surface layer
Composition: 0 to 4 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Aramburu very channery loam and similar soils
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Temblor very channery loam and similar soils
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, "Engineering Index Properties;" table 16, "Physical Properties of the Soils;" table 17, "Chemical Properties of the Soils;" and the "Soil Properties" section of this publication. For a description of a typical soil, including a range in characteristics, see the "Classification of the Soils" section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Limited available water capacity, water erosion, runoff, excessive slope, and depth to bedrock
Management considerations:
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.
• Special design may be needed for fences in areas of shallow soils. Shallow soils also limit forage production. Species adapted to droughty conditions should be considered for seeding.

218—Seaback-Calleguas-Panoza complex, 30 to 50 percent slopes

Map Unit Setting

General location: Southern La Panza Range
MLRA: 15
Elevation: 2,495 to 2,800 feet (762 to 854 meters)
Mean annual precipitation: 10 to 12 inches (254 to 304 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Seaback: 30 percent
Calleguas: 25 percent
Panoza: 20 percent
Minor components: 25 percent

Characteristics of the Seaback Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from soft, calcareous sandstone or conglomerate
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 30 to 50 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 10 to 20 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 1.5 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to 9 inches—loam
9 to 19 inches—loam
19 to 23 inches—weathered bedrock

Characteristics of the Calleguas Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from unspecified sandstone
Typical vegetation: Annual grasses and forbs; scattered shrubs and oaks

Component properties and qualities
Slope: 30 to 50 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 8 to 20 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 1.6 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF038CA, Shallow fine loamy

Typical profile
0 to 2 inches—loam
2 to 9 inches—clay loam
9 to 17 inches—weathered bedrock

Characteristics of the Panoza Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone, shale, or conglomerate
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 30 to 50 percent
Runoff: Very high
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 3.6 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 6e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 6 inches—loam
6 to 24 inches—loam
24 to 30 inches—weathered bedrock

Minor Components

Aramburu very channery loam and similar soils
Composition: 0 to 4 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Bellyspring sandy loam and similar soils
Composition: 0 to 4 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Gaviota sandy loam and similar soils
Composition: 0 to 4 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Hillbrick sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Unnamed soils that have a dark colored surface layer
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Yeguas loam and similar soils
Composition: 0 to 3 percent
Slope: 0 to 5 percent
Geomorphic setting: Alluvial fans and alluvial flats

Panoza loam and similar soils
Composition: 0 to 2 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Seaback loam and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical

Figure 10.—An area of Xerorthents-Badlands complex, 30 to 75 percent slopes, in the background and Bellyspring-Panoza complex, 9 to 15 percent slopes, in the foreground.

Properties of the Soils;" and the "Soil Properties" section of this publication. For a description of a typical soil, including a range in characteristics, see the "Classification of the Soils" section.

Use and Management

Major uses: Livestock grazing

Livestock grazing

Major management factors: Water erosion, runoff, excessive slope, depth to bedrock, and limited available water capacity

Management considerations:

• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.

• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.

• Special design may be needed for fences in areas of shallow soils. Shallow soils also limit forage production. Species adapted to droughty conditions should be considered for seeding.

• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.

219—Xerorthents-Badlands complex, 30 to 75 percent slopes

Map Unit Setting

General location: Temblor and La Panza Ranges (fig. 10)
MLRA: 15
Elevation: 1,200 to 3,500 feet (366 to 1,067 meters)
Mean annual precipitation: 7 to 10 inches (178 to 254 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 170 to 180 days

Map Unit Composition

Xerorthents: 50 percent
Badlands: 35 percent
Minor components: 15 percent

Characteristics of the Xerorthents

Geomorphic setting: Mountains
Parent material: Residuum weathered from basalt, sandstone, or shale

Typical vegetation: Sparse annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 30 to 75 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 35 to 60 percent coarse subangular gravel
Restrictive feature: Bedrock (lithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 2.3 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Somewhat excessively drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to 12 inches—very gravelly loam
12 to 19 inches—very gravelly loam
19 to 26 inches—extremely cobbly loam
26 to 28 inches—unweathered bedrock

Characteristics of the Badlands

Badlands are landscapes that are intricately dissected and characterized by a very fine drainage network with high drainage densities and by short, steep slopes with narrow interfluves. Badlands develop on surfaces with little or no vegetative cover, overlying unconsolidated or poorly cemented materials and in places soluble minerals, such as gypsum or halite.

Geomorphic setting: Mountains
Parent material: Residuum weathered from basalt, sandstone, or shale
Typical vegetation: Barren

Component properties and qualities
Slope: 30 to 75 percent
Runoff: Very high

Component hydrologic properties
Flooding: None
Ponding: None

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 8

Minor Components

Beam fine sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

Hillbrick loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

Kilmer loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

Panoza loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

Rock outcrop
Composition: 0 to 3 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Water erosion, limited available water capacity, runoff, and excessive slope
Management considerations:
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.

• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.

220—Beam-Panoza-Hillbrick complex, 15 to 30 percent slopes

Map Unit Setting

General location: Temblor and La Panza Ranges
MLRA: 15
Elevation: 1,800 to 4,100 feet (549 to 1,250 meters)
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 200 to 250 days

Map Unit Composition

Beam: 35 percent
Panoza: 30 percent
Hillbrick: 15 percent
Minor components: 20 percent

Characteristics of the Beam Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from soft, calcareous shale, conglomerate, or sandstone
Typical vegetation: Annual grasses and forbs; scattered shrubs and oaks

Component properties and qualities
Slope: 15 to 30 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 14 to 20 inches
Slowest permeability class: Moderately rapid above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 1.9 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to 15 inches—fine sandy loam
15 to 23 inches—weathered bedrock

Characteristics of the Panoza Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone, shale, or conglomerate
Typical vegetation: Annual grasses and forbs; scattered shrubs and juniper

Component properties and qualities
Slope: 15 to 30 percent
Runoff: Very high
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 3.6 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 4e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 6 inches—loam
6 to 24 inches—loam
24 to 30 inches—weathered bedrock

Characteristics of the Hillbrick Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone and shale
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 15 to 30 percent
Runoff: Medium

Surface features: None noted.
Coarse fragments on the surface: 0 to 15 percent coarse subangular gravel
Restrictive feature: Bedrock (lithic) at a depth of 10 to 20 inches
Slowest permeability class: Moderately rapid above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 2.1 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to 15 inches—loam
15 to 24 inches—unweathered bedrock

Minor Components

Bellyspring sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Padres sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans and alluvial flats

Semper very fine sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Geomorphic setting: Mountains

Wasioja sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Fan remnants

Beam fine sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Panoza loam and similar soils
Composition: 0 to 2 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills and mountains

Rock outcrop
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Unnamed soils that have a stony surface layer
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Water erosion, limited available water capacity, and depth to bedrock
Management considerations:
• Controlled grazing maintains the vegetative cover, promotes a desirable composition of plants, and reduces the hazard of erosion.
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• Special design may be needed for fences in areas of shallow soils. Shallow soils also limit forage production. Species adapted to droughty conditions should be considered for seeding.

221—Beam-Panoza-Hillbrick complex, 30 to 50 percent slopes

Map Unit Setting

General location: Temblor and La Panza Ranges
MLRA: 15
Elevation: 1,800 to 4,100 feet (549 to 1,250 meters)
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)

Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 200 to 250 days

Map Unit Composition

Beam: 35 percent
Panoza: 30 percent
Hillbrick: 15 percent
Minor components: 20 percent

Characteristics of the Beam Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from soft, calcareous shale, conglomerate, or sandstone
Typical vegetation: Annual grasses and forbs; scattered oaks

Component properties and qualities
Slope: 15 to 75 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 14 to 20 inches
Slowest permeability class: Moderately rapid above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 1.9 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to 15 inches—fine sandy loam
15 to 23 inches—weathered bedrock

Characteristics of the Panoza Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone, shale, or conglomerate
Typical vegetation: Annual grasses and forbs; scattered shrubs and juniper

Component properties and qualities
Slope: 30 to 50 percent
Runoff: Very high
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 3.6 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 6e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 6 inches—loam
6 to 24 inches—loam
24 to 30 inches—weathered bedrock

Characteristics of the Hillbrick Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone and shale
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 30 to 50 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 0 to 15 percent coarse subangular gravel
Restrictive feature: Bedrock (lithic) at a depth of 10 to 20 inches
Slowest permeability class: Moderately rapid above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 2.1 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated

Land capability, nonirrigated: 7e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to 15 inches—loam
15 to 24 inches—unweathered bedrock

Minor Components

Badlands
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills

Bellyspring sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Padres sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans and alluvial flats

Panoza loam and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Rock outcrop
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

San Timoteo sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Semper very fine sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Geomorphic setting: Mountains

Unnamed soils that have a stony surface layer
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Wasioja sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 2 to 9 percent
Geomorphic setting: Fan remnants

Additional Component Properties

For additional data regarding component horizons, see table 15, "Engineering Index Properties;" table 16, "Physical Properties of the Soils;" table 17, "Chemical Properties of the Soils;" and the "Soil Properties" section of this publication. For a description of a typical soil, including a range in characteristics, see the "Classification of the Soils" section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Water erosion, limited available water capacity, runoff, excessive slope, and depth to bedrock
Management considerations:
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.
• Special design may be needed for fences in areas of shallow soils. Shallow soils also limit forage production. Species adapted to droughty conditions should be considered for seeding.

222—Beam-Panoza-Hillbrick complex, 50 to 75 percent slopes

Map Unit Setting

General location: Temblor and La Panza Ranges
MLRA: 15
Elevation: 1,800 to 4,100 feet (549 to 1,250 meters)
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 200 to 250 days

Map Unit Composition

Beam: 35 percent
Panoza: 30 percent
Hillbrick: 15 percent
Minor components: 20 percent

Characteristics of the Beam Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from soft, calcareous shale, conglomerate, or sandstone
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 50 to 75 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 14 to 20 inches
Slowest permeability class: Moderately rapid above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 1.9 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to 15 inches—fine sandy loam
15 to 23 inches—weathered bedrock

Characteristics of the Panoza Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone, shale, or conglomerate
Typical vegetation: Annual grasses and forbs; scattered shrubs and juniper

Component properties and qualities
Slope: 50 to 75 percent
Runoff: Very high
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 3.6 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 6 inches—loam
6 to 24 inches—loam
24 to 30 inches—weathered bedrock

Characteristics of the Hillbrick Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone and shale
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 50 to 75 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 0 to 15 percent coarse subangular gravel
Restrictive feature: Bedrock (lithic) at a depth of 10 to 20 inches
Slowest permeability class: Moderately rapid above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 2.1 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to 15 inches—loam
15 to 24 inches—unweathered bedrock

Minor Components

Badlands
Composition: 0 to 3 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills

Bellyspring sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Padres sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans and alluvial flats

Semper very fine sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 50 to 75 percent
Geomorphic setting: Mountains

Panoza loam and similar soils
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Rock outcrop
Composition: 0 to 2 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Unnamed soils that have a stony surface layer
Composition: 0 to 2 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Wasioja sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 2 to 9 percent
Geomorphic setting: Fan remnants

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Water erosion, limited available water capacity, runoff, excessive slope, and depth to bedrock

Management considerations:
- Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
- The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
- The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.
- Special design may be needed for fences in areas of shallow soils. Shallow soils also limit forage production. Species adapted to droughty conditions should be considered for seeding.

227—Beam-Panoza complex, stony, 15 to 50 percent slopes

Map Unit Setting

General location: Southern Temblor Ranges
MLRA: 15
Elevation: 1,800 to 4,100 feet (549 to 1,250 meters)
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Beam: 40 percent
Panoza: 35 percent
Minor components: 25 percent

Characteristics of the Beam Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from soft, calcareous shale, conglomerate, or sandstone
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 15 to 50 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 15 to 30 percent coarse subangular gravel

Restrictive feature: Bedrock (paralithic) at a depth of 14 to 20 inches
Slowest permeability class: Moderately rapid above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 1.6 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to 15 inches—stony fine sandy loam
15 to 23 inches—weathered bedrock

Characteristics of the Panoza Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone, shale, or conglomerate
Typical vegetation: Annual grasses and forbs; scattered shrubs and juniper

Component properties and qualities
Slope: 15 to 50 percent
Runoff: Very high
Surface features: None noted.
Coarse fragments on the surface: 15 to 35 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 3.1 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 6e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 6 inches—stony loam
6 to 24 inches—stony loam
24 to 30 inches—weathered bedrock

Minor Components

Panoza loam and similar soils
Composition: 0 to 13 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills and mountains

Beam fine sandy loam and similar soils
Composition: 0 to 12 percent
Slope: 50 to 60 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, "Engineering Index Properties;" table 16, "Physical Properties of the Soils;" table 17, "Chemical Properties of the Soils;" and the "Soil Properties" section of this publication. For a description of a typical soil, including a range in characteristics, see the "Classification of the Soils" section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Water erosion, limited available water capacity, runoff, excessive slope, and depth to bedrock
Management considerations:
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.
• Special design may be needed for fences in areas of shallow soils. Shallow soils also limit forage production. Species adapted to droughty conditions should be considered for seeding.

228—Beam-Panoza complex, stony, 50 to 75 percent slopes

Map Unit Setting

General location: Southern Temblor Range
MLRA: 15
Elevation: 1,800 to 4,100 feet (549 to 1,250 meters)
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Beam: 40 percent
Panoza: 35 percent
Minor components: 25 percent

Characteristics of the Beam Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from soft, calcareous shale, conglomerate, or sandstone
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 50 to 75 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 15 to 30 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 14 to 20 inches
Slowest permeability class: Moderately rapid above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 1.6 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to 15 inches—stony fine sandy loam
15 to 23 inches—weathered bedrock

Characteristics of the Panoza Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone, shale, or conglomerate
Typical vegetation: Annual grasses and forbs; scattered shrubs and juniper

Component properties and qualities
Slope: 50 to 75 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 15 to 35 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 3.1 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 6 inches—stony loam
6 to 24 inches—stony loam
24 to 30 inches—weathered bedrock

Minor Components

Panoza loam and similar soils
Composition: 0 to 8 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills and mountains

Beam fine sandy loam and similar soils
Composition: 0 to 17 percent
Slope: 35 to 50 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, "Engineering Index Properties;" table 16, "Physical Properties of the Soils;" table 17, "Chemical Properties of the Soils;" and the "Soil Properties" section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Water erosion, limited available water capacity, stony surface texture, runoff, excessive slope, and depth to bedrock
Management considerations:
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• Rock fragments on the surface limit forage production. Species adapted to droughty conditions should be considered if seeding is desired.
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.
• Special design may be needed for fences in areas of shallow soils. Shallow soils also limit forage production. Species adapted to droughty conditions should be considered for seeding.

229—Seaback-San Timoteo complex, 50 to 75 percent slopes

Map Unit Setting

General location: San Juan Hills
MLRA: 15
Elevation: 1,400 to 4,100 feet (427 to 1,250 meters)
Mean annual precipitation: 8 to 11 inches (203 to 279 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Seaback: 40 percent
San Timoteo: 35 percent
Minor components: 25 percent

Characteristics of the Seaback Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from soft, calcareous sandstone or conglomerate
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 50 to 75 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 10 to 20 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 1.5 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to 9 inches—loam
9 to 19 inches—loam
19 to 23 inches—weathered bedrock

Characteristics of the San Timoteo Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from soft, calcareous sandstone
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 50 to 75 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 15 to 35 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderately rapid above the bedrock
Salinity: Not saline

Sodicity: Not sodic
Available water capacity: About 3.3 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 11 inches—sandy loam
11 to 25 inches—sandy loam
25 to 30 inches—weathered bedrock

Minor Components

Panoza loam and similar soils
Composition: 0 to 4 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Badlands
Composition: 0 to 3 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills

Bellyspring sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Jenks clay loam and similar soils
Composition: 0 to 3 percent
Slope: 5 to 75 percent
Geomorphic setting: Hills

Rock outcrop
Composition: 0 to 3 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

San Andreas loam and similar soils
Composition: 0 to 3 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

San Timoteo sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Seaback loam and similar soils
Composition: 0 to 3 percent
Slope: 75 to 100 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Water erosion, limited available water capacity, runoff, excessive slope, and depth to bedrock
Management considerations:
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.
• Special design may be needed for fences in areas of shallow soils. Shallow soils also limit forage production. Species adapted to droughty conditions should be considered for seeding.

230—Padres-Wasioja complex, 2 to 9 percent slopes

Map Unit Setting

General location: Elkhorn Plain
MLRA: 17
Elevation: 1,895 to 2,495 feet (579 to 762 meters)
Mean annual precipitation: 7 to 10 inches (178 to 254 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Padres: 50 percent
Wasioja: 35 percent
Minor components: 15 percent

Characteristics of the Padres Soil

Geomorphic setting: Alluvial fans and alluvial flats
Parent material: Alluvium derived from sedimentary rocks
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 2 to 9 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 0 to 15 percent coarse subangular gravel
Restrictive feature: None noted.
Slowest permeability class: Moderately rapid
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 7.1 inches (moderate)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 2e
Land capability, nonirrigated: 4e
Ecological site: R014XY001CA, Loamy bottomland

Typical profile
0 to 6 inches—sandy loam
6 to 60 inches—sandy loam

Characteristics of the Wasioja Soil

Geomorphic setting: Fan remnants
Parent material: Alluvium derived from mixed rock types
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 2 to 9 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: None noted.
Slowest permeability class: Moderately slow
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 8.1 inches (high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 2e
Land capability, nonirrigated: 4e
Ecological site: R014XY001CA, Loamy bottomland

Typical profile
0 to 5 inches—sandy loam
5 to 33 inches—sandy clay loam
33 to 70 inches—stratified very gravelly loamy coarse sand to gravelly sandy loam

Minor Components

Polonio loam and similar soils
Composition: 0 to 4 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans

Xerofluvents cobbly loamy sand and similar soils
Composition: 0 to 4 percent
Slope: 0 to 2 percent
Geomorphic setting: Flood plains

Rock outcrop
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Hills and mountains

Panoza sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 9 to 15 percent
Geomorphic setting: Mountains and hills

Panoza loam and similar soils
Composition: 0 to 2 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Few limitations

240—Panoza-Beam complex, 15 to 30 percent slopes

Map Unit Setting

General location: Temblor Range
MLRA: 15
Elevation: 1,800 to 4,100 feet (549 to 1,250 meters)
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 225 days

Map Unit Composition

Panoza: 40 percent
Beam: 30 percent
Minor components: 30 percent

Characteristics of the Panoza Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone, shale, or conglomerate
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 15 to 30 percent
Runoff: Very high
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 3.6 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 4e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 6 inches—loam
6 to 24 inches—loam
24 to 30 inches—weathered bedrock

Characteristics of the Beam Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from soft, calcareous sandstone or conglomerate
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 15 to 30 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 10 to 20 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 1.5 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to 3 inches—loam
3 to 11 inches—loam
11 to 15 inches—weathered bedrock

Minor Components

Bellyspring sandy loam and similar soils
Composition: 0 to 4 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Hillbrick loam and similar soils
Composition: 0 to 4 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Padres sandy loam and similar soils
Composition: 0 to 4 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans and alluvial flats

Beam fine sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent

Geomorphic setting: Hills and mountains

Beam stony fine sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Panoza loam and similar soils
Composition: 0 to 3 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills and mountains

Semper very fine sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Geomorphic setting: Mountains

Thomhill loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans and alluvial flats

Wasioja sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Fan remnants

Additional Component Properties

For additional data regarding component horizons, see table 15, "Engineering Index Properties;" table 16, "Physical Properties of the Soils;" table 17, "Chemical Properties of the Soils;" and the "Soil Properties" section of this publication. For a description of a typical soil, including a range in characteristics, see the "Classification of the Soils" section.

Use and Management

Major uses: Livestock grazing and dry-farmed crops

Dry-farmed crops
Major management factors: Excessive slope, water erosion, and limited available water capacity
Management considerations:
- All tillage should be on the contour or across the slope.
- The hazard of erosion can be reduced by keeping as much residue as possible on the surface, seeding fall grain early, and practicing conservation tillage.
- Residue management and crop rotations that include summer fallow conserve soil moisture for use by crops.

Livestock grazing
Major management factors: Water erosion, limited available water capacity, and depth to bedrock
Management considerations:
- Controlled grazing maintains the vegetative cover, promotes a desirable composition of plants, and reduces the hazard of erosion.
- Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
- Special design may be needed for fences in areas of shallow soils. Shallow soils also limit forage production. Species adapted to droughty conditions should be considered for seeding.

241—Panoza-Beam complex, 30 to 50 percent slopes

Map Unit Setting

General location: Temblor Range and San Juan Hills
MLRA: 15
Elevation: 1,800 to 4,100 feet (549 to 1,250 meters)
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 225 days

Map Unit Composition

Panoza: 40 percent
Beam: 30 percent
Minor components: 30 percent

Characteristics of the Panoza Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone, shale, or conglomerate
Typical vegetation: Annual grasses and forbs; scattered shrubs and juniper

Component properties and qualities
Slope: 30 to 50 percent
Runoff: Very high
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 3.6 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 6e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 6 inches—loam
6 to 24 inches—loam
24 to 30 inches—weathered bedrock

Characteristics of the Beam Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from soft, calcareous sandstone or conglomerate
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 30 to 50 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 10 to 20 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 1.5 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to 3 inches—loam
3 to 11 inches—loam
11 to 15 inches—weathered bedrock

Minor Components

Badlands
Composition: 0 to 4 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills

Bellyspring sandy loam and similar soils
Composition: 0 to 4 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Hillbrick loam and similar soils
Composition: 0 to 4 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Padres sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans and alluvial flats

Polonio loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans

Seaback stony loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Seaback loam and similar soils
Composition: 0 to 3 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Semper very fine sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Geomorphic setting: Mountains

Wasioja sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Fan remnants

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Water erosion, limited available water capacity, runoff, excessive slope, and depth to bedrock

Management considerations:
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.
• Special design may be needed for fences in areas of shallow soils. Shallow soils also limit forage production. Species adapted to droughty conditions should be considered for seeding.

242—Panoza-Beam complex, 50 to 75 percent slopes

Map Unit Setting

General location: Temblor Range and San Juan Hills
MLRA: 15
Elevation: 1,800 to 4,100 feet (549 to 1,250 meters)
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 225 days

Map Unit Composition

Panoza: 40 percent
Beam: 30 percent
Minor components: 30 percent

Characteristics of the Panoza Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone, shale, or conglomerate
Typical vegetation: Annual grasses and forbs; scattered shrubs and juniper

Component properties and qualities
Slope: 50 to 75 percent
Runoff: Very high
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 3.6 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 6 inches—loam
6 to 24 inches—loam
24 to 30 inches—weathered bedrock

Characteristics of the Beam Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from soft, calcareous sandstone or conglomerate
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 50 to 75 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 10 to 20 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 1.5 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to 3 inches—loam
3 to 11 inches—loam
11 to 15 inches—weathered bedrock

Minor Components

Badlands
Composition: 0 to 4 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills

Bellyspring sandy loam and similar soils
Composition: 0 to 4 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Hillbrick loam and similar soils
Composition: 0 to 4 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Padres sandy loam and similar soils
Composition: 0 to 4 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans and alluvial flats

Semper very fine sandy loam and similar soils
Composition: 0 to 4 percent
Slope: 50 to 75 percent
Geomorphic setting: Mountains

Wasioja sandy loam and similar soils
Composition: 0 to 4 percent
Slope: 2 to 9 percent
Geomorphic setting: Fan remnants

Panoza loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Seaback stony loam and similar soils
Composition: 0 to 3 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, "Engineering Index Properties;" table 16, "Physical Properties of the Soils;" table 17, "Chemical Properties of the Soils;" and the "Soil Properties" section of this publication. For a description of a typical soil, including a range in characteristics, see the "Classification of the Soils" section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Water erosion, limited available water capacity, runoff, excessive slope, and depth to bedrock
Management considerations:
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.
• Special design may be needed for fences in areas of shallow soils. Shallow soils also limit forage production. Species adapted to droughty conditions should be considered for seeding.

248—Pyxo-Cochora association, 15 to 30 percent slopes

Map Unit Setting

General location: Temblor Range near Fellows
MLRA: 15
Elevation: 1,000 to 2,230 feet (305 to 680 meters)
Mean annual precipitation: 6 to 8 inches (152 to 203 millimeters)
Mean annual air temperature: 61 to 64 degrees F (16 to 18 degrees C)
Frost-free period: 240 to 300 days

Map Unit Composition

Pyxo: 55 percent
Cochora: 30 percent
Minor components: 15 percent

Characteristics of the Pyxo Soil

Geomorphic setting: Hills
Parent material: Residuum weathered from soft, calcareous sandstone or shale
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 15 to 30 percent, west to east aspects
Runoff: High
Surface features: None noted.

Coarse fragments on the surface: 0 to 10 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 5.7 inches (moderate)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 11 inches—loam
11 to 38 inches—loam
38 to 40 inches—weathered bedrock

Characteristics of the Cochora Soil

Geomorphic setting: Hills
Parent material: Fractured shale
Typical vegetation: Annual grasses and forbs; some desert shrubs

Component properties and qualities
Slope: 15 to 30 percent, east to west aspects
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: Bedrock (paralithic) at a depth of 14 to 20 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 1.8 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 9 inches—loam
9 to 15 inches—sandy loam
15 inches—weathered bedrock

Minor Components

Cochora loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 15 percent
Geomorphic setting: Hills

Cochora cobbly loam and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills

Pyxo loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 15 percent
Geomorphic setting: Hills

Padres fine sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 0 to 2 percent
Geomorphic setting: Hills and alluvial fans

Rock outcrop
Composition: 0 to 2 percent
Slope: 15 to 50 percent
Geomorphic setting: Hills

Pyxo loam and similar soils
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Water erosion, depth to bedrock, and limited available water capacity
Management considerations:
• Controlled grazing maintains the vegetative cover, promotes a desirable composition of plants, and reduces the hazard of erosion.
• Special design may be needed for fences in areas of shallow soils. Shallow soils also limit forage

production. Species adapted to droughty conditions should be considered for seeding.

• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.

249—Xeric Torriorthents-Badlands complex, 30 to 75 percent slopes

Map Unit Setting

General location: Southern Temblor Range
MLRA: 15
Elevation: 1,000 to 2,495 feet (305 to 762 meters)
Mean annual precipitation: 6 to 9 inches (152 to 229 millimeters)
Mean annual air temperature: 63 to 64 degrees F (17 to 18 degrees C)
Frost-free period: 190 to 250 days

Map Unit Composition

Xeric Torriorthents: 50 percent
Badlands: 25 percent
Minor components: 25 percent

Characteristics of the Xeric Torriorthents

Geomorphic setting: Mountains
Parent material: Residuum weathered from sandstone or shale
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 30 to 75 percent
Runoff: Very high
Surface features: None noted.
Coarse fragments on the surface: 15 to 35 percent coarse subangular gravel
Restrictive feature: Bedrock (lithic) at a depth of 20 to 60 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 2.8 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 10 inches—gravelly sandy loam
10 to 24 inches—very gravelly loam
24 to 43 inches—extremely gravelly sandy loam
43 to 53 inches—unweathered bedrock

Characteristics of the Badlands

Badlands are landscapes that are intricately dissected and characterized by a very fine drainage network with high drainage densities and by short, steep slopes with narrow interfluves. Badlands develop on surfaces with little or no vegetative cover, overlying unconsolidated or poorly cemented materials and in places soluble minerals, such as gypsum or halite.

Geomorphic setting: Hills
Parent material: Residuum weathered from soft, calcareous sandstone or shale
Typical vegetation: Barren

Component properties and qualities
Slope: 50 to 75 percent
Runoff: Very high

Component hydrologic properties
Flooding: None
Ponding: None

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 8

Minor Components

Hillbrick sandy loam and similar soils
Composition: 0 to 7 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

Beam fine sandy loam and similar soils
Composition: 0 to 6 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

Pyxo loam and similar soils
Composition: 0 to 6 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills

Kilmer loam and similar soils
Composition: 0 to 6 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, "Engineering Index Properties;" table 16, "Physical Properties of the Soils;" table 17, "Chemical Properties of the Soils;" and the "Soil Properties" section of this publication. For a description of a typical soil, including a range in characteristics, see the "Classification of the Soils" section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Water erosion, limited available water capacity, runoff, and excessive slope
Management considerations:
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.

250—Pyxo-Cochora-Badlands association, 15 to 75 percent slopes

Map Unit Setting

General location: Temblor Range near Fellows
MLRA: 15
Elevation: 1,295 to 2,000 feet (396 to 610 meters)
Mean annual precipitation: 6 to 8 inches (152 to 203 millimeters)
Mean annual air temperature: 61 to 64 degrees F (16 to 18 degrees C)
Frost-free period: 240 to 300 days

Map Unit Composition

Pyxo: 40 percent
Cochora: 25 percent
Badlands: 15 percent
Minor components: 20 percent

Characteristics of the Pyxo Soil

Geomorphic setting: Hills
Parent material: Soft shale
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 30 to 50 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 0 to 10 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 4.2 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 6 inches—loam
6 to 28 inches—loam
28 to 32 inches—weathered bedrock

Characteristics of the Cochora Soil

Geomorphic setting: Hills
Parent material: Fractured shale
Typical vegetation: Annual grasses and forbs; some desert shrubs

Component properties and qualities
Slope: 15 to 30 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: Bedrock (paralithic) at a depth of 14 to 20 inches

Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 1.0 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 3 inches—loam
3 to 9 inches—gravelly loam
9 inches to weathered bedrock

Characteristics of the Badlands

Badlands are landscapes that are intricately dissected and characterized by a very fine drainage network with high drainage densities and by short, steep slopes with narrow interfluves. Badlands develop on surfaces with little or no vegetative cover, overlying unconsolidated or poorly cemented materials and in places soluble minerals, such as gypsum or halite.

Geomorphic setting: Hills
Parent material: Soft sandstone and shale
Typical vegetation: Barren

Component properties and qualities
Slope: 50 to 75 percent
Runoff: Very high

Component hydrologic properties
Flooding: None
Ponding: None

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 8

Minor Components

Polonio clay loam and similar soils
Composition: 0 to 4 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans

Xeric Torriorthents gravelly sandy loam and similar soils
Composition: 0 to 4 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills

Cochora, eroded, and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills

Pyxo, eroded, and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills

Padres sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 0 to 2 percent
Geomorphic setting: Long, narrow alluvial fans

Rock outcrop
Composition: 0 to 3 percent
Slope: 15 to 75 percent
Geomorphic setting: Hills

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Water erosion, runoff, excessive slope, depth to bedrock, and limited available water capacity
Management considerations:
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.
• Special design may be needed for fences in areas of shallow soils. Shallow soils also limit forage production. Species adapted to droughty conditions should be considered for seeding.
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress

forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.

251—Nacimiento clay loam, 15 to 30 percent slopes

Map Unit Setting

General location: Northern Temblor Range
MLRA: 15
Elevation: 1,295 to 2,995 feet (396 to 914 meters)
Mean annual precipitation: 10 to 12 inches (254 to 305 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Nacimiento: 75 percent
Minor components: 25 percent

Characteristics of the Nacimiento Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from soft, calcareous shale or sandstone
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 15 to 30 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 0 to 15 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderately slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 5.5 inches (moderate)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 4e
Land capability, nonirrigated: 4e
Ecological site: R015XF011CA, Fine loamy

Typical profile
0 to 10 inches—clay loam
10 to 37 inches—clay loam
37 to 41 inches—weathered bedrock

Minor Components

Balcom loam and similar soils
Composition: 0 to 4 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Aido clay and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Beam fine sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Choice silty clay and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Nacimiento clay loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Geomorphic setting: Mountains and hills

San Emigdio sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Flood plains

San Timoteo sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Sorrento loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Dry-farmed crops and livestock grazing

Dry-farmed crops
Major management factors: Excessive slope; water erosion
Management considerations:
• All tillage should be on the contour or across the slope.
• The hazard of erosion can be reduced by keeping as much residue as possible on the surface, seeding fall grain early, and practicing conservation tillage.

Livestock grazing
Major management factors: Water erosion and moderately fine surface texture
Management considerations:
• Controlled grazing maintains the vegetative cover, promotes a desirable composition of plants, and reduces the hazard of erosion.
• Trampling by livestock when the soil is too wet can cause soil compaction, which reduces productivity and increases runoff.

252—Nacimiento clay loam, 30 to 50 percent slopes

Map Unit Setting

General location: Northern Temblor Range
MLRA: 15
Elevation: 1,295 to 2,995 feet (396 to 914 meters)
Mean annual precipitation: 10 to 12 inches (254 to 305 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Nacimiento: 75 percent
Minor components: 25 percent

Characteristics of the Nacimiento Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from soft, calcareous shale or sandstone
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 30 to 50 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 0 to 15 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderately slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 5.5 inches (moderate)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 6e
Ecological site: R015XF011CA, Fine loamy

Typical profile
0 to 10 inches—clay loam
10 to 37 inches—clay loam
37 to 41 inches—weathered bedrock

Minor Components

Aido silty clay and similar soils
Composition: 0 to 4 percent
Slope: 30 to 50 percent
Geomorphic setting: Mountains and hills

Balcom loam and similar soils
Composition: 0 to 4 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Beam loam and similar soils
Composition: 0 to 4 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Choice silty clay and similar soils
Composition: 0 to 4 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

San Emigdio sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Flood plains

San Timoteo sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Sorrento clay loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Water erosion, moderately fine surface texture, runoff, and excessive slope
Management considerations:
• Trampling by livestock when the soil is too wet can cause soil compaction, which reduces productivity and increases runoff.
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.

261—Aido clay, 15 to 30 percent slopes

Map Unit Setting

General location: Temblor Range
MLRA: 15
Elevation: 1,600 to 3,600 feet (488 to 1,098 meters)
Mean annual precipitation: 8 to 11 inches (203 to 279 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Aido: 85 percent
Minor components: 15 percent

Characteristics of the Aido Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from calcareous shale or fine-grained sandstone
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 15 to 30 percent
Runoff: Very high
Surface features: Polygonal cracks when dry and soil slips
Coarse fragments on the surface: None noted.
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 4.5 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 4e
Ecological site: R015XF001CA, Clayey Hills 10-14" p.z.

Typical profile
0 to 8 inches—clay
8 to 38 inches—clay
38 to 50 inches—weathered bedrock

Minor Components

Balcom loam and similar soils
Composition: 0 to 4 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Nacimiento clay loam and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Aido clay and similar soils
Composition: 0 to 2 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills and mountains

Choice silty clay and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Hillbrick loam and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Kilmer loam and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, "Engineering Index Properties;" table 16, "Physical Properties of the Soils;" table 17, "Chemical Properties of the Soils;" and the "Soil Properties" section of this publication. For a description of a typical soil, including a range in characteristics, see the "Classification of the Soils" section.

Use and Management

Major uses: Dry-farmed crops and livestock grazing

Dry-farmed crops
Major management factors: Excessive slope, water erosion, limited available water capacity, and fine surface texture
Management considerations:
• All tillage should be on the contour or across the slope.
• The hazard of erosion can be reduced by keeping as much residue as possible on the surface, seeding fall grain early, and practicing conservation tillage.
• Residue management and crop rotations that include summer fallow conserve soil moisture for use by crops.
• The soil is too sticky to cultivate when it is wet and is too hard to cultivate when it is dry.

Livestock grazing
Major management factors: Fine surface texture, shrink-swell potential, and limited available water capacity
Management considerations:
• Trampling by livestock when the soil is too wet can cause soil compaction, which reduces productivity and increases runoff.
• Because of the high shrink-swell potential, areas of this map unit are difficult to fence. Shrinking and swelling of the soil can tilt fence posts or lift them out of the soil.
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.

262—Aido clay, 30 to 50 percent slopes

Map Unit Setting

General location: San Juan Hills, La Panza Range, and Temblor Range
MLRA: 15
Elevation: 1,600 to 3,600 feet (488 to 1,098 meters)
Mean annual precipitation: 8 to 11 inches (203 to 279 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Aido: 80 percent
Minor components: 20 percent

Characteristics of the Aido Soil

Geomorphic setting: Mountains and hills
Parent material: Residuum weathered from calcareous shale or fine-grained sandstone
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 30 to 50 percent
Runoff: Very high
Surface features: Polygonal cracks when dry and soil slips
Coarse fragments on the surface: None noted.
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 4.5 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 6e
Ecological site: R015XF001CA, Clayey Hills 10-14" p.z.

Typical profile
0 to 8 inches—clay
8 to 38 inches—clay
38 to 50 inches—weathered bedrock

Minor Components

Balcom loam and similar soils
Composition: 0 to 4 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Nacimiento clay loam and similar soils
Composition: 0 to 4 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Aido clay and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Choice silty clay and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Hillbrick loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Kilmer loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, "Engineering Index Properties;" table 16, "Physical Properties of the Soils;" table 17, "Chemical Properties of the Soils;" and the "Soil Properties" section of this publication. For a description of a typical soil, including a range in characteristics, see the "Classification of the Soils" section.

Use and Management

Major uses: Livestock grazing

263—Aido clay, 50 to 75 percent slopes

Map Unit Setting

General location: Temblor Range
MLRA: 15
Elevation: 1,800 to 4,195 feet (549 to 1,280 meters)
Mean annual precipitation: 10 to 12 inches (254 to 305 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Aido: 85 percent
Minor components: 15 percent

Characteristics of the Aido Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from calcareous shale or fine-grained sandstone
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 50 to 75 percent
Runoff: Very high
Surface features: Polygonal cracks when dry and soil slips
Coarse fragments on the surface: None noted.
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 4.5 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF001CA, Clayey Hills 10-14" p.z.

Typical profile
0 to 8 inches—clay
8 to 38 inches—clay
38 to 50 inches—weathered bedrock

Minor Components

Balcom loam and similar soils
Composition: 0 to 3 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Choice silty clay and similar soils
Composition: 0 to 3 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Hillbrick loam and similar soils
Composition: 0 to 3 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Kilmer loam and similar soils
Composition: 0 to 3 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Nacimiento clay loam and similar soils
Composition: 0 to 3 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, "Engineering Index Properties;" table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Fine surface texture, shrink-swell potential, limited available water capacity, runoff, and excessive slope
Management considerations:
• Trampling by livestock when the soil is too wet can cause soil compaction, which reduces productivity and increases runoff.
• Because of the high shrink-swell potential, areas of this map unit are difficult to fence. Shrinking and swelling of the soil can tilt fence posts or lift them out of the soil.
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.

270—Ayar silty clay, 5 to 9 percent slopes

Map Unit Setting

General location: Temblor Range
MLRA: 15
Elevation: 2,495 to 3,300 feet (762 to 1,006 meters)
Mean annual precipitation: 10 to 25 inches (254 to 635 millimeters)
Mean annual air temperature: 59 to 64 degrees F (15 to 18 degrees C)
Frost-free period: 200 to 330 days

Map Unit Composition

Ayar: 80 percent
Minor components: 20 percent

Characteristics of the Ayar Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone and shale
Typical vegetation: Annual grasses and forbs; scattered juniper and oaks

Component properties and qualities
Slope: 5 to 9 percent
Runoff: Very high
Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: Bedrock (paralithic) at a depth of 40 to 70 inches
Slowest permeability class: Slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 7.1 inches (moderate)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 4e
Ecological site: R015XF001CA, Clayey Hills 10-14" p.z.

Typical profile
0 to 11 inches—silty clay
11 to 44 inches—clay
44 to 48 inches—weathered bedrock

Minor Components

Aido clay and similar soils
Composition: 0 to 10 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills and mountains

Unnamed soils that are similar to the Aido soil but are shallow to hard bedrock
Composition: 0 to 10 percent
Slope: 5 to 9 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Dry-farmed crops and livestock grazing

Dry-farmed crops
Major management factors: Fine surface texture
Management considerations:
• The soil is too sticky to cultivate when it is wet and is too hard to cultivate when it is dry.
• All tillage should be on the contour or across the slope.

Livestock grazing
Major management factors: Fine surface texture and shrink-swell potential
Management considerations:
• Trampling by livestock when the soil is too wet can cause soil compaction, which reduces productivity and increases runoff.
• Because of the high shrink-swell potential, areas of this map unit are difficult to fence. Shrinking and swelling of the soil can tilt fence posts or lift them out of the soil.

271—Ayar clay, 15 to 30 percent slopes

Map Unit Setting

General location: Temblor Range
MLRA: 15
Elevation: 2,795 to 3,300 feet (853 to 1,006 meters)
Mean annual precipitation: 10 to 11 inches (254 to 279 millimeters)
Mean annual air temperature: 59 to 64 degrees F (15 to 18 degrees C)
Frost-free period: 200 to 225 days

Map Unit Composition

Ayar: 80 percent
Minor components: 20 percent

Characteristics of the Ayar Soil

Geomorphic setting: Mountains and hills
Parent material: Residuum weathered from sandstone and shale
Typical vegetation: Annual grasses and forbs; scattered juniper and oaks

Component properties and qualities
Slope: 15 to 30 percent
Runoff: Very high
Surface features: Polygonal cracks when dry
Coarse fragments on the surface: None noted.
Restrictive feature: Bedrock (paralithic) at a depth of 40 to 70 inches
Slowest permeability class: Slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 8.8 inches (high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 4e
Land capability, nonirrigated: 4e
Ecological site: R015XF001CA, Clayey Hills 10-14" p.z.

Typical profile
0 to 19 inches—clay
19 to 56 inches—clay
56 to 63 inches—weathered bedrock

Minor Components

Ayar clay and similar soils
Composition: 0 to 6 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills and mountains

Balcom loam and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Hillbrick loam and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Kilmer loam and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Geomorphic setting: Mountains and hills

Nacimiento clay loam and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Ayar clay and similar soils
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Dry-farmed crops and livestock grazing

Dry-farmed crops
Major management factors: Fine surface texture, excessive slope, and water erosion
Management considerations:
• The soil is too sticky to cultivate when it is wet and is too hard to cultivate when it is dry.
• All tillage should be on the contour or across the slope.
• The hazard of erosion can be reduced by keeping as much residue as possible on the surface, seeding fall grain early, and practicing conservation tillage.

Livestock grazing
Major management factors: Fine surface texture and shrink-swell potential
Management considerations:
• Trampling by livestock when the soil is too wet can cause soil compaction, which reduces productivity and increases runoff.
• Because of the high shrink-swell potential, areas of this map unit are difficult to fence. Shrinking and swelling of the soil can tilt fence posts or lift them out of the soil.

274—Ayar-Hillbrick-Aido complex, 15 to 30 percent slopes

Map Unit Setting

General location: Temblor and La Panza Ranges
MLRA: 15
Elevation: 2,000 to 3,500 feet (610 to 1,067 meters)
Mean annual precipitation: 10 to 11 inches (254 to 279 millimeters)
Mean annual air temperature: 57 to 64 degrees F (14 to 18 degrees C)
Frost-free period: 175 to 225 days

Map Unit Composition

Ayar: 30 percent
Hillbrick: 30 percent
Aido: 20 percent
Minor components: 20 percent

Characteristics of the Ayar Soil

Geomorphic setting: Mountains and hills
Parent material: Residuum weathered from sandstone and shale
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 15 to 30 percent
Runoff: Very high
Surface features: Polygonal cracks when dry and soil slips
Coarse fragments on the surface: None noted.
Restrictive feature: Bedrock (paralithic) at a depth of 40 to 70 inches
Slowest permeability class: Slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 8.8 inches (high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 4e
Land capability, nonirrigated: 4e
Ecological site: R015XF001CA, Clayey Hills 10-14" p.z.

Typical profile
0 to 19 inches—clay
19 to 56 inches—clay
56 to 63 inches—weathered bedrock

Characteristics of the Hillbrick Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone and shale
Typical vegetation: Annual grasses and forbs; scattered shrubs and juniper

Component properties and qualities
Slope: 15 to 30 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 0 to 15 percent coarse subangular gravel
Restrictive feature: Bedrock (lithic) at a depth of 10 to 20 inches
Slowest permeability class: Moderately rapid above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 2.1 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.

Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to 15 inches—loam
15 to 24 inches—unweathered bedrock

Characteristics of the Aido Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from calcareous shale or fine-grained sandstone
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 15 to 30 percent
Runoff: Very high
Surface features: Polygonal cracks when dry and soil slips
Coarse fragments on the surface: None noted.
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 4.5 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 4e
Ecological site: R015XF001CA, Clayey Hills 10-14" p.z.

Typical profile
0 to 8 inches—clay
8 to 38 inches—clay
38 to 50 inches—weathered bedrock

Minor Components

Beam fine sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Kilmer loam and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Nacimento clay loam and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Panoza loam and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Bellyspring sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Hillbrick loam and similar soils
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Rock outcrop
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

San Timoteo sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Water erosion, fine surface texture, shrink-swell potential, limited available water, and depth to bedrock
Management considerations:
• Controlled grazing maintains the vegetative cover, promotes a desirable composition of plants, and reduces the hazard of erosion.
• Trampling by livestock when the soil is too wet can cause soil compaction, which reduces productivity and increases runoff.
• Because of the high shrink-swell potential, areas of this map unit are difficult to fence. Shrinking and swelling of the soil can tilt fence posts or lift them out of the soil.

• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• Special design may be needed for fences in areas of shallow soils. Shallow soils also limit forage production. Species adapted to droughty conditions should be considered for seeding.

275—Ayar-Hillbrick-Aido complex, 30 to 50 percent slopes

Map Unit Setting

General location: Central Temblor Range
MLRA: 15
Elevation: 2,000 to 3,500 feet (610 to 1,067 meters)
Mean annual precipitation: 10 to 25 inches (254 to 635 millimeters)
Mean annual air temperature: 57 to 64 degrees F (14 to 18 degrees C)
Frost-free period: 175 to 225 days

Map Unit Composition

Ayar: 30 percent
Hillbrick: 30 percent
Aido: 20 percent
Minor components: 20 percent

Characteristics of the Ayar Soil

Geomorphic setting: Mountains and hills
Parent material: Residuum weathered from sandstone and shale
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 30 to 50 percent
Runoff: Very high
Surface features: Polygonal cracks when dry and soil slips
Coarse fragments on the surface: None noted.
Restrictive feature: Bedrock (paralithic) at a depth of 40 to 70 inches
Slowest permeability class: Slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 8.8 inches (high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 6e
Land capability, nonirrigated: 6e
Ecological site: R015XF001CA, Clayey Hills 10-14" p.z.

Typical profile
0 to 19 inches—clay
19 to 56 inches—clay
56 to 63 inches—weathered bedrock

Characteristics of the Hillbrick Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone and shale
Typical vegetation: Annual grasses and forbs; scattered shrubs and juniper

Component properties and qualities
Slope: 30 to 50 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 0 to 15 percent coarse subangular gravel
Restrictive feature: Bedrock (lithic) at a depth of 10 to 20 inches
Slowest permeability class: Moderately rapid above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 2.1 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to 15 inches—loam
15 to 24 inches—unweathered bedrock

Characteristics of the Aido Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from calcareous shale or fine-grained sandstone
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 30 to 50 percent
Runoff: Very high
Surface features: Polygonal cracks when dry and soil slips
Coarse fragments on the surface: None noted.
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 4.5 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 6e
Ecological site: R015XF001CA, Clayey Hills 10-14" p.z.

Typical profile
0 to 8 inches—clay
8 to 38 inches—clay
38 to 50 inches—weathered bedrock

Minor Components

Beam fine sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Kilmer loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Ayar clay and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Bellyspring sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Hillbrick loam and similar soils
Composition: 0 to 2 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Nacimento clay loam and similar soils
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Panoza loam and similar soils
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Rock outcrop
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

San Timoteo sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Water erosion, runoff, excessive slope, fine surface texture, shrink-swell potential, limited available water capacity, and depth to bedrock
Management considerations:
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.
• Trampling by livestock when the soil is too wet can cause soil compaction, which reduces productivity and increases runoff.
• Because of the high shrink-swell potential, areas of this map unit are difficult to fence. Shrinking and swelling of the soil can tilt fence posts or lift them out of the soil.
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the

composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• Special design may be needed for fences in areas of shallow soils. Shallow soils also limit forage production. Species adapted to droughty conditions should be considered for seeding.

280—Seaback-Panoza-Jenks complex, 9 to 15 percent slopes

Map Unit Setting

General location: Central Temblor Range
MLRA: 15
Elevation: 2,000 to 2,600 feet (610 to 793 meters)
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Seaback: 35 percent
Panoza: 30 percent
Jenks: 15 percent
Minor components: 20 percent

Characteristics of the Seaback Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from soft, calcareous sandstone or conglomerate
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 9 to 15 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 10 to 20 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 1.5 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to 9 inches—loam
9 to 19 inches—loam
19 to 23 inches—weathered bedrock

Characteristics of the Panoza Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone, shale, or conglomerate
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 9 to 15 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 3.6 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 4e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 6 inches—loam
6 to 24 inches—loam
24 to 30 inches—weathered bedrock

Characteristics of the Jenks Soil

Geomorphic setting: Hills
Parent material: Residuum weathered from soft sandstone or shale
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 9 to 15 percent

Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 0 to 15 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderately slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 4.9 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 4e
Ecological site: R015XF011CA, Fine loamy

Typical profile
0 to 27 inches—clay loam
27 to 35 inches—weathered bedrock

Minor Components

Aido clay and similar soils
Composition: 0 to 3 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills and mountains

Choice silty clay and similar soils
Composition: 0 to 3 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills and mountains

Padres sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans and alluvial flats

Panoza loam and similar soils
Composition: 0 to 2 percent
Slope: 5 to 9 percent
Geomorphic setting: Hills and mountains

Pinspring loam and similar soils
Composition: 0 to 2 percent
Slope: 0 to 5 percent
Geomorphic setting: Alluvial flats

Polonio clay loam and similar soils
Composition: 0 to 2 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans

Seaback loam and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Thomhill loam and similar soils
Composition: 0 to 2 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans and alluvial flats

Yeguas loam and similar soils
Composition: 0 to 2 percent
Slope: 0 to 5 percent
Geomorphic setting: Alluvial fans and alluvial flats

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing and dry-farmed crops

Dry-farmed crops
Major management factors: Water erosion and limited available water capacity
Management considerations:
• All tillage should be on the contour or across the slope.
• The hazard of erosion can be reduced by keeping as much residue as possible on the surface, seeding fall grain early, and practicing conservation tillage.
• Residue management and crop rotations that include summer fallow conserve soil moisture for use by crops.

Livestock grazing
Major management factors: Limited available water capacity, depth to bedrock, and moderately fine surface texture
Management considerations:
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• Special design may be needed for fences in areas of shallow soils. Shallow soils also limit forage

production. Species adapted to droughty conditions should be considered for seeding.
• Trampling by livestock when the soil is too wet can cause soil compaction, which reduces productivity and increases runoff.

281—Seaback-Panoza-Jenks complex, 15 to 30 percent slopes

Map Unit Setting

General location: Central Temblor Range
MLRA: 15
Elevation: 2,000 to 2,600 feet (610 to 793 meters)
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Seaback: 35 percent
Panoza: 30 percent
Jenks: 15 percent
Minor components: 20 percent

Characteristics of the Seaback Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from soft, calcareous sandstone or conglomerate
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 15 to 50 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 10 to 20 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 1.5 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to 9 inches—loam
9 to 19 inches—loam
19 to 23 inches—weathered bedrock

Characteristics of the Panoza Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone, shale, or conglomerate
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 15 to 30 percent
Runoff: Very high
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 3.6 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 4e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 6 inches—loam
6 to 24 inches—loam
24 to 30 inches—weathered bedrock

Characteristics of the Jenks Soil

Geomorphic setting: Hills
Parent material: Residuum weathered from soft sandstone or shale
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 15 to 30 percent
Runoff: High

Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderately slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 4.9 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 4e
Ecological site: R015XF011CA, Fine loamy

Typical profile
0 to 27 inches—clay loam
27 to 35 inches—weathered bedrock

Minor Components

Aido clay and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Choice silty clay and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Padres sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans and alluvial flats

Panoza loam and similar soils
Composition: 0 to 2 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills and mountains

Pinspring loam and similar soils
Composition: 0 to 2 percent
Slope: 0 to 5 percent
Geomorphic setting: Alluvial flats

Polonio clay loam and similar soils
Composition: 0 to 2 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans

Seaback loam and similar soils
Composition: 0 to 2 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Thomhill loam and similar soils
Composition: 0 to 2 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans and alluvial flats

Yeguas loam and similar soils
Composition: 0 to 2 percent
Slope: 0 to 5 percent
Geomorphic setting: Alluvial fans and alluvial flats

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing and dry-farmed crops

Dry-farmed crops
Major management factors: Excessive slope, water erosion, and limited available water capacity
Management considerations:
• All tillage should be on the contour or across the slope.
• The hazard of erosion can be reduced by keeping as much residue as possible on the surface, seeding fall grain early, and practicing conservation tillage.
• Residue management and crop rotations that include summer fallow conserve soil moisture for use by crops.

Livestock grazing
Major management factors: Limited available water capacity, depth to bedrock, and moderately fine surface texture
Management considerations:
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• Special design may be needed for fences in areas of shallow soils. Shallow soils also limit forage production. Species adapted to droughty conditions should be considered for seeding.
• Trampling by livestock when the soil is too wet can

cause soil compaction, which reduces productivity and increases runoff.

282—Seaback-Panoza-Jenks complex, 30 to 50 percent slopes

Map Unit Setting

General location: Temblor Range
MLRA: 15
Elevation: 2,000 to 2,600 feet (610 to 793 meters)
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Seaback: 35 percent
Panoza: 30 percent
Jenks: 15 percent
Minor components: 20 percent

Characteristics of the Seaback Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from soft, calcareous sandstone or conglomerate
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 30 to 50 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 10 to 20 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 1.5 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to 9 inches—loam
9 to 19 inches—loam
19 to 23 inches—weathered bedrock

Characteristics of the Panoza Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone, shale, or conglomerate
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 30 to 50 percent
Runoff: Very high
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 3.6 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 6e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 6 inches—loam
6 to 24 inches—loam
24 to 30 inches—weathered bedrock

Characteristics of the Jenks Soil

Geomorphic setting: Hills
Parent material: Residuum weathered from soft sandstone or shale
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 30 to 50 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel

Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderately slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 4.9 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 6e
Ecological site: R015XF011CA, Fine loamy

Typical profile
0 to 27 inches—clay loam
27 to 35 inches—weathered bedrock

Minor Components

Aido clay and similar soils
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Geomorphic setting: Mountains and hills

Choice silty clay and similar soils
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Padres sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans and alluvial flats

Panoza sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Pinspring loam and similar soils
Composition: 0 to 2 percent
Slope: 0 to 5 percent
Geomorphic setting: Alluvial flats

Polonio loam and similar soils
Composition: 0 to 2 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans

San Timoteo sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Seaback loam and similar soils
Composition: 0 to 2 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Thomhill loam and similar soils
Composition: 0 to 2 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans and alluvial flats

Yeguas loam and similar soils
Composition: 0 to 2 percent
Slope: 0 to 5 percent
Geomorphic setting: Alluvial fans and alluvial flats

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing and dry-farmed crops

Dry-farmed crops
Major management factors: Excessive slope, water erosion, and limited available water capacity
Management considerations:
• All tillage should be on the contour or across the slope.
• The hazard of erosion can be reduced by keeping as much residue as possible on the surface, seeding fall grain early, and practicing conservation tillage.
• Residue management and crop rotations that include summer fallow conserve soil moisture for use by crops.

Livestock grazing
Major management factors: Limited available water capacity, runoff, excessive slope, depth to bedrock, and moderately fine surface texture
Management considerations:
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and

some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.
• Special design may be needed for fences in areas of shallow soils. Shallow soils also limit forage production. Species adapted to droughty conditions should be considered for seeding.
• Trampling by livestock when the soil is too wet can cause soil compaction, which reduces productivity and increases runoff.

290—San Timoteo-San Andreas-Bellyspring complex, 15 to 30 percent slopes

Map Unit Setting

General location: San Juan Hills, Temblor Range, and La Panza Range
MLRA: 15
Elevation: 1,495 to 3,300 feet (457 to 1,006 meters)
Mean annual precipitation: 9 to 12 inches (229 to 304 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 190 to 200 days

Map Unit Composition

San Timoteo: 30 percent
San Andreas: 25 percent
Bellyspring: 20 percent
Minor components: 25 percent

Characteristics of the San Timoteo Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from soft, calcareous sandstone
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 15 to 30 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 0 to 15 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderately rapid above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 3.3 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 4e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 11 inches—sandy loam
11 to 25 inches—sandy loam
25 to 30 inches—weathered bedrock

Characteristics of the San Andreas Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 15 to 30 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderately rapid above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 3.1 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 4e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 3 inches—fine sandy loam
3 to 22 inches—fine sandy loam
22 to 26 inches—weathered bedrock

Characteristics of the Bellyspring Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 15 to 30 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderately slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 4.2 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 4e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 7 inches—sandy loam
7 to 27 inches—cobbly sandy clay loam
27 to 36 inches—coarse sandy loam
36 to 40 inches—weathered bedrock

Minor Components

Arbuckle fine sandy loam and similar soils
Composition: 0 to 4 percent
Slope: 15 to 30 percent
Geomorphic setting: Fluvial terraces

Arnold loamy sand and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Beam loam and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Nacimiento clay loam and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Panoza loam and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Rock outcrop
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

San Timoteo cobbly sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

San Timoteo sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Dry-farmed crops and livestock grazing

Dry-farmed crops
Major management factors: Excessive slope, water erosion, and limited available water capacity
Management considerations:
• All tillage should be on the contour or across the slope.
• The hazard of erosion can be reduced by keeping as much residue as possible on the surface, seeding fall grain early, and practicing conservation tillage.
• Residue management and crop rotations that include summer fallow conserve soil moisture for use by crops.

Livestock grazing
Major management factors: Water erosion and limited available water capacity
Management considerations:
• Controlled grazing maintains the vegetative cover, promotes a desirable composition of plants, and reduces the hazard of erosion.
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.

291—San Timoteo-San Andreas-Bellyspring complex, 30 to 50 percent slopes

Map Unit Setting

General location: San Juan Hills and La Panza Range
MLRA: 15
Elevation: 1,495 to 3,300 feet (457 to 1,006 meters)
Mean annual precipitation: 9 to 12 inches (229 to 304 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 190 to 200 days

Map Unit Composition

San Timoteo: 30 percent
San Andreas: 25 percent
Bellyspring: 20 percent
Minor components: 25 percent

Characteristics of the San Timoteo Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from soft, calcareous sandstone
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 30 to 50 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 0 to 15 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderately rapid above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 3.3 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 6e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 11 inches—sandy loam
11 to 25 inches—sandy loam
25 to 30 inches—weathered bedrock

Characteristics of the San Andreas Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 30 to 50 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderately rapid above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 3.1 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 6e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 3 inches—fine sandy loam
3 to 22 inches—fine sandy loam
22 to 26 inches—weathered bedrock

Characteristics of the Bellyspring Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 30 to 50 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderately slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 4.2 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 6e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 7 inches—sandy loam
7 to 27 inches—cobbly sandy clay loam
27 to 36 inches—coarse sandy loam
36 to 40 inches—weathered bedrock

Minor Components

Arbuckle fine sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Geomorphic setting: Fluvial terraces

Arnold loamy sand and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Beam loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Badlands
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills

Balcom loam and similar soils
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Nacimiento clay loam and similar soils
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Panoza loam and similar soils
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Rock outcrop
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

San Timoteo cobbly sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Geomorphic setting: Mountains and hills

Unnamed soils that have a gentler slope
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Unnamed soils that have a steeper slope
Composition: 0 to 2 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Water erosion, limited available water capacity, runoff, and excessive slope
Management considerations:
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.

292—San Timoteo-San Andreas-Bellyspring complex, 50 to 75 percent slopes

Map Unit Setting

General location: San Juan Hills
MLRA: 15
Elevation: 1,495 to 3,300 feet (457 to 1,006 meters)

Mean annual precipitation: 9 to 12 inches (229 to 304 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 190 to 200 days

Map Unit Composition

San Timoteo: 30 percent
San Andreas: 25 percent
Bellyspring: 20 percent
Minor components: 25 percent

Characteristics of the San Timoteo Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from soft, calcareous sandstone
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 50 to 75 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 0 to 15 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderately rapid above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 3.3 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 11 inches—sandy loam
11 to 25 inches—sandy loam
25 to 30 inches—weathered bedrock

Characteristics of the San Andreas Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone
Typical vegetation: Annual grasses and forbs; scattered oaks

Component properties and qualities
Slope: 50 to 75 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderately rapid above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 3.1 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 3 inches—fine sandy loam
3 to 22 inches—fine sandy loam
22 to 26 inches—weathered bedrock

Characteristics of the Bellyspring Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 50 to 75 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderately slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 4.2 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e

Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 7 inches—sandy loam
7 to 27 inches—cobbly sandy clay loam
27 to 36 inches—coarse sandy loam
36 to 40 inches—weathered bedrock

Minor Components

Arnold loamy sand and similar soils
Composition: 0 to 4 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Badlands
Composition: 0 to 3 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills

Beam loam and similar soils
Composition: 0 to 3 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Bellyspring sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Nacimiento clay loam and similar soils
Composition: 0 to 3 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Panoza loam and similar soils
Composition: 0 to 3 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Rock outcrop
Composition: 0 to 3 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

San Timoteo cobbly sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Water erosion, limited available water capacity, runoff, and excessive slope
Management considerations:
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.

301—Arbuckle sandy loam, 2 to 9 percent slopes

Map Unit Setting

General location: Northern La Panza Range
MLRA: 14
Elevation: 1,095 to 2,000 feet (335 to 610 meters)
Mean annual precipitation: 10 to 14 inches (254 to 355 millimeters)
Mean annual air temperature: 57 to 64 degrees F (14 to 18 degrees C)
Frost-free period: 190 to 210 days

Map Unit Composition

Arbuckle: 70 percent
Minor components: 30 percent

Characteristics of the Arbuckle Soil

Geomorphic setting: Stream terraces
Parent material: Alluvium derived from sandstone and shale
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 2 to 9 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 0 to 15 percent coarse subangular gravel

Restrictive feature: None noted.
Slowest permeability class: Moderately slow
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 7.7 inches (high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 2e
Land capability, nonirrigated: 4e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 11 inches—sandy loam
11 to 34 inches—sandy loam
34 to 55 inches—sandy clay loam
55 to 65 inches—coarse sandy loam
65 to 73 inches—loamy coarse sand

Minor Components

Padres sandy loam and similar soils
Composition: 0 to 6 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans and alluvial flats

Polonio loam and similar soils
Composition: 0 to 6 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans

San Emigdio sandy loam and similar soils
Composition: 0 to 6 percent
Slope: 2 to 9 percent
Geomorphic setting: Flood plains

San Timoteo sandy loam and similar soils
Composition: 0 to 6 percent
Slope: 2 to 9 percent
Geomorphic setting: Hills and mountains

Xerofluvents sand and similar soils
Composition: 0 to 6 percent
Slope: 0 to 2 percent
Geomorphic setting: Flood plains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Vineyards and orchards, irrigated crops, dry-farmed crops, and livestock grazing

Vineyards and orchards
Major management factors: Slope
Management considerations:
• Vines and trees should be planted on the contour or across the slope.
• Cover crops minimize wind erosion and water erosion, maximize water infiltration, suppress dust, and minimize soil compaction.
• This map unit is suited to sprinkler and drip irrigation systems.

Irrigated crops
Major management factors: Slope
Management considerations:
• This map unit is suited to sprinkler irrigation systems.
• All tillage should be on the contour or across the slope.

Dry-farmed crops
Major management factors: Few limitations
Management considerations:
• All tillage should be on the contour or across the slope.

Livestock grazing
Major management factors: Few limitations

302—Arbuckle sandy loam, 9 to 15 percent slopes

Map Unit Setting

General location: Northern La Panza Range
MLRA: 14
Elevation: 1,095 to 2,000 feet (335 to 610 meters)
Mean annual precipitation: 10 to 14 inches (254 to 355 millimeters)
Mean annual air temperature: 57 to 64 degrees F (14 to 18 degrees C)
Frost-free period: 190 to 210 days

Map Unit Composition

Arbuckle: 70 percent
Minor components: 30 percent

Characteristics of the Arbuckle Soil

Geomorphic setting: Stream terraces
Parent material: Alluvium derived from sandstone and shale

Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 9 to 15 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 0 to 15 percent coarse subangular gravel
Restrictive feature: None noted.
Slowest permeability class: Moderately slow
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 7.7 inches (high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 3e
Land capability, nonirrigated: 4e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 11 inches—sandy loam
11 to 34 inches—sandy loam
34 to 55 inches—sandy clay loam
55 to 65 inches—coarse sandy loam
65 to 73 inches—loamy coarse sand

Minor Components

San Emigdio sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 2 to 9 percent
Geomorphic setting: Flood plains

San Timoteo sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills and mountains

Arbuckle cobbly sandy loam and similar soils
Composition: 0 to 4 percent
Slope: 9 to 15 percent
Geomorphic setting: Fluvial terraces

Arbuckle sandy loam and similar soils
Composition: 0 to 4 percent
Slope: 15 to 30 percent
Geomorphic setting: Fluvial terraces

Padres sandy loam and similar soils
Composition: 0 to 4 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans and alluvial flats

Polonio loam and similar soils
Composition: 0 to 4 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans

Xerofluvents sand and similar soils
Composition: 0 to 4 percent
Slope: 0 to 2 percent
Geomorphic setting: Flood plains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Vineyards and orchards, irrigated crops, dry-farmed crops, and livestock grazing

Vineyards and orchards
Major management factors: Slope
Management considerations:
• Vines and trees should be planted on the contour or across the slope.
• Cover crops minimize wind erosion and water erosion, maximize water infiltration, suppress dust, and minimize soil compaction.
• This map unit is suited to sprinkler and drip irrigation systems.

Irrigated crops
Major management factors: Slope
Management considerations:
• This map unit is suited to sprinkler irrigation systems.
• All tillage should be on the contour or across the slope.

Dry-farmed crops
Major management factors: Few limitations
Management considerations:
• All tillage should be on the contour or across the slope.

Livestock grazing
Major management factors: Few limitations

303—Arbuckle sandy loam, 15 to 30 percent slopes

Map Unit Setting

General location: San Juan Valley and Camatta Canyon

MLRA: 14
Elevation: 1,095 to 2,000 feet (335 to 610 meters)
Mean annual precipitation: 10 to 14 inches (254 to 355 millimeters)
Mean annual air temperature: 57 to 64 degrees F (14 to 18 degrees C)
Frost-free period: 190 to 210 days

Map Unit Composition

Arbuckle: 70 percent
Minor components: 30 percent

Characteristics of the Arbuckle Soil

Geomorphic setting: Stream terraces
Parent material: Alluvium derived from sandstone and shale
Typical vegetation: Annual grasses and forbs; scattered oaks

Component properties and qualities
Slope: 15 to 30 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 0 to 15 percent coarse subangular gravel
Restrictive feature: None noted.
Slowest permeability class: Moderately slow
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 7.7 inches (high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 4e
Land capability, nonirrigated: 4e
Ecological site: R015XE009CA, Coarse loamy

Typical profile
0 to 11 inches—sandy loam
11 to 34 inches—sandy loam
34 to 55 inches—sandy clay loam
55 to 65 inches—coarse sandy loam
65 to 73 inches—loamy coarse sand

Minor Components

Padres sandy loam and similar soils
Composition: 0 to 6 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans and alluvial flats

Polonio loam and similar soils
Composition: 0 to 6 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans

San Emigdio sandy loam and similar soils
Composition: 0 to 6 percent
Slope: 2 to 9 percent
Geomorphic setting: Flood plains

San Timoteo sandy loam and similar soils
Composition: 0 to 6 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Xerofluvents sand and similar soils
Composition: 0 to 6 percent
Slope: 0 to 2 percent
Geomorphic setting: Flood plains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Vineyards and orchards, irrigated crops, dry-farmed crops, and livestock grazing

Vineyards and orchards
Major management factors: Slope and water erosion
Management considerations:
• Vines and trees should be planted on the contour or across the slope.
• A system is needed for collecting concentrated or excess water from higher-lying areas and conducting it to safe outlets in diversions or permanent grassed waterways.
• Cover crops minimize wind erosion and water erosion, maximize water infiltration, suppress dust, and minimize soil compaction.
• This map unit is suited to sprinkler and drip irrigation systems.

Irrigated crops
Major management factors: Slope and water erosion
Management considerations:
• This map unit is suited to sprinkler irrigation systems.
• All tillage should be on the contour or across the slope.

Dry-farmed crops
Major management factors: Excessive slope; water erosion

Management considerations:
- All tillage should be on the contour or across the slope.
- The hazard of erosion can be reduced by keeping as much residue as possible on the surface, seeding fall grain early, and practicing conservation tillage.

Livestock grazing
Major management factors: Water erosion
Management considerations:
- Controlled grazing maintains the vegetative cover, promotes a desirable composition of plants, and reduces the hazard of erosion.

304—Arbuckle sandy loam, 30 to 50 percent slopes

Map Unit Setting

General location: San Juan Valley and Camatta Canyon
MLRA: 14
Elevation: 1,095 to 2,000 feet (335 to 610 meters)
Mean annual precipitation: 10 to 14 inches (254 to 355 millimeters)
Mean annual air temperature: 57 to 64 degrees F (14 to 18 degrees C)
Frost-free period: 190 to 210 days

Map Unit Composition

Arbuckle: 70 percent
Minor components: 30 percent

Characteristics of the Arbuckle Soil

Geomorphic setting: Stream terraces
Parent material: Alluvium derived from sandstone and shale
Typical vegetation: Annual grasses and forbs; scattered oaks

Component properties and qualities
Slope: 30 to 50 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 0 to 15 percent coarse subangular gravel
Restrictive feature: None noted.
Slowest permeability class: Moderately slow
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 7.7 inches (high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 6e
Ecological site: R015XE009CA, Coarse loamy

Typical profile
0 to 11 inches—sandy loam
11 to 34 inches—sandy loam
34 to 55 inches—sandy clay loam
55 to 65 inches—coarse sandy loam
65 to 73 inches—loamy coarse sand

Minor Components

Padres sandy loam and similar soils
Composition: 0 to 6 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans and alluvial flats

Polonio loam and similar soils
Composition: 0 to 6 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans

San Emigdio sandy loam and similar soils
Composition: 0 to 6 percent
Slope: 2 to 9 percent
Geomorphic setting: Flood plains

San Timoteo sandy loam and similar soils
Composition: 0 to 6 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Xerofluvents sand and similar soils
Composition: 0 to 6 percent
Slope: 0 to 2 percent
Geomorphic setting: Flood plains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Water erosion, runoff, and excessive slope

Management considerations:
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.

306—Arbuckle sandy loam, 15 to 30 percent slopes, eroded

Map Unit Setting

General location: San Juan Valley and Camatta Canyon
MLRA: 14
Elevation: 1,095 to 2,000 feet (335 to 610 meters)
Mean annual precipitation: 10 to 14 inches (254 to 355 millimeters)
Mean annual air temperature: 57 to 64 degrees F (14 to 18 degrees C)
Frost-free period: 190 to 210 days

Map Unit Composition

Arbuckle: 70 percent
Minor components: 30 percent

Characteristics of the Arbuckle Soil

Geomorphic setting: Stream terraces
Parent material: Alluvium derived from sandstone and shale
Typical vegetation: Annual grasses and forbs; scattered oaks

Component properties and qualities
Slope: 15 to 30 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 0 to 15 percent coarse subangular gravel
Restrictive feature: None noted.
Slowest permeability class: Moderately slow
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 7.7 inches (high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 4e
Land capability, nonirrigated: 4e
Ecological site: R015XE009CA, Coarse loamy

Typical profile
0 to 11 inches—sandy loam
11 to 34 inches—sandy loam
34 to 55 inches—sandy clay loam
55 to 65 inches—coarse sandy loam
65 to 73 inches—loamy coarse sand

Minor Components

Arbuckle cobbly sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Geomorphic setting: Fluvial terraces

Padres sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 0 to 9 percent
Geomorphic setting: Alluvial fans and alluvial flats

Polonio loam and similar soils
Composition: 0 to 5 percent
Slope: 0 to 9 percent
Geomorphic setting: Alluvial fans

San Emigdio sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 0 to 9 percent
Geomorphic setting: Flood plains

San Timoteo sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Xerofluvents sand and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Geomorphic setting: Flood plains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Vineyards and orchards, irrigated crops, dry-farmed crops, and livestock grazing

Vineyards and orchards
Major management factors: Slope and water erosion

Management considerations:
- Vines and trees should be planted on the contour or across the slope.
- A system is needed for collecting concentrated or excess water from higher-lying areas and conducting it to safe outlets in diversions or permanent grassed waterways.
- Cover crops minimize wind erosion and water erosion, maximize water infiltration, suppress dust, and minimize soil compaction.
- This map unit is suited to sprinkler and drip irrigation systems.

Irrigated crops
Major management factors: Slope and water erosion
Management considerations:
- This map unit is suited to sprinkler irrigation systems.
- All tillage should be on the contour or across the slope.

Dry-farmed crops
Major management factors: Excessive slope; water erosion
Management considerations:
- All tillage should be on the contour or across the slope.
- The hazard of erosion can be reduced by keeping as much residue as possible on the surface, seeding fall grain early, and practicing conservation tillage.

Livestock grazing
Major management factors: Water erosion
Management considerations:
- Controlled grazing maintains the vegetative cover, promotes a desirable composition of plants, and reduces the hazard of erosion.

307—Arbuckle sandy loam, 30 to 50 percent slopes, eroded

Map Unit Setting

General location: San Juan Valley and Camatta Canyon
MLRA: 14
Elevation: 1,095 to 2,000 feet (335 to 610 meters)
Mean annual precipitation: 10 to 14 inches (254 to 355 millimeters)
Mean annual air temperature: 57 to 64 degrees F (14 to 18 degrees C)
Frost-free period: 190 to 210 days

Map Unit Composition

Arbuckle: 70 percent
Minor components: 30 percent

Characteristics of the Arbuckle Soil

Geomorphic setting: Stream terraces
Parent material: Alluvium derived from sandstone and shale
Typical vegetation: Annual grasses and forbs; scattered oaks

Component properties and qualities
Slope: 30 to 50 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 0 to 15 percent coarse subangular gravel
Restrictive feature: None noted.
Slowest permeability class: Moderately slow
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 7.7 inches (high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 6e
Ecological site: R015XE009CA, Coarse loamy

Typical profile
0 to 11 inches—sandy loam
11 to 34 inches—sandy loam
34 to 55 inches—sandy clay loam
55 to 65 inches—coarse sandy loam
65 to 73 inches—loamy coarse sand

Minor Components

Padres sandy loam and similar soils
Composition: 0 to 6 percent
Slope: 0 to 9 percent
Geomorphic setting: Alluvial fans and alluvial flats

Polonio loam and similar soils
Composition: 0 to 6 percent
Slope: 0 to 9 percent
Geomorphic setting: Alluvial fans

San Emigdio sandy loam and similar soils
Composition: 0 to 6 percent
Slope: 0 to 9 percent
Geomorphic setting: Flood plains

San Timoteo sandy loam and similar soils
Composition: 0 to 6 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Xerofluvents sand and similar soils
Composition: 0 to 6 percent
Slope: 0 to 2 percent
Geomorphic setting: Flood plains

Additional Component Properties

For additional data regarding component horizons, see table 15, "Engineering Index Properties;" table 16, "Physical Properties of the Soils;" table 17, "Chemical Properties of the Soils;" and the "Soil Properties" section of this publication. For a description of a typical soil, including a range in characteristics, see the "Classification of the Soils" section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Water erosion, runoff, and excessive slope
Management considerations:
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.

310—Yeguas-Pinspring complex, 0 to 2 percent slopes

Map Unit Setting

General location: Northern Carrizo Plain
MLRA: 17
Elevation: 2,000 to 2,295 feet (610 to 701 meters)
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 57 to 63 degrees F (14 to 17 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Yeguas: 40 percent
Pinspring: 40 percent
Minor components: 20 percent

Characteristics of the Yeguas Soil

Geomorphic setting: Alluvial fans and alluvial flats
Parent material: Alluvium derived from sandstone, shale, and basalt
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 0 to 2 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: None noted.
Slowest permeability class: Slow
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 9.1 inches (high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 2s
Land capability, nonirrigated: 4s
Ecological site: R017XF071CA, Loamy bottomland

Typical profile
0 to 19 inches—loam
19 to 35 inches—clay loam, clay
35 to 51 inches—loam and clay loam
51 to 62 inches—gravelly coarse sandy loam

Characteristics of the Pinspring Soil

Geomorphic setting: Alluvial flats
Parent material: Alluvium derived from mixed rock types
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 0 to 2 percent
Runoff: Low
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: None noted.
Slowest permeability class: Moderately slow
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 9.0 inches (high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 2s
Land capability, nonirrigated: 4s
Ecological site: R017XF071CA, Loamy bottomland

Typical profile
0 to 14 inches—loam
14 to 30 inches—clay loam
30 to 39 inches—sandy loam
39 to 60 inches—loam

Minor Components

Jenks clay loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 5 percent
Geomorphic setting: Hills

Polonio loam and similar soils
Composition: 0 to 3 percent
Slope: 0 to 5 percent
Geomorphic setting: Alluvial fans

Thomhill loam and similar soils
Composition: 0 to 3 percent
Slope: 0 to 5 percent
Geomorphic setting: Drainageways

Yeguas loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 5 percent
Geomorphic setting: Alluvial fans and alluvial flats

Wasioja sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 0 to 5 percent
Geomorphic setting: Fan remnants

Bellyspring sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills and mountains

Areas that are subject to flooding
Composition: 0 to 2 percent
Slope: 0 to 2 percent
Geomorphic setting: Drainageways

Additional Component Properties

For additional data regarding component horizons, see table 15, "Engineering Index Properties;" table 16, "Physical Properties of the Soils;" table 17, "Chemical Properties of the Soils;" and the "Soil Properties" section of this publication. For a description of a typical soil, including a range in characteristics, see the "Classification of the Soils" section.

Use and Management

Major uses: Dry-farmed crops, livestock grazing, and homesite development

Dry-farmed crops
Major management factors: Few limitations

Livestock grazing
Major management factors: Few limitations

Homesite development
Major management factors: Low strength, restricted permeability, and shrink-swell potential
Management considerations:
• Buildings and roads should be designed to offset the limited ability of the soil to support a load.
• The restricted permeability decreases the absorption capacity of leach fields. Increasing the size of the leach field or using a specially designed system can overcome this limitation.
• Using proper engineering designs or backfilling with material that has a low shrink-swell potential minimizes the effects of shrinking and swelling.

311—Yeguas-Pinspring complex, 2 to 5 percent slopes

Map Unit Setting

General location: Northern Carrizo Plain
MLRA: 17
Elevation: 2,000 to 2,295 feet (610 to 701 meters)
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 57 to 63 degrees F (14 to 17 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Yeguas: 40 percent
Pinspring: 40 percent
Minor components: 20 percent

Characteristics of the Yeguas Soil

Geomorphic setting: Alluvial fans and alluvial flats
Parent material: Alluvium derived from sandstone, shale, and basalt
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 2 to 5 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: None noted.
Slowest permeability class: Slow
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 9.1 inches (high)

Component hydrologic properties
Flooding: None

Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 2e
Land capability, nonirrigated: 4e
Ecological site: R017XF071CA, Loamy bottomland

Typical profile
0 to 19 inches—loam
19 to 35 inches—clay loam, clay
35 to 51 inches—loam and clay loam
51 to 62 inches—gravelly coarse sandy loam

Characteristics of the Pinspring Soil

Geomorphic setting: Alluvial flats
Parent material: Alluvium derived from mixed rock types
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 2 to 5 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: None noted.
Slowest permeability class: Moderately slow
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 9.0 inches (high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 2e
Land capability, nonirrigated: 4e
Ecological site: R017XF071CA, Loamy bottomland

Typical profile
0 to 14 inches—loam
14 to 30 inches—clay loam
30 to 39 inches—sandy loam
39 to 60 inches—loam

Minor Components

Jenks clay loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Hills

Polonio loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans

Unnamed soils that are moderately deep to soft bedrock
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Hills

Thomhill loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Drainageways

Wasioja sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Fan remnants

Beam loam and similar soils
Composition: 0 to 3 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills and mountains

Areas that are subject to flooding
Composition: 0 to 2 percent
Slope: 0 to 2 percent
Geomorphic setting: Drainageways

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Dry-farmed crops and livestock grazing

Dry-farmed crops
Major management factors: Few limitations

Livestock grazing
Major management factors: Few limitations

321—Thomhill loam, 2 to 5 percent slopes

Map Unit Setting

General location: Northern Carrizo Plain
MLRA: 17
Elevation: 1,895 to 2,400 feet (579 to 732 meters)
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)

Mean annual air temperature: 59 to 61 degrees F (15 to 16 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Thomhill: 80 percent
Minor components: 20 percent

Characteristics of the Thomhill Soil

Geomorphic setting: Alluvial fans and alluvial flats
Parent material: Alluvium derived from mixed rock types
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 2 to 5 percent
Runoff: Low
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: None noted.
Slowest permeability class: Moderately slow
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 10.5 inches (very high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 2e
Land capability, nonirrigated: 4e
Ecological site: R017XF071CA, Loamy bottomland

Typical profile
0 to 13 inches—loam
13 to 60 inches—loam

Minor Components

Pinspring loam and similar soils
Composition: 0 to 4 percent
Slope: 2 to 5 percent
Geomorphic setting: Alluvial flats

Polonio loam and similar soils
Composition: 0 to 4 percent
Slope: 2 to 5 percent
Geomorphic setting: Alluvial fans

Thomhill loam and similar soils
Composition: 0 to 4 percent
Slope: 5 to 9 percent
Geomorphic setting: Alluvial flats and alluvial fans

Wasioja sandy loam and similar soils
Composition: 0 to 4 percent
Slope: 2 to 5 percent
Geomorphic setting: Fan remnants

Yeguas loam and similar soils
Composition: 0 to 4 percent
Slope: 2 to 5 percent
Geomorphic setting: Alluvial fans and alluvial flats

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Dry-farmed crops and livestock grazing

Dry-farmed crops
Major management factors: Few limitations

Livestock grazing
Major management factors: Few limitations

330—Jenks clay loam, 2 to 9 percent slopes

Map Unit Setting

General location: San Juan Hills
MLRA: 15
Elevation: 1,800 to 2,495 feet (549 to 762 meters)
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 59 to 61 degrees F (15 to 16 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Jenks: 80 percent
Minor components: 20 percent

Characteristics of the Jenks Soil

Geomorphic setting: Hills
Parent material: Residuum weathered from soft sandstone or shale
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 2 to 9 percent

Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 0 to 15 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderately slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 4.9 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 4e
Ecological site: R015XF011CA, Fine loamy

Typical profile
0 to 27 inches—clay loam
27 to 35 inches—weathered bedrock

Minor Components

Beam fine sandy loam and similar soils
Composition: 0 to 4 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills and mountains

Jenks clay loam and similar soils
Composition: 0 to 2 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills

Jenks clay loam and similar soils
Composition: 0 to 2 percent
Slope: 0 to 2 percent
Geomorphic setting: Hills

Nacimiento clay loam and similar soils
Composition: 0 to 2 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills and mountains

Polonio clay loam and similar soils
Composition: 0 to 2 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans

Thomhill loam and similar soils
Composition: 0 to 2 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans and alluvial flats

Unnamed soils that are more than 40 inches deep to sandstone
Composition: 0 to 2 percent
Slope: 2 to 9 percent
Geomorphic setting: Hills

Yeguas loam and similar soils
Composition: 0 to 2 percent
Slope: 2 to 5 percent
Geomorphic setting: Alluvial fans and alluvial flats

Panoza loam and similar soils
Composition: 0 to 2 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Dry-farmed crops and livestock grazing

Dry-farmed crops
Major management factors: Few limitations

Livestock grazing
Major management factors: Moderately fine surface texture
Management considerations:
• Trampling by livestock when the soil is too wet can cause soil compaction, which reduces productivity and increases runoff.

339—Arnold-San Andreas complex, 9 to 30 percent slopes

Map Unit Setting

General location: Northern La Panza Range
MLRA: 15
Elevation: 1,000 to 2,495 feet (305 to 762 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Mean annual air temperature: 59 to 63 degrees F (15 to 17 degrees C)
Frost-free period: 185 to 210 days

Map Unit Composition

Arnold: 30 percent

San Andreas: 20 percent
Minor components: 50 percent

Characteristics of the Arnold Soil

Geomorphic setting: Mountains and hills
Parent material: Residuum weathered from sandstone
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 9 to 30 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 40 to 60 inches
Slowest permeability class: Rapid above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 3.1 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Somewhat excessively drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XE031CA, Sandy

Typical profile
0 to 6 inches—loamy sand
6 to 44 inches—loamy sand
44 to 48 inches—weathered bedrock

Characteristics of the San Andreas Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone
Typical vegetation: Oak and pine woodland

Component properties and qualities
Slope: 9 to 30 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderately rapid above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 4.0 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 4e
Ecological site: R015XE009CA, Coarse loamy

Typical profile
0 to 11 inches—sandy loam
11 to 29 inches—sandy loam
29 to 33 inches—weathered bedrock

Minor Components

Badlands
Composition: 0 to 10 percent
Slope: 9 to 30 percent
Geomorphic setting: Hills

Unnamed calcareous soils
Composition: 0 to 10 percent
Slope: 9 to 30 percent
Geomorphic setting: Hills

Aido clay and similar soils
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Cieneba coarse sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills

Gaviota sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills

Rock outcrop
Composition: 0 to 5 percent
Slope: 9 to 30 percent
Geomorphic setting: Hills

Shimmon fine sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills

Urban land
Composition: 0 to 5 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Dry-farmed crops and livestock grazing

Dry-farmed crops
Major management factors: Excessive slope, water erosion, and limited available water capacity
Management considerations:
• All tillage should be on the contour or across the slope.
• The hazard of erosion can be reduced by keeping as much residue as possible on the surface, seeding fall grain early, and practicing conservation tillage.
• Residue management and crop rotations that include summer fallow conserve soil moisture for use by crops.

Livestock grazing
Major management factors: Water erosion and limited available water capacity
Management considerations:
• Controlled grazing maintains the vegetative cover, promotes a desirable composition of plants, and reduces the hazard of erosion.
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.

340—Arnold-San Andreas complex, 30 to 75 percent slopes

Map Unit Setting

General location: Northern La Panza Range
MLRA: 15
Elevation: 1,000 to 2,495 feet (305 to 762 meters)
Mean annual precipitation: 10 to 14 inches (254 to 356 millimeters)
Mean annual air temperature: 59 to 63 degrees F (15 to 17 degrees C)
Frost-free period: 185 to 210 days

Map Unit Composition

Arnold: 30 percent
San Andreas: 20 percent
Minor components: 50 percent

Characteristics of the Arnold Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 30 to 75 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 2 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 40 to 60 inches
Slowest permeability class: Rapid above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 3.1 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Somewhat excessively drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XE031CA, Sandy

Typical profile
0 to 6 inches—loamy sand
6 to 44 inches—loamy sand
44 to 48 inches—weathered bedrock

Characteristics of the San Andreas Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone
Typical vegetation: Oak and pine woodland

Component properties and qualities
Slope: 30 to 75 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderately rapid above the bedrock

Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 4.0 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XE009CA, Coarse loamy

Typical profile
0 to 11 inches—sandy loam
11 to 29 inches—sandy loam
29 to 33 inches—weathered bedrock

Minor Components

Badlands
Composition: 0 to 10 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills

Unnamed calcareous soils
Composition: 0 to 10 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills

Cieneba coarse sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills

Gaviota sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

Rock outcrop
Composition: 0 to 5 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills

Shimmon fine sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Unnamed soils that are moderately deep to soft shale
Composition: 0 to 5 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills

Urban land
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing and woodland

Livestock grazing
Major management factors: Water erosion, limited available water capacity, runoff, and excessive slope
Management considerations:
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.

350—Cieneba coarse sandy loam, 30 to 75 percent slopes

Map Unit Setting

General location: Northern La Panza Range
MLRA: 15
Elevation: 1,000 to 2,495 feet (305 to 762 meters)
Mean annual precipitation: 12 to 20 inches (304 to 508 millimeters)
Mean annual air temperature: 59 to 63 degrees F (15 to 17 degrees C)
Frost-free period: 190 to 200 days

Map Unit Composition

Cieneba: 75 percent
Minor components: 25 percent

Characteristics of the Cieneba Soil

Geomorphic setting: Hills
Parent material: Residuum weathered from granite
Typical vegetation: Annual grasses and forbs; shrubs

Component properties and qualities
Slope: 30 to 75 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 6 to 20 inches
Slowest permeability class: Moderately rapid above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 1.3 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Somewhat excessively drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XE080CA, Shallow coarse loamy 10-16" p.z.

Typical profile
0 to 15 inches—coarse sandy loam
15 to 20 inches—weathered bedrock

Minor Components

Badlands
Composition: 0 to 5 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills

Gaviota sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

Rock outcrop
Composition: 0 to 5 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

San Andreas coarse sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

Arnold loamy sand and similar soils
Composition: 0 to 3 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

Unnamed calcareous soils
Composition: 0 to 2 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills

Additional Component Properties

For additional data regarding component horizons, see table 15, "Engineering Index Properties;" table 16, "Physical Properties of the Soils;" table 17, "Chemical Properties of the Soils;" and the "Soil Properties" section of this publication. For a description of a typical soil, including a range in characteristics, see the "Classification of the Soils" section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Depth to bedrock, water erosion, limited available water capacity, runoff, excessive slope, and brush
Management considerations:
• Special design may be needed for fences in areas of shallow soils. Shallow soils also limit forage production. Species adapted to droughty conditions should be considered for seeding.
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.
• Brush management can improve the range condition in areas where competition from woody shrubs is decreasing the extent of the preferred forage plants.

360—Chicote complex, 0 to 2 percent slopes

Map Unit Setting

General location: Carrizo Plain around Soda Lake
MLRA: 17
Elevation: 1,895 to 2,000 feet (579 to 610 meters)
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 57 to 63 degrees F (14 to 17 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Chicote silty clay loam: 40 percent
Chicote silt loam: 40 percent
Minor components: 20 percent

Characteristics of Chicote Silty Clay Loam

Geomorphic setting: Lake plains
Parent material: Alluvium derived from sedimentary rocks and lacustrine sediments
Typical vegetation: Annual grasses and forbs; shrubs

Component properties and qualities
Slope: 0 to 2 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: None noted.
Slowest permeability class: Impermeable
Salinity: Saline within a depth of 40 inches
Sodicity: Sodic within a depth of 40 inches
Available water capacity: About 4.9 inches (low)

Component hydrologic properties
Flooding: Rare
Ponding: Frequent
Water table: None noted.
Natural drainage class: Moderately well drained

Interpretive groups
Land capability, irrigated: 4s
Land capability, nonirrigated: 6s
Ecological site: R017XF031CA, Fine loamy flat

Typical profile
0 to 2 inches—silty clay loam
2 to 12 inches—clay
12 to 61 inches—clay

Characteristics of Chicote Silt Loam

Geomorphic setting: Lake plains
Parent material: Alluvium derived from sedimentary rocks and lacustrine sediments
Typical vegetation: Annual grasses and forbs; shrubs

Component properties and qualities
Slope: 0 to 2 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: None noted.
Slowest permeability class: Impermeable
Salinity: Saline within a depth of 40 inches
Sodicity: Sodic within a depth of 40 inches
Available water capacity: About 7.5 inches (moderate)

Component hydrologic properties
Flooding: Rare
Ponding: Frequent
Water table: None noted.
Natural drainage class: Moderately well drained

Interpretive groups
Land capability, irrigated: 4s
Land capability, nonirrigated: 6s
Ecological site: R017XF031CA, Fine loamy flat

Typical profile
0 to 5 inches—silt loam
5 to 14 inches—clay
14 to 24 inches—silty clay loam
24 to 60 inches—silt loam

Minor Components

Playas
Composition: 0 to 4 percent
Slope: 0 to 1 percent
Geomorphic setting: Playas

Polonio clay loam and similar soils
Composition: 0 to 4 percent
Slope: 0 to 2 percent
Geomorphic setting: Alluvial fans

Yeguas loam and similar soils
Composition: 0 to 3 percent
Slope: 0 to 2 percent
Geomorphic setting: Alluvial fans and alluvial flats

Capay and similar soils
Composition: 0 to 3 percent
Slope: 0 to 2 percent
Geomorphic setting: Alluvial fans and alluvial flats

Unnamed soils that have a dark brown surface layer
Composition: 0 to 3 percent
Slope: 0 to 2 percent
Geomorphic setting: Hills

Unnamed silty clay loam soils
Composition: 0 to 3 percent

Slope: 0 to 2 percent
Geomorphic setting: Hills

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing and homesite development

Livestock grazing
Major management factors: Ponding, flooding, moderately fine surface texture, salinity, limited available water capacity, and shrink-swell potential
Management considerations:
- Flooding affects livestock operations.
- Trampling by livestock when the soil is too wet can cause soil compaction, which reduces productivity and increases runoff.
- Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
- Because of the high shrink-swell potential, areas of this map unit are difficult to fence. Shrinking and swelling of the soil can tilt fence posts or lift them out of the soil.

Homesite development
Major management factors: Ponding, flooding, restricted permeability, and shrink-swell potential
Management considerations:
- Because ponding and flooding can occur during the winter and early spring, foundations should be taller than normal or the buildings should be located on the highest elevations. Drainage ditches should be used to intercept water, or a drainage system should be installed around the foundations.
- Ponding and flooding can add water to septic systems. Diverting the floodwaters away from the area reduces this hazard.
- The restricted permeability decreases the absorption capacity of leach fields. Increasing the size of the leach field or using a specially designed system can overcome this limitation.
- Using proper engineering designs or backfilling with material that has a low shrink-swell potential minimizes the effects of shrinking and swelling.

361—Chicote complex, 2 to 5 percent slopes

Map Unit Setting

General location: Carrizo Plain around Soda Lake
MLRA: 17
Elevation: 1,895 to 2,000 feet (579 to 610 meters)
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 57 to 63 degrees F (14 to 17 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Chicote silty clay loam: 40 percent
Chicote silt loam: 40 percent
Minor components: 20 percent

Characteristics of Chicote Silty Clay Loam

Geomorphic setting: Lake plains
Parent material: Alluvium derived from sedimentary rocks and lacustrine sediments
Typical vegetation: Annual grasses and forbs; shrubs

Component properties and qualities
Slope: 2 to 5 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: None noted.
Slowest permeability class: Impermeable
Salinity: Saline within a depth of 40 inches
Sodicity: Sodic within a depth of 40 inches
Available water capacity: About 4.9 inches (low)

Component hydrologic properties
Flooding: Rare
Ponding: Frequent
Water table: None noted.
Natural drainage class: Moderately well drained

Interpretive groups
Land capability, irrigated: 4e
Land capability, nonirrigated: 6e
Ecological site: R017XF031CA, Fine loamy flat

Typical profile
0 to 2 inches—silty clay loam
2 to 12 inches—clay
12 to 61 inches—clay

Characteristics of Chicote Silt Loam

Geomorphic setting: Lake plains
Parent material: Alluvium derived from sedimentary rocks and lacustrine sediments
Typical vegetation: Annual grasses and forbs; shrubs

Component properties and qualities
Slope: 2 to 5 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: None noted.
Slowest permeability class: Impermeable
Salinity: Saline within a depth of 40 inches
Sodicity: Sodic within a depth of 40 inches
Available water capacity: About 7.5 inches (moderate)

Component hydrologic properties
Flooding: Rare
Ponding: Frequent
Water table: None noted.
Natural drainage class: Moderately well drained

Interpretive groups
Land capability, irrigated: 4e
Land capability, nonirrigated: 6e
Ecological site: R017XF031CA, Fine loamy flat

Typical profile
0 to 5 inches—silt loam
5 to 14 inches—clay
14 to 24 inches—silty clay loam
24 to 60 inches—silt loam

Minor Components

Playas
Composition: 0 to 4 percent
Slope: 0 to 1 percent
Geomorphic setting: Playas

Polonio clay loam and similar soils
Composition: 0 to 4 percent
Slope: 2 to 5 percent
Geomorphic setting: Alluvial fans

Yeguas loam and similar soils
Composition: 0 to 4 percent
Slope: 2 to 5 percent
Geomorphic setting: Alluvial fans and alluvial flats

Unnamed soils that have a dark brown surface layer
Composition: 0 to 4 percent
Slope: 2 to 5 percent
Geomorphic setting: Hills

Unnamed silty clay loam soils
Composition: 0 to 4 percent
Slope: 2 to 5 percent
Geomorphic setting: Hills

Additional Component Properties

For additional data regarding component horizons, see table 15, "Engineering Index Properties;" table 16, "Physical Properties of the Soils;" table 17, "Chemical Properties of the Soils;" and the "Soil Properties" section of this publication. For a description of a typical soil, including a range in characteristics, see the "Classification of the Soils" section.

Use and Management

Major uses: Livestock grazing and homesite development

Livestock grazing
Major management factors: Ponding, flooding, moderately fine surface texture, salinity, limited available water capacity, and shrink-swell potential
Management considerations:
• Flooding affects livestock operations.
• Trampling by livestock when the soil is too wet can cause soil compaction, which reduces productivity and increases runoff.
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• Because of the high shrink-swell potential, areas of this map unit are difficult to fence. Shrinking and swelling of the soil can tilt fence posts or lift them out of the soil.

Homesite development
Major management factors: Ponding, flooding, restricted permeability, and shrink-swell potential
Management considerations:
• Because ponding and flooding can occur during the winter and early spring, foundations should be taller than normal or the buildings should be located on the highest elevations. Drainage ditches should be used to intercept water, or a drainage system should be installed around the foundations.
• Ponding and flooding can add water to septic systems. Diverting the floodwaters away from the area reduces this hazard.
• The restricted permeability decreases the absorption capacity of leach fields. Increasing the

size of the leach field or using a specially designed system can overcome this limitation.

- Using proper engineering designs or backfilling with material that has a low shrink-swell potential minimizes the effects of shrinking and swelling.

362—Chicote complex, 5 to 9 percent slopes

Map Unit Setting

General location: Carrizo Plain around Soda Lake
MLRA: 17
Elevation: 1,895 to 2,000 feet (579 to 610 meters)
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 57 to 63 degrees F (14 to 17 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Chicote silty clay loam: 40 percent
Chicote silt loam: 40 percent
Minor components: 20 percent

Characteristics of Chicote Silty Clay Loam

Geomorphic setting: Lake plains
Parent material: Alluvium derived from sedimentary rocks and lacustrine sediments
Typical vegetation: Annual grasses and forbs; shrubs

Component properties and qualities
Slope: 5 to 9 percent
Runoff: Very high
Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: None noted.
Slowest permeability class: Impermeable
Salinity: Saline within a depth of 40 inches
Sodicity: Sodic within a depth of 40 inches
Available water capacity: About 4.9 inches (low)

Component hydrologic properties
Flooding: Rare
Ponding: Frequent
Water table: None noted.
Natural drainage class: Moderately well drained

Interpretive groups
Land capability, irrigated: 4e
Land capability, nonirrigated: 6e
Ecological site: R017XF031CA, Fine loamy flat

Typical profile
0 to 2 inches—silty clay loam
2 to 12 inches—clay
12 to 61 inches—clay

Characteristics of Chicote Silt Loam

Geomorphic setting: Lake plains
Parent material: Alluvium derived from sedimentary rocks and lacustrine sediments
Typical vegetation: Annual grasses and forbs; shrubs

Component properties and qualities
Slope: 5 to 9 percent
Runoff: Very high
Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: None noted.
Slowest permeability class: Impermeable
Salinity: Saline within a depth of 40 inches
Sodicity: Sodic within a depth of 40 inches
Available water capacity: About 7.5 inches (moderate)

Component hydrologic properties
Flooding: Rare
Ponding: Frequent
Water table: None noted.
Natural drainage class: Moderately well drained

Interpretive groups
Land capability, irrigated: 4e
Land capability, nonirrigated: 6e
Ecological site: R017XF031CA, Fine loamy flat

Typical profile
0 to 5 inches—silt loam
5 to 14 inches—clay
14 to 24 inches—silty clay loam
24 to 60 inches—silt loam

Minor Components

Playas
Composition: 0 to 4 percent
Slope: 0 to 1 percent
Geomorphic setting: Playa floors

Polonio clay loam and similar soils
Composition: 0 to 4 percent
Slope: 5 to 9 percent
Geomorphic setting: Alluvial fans

Yeguas loam and similar soils
Composition: 0 to 4 percent
Slope: 0 to 5 percent
Geomorphic setting: Alluvial fans and alluvial flats

Unnamed soils that have a dark brown surface layer
Composition: 0 to 4 percent
Slope: 5 to 9 percent
Geomorphic setting: Hills

Unnamed silty clay loam soils
Composition: 0 to 4 percent
Slope: 5 to 9 percent
Geomorphic setting: Hills

Additional Component Properties

For additional data regarding component horizons, see table 15, "Engineering Index Properties;" table 16, "Physical Properties of the Soils;" table 17, "Chemical Properties of the Soils;" and the "Soil Properties" section of this publication. For a description of a typical soil, including a range in characteristics, see the "Classification of the Soils" section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Ponding, flooding, moderately fine surface texture, salinity, limited available water capacity, and shrink-swell potential
Management considerations:
- Flooding affects livestock operations.
- Trampling by livestock when the soil is too wet can cause soil compaction, which reduces productivity and increases runoff.
- Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
- Because of the high shrink-swell potential, areas of this map unit are difficult to fence. Shrinking and swelling of the soil can tilt fence posts or lift them out of the soil.

Homesite development
Major management factors: Ponding, flooding, restricted permeability, and shrink-swell potential
Management considerations:
- Because ponding and flooding can occur during the winter and early spring, foundations should be taller than normal or the buildings should be located on the highest elevations. Drainage ditches should be used to intercept water, or a drainage system should be installed around the foundations.
- Ponding and flooding can add water to septic systems. Diverting the floodwaters away from the area reduces this hazard.
- The restricted permeability decreases the absorption capacity of leach fields. Increasing the size of the leach field or using a specially designed system can overcome this limitation.
- Using proper engineering designs or backfilling with material that has a low shrink-swell potential minimizes the effects of shrinking and swelling.

371—Semper very fine sandy loam, 30 to 50 percent slopes

Map Unit Setting

General location: Caliente Range
MLRA: 15
Elevation: 2,400 to 4,195 feet (732 to 1,280 meters)
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 59 to 61 degrees F (15 to 16 degrees C)
Frost-free period: 195 to 200 days

Map Unit Composition

Semper: 50 percent
Minor components: 50 percent

Characteristics of the Semper Soil

Geomorphic setting: Mountains
Parent material: Residuum weathered from soft sandstone
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 50 to 90 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderately rapid above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 3.3 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 5 inches—very fine sandy loam
5 to 22 inches—very fine sandy loam
22 to 26 inches—weathered bedrock

Minor Components

Beam sandy loam and similar soils
Composition: 0 to 8 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Hillbrick sandy loam and similar soils
Composition: 0 to 7 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Kilmer loam and similar soils
Composition: 0 to 7 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Panoza loam and similar soils
Composition: 0 to 7 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Semper and similar soils
Composition: 0 to 7 percent
Slope: 50 to 75 percent
Geomorphic setting: Mountains

Semper and similar soils
Composition: 0 to 7 percent
Slope: 30 to 50 percent
Geomorphic setting: Mountains

Unnamed soils that are greater than 40 inches deep
Composition: 0 to 7 percent
Slope: 50 to 90 percent
Geomorphic setting: Mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Water erosion, limited available water capacity, runoff, and excessive slope

Management considerations:
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.

372—Semper very fine sandy loam, 50 to 75 percent slopes

Map Unit Setting

General location: Caliente Range
MLRA: 15
Elevation: 2,400 to 4,195 feet (732 to 1,280 meters)
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 59 to 61 degrees F (15 to 16 degrees C)
Frost-free period: 195 to 200 days

Map Unit Composition

Semper: 65 percent
Minor components: 35 percent

Characteristics of the Semper Soil

Geomorphic setting: Mountains
Parent material: Residuum weathered from soft sandstone
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 50 to 75 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderately rapid above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 3.3 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 5 inches—very fine sandy loam
5 to 22 inches—very fine sandy loam
22 to 26 inches—weathered bedrock

Minor Components

Beam sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Hillbrick sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 50 to 75 percent
Geomorphic setting: Mountains and hills

Kilmer loam and similar soils
Composition: 0 to 5 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Millsholm loam and similar soils
Composition: 0 to 4 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Panoza loam and similar soils
Composition: 0 to 4 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Semper very fine sandy loam and similar soils
Composition: 0 to 4 percent
Slope: 75 to 90 percent
Geomorphic setting: Mountains

Semper very fine sandy loam and similar soils
Composition: 0 to 4 percent
Slope: 30 to 50 percent
Geomorphic setting: Mountains

Unnamed soils that are greater than 40 inches deep
Composition: 0 to 4 percent
Slope: 50 to 75 percent
Geomorphic setting: Mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Water erosion, limited available water capacity, runoff, and excessive slope
Management considerations:
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.

375—Semper-Badlands association, 50 to 100 percent slopes

Map Unit Setting

General location: Caliente Range (fig. 11)
MLRA: 15
Elevation: 2,400 to 4,195 feet (732 to 1,280 meters)
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 59 to 61 degrees F (15 to 16 degrees C)
Frost-free period: 195 to 200 days

Map Unit Composition

Semper: 40 percent
Badlands: 25 percent
Minor components: 35 percent

Figure 11.—An area of Semper-Badlands association, 50 to 100 percent slopes, in the Caliente Range.

Characteristics of the Semper Soil

Geomorphic setting: Mountains
Parent material: Residuum weathered from soft sandstone
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 50 to 90 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderately rapid above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 3.3 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 5 inches—very fine sandy loam
5 to 22 inches—very fine sandy loam
22 to 26 inches—weathered bedrock

Characteristics of the Badlands

Badlands are landscapes that are intricately dissected and characterized by a very fine drainage network with high drainage densities and by short, steep slopes with narrow interfluves. Badlands develop on surfaces with little or no vegetative cover, overlying unconsolidated or poorly cemented materials and in places soluble minerals, such as gypsum or halite.

Geomorphic setting: Mountains
Parent material: Residuum weathered from sandstone
Typical vegetation: Barren

Component properties and qualities
Slope: 50 to 99 percent
Runoff: Very high

Component hydrologic properties
Flooding: None
Ponding: None

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 8

Minor Components

Beam sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Hillbrick sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Kilmer loam and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Millsholm loam and similar soils
Composition: 0 to 5 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Panoza loam and similar soils
Composition: 0 to 5 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Semper very fine sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Geomorphic setting: Mountains

Unnamed soils that are greater than 40 inches deep
Composition: 0 to 5 percent
Slope: 50 to 75 percent
Geomorphic setting: Mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Water erosion, limited available water capacity, runoff, and excessive slope
Management considerations:
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.

380—Muranch-Xerorthents-Rock outcrop association, 30 to 75 percent slopes

Map Unit Setting

General location: Caliente Range
MLRA: 15
Elevation: 2,795 to 4,100 feet (853 to 1,250 meters)
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Muranch: 30 percent
Xerorthents: 25 percent
Rock outcrop: 20 percent
Minor components: 25 percent

Characteristics of the Muranch Soil

Geomorphic setting: Mountains and hills
Parent material: Residuum weathered from basalt

Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 30 to 75 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (lithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 3.6 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 15 inches—loam
15 to 36 inches—very gravelly loam
36 to 40 inches—unweathered bedrock

Characteristics of the Xerorthents

Geomorphic setting: Mountains
Parent material: Residuum weathered from basalt
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 30 to 75 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 35 to 60 percent coarse subangular gravel
Restrictive feature: Bedrock (lithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 2.3 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Somewhat excessively drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to 12 inches—very gravelly loam
12 to 19 inches—very gravelly loam
19 to 26 inches—extremely cobbly loam
26 to 28 inches—unweathered bedrock

Characteristics of the Rock Outcrop

The rock outcrop consists of exposures of basalt bedrock.

Geomorphic setting: Mountains
Typical vegetation: Barren

Component properties and qualities
Slope: 30 to 75 percent
Runoff: Very high

Component hydrologic properties
Flooding: None
Ponding: None

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 8

Minor Components

Unnamed brown and reddish brown fine sandy loam soils
Composition: 0 to 10 percent
Slope: 30 to 75 percent
Geomorphic setting: Mountains

Aido clay and similar soils
Composition: 0 to 3 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

Bellyspring sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

Hillbrick loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

Kilmer loam and similar soils
Composition: 0 to 2 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

Padres sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 0 to 9 percent
Geomorphic setting: Alluvial fans and alluvial flats

Semper very fine sandy loam and similar soils
Composition: 0 to 1 percent
Slope: 30 to 75 percent
Geomorphic setting: Mountains

Unnamed soils that are less than 20 inches deep
Composition: 0 to 1 percent
Slope: 30 to 75 percent
Geomorphic setting: Mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Water erosion, limited available water capacity, runoff, and excessive slope
Management considerations:
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.

388—Rock outcrop-Gaviota complex, 30 to 75 percent slopes

Map Unit Setting

General location: Central La Panza Range
MLRA: 15
Elevation: 1,695 to 3,995 feet (518 to 1,219 meters)
Mean annual precipitation: 8 to 15 inches (203 to 381 millimeters)
Mean annual air temperature: 45 to 63 degrees F (7 to 17 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Rock outcrop: 50 percent
Gaviota: 25 percent
Minor components: 25 percent

Characteristics of the Rock Outcrop

The rock outcrop consists of exposures of sandstone bedrock.

Geomorphic setting: Hills and mountains
Typical vegetation: Barren

Component properties and qualities
Slope: 30 to 75 percent
Runoff: Very high

Component hydrologic properties
Flooding: None
Ponding: None

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 8

Characteristics of the Gaviota Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from unspecified sandstone
Typical vegetation: Sparse annual grasses and forbs

Component properties and qualities
Slope: 30 to 75 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 0 to 15 percent coarse subangular gravel
Restrictive feature: Bedrock (lithic) at a depth of 6 to 20 inches
Slowest permeability class: Moderately rapid above the bedrock
Salinity: Not saline

Sodicity: Not sodic
Available water capacity: About 0.9 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to 8 inches—sandy loam
8 to 11 inches—unweathered bedrock

Minor Components

Beam fine sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

Hillbrick loam and similar soils
Composition: 0 to 5 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

Panoza loam and similar soils
Composition: 0 to 5 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

San Timoteo sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

Unnamed soils that have a dark colored surface layer
Composition: 0 to 5 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Depth to bedrock, water erosion, limited available water capacity, runoff, excessive slope, and rock outcrop
Management considerations:
• Special design may be needed for fences in areas of shallow soils. Shallow soils also limit forage production. Species adapted to droughty conditions should be considered for seeding.
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.
• The rock outcrop may limit access by equipment and some classes of livestock.

391—Rock outcrop-Lithic Torriorthents complex, 50 to 100 percent slopes

Map Unit Setting

General location: Caliente Range
MLRA: 15
Elevation: 2,200 to 5,100 feet (671 to 1,555 meters)
Mean annual precipitation: 8 to 15 inches (203 to 381 millimeters)
Mean annual air temperature: 45 to 61 degrees F (7 to 16 degrees C)
Frost-free period: 195 to 205 days

Map Unit Composition

Rock outcrop: 35 percent
Lithic Torriorthents: 30 percent
Minor components: 35 percent

Characteristics of the Rock Outcrop

The rock outcrop consists of exposures of sandstone bedrock.

Geomorphic setting: Mountains
Typical vegetation: Barren

Component properties and qualities
Slope: 50 to 100 percent
Runoff: Very high

Component hydrologic properties
Flooding: None
Ponding: None

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 8

Characteristics of the Lithic Torriorthents

Geomorphic setting: Mountains
Parent material: Residuum weathered from sandstone
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 50 to 100 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 10 to 15 percent coarse subangular gravel
Restrictive feature: Bedrock (lithic) at a depth of 8 to 20 inches
Slowest permeability class: Moderately rapid above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 0.4 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Excessively drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to 4 inches—sandy loam
4 to 9 inches—unweathered bedrock

Minor Components

Lithic Torriorthents sandy loam and similar soils
Composition: 0 to 10 percent
Slope: 30 to 50 percent
Geomorphic setting: Mountains

Beam sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 50 to 75 percent
Geomorphic setting: Mountains and hills

Bellyspring sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Gaviota sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Kilmer loam and similar soils
Composition: 0 to 5 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Panoza loam and similar soils
Composition: 0 to 5 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, "Engineering Index Properties;" table 16, "Physical Properties of the Soils;" table 17, "Chemical Properties of the Soils;" and the "Soil Properties" section of this publication. For a description of a typical soil, including a range in characteristics, see the "Classification of the Soils" section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Depth to bedrock, water erosion, limited available water capacity, runoff, excessive slope, and rock outcrop
Management considerations:
• Special design may be needed for fences in areas of shallow soils. Shallow soils also limit forage production. Species adapted to droughty conditions should be considered for seeding.
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing

management is necessary to maintain sufficient cover to control erosion.
• The rock outcrop may limit access by equipment and some classes of livestock.

401—Godde-Xerorthents-Rock outcrop complex, 30 to 75 percent slopes

Map Unit Setting

General location: Caliente Range
MLRA: 15
Elevation: 2,795 to 5,100 feet (853 to 1,555 meters)
Mean annual precipitation: 10 to 12 inches (254 to 304 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 170 to 180 days

Map Unit Composition

Godde: 40 percent
Xerorthents: 20 percent
Rock outcrop: 15 percent
Minor components: 25 percent

Characteristics of the Godde Soil

Geomorphic setting: Mountains
Parent material: Residuum weathered from sandstone
Typical vegetation: Annual grasses and forbs; pockets of woodland

Component properties and qualities
Slope: 30 to 75 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 5 to 15 percent coarse subangular gravel
Restrictive feature: Bedrock (lithic) at a depth of 10 to 20 inches
Slowest permeability class: Moderately rapid above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 1.7 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Somewhat excessively drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to 14 inches—sandy loam
14 to 18 inches—unweathered bedrock

Characteristics of the Xerorthents

Geomorphic setting: Mountains
Parent material: Residuum weathered from sandstone
Typical vegetation: Annual grasses and forbs; pockets of woodland

Component properties and qualities
Slope: 30 to 75 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 0 to 15 percent coarse subangular gravel
Restrictive feature: Bedrock (lithic) at a depth of 5 to 20 inches
Slowest permeability class: Moderately rapid above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 0.8 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to 7 inches—sandy loam
7 to 11 inches—unweathered bedrock

Characteristics of the Rock Outcrop

The rock outcrop consists of exposures of sandstone bedrock.

Geomorphic setting: Mountains
Typical vegetation: Barren

Component properties and qualities
Slope: 30 to 75 percent
Runoff: Very high

Component hydrologic properties
Flooding: None
Ponding: None

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 8

Minor Components

Bellyspring sandy loam and similar soils
Composition: 0 to 6 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

Beam sandy loam and similar soils
Composition: 0 to 4 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

Gaviota sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

Godde sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Geomorphic setting: Mountains

Godde sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 75 to 100 percent
Geomorphic setting: Mountains

Panoza loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

San Andreas fine sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Depth to bedrock, water erosion, limited available water capacity, runoff, excessive slope, and rock outcrop
Management considerations:
- Special design may be needed for fences in areas of shallow soils. Shallow soils also limit forage production. Species adapted to droughty conditions should be considered for seeding.
- Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
- The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
- The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.
- The rock outcrop may limit access by equipment and some classes of livestock.

408—Gaviota-San Andreas association, 15 to 30 percent slopes

Map Unit Setting

General location: West of Camatta Canyon
MLRA: 15
Elevation: 1,200 to 2,700 feet (366 to 823 meters)
Mean annual precipitation: 10 to 12 inches (254 to 304 millimeters)
Mean annual air temperature: 57 to 64 degrees F (14 to 18 degrees C)
Frost-free period: 175 to 300 days

Map Unit Composition

Gaviota: 35 percent
San Andreas: 25 percent
Minor components: 40 percent

Characteristics of the Gaviota Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from unspecified sandstone
Typical vegetation: Annual grasses and forbs; shrubs

Component properties and qualities
Slope: 15 to 30 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 0 to 15 percent coarse subangular gravel
Restrictive feature: Bedrock (lithic) at a depth of 12 to 20 inches

Slowest permeability class: Moderately rapid above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 1.5 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 6e
Ecological site: R015XE080CA, Shallow coarse loamy 10-16" p.z.

Typical profile
0 to 15 inches—sandy loam
15 to 19 inches—unweathered bedrock

Characteristics of the San Andreas Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 15 to 30 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderately rapid above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 4.1 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 4e
Land capability, nonirrigated: 4e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 11 inches—sandy loam
11 to 29 inches—fine sandy loam
29 to 33 inches—weathered bedrock

Minor Components

Cieneba coarse sandy loam
Composition: 0 to 20 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills

Shimmon loam and similar soils
Composition: 0 to 10 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Unnamed soils that are similar to the Yeguas soil but are moderately deep to soft bedrock
Composition: 0 to 7 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Gaviota sandy loam and similar soils
Composition: 0 to 1 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Rock outcrop
Composition: 0 to 1 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Unnamed soils that are similar to the Millsholm soil but are moderately deep to soft bedrock
Composition: 0 to 1 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Water erosion, limited available water capacity, and depth to bedrock
Management considerations:
• Controlled grazing maintains the vegetative cover, promotes a desirable composition of plants, and reduces the hazard of erosion.
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants,

reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.

- Special design may be needed for fences in areas of shallow soils. Shallow soils also limit forage production. Species adapted to droughty conditions should be considered for seeding.

409—Gaviota-Saltos-Rock outcrop complex, 30 to 75 percent slopes

Map Unit Setting

General location: Southern La Panza Range
MLRA: 15
Elevation: 2,095 to 2,700 feet (640 to 823 meters)
Mean annual precipitation: 10 to 12 inches (254 to 304 millimeters)
Mean annual air temperature: 57 to 63 degrees F (14 to 17 degrees C)
Frost-free period: 175 to 205 days

Map Unit Composition

Gaviota: 35 percent
Saltos: 25 percent
Rock outcrop: 15 percent
Minor components: 25 percent

Characteristics of the Gaviota Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from unspecified sandstone
Typical vegetation: Annual grasses and forbs; shrubs

Component properties and qualities
Slope: 30 to 75 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 0 to 15 percent coarse subangular gravel
Restrictive feature: Bedrock (lithic) at a depth of 6 to 20 inches
Slowest permeability class: Moderately rapid above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 0.9 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to 8 inches—sandy loam
8 to 11 inches—unweathered bedrock

Characteristics of the Saltos Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone
Typical vegetation: Annual grasses and forbs; shrubs

Component properties and qualities
Slope: 30 to 75 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: Bedrock (lithic) at a depth of 8 to 14 inches
Slowest permeability class: Moderately slow
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 1.3 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to $^1/_2$ inch—slightly decomposed plant material
$^1/_2$ inch to 4 inches—loam
4 to 10 inches—loam
10 to 15 inches—unweathered bedrock

Characteristics of the Rock Outcrop

The rock outcrop consists of exposures of sandstone bedrock.

Geomorphic setting: Mountains and hills
Typical vegetation: Barren

Component properties and qualities
Slope: 30 to 75 percent
Runoff: Very high

Component hydrologic properties
Flooding: None
Ponding: None

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 8

Minor Components

Beam sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

Bellyspring sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

Calleguas loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Hillbrick loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

Kilmer loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

Panoza loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

Saltos sandy clay loam and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Akad loam and similar soils
Composition: 0 to 2 percent
Slope: 30 to 75 percent
Geomorphic setting: Mountains

Gaviota sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 75 to 100 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Depth to bedrock, water erosion, limited available water capacity, runoff, excessive slope, and rock outcrop
Management considerations:
• Special design may be needed for fences in areas of shallow soils. Shallow soils also limit forage production. Species adapted to droughty conditions should be considered for seeding.
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.
• The rock outcrop may limit access by equipment and some classes of livestock.

410—Gaviota-Rock outcrop complex, 30 to 75 percent slopes

Map Unit Setting

General location: Central La Panza Range
MLRA: 15
Elevation: 1,695 to 3,300 feet (518 to 1,006 meters)
Mean annual precipitation: 8 to 15 inches (203 to 381 millimeters)
Mean annual air temperature: 45 to 63 degrees F (7 to 17 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Gaviota: 40 percent
Rock outcrop: 30 percent
Minor components: 30 percent

Characteristics of the Gaviota Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone
Typical vegetation: Shrubs, sparse annual grasses and forbs, and scattered oaks

Component properties and qualities
Slope: 30 to 75 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 0 to 15 percent coarse subangular gravel
Restrictive feature: Bedrock (lithic) at a depth of 6 to 20 inches
Slowest permeability class: Moderately rapid above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 0.9 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to 8 inches—sandy loam
8 to 11 inches—unweathered bedrock

Characteristics of the Rock Outcrop

The rock outcrop consists of exposures of sandstone bedrock.

Geomorphic setting: Mountains and hills
Typical vegetation: Barren

Component properties and qualities
Slope: 30 to 75 percent
Runoff: Very high

Component hydrologic properties
Flooding: None
Ponding: None

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 8

Minor Components

Beam fine sandy loam and similar soils
Composition: 0 to 4 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

Bellyspring sandy loam and similar soils
Composition: 0 to 4 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

Choice silty clay and similar soils
Composition: 0 to 4 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Gaviota sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Hillbrick loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

Nacimiento clay loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Panoza loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

San Andreas fine sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

Unnamed soils that have a dark colored surface layer
Composition: 0 to 3 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Depth to bedrock, water erosion, limited available water capacity, runoff, excessive slope, and rock outcrop
Management considerations:
• Special design may be needed for fences in areas of shallow soils. Shallow soils also limit forage

production. Species adapted to droughty conditions should be considered for seeding.
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.
• The rock outcrop may limit access by equipment and some classes of livestock.

411—Tajea-Saltos complex, 15 to 30 percent slopes

Map Unit Setting

General location: Southern La Panza Range
MLRA: 15
Elevation: 2,095 to 2,700 feet (640 to 823 meters)
Mean annual precipitation: 10 to 12 inches (254 to 305 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 250 days

Map Unit Composition

Tajea: 40 percent
Saltos: 40 percent
Minor components: 20 percent

Characteristics of the Tajea Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from hard sandstone
Typical vegetation: Annual grasses and forbs; oaks and scattered shrubs

Component properties and qualities
Slope: 15 to 30 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: Bedrock (lithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderately slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 4.5 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 4e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 10 inches—loam
10 to 20 inches—clay loam
20 to 27 inches—gravelly clay loam
27 to 30 inches—unweathered bedrock

Characteristics of the Saltos Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone
Typical vegetation: Annual grasses and forbs; oaks and scattered shrubs

Component properties and qualities
Slope: 15 to 30 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 5 to 15 percent coarse subangular gravel
Restrictive feature: Bedrock (lithic) at a depth of 8 to 14 inches
Slowest permeability class: Moderately slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 1.3 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to $^{1}/_{2}$ inch—slightly decomposed plant material

1/2 inch to 4 inches—sandy clay loam
4 to 10 inches—gravelly clay loam
10 to 15 inches—unweathered bedrock

Minor Components

Beam fine sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Hillbrick loam and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Kilmer loam and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Panoza loam and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Polonio loam and similar soils
Composition: 0 to 2 percent
Slope: 0 to 9 percent
Geomorphic setting: Alluvial fans

Rock outcrop
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Saltos sandy clay loam and similar soils
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

San Andreas fine sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Tajea loam and similar soils
Composition: 0 to 2 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills and mountains

Yeguas loam and similar soils
Composition: 0 to 2 percent
Slope: 0 to 5 percent
Geomorphic setting: Alluvial fans and alluvial flats

Additional Component Properties

For additional data regarding component horizons, see table 15, "Engineering Index Properties;" table 16, "Physical Properties of the Soils;" table 17, "Chemical Properties of the Soils;" and the "Soil Properties" section of this publication. For a description of a typical soil, including a range in characteristics, see the "Classification of the Soils" section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Water erosion, limited available water capacity, depth to bedrock, and moderately fine surface texture
Management considerations:
• Controlled grazing maintains the vegetative cover, promotes a desirable composition of plants, and reduces the hazard of erosion.
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• Special design may be needed for fences in areas of shallow soils. Shallow soils also limit forage production. Species adapted to droughty conditions should be considered for seeding.
• Trampling by livestock when the soil is too wet can cause soil compaction, which reduces productivity and increases runoff.

412—Tajea-Saltos complex, 30 to 50 percent slopes

Map Unit Setting

General location: Southern La Panza Range
MLRA: 15
Elevation: 2,095 to 2,700 feet (640 to 823 meters)
Mean annual precipitation: 12 to 20 inches (305 to 508 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Tajea: 45 percent
Saltos: 30 percent
Minor components: 25 percent

Characteristics of the Tajea Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from hard sandstone

Typical vegetation: Annual grasses and forbs; oaks and scattered shrubs

Component properties and qualities
Slope: 30 to 50 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: Bedrock (lithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderately slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 4.5 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 6e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 10 inches—loam
10 to 20 inches—clay loam
20 to 27 inches—gravelly clay loam
27 to 30 inches—unweathered bedrock

Characteristics of the Saltos Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone
Typical vegetation: Annual grasses and forbs; oaks and scattered shrubs

Component properties and qualities
Slope: 30 to 50 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 5 to 15 percent coarse subangular gravel
Restrictive feature: Bedrock (lithic) at a depth of 8 to 14 inches
Slowest permeability class: Moderately slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 1.3 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to $^{1}/_{2}$ inch—slightly decomposed plant material
$^{1}/_{2}$ inch to 4 inches—loam
4 to 10 inches—loam
10 to 15 inches—unweathered bedrock

Minor Components

Rock outcrop
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Beam sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Calleguas loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Gaviota sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Hillbrick loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Kilmer loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

San Andreas fine sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Saltos loam and similar soils
Composition: 0 to 2 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index

Properties;" table 16, "Physical Properties of the Soils;" table 17, "Chemical Properties of the Soils;" and the "Soil Properties" section of this publication. For a description of a typical soil, including a range in characteristics, see the "Classification of the Soils" section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Water erosion, limited available water capacity, runoff, excessive slope, depth to bedrock, and moderately fine surface texture
Management considerations:
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.
• Special design may be needed for fences in areas of shallow soils. Shallow soils also limit forage production. Species adapted to droughty conditions should be considered for seeding.
• Trampling by livestock when the soil is too wet can cause soil compaction, which reduces productivity and increases runoff.

420—Bellyspring-Saltos-Rock outcrop complex, 50 to 75 percent slopes

Map Unit Setting

General location: Southern La Panza Range
MLRA: 15
Elevation: 2,000 to 2,795 feet (610 to 853 meters)
Mean annual precipitation: 10 to 12 inches (254 to 305 millimeters)
Mean annual air temperature: 57 to 63 degrees F (14 to 17 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Bellyspring: 30 percent
Saltos: 25 percent
Rock outcrop: 20 percent
Minor components: 25 percent

Characteristics of the Bellyspring Soil

Geomorphic setting: Mountains and hills
Parent material: Residuum weathered from sandstone
Typical vegetation: Annual grasses and forbs; oaks and scattered shrubs

Component properties and qualities
Slope: 50 to 75 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 5 to 15 percent coarse subangular gravel
Restrictive feature: Bedrock (lithic) at a depth of 40 to 60 inches
Slowest permeability class: Moderately slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 8.3 inches (high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 12 inches—loam
12 to 55 inches—gravelly clay loam
55 to 59 inches—unweathered bedrock

Characteristics of the Saltos Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone
Typical vegetation: Annual grasses and forbs; oaks and scattered shrubs

Component properties and qualities
Slope: 50 to 75 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 5 to 15 percent coarse subangular gravel

Restrictive feature: Bedrock (lithic) at a depth of 8 to 14 inches
Slowest permeability class: Moderately slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 1.3 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to 1/2 inch—slightly decomposed plant material
1/2 inch to 4 inches—loam
4 to 10 inches—loam
10 to 15 inches—unweathered bedrock

Characteristics of the Rock Outcrop

The rock outcrop consists of exposures of sandstone bedrock.

Geomorphic setting: Hills and mountains
Typical vegetation: Barren

Component properties and qualities
Slope: 50 to 75 percent
Runoff: Very high

Component hydrologic properties
Flooding: None
Ponding: None

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 8

Minor Components

Aramburu very channery loam and similar soils
Composition: 0 to 3 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Bellyspring sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Gaviota sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Hillbrick sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Kilmer loam and similar soils
Composition: 0 to 3 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Akad loam and similar soils
Composition: 0 to 2 percent
Slope: 50 to 75 percent
Geomorphic setting: Mountains

Beam fine sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Calleguas loam and similar soils
Composition: 0 to 2 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Saucito sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 50 to 75 percent
Geomorphic setting: Mountains

Saltos loam and similar soils
Composition: 0 to 2 percent
Slope: 75 to 100 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, "Engineering Index Properties;" table 16, "Physical Properties of the Soils;" table 17, "Chemical Properties of the Soils;" and the "Soil Properties" section of this publication. For a description of a typical soil, including a range in characteristics, see the "Classification of the Soils" section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Water erosion, runoff, excessive slope, rock outcrop, depth to bedrock, and limited available water capacity
Management considerations:
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt

blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.
• The rock outcrop may limit access by equipment and some classes of livestock.
• Special design may be needed for fences in areas of shallow soils. Shallow soils also limit forage production. Species adapted to droughty conditions should be considered for seeding.
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.

430—Saucito-Akad-Rock outcrop complex, 30 to 75 percent slopes

Map Unit Setting

General location: Southern La Panza Range
MLRA: 15
Elevation: 1,800 to 2,900 feet (549 to 884 meters)
Mean annual precipitation: 8 to 15 inches (203 to 381 millimeters)
Mean annual air temperature: 59 to 61 degrees F (15 to 16 degrees C)
Frost-free period: 195 to 200 days

Map Unit Composition

Saucito: 40 percent
Akad: 25 percent
Rock outcrop: 20 percent
Minor components: 15 percent

Characteristics of the Saucito Soil

Geomorphic setting: Mountains
Parent material: Residuum weathered from sandstone
Typical vegetation: Annual grasses and forbs; oaks and scattered shrubs

Component properties and qualities
Slope: 30 to 75 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 5 to 15 percent coarse subangular gravel
Restrictive feature: Bedrock (lithic) at a depth of 10 to 20 inches
Slowest permeability class: Moderately slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 1.4 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to 3 inches—sandy loam
3 to 18 inches—very cobbly clay loam
18 to 28 inches—unweathered bedrock

Characteristics of the Akad Soil

Geomorphic setting: Mountains
Parent material: Residuum weathered from sandstone
Typical vegetation: Annual grasses and forbs; oaks and scattered shrubs

Component properties and qualities
Slope: 30 to 75 percent
Runoff: Very high
Surface features: None noted.
Coarse fragments on the surface: 0 to 10 percent coarse subangular gravel
Restrictive feature: Bedrock (lithic) at a depth of 20 to 30 inches
Slowest permeability class: Moderately slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 2.9 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Somewhat excessively drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 5 inches—loam
5 to 23 inches—very gravelly clay loam
23 to 25 inches—unweathered bedrock

Characteristics of the Rock Outcrop

The rock outcrop consists of exposures of sandstone bedrock.

Geomorphic setting: Mountains
Typical vegetation: Barren

Component properties and qualities
Slope: 30 to 75 percent
Runoff: Very high

Component hydrologic properties
Flooding: None
Ponding: None

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 8

Minor Components

Bellyspring sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

Gaviota sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

Hillbrick loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

Bellyspring sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Kilmer loam and similar soils
Composition: 0 to 2 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

Saltos sandy clay loam and similar soils
Composition: 0 to 2 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Water erosion, limited available water capacity, runoff, excessive slope, rock outcrop, and depth to bedrock
Management considerations:
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.
• The rock outcrop may limit access by equipment and some classes of livestock.
• Special design may be needed for fences in areas of shallow soils. Shallow soils also limit forage production. Species adapted to droughty conditions should be considered for seeding.

440—Bellyspring-Panoza complex, 9 to 15 percent slopes

Map Unit Setting

General location: San Juan Hills
MLRA: 15
Elevation: 2,200 to 3,300 feet (671 to 1,006 meters)
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 150 to 175 days

Map Unit Composition

Bellyspring: 35 percent
Panoza: 25 percent
Minor components: 40 percent

Characteristics of the Bellyspring Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 9 to 15 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderately slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 4.2 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 4e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 7 inches—sandy loam
7 to 27 inches—cobbly sandy clay loam
27 to 36 inches—loamy coarse sand
36 to 40 inches—weathered bedrock

Characteristics of the Panoza Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone, shale, or conglomerate
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 9 to 15 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 3.6 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 4e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 6 inches—loam
6 to 24 inches—loam
24 to 30 inches—weathered bedrock

Minor Components

Padres sandy loam and similar soils
Composition: 0 to 11 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans and alluvial flats

Beam fine sandy loam and similar soils
Composition: 0 to 10 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills and mountains

Polonio clay loam and similar soils
Composition: 0 to 10 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans

Muranch loam and similar soils
Composition: 0 to 9 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing and dry-farmed crops

Dry-farmed crops
Major management factors: Excessive slope, water erosion, and limited available water capacity
Management considerations:
• All tillage should be on the contour or across the slope.
• The hazard of erosion can be reduced by keeping as much residue as possible on the surface, seeding fall grain early, and practicing conservation tillage.

• Residue management and crop rotations that include summer fallow conserve soil moisture for use by crops.

Livestock grazing
Major management factors: Limited available water capacity
Management considerations:
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.

441—Bellyspring-Panoza complex, 15 to 30 percent slopes

Map Unit Setting

General location: Caliente Range
MLRA: 15
Elevation: 2,200 to 3,300 feet (671 to 1,006 meters)
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 150 to 175 days

Map Unit Composition

Bellyspring: 35 percent
Panoza: 30 percent
Minor components: 35 percent

Characteristics of the Bellyspring Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone
Typical vegetation: Annual grasses and forbs; scattered shrubs and juniper

Component properties and qualities
Slope: 15 to 30 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderately slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 4.2 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 4e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 7 inches—sandy loam
7 to 27 inches—cobbly sandy clay loam
27 to 36 inches—loamy coarse sand
36 to 40 inches—weathered bedrock

Characteristics of the Panoza Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone, shale, or conglomerate
Typical vegetation: Annual grasses and forbs; scattered shrubs and juniper

Component properties and qualities
Slope: 15 to 30 percent
Runoff: Very high
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 3.6 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 4e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 6 inches—loam
6 to 24 inches—loam
24 to 30 inches—weathered bedrock

Minor Components

Beam fine sandy loam and similar soils
Composition: 0 to 10 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Muranch loam and similar soils
Composition: 0 to 6 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Padres sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans and alluvial flats

Badlands
Composition: 0 to 4 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills

Polonio clay loam and similar soils
Composition: 0 to 4 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans

Rock outcrop
Composition: 0 to 3 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Semper very fine sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Geomorphic setting: Mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, "Engineering Index Properties;" table 16, "Physical Properties of the Soils;" table 17, "Chemical Properties of the Soils;" and the "Soil Properties" section of this publication. For a description of a typical soil, including a range in characteristics, see the "Classification of the Soils" section.

Use and Management

Major uses: Livestock grazing and dry-farmed crops

Dry-farmed crops
Major management factors: Excessive slope, water erosion, and limited available water capacity
Management considerations:
• All tillage should be on the contour or across the slope.
• The hazard of erosion can be reduced by keeping as much residue as possible on the surface, seeding fall grain early, and practicing conservation tillage.
• Residue management and crop rotations that include summer fallow conserve soil moisture for use by crops.

Livestock grazing
Major management factors: Limited available water capacity; water erosion
Management considerations:
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• Controlled grazing maintains the vegetative cover, promotes a desirable composition of plants, and reduces the hazard of erosion.

442—Bellyspring-Panoza complex, 30 to 50 percent slopes

Map Unit Setting

General location: Caliente Range
MLRA: 15
Elevation: 2,200 to 3,300 feet (671 to 1,006 meters)
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 150 to 175 days

Map Unit Composition

Bellyspring: 35 percent
Panoza: 30 percent
Minor components: 35 percent

Characteristics of the Bellyspring Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone
Typical vegetation: Annual grasses and forbs; scattered shrubs and juniper

Component properties and qualities
Slope: 30 to 50 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderately slow above the bedrock

Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 4.3 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 6e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 13 inches—sandy loam
13 to 23 inches—clay loam
23 to 38 inches—gravelly sandy loam
38 to 48 inches—weathered bedrock

Characteristics of the Panoza Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone, shale, or conglomerate
Typical vegetation: Annual grasses and forbs; scattered shrubs and juniper

Component properties and qualities
Slope: 30 to 50 percent
Runoff: Very high
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 3.6 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 6e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 6 inches—loam
6 to 24 inches—loam
24 to 30 inches—weathered bedrock

Minor Components

Beam fine sandy loam and similar soils
Composition: 0 to 10 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Muranch loam and similar soils
Composition: 0 to 6 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Padres sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans and alluvial flats

Badlands
Composition: 0 to 4 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills

Polonio clay loam and similar soils
Composition: 0 to 4 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans

Rock outcrop
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Semper very fine sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Geomorphic setting: Mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Limited available water capacity, water erosion, runoff, and excessive slope
Management considerations:
- Because of the limited available water capacity,

Figure 12.—A view looking east across the Carrizo Plain. Temblor Range and the San Andreas Fault are in the background. Bellyspring-Panoza-Beam complex, 50 to 75 percent slopes, is on the hills in the foreground. Padres sandy loam is in the drainageway.

forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.

- The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
- The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.

443—Bellyspring-Panoza-Beam complex, 50 to 75 percent slopes

Map Unit Setting

General location: Caliente Range
MLRA: 15
Elevation: 2,195 to 3,300 feet (670 to 1,006 meters)
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Bellyspring: 35 percent
Panoza: 25 percent
Beam: 25 percent
Minor components: 15 percent

Characteristics of the Bellyspring Soil

Geomorphic setting: Hills and mountains (fig. 12)
Parent material: Residuum weathered from sandstone
Typical vegetation: Annual grasses and forbs; scattered shrubs and juniper

Component properties and qualities
Slope: 50 to 75 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderately slow above the bedrock

Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 4.3 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 13 inches—sandy loam
13 to 23 inches—sandy clay loam
23 to 38 inches—gravelly sandy loam
38 to 48 inches—weathered bedrock

Characteristics of the Panoza Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone, shale, or conglomerate
Typical vegetation: Annual grasses and forbs; scattered shrubs and juniper

Component properties and qualities
Slope: 50 to 75 percent
Runoff: Very high
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 3.6 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 6 inches—loam
6 to 24 inches—loam
24 to 30 inches—weathered bedrock

Characteristics of the Beam Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone, shale, or conglomerate
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 50 to 75 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 14 to 20 inches
Slowest permeability class: Moderately rapid above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 1.9 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to 15 inches—fine sandy loam
15 to 23 inches—weathered bedrock

Minor Components

Badlands
Composition: 0 to 3 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills

Muranch loam and similar soils
Composition: 0 to 3 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Padres sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans and alluvial flats

Polonio clay loam and similar soils
Composition: 0 to 2 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans

Rock outcrop
Composition: 0 to 2 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Semper very fine sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 50 to 75 percent
Geomorphic setting: Mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, "Engineering Index Properties;" table 16, "Physical Properties of the Soils;" table 17, "Chemical Properties of the Soils;" and the "Soil Properties" section of this publication. For a description of a typical soil, including a range in characteristics, see the "Classification of the Soils" section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Limited available water capacity, water erosion, runoff, excessive slope, depth of soil, and depth to bedrock
Management considerations:
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.
• Special design may be needed for fences in areas of shallow soils. Shallow soils also limit forage production. Species adapted to droughty conditions should be considered for seeding.

445—Bellyspring-Xerorthents-Panoza complex, 15 to 50 percent slopes

Map Unit Setting

General location: Caliente Range
MLRA: 15
Elevation: 1,495 to 3,300 feet (457 to 1,006 meters)
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 150 to 175 days

Map Unit Composition

Bellyspring: 35 percent
Xerorthents: 30 percent
Panoza: 15 percent
Minor components: 20 percent

Characteristics of the Bellyspring Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone
Typical vegetation: Annual grasses and forbs; scattered shrubs and juniper

Component properties and qualities
Slope: 15 to 50 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderately slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 4.2 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 6e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 7 inches—sandy loam

7 to 27 inches—cobbly sandy clay loam
27 to 36 inches—loamy coarse sand
36 to 40 inches—weathered bedrock

Characteristics of the Xerorthents

Geomorphic setting: Mountains
Parent material: Residuum weathered from basalt, sandstone, or shale
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 15 to 50 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 35 to 60 percent coarse subangular gravel
Restrictive feature: Bedrock (lithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 2.3 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Somewhat excessively drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 6e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to 12 inches—very gravelly loam
12 to 19 inches—very gravelly loam
19 to 26 inches—extremely cobbly loam
26 to 28 inches—unweathered bedrock

Characteristics of the Panoza Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone, shale, or conglomerate
Typical vegetation: Annual grasses and forbs; scattered shrubs and juniper

Component properties and qualities
Slope: 15 to 50 percent
Runoff: Very high
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 3.6 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 6e
Ecological site: R015XF031CA, Loamy Upland 9-13" p.z.

Typical profile
0 to 6 inches—loam
6 to 24 inches—loam
24 to 30 inches—weathered bedrock

Minor Components

Beam sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 15 to 50 percent
Geomorphic setting: Hills and mountains

Hillbrick loam and similar soils
Composition: 0 to 5 percent
Slope: 15 to 50 percent
Geomorphic setting: Hills and mountains

Muranch loam and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Wasioja sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 2 to 9 percent
Geomorphic setting: Fan remnants

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Limited available water capacity, water erosion, runoff, and excessive slope
Management considerations:
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.

450—Botella loam, 2 to 9 percent slopes

Map Unit Setting

General location: Near Chimineas Ranch
MLRA: 15
Elevation: 2,495 to 2,600 feet (762 to 793 meters)
Mean annual precipitation: 7 to 10 inches (177 to 254 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Botella: 75 percent
Minor components: 25 percent

Characteristics of the Botella Soil

Geomorphic setting: Alluvial fans and alluvial flats
Parent material: Alluvium derived from mixed rock types
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 2 to 9 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 0 to 15 percent coarse subangular gravel
Restrictive feature: None noted.
Slowest permeability class: Moderately slow
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 8.3 inches (high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 2e
Land capability, nonirrigated: 4e
Ecological site: R017XF071CA, Loamy bottomland

Typical profile
0 to 14 inches—loam
14 to 39 inches—sandy clay loam
39 to 60 inches—sandy loam

Minor Components

Capay clay and similar soils
Composition: 0 to 5 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans and alluvial flats

Pinspring loam and similar soils
Composition: 0 to 5 percent
Slope: 0 to 5 percent
Geomorphic setting: Alluvial flats

Yeguas loam and similar soils
Composition: 0 to 5 percent
Slope: 0 to 5 percent
Geomorphic setting: Alluvial fans and alluvial flats

Capay clay and similar soils
Composition: 0 to 4 percent
Slope: 0 to 2 percent
Geomorphic setting: Alluvial fans and alluvial flats

Botella sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 9 to 15 percent
Geomorphic setting: Alluvial fans and alluvial flats

Wasioja sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 9 percent
Geomorphic setting: Fan remnants

Additional Component Properties

For additional data regarding component horizons, see table 15, "Engineering Index Properties;" table 16, "Physical Properties of the Soils;" table 17, "Chemical Properties of the Soils;" and the "Soil Properties" section of this publication. For a description of a typical soil, including a range in characteristics, see the "Classification of the Soils" section.

Use and Management

Major uses: Irrigated crops, dry-farmed crops, and livestock grazing

Irrigated crops
Major management factors: Slope
Management considerations:
• All tillage should be on the contour or across the slope.
• This map unit is suited to sprinkler irrigation systems.

Dry-farmed crops
Major management factors: Slope
Management considerations:
• All tillage should be on the contour or across the slope.

Livestock grazing
Major management factors: Few limitations

460—Camatta loam, 5 to 30 percent slopes

Map Unit Setting

General location: Camatta Canyon
MLRA: 15
Elevation: 1,400 to 1,695 feet (427 to 518 meters)
Mean annual precipitation: 10 to 12 inches (254 to 305 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Camatta: 75 percent
Minor components: 25 percent

Characteristics of the Camatta Soil

Geomorphic setting: Stream terraces
Parent material: Alluvium derived from calcareous shale and sandstone
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 5 to 30 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: Petrocalcic at a depth of 8 to 19 inches
Slowest permeability class: Slow above the duripan
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 1.1 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to 8 inches—loam
8 to 13 inches—indurated
13 to 60 inches—sandy loam

Minor Components

Nacimiento clay loam and similar soils
Composition: 0 to 9 percent
Slope: 9 to 30 percent
Geomorphic setting: Hills and mountains

Balcom loam and similar soils
Composition: 0 to 8 percent
Slope: 9 to 30 percent
Geomorphic setting: Hills and mountains

Calleguas loam and similar soils
Composition: 0 to 8 percent
Slope: 9 to 30 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Crops and livestock grazing

Irrigated crops
Major management factors: Excessive slope, water erosion, and depth to hardpan
Management considerations:
• All tillage should be on the contour or across the slope.
• When the soil is bare, crop residue management or the establishment of a cover crop can reduce the hazard of erosion.

• Irrigating frequently at a rate proportionate to the available water capacity prevents a perched water table where the hardpan has been not been ripped.
• The hardpan reduces the yield of deep-rooted crops. Where feasible, deep ripping helps to overcome this limitation.
• This map unit is suited to sprinkler irrigation systems.

Dry-farmed crops
Major management factors: Excessive slope, water erosion, and limited available water capacity
Management considerations:
• All tillage should be on the contour or across the slope.
• The hazard of erosion can be reduced by keeping as much residue as possible on the surface, seeding fall grain early, and practicing conservation tillage.
• Residue management and crop rotations that include summer fallow conserve soil moisture for use by crops.

Livestock grazing
Major management factors: Depth to hardpan, water erosion, and limited available water capacity
Management considerations:
• Special design may be needed for fences in areas of shallow soils. Shallow soils also limit forage production. Species adapted to droughty conditions should be considered for seeding.
• Controlled grazing maintains the vegetative cover, promotes a desirable composition of plants, and reduces the hazard of erosion.
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.

470—Botella sandy loam, 2 to 9 percent slopes

Map Unit Setting

General location: Shell Creek
MLRA: 15
Elevation: 1,295 to 2,295 feet (396 to 701 meters)
Mean annual precipitation: 12 to 14 inches (305 to 356 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Botella: 85 percent
Minor components: 15 percent

Characteristics of the Botella Soil

Geomorphic setting: Alluvial fans and alluvial flats
Parent material: Alluvium derived from mixed rock types
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 2 to 9 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 0 to 15 percent coarse subangular gravel
Restrictive feature: None noted.
Slowest permeability class: Moderately slow
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 7.7 inches (high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 2e
Land capability, nonirrigated: 4e
Ecological site: R014XY001CA, Loamy bottomland

Typical profile
0 to 14 inches—sandy loam
14 to 39 inches—sandy clay loam
39 to 60 inches—sandy loam

Minor Components

Elder and similar soils
Composition: 0 to 5 percent
Slope: 2 to 9 percent
Geomorphic setting: Flood plains

Unnamed soils that have a clay subsoil
Composition: 0 to 5 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans

Unnamed soils that are deep to soft sandstone
Composition: 0 to 2 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans

Metz loamy sand and similar soils
Composition: 0 to 1 percent
Slope: 0 to 5 percent

Geomorphic setting: Flood plains

San Andreas fine sandy loam and similar soils
Composition: 0 to 1 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills and mountains

Wet spots
Composition: 0 to 1 percent
Slope: 0 to 9 percent
Geomorphic setting: Depressions and drainageways

Additional Component Properties

For additional data regarding component horizons, see table 15, "Engineering Index Properties;" table 16, "Physical Properties of the Soils;" table 17, "Chemical Properties of the Soils;" and the "Soil Properties" section of this publication. For a description of a typical soil, including a range in characteristics, see the "Classification of the Soils" section.

Use and Management

Major uses: Crops and livestock grazing

Irrigated crops
Major management factors: Moderately rapid permeability in the surface layer
Management considerations:
• This soil requires short, frequent irrigation cycles to keep the surface moist during seedling germination.
• This map unit is suited to furrow, border, and sprinkler irrigation systems.

Dry-farmed crops
Major management factors: Few limitations

Livestock grazing
Major management factors: Few limitations

474—Elder sandy loam, 0 to 2 percent slopes

Map Unit Setting

General location: Camatta Canyon and San Juan Valley
MLRA: 14
Elevation: 1,200 to 1,495 feet (366 to 457 meters)
Mean annual precipitation: 12 to 14 inches (304 to 356 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Elder: 80 percent
Minor components: 20 percent

Characteristics of the Elder Soil

Geomorphic setting: Alluvial fans and flood plains
Parent material: Alluvium derived from mixed rock types
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 0 to 2 percent
Runoff: Low
Surface features: None noted.
Coarse fragments on the surface: 0 to 15 percent coarse subangular gravel
Restrictive feature: None noted.
Slowest permeability class: Moderately rapid
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 7.7 inches (high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 1
Land capability, nonirrigated: 4c
Ecological site: R014XY001CA, Loamy bottomland

Typical profile
0 to 21 inches—sandy loam
21 to 67 inches—sandy loam

Minor Components

Metz loamy sand and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Geomorphic setting: Flood plains

San Emigdio sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Geomorphic setting: Flood plains

Areas that are subject to flooding
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Geomorphic setting: Flood plains

Xerofluvents sand and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Geomorphic setting: Flood plains

Additional Component Properties

For additional data regarding component horizons, see table 15, "Engineering Index Properties;" table

16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Vineyards and orchards, irrigated crops, dry-farmed crops, and livestock grazing

Vineyards and orchards
Major management factors: Few limitations
Management considerations:
• Cover crops maximize water infiltration, suppress dust, and minimize soil compaction.
• This map unit is suited to sprinkler and drip irrigation systems.

Irrigated crops
Major management factors: Moderately rapid permeability in the surface layer
Management considerations:
• This soil requires short, frequent irrigation cycles to keep the surface moist during seedling germination.
• This map unit is suited to sprinkler irrigation systems.

Dry-farmed crops
Major management factors: Few limitations

Livestock grazing
Major management factors: Water erosion
Management considerations:
• The hazard of erosion can be reduced by fencing livestock out of gullies and off streambanks, especially during the rainy season.

475—Elder sandy loam, 2 to 9 percent slopes

Map Unit Setting

General location: Camatta Canyon and San Juan Valley
MLRA: 14
Elevation: 1,200 to 1,495 feet (366 to 457 meters)
Mean annual precipitation: 12 to 14 inches (304 to 356 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Elder: 80 percent
Minor components: 20 percent

Characteristics of the Elder Soil

Geomorphic setting: Alluvial fans and flood plains
Parent material: Alluvium derived from mixed rock types
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 2 to 9 percent
Runoff: Low
Surface features: None noted.
Coarse fragments on the surface: 0 to 15 percent coarse subangular gravel
Restrictive feature: None noted.
Slowest permeability class: Moderately rapid
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 7.7 inches (high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 2e
Land capability, nonirrigated: 4e
Ecological site: R014XY001CA, Loamy bottomland

Typical profile
0 to 21 inches—sandy loam
21 to 67 inches—sandy loam

Minor Components

Metz loamy sand and similar soils
Composition: 0 to 7 percent
Slope: 2 to 5 percent
Geomorphic setting: Flood plains

San Emigdio sandy loam and similar soils
Composition: 0 to 7 percent
Slope: 2 to 9 percent
Geomorphic setting: Flood plains

Xerofluvents sand and similar soils
Composition: 0 to 6 percent
Slope: 0 to 2 percent
Geomorphic setting: Flood plains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Vineyards and orchards, irrigated crops, dry-farmed crops, and livestock grazing

Vineyards and orchards
Major management factors: Slope
Management considerations:
• Vines and trees should be planted on the contour or across the slope.
• Cover crops minimize wind erosion and water erosion, maximize water infiltration, suppress dust, and minimize soil compaction.
• This map unit is suited to sprinkler and drip irrigation systems.

Irrigated crops
Major management factors: Moderately rapid permeability in the surface layer and slope
Management considerations:
• This soil requires short, frequent irrigation cycles to keep the surface moist during seedling germination.
• All tillage should be on the contour or across the slope.
• This map unit is suited to sprinkler irrigation systems.

Dry-farmed crops
Major management factors: Slope
Management considerations:
• All tillage should be on the contour or across the slope.

Livestock grazing
Major management factors: Water erosion
Management considerations:
• The hazard of erosion can be reduced by fencing livestock out of gullies and off streambanks, especially during the rainy season.

480—Metz loamy sand, 0 to 5 percent slopes

Map Unit Setting

General location: Camatta Canyon and San Juan Valley
MLRA: 14
Elevation: 1,095 to 2,000 feet (335 to 610 meters)
Mean annual precipitation: 12 to 14 inches (305 to 356 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Metz: 70 percent
Minor components: 30 percent

Characteristics of the Metz Soil

Geomorphic setting: Flood plains
Parent material: Alluvium derived from mixed rock types
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 0 to 5 percent
Runoff: Low
Surface features: None noted.
Coarse fragments on the surface: 0 to 15 percent coarse subangular gravel
Restrictive feature: None noted.
Slowest permeability class: Moderate
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 5.2 inches (moderate)

Component hydrologic properties
Flooding: Rare
Ponding: None
Water table: None noted.
Natural drainage class: Somewhat excessively drained

Interpretive groups
Land capability, irrigated: 2s
Land capability, nonirrigated: 4s
Ecological site: R014XE026CA, Sandy bottomland

Typical profile
0 to 10 inches—loamy sand
10 to 63 inches—stratified coarse sand to sandy loam

Minor Components

Riverwash
Composition: 0 to 8 percent
Slope: 0 to 2 percent
Geomorphic setting: Drainageways

San Emigdio sandy loam and similar soils
Composition: 0 to 8 percent
Slope: 0 to 5 percent
Geomorphic setting: Flood plains

Arbuckle sandy loam and similar soils
Composition: 0 to 7 percent
Slope: 2 to 5 percent
Geomorphic setting: Fluvial terraces

Elder sandy loam and similar soils
Composition: 0 to 7 percent

Slope: 0 to 5 percent
Geomorphic setting: Flood plains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Vineyards and orchards, irrigated crops, dry-farmed crops, and livestock grazing

Vineyards and orchards
Major management factors: Somewhat excessive drainage; flooding
Management considerations:
• Cover crops maximize water infiltration, suppress dust, and minimize soil compaction.
• Water should be applied in quantities large enough to wet the root zone but small enough to minimize the leaching of plant nutrients.
• The hazard of flooding should be considered before crops are planted or capital improvements are installed.
• This map unit is suited to sprinkler and drip irrigation systems.

Irrigated crops
Major management factors: Rapid permeability in the surface layer, somewhat excessive drainage, and flooding
Management considerations:
• This soil requires short, frequent irrigation cycles to keep the surface moist during seedling germination.
• Water should be applied in quantities large enough to wet the root zone but small enough to minimize the leaching of plant nutrients.
• The hazard of flooding should be considered before crops are planted or capital improvements are installed.
• This map unit is suited to sprinkler irrigation systems.

Dry-farmed crops
Major management factors: Few limitations

Livestock grazing
Major management factors: Water erosion
Management considerations:
• The hazard of erosion can be reduced by fencing livestock out of gullies and off streambanks, especially during the rainy season.

490—Wasioja loam, 0 to 2 percent slopes

Map Unit Setting

General location: Central Carrizo Plain
MLRA: 17
Elevation: 1,895 to 2,495 feet (579 to 762 meters)
Mean annual precipitation: 7 to 10 inches (178 to 254 millimeters)
Mean annual air temperature: 58 to 60 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Wasioja: 75 percent
Minor components: 25 percent

Characteristics of the Wasioja Soil

Geomorphic setting: Fan remnants
Parent material: Alluvium derived from mixed rock types
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 0 to 2 percent
Runoff: Low
Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: None noted.
Slowest permeability class: Moderately slow
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 10.1 inches (very high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 1
Land capability, nonirrigated: 4c
Ecological site: R017XF071CA, Loamy bottomland

Typical profile
0 to 9 inches—loam
9 to 40 inches—clay loam
40 to 60 inches—loam

Minor Components

Padres sandy loam and similar soils
Composition: 0 to 9 percent
Slope: 0 to 2 percent
Geomorphic setting: Alluvial fans and alluvial flats

Polonio clay loam and similar soils
Composition: 0 to 8 percent
Slope: 0 to 2 percent
Geomorphic setting: Alluvial fans

Thomhill loam and similar soils
Composition: 0 to 8 percent
Slope: 0 to 2 percent
Geomorphic setting: Alluvial fans and alluvial flats

Additional Component Properties

For additional data regarding component horizons, see table 15, "Engineering Index Properties;" table 16, "Physical Properties of the Soils;" table 17, "Chemical Properties of the Soils;" and the "Soil Properties" section of this publication. For a description of a typical soil, including a range in characteristics, see the "Classification of the Soils" section.

Use and Management

Major uses: Irrigated crops, dry-farmed crops, and livestock grazing

Irrigated crops
Major management factors: Few limitations
Management considerations:
• This map unit is suited to furrow, border, and sprinkler irrigation systems.

Dry-farmed crops
Major management factors: Few limitations

Livestock grazing
Major management factors: Few limitations

491—Wasioja sandy loam, 2 to 5 percent slopes

Map Unit Setting

General location: Central Carrizo Plain
MLRA: 17
Elevation: 1,495 to 2,495 feet (457 to 762 meters)
Mean annual precipitation: 7 to 10 inches (178 to 254 millimeters)
Mean annual air temperature: 58 to 60 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 250 days

Map Unit Composition

Wasioja: 85 percent
Minor components: 15 percent

Characteristics of the Wasioja Soil

Geomorphic setting: Fan remnants
Parent material: Alluvium derived from mixed rock types
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 2 to 5 percent
Runoff: Low
Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: None noted.
Slowest permeability class: Moderately slow
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 10.0 inches (very high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 2e
Land capability, nonirrigated: 4e
Ecological site: R017XF071CA, Loamy bottomland

Typical profile
0 to 10 inches—sandy loam
10 to 60 inches—clay loam

Minor Components

Pinspring loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 5 percent
Geomorphic setting: Alluvial flats

Polonio clay loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 5 percent
Geomorphic setting: Alluvial fans

Thomhill loam and similar soils
Composition: 0 to 3 percent
Slope: 2 to 5 percent
Geomorphic setting: Alluvial fans and alluvial flats

Wasioja sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 5 to 9 percent
Geomorphic setting: Fan remnants

Xerofluvents cobbly loamy sand and similar soils
Composition: 0 to 2 percent
Slope: 0 to 2 percent
Geomorphic setting: Flood plains

Yeguas loam and similar soils
Composition: 0 to 2 percent
Slope: 2 to 5 percent

Geomorphic setting: Alluvial fans and alluvial flats

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Irrigated crops, dry-farmed crops, and livestock grazing

Irrigated crops
Major management factors: Few limitations
Management considerations:
- This map unit is suited to sprinkler irrigation systems.

Dry-farmed crops
Major management factors: Few limitations

Livestock grazing
Major management factors: Few limitations

495—Wasioja-Polonio complex, 2 to 5 percent slopes

Map Unit Setting

General location: Carrizo Plain west of Soda Lake
MLRA: 17
Elevation: 1,495 to 2,495 feet (457 to 762 meters)
Mean annual precipitation: 7 to 10 inches (178 to 254 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 250 days

Map Unit Composition

Wasioja: 60 percent
Polonio: 20 percent
Minor components: 20 percent

Characteristics of the Wasioja Soil

Geomorphic setting: Fan remnants
Parent material: Alluvium derived from mixed rock types
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 2 to 5 percent
Runoff: Low
Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: None noted.
Slowest permeability class: Moderately slow
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 9.9 inches (high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 2e
Land capability, nonirrigated: 4e
Ecological site: R017XF071CA, Loamy bottomland

Typical profile
0 to 10 inches—loam
10 to 60 inches—clay loam

Characteristics of the Polonio Soil

Geomorphic setting: Alluvial fans
Parent material: Alluvium derived from calcareous sedimentary rocks
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 2 to 5 percent
Runoff: Low
Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: None noted.
Slowest permeability class: Moderately slow
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 9.9 inches (high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 2e
Land capability, nonirrigated: 4e
Ecological site: R017XF071CA, Loamy bottomland

Typical profile
0 to 14 inches—loam
14 to 69 inches—loam

Minor Components

Yeguas loam and similar soils
Composition: 0 to 10 percent
Slope: 2 to 5 percent
Geomorphic setting: Alluvial fans and alluvial flats

Beam fine sandy loam and similar soils
Composition: 0 to 2 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills and mountains

Chicote silty clay loam and similar soils
Composition: 0 to 1 percent
Slope: 0 to 5 percent
Geomorphic setting: Lake plains

Hillbrick sandy loam and similar soils
Composition: 0 to 1 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills and mountains

Padres sandy loam and similar soils
Composition: 0 to 1 percent
Slope: 2 to 5 percent
Geomorphic setting: Alluvial fans and alluvial flats

Panoza loam and similar soils
Composition: 0 to 1 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills and mountains

Polonio clay loam and similar soils
Composition: 0 to 1 percent
Slope: 0 to 2 percent
Geomorphic setting: Alluvial fans

Thomhill loam and similar soils
Composition: 0 to 1 percent
Slope: 2 to 5 percent
Geomorphic setting: Alluvial fans and alluvial flats

Wasioja sandy loam and similar soils
Composition: 0 to 1 percent
Slope: 5 to 9 percent
Geomorphic setting: Fan remnants

Xerofluvents cobbly loamy sand and similar soils
Composition: 0 to 1 percent
Slope: 0 to 2 percent
Geomorphic setting: Flood plains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Irrigated crops, dry-farmed crops, and livestock grazing

Irrigated crops
Major management factors: Few limitations
Management considerations:
- This map unit is suited to sprinkler irrigation systems.

Dry-farmed crops
Major management factors: Few limitations

Livestock grazing
Major management factors: Few limitations

497—Wasioja-Pinspring-Yeguas complex, 2 to 5 percent slopes

Map Unit Setting

General location: Carrizo Plain south of Carrizo Plain School
MLRA: 17
Elevation: 1,895 to 2,495 feet (579 to 762 meters)
Mean annual precipitation: 7 to 10 inches (178 to 254 millimeters)
Mean annual air temperature: 57 to 62 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Wasioja: 35 percent
Pinspring: 30 percent
Yeguas: 15 percent
Minor components: 20 percent

Characteristics of the Wasioja Soil

Geomorphic setting: Fan remnants
Parent material: Alluvium derived from mixed rock types
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 2 to 5 percent
Runoff: Low
Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: None noted.
Slowest permeability class: Moderately slow
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 10.1 inches (very high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 1
Land capability, nonirrigated: 4c
Ecological site: R017XF071CA, Loamy bottomland

Typical profile
0 to 9 inches—loam
9 to 40 inches—clay loam
40 to 60 inches—loam

Characteristics of the Pinspring Soil

Geomorphic setting: Alluvial flats
Parent material: Alluvium derived from mixed rock types
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 2 to 5 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: None noted.
Slowest permeability class: Moderately slow
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 9.0 inches (high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 2e
Land capability, nonirrigated: 4e
Ecological site: R017XF071CA, Loamy bottomland

Typical profile
0 to 25 inches—loam
25 to 30 inches—clay loam
30 to 39 inches—sandy loam
39 to 62 inches—loam

Characteristics of the Yeguas Soil

Geomorphic setting: Alluvial fans and alluvial flats
Parent material: Alluvium derived from sandstone, shale, and basalt
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 2 to 5 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: None noted.
Slowest permeability class: Slow
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 9.1 inches (high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 2e
Land capability, nonirrigated: 4e
Ecological site: R017XF071CA, Loamy bottomland

Typical profile
0 to 19 inches—loam
19 to 35 inches—clay loam
35 to 51 inches—loam
51 to 62 inches—gravelly coarse sandy loam

Minor Components

Polonio clay loam and similar soils
Composition: 0 to 5 percent
Slope: 2 to 5 percent
Geomorphic setting: Alluvial fans

Thomhill loam and similar soils
Composition: 0 to 5 percent
Slope: 2 to 5 percent
Geomorphic setting: Alluvial fans and alluvial flats

Wasioja sandy loam and similar soils
Composition: 0 to 5 percent
Slope: 5 to 9 percent
Geomorphic setting: Fan remnants

Xerofluvents cobbly loamy sand and similar soils
Composition: 0 to 5 percent
Slope: 0 to 2 percent
Geomorphic setting: Flood plains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Irrigated crops, dry-farmed crops, and livestock grazing

Irrigated crops
Major management factors: Restricted permeability

Management considerations:
• Because the restricted permeability can cause stand deterioration, proper irrigation requires a low application rate and a longer application period.
• This map unit is suited to sprinkler irrigation systems.

Dry-farmed crops
Major management factors: Few limitations

Livestock grazing
Major management factors: Few limitations

512—Shimmon fine sandy loam, 30 to 50 percent slopes

Map Unit Setting

General location: La Panza Range south of Camatta Canyon
MLRA: 15
Elevation: 1,495 to 2,495 feet (457 to 762 meters)
Mean annual precipitation: 12 to 14 inches (305 to 356 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Shimmon: 80 percent
Minor components: 20 percent

Characteristics of the Shimmon Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from unspecified sandstone
Typical vegetation: Annual grasses and forbs; oaks

Component properties and qualities
Slope: 30 to 50 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: Bedrock (paralithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderately slow above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 3.1 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 6e
Ecological site: R015XE106CA, Loamy north

Typical profile
0 to 12 inches—fine sandy loam
12 to 21 inches—sandy clay loam
21 to 32 inches—weathered bedrock

Minor Components

Tajea loam and similar soils
Composition: 0 to 10 percent
Slope: 30 to 50 percent
Geomorphic setting: Mountains and hills

Unnamed soils that are moderately deep to soft shale
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Areas with deep gullies
Composition: 0 to 1 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Balcom loam and similar soils
Composition: 0 to 1 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Nacimiento channery clay loam and similar soils
Composition: 0 to 1 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Rock outcrop
Composition: 0 to 1 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Unnamed gravelly clay loam soils that are shallow to hard sandstone
Composition: 0 to 1 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Water erosion, limited available water capacity, runoff, and excessive slope
Management considerations:
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.

520—Santa Lucia channery clay loam, 50 to 75 percent slopes

Map Unit Setting

General location: West of Camatta Canyon
MLRA: 15
Elevation: 1,295 to 2,995 feet (396 to 914 meters)
Mean annual precipitation: 12 to 30 inches (305 to 762 millimeters)
Mean annual air temperature: 58 to 60 degrees F (14 to 16 degrees C)
Frost-free period: 200 to 300 days

Map Unit Composition

Santa Lucia: 30 percent
Minor components: 70 percent

Characteristics of the Santa Lucia Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from shale
Typical vegetation: Annual grasses and forbs; oaks and scattered shrubs

Component properties and qualities
Slope: 50 to 75 percent
Runoff: Very high
Surface features: None noted.
Coarse fragments on the surface: 15 to 35 percent subangular channers
Restrictive feature: Bedrock (lithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 2.3 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XE103CA, Gravelly fine loamy

Typical profile
0 to 4 inches—channery clay loam
4 to 21 inches—very channery clay loam
21 to 25 inches—unweathered bedrock

Minor Components

Aramburu very channery loam and similar soils
Composition: 0 to 20 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills and mountains

Temblor very channery loam and similar soils
Composition: 0 to 15 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Unnamed channery loam soils that are similar to the Reward soil but are moderately deep to soft bedrock
Composition: 0 to 10 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Unnamed soils that are similar to the Santa Lucia soil
Composition: 0 to 10 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Ayar clay and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Reward channery loam and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Rock outcrop
Composition: 0 to 5 percent

Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, "Engineering Index Properties;" table 16, "Physical Properties of the Soils;" table 17, "Chemical Properties of the Soils;" and the "Soil Properties" section of this publication. For a description of a typical soil, including a range in characteristics, see the "Classification of the Soils" section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Water erosion, limited available water capacity, runoff, and excessive slope
Management considerations:
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.

521—Santa Lucia channery clay loam, 15 to 30 percent slopes

Map Unit Setting

General location: La Panza Range south of Camatta Canyon
MLRA: 15
Elevation: 1,295 to 1,695 feet (396 to 518 meters)
Mean annual precipitation: 12 to 14 inches (305 to 356 millimeters)
Mean annual air temperature: 58 to 60 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Santa Lucia: 80 percent
Minor components: 20 percent

Characteristics of the Santa Lucia Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from shale
Typical vegetation: Annual grasses and forbs; oaks and scattered shrubs

Component properties and qualities
Slope: 15 to 30 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 15 to 35 percent subangular channers
Restrictive feature: Bedrock (lithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 2.3 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 6e
Ecological site: R015XE103CA, Gravelly fine loamy

Typical profile
0 to 4 inches—channery clay loam
4 to 21 inches—very channery clay loam
21 to 25 inches—unweathered bedrock

Minor Components

Muranch channery clay loam and similar soils
Composition: 0 to 10 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Nacimiento clay loam and similar soils
Composition: 0 to 4 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Ayar clay and similar soils
Composition: 0 to 1 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Botella channery loam and similar soils
Composition: 0 to 1 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans and alluvial flats

Reward channery loam and similar soils
Composition: 0 to 1 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Rock outcrop
Composition: 0 to 1 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Santa Lucia channery clay loam and similar soils
Composition: 0 to 1 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills and mountains

Urban land
Composition: 0 to 1 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing and dry-farmed crops

Dry-farmed crops
Major management factors: High content of gravel, excessive slope, water erosion, and limited available water capacity
Management considerations:
• The high content of gravel in the soil reduces the amount of moisture available for plant growth and can cause rapid wear of tillage equipment.
• All tillage should be on the contour or across the slope.
• The hazard of erosion can be reduced by keeping as much residue as possible on the surface, seeding fall grain early, and practicing conservation tillage.
• Residue management and crop rotations that include summer fallow conserve soil moisture for use by crops.

Livestock grazing
Major management factors: Water erosion and limited available water capacity
Management considerations:
• Controlled grazing maintains the vegetative cover, promotes a desirable composition of plants, and reduces the hazard of erosion.
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.

522—Santa Lucia channery clay loam, 30 to 50 percent slopes

Map Unit Setting

General location: La Panza Range south of Camatta Canyon
MLRA: 15
Elevation: 1,295 to 1,695 feet (396 to 518 meters)
Mean annual precipitation: 12 to 14 inches (305 to 356 millimeters)
Mean annual air temperature: 58 to 60 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Santa Lucia: 55 percent
Minor components: 45 percent

Characteristics of the Santa Lucia Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from shale
Typical vegetation: Annual grasses and forbs; oaks and scattered shrubs

Component properties and qualities
Slope: 30 to 50 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 15 to 35 percent subangular channers
Restrictive feature: Bedrock (lithic) at a depth of 20 to 40 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 2.3 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated

Land capability, nonirrigated: 6e
Ecological site: R015XE103CA, Gravelly fine loamy

Typical profile
0 to 4 inches—channery clay loam
4 to 21 inches—very channery clay loam
21 to 25 inches—unweathered bedrock

Minor Components

Muranch channery clay loam and similar soils
Composition: 0 to 10 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Nacimiento clay loam and similar soils
Composition: 0 to 10 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Ayar clay and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Reward channery loam and similar soils
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Urban land
Composition: 0 to 5 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Botella channery loam and similar soils
Composition: 0 to 4 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans and alluvial flats

Rock outcrop
Composition: 0 to 4 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Santa Lucia channery clay loam and similar soils
Composition: 0 to 2 percent
Slope: 15 to 30 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Water erosion, limited available water capacity, runoff, and excessive slope
Management considerations:
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.

531—Saltos-Millsholm complex, 15 to 30 percent slopes

Map Unit Setting

General location: La Panza Range east of Freeborn Mountain
MLRA: 15
Elevation: 2,095 to 2,700 feet (640 to 823 meters)
Mean annual precipitation: 10 to 12 inches (254 to 305 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Saltos: 45 percent
Millsholm: 35 percent
Minor components: 20 percent

Characteristics of the Saltos Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone
Typical vegetation: Annual grasses and forbs; oaks and scattered shrubs

Component properties and qualities
Slope: 15 to 50 percent
Runoff: High
Surface features: None noted.

Coarse fragments on the surface: 5 to 15 percent coarse subangular gravel
Restrictive feature: Bedrock (lithic) at a depth of 8 to 14 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 1.3 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to 1/2 inch—slightly decomposed plant material
1/2 inch to 4 inches—loam
4 to 10 inches—loam
10 to 15 inches—unweathered bedrock

Characteristics of the Millsholm Soil

Geomorphic setting: Hills and mountains
Parent material: Residuum weathered from sandstone
Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 15 to 30 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: Bedrock (lithic) at a depth of 10 to 20 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 1.9 inches (very low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XE043CA, Shallow fine loamy

Typical profile
0 to 2 inches—loam
2 to 12 inches—loam
12 to 15 inches—unweathered bedrock

Minor Components

Saltos sandy clay loam and similar soils
Composition: 0 to 4 percent
Slope: 30 to 75 percent
Geomorphic setting: Hills and mountains

San Andreas fine sandy loam and similar soils
Composition: 0 to 4 percent
Slope: 9 to 15 percent
Geomorphic setting: Hills and mountains

Kilmer loam and similar soils
Composition: 0 to 3 percent
Slope: 15 to 50 percent
Geomorphic setting: Hills and mountains

Panoza loam and similar soils
Composition: 0 to 3 percent
Slope: 15 to 50 percent
Geomorphic setting: Hills and mountains

San Andreas fine sandy loam and similar soils
Composition: 0 to 3 percent
Slope: 15 to 50 percent
Geomorphic setting: Hills and mountains

Rock outcrop
Composition: 0 to 3 percent
Slope: 15 to 50 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Depth to bedrock and water erosion
Management considerations:
• Special design may be needed for fences in areas of shallow soils. Shallow soils also limit forage production. Species adapted to droughty conditions should be considered for seeding.
• Controlled grazing maintains the vegetative cover,

promotes a desirable composition of plants, and reduces the hazard of erosion.

561—Chanac loam, 9 to 30 percent slopes

Map Unit Setting

General location: Camatta Canyon
MLRA: 14
Elevation: 1,295 to 1,600 feet (396 to 488 meters)
Mean annual precipitation: 9 to 12 inches (229 to 305 millimeters)
Mean annual air temperature: 57 to 68 degrees F (14 to 20 degrees C)
Frost-free period: 200 to 275 days

Map Unit Composition

Chanac: 85 percent
Minor components: 15 percent

Characteristics of the Chanac Soil

Geomorphic setting: Stream terraces
Parent material: Alluvium derived from mixed rock types
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 9 to 30 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: None noted.
Slowest permeability class: Moderately slow
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 8.6 inches (high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: 4e
Land capability, nonirrigated: 4e
Ecological site: R015XE026CA, Loamy Slopes 9-12" p.z.

Typical profile
0 to 12 inches—loam
12 to 21 inches—loam
21 to 60 inches—fine sandy loam

Minor Components

Camatta loam and similar soils
Composition: 0 to 10 percent
Slope: 9 to 30 percent
Geomorphic setting: Fluvial terraces

Polonio clay loam and similar soils
Composition: 0 to 5 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Use and Management

Major uses: Irrigated crops, dry-farmed crops, and livestock grazing

Irrigated crops
Major management factors: Excessive slope; water erosion
Management considerations:
• All tillage should be on the contour or across the slope.
• When the soil is bare, crop residue management or the establishment of a cover crop can reduce the hazard of erosion.
• This map unit is suited to sprinkler irrigation systems.

Dry-farmed crops
Major management factors: Excessive slope; water erosion
Management considerations:
• All tillage should be on the contour or across the slope.
• The hazard of erosion can be reduced by keeping as much residue as possible on the surface, seeding fall grain early, and practicing conservation tillage.

Livestock grazing
Major management factors: Water erosion
Management considerations:
• Controlled grazing maintains the vegetative cover, promotes a desirable composition of plants, and reduces the hazard of erosion.

562—Chanac loam, 30 to 75 percent slopes

Map Unit Setting

General location: Camatta Canyon
MLRA: 14
Elevation: 1,295 to 1,600 feet (396 to 488 meters)
Mean annual precipitation: 9 to 12 inches (229 to 305 millimeters)
Mean annual air temperature: 57 to 68 degrees F (14 to 20 degrees C)
Frost-free period: 200 to 275 days

Map Unit Composition

Chanac: 90 percent
Minor components: 10 percent

Characteristics of the Chanac Soil

Geomorphic setting: Stream terraces
Parent material: Alluvium derived from mixed rock types
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 30 to 75 percent
Runoff: High
Surface features: None noted.
Coarse fragments on the surface: 0 to 5 percent coarse subangular gravel
Restrictive feature: None noted.
Slowest permeability class: Moderately slow
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 8.6 inches (high)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XE026CA, Loamy Slopes 9-12" p.z.

Typical profile
0 to 12 inches—loam
12 to 21 inches—loam
21 to 60 inches—fine sandy loam

Minor Components

Camatta loam and similar soils
Composition: 0 to 5 percent
Slope: 15 to 30 percent
Geomorphic setting: Fluvial terraces

Polonio clay loam and similar soils
Composition: 0 to 5 percent
Slope: 2 to 9 percent
Geomorphic setting: Alluvial fans

Additional Component Properties

For additional data regarding component horizons, see table 15, "Engineering Index Properties;" table 16, "Physical Properties of the Soils;" table 17, "Chemical Properties of the Soils;" and the "Soil Properties" section of this publication. For a description of a typical soil, including a range in characteristics, see the "Classification of the Soils" section.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Water erosion, runoff, and excessive slope
Management considerations:
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.

900—Pits

Map Unit Setting

General location: Mostly in Temblor Range
MLRA: 15
Elevation: 2,700 to 4,300 feet (823 to 1,311 meters)
Mean annual precipitation: 9 to 10 inches (228 to 254 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 175 to 225 days

Map Unit Composition

Pits: 100 percent

Characteristics of the Pits

Pits are excavations from which soil and underlying material have been removed together with areas of uneven accumulations of waste material. They are rock quarries and sand and gravel pits.

Typical vegetation: Annual grasses and forbs

Component properties and qualities
Slope: 0 to 4 percent
Runoff: Negligible

Component hydrologic properties
Flooding: Occasional
Ponding: Occasional
Water table: None noted.

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 8

Additional Component Properties

For additional data regarding component horizons, see table 15, "Engineering Index Properties;" table 16, "Physical Properties of the Soils;" table 17, "Chemical Properties of the Soils;" and the "Soil Properties" section of this publication. For a description of a typical soil, including a range in characteristics, see the "Classification of the Soils" section.

Use and Management

Major uses: Sand and gravel, borrow pits, waste disposal, and mine pits

905—Xerofluvents-Riverwash association, 0 to 2 percent slopes

Map Unit Setting

General location: La Panza and Temblor Ranges
MLRA: 17
Elevation: 1,095 to 1,495 feet (335 to 457 meters)
Mean annual precipitation: 12 to 20 inches (304 to 508 millimeters)
Mean annual air temperature: 61 to 63 degrees F (16 to 17 degrees C)
Frost-free period: 195 to 205 days

Map Unit Composition

Xerofluvents: 50 percent
Riverwash: 30 percent
Minor components: 20 percent

Characteristics of the Xerofluvents

Geomorphic setting: Flood plains
Parent material: Alluvium derived from mixed rock types
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 0 to 2 percent
Runoff: Very low
Surface features: None noted.
Coarse fragments on the surface: 5 to 15 percent coarse subangular gravel
Restrictive feature: None noted.
Slowest permeability class: Moderately rapid
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 6.0 inches (moderate)

Component hydrologic properties
Flooding: Frequent
Ponding: None
Water table: Present
Natural drainage class: Somewhat poorly drained

Interpretive groups
Land capability, irrigated: 6w
Land capability, nonirrigated: 6w

Typical profile
0 to 10 inches—sand
10 to 30 inches—stratified sand to loam
30 to 60 inches—stratified gravelly sand to gravelly loam

Characteristics of the Riverwash

Riverwash consists of barren alluvial areas of unstabilized sand, silt, clay, or gravel reworked frequently by stream activity.

Geomorphic setting: Drainageways
Parent material: Alluvium derived from mixed rock types
Typical vegetation: Barren

Component properties and qualities
Slope: 0 to 2 percent
Runoff: Negligible when dry
Surface features: None noted.
Coarse fragments on the surface: 0 to 15 percent coarse subangular gravel
Slowest permeability class: Rapid
Available water capacity: About 2.9 inches (low)

Component hydrologic properties
Flooding: Frequent
Ponding: None
Water table: Present
Natural drainage class: Somewhat excessively drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 8

Typical profile
0 to 6 inches—sand
6 to 60 inches—stratified coarse sand to sandy loam

Minor Components

Metz loamy sand and similar soils
Composition: 0 to 13 percent
Slope: 0 to 2 percent
Geomorphic setting: Flood plains

Elder sandy loam and similar soils
Composition: 0 to 7 percent
Slope: 0 to 2 percent
Geomorphic setting: Flood plains

Additional Component Properties

For additional data regarding component horizons, see table 15, "Engineering Index Properties;" table 16, "Physical Properties of the Soils;" table 17, "Chemical Properties of the Soils;" and the "Soil Properties" section of this publication. For a description of a typical soil, including a range in characteristics, see the "Classification of the Soils" section.

Use and Management

Major uses: Sand, gravel, watershed, and wildlife habitat

906—Xerofluvents, 0 to 2 percent slopes

Map Unit Setting

General location: Temblor and La Panza Ranges, especially south of Freeborn Mountain
MLRA: 14
Elevation: 1,095 to 1,495 feet (335 to 457 meters)
Mean annual precipitation: 12 to 20 inches (304 to 508 millimeters)
Mean annual air temperature: 59 to 63 degrees F (15 to 17 degrees C)
Frost-free period: 190 to 210 days

Map Unit Composition

Xerofluvents: 85 percent
Minor components: 15 percent

Characteristics of the Xerofluvents

Geomorphic setting: Flood plains
Parent material: Alluvium derived from mixed rock types
Typical vegetation: Annual grasses and forbs; scattered oaks

Component properties and qualities
Slope: 0 to 2 percent
Runoff: Negligible
Surface features: None noted.
Coarse fragments on the surface: None noted.
Restrictive feature: None noted.
Slowest permeability class: Moderately slow
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 8.1 inches (high)

Component hydrologic properties
Flooding: Occasional
Ponding: Occasional
Water table: Present
Natural drainage class: Somewhat poorly drained

Interpretive groups
Land capability, irrigated: 3w
Land capability, nonirrigated: 4w

Typical profile
0 to 15 inches—stratified loamy sand to fine sandy loam
15 to 37 inches—stratified loamy sand to fine sandy loam to silt loam
37 to 55 inches—stratified gravelly loam to silty clay loam to clay

Minor Components

San Emigdio sandy loam and similar soils
Composition: 0 to 8 percent
Slope: 0 to 2 percent
Geomorphic setting: Flood plains

Riverwash
Composition: 0 to 7 percent
Slope: 0 to 2 percent
Geomorphic setting: Drainageways

Additional Component Properties

For additional data regarding component horizons, see table 15, "Engineering Index Properties;" table 16, "Physical Properties of the Soils;" table 17, "Chemical Properties of the Soils;" and the "Soil Properties" section of this publication. For a description of a typical soil, including a range in characteristics, see the "Classification of the Soils" section.

Use and Management

Major uses: Irrigated crops, dry-farmed crops, and livestock grazing

Irrigated crops
Major management factors: Flooding and high water table
Management considerations:
• The hazard of flooding should be considered before crops are planted or capital improvements are installed.

• The high water table limits the suitability of this unit for deep-rooted crops and can cause crop damage.
• This map unit is suited to furrow, border, and sprinkler irrigation systems.

Dry-farmed crops
Major management factors: Few limitations

Livestock grazing
Major management factors: Water erosion and flooding
Management considerations:
• The hazard of erosion can be reduced by fencing livestock out of gullies and off streambanks, especially during the rainy season.
• Flooding affects livestock operations.
• Trampling by livestock when the soil is too wet can cause soil compaction, which reduces productivity and increases runoff.

908—Xerorthents very gravelly, 50 to 75 percent slopes

Map Unit Setting

General location: Temblor Range
MLRA: 15
Elevation: 2,000 to 2,965 feet (610 to 904 meters)
Mean annual precipitation: 9 to 11 inches (228 to 279 millimeters)
Mean annual air temperature: 57 to 61 degrees F (14 to 16 degrees C)
Frost-free period: 200 to 250 days

Map Unit Composition

Xerorthents: 85 percent
Minor components: 15 percent

Characteristics of the Xerorthents

Geomorphic setting: Mountains
Parent material: Residuum weathered from basalt, sandstone, or shale
Typical vegetation: Annual grasses and forbs; scattered shrubs

Component properties and qualities
Slope: 50 to 75 percent
Runoff: Medium
Surface features: None noted.
Coarse fragments on the surface: 35 to 60 percent coarse subangular gravel
Restrictive feature: Bedrock (lithic) at a depth of 40 to 60 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Not saline
Sodicity: Not sodic
Available water capacity: About 3.4 inches (low)

Component hydrologic properties
Flooding: None
Ponding: None
Water table: None noted.
Natural drainage class: Somewhat excessively drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 7e
Ecological site: R015XF034CA, Limy Upland (shallow) 9-12" p.z.

Typical profile
0 to 2 inches—very gravelly coarse sandy loam
2 to 42 inches—very gravelly sandy loam
42 to 46 inches—unweathered bedrock

Minor Components

Ayar clay and similar soils
Composition: 0 to 3 percent
Slope: 30 to 50 percent
Geomorphic setting: Hills and mountains

Hillbrick loam and similar soils
Composition: 0 to 3 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Kilmer loam and similar soils
Composition: 0 to 3 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Aido clay and similar soils
Composition: 0 to 3 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Rock outcrop
Composition: 0 to 3 percent
Slope: 50 to 75 percent
Geomorphic setting: Hills and mountains

Additional Component Properties

For additional data regarding component horizons, see table 15, “Engineering Index Properties;” table 16, “Physical Properties of the Soils;” table 17, “Chemical Properties of the Soils;” and the “Soil Properties” section of this publication. For a description of a typical soil, including a range in characteristics, see the “Classification of the Soils” section.

Figure 13.—An area of Playas ponded, which is the map unit in Soda Lake. The lake bed is made up of soft, fine mud that has a brittle crust of salt on the surface.

Use and Management

Major uses: Livestock grazing

Livestock grazing
Major management factors: Water erosion, limited available water capacity, runoff, and excessive slope
Management considerations:
• Because of the limited available water capacity, forage plants should not be stressed too frequently or severely during the growing season. Improper frequency, intensity, or duration of grazing can stress forage plants, reduce seed production, and affect the composition of the plant community. Proper grazing maintains desirable forage species and conserves soil moisture.
• The steep topography and resulting rapid runoff reduce the amount of rainfall that enters the soil.
• The slope may limit access by equipment and some classes of livestock. Fences, water developments, salt blocks, and forage supplements can improve livestock distribution. Proper grazing management is necessary to maintain sufficient cover to control erosion.

910—Playas ponded

Map Unit Setting

General location: Soda Lake (fig. 13)
MLRA: 17
Elevation: 1,895 to 2,000 feet (579 to 610 meters)
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 57 to 63 degrees F (14 to 17 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Playas: 80 percent
Minor components: 20 percent

Characteristics of the Playas

Playas are usually dry and nearly level lake plains that occupy the lowest parts of closed depressions. Temporary flooding occurs primarily in response to precipitation-runoff events. Playa deposits are fine grained and may or may not have a high water table and saline conditions.

Geomorphic setting: Playas
Parent material: Alluvium derived from sedimentary rocks and lacustrine sediments
Typical vegetation: Barren

Component properties and qualities
Slope: 0 to 1 percent
Runoff: Negligible
Surface features: Thin salt crusts on the surface and polygonal cracks when the soil is dry
Coarse fragments on the surface: None noted.

Slowest permeability class: Impermeable
Salinity: Saline within a depth of 40 inches
Sodicity: Sodic within a depth of 40 inches
Available water capacity: About 1.8 inches (very low)

Component hydrologic properties
Flooding: Rare
Ponding: Frequent
Water table: Present
Natural drainage class: Poorly drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 8

Minor Components

Playas
Composition: 0 to 12 percent
Slope: 0 to 1 percent
Geomorphic setting: Playas

Chicote clay loam and similar soils
Composition: 0 to 8 percent
Slope: 0 to 1 percent
Geomorphic setting: Lake plains

Additional Component Properties

For additional data regarding component horizons, see table 15, "Engineering Index Properties;" table 16, "Physical Properties of the Soils;" table 17, "Chemical Properties of the Soils;" and the "Soil Properties" section of this publication. For a description of a typical soil, including a range in characteristics, see the "Classification of the Soils" section.

Use and Management

Major uses: Salt mining and wildlife habitat

911—Playas

Map Unit Setting

General location: Soda Lake
MLRA: 17
Elevation: 1,895 to 2,000 feet (579 to 610 meters)
Mean annual precipitation: 8 to 10 inches (203 to 254 millimeters)
Mean annual air temperature: 57 to 63 degrees F (14 to 17 degrees C)
Frost-free period: 175 to 200 days

Map Unit Composition

Playas: 85 percent
Minor components: 15 percent

Characteristics of the Playas

Playas are usually dry and nearly level lake plains that occupy the lowest parts of closed depressions. Temporary flooding occurs primarily in response to precipitation-runoff events. Playa deposits are fine grained and may or may not have a high water table and saline conditions.

Geomorphic setting: Playas
Parent material: Alluvium derived from sedimentary rocks and lacustrine sediments
Typical vegetation: Barren

Component properties and qualities
Slope: 0 to 1 percent
Runoff: Negligible
Surface features: Thin salt crusts on the surface and polygonal cracks when the soil is dry
Coarse fragments on the surface: None noted.
Slowest permeability class: Impermeable
Salinity: Saline within a depth of 40 inches
Sodicity: Sodic within a depth of 40 inches
Available water capacity: About 1.8 inches (very low)

Component hydrologic properties
Flooding: Rare
Ponding: Occasional
Water table: Present
Natural drainage class: Moderately well drained

Interpretive groups
Land capability, irrigated: Not calculated
Land capability, nonirrigated: 8

Minor Components

Ponds
Composition: 0 to 10 percent
Slope: 0 to 1 percent
Geomorphic setting: Playas

Chicote silty clay loam and similar soils
Composition: 0 to 5 percent
Slope: 0 to 1 percent
Geomorphic setting: Lake plains

Additional Component Properties

For additional data regarding component horizons, see table 15, "Engineering Index Properties;" table 16, "Physical Properties of the Soils;" table 17, "Chemical Properties of the Soils;" and the "Soil Properties" section of this publication. For a description of a typical soil, including a range in characteristics, see the "Classification of the Soils" section.

Use and Management

Major uses: Varies, as determined by onsite investigation

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. In addition, 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; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; and for wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may 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.

Crops and Pasture

Prepared by Boyd W. Desonia, soil conservationist, and Clarence U. Finch, conservation agronomist, Natural Resources Conservation Service.

General management needed for crops and pasture is suggested in this section. The system of land capability classification used by the Natural Resources Conservation Service is explained, and prime farmland is described. Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under the heading “Detailed Soil Map Units.” Specific information can be obtained from the local office of the Natural Resources Conservation Service or the University of California Cooperative Extension Service.

In the paragraphs that follow, the main management practices are discussed for those soils that are suitable for tilled crops and pasture in the survey area. If soils are farmed, the major concerns are maintaining or improving productive capacity and preventing erosion. Management practices include, but are not limited to, *conservation cropping systems, crop residue management, conservation tillage, irrigation water management, cover crops, erosion control,* and *pasture management.* Technical assistance regarding the planning and application of practices that are suitable for the soils on a particular farm can be obtained from local representatives of the Natural Resources Conservation Service and the University of California Cooperative Extension Service.

Conservation cropping systems consist of growing crops in combination with necessary cultural and management methods. A good conservation cropping system includes soil-improving crops and methods that more than offset the soil-depleting crops and methods. Conservation cropping systems are necessary on all tilled soils in the survey area.

Soil improving methods in a conservation cropping system include the use of rotations that contain grasses and legumes, the return of crop residue to the soil, the use of green manure crops of grasses and legumes, proper tillage, adequate applications of fertilizer, weed control, and pest control.

Dryland grain is the predominant crop in the survey area. Cropping systems for dryland grain include grain-summer fallow, ecological or chemical fallow, 3-year rotations, and annual plantings. A grain-summer fallow rotation consists of preparing the seedbed one year and planting the next. An ecological or chemical fallow system consists of replacing all of the tillage practices with herbicides during the fallow year. A 3-year rotation typically consists of planting grain the first year, volunteering grain in the second, and leaving summer fallow in the third. Annual no-till planting is also used in the survey area.

Summer fallow helps to control weeds, plant diseases, and insects. It keeps the land free of vegetation during one crop season so that moisture cannot be depleted by undesirable plant growth. Keeping as much residue as possible on the surface lessens the danger of erosion in areas of sloping soils. The safest method of controlling erosion in areas of sloping soils is to use sweep- or blade-type subsurface tillage implements. Delaying the first operation until the spring following harvest also helps to control erosion during the rainfall season.

Crop residue management involves returning crop residue to the soil and thereby maintaining soil tilth, conserving moisture, improving water infiltration, increasing the content of organic matter in the soil, maintaining fertility, and minimizing erosion. In sloping areas, residue should be left on or near the surface during critical periods for erosion.

Conservation tillage systems include minimizing the number of operations necessary to control weeds, incorporating crop residue into the soil, obtaining favorable air and water movement in the soil, and preparing an adequate seedbed. Tillage breaks down soil structure, reduces the content of organic matter in the soil, and commonly creates a plowpan below the tillage implements. These conditions increase the hazard of erosion. Also, the plowpan limits permeability in the soil and restricts root penetration. Varying the depth of tillage operations delays the development of the plowpan, and infrequent, shallow chiseling breaks up the pan. Combining tillage operations to reduce the number of trips over a field and delaying tillage operations when the soils are wet are important factors in maintaining soil tilth and preventing compaction.

There are many dryland grain tillage systems, and they utilize various equipment. Although conservation tillage systems are gaining popularity, the conventional systems, which incorporate all crop residues into the soil, are still most widely used in a grain-summer fallow or 3-year rotation.

Reduced and no-till conservation tillage systems meet performance requirements if a minimum of 1,500 pounds crop residue per acre is left on the surface or if 30 percent of the ground is covered by residue after planting (fig. 14).

Reduced tillage systems use one or more tillage practices and leave enough crop residue on the surface to reduce the hazard of erosion. Reduced tillage is typically used in a grain-summer fallow or 3-year rotation using conventional equipment, including disks, chisels, cultivators, and conventional drills.

Two types of no-till systems are used in the survey area. No-till systems plant a crop into crop residue without tillage. Weeds are controlled by the use of herbicides in annual cropping systems and in ecological or chemical fallow cropping systems. Special equipment, such as a chemical herbicide applicator and a no-till drill, are typically required.

Irrigation water management involves supplying water to crops in a planned and efficient manner. It is achieved by controlling the rate, amount, and timing of irrigation to various soils. It uses the available irrigation water and supplies moisture in a manner that minimizes erosion and loss of plant nutrients. Water management also controls undesirable loss water and protects water quality. Because of the limited availability of water, few areas in the survey area are irrigated. The limited availability of water also increases the importance of irrigation water management. If sufficient water is obtained in the future, broader use of the irrigation water management systems can be utilized.

Irrigation methods that can be used in the survey area include furrow, border, sprinkler, and trickle irrigation. Furrow and border irrigation should be limited to areas that have slopes of not more than 3 percent. Sprinkler irrigation is suited to all of the tilled soils in the area. Trickle irrigation is suited to orchards and vineyards. Irrigation water should be applied at a rate and in an amount that meet crop needs and soil characteristics without causing excessive runoff or deep percolation.

Cover crops are necessary in orchards and vineyards and on soils left fallow during the rainy season (fig. 15). Cover crops provide protection from erosion and maintain or improve water penetration, soil tilth, and fertility. Cover crops can be volunteer native or naturalized plants. If a seeded cover crop is desired, a representative of the Natural Resources Conservation Service or the University of California Cooperative Extension can be consulted for a recommendation.

Erosion control is generally needed on sloping soils. As the steepness of the slope increases, the hazard of erosion increases. Erosion can be recognized by an accumulation of soil material at the base of the slope, in drainageways, and against fence lines or as rills and gullies on the slope.

Land leveling or smoothing, selecting the best method of irrigation, and controlling irrigation help to prevent erosion on irrigated soils. Other erosion-

Figure 14.—No-till seeding in an area of Wasioja-Polonio complex, 2 to 5 percent slopes. Proper management of crop residue protects the soil from erosion.

control methods include the use of cover crops, crop residue, and vegetative cover in rotation; proper tillage; and cross-slope farming.

Structural measures can also help to control erosion, either individually or in combination. These measures include diversions, grassed waterways, grade stabilization structures, water retention structures, and stream-bank stabilization.

Pasture management is needed in irrigated pastures to prevent soil deterioration, provide for maximum production, maintain a desirable plant community, and extend the life of the pasture. A pasture management program can include managing irrigation water, rotating grazing between a minimum of three fields, applying fertilizer, harrowing or dragging to scattering droppings, and clipping to maintain uniform growth. Grazing should begin when plants are 6 to 8 inches high, and livestock are removed when plants are 3 to 4 inches high.

Selection of an adapted plant mixture is important when a pasture is established. A representative of the Natural Resources Conservation Service or the University of California Cooperative Extension Service can be consulted for a specific recommendation.

Soils strongly influence the kind of crops and pasture plants that can be grown in an area. In areas that have similar climate and topography, the crops that can be grown are related closely to the kind of soil. The crops that are suited to the soils in the survey area are described under two broad categories: field crops and fruit and nut crops.

Field crops that are suited to the soils where irrigation water is available include alfalfa, sugar beets, carrots, and pasture. These crops are grown on soils on the alluvial plains, flood plains, and terraces south of Shandon. Grain-hay and small grain crops are mainly dry-farmed. Dry-farmed grain and grain-hay are suited to the large areas of moderately deep to deep, well drained sandy loams, calcareous loams, and clay loams in the northern and central parts of the survey area. Although grain crops include barley, oats, safflower, and wheat, most of the acreage is planted to barley.

Fruit crops that are suited to the soils in the survey area include apples and grapes. Apples are suited to deep soils on alluvial fans south of Shandon. Excellent quality wine grapes are suited to the soils on terraces and hills in Camatta Canyon, along Shell Creek, and south of Shandon.

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 that are 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. Only capability class and subclass are used in this survey.

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

Figure 15.—Cover crops in a vineyard south of Shandon minimize wind erosion and water erosion, maximize water infiltration, suppress dust, and minimize soil compaction.

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. Adding a small letter, *e, w, s,* or *c,* to the class numeral, for example, 2e, designates them. 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 for each major map unit component is given in table 5 and the “Detailed Soil Map Units” section.

Major Land Resource Areas

The land capability classification system is further refined by designating the major land resource area (MLRA) in which the soils in a unit occur. A major land resource area is a broad geographic area that has a distinct combination of climate, topography, vegetation, land use, and general type of farming (USDA, 1981). Parts of three of these nationally designated areas are in the survey area. These areas and their numbers are Central California Coastal Valleys, MLRA 14; Central California Coast Range, MLRA 15; and Sacramento and San Joaquin Valleys, MLRA 17. The major land resource area number is given for each soil in the detailed soil map unit descriptions.

MLRA 14, Central California Coastal Valleys.—About 12 percent of the survey area is in MLRA 14. This MLRA is characterized by alluvial fans, flood plains, and stream terraces in San Juan Valley and Camatta Canyon. The natural vegetation is dominantly annual grasses and forbs and includes some scattered oaks. Elevation ranges mainly from 335 to 640 meters (1,100 to 2,100 feet). The average annual precipitation ranges from 254 to 356 millimeters (10 to 14 inches), the average annual air temperature ranges from 14 to 18 degrees C (57 to 54 degrees F), and the average frost-free period ranges from 190 to 210 days.

In this survey area, most of this MLRA is used for irrigated crops, vineyards, dry-farmed grains, and livestock grazing.

MLRA 15, Central California Coast Range.—About 68 percent of the survey area is in MLRA 15. This MLRA is characterized by hills and mountains in the Caliente Range, Elkhorn Hills, Elkhorn Scarp, La Panza Range, Panorama Hills, San Juan Hills, and Temblor Range. The natural vegetation is dominantly annual grasses and forbs and includes some scattered shrubs, oaks, and juniper. Elevation ranges mainly from 305 to 1,555 meters (1,000 to 5,106 feet). The average annual precipitation ranges from 152 to 508 millimeters (6 to 20 inches), the average annual air temperature ranges from 7 to 18 degrees C (45 to 64 degrees F), and the average frost-free period ranges from 150 to 300 days.

In this survey area, most of this MLRA is used for dry-farmed grain, livestock grazing, wildlife habitat, and watershed.

MLRA 17, Sacramento and San Joaquin Valleys.—About 20 percent of the survey area is in MLRA 17. This MLRA is characterized by alluvial fans, alluvial flats, and the bolson floor on the Carrizo Plain. The natural vegetation is annual grasses and forbs. Elevation ranges mainly from 457 to 762 meters (1,500 to 2,500 feet). The average annual precipitation ranges from 203 to 305 millimeters (7 to 12 inches), the average annual air temperature ranges from 14 to 17 degrees C (57 to 63 degrees F), and the average frost-free period ranges from 175 to 250 days.

In this survey area, most of this MLRA is used for homesite development, irrigated crops, dry-farmed grain, livestock grazing, and wildlife habitat.

Important Farmlands

Two kinds of important farmland are recognized in this soil survey—prime farmland and additional farmland of statewide importance.

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 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.

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 in table 6. 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 the hazard or limitation has been overcome by corrective measures. The extent of each listed map unit is shown in table 4. The location is shown on the detailed soil maps. The soil qualities that affect use and management are described under the heading "Detailed Soil Map Units."

About 94,000 acres in the survey area, or nearly 17 percent of the area, would meet the requirements for prime farmland if an adequate and dependable supply of irrigation water were available.

Additional Farmland of Statewide Importance

This is land, in addition to prime farmland and unique farmland, that is of statewide importance for the production of food, feed, fiber, forage, and oilseed crops.

The criteria for defining and delineating this land are to be determined by the appropriate state agency or agencies. Generally, additional farmlands of statewide importance include those that are nearly prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Some may produce as high a yield as prime farmlands if conditions are favorable.

The map units in the survey area that are considered additional farmland of statewide importance are listed in table 7. 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 the hazard or limitation has been overcome by corrective measures. The extent of each listed map unit is shown in table 4. The location is shown on the detailed soil maps at the back of this publication. The soil qualities that affect use and management are described under the heading "Detailed Soil Map Units."

Rangeland

Rangeland is the dominant land use throughout the survey area, and most map units have been used for grazing. Climate, soils, and topography determine the kind and amount of vegetation produced. Effective rangeland management considers the relationship between the soils, vegetation, and water. The following paragraphs relate rangeland to the climate, ecological sites, and soils in the survey area. A description of possible management practices is also included.

Climate determines the growing season on rangeland. Natural vegetation begins growing with the first rain in the fall and continues until soil moisture is depleted in late spring. Annual plants die and perennial plants become dormant when the soil moisture is depleted. Rainfall increases from the southeast to the northwest in the survey area. Mean annual precipitation is as low as 6 to 8 inches in the southeast near the town of Fellows and as high as 12 to 14 inches in the northwest in the San Juan Valley. Because rainfall is nearly absent during the summer, only soils that have a higher available water capacity produce vegetation later into the season.

Table 8 shows, for each soil that supports rangeland vegetation, the ecological site; the potential annual production of vegetation in favorable, normal, and unfavorable years; the characteristic vegetation; and the average percentage of each species. An explanation of the column headings in the table follows.

An *ecological site* is the product of all the environmental factors responsible for its development. It has characteristic soils that have developed over time throughout the soil development process; a characteristic hydrology, particularly infiltration and runoff, that has developed over time; and a characteristic plant community (kind and amount of vegetation). The hydrology of a site is influenced by development of the soil and plant community. The vegetation, soils, and hydrology are all interrelated and influence 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.

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 temperature 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.

Potential natural vegetation—the grasses, forbs, and shrubs that make up most of the potential natural plant community on each soil—is listed by common name. Under *species composition by weight*, the expected percentage of the total annual production is given for each species making up the characteristic vegetation. The amount that can be used as forage depends on the kinds of grazing animals and on the grazing season.

Table 9 lists the common names, scientific names, and symbols for the plants listed in table 8. Table 9 can be used as an aid in correctly identifying plants and as a cross reference. The synonymy is from the USDA–NRCS National Plants Database (USDA–NRCS, 2002).

An ecological site is correlated with each soil in the survey area (fig. 16). The soils occur on corresponding topography and landforms. The topography ranges from nearly level on the lake plains and flood plains to very steep in the Caliente, La Panza, and Temblor Ranges. The valleys in the northeast part of the survey area are the lowest lying landforms. Bitterwater Creek, San Juan Creek, and Shell Creek drain into Bitterwater Valley, San Juan Valley, and Camatta Canyon, respectively. Average annual precipitation ranges from 10 to 14 inches. Landforms range in relief from the nearly level flood plains to steep stream terraces. The soils are mostly very deep, have a high available water capacity, and support a vegetative cover of mostly annual grasses and forbs with a few perennial grasses. The ecological sites on the flood plains include Sandy Bottomland and Loamy Bottomland. Elder sandy loam is typical of the soils on flood plains and normally produces about 1,500 pounds of vegetation per acre per year. The ecological sites on the stream terraces include Loamy Upland 9–13” p.z., Limy Upland (shallow) 9–12” p.z., and Coarse Loamy. Arbuckle sandy loam is typical of the soils on the stream terraces and normally produces about 1,600 pounds of vegetation per acre per year.

Carrizo Plain and Elkhorn Plain extend from the northwest to the southeast across the center of the survey area and drain into Soda Lake. Average annual precipitation ranges from 8 to 10 inches. Landforms include playas, lake plains, and flats. The soils are mostly very deep and have moderate to very high available water capacity. The vegetation is mostly annual grasses and forbs but includes a few perennial grasses. The ecological sites on the plains include Fine-loamy Flat, Clayey, and Loamy Bottomland. Chicote silty clay loam is typical of the soils on the lake plain adjacent to Soda Lake. Excessive salts limit forage production. Chicote silty clay loam normally

Figure 16.—An area of Gaviota-Rock outcrop complex, 30 to 75 percent slopes, in the background. The vegetation on the Gaviota soil is mainly California buckwheat and chamise. Blue oaks and annual grasses grow on the soil in the foreground.

produces 1,800 pounds of vegetation per acre per year. Capay clay occurs on some flats. This clayey soil is especially vulnerable to compaction if it is grazed while too wet. It also shrinks and swells with changes in moisture content. The shrinking and swelling of the soil can tilt fence posts or lift them out of the soil. Capay clay has a high available water capacity and normally produces about 2,200 pounds of vegetation per acre per year. Polonio clay loam and Yeguas loam represent the soils in the higher areas on the Carrizo and Elkhorn Plains. These soils have high or very high available water capacity and normally produce 2,200 pounds of vegetation per acre per year.

Hills and mountains surround the Carrizo and Elkhorn Plains. The La Panza Range and San Juan Hills are to the northwest, the Caliente Range is to the southwest, and the Temblor Range is to the east. Average annual precipitation ranges from 6 to 14 inches. The following paragraphs describe five soils that are representative of the rangeland in these hills and mountains.

Pyxo loam occurs on the southeast slopes of the Temblor Range near the town of Fellows. With an average annual precipitation of 6 to 8 inches per year, it is the driest site in the survey area. Pyxo loam is moderately deep and has a low available water capacity. It supports the Loamy Upland 9–13” p.z. ecological site and normally produce 1,200 pounds of vegetation per acre per year. This plant community includes saltbush as well as annual grasses and forbs.

Beam fine sandy loam occurs in the Temblor and La Panza Ranges. Average annual precipitation ranges from 8 to 10 inches. Beam fine sandy loam is shallow and has a very low available water capacity. Beam soils support the Limy Upland (shallow) 9–12” p.z. ecological site and normally produce 1,000 pounds of vegetation per acre per year.

Panoza loam occurs throughout all the hills and mountains in the survey area. Average annual precipitation ranges from 8 to 10 inches. Panoza loam is moderately deep and has a low available water capacity. Panoza soils support the Loamy Upland 9–13” p.z. ecological site and normally produce 1,200 pounds of vegetation per acre per year.

Aramburu very channery loam occurs in the Temblor Range. Average annual precipitation ranges from 9 to 10 inches. The Aramburu series is one of three series in the survey area that contain more than 35 percent rock fragments throughout. Aramburu very channery loam is moderately deep and has a low available water capacity. Aramburu soils support the Shaly Fine Loamy ecological site and normally produce 2,600 pounds of vegetation per acre per year. Scattered oaks occur in areas of this soil.

Aido clay occurs in the Temblor and La Panza Ranges. Average annual precipitation ranges from

8 to 11 inches. This clayey soil is especially vulnerable to compaction if it is grazed while too wet. It also shrinks and swells with changes in moisture content. The shrinking and swelling of the soil can tilt fence posts or lift them out of the soil. Aido soils support the Clayey Hills 10–14” p.z. ecological site and normally produce about 2,100 pounds of vegetation per acre per year.

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,” which is available in local offices of the Natural Resources Conservation Service.

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.

Major rangeland management practices that are needed in the area include prescribed grazing, water development, fencing, brush management, range planting, and development of animal trails and walkways.

Prescribed grazing is the controlled harvest of vegetation by grazing or browsing animals, managed with the intent to achieve a specified objective. The health and vigor of selected plants are improved or maintained by the proper application of a grazing prescription. Other benefits of prescribed grazing include sustained animal health, improved water quality, and decreased soil erosion. Factors involved in the design of a grazing prescription include level and distribution of utilization, season of use, type of grazing animal, type of vegetation (both beneficial and harmful), water distribution, and stocking rate.

Water developments provide clean, dependable water to selected sites for livestock and wildlife. A water supply can control the distribution of livestock and can influence the distribution of wildlife. Other benefits from water developments include sustained animal health and reduced pressure on riparian areas. Factors involved in the planning of a water development include type and number of animals, the terrain, season of use, soil limitations on selected sites, and cost of installation and maintenance.

Fencing is used to form a barrier to livestock, wildlife, or people and can facilitate other conservation practices that treat natural resources (fig. 17). Factors involved in the planning of a fencing project include ease of livestock management, wildlife movement, soil limitations on selected sites, cost of construction and maintenance, and legal considerations.

Brush management is the removal, reduction, or manipulation of shrubby plants. It can be conducted by chemical, mechanical, or biological means or by prescribed burning. Brush management can create a desired plant community. Other benefits include improvement of forage, enhancement of wildlife habitat, removal of noxious plants, and reduction in the hazard of wildfires. Factors involved in the planning of brush management include the form of management, growth stage of the targeted shrubs, cost of implementation and follow-up, availability of alternate forage during implementation, and potential hazards to other natural resources.

Range planting is creating a desired plant community by establishing vegetation that is adapted to the area. Benefits include improvement of forage, browse, or cover for livestock and wildlife and protection of other natural resources. Factors involved in the planning of a range planting include the nutritional or other value of selected species of vegetation, capability of the soil being planted, time needed for establishment, cost of implementation, and availability of alternative forage during establishment.

Animal trails and walkways provide access and ease of movement for livestock or wildlife through difficult terrain. Benefits include improved grazing proficiency; better access to forage, water, and shelter; and easier handling of livestock. Factors involved in the planning of a trail or walkway include the cost of implementation and maintenance and the hazard of erosion or other damage to natural resources.

Technical assistance in managing rangeland can be obtained from the local offices of the Natural Resources Conservation Service, the Cooperative Extension Service, and the Upper Salinas-Las Tablas Resource Conservation District.

Figure 17.—Pasture in the San Juan Valley. The area to the left of the fence is lightly grazed. The area to the right is heavily grazed.

Recreational Development

The soils of the survey area are rated in the tables 10a and 10b according to limitations that affect their suitability for recreational development. The ratings are both descriptive 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. *Slight* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Moderate* indicates that the soil has features that are moderately favorable for the specified use. Special planning, design, or installation may overcome, or minimize, these limitations. Fair performance and moderate maintenance can be expected. *Severe* 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).

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 10a and 10b 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

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 fragments. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Major Management Considerations

Depth to bedrock.—Bedrock is close enough to the surface to restrict the use.

Depth to pan.—Dense, hard, somewhat impervious cemented soil material at a specific depth restricts the use.

Dusty.—Soil particles detach easily and cause dust.

Flooding.—The soil is flooded by moving water from stream overflow, runoff, or high tides.

Fragments.—The profile contains enough rock fragments of a specific size to adversely affect site preparation or trafficability.

Organic matter (OM).—A high content of organic matter at some depth, sometimes expressed as a Unified soil class (PT, OL, or OH), can result in poor engineering properties and subsidence. A low content of organic matter can restrict the growth of plants.

Permeability.—The movement of water through the soil adversely affects the specified use. The permeability may be either too slow or too fast.

Ponding.—Standing water on soils in closed depressions that is removed only by percolation or evapotranspiration.

Salinity (EC).—Excess water-soluble salts in the soil restrict the growth of most plants.

Sand or sandy texture.—At some depth the content of sand or a sandy texture results in soil that is soft and loose, droughty, and low in fertility or is too fine to use as gravel.

Slope.—The slope is steep enough that special practices are required to ensure satisfactory performance of the soil.

Sodicity (SAR).—Excess exchangeable sodium, which imparts poor physical properties, restricts the growth of plants.

Surface clay.—The content of clay or clayey texture of the surface layer results in a soil that is slippery and sticky when wet and slow to dry. The soil climate may modify the limitation.

Wetness.—Wetness near the surface or a high water tables affects the growth of plants and the construction of facilities.

Picnic Areas

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 wetness, ponding, flooding, permeability, and fragments. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Major Management Considerations

Depth to bedrock.—Bedrock is close enough to the surface to restrict the use.

Depth to pan.—Dense, hard, somewhat impervious cemented soil material at a specific depth restricts the use.

Dusty.—Soil particles detach easily and cause dust.

Flooding.—The soil is flooded by moving water from stream overflow, runoff, or high tides.

Fragments.—The profile contains enough rock fragments of a specific size to adversely affect site preparation or trafficability.

Organic matter (OM).—A high content of organic matter at some depth, sometimes expressed as a Unified soil class (PT, OL, or OH), can result in poor engineering properties and subsidence. A low content of organic matter can restrict the growth of plants.

Permeability.—The movement of water through the soil adversely affects the specified use. The permeability may be either too slow or too fast.

pH.—The pH of the soil is too low (acid) or too high (basic) for the growth of most plants.

Ponding.—Standing water on soils in closed depressions that is removed only by percolation or evapotranspiration.

Salinity (EC).—Excess water-soluble salts in the soil restrict the growth of most plants.

Sand or sandy texture.—At some depth the content of sand or a sandy texture results in soil that is soft and loose, droughty, and low in fertility or is too fine to use as gravel.

Slope.—The slope is steep enough that special practices are required to ensure satisfactory performance of the soil.

Sodicity (SAR).—Excess exchangeable sodium, which imparts poor physical properties, restricts the growth of plants.

Surface clay.—The content of clay or clayey texture of the surface layer results in a soil that is slippery and sticky when wet and slow to dry. The soil climate may modify the limitation.

Wetness.—Wetness near the surface or a high water tables affects the growth of plants and the construction of facilities.

Playgrounds

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, that influence trafficability, and the growth of vegetation after development. The main concerns affecting the development of playgrounds are slope and fragments on the surface. 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, percent clay or sand, organic matter, depth to soil wetness, ponding, flooding, permeability, and fragments. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Major Management Considerations

Depth to bedrock.—Bedrock is close enough to the surface to restrict the use.

Depth to pan.—Dense, hard, somewhat impervious cemented soil material at a specific depth restricts the use.

Dusty.—Soil particles detach easily and cause dust.

Flooding.—The soil is flooded by moving water from stream overflow, runoff, or high tides.

Fragments.—The profile contains enough rock fragments of a specific size to adversely affect site preparation or trafficability.

Organic matter (OM).—A high content of organic matter at some depth, sometimes expressed as a Unified soil class (PT, OL, or OH), can result in poor engineering properties and subsidence. A low content of organic matter can restrict the growth of plants.

Permeability.—The movement of water through the soil adversely affects the specified use. The permeability may be either too slow or too fast.

pH.—The pH of the soil is too low (acid) or too high (basic) for the growth of most plants.

Ponding.—Standing water on soils in closed depressions that is removed only by percolation or evapotranspiration.

Salinity (EC).—Excess water-soluble salts in the soil restrict the growth of most plants.

Sand or sandy texture.—At some depth the content of sand or a sandy texture results in soil that is soft and loose, droughty, and low in fertility or is too fine to use as gravel.

Slope.—The slope is steep enough that special practices are required to ensure satisfactory performance of the soil.

Sodicity (SAR).—Excess exchangeable sodium, which imparts poor physical properties, restricts the growth of plants.

Surface clay.—The content of clay or clayey texture of the surface layer results in a soil that is slippery and sticky when wet and slow to dry. The soil climate may modify the limitation

Wetness.—Wetness near the surface or a high water tables affects the growth of plants and the construction of facilities.

Paths and Trails

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 fragments on the surface, depth to soil wetness, ponding, flooding, slope, and texture of the surface layer, or percent sand, clay, or organic matter.

Major Management Considerations

Dusty.—Soil particles detach easily and cause dust.

Flooding.—The soil is flooded by moving water from stream overflow, runoff, or high tides.

Fragments.—The profile contains enough rock fragments of a specific size to adversely affect site preparation or trafficability.

K-factor.— The soil is in a potential water erosion class.

Organic matter (OM).—A high content of organic matter at some depth, sometimes expressed as a Unified soil class (PT, OL, or OH), can result in poor engineering properties and subsidence. A low content of organic matter can restrict the growth of plants.

Ponding.—Standing water on soils in closed depressions that is removed only by percolation or evapotranspiration.

Sand or sandy texture.—At some depth the content of sand or a sandy texture results in soil that is soft and loose, droughty, and low in fertility or is too fine to use as gravel.

Slope.—The slope is steep enough that special practices are required to ensure satisfactory performance of the soil.

Surface clay.—The content of clay or clayey texture of the surface layer results in a soil that is slippery and sticky when wet and slow to dry. The soil climate may modify the limitation.

Wetness.—Wetness near the surface or a high water tables affects the growth of plants and the construction of facilities.

Off-Road Motorcycle Trails

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 fragments on the surface, slope, depth to soil wetness, ponding, flooding, and texture of the surface layer, or the amount of clay, sand, or organic matter.

Major Management Considerations

Dusty.—Soil particles detach easily and cause dust.

Flooding.—The soil is flooded by moving water from stream overflow, runoff, or high tides.

Fragments.—The profile contains enough rock fragments of a specific size to adversely affect site preparation or trafficability.

Organic matter (OM).—A high content of organic matter at some depth, sometimes expressed as a Unified soil class (PT, OL, or OH), can result in poor engineering properties and subsidence. A low content of organic matter can restrict the growth of plants.

Ponding.—Standing water on soils in closed depressions that is removed only by percolation or evapotranspiration.

Sand or sandy texture.—At some depth the content of sand or a sandy texture results in soil that is soft and loose, droughty, and low in fertility or is too fine to use as gravel.

Slope.—The slope is steep enough that special practices are required to ensure satisfactory performance of the soil.

Surface clay.—The content of clay or clayey texture of the surface layer results in a soil that is slippery and sticky when wet and slow to dry. The soil climate may modify the limitation.

Wetness.—Wetness near the surface or a high water tables affects the growth of plants and the construction of facilities.

Lawns, Landscaping, and Golf Fairways

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 soil wetness, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in 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 soil wetness, ponding, slope, fragments on the surface, 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.

Major Management Considerations

Available water capacity (AWC).—The available water capacity may be low enough to restrict the growth of plants.

Calcium carbonates.—The content of calcium carbonates may be high enough to restrict the growth of plants.

Depth to bedrock.—Bedrock is close enough to the surface to restrict the use.

Depth to pan.—Dense, hard, somewhat impervious cemented soil material at a specific depth restricts the use.

Flooding.—The soil is flooded by moving water from stream overflow, runoff, or high tides.

Fragments.—The profile contains enough rock fragments of a specific size to adversely affect site preparation or trafficability.

Organic matter (OM).—A high content of organic matter at some depth, sometimes expressed as a Unified soil class (PT, OL, or OH), can result in poor engineering properties and subsidence. A low content of organic matter can restrict the growth of plants.

pH.—The pH of the soil is too low (acid) or too high (basic) for the growth of most plants.

Ponding.—Standing water on soils in closed depressions that is removed only by percolation or evapotranspiration.

Salinity (EC).—Excess water-soluble salts in the soil restrict the growth of most plants.

Sand or sandy texture.—At some depth the content of sand or a sandy texture results in soil that is soft and loose, droughty, and low in fertility or is too fine to use as gravel.

Slope.—The slope is steep enough that special practices are required to ensure satisfactory performance of the soil.

Sodicity (SAR).—Excess exchangeable sodium, which imparts poor physical properties, restricts the growth of plants.

Sulfur content.—The content of sulfur in the soil may be high enough to restrict plant growth.

Surface clay.—The content of clay or clayey texture of the surface layer results in a soil that is slippery and sticky when wet and slow to dry. The soil climate may modify the limitation.

Wetness.—Wetness near the surface or a high water tables affects the growth of plants and the construction of facilities.

Wildlife Habitat

The wildlife in the survey area are a valuable resource. Wildlife improve the quality of the environment, act as indicators of pollution, and provide numerous opportunities for recreation. Wildlife-related activities, such as nature study, bird watching, and hunting, have a positive effect on the economy of the area. Many types of wildlife help in the natural control of weeds, insects, and animal pests.

Important game species, such as tule elk, California mule deer, black-tailed deer, feral pig, chukar, California quail, band-tailed pigeon, and mourning dove, are hunted within the survey area. The feral pig is prized as a game animal, but it can cause severe damage to crops and range. Ground squirrels and starlings also cause damage to crops and may require control measures.

Badgers and coyotes are useful as predators that hunt rodents. Golden eagles and red-tailed hawks also feed on rodents. Dove, quail, and such small birds as sparrows and finches eat a variety of seeds, many of which are considered weeds on rangeland or cropland. Woodpeckers and swallows eat insects, which can be harmful to crops and trees.

Human activities have varying effects on wildlife populations. Many wildlife species, such as house sparrows, blackbirds, and ground squirrels, can tolerate human activities and actually thrive in close association with people. In contrast, people threaten the existence of other species. Threatened, endangered, or rare species are important wildlife elements in the survey area. Land managers should anticipate the effect of their practices on these species and their habitats.

Soil is a necessary component of wildlife habitat and contributes to the provision of cover, food, and water. It provides cover directly to burrowing animals and supports vegetation that provides cover for other animals. This same vegetation may also provide food for wildlife. Soil provides the substrate to impound water in creeks, lakes, and ponds, which are used by wildlife.

Figure 18.—A view of the Carrizo Plain looking north. Soda Lake, seen in the middle of the plain, provides wetland habitat for many water fowl during the winter.

Coyotes, kit foxes, ground squirrels, and kangaroo rats are some of the animals that excavate burrows to escape predators and the summer sun. When deserted, the burrows are used by burrowing owls, lizards, rattlesnakes, tarantulas, and beetles (Sierra Club, 2001).

Water is in short supply in the Carrizo Plain Area. Although a few perennial creeks are in the northern part of the area, many creeks and springs—and even Soda Lake—may dry up by midsummer. The development of supplemental water supplies may be necessary to encourage wildlife to occupy a site. Water may be impounded, or livestock troughs and guzzlers may be installed.

The soils of the Carrizo Plain Area are aggregated into five major habitat groups. Each habitat group consists of soils that occupy similar landscape positions, have similar properties, and produce or have the potential to produce similar vegetation. The description of each group includes the general location in the survey area, the habitat name from the California Wildlife-Habitat Relationships (WHR) System (Mayer and Laudenslayer, 1988), a general description of vegetation and wildlife, a list of the related soils from the General Soil Map, the suitability of the soils for use by wildlife, and some management options. Each group is an aggregate of units from the General Soil Map. Each soil series in the General Soil Map unit has a peculiar set of soil properties, including landscape position, slope, drainage, depth, and salt content. The soils are rated for their suitability for animal burrows and their capacity to serve as sites for water impoundments. The management options address the development of cover, food, and water for wildlife.

The five habitat groups are Playa and Alkali Desert Scrub, Annual Grassland Plains, Valley Foothill Riparian, Annual Grassland and Scrub Hills, and Oak and Juniper Woodland.

Playa and Alkali Desert Scrub

The Playa habitat group is on Soda Lake on the basin floor of the Carrizo Plain. Soda Lake is an ephemeral lake that collects all of the water draining from the surrounding watershed (fig. 18). In winter, it fills with water and extends to 3,000 acres (Sierra Club, 2001). In dry years, it may be diminished to a salt-encrusted playa. The water in Soda Lake is brackish. The Alkali Desert Scrub habitat is on the lower lake terraces surrounding Soda Lake.

Soda Lake, whether wet or dry, is largely unvegetated. Vegetation in the Alkali Desert Scrub habitat is mostly saltbush and saltgrass. In winter and spring, the lake provides important habitat for migratory birds, including shorebirds, waterfowl, and sandhill crane (Sierra Club, 2001).

The Playa and Alkali Desert Scrub habitat group occurs in general soil map unit 1. The soils in this unit are mostly very deep, nearly level to moderately sloping, somewhat poorly drained and poorly drained, and formed in fine-textured lacustrine sediments and alluvium on the bolson floor. The Chicote soils are dominant and are associated with Playas. Chicote soils are poorly suited for animal burrows because they are fine textured, have a high content of gypsum, and are subject to ponding. Chicote soils and Playas are well suited as sites for water impoundments.

Only salt-tolerant vegetation should be planted. Soda Lake provides seasonal water.

Annual Grassland Plains

The Annual Grassland Plains habitat group occurs on the higher parts of the Carrizo Plain, on the Elkhorn Plain, and on the higher parts of Camatta Canyon. Some areas in Camatta Canyon and along San Juan Creek have been developed as orchards and vineyards.

The vegetation in this habitat consists of annual grasses and forbs, including California needlegrass, wild oats, filaree, soft chess, and turkey mullein. Pronghorn and Tule elk have been reintroduced to the Carrizo Plain and Elkhorn Plain. Other kinds of wildlife attracted to these areas include valley quail, western meadowlark, western kingbird, blacktail jackrabbit, and skunk.

This habitat group occurs in general soil map units 2, 3, and 5. The soils in these units are mostly very deep, nearly level to moderately sloping, well drained soils that formed in alluvium from sedimentary rocks on alluvial fans, alluvial flats, and stream terraces. The Polonio, Padres, Wasioja, and Arbuckle soils dominate these units and are mostly well suited to habitat for burrowing animals. The moderately fine texture of the Polonio and Wasioja soils, however, is a limitation. The Polonio soils are well suited as sites for water impoundments. The Padres, Wasioja, and Arbuckle soils are limited as sites for water impoundments because of seepage and excessive slope.

Cover can be improved around cropland by planting field hedgerows or maintaining naturally occurring vegetation in adjacent uncultivated areas. Food supplies may be increased by leaving grain standing in the field over the winter or by planting cover crops in orchards and vineyards. Habitat can be improved by using a grazing system that increases the amount of ground cover and by promoting the growth of species that are palatable to livestock and wildlife. Riparian areas are better suited to wildlife if grazing is managed to protect the characteristic plant community. Installing raptor perches and nesting boxes on field borders can help to control rodent problems.

Valley Foothill Riparian

The Valley Foothill Riparian habitat group includes riparian areas along the larger creeks, particularly Bitterwater Creek, San Juan Creek, and lower Camatta Canyon. Other smaller riparian corridors occur along the smaller creeks. Some areas of this habitat group include riverine habitat.

The vegetation in this habitat consists of riparian trees, shrubs, and vines. Trees include cottonwood and willow. The understory includes willow, mule fat, and annual grasses and forbs. Trees and shrubs provide cover for wildlife and produce nuts and other fruit, buds, catkins, twigs, bark, or foliage that wildlife eat. Some of the wildlife attracted to these areas are amphibians, ducks, deer, bats, and mourning dove.

This habitat group occurs throughout general soil map unit 4 and in parts of units 3, 5, and 8. The soils in these units are mostly very deep, nearly level to moderately sloping, well drained soils that formed in alluvium from sedimentary rocks. These soils are on alluvial fans and flood plains. Elder and Metz soils and Xerofluvents dominate this unit. They are associated with Riverwash. The Elder soil is well suited to habitat for burrowing animals, but the other soils are poorly suited because of coarse textures and flooding. All of the soils are limited as sites for water impoundments because of seepage.

Protecting riparian vegetation and snags helps to maintain this habitat and provides perches for raptors and other birds. Riparian areas are better suited to wildlife if grazing is managed to protect the characteristic plant community. Livestock troughs and guzzlers can provide supplemental water.

Annual Grassland and Scrub Hills

The Annual Grassland and Scrub Hills habitat group occurs at the lower elevations of the Caliente, La Panza, and Temblor Ranges. Alkali desert scrub may occur on the east and south aspects of the Temblor Range and the south aspect of the Caliente Range. Coastal scrub may occur on some west aspects. Mixed chaparral occurs on the northern parts of La Panza Range and on Caliente Mountain. Annual grassland occurs on hills throughout the unit.

The vegetation in this habitat consists of mostly annual grasses with or without shrubs, including goldenbush, buckwheat, and some ephedra. Examples of other shrubs include mountain-mahogany, toyon, ceanothus, California sagebrush, and quailbush. Aido and Ayar soils only support annual grasses and forbs. Cieneba and Gaviota soils support chaparral, including chamise and buckbrush. Pyxo soils support saltbush. Wildlife attracted to this habitat group include coyote, black-tailed deer, California mule deer, meadowlark, and horned lark.

This habitat group occurs in general soil map units 6, 7, 11, 12, 13, and 14. The soils in these units are mostly shallow to moderately deep, strongly sloping to very steep, well drained and somewhat excessively drained soils that formed in residuum weathered from sandstone, shale, or granitic rocks on hills and mountains. Balcom, Nacimiento, Bellyspring, San Timoteo, San Andreas, Beam, Aido, Ayar, Godde, Semper, Muranch, Cieneba, and Pyxo soils are the dominant soils. They are associated with Badlands and Rock outcrop. Balcom, San Timoteo, San Andreas, and Pyxo soils are well suited to habitat for burrowing animals. The other soils are suited to habitat for burrowing animals but are limited by moderately coarse, moderately fine, or fine textures; rock fragments; and depth to bedrock. Semper soils are limited by the high content of gypsum. Most soils are limited as sites for water impoundments by excessive slope and depth to bedrock; the Bellyspring, San Timoteo, San Andreas, Semper, and Muranch soils are also limited by seepage.

Habitat can be improved by using a grazing system that increases the amount of ground cover and promotes the growth of species that are palatable to livestock and wildlife. Riparian areas within the habitat group are better suited to wildlife if grazing is managed to protect the characteristic plant community. Brush clearing and thinning should be planned to enhance the habitat by retaining the most productive food trees and patches of shrubs for cover. Livestock troughs and guzzlers can provide supplemental water.

Oak and Juniper Woodland

The Oak and Juniper Woodland habitat group occurs at the higher elevations in the Caliente, La Panza, and Temblor Ranges.

The vegetation in this habitat group consists of Alvord oak, blue oak, and California juniper with an understory of annual grasses with or without buckwheat, goldenbush, and buckbrush. A minor soil, Gaviota, supports chaparral, including chamise and buckbrush. Trees and shrubs provide cover for wildlife and produce nuts and other fruit, buds, catkins, twigs, bark, and foliage that wildlife eat. Wildlife attracted to this habitat group include band-tailed pigeon, mourning dove, woodpeckers, squirrels, gray fox, and deer.

This habitat group occurs in general soil map units 8, 9, and 10. The soils in these units are mostly shallow to moderately deep, moderately sloping to very steep, well drained soils that formed in residuum weathered from sedimentary rocks. Aramburu, Saltos, Tajea, Saucito, Akad, Shimmon, and Santa Lucia soils are the dominant soils. They are associated with Rock outcrop. Most of these soils are poorly suited to habitat for burrowing animals because of rock fragments and moderately fine textures and are limited as sites for water impoundments because of excessive slope and depth to bedrock.

Oaks and junipers that are past maturity, as well as their snags, should be retained at the rate of 1 or 2 per acre to provide optimum sites for perching, nesting, and food storage for birds and cavity nesters. Brush clearing and thinning should be planned to enhance the habitat by retaining the most productive food trees and patches of shrubs for cover. Acorns from oaks and berries and seeds from chaparral and other shrubs provide some feed. Habitat can be improved by using a grazing system that increases the amount of ground cover and promotes the growth of species that are palatable to livestock and wildlife. Riparian areas within the oak and juniper woodland habitat group are better suited to wildlife if grazing is managed to protect the characteristic plant community. Fallen trees and branches also provide areas for feeding, perching, and sheltering. Livestock troughs and guzzlers can provide supplemental water.

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 estimated data and test data in the “Soil Properties” section.

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 within a depth of 5 or 6 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 grain-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 or 6 feet of the surface, soil wetness, depth to a seasonal high water table, 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, earth fill, 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 11a and 11b show the degree and kind of soil limitations that affect dwellings with and without basements, small commercial buildings, local roads and streets, and shallow excavations.

The ratings in the tables are both descriptive 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. *Slight* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Moderate* 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. *Severe* 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 soil wetness, ponding, flooding, subsidence, linear extensibility (LEP or 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 soil wetness, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount, size, and depth of 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 soil wetness, ponding, flooding, subsidence, linear extensibility (LEP or 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, size, and depth of fragments.

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 coarse fragments, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal soil wetness, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to soil wetness, and linear extensibility (LEP or shrink-swell potential) influence the resistance to sloughing.

The ease of digging, filling, and compacting is affected by the depth to bedrock, a cemented pan, or a very firm dense layer; coarse fragment content; soil texture; and slope. The depth to a seasonal high water table and the susceptibility of the soil to flooding affects the time of the year that excavations can be made. Soil texture and depth to the water table affect the resistance of the excavation walls or banks to sloughing or caving.

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 soil wetness, ponding, flooding, the amount of coarse fragments, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (LEP or shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

Major Management Considerations For Dwellings Without Basements

Depth to bedrock.—Bedrock is close enough to the surface to restrict the use.
- Onsite investigation is needed to identify areas where the soil is deep enough for the construction of dwellings.
- Where slopes are more than 8 percent, the cuts needed to provide a level building site can expose the bedrock.
- The bedrock can make a good base for the foundation.
- Frequent irrigation cycles and controlled application rates are needed to maintain vegetation.

Depth to pan.—Dense, hard, somewhat impervious cemented soil material at a specific depth restricts the use.
- Onsite investigation is needed to identify areas where the soil is deep enough for the construction of dwellings.
- Where slopes are more than 8 percent, the cuts needed to provide a level building site can expose the cemented pan.
- The pan can make a good base for the foundation.
- Because of the possibility of a perched water table, frequent irrigation cycles and controlled application rates are needed to maintain vegetation.
- If deep-rooted plants, such as trees, are planted, the pan should be ripped or broken to provide greater rooting depth.

Flooding.—The soil is flooded by moving water from stream overflow, runoff, or high tides.
- The hazard of flooding should be considered before buildings or capital improvements are planned or constructed.
- Buildings, roads, and streets should be located above the expected level of flooding.
- Dikes and channels that have outlets for floodwater can protect buildings from flooding.

Fragments.—The profile contains enough rock fragments of a specific size to adversely affect site preparation or trafficability.

Organic matter (OM).—A high content of organic matter at some depth, sometimes expressed as a Unified soil class (PT, OL, or OH), can result in poor engineering properties and subsidence. A low content of organic matter can restrict the growth of plants.

Ponding.—Standing water on soils in closed depressions that is removed only by percolation or evapotranspiration.

Shrink-swell (LEP).—The shrinking of soil when

dry and the swelling when wet is expressed as the linear extensibility percent (LEP). Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.
• Properly designing foundations and footings and diverting runoff away from buildings help to prevent the structural damage caused by shrinking and swelling.

Slope.—The slope is steep enough that special practices are required to ensure satisfactory performance of the soil.
• Excavation for roads and buildings increases the hazard of erosion.
• During construction, all bare ground should be mulched. A ground cover should be established to prevent excessive erosion during periods of high rainfall.

Wetness.—Wetness near the surface or a high water tables affects the growth of plants and the construction of facilities.
• A drainage system is needed if roads and building foundations are constructed.

Major Management Considerations For Dwellings With Basements

Depth to bedrock.—Bedrock is close enough to the surface to restrict the use.
• Onsite investigation is needed to identify areas where the soil is deep enough for the construction of dwellings.
• Where slopes are more than 8 percent, the cuts needed to provide a level building site can expose the bedrock.
• The bedrock can make a good base for the foundation.
• Frequent irrigation cycles and controlled application rates are needed to maintain vegetation.

Depth to pan.—Dense, hard, somewhat impervious cemented soil material at a specific depth restricts the use.
• Onsite investigation is needed to identify areas where the soil is deep enough for the construction of dwellings.
• Where slopes are more than 8 percent, the cuts needed to provide a level building site can expose the cemented pan.
• The pan can make a good base for the foundation.
• Because of the possibility of a perched water table, frequent irrigation cycles and controlled application rates are needed to maintain vegetation.
• If deep-rooted plants, such as trees, are planted, the pan should be ripped or broken to provide greater rooting depth.

Flooding.—The soil is flooded by moving water from stream overflow, runoff, or high tides.
• The hazard of flooding should be considered before buildings or capital improvements are planned or constructed.
• Buildings, roads, and streets should be located above the expected level of flooding.
• Dikes and channels that have outlets for floodwater can protect buildings from flooding.

Fragments.—The profile contains enough rock fragments of a specific size to adversely affect site preparation or trafficability.

Organic matter (OM).—A high content of organic matter at some depth, sometimes expressed as a Unified soil class (PT, OL, or OH), can result in poor engineering properties and subsidence. A low content of organic matter can restrict the growth of plants.

Ponding.—Standing water on soils in closed depressions that is removed only by percolation or evapotranspiration.
• A drainage system is needed if roads and building foundations are constructed.

Shrink-swell (LEP).—The shrinking of soil when dry and the swelling when wet is expressed as the linear extensibility percent (LEP). Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.
• Properly designing foundations and footings and diverting runoff away from buildings help to prevent the structural damage caused by shrinking and swelling.

Slope.—The slope is steep enough that special practices are required to ensure satisfactory performance of the soil.
• Excavation for roads and buildings increases the hazard of erosion.
• During construction, all bare ground should be mulched. A ground cover should be established to prevent excessive erosion during periods of high rainfall.

Wetness.—Wetness near the surface or a high water tables affects the growth of plants and the construction of facilities.
• A drainage system is needed if roads and building foundations are constructed.

Major Management Considerations For Small Commercial Buildings

Depth to bedrock.—Bedrock is close enough to the surface to restrict the use.
• Onsite investigation is needed to identify areas where the soil is deep enough for the construction of dwellings.

• Where slopes are more than 8 percent, the cuts needed to provide a level building site can expose the bedrock.
• The bedrock can make a good base for the foundation.
• Frequent irrigation cycles and controlled application rates are needed to maintain vegetation.

Depth to pan.—Dense, hard, somewhat impervious cemented soil material at a specific depth restricts the use.
• Onsite investigation is needed to identify areas where the soil is deep enough for the construction of dwellings.
• Where slopes are more than 4 percent, the cuts needed to provide level building sites can expose the cemented pan.
• The pan can make a good base for the foundation.
• Because of the possibility of a perched water table, frequent irrigation cycles and controlled application rates are needed to maintain vegetation.
• If deep-rooted plants, such as trees, are planted, the pan should be ripped or broken to provide greater rooting depth.

Flooding.—The soil is flooded by moving water from stream overflow, runoff, or high tides.
• The hazard of flooding should be considered before buildings or capital improvements are planned or constructed.
• Buildings, roads, and streets should be located above the expected level of flooding.
• Dikes and channels that have outlets for floodwater can protect buildings from flooding

Fragments.—The profile contains enough rock fragments of a specific size to adversely affect site preparation or trafficability.

Organic matter (OM).—A high content of organic matter at some depth, sometimes expressed as a Unified soil class (PT, OL, or OH), can result in poor engineering properties and subsidence. A low content of organic matter can restrict the growth of plants.

Ponding.—Standing water on soils in closed depressions that is removed only by percolation or evapotranspiration.
• A drainage system is needed if roads and building foundations are constructed.

Shrink-swell (LEP).—The shrinking of soil when dry and the swelling when wet is expressed as the linear extensibility percent (LEP). Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.
• Properly designing foundations and footings and diverting runoff away from buildings help to prevent the structural damage caused by shrinking and swelling.

Slope.—The slope is steep enough that special practices are required to ensure satisfactory performance of the soil.
• Excavation for roads and buildings increases the hazard of erosion.
• During construction, all bare ground should be mulched. A ground cover should be established to prevent excessive erosion during periods of high rainfall.

Wetness.—Wetness near the surface or a high water tables affects the growth of plants and the construction of facilities.
• A drainage system is needed if roads and building foundations are constructed.

Major Management Considerations for Local Roads and Streets

AASHTO GI (soil strength).—Engineering properties of the soil expressed as the AASHTO Group Index indicate soil strength. Values of more than 8 indicate low soil strength for roads and airfield construction.

Depth to bedrock.—Bedrock is close enough to the surface to restrict the use.
• Onsite investigation is needed to identify areas where the soil is deep enough for local roads and streets.
• Where slopes are more than 8 percent, the cuts needed to provide a level road or street can expose the bedrock.
• The bedrock can make a good base for the foundation.

Depth to pan.—Dense, hard, somewhat impervious cemented soil material at a specific depth restricts the use.
• Onsite investigation is needed to identify areas where the soil is deep enough for local roads and streets.
• Where slopes are more than 8 percent, the cuts needed to provide a level road or street can expose the cemented pan.
• The pan can make a good base for the foundation.

Flooding.—The soil is flooded by moving water from stream overflow, runoff, or high tides.

Fragments.—The profile contains enough rock fragments of a specific size to adversely affect site preparation or trafficability.

Frost action.—The upward or lateral movement of the soil by the formation of ice lenses may damage structures, roads and plant roots.

Organic matter (OM).—A high content of organic matter at some depth, sometimes expressed as a

Unified soil class (PT, OL, or OH), can result in poor engineering properties and subsidence. A low content of organic matter can restrict the growth of plants.

Ponding.—Standing water on soils in closed depressions that is removed only by percolation or evapotranspiration.

• A drainage system is needed if roads are constructed.

Shrink-swell (LEP).—The shrinking of soil when dry and the swelling when wet is expressed as the linear extensibility percent (LEP). Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

• Properly designing the road base and diverting runoff away from roads help to prevent the structural damage caused by shrinking and swelling.

Slope.—The slope is steep enough that special practices are required to ensure satisfactory performance of the soil.

• Excavation for roads increases the hazard of erosion.

• During construction, all bare ground should be mulched. A ground cover should be established to prevent excessive erosion during periods of high rainfall.

Wetness.—Wetness near the surface or a high water tables affects the growth of plants and the construction of facilities.

• A drainage system is needed if roads are constructed.

Major Management Considerations for Shallow Excavations

Clay or clayey texture.—At some depth there is a clay content or clayey texture that results in soil that is slippery and sticky when wet and slow to dry.

Caving potential.—The walls or sides of excavations tend to cave inwards. All soil excavations have a potential to cave, but some soils have a higher potential than others.

Bulk density (dense layer).—A dense soil layer with a high bulk density.

Depth to bedrock.—Bedrock is close enough to the surface to restrict the use.

• Onsite investigation is needed to identify areas where the soil is deep enough for excavations.

• Where slopes are more than 8 percent, the excavations can expose bedrock.

• The bedrock can make a good base for the foundation.

Depth to pan.—Dense, hard, somewhat impervious cemented soil material at a specific depth restricts the use.

• Onsite investigation is needed to identify areas where the soil is deep enough for excavations.

• Where slopes are more than 8 percent, the excavations can expose the cemented pan.

• The pan can make a good base for a foundation.

Flooding.—The soil is flooded by moving water from stream overflow, runoff, or high tides.

• The hazard of flooding should be considered before buildings or capital improvements are planned or constructed.

• Dikes and channels that have outlets for floodwater can protect excavations.

Fragments.—The profile contains enough rock fragments of a specific size to adversely affect site preparation or trafficability.

Organic matter (OM).—A high content of organic matter at some depth, sometimes expressed as a Unified soil class (PT, OL, or OH), can result in poor engineering properties and subsidence. A low content of organic matter can restrict the growth of plants.

Ponding.—Standing water on soils in closed depressions that is removed only by percolation or evapotranspiration.

• A drainage system is needed during some periods of the year.

Slope.—The slope is steep enough that special practices are required to ensure satisfactory performance of the soil.

• Excavation increases the hazard of erosion.

• During construction, all bare ground should be mulched. A ground cover should be established to prevent excessive erosion during periods of high rainfall.

Wetness.—Wetness near the surface or a high water tables affects the growth of plants and the construction of facilities.

• A drainage system is needed for excavation during some periods of the year.

Sanitary Facilities

Tables 12a and 12b 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 descriptive and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Slight* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Moderate* indicates that the soil has features that are moderately favorable for the specified use. Special planning, design, or installation can overcome, or minimize, these limitations. Fair performance and moderate maintenance can be expected. *Severe* 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).

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. Coarse fragments 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. Therefore, 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, coarse fragments, 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 soil wetness 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 coarse fragments 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.

Sanitary landfills are areas where solid waste is disposed of by burying it in soil. There are two types of landfill: trench and area. In a trench landfill, the waste is placed in a trench. It is spread, compacted, and covered daily with a thin layer of soil excavated at the site. In an area landfill, the 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.

Both types of landfill must be able to bear heavy vehicular traffic. Both types involve a risk of ground-water pollution. Ease of excavation and revegetation should be considered.

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 soil wetness, 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 soil wetness, 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. In addition, 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 soil wetness, 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 coarse fragments 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. In addition, 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 soil wetness 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.

Major Management Considerations for Septic Tank Absorption Fields

Depth to bedrock.—Bedrock is close enough to the surface to restrict the use.

- Onsite investigation is needed to identify areas where the soil is deep enough for septic tank absorption fields.
- The filtering capacity of the leach lines is restricted by the limited volume of soil above the bedrock, or the bedrock can prevent installation of the leach lines. If the lines are installed too close to the bedrock, the effluent can contaminate ground water.
- Enlarging septic tank absorption fields helps to overcome the limited depth to bedrock.
- Where slopes are more than 8 percent, the cuts needed to provide essentially level building sites can expose bedrock.

Depth to pan.—Dense, hard, somewhat impervious cemented soil material at a specific depth restricts the use.

- The volume of soil available for filtering effluent is restricted by the pan. Tests should be made below the pan depth to determine if the leach lines should be placed below the pan.

Flooding.—The soil is flooded by moving water from stream overflow, runoff, or high tides.

- The hazard of flooding should be considered before buildings or capital improvements are planned or constructed.
- The system should be located above the expected level of flooding.
- Dikes and channels that have outlets for floodwater can protect the onsite sewage disposal system from flooding.

Fragments.—The profile contains enough rock fragments of a specific size to adversely affect site preparation or trafficability.

Organic matter (OM).—A high content of organic matter at some depth, sometimes expressed as a Unified soil class (PT, OL, or OH), can result in poor engineering properties and subsidence. A low content of organic matter can restrict the growth of plants.

Permeability.—The movement of water through the soil adversely affects the specified use. The permeability may be either too slow or too fast.

- Restricted permeability increases the possibility of failure of septic tank absorption fields.

• Restricted permeability can be overcome by increasing the size of the absorption field and using coarser backfill material or by installing the leach lines in strata that are more permeable.
• Building up or mounding the septic system site with suitable fill material increases the filtering capacity of the absorption field.

Ponding.—Standing water on soils in closed depressions that is removed only by percolation or evapotranspiration.
• Adding suitable fill material to raise the absorption field improves the performance of the septic system.

Slope.—The slope is steep enough that special practices are required to ensure satisfactory performance of the soil.
• Onsite investigation is needed to identify areas where the soil is suitable for septic tank absorption fields.
• Installing the leach lines on the contour helps to prevent the seepage of effluent in downslope areas.
• During construction, all bare ground should be mulched. A ground cover should be established to prevent excessive erosion during periods of high rainfall.

Wetness.—Wetness near the surface or a high water tables affects the growth of plants and the construction of facilities.
• Adding suitable fill material to raise the absorption field a sufficient distance above the seasonal high water table improves the performance of the septic system.

Major Management Considerations for Sewage Lagoons

Depth to bedrock.—Bedrock is close enough to the surface to restrict the use.
• Onsite investigation is needed to identify areas where the soil is deep enough for the sewage lagoon.
• Enlarging the sewage lagoon helps to overcome the limited depth to bedrock.
• Where slopes are more than 2 percent, the cuts needed to provide essentially level building sites can expose bedrock.

Depth to pan.—Dense, hard, somewhat impervious cemented soil material at a specific depth restricts the use.
• Onsite investigation is needed to identify areas where the soil is deep enough for the sewage lagoon.
• Enlarging the sewage lagoon helps to overcome the limited depth to cemented pan in this unit.
• Where slopes are more than 2 percent, the cuts needed to provide essentially level sites can expose the cemented pan.

Flooding.—The soil is flooded by moving water from stream overflow, runoff, or high tides.
• The hazard of flooding should be considered before capital improvements are planned or sewage lagoons are installed.
• The sewage lagoon should be located above the expected level of flooding.
• Dikes and channels that have outlets for floodwater can protect the sewage lagoon from flooding.

Fragments.—The profile contains enough rock fragments of a specific size to adversely affect site preparation or trafficability.

Organic matter (OM).—A high content of organic matter at some depth, sometimes expressed as a Unified soil class (PT, OL, or OH), can result in poor engineering properties and subsidence. A low content of organic matter can restrict the growth of plants.

Permeability.—The movement of water through the soil adversely affects the specified use. The permeability may be either too slow or too fast.
• A suitable lining is needed to prevent seepage and the contamination of ground water.

Ponding.—Standing water on soils in closed depressions that is removed only by percolation or evapotranspiration.
• Adding suitable fill material to raise the sewage lagoon improves performance.

Slope.—The slope is steep enough that special practices are required to ensure satisfactory performance of the soil.
• Onsite investigation is needed to identify areas where the soil is suitable for sewage lagoons.
• Installing sewage lagoons on the contour helps to prevent seepage of effluent in downslope areas.
• During construction, all bare ground should be mulched. A ground cover should be established to prevent excessive erosion during periods of high rainfall.

Wetness.—Wetness near the surface or a high water tables affects the growth of plants and the construction of facilities.
• Adding suitable fill material to raise the sewage lagoon a sufficient distance above the seasonal high water table improves performance.

Major Management Considerations for Trench Sanitary Landfills

Clay or clayey texture.—At some depth there is a clay content or clayey texture that results in soil that is slippery and sticky when wet and slow to dry.

Depth to bedrock.— Bedrock is close enough to the surface to restrict the use.
• Onsite investigation is needed to identify areas where the soil is deep enough for the sanitary landfill.

• Enlarging the sanitary landfill helps to overcome the limited depth to bedrock.
• Where slopes are more than 8 percent, the cuts needed to provide essentially level building sites can expose the bedrock.

Depth to pan.—Dense, hard, somewhat impervious cemented soil material at a specific depth restricts the use.
• Onsite investigation is needed to identify areas where the soil is deep enough for the sanitary landfill.
• If the cemented pan is thick, enlarging the sanitary landfill helps to overcome the limited depth to the cemented pan.
• If the cemented pan is thin and suitable soil material is underneath the pan, ripping the pan can improve performance.

Flooding.—The soil is flooded by moving water from stream overflow, runoff, or high tides.
• The hazard of flooding should be considered before buildings or capital improvements are planned or a sanitary landfill is installed.
• The sanitary landfill should be located above the expected level of flooding.
• Dikes and channels that have outlets for floodwater can protect the sanitary landfill from flooding.

Fragments.—The profile contains enough rock fragments of a specific size to adversely affect site preparation or trafficability.

Organic matter (OM).—A high content of organic matter at some depth, sometimes expressed as a Unified soil class (PT, OL, or OH), can result in poor engineering properties and subsidence. A low content of organic matter can restrict the growth of plants.

Permeability.—The movement of water through the soil adversely affects the specified use. The permeability may be either too slow or too fast.
• A suitable lining is needed to prevent seepage and the contamination of ground water.

pH.—The pH of the soil is too low (acid) or too high (basic) for the growth of most plants.

Ponding.—Standing water on soils in closed depressions that is removed only by percolation or evapotranspiration.
• Adding suitable fill material to raise the sanitary landfill improves performance.

Salinity (EC).—Excess water-soluble salts in the soil restrict the growth of most plants.

Sand or sandy texture.—At some depth the content of sand or a sandy texture results in soil that is soft and loose, droughty, and low in fertility or is too fine for use as gravel.

Slope.—The slope is steep enough that special practices are required to ensure satisfactory performance of the soil.
• Onsite investigation is needed to identify areas where the soil is suitable for the sanitary landfill.
• Installing sanitary landfills on the contour helps to prevent the seepage of effluent in downslope areas.
• During construction, all bare ground should be mulched. A ground cover should be established to prevent excessive erosion during periods of high rainfall.

Sodicity (SAR).—Excess exchangeable sodium, which imparts poor physical properties, restricts the growth of plants.

Wetness.—Wetness near the surface or a high water tables affects the growth of plants and the construction of facilities.
• Adding suitable fill material to raise the landfill a sufficient distance above the seasonal high water table improves performance.

Major Management Considerations for Area Sanitary Landfills

Depth to bedrock.—Bedrock is close enough to the surface to restrict the use.
• Onsite investigation is needed to identify areas where the soil is deep enough for the sanitary landfill.
• Enlarging the sanitary landfill helps to overcome the limited depth to bedrock.

Depth to pan.—Dense, hard, somewhat impervious cemented soil material at a specific depth restricts the use.
• Onsite investigation is needed to identify areas where the soil is deep enough for the sanitary landfill.
• Enlarging the sanitary landfill helps to overcome the limited depth to a cemented pan.

Flooding.—The soil is flooded by moving water from stream overflow, runoff, or high tides.
• The hazard of flooding should be considered before buildings or capital improvements are planned or a sanitary landfill is installed.
• The sanitary landfill should be located above the expected level of flooding.
• Dikes and channels that have outlets for floodwater can protect the sanitary landfill from flooding.

Permeability.—The movement of water through the soil adversely affects the specified use. The permeability may be either too slow or too fast.
• A suitable lining is needed to prevent seepage and the contamination of ground water.

Ponding.—Standing water on soils in closed depressions that is removed only by percolation or evapotranspiration.
• Adding suitable fill material to raise the sanitary landfill improves performance.

Slope.—The slope is steep enough that special practices are required to ensure satisfactory performance of the soil.

- Onsite investigation is needed to identify areas where the soil is suitable for the sanitary landfill.
- Installing sanitary landfills on the contour helps to prevent the seepage of effluent in downslope areas.
- During construction, all bare ground should be mulched. A ground cover should be established to prevent excessive erosion during periods of high rainfall.

Wetness.—Wetness near the surface or a high water tables affects the growth of plants and the construction of facilities.

- Adding suitable fill material to raise the sanitary landfill a sufficient distance above the seasonal high water table improves performance.

Major Management Considerations for Daily Cover for Landfill

Calcium carbonates.—The content of calcium carbonates may be high enough to restrict plant growth.

Clay or clayey texture.—At some depth there is a clay content or clayey texture that results in soil that is slippery and sticky when wet and slow to dry.

Depth to bedrock.—The bedrock is too near the surface.

- Onsite investigation is needed to identify areas where the soil is deep enough to provide cover material.

Depth to pan.—Dense, hard, somewhat impervious cemented soil material at a specific depth restricts the use.

- Onsite investigation is needed to identify areas where the soil is deep enough to provide cover material.

Fragments.—The profile contains enough rock fragments of a specific size to adversely affect site preparation or trafficability.

Packing.—The Unified class OL, OH, CH, or MH indicates that the soil may be difficult to compact using regular earthwork construction equipment.

Organic matter (OM).—A high content of organic matter at some depth, sometimes expressed as a Unified soil class (PT, OL, or OH), can result in poor engineering properties and subsidence. A low content of organic matter can restrict the growth of plants.

Permeability.—The movement of water through the soil adversely affects the specified use. The permeability may be either too slow or too fast.

- The material is too coarse to use as landfill cover, resulting in seepage and the contamination of ground water.

pH.—The pH of the soil is too low (acid) or too high (basic) for the growth of most plants.

Ponding.—Standing water on soils in closed depressions that is removed only by percolation or evapotranspiration.

- Seasonal ponding may restrict access to the material.

Salinity (EC).—Excess water-soluble salts in the soil restrict the growth of most plants.

Sand or sandy texture.—At some depth the content of sand or a sandy texture results in soil that is soft and loose, droughty, and low in fertility or is too fine to use as gravel.

Slope.—The slope is steep enough that special practices are required to ensure satisfactory performance of the soil.

- Onsite investigation is needed to identify areas where the slope is suitable for landfill cover.
- Where slopes are more than 8 percent, the cutting may expose undesirable material.
- The cuts should be mulched. A ground cover should be established to prevent excessive erosion during periods of high rainfall.

Sodicity (SAR).—Excess exchangeable sodium, which imparts poor physical properties, restricts the growth of plants.

Wetness.—Wetness near the surface or a high water tables affects the growth of plants and the construction of facilities.

- Seasonal wetness may restrict the access to the material.

Construction Materials

Tables 13a and 13b 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.

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.

The soils are rated as a *good* or *poor* source of sand and gravel. A rating of *good* means that the source material is likely to be in or below the soil. The numerical ratings in these columns indicate the degree of probability. The number 0.00 indicates that the soil is an improbable source. A number between 0.00 and 1.00 indicates the degree to which the soil is a probable source of sand or gravel.

Sand and *gravel* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In table 13a, only the probability of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material. The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes, the thickness of suitable material, and the content of rock fragments. If the lowest layer of the soil contains sand or gravel, the soil is rated as a probable source regardless of thickness. The assumption is that the sand or gravel layer below the depth of observation exceeds the minimum thickness.

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. Rock fragments affect the ease of excavating, loading, and spreading, 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 coarse fragments, depth to soil wetness, 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 14 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 and for embankments, dikes, and levees. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and are easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increase in construction costs, and possibly increased maintenance are required.

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. 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. Shallow soil wetness affects the amount of usable material. It also affects trafficability.

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 (USDA–NRCS, 1996b). 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 15 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, 1998) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 1998).

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.

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 16 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 the table, 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 the table, 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 the table, 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 (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Saturated hydraulic conductivity refers to the ability of a soil to transmit water or air. The term “permeability,” as used in soil surveys, indicates saturated hydraulic conductivity (K_{sat}). The estimates in the table indicate the rate of water movement, in 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 (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In the table, 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 the table 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 17 shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Cation-exchange capacity is the total amount of extractable bases that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Effective cation-exchange capacity refers to the sum of extractable bases plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

Soil reaction is a measure of acidity or alkalinity.

The pH of each soil horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

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 (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration. Soils that have SAR values of 13 or more may be characterized by an increased dispersion of organic matter and clay particles, reduced permeability and aeration, and a general degradation of soil structure.

Soil Features

Table 18 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.

Subsidence is the settlement of organic soils or of saturated mineral soils of very low density. Subsidence generally results from either desiccation and shrinkage or oxidation of organic material, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. The table shows the expected initial subsidence, which usually is a result of drainage, and total subsidence, which results from a combination of factors.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low, moderate,* or *high,* is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low, moderate,* or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Water Features

Table 19 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.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

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. The table 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.

Figure 19.—Seasonal ponding in an area of Chicote soil. Ponding can impair livestock operations and require drainage around homesites in the California Valley development.

Ponding is standing water in a closed depression (fig. 19). Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. The table indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and *frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent.

None means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff, 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 20 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

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

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Xeralf (*Xer*, meaning of Mediterranean climate, plus *alf*, from Alfisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Haploxeralfs (*Hapl*, meaning minimal horizonation, plus *xeralf*, the suborder of the Alfisols that has a xeric moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic subgroup is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other taxonomic class. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Haploxeralfs.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle size, mineral content, soil temperature regime, soil depth, and reaction. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-loamy, mixed, superactive, thermic Typic Haploxeralfs.

SERIES. The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. Characteristics of the soil and the material in which it formed are identified for each series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the “Soil Survey Manual” (Soil Survey Division Staff, 1993). Many of the technical terms used in the descriptions are defined in “Soil Taxonomy” (Soil Survey Staff, 1999) and in “Keys to Soil Taxonomy” (Soil Survey Staff, 1998). 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.

Laboratory characterization data for the Balcom, Beam, Chicote, Choice, Padres, Pinspring, Semper, Sorrento, Thomhill, and Yeguas series are stored in the database of the National Soil Survey Laboratory.

Aido Series

Depth class: Moderately deep
Drainage class: Well drained

Permeability: Slow
Landform: Hills and mountains
Parent material: Residual material weathered from calcareous shale or fine-grained sandstone
Slope: 15 to 75 percent
Taxonomic class: Fine, smectitic, thermic Aridic Haploxererts

Typical Pedon

Aido clay, 15 to 30 percent slopes, at an elevation of 649 meters (2,130 feet); about 450 feet east and 400 feet south of the northwest corner of sec. 7, T. 28 S., R. 18 E.; USGS Packwood Creek topographic quadrangle; lat. 35 degrees 30 minutes 44 seconds N. and long. 120 degrees 5 minutes 5 seconds W.

Ap—0 to 20 centimeters (0 to 8 inches); brown (10YR 5/3) clay, brown (10YR 4/3) moist; weak very fine granular and moderate fine granular and subangular blocky structure; hard, friable, very sticky and very plastic; common very fine and fine roots; common very fine interstitial and few very fine tubular pores; moderately alkaline; gradual smooth boundary.

Bssk1—20 to 64 centimeters (8 to 25 inches); brown (10YR 5/3) clay, brown (10YR 4/3) moist; strong coarse prismatic structure parting to moderate coarse and medium subangular blocky; hard, friable, very sticky and very plastic; common very fine and fine roots; common very fine tubular pores; visible cracks 0.25 to 1 centimeter wide and 5 to 9 inches apart; common pressure faces; very few weak slickensides; slightly effervescent; carbonates that are segregated as few fine soft masses; moderately alkaline; clear wavy boundary.

Bssk2—64 to 97 centimeters (25 to 38 inches); mixed pale brown and light gray (10YR 6/3 and 7/2) clay, mixed brown and grayish brown (10YR 5/3 and 5/2) moist; massive; hard, friable, very sticky and very plastic; few weak slickensides; strongly effervescent; carbonates that are segregated as common fine soft masses; moderately alkaline; gradual wavy boundary.

Cr—97 to 127 centimeters (38 to 50 inches); light gray (10YR 7/2 and 7/1), weathered fractured shale, grayish brown (10YR 5/2) moist; fine and medium angular blocky structure that breaks down in water after 15 minutes of soaking; strongly effervescent; carbonates that are segregated in seams and coatings on fracture faces.

Range in Characteristics

Depth to the paralithic contact ranges from 50 to 100 centimeters (20 to 40 inches). Cracks wider than 1 centimeter extend from the surface to a depth of 50 centimeters (20 inches) or to the paralithic contact. The cracks close from mid-December to March. The content of gravel ranges from 0 to 5 percent. Reaction is slightly alkaline or moderately alkaline.

The A horizon has dry color of 10YR 5/3, 6/3, or 7/2. Moist color is 10YR 4/3. The content of clay ranges from 40 to 55 percent. Effervescence ranges from none to violent.

The Bssk horizon has dry color of 10YR 5/3, 6/3, or 7/2. Moist color is 10YR 4/3, 5/2, 5/3, or 5/4. The textures is clay or silty clay. The content of clay ranges from 40 to 60 percent. The content of gravel ranges from 5 to 15 percent. Effervescence ranges from slight to violent, and carbonates are segregated as fine soft masses or filaments.

The Aido soils in map unit 134 are slightly outside the range of characteristics of the series because the elevation ranges up to 1,280 meters (4,200 feet).

Akad Series

Depth class: Moderately deep
Drainage class: Somewhat excessively drained
Permeability: Moderately Slow
Landform: Mountains
Parent material: Residual material from sandstone
Slope: 30 to 75 percent
Taxonomic class: Loamy-skeletal, mixed, superactive, thermic Mollic Haploxeralfs

Typical Pedon

Akad loam in an area of Saucito-Akad-Rock outcrop complex, 30 to 75 percent slopes, at an elevation of 625 meters (2,050 feet); about 1.2 miles north of Highway 166 on Carrizo Canyon Road, then about 1 mile east on jeep trail into Johnson Flat; about 2,000 feet north and 350 feet east of the southwest corner of sec. 32, T. 32 S., R. 19 E.; USGS Taylor Canyon topographic quadrangle; lat. 35 degrees 5 minutes 38 seconds N. and long. 119 degrees 58 minutes 3 seconds W.

A—0 to 13 centimeters (0 to 5 inches); brown (7.5YR 5/4) loam, dark brown (7.5YR 3/2) moist; massive; hard, friable, nonsticky and nonplastic; few very fine roots; few very fine interstitial and common very fine tubular pores; 5 percent gravel; neutral; clear smooth boundary.

Bt1—13 to 28 centimeters (5 to 11 inches); reddish brown (5YR 4/4) very gravelly clay loam, dark brown (7.5YR 3/4) moist; massive; hard, friable, slightly sticky and nonplastic; few very fine roots; few very fine interstitial and common very fine tubular pores; few thin clay films on ped faces and in pores; 25 percent gravel and 15 percent cobbles; neutral; gradual wavy boundary.

Bt2—28 to 58 centimeters (11 to 23 inches); reddish brown (5YR 4/3) very gravelly clay loam, dark reddish brown (5YR 3/4) moist; massive; hard, friable, sticky and plastic; few very fine interstitial and tubular pores; common thin clay films on ped faces and in pores; 40 percent gravel and 20 percent cobbles; neutral; gradual wavy boundary.

R—58 to 64 centimeters (23 to 25 inches); hard sandstone.

Range in Characteristics

Depth to lithic contact with sandstone ranges from 50 to 76 centimeters (20 to 30 inches). The surface is covered by up to 15 percent gravel and cobbles. Reaction is neutral to moderately alkaline. Some pedons are calcareous throughout.

The A horizon has dry color of 10YR 5/4 or 7.5YR 4/4 or 5/4. Moist color is 10YR 3/4 or 7.5YR 3/2, 3/3, or 3/4. The content of clay ranges from 17 to 20 percent. The content of gravel ranges from 0 to 10 percent.

The Bt horizon has dry color of 10YR 4/4; 7.5YR 4/4; or 5YR 4/3, 4/4, or 5/4. Moist color is 10YR 3/4; 7.5YR 3/4 or 4/4; or 5YR 3/4 or 4/4. The texture is very gravelly clay loam or very gravelly sandy clay loam. The content of clay ranges from 25 to 35 percent. The content of gravel ranges from 25 to 50 percent. The content of cobbles ranges from 10 to 20 percent.

Aramburu Series

Depth class: Moderately deep
Drainage class: Well drained
Permeability: Moderate
Landform: Hills and mountains
Parent material: Residual material weathered from shale or sandstone
Slope: 15 to 75 percent
Taxonomic class: Loamy-skeletal, mixed, superactive, thermic Pachic Haploxerolls

Typical Pedon

Aramburu very channery loam in an area of Aramburu-Temblor complex, 50 to 75 percent slopes, at an elevation of 890 meters (2,920 feet); about 2,280 feet east and 1,710 feet south of the northwest corner of sec. 3, T. 30 S., R. 20 E.; USGS McKittrick Summit topographic quadrangle; lat. 35 degrees 20 minutes 45 seconds N. and long. 119 degrees 49 minutes 9 seconds W.

Ap—0 to 20 centimeters (0 to 8 inches); grayish brown (10YR 5/2) very channery loam, very dark grayish brown (10YR 3/2) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and plastic; few very fine roots; common very fine tubular and few very fine interstitial pores; about 35 percent, by volume, distinct angular shale fragments; moderately alkaline; clear smooth boundary.

A—20 to 58 centimeters (8 to 23 inches); grayish brown (10YR 5/2) very channery loam, very dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure; slightly hard, friable, sticky and plastic; common very fine roots; common very fine and fine tubular pores; about 45 percent, by volume, distinct angular shale fragments; moderately alkaline; clear wavy boundary.

R—58 to 76 centimeters (23 to 30 inches); hard fractured shale.

Range in Characteristics

Depth to lithic contact with shale or sandstone is 50 to 100 centimeters (20 to 40 inches). The content of coarse fragments ranges from 35 to 50 percent.

The A horizon has dry color of 10YR 5/2 or 4/2. Moist color is 10YR 3/2 or 3/3. Reaction ranges from neutral to moderately alkaline.

Some pedons have a C horizon.

Arbuckle Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Landform: Stream terraces
Parent material: Alluvium weathered from sedimentary rocks
Slope: 2 to 50 percent
Taxonomic class: Fine-loamy, mixed, superactive, thermic Typic Haploxeralfs

Typical Pedon

Arbuckle sandy loam, 2 to 9 percent slopes, at an elevation of 396 meters (1,300 feet); about 2,420 feet south and 2,500 feet east of the northwest corner of sec. 27, T. 27 S., R. 16. E.; USGS Holland Canyon topographic quadrangle; lat. 35 degrees 32 minutes 57 seconds N. and long. 120 degrees 14 minutes 19 seconds W.

Ap—0 to 28 centimeters (0 to 11 inches); brown (10YR 5/3) sandy loam, dark grayish brown (10YR 4/2) moist; cloddy; hard, friable, nonsticky and slightly plastic; common very fine and few fine roots; common very fine tubular pores; neutral; gradual smooth boundary.

Bt1—28 to 86 centimeters (11 to 34 inches); brown (10YR 5/3) sandy loam, dark brown (10YR 4/3) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; common very fine and fine and few medium tubular pores; very few thin clay films on ped faces and in pores; slightly alkaline; clear wavy boundary.

Bt2—86 to 140 centimeters (34 to 55 inches); light yellowish brown (10YR 6/4) sandy clay loam, yellowish brown (10YR 5/4) moist; strong fine and medium subangular blocky structure; hard, friable, sticky and plastic; few very fine roots; few very fine tubular pores; common moderately thick clay films on ped faces and in pores; slightly alkaline; gradual wavy boundary.

BC—140 to 165 centimeters (55 to 65 inches); very pale brown (10YR 7/4) coarse sandy loam, yellowish brown (10YR 5/4) moist; weak medium subangular blocky structure; hard, friable, slightly sticky and nonplastic; few very fine roots; few very fine tubular pores; few thin clay films on ped faces and in pores; slightly alkaline; gradual wavy boundary.

C—165 to 185 centimeters (65 to 73 inches); very pale brown (10YR 7/4) loamy coarse sand, yellowish brown (10YR 5/4) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine tubular and common very fine interstitial pores; slightly alkaline.

Range in Characteristics

The A horizon has dry color of 10YR 5/3, 6/2, 6/3, or 6/4. Moist color is 10YR 4/2, 4/3, or 4/4. The content of gravel ranges from 0 to 15 percent.

The B horizon has dry color of 10YR 5/3, 6/3, 6/4, 6/6, or 7/4. Moist color is 10YR 4/3, 4/4, 4/6, 5/4, or 5/6 or 7.5YR 5/4. The texture is clay loam, sandy clay loam, or sandy loam. The content of gravel ranges from 5 to 15 percent. The content of cobbles ranges from 0 to 5 percent. The cobbles are most common in the lower part of the B horizon.

The BC and C horizons have dry color of 10YR 4/3, 4/4, 6/4, or 7/4. Moist color is 10YR 4/4 or 5/4. The texture is loamy coarse sand, coarse sandy loam, or sandy loam. The content of gravel ranges from 0 to 15 percent. The content of cobbles ranges from 0 to 15 percent.

Arnold Series

Depth class: Deep
Drainage class: Somewhat excessively drained
Permeability: Rapid
Landform: Hills and mountains
Parent material: Residual material weathered from sandstone
Slope: 9 to 75 percent
Taxonomic class: Mixed, thermic Typic Xeropsamments

Typical Pedon

Arnold loamy sand in an area of Arnold-San Andreas complex, 30 to 75 percent slopes, at an elevation of 457 meters (1,500 feet); about 880 feet south and 830 feet east of the northwest corner of sec. 25, T. 28 S., R. 15 E.; USGS Camatta Ranch, California, topographic quadrangle; lat. 35 degrees 28 minutes 3 seconds N. and long. 120 degrees 19 minutes 4 seconds W.

A—0 to 15 centimeters (0 to 6 inches); light brownish gray (10YR 6/2) loamy sand, brown (10YR 5/2) moist; weak fine subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; few very fine roots; common very fine and fine interstitial and tubular pores; neutral; gradual smooth boundary.

C1—15 to 64 centimeters (6 to 25 inches); very pale brown (10YR 7/3) loamy sand, brown (10YR 5/3) moist; massive; soft, loose, nonsticky and nonplastic; common very fine and fine and few medium and coarse roots; few very fine and fine tubular pores; neutral; gradual wavy boundary.

C2—64 to 112 centimeters (25 to 44 inches); very pale brown (10YR 8/3) loamy sand, very pale brown (10YR 7/3) moist; massive; soft, loose, nonsticky and nonplastic; few very fine roots; few very fine and fine tubular pores; neutral; gradual wavy boundary.

Cr—112 to 122 centimeters (44 to 48 inches); white (10YR 8/2) weathered sandstone that crushes to sand.

Range in Characteristics

Depth to weathered sandstone ranges from 100 to 150 centimeters (40 to 60 inches). The texture is sand or loamy sand. The content of gravel ranges from 1 to 10 percent. Reaction ranges from strongly acid to neutral.

The A horizon has dry color of 10YR 6/2 or 6/3.

The C horizon has dry color of 10RY 7/3 or 8/3. Moist color is 10YR 5/3 or 7/3.

Ayar Series

Depth class: Deep
Drainage class: Well drained
Permeability: Slow when cracks are closed
Landform: Hills and mountains
Parent material: Residual material weathered from sandstone or shale
Slope: 5 to 50 percent
Taxonomic class: Fine, smectitic, thermic Typic Haploxererts

Typical Pedon

Ayar clay, 9 to 30 percent slopes, at an elevation of 1,012 meters (3,320 feet); about 700 feet west and 2,600 feet north of the southeast corner of sec. 4, T. 29 S., R. 19 E.; USGS Las Yeguas Ranch topographic quadrangle; lat. 35 degrees 25 minutes 52 seconds N. and long. 119 degrees 56 minutes 7 seconds W.

Ap—0 to 15 centimeters (0 to 6 inches); brown (10YR 5/3) clay, dark brown (10YR 3/3) moist; strong medium granular and subangular blocky structure; hard, friable, very sticky and very plastic; common very fine roots; few very fine tubular and common very fine and fine interstitial pores; noneffervescent; slightly alkaline; clear smooth boundary.

A—15 to 48 centimeters (6 to 19 inches); brown (10YR 5/3) clay, dark brown (10YR 3/3) moist; strong medium and coarse prismatic structure; very hard, firm, very sticky and very plastic; few very fine roots; few very fine tubular pores; visible cracks 0.5 to 1.5 centimeters wide and 6 to 20 inches apart; many pressure faces on faces of peds; slightly alkaline; clear wavy boundary.

Bssk—48 to 107 centimeters (19 to 42 inches); yellowish brown (10YR 5/4) clay, dark yellowish brown (10YR 4/4) moist; weak medium and coarse prismatic structure; very hard, firm, very sticky and very plastic; few very fine roots; common very fine tubular pores; many peds tilted 45 to 60 degrees with intersecting slickensides; slightly effervescent; carbonates that are segregated as few fine soft masses; moderately alkaline; gradual wavy boundary.

C—107 to 142 centimeters (42 to 56 inches); yellowish brown (10YR 5/4) clay, dark yellowish brown (7.5YR 4/4) moist; massive; very hard, friable, very sticky and very plastic; few very fine roots; common very fine tubular pores; slightly effervescent; moderately alkaline; abrupt wavy boundary.

R—142 to 160 centimeters (56 to 63 inches); fractured, fine-grained sandstone.

Range in Characteristics

Depth to lithic contact ranges from 100 to 150 centimeters (40 to 60 inches). Cracks 1 to 3 centimeter wide extend from the surface to a depth of 100 centimeters (40 inches). The cracks close from mid-December to April.

The A horizon has dry color of 10YR 5/3 or 7.5YR 4/4. Moist color is 10YR 3/3. Reaction is slightly alkaline or moderately alkaline.

The B and C horizons have dry color of 10YR 5/4 or 6/5 or 7.5YR 4/4. Moist color is 10YR 4/4 or 7.5YR 4/4. Carbonates are slightly or strongly effervescent.

The Ayar soils in this survey area are a taxadjunct to the series because they receive less than 12 inches mean annual precipitation, have soil cracks that remain open for more than 180 days, and have a lithic rather than a paralithic contact. Also, the Ayar soil in map unit 270 is in the very fine family. These differences do not significantly affect the use and management of the soils.

Balcom Series

Depth class: Moderately deep
Drainage class: Well drained
Permeability: Moderate
Landform: Hills and mountains
Parent material: Residual material weathered from soft, calcareous shale or sandstone
Slope: 9 to 75 percent
Taxonomic class: Fine-loamy, mixed, superactive, thermic Typic Calcixerepts

Typical Pedon

Balcom loam in an area of Balcom-Nacimiento complex, 15 to 30 percent slopes, at an elevation of 671 meters (2,200 feet); about 1,950 feet east and 1,700 feet south from the northwest corner of sec. 4, T. 27 S., R. 17 E.; USGS Holland Canyon topographic quadrangle; lat. 35 degrees 36 minutes 34 seconds N. and long. 120 degrees 9 minutes 5 seconds W.

A—0 to 20 centimeters (0 to 8 inches); light gray (10YR 7/2) loam, grayish brown (10YR 5/2) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; few very fine tubular pores; violently effervescent; disseminated lime; moderately alkaline; gradual smooth boundary.

Bk—20 to 58 centimeters (8 to 23 inches); light gray (10YR 7/2) loam, grayish brown (10YR 5/2) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; few very fine tubular pores; violently effervescent; carbonates that are segregated as few fine soft masses and many fine filaments; moderately alkaline; clear wavy boundary.

Cr—58 to 137 centimeters (23 to 54 inches); pale olive (5Y 6/3), soft, calcareous sandstone, olive (5Y 5/3) moist.

Range in Characteristics

Depth to weathered, calcareous shale or sandstone ranges from 50 to 100 centimeters (20 to 40 inches). The content of coarse fragments is less than 10 percent throughout.

The A horizon has dry color of 10YR 6/1, 6/2, 6/3, or 7/2. Moist color is 10YR 5/2, 5/3, 4/2, or 4/3. Effervescence ranges from slight to violent.

The Bk horizon has dry color of 10YR 6/3 or 7/2. Moist color is 10YR 4/2 or 5/2. Effervescence is strong or violent.

Beam Series

Depth class: Shallow
Drainage class: Well drained
Permeability: Moderately rapid
Landform: Hills and mountains
Parent material: Residual material weathered from soft, calcareous sandstone, shale, and conglomerate
Slope: 15 to 75 percent
Taxonomic class: Loamy, mixed, superactive, calcareous, thermic, shallow Xeric Haplocambids

Typical Pedon

Beam fine sandy loam in an area of Beam-Panoza-Hillbrick complex, 30 to 50 percent slopes, at an elevation of 777 meters (2,550 feet); about 2,750 feet northwest on Simmler-Soda Lake Road from its intersection with Hurricane Road, about 1,500 feet east on road to water tank, and uphill 212 feet southwest (on magnetic bearing 230 degrees) of the metal pole south of concrete ruins; about 850 feet east and 5 feet south from the northwest corner of sec. 27, T. 31 S., R. 21 E.; USGS Panorama Hills topographic quadrangle; lat. 35 degrees 12 minutes 17 seconds N. and long. 119 degrees 42 minutes 59 seconds W.

A—0 to 10 centimeters (0 to 4 inches); light gray (2.5Y 7/2) fine sandy loam, grayish brown (2.5Y 5/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and slightly plastic; common very fine roots; few very fine tubular and interstitial pores; electrical conductivity (EC) of 2.5 mmhos/cm; violently effervescent; moderately alkaline (pH 8.0); gradual wavy boundary.

B—10 to 38 centimeters (4 to 15 inches); light gray (2.5Y 7/2) fine sandy loam, grayish brown (2.5Y 5/2) moist; massive; soft, very friable, nonsticky and slightly plastic; common very fine and few fine roots; common very fine tubular pores; electrical conductivity (EC) of 2.6 mmhos/cm; violently effervescent; moderately alkaline (pH 8.0); clear wavy boundary.

Cr—38 to 58 centimeters (15 to 23 inches); variegated gray (N 6/0) and grayish brown (2.5Y 5/2), fractured, fine-grained sandstone, dark gray (N 4/0) moist; strong fine and medium angular blocky fragments that slake in water after 15 minutes of shaking; common very fine roots in fractures; strongly effervescent; carbonates that are segregated in seams and coatings on fracture faces.

Range in Characteristics

Depth to soft, calcareous sandstone or conglomerate is 25 to 50 centimeters (10 to 20 inches). The content of clay ranges from 12 to 20 percent but averages 12 to 18 percent. The content of gravel ranges from 0 to 10 percent. Stones and cobbles cover 0 to 20 percent of the surface.

The A horizon has dry color of 10YR 6/2, 6/3, 6/4, or 7/3 or 2.5Y 7/2. Moist color is 10YR 4/2, 4/3, 4/4, or 5/3 or 2.5Y 5/2. The texture is fine sandy loam, sandy loam, loam, or stony fine sandy loam. Effervescence ranges from slight to violent. Electrical conductivity (EC) ranges from 2 to 4 mmhos/cm. The content of gypsum is 1 to 2 percent, by volume.

The C horizon, where present, has dry color of 10YR 6/3, 6/4, or 7/3 or 2.5Y 7/2. Moist color is 10YR 4/3 or 5/4 or 2/5Y 5/2. The texture is fine sandy loam or sandy loam. Effervescence is strong or violent. Electrical conductivity (EC) ranges from 2 to 4 mmhos/cm. The content of gypsum ranges from 2 to 5 percent, by volume.

Bellyspring Series

Depth class: Moderately deep
Drainage class: Well drained
Permeability: Moderately slow
Landform: Hills and mountains
Parent material: Residual material weathered from sandstone
Slope: 9 to 75 percent

Taxonomic class: Fine-loamy, mixed, superactive, thermic Mollic Haploxeralfs

Typical Pedon

Bellyspring loam in an area of Bellyspring-Panoza complex, 15 to 30 percent slopes, in Kern County, California, at an elevation of 762 meters (2,500 feet); about 4,500 feet west of county road 285 on the dirt road to the Traver eucalyptus farm, then about 1,000 feet northeast of the dirt road along the side of the slope; about 650 feet south and 500 feet west of the northeast corner of sec. 20, T. 11 N., R. 25 W., San Bernardino Base and Meridian; USGS Elkhorn Hills topographic quadrangle; lat. 35 degrees 1 minute 55 seconds N. and long. 119 degrees 33 minutes 42 seconds W.

A1—0 to 8 centimeters (0 to 3 inches); brown (10YR 5/3) sandy loam, dark brown (10YR 3/3) moist; massive; hard, friable, slightly sticky and slightly plastic; common very fine roots; few very fine tubular and common fine interstitial pores; 5 percent gravel; slightly alkaline (pH 7.5); clear smooth boundary.

A2—8 to 33 centimeters (3 to 13) inches; yellowish brown (10YR 5/4) loam, dark brown (10YR 3/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; common very fine roots; common very fine and few fine and medium tubular pores; 5 percent gravel; slightly alkaline (pH 7.5); clear wavy boundary.

Bt—33 to 58 centimeters (13 to 23 inches); strong brown (7.5YR 5/6) clay loam, strong brown (7.5YR 4/6) moist; massive when moist; hard, friable, sticky and plastic; few very fine roots; few very fine tubular and common very fine interstitial pores; common thin clay films on fractures, in pores, and on bridges between mineral grains; 10 percent gravel; moderately alkaline (pH 8.0); gradual wavy boundary.

Bk—58 to 97 centimeters (23 to 38 inches); variegated strong brown (7.5YR 5/6) and light brown (7.5YR 6/4) gravelly sandy loam, strong brown (7.5YR 4/6) moist; massive; hard, friable, nonsticky and nonplastic; few very fine roots; few very fine tubular pores; 20 percent gravel; violently effervescent; carbonates that are segregated as common fine filaments; moderately alkaline (pH 8.0); gradual irregular boundary.

Cr—97 to 122 centimeters (38 to 48 inches); variegated very pale brown (10YR 7/3) and light yellowish brown (10YR 6/4), weakly consolidated, coarse-grained sandstone, light yellowish brown (10YR 6/4) and yellowish brown (10YR 5/6) moist.

Range in Characteristics

The depth to paralithic contact ranges from 50 to 100 centimeters (20 to 40 inches). Reaction is slightly alkaline or moderately alkaline.

The A horizon has dry color of 10YR 5/2, 5/3, or 5/4. Moist color is 10YR 3/2, 3/3, or 3/4. The texture is sandy loam or loam. The content of clay ranges from 12 to 20 percent. The content of gravel ranges from 0 to 10 percent. The content of organic matter is 0.5 to 1.0 percent.

The Bt horizon has dry color of 7.5YR 4/6, 5/6, or 6/6 or 10YR 5/4, 5/6, or 6/6. Moist color is 7.5YR 3/4, 4/4, or 4/6 or 10YR 3/4, 3/6, 4/4, or 4/6. The texture is clay loam, sandy clay loam, cobbly clay loam, or cobbly sandy clay loam. The content of clay ranges from 25 to 35 percent. The content of gravel ranges from 0 to 10 percent. The content of cobbles ranges from 0 to 20 percent.

The Bk horizon has dry color of 7.5YR 5/6, 6/4, or 6/6 or 10YR 6/4 or 7/3. Moist color is 7.5YR 4/4 or 4/6 or 10YR 4/2, 4/4, or 5/3. The texture is loamy coarse sand, sandy loam, gravelly coarse sandy loam, or gravelly sandy loam. The content of clay ranges from 5 to 18 percent. The content of gravel ranges from 10 to 25 percent. The content of cobbles ranges from 0 to 10 percent. Effervescence is strong or violent.

The Bellyspring soil in map unit 420 is a taxadjunct to the series because it is 40 to 60 inches deep to unweathered bedrock. This taxa is only on 50 to 75 percent slopes and has the same range site as other Bellyspring components; therefore, the difference in soil depth does not significantly affect use and management.

Botella Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Landform: Alluvial fans and alluvial flats
Parent material: Alluvium from mixed rock types
Slope: 2 to 9 percent
Taxonomic class: Fine-loamy, mixed, superactive, thermic Pachic Argixerolls

Typical Pedon

Botella sandy loam, 2 to 9 percent slopes, at an elevation of 420 meters (1,380 feet); about 2,100 feet south and 1,500 feet east of the northwest corner of sec. 26, T. 28 S., R. 15 E.; USGS Camatta Ranch, California, topographic quadrangle; lat. 35 degrees 27 minutes 40 seconds N. and long. 120 degrees 19 minutes 57 seconds W.

A1—0 to 8 centimeters (0 to 3 inches); dark gray (10YR 4/2) sandy loam, very dark gray (10YR 3/1) moist; moderate fine subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; common very fine roots; common very fine interstitial and tubular pores; slightly acid; clear wavy boundary.

A2—8 to 36 centimeters (3 to 14 inches); gray (10YR 5/2) sandy loam, very dark gray (10YR 3/1) moist; moderate medium subangular blocky structure; slightly hard, firm, slightly sticky and slightly plastic; common very fine and few fine roots; common very fine interstitial and tubular pores; slightly alkaline; gradual wavy boundary.

Bt1—36 to 66 centimeters (14 to 26 inches); dark grayish brown (10YR 4/2) sandy clay loam, very dark grayish brown (10YR 3/2) moist; moderate medium prismatic structure parting to fine angular blocky; hard, firm, slightly sticky and plastic; few very fine and fine roots; common very fine and fine tubular pores; common thin clay films on ped faces and lining pores; slightly alkaline; gradual wavy boundary.

Bt2—66 to 99 centimeters (26 to 39 inches); yellowish brown (10YR 5/3) sandy clay loam, dark brown (10YR 4/3) moist; moderate fine prismatic structure parting to fine angular blocky; hard, firm, slightly sticky and plastic; few very fine and fine roots; few very fine and fine tubular pores; few thin clay films on ped faces; slightly alkaline; gradual wavy boundary.

C—99 to 152 centimeters (39 to 60 inches); pale yellow (2.5Y 7/3) sandy loam, light yellowish brown (2.5Y 6/3) moist; massive; hard, firm, slightly sticky and slightly plastic; few very fine roots; few very fine tubular pores; slightly alkaline.

Range in Characteristics

Shale fragments or other rock fragments generally make up less than 15 percent of the soil. Reaction ranges from slightly alkaline to medium acid. Base saturation ranges from 75 to 95 percent. The content of organic matter ranges from 2 to 6 percent in the upper 20 inches and decreases gradually to about 1 percent or less at a depth of 30 inches.

The A horizon has dry color of 10YR 5/1, 5/2, 4/1, 4/2, 3/1, 3/2, or 2/2; N 5/0 or 3/0; or 2.5Y 4/2 or 3/2. The texture is sandy loam or loam.

The Bt horizon has dry color of 10YR 5/1, 5/2, 5/3, 4/1, 3/1, 4/2, 3/2, 4/3, or 3/3; 2.5Y 4/2 or 3/2; or N 5/0, 4/0, or 3/0. The texture is clay loam, silty clay loam, or sandy clay loam. The Bt horizon has about 6 to 10 percent more total clay than the A horizon. Structure is weak to strong angular blocky, subangular blocky, or prismatic.

The C horizon has dry color of 10YR 7/1, 7/2, 6/1, 6/2, or 5/2; N 7/0 or 6/0; or 2.5Y 7/2, 7/3, 6/2, or 5/2.

Calleguas Series

Depth class: Very shallow and shallow
Drainage class: Well drained
Permeability: Moderate
Landform: Hills and mountains
Parent material: Residual material weathered from sandstone
Slope: 9 to 50 percent
Taxonomic class: Loamy, mixed, superactive, calcareous, thermic, shallow Typic Xerorthents

Typical Pedon

Calleguas loam in an area of Seabrook-Calleguas-Panoza complex, 30 to 50 percent slopes, at an elevation of 829 meters (2,720 feet); about 1,600 feet north and 1,100 feet east of the southwest corner of sec. 15, T. 32 S., R. 19 E.; USGS Chimineas Ranch topographic quadrangle; lat. 35 degrees 8 minutes 11 seconds N. and long. 119 degrees 55 minutes 46 seconds W.

A1—0 to 5 centimeters (0 to 2 inches); grayish brown (10YR 5/2) loam, dark grayish brown (10YR 4/2) moist; weak fine and medium granular structure; soft, friable, slightly sticky and slightly plastic; many very fine roots; common very fine interstitial pores; 5 percent gravel; violently effervescent; moderately alkaline; clear smooth boundary.

A2—5 to 23 centimeters (2 to 9 inches); brown (10YR 5/3) clay loam, dark brown (10YR 4/3) moist; weak coarse subangular blocky structure; slightly hard, friable, sticky and slightly plastic; common very fine, fine, and medium roots; common very fine interstitial and tubular pores; 5 percent gravel; violently effervescent; moderately alkaline; gradual wavy boundary.

Cr—23 to 43 centimeters (9 to 17 inches); soft, calcareous sandstone.

Range in Characteristics

Depth to paralithic contact ranges from 20 to 51 centimeters (8 to 20 inches).

The A horizon has dry color of 10YR 5/2, 5/3, or 6/3 or 2.5Y 6/2. Moist color is 10YR 4/2, 4/3, or 4/4 or 2.5Y 4/2. Reaction is slightly alkaline or moderately alkaline. The content of gravel ranges from 5 to 10 percent.

Camatta Series

Depth class: Very shallow and shallow
Drainage class: Well drained
Permeability: Moderate
Landform: High stream terraces
Parent material: Alluvium from calcareous sedimentary rocks
Slope: 5 to 30 percent
Taxonomic class: Loamy, mixed, superactive, thermic, shallow Xeric Petrocalcids

Typical Pedon

Camatta loam, 5 to 30 percent slopes, at an elevation of 502 meters (1,645 feet); about 1,800 feet east and 200 feet south from the northwest corner of sec. 6, T. 28 S., R. 16 E.; USGS Camatta Canyon, California, topographic quadrangle; lat. 35 degrees 31 minutes 38 seconds N. and long. 120 degrees 17 minutes 43 seconds W.

A—0 to 20 centimeters (0 to 8 inches); light brownish gray (10YR 6/2) loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky structure; hard, friable, sticky and plastic; few very fine roots; common very fine tubular pores; violently effervescent; moderately alkaline; abrupt smooth boundary.

Bkm—20 to 33 centimeters (8 to 13 inches); white (10YR 8/1), indurated lime hardpan, white (10YR 8/2) moist; massive; very hard, very firm, upper 1/4-inch is a laminar capping; violently effervescent; moderately alkaline; clear smooth boundary.

Bk—33 to 152 centimeters (13 to 60 inches); mixed yellowish brown, light yellowish brown, and white (10YR 5/6, 6/4, and 8/1) sandy loam, mixed dark yellowish brown, light yellowish brown, and white (10YR 4/5, 6/4, and 8/2) moist; massive; hard, firm, nonsticky and nonplastic; few very fine tubular and interstitial pores; violently effervescent; carbonates that are segregated as common fine concretions and many fine seams; moderately alkaline.

Range in Characteristics

Depth to the indurated Bkm horizon ranges from 20 to 48 centimeters (8 to 19 inches). The calcium carbonate equivalent in the control section ranges from about 15 to 35 percent.

The A horizon has dry color of 10YR 6/2 or 6/3.

The Bkm horizon has dry color of 10YR 7/3, 8/1, or 8/3. The uppermost 0.5 to 2.5 centimeters (1/4 to 1 inch) is a very dense laminar capping containing no pores. The Bkm horizon is stratified with thin laminae and strongly to weakly lime-cemented materials. The thickness of the Bkm horizon ranges from 13 to 51 centimeters (5 to 20 inches).

The Bk horizon has dry color of 10YR 5/6, 6/4, or 8/1. Moist color is 10YR 4/5, 6/4, or 8/2. The Bk horizon is weakly cemented and ranges in texture from very fine sandy loam to loamy sand. The calcium carbonate equivalent of the B horizon ranges from 30 to 75 percent, by volume.

Capay Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Slow
Landform: Alluvial fans and alluvial flats
Parent material: Alluvium from mixed rock types
Slope: 0 to 9 percent
Taxonomic class: Fine, smectitic, thermic Typic Haploxererts

Typical Pedon

Capay clay, 2 to 9 percent slopes, at an elevation of 707 meters (2,320 feet); about 1,000 feet east and 2,125 feet south of the northwest corner of sec. 22, T. 32 S., R. 19 E.; USGS Chimineas Ranch topographic quadrangle; lat. 35 degrees 12 minutes 51 seconds N. and long. 119 degrees 55 minutes 49 seconds W.

Ap—0 to 5 centimeters (0 to 2 inches); grayish brown (10YR 5/2) clay, very dark grayish brown (10YR 3/2) moist; moderate thin platy structure; very hard, friable, very sticky and very plastic; common very fine roots; few very fine tubular pores; slightly effervescent; moderately alkaline; clear smooth boundary.

A—5 to 51 centimeters (2 to 20 inches); grayish brown (10YR 5/2) clay, very dark brown (10YR 3/2) moist; weak coarse and very coarse prismatic structure parting to moderate medium angular blocky structure; very hard, friable, very sticky and very plastic; common very fine roots; few very fine tubular and interstitial pores; strongly effervescent; moderately alkaline; gradual smooth boundary.

Bssk1—51 to 94 centimeters (20 to 37 inches); brown (10YR 5/3) clay, dark brown (10YR 4/3) moist; moderate medium angular blocky structure; very hard, friable, very sticky and very plastic; few very fine roots; common very fine interstitial pores and few very fine tubular pores; few intersecting slickensides; common pressure faces; strongly effervescent; carbonates that are segregated as few fine soft masses; moderately alkaline; gradual smooth boundary.

Bssk2—94 to 160 centimeters (37 to 63 inches); brown (10YR 5/3) clay, dark brown (10YR 4/3) moist; moderate medium angular blocky structure; very hard, friable, very sticky and very plastic; few very fine roots; common very fine interstitial pores; common pressure faces; violently effervescent; carbonates that are segregated as common fine filaments; moderately alkaline.

Range in Characteristics

The A horizon has dry color of 10YR 4/2, 5/2, or 5/3. Moist color is 10YR 3/2 or 3/3. Reaction ranges from neutral to moderately alkaline.

The Bssk horizon has dry color of 10YR 5/2 or 5/3. Moist color is 10YR 3/2, 3/3, or 4/3. The texture is clay or silty clay. Carbonates are disseminated and segregated as soft masses. The Bssk horizon has common pressure faces.

Chanac Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Landform: Stream terraces
Parent material: Alluvium from mixed rock types
Slope: 9 to 75 percent
Taxonomic class: Fine-loamy, mixed, superactive, thermic Calcic Haploxerepts

Typical Pedon

Chanac loam, 30 to 75 percent slopes, at an elevation of 414 meters (1,360 feet); about 2,000 feet north and 300 feet east of the southwest corner of sec. 21, T. 27 S., R. 15 E.; USGS Camatta Canyon, California, topographic quadrangle; lat. 35 degrees 33 minutes 52 seconds N. and long. 120 degrees 22 minutes 15 seconds W.

Ap—0 to 5 centimeters (0 to 2 inches); grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium granular structure; slightly hard, friable, slightly sticky and plastic; many very fine roots; many very fine tubular pores; strongly effervescent; moderately alkaline; clear smooth boundary.

A—5 to 31 centimeters (2 to 12 inches); grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and plastic; common very fine roots, many very fine and common medium tubular pores; strongly effervescent; moderately alkaline; clear wavy boundary.

Btk—31 to 53 centimeters (12 to 21 inches); light brownish gray (10YR 6/2) loam, dark grayish brown (10YR 4/2) moist; strong medium subangular blocky structure; slightly hard, friable, slightly sticky and plastic; few very fine roots; many very fine and common fine and medium tubular pores; few thin clay films lining pores; violently effervescent; carbonates that are segregated as common fine filaments and soft masses; moderately alkaline; clear wavy boundary.

Ck1—53 to 89 centimeters (21 to 35 inches); light yellowish brown (10YR 6/4) loam, yellowish brown (10YR 5/4) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and plastic; many very fine and common fine and medium tubular pores; violently effervescent; carbonates that are segregated as common fine filaments and soft masses; moderately alkaline; clear wavy boundary.

Ck2—89 to 140 centimeters (35 to 55 inches); light yellowish brown (10YR 6/4) loam, yellowish brown (10YR 5/4) moist; weak medium subangular blocky structure; slightly hard, friable, nonsticky and slightly plastic; many very fine and few fine tubular pores; violently effervescent; carbonates that are segregated as common fine filaments and soft masses; moderately alkaline; gradual wavy boundary.

C3—140 to 152 centimeters (55 to 60 inches); pale yellow (10YR 7/4) fine sandy loam, light yellowish brown (10YR 6/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; strongly effervescent; moderately alkaline.

Range in Characteristics

The content of gravel ranges from 0 to 10 percent throughout. The moisture regime is xeric bordering on aridic.

The A horizon has dry color of 10YR 5/1, 5/2, or 5/3. Moist color values are 1 to 2 units lower.

The B horizon has dry color of 10YR 6/2, 6/3, or 6/4. Moist color values are 1 to 2 units lower. The texture is loam or sandy clay loam. The content of clay increases by 1 to 2 percent between the A and B horizons. Carbonates appears as soft masses and few to common filaments or as coatings on faces of peds.

The C horizon has dry color of 10YR 6/4 or 7/4. The texture is fine sandy loam, sandy loam, or loam.

Chicote Series

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Very slow
Landform: Lake plains
Parent material: Alluvium from sedimentary rocks and lacustrine sediments
Slope: 0 to 9 percent
Taxonomic class: Fine, smectitic, thermic Typic Natrixeralfs

Typical Pedon

Chicote silty clay loam in an area of Chicote complex, 0 to 2 percent slopes, at an elevation of 588 meters (1,930 feet); about 125 feet south and 650 feet west of the northeast corner of sec. 35, T. 30 S., R. 19 E.; USGS Simmler topographic quadrangle; lat. 35 degrees 16 minutes 41 seconds N. and long. 119 degrees 54 minutes 0 seconds W.

A—0 to 5 centimeters (0 to 2 inches); mixed grayish brown (2.5Y 5/2) and light brownish gray (2.5Y 6/2) silty clay loam, very dark grayish brown (2.5Y 3/2) moist; strong medium and fine angular blocky structure; hard, friable, sticky and plastic; few very fine roots; few very fine tubular pores; sodium absorption ratio (SAR) of 17; moderately alkaline; clear smooth boundary.

Bt—5 to 31 centimeters (2 to 12 inches); grayish brown (2.5Y 5/2) clay, dark grayish brown (2.5Y 4/2) moist; weak medium and coarse prismatic structure parting to moderate medium subangular blocky; hard, friable, very sticky and very plastic; many very fine and few fine roots; few very fine tubular pores; very few thin clay films on ped faces and in pores; many pressure faces; sodium absorption ratio (SAR) of 36; strongly alkaline; gradual wavy boundary.

Bty1—31 to 46 centimeters (12 to 18 inches); light brownish gray (2.5Y 6/2) clay, grayish brown (2.5Y 5/2) moist; massive; hard, friable, sticky and plastic; few very fine roots; common very fine tubular pores; common thin clay films on ped faces; common gypsum crystals in filaments and soft masses (13 percent calcium sulfate); sodium absorption ratio (SAR) of 45; moderately alkaline; gradual wavy boundary.

Bty2—46 to 99 centimeters (18 to 39 inches); light olive gray (5Y 6/2) clay, olive (5Y 5/3) moist; massive; hard, friable, sticky and plastic; common very fine and few fine tubular pores; few thin clay films on ped faces; many gypsum crystals in filaments and soft masses (25 percent calcium sulfate); sodium absorption ratio (SAR) of 51; moderately alkaline; gradual wavy boundary.

Bty3—99 to 155 centimeters (39 to 61 inches); light olive gray (5Y 6/2) clay, olive (5Y 5/3) moist; massive; hard, friable, slightly sticky and plastic; common very fine and few fine tubular pores; few thin clay films in pores; common gypsum crystals in filaments and soft masses (10 percent calcium sulfate); sodium absorption ratio (SAR) of 54; moderately alkaline.

Range in Characteristics

The A horizon has dry color of 10YR 6/2 or 7/2 or 2.5Y 5/2 or 6/2. Moist color is 10YR 3/2, 4/2, 4/3, or 5/3 or 2.5Y 3/2, 4/2, or 4/3. The horizon does not qualify as a mollic epipedon. It is too thin or does not meet both moist and dry color requirements. In some pedons, it has disseminated carbonates. In places, it has a 2 to 10 inch thick overwash of fine sandy loam or silt loam.

A few pedons have an E horizon.

The B horizon has dry color of 10YR 4/2, 5/2, 5/3, 5/4, 6/2, or 6/3; 2.5Y 4/2, 5/2, or 6/2; or 5Y 6/2. Moist color is 10YR 3/2, 4/2, 4/3, 4/4, 5/2, or 5/3; 2.5Y 4/2, 5/2, 5/3, or 5/4; or 5Y 5/2 or 5/3. The texture is silty clay or clay. The content of clay ranges from 45 to 65 percent. The content of gypsum ranges from a trace to 25 percent. The sodium absorption ratio (SAR) ranges from 15 to 50 in some parts of the B horizon within 16 inches of its upper boundary. The electrical conductivity (EC) ranges from 5 to 35 mmhos/cm. In some pedons, the lower part of the B horizon has few distinct reddish mottles. In places, the B horizon has disseminated and segregated carbonates.

The C horizon, where present, has the same characteristics as the B horizon, except it is silt loam, clay loam, or silty clay loam.

Choice Series

Depth class: Deep
Drainage class: Well drained
Permeability: Slow
Landform: Hills and mountains
Parent material: Residual material weathered from soft, calcareous sandstone and shale
Slope: 15 to 30 percent
Taxonomic class: Fine, mixed, superactive, calcareous, thermic Typic Xerorthents

Typical Pedon

Choice silty clay, 15 to 30 percent slopes, at an elevation of 591 meters (1,940 feet); about 4.2 miles northwest on Palo Prieta, Cholame Road from its intersection with Bitterwater Valley Road, then about 2.5 miles southeast on dirt road across road from farmstead; 172 feet from corner fence post on road on magnetic bearing 346 degrees; about 450 feet north and 700 feet east of the southwest corner of sec. 2, T. 27 S., R. 17 E.; USGS Packwood Creek topographic quadrangle; lat. 35 degrees 36 minutes 5 seconds N. and long. 120 degrees 7 minutes 6 seconds W.

A1—0 to 15 centimeters (0 to 6 inches); pale brown (10YR 6/3) silty clay, brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, sticky and plastic; common very fine roots; few very fine tubular pores; strongly effervescent; moderately alkaline; clear smooth boundary.

A2—15 to 43 centimeters (6 to 17 inches); pale brown (10YR 6/3) silty clay, brown (10YR 4/3) moist; weak medium prismatic structure parting to weak medium subangular blocky; slightly hard, friable, sticky and plastic; few very fine roots; common very fine tubular pores; strongly effervescent; carbonates that are segregated as few fine filaments in lower part; moderately alkaline; clear wavy boundary.

Bk1—43 to 81 centimeters (17 to 32 inches); light yellowish brown (10YR 6/4) silty clay, dark yellowish brown (10YR 4/4) moist; moderate fine prismatic structure parting to moderate fine subangular blocky; hard, friable, sticky and plastic; few very fine roots; common very fine and few fine tubular pores; few pressure faces; violently effervescent; carbonates that are segregated as many fine filaments and in seams and common fine soft masses; moderately alkaline; gradual wavy boundary.

Bk2—81 to 119 centimeters (32 to 47 inches); light yellowish brown and brownish yellow (10YR 6/4 and 6/6) silty clay, yellowish brown (10YR 5/6) moist; weak fine subangular blocky structure; slightly hard, very friable, sticky and plastic; few very fine roots; common very fine tubular pores; violently effervescent; carbonates that are segregated as common fine filaments and soft masses; moderately alkaline; gradual wavy boundary.

Cr—119 to 145 centimeters (47 to 57 inches); weathered, calcareous sandstone; fine and medium angular blocky rock structure that breaks down in water after 15 minutes of shaking.

Range in Characteristics

Depth to weathered, calcareous sandstone or shale ranges from 100 to 150 centimeters (40 to 60 inches).

The A horizon has dry color of 10YR 5/2, 6/2, or 6/3 or 2.5Y 5/2 or 6/2. Moist color is 10YR 3/2, 4/2, or 4/3 or 2.5Y 3/2, 4/2, or 5/2. The content of organic carbon is less than 0.6 percent. At depths of 5 to 17 inches, the cracks are 0.5 to 2 centimeters wider when dry. Effervescence ranges from slight to violent.

The B horizon has dry color of 10YR 6/2, 6/3, 6/4, 6/6, or 7/4; 2.5Y 6/2; or 5Y 5/2 or 7/2. Moist color is 10YR 4/2, 4/3, 4/4, 4/6, 5/4, or 5/6; 2.5Y 3/2, 4/2, or 5/2; or 5Y 4/2 or 5/2. Effervescence is strong or violent.

Cieneba Series

Depth class: Very shallow and shallow
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid
Landform: Hills
Parent material: Residual material weathered from granitic rock
Slope: 30 to 75 percent
Taxonomic class: Loamy, mixed, superactive, nonacid, thermic, shallow Typic Xerorthents

Typical Pedon

Cieneba coarse sandy loam, 30 to 75 percent slopes, at an elevation of 671 meters (2,200 feet); about 1,150 feet east and 200 feet north of the southwest corner of sec. 6, T. 30 S., R. 17 E.; USGS La Panza topographic quadrangle; lat. 35 degrees 20 minutes 19 seconds N. and long. 120 degrees 11 minutes 49 seconds W.

A1—0 to 5 centimeters (0 to 2 inches); brown (10YR 5/3) coarse sandy loam, dark brown (10YR 3/3) moist; moderate fine granular structure; soft, very friable, nonsticky and nonplastic; common very fine roots; common fine interstitial pores; 5 percent gravel; slightly acid; clear smooth boundary.

A2—5 to 38 centimeters (2 to 15 inches); pale brown (10YR 6/3) coarse sandy loam, brown (10YR 4/3) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; few very fine roots; common very fine interstitial and few very fine tubular pores; 10 percent gravel; slightly acid; clear wavy boundary.

Cr—38 to 51 centimeters (15 to 20 inches); strongly weathered granite.

Range in Characteristics

Depth to weathered bedrock ranges from 6 to 20 inches. Reaction is moderately acid to neutral.

The A horizon has dry color of 10YR 5/2, 5/3, 6/2, or 6/3. The content of organic matter is less than one percent.

Cochora Series

Depth class: Shallow
Drainage class: Well drained
Permeability: Moderate
Landform: Hills and mountains
Parent material: Weakly consolidated material weathered from diatomite, sandstone, or shale
Slope: 9 to 50 percent
Taxonomic class: Loamy, mixed, superactive, calcareous, thermic, shallow Typic Torriorthents

Typical Pedon

Cochora loam, in an area of Pyxo-Cochora association, 15 to 30 percent slopes, on an east-facing 20 percent slope under annual grasses and shrubs at an elevation of 511 meters (1,675 feet) in Kern County, California; on the eastern foothills of the Temblor Range about 6 miles northwest of the town of Taft; 525 feet north and 850 feet east of the southwest corner of sec. 6, T. 32 S., R. 23. E; USGS Fellows topographic quadrangle; lat. 35 degrees 9 minutes 48 seconds N. and long. 119 degrees 33 minutes 6 seconds W. (When described on November 19, 1990, the soil was dry throughout.)

A—0 to 5 centimeters (0 to 2 inches); light gray (2.5Y 7/2) loam, olive brown (2.5Y 4/4) moist; moderate medium platy structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine roots; common very fine tubular pores; 10 percent gravel; noneffervescent; slightly alkaline (pH 7.5); clear smooth boundary.

Bw—5 to 23 centimeters (2 to 9 inches); light gray (10YR 7/2) loam, yellowish brown (10YR 5/4) moist; weak medium and coarse angular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine roots; common very fine tubular pores; 10 percent gravel; slightly effervescent; disseminated carbonates; moderately alkaline (pH 8.0); clear wavy boundary.

C—23 to 38 centimeters (9 to 15 inches); pale yellow (2.5Y 8/2) sandy loam, light olive brown (2.5Y 5/4) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; common very fine tubular pores; 10 percent gravel; strongly effervescent; disseminated carbonates; moderately alkaline (pH 8.0); abrupt wavy boundary.

Cr—38 centimeters (15 inches); massive, weakly consolidated sediment; slakes in water within minutes; works up to a silty clay loam; impenetrable by roots, can be dug with a spade; violently effervescent; disseminated carbonates; 10 percent subrounded gravel from shale and chert.

Range in Characteristics

Depth to soft bedrock ranges from 36 to 50 centimeters (14 to 20 inches).

The A horizon has dry color of 10YR 6/3, 7/2, 7/3, 8/2, or 8/3 or 2.5Y 7/2. Moist color is 10YR 4/3, 5/3, 5/4, or 6/4 or 2.5Y 5/4. The texture is predominantly loam, but in places is sandy loam, fine sandy loam, gravelly loam, or gravelly sandy loam. The content of clay ranges from 10 to 18 percent clay. The content of gravel ranges from 0 to 20 percent. Reaction is slightly alkaline or moderately alkaline. Effervescence ranges from none to violent, and carbonates are disseminated.

The Bw horizon has dry color of 10YR 6/3, 7/2, 7/3, 7/4, 8/2, or 8/3 or 2.5Y 4/4, 7/2, or 8/2. Moist color is 10YR 4/3, 5/3, 5/4, 6/4, or 7/4 or 2.5Y 5/4 or 6/4. The texture is predominantly loam, but in places is sandy loam, fine sandy loam, gravelly loam, or gravelly sandy loam. The content of clay ranges from 10 to 18 percent. The content of gravel ranges from 0 to 20 percent. Reaction is moderately alkaline. Effervescence is strong or violent, and carbonates are disseminated.

The C horizon has dry color of 10YR 6/3, 7/2, 7/3, 8/2, or 8/3 or 2.5Y 7/2 or 8/2. Moist color is 10YR 4/3, 5/3, or 6/3 or 2.5Y 5/4. The texture is loam, sandy loam, gravelly loam, or gravelly sandy loam. The content of clay ranges from 4 to 18 percent. The content of gravel ranges from 0 to 20 percent. Reaction is moderately alkaline. Effervescence ranges from slight to violent, and carbonates are disseminated.

Elder Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately rapid
Landform: Alluvial fans and flood plains
Parent material: Alluvium from mixed rock types
Slope: 0 to 9 percent
Taxonomic class: Coarse-loamy, mixed, superactive, thermic Cumulic Haploxerolls

Typical Pedon

Elder sandy loam, 0 to 2 percent slopes, at an elevation of 480 meters (1,575 feet); about 875 feet east and 1,125 feet north of the southwest corner of sec. 5, T. 29 S., R. 16 E.; USGS Camatta Ranch, California, topographic quadrangle; lat. 35 degrees 25 minutes 41 seconds N. and long. 120 degrees 17 minutes 11 seconds W.

Ap—0 to 23 centimeters (0 to 9 inches); dark grayish brown (10YR 4/2) sandy loam, very dark brown (10YR 2/2) moist; weak fine and medium subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; common very fine roots; few very fine tubular and common very fine interstitial pores; 5 percent gravel; neutral; clear smooth boundary.
A—23 to 53 centimeters (9 to 21 inches); dark grayish brown (10YR 4/2) sandy loam, very dark brown (10YR 2/2) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine roots; few very fine tubular and very fine interstitial pores; 5 percent gravel; neutral; clear smooth boundary.
C1—53 to 76 centimeters (21 to 30 inches); mixed dark brown and brown (10YR 3/3 and 4/3) coarse sandy loam, mixed very dark brown and dark brown (10YR 2/2 and 3/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine roots; common very fine interstitial pores; 5 percent gravel; neutral; gradual wavy boundary.
C2—76 to 99 centimeters (30 to 39 inches); dark brown (10YR 3/3) sandy loam, very dark brown (10YR 2/2) moist; massive; slightly hard, friable, nonsticky and nonplastic; few very fine roots; common very fine interstitial pores; 5 percent gravel; neutral; gradual wavy boundary.
Ab—99 to 170 centimeters (39 to 67 inches); very dark grayish brown (10YR 3/2) coarse sandy loam, mixed very dark brown and dark brown (10YR 2/2 and 3/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; common very fine tubular and few very fine interstitial pores; 5 percent gravel; neutral.

Range in Characteristics

These soils are either stratified or have a buried A horizon. The textural control section consists of stratified loam, sandy loam, fine sandy loam, and loamy sand and averages 9 to 18 percent clay. The content of gravel ranges from 2 to 15 percent. Not all pedons have an Ab horizon.

The A horizon has dry color of 10YR 4/1, 4/2, 5/1, or 5/2. Reaction ranges from moderately acid to neutral. The thickness of the horizon ranges from 53 to 86 centimeters (21 to 34 inches).

The C horizon has dry color of 10YR 3/3 or 4/3. Moist color is 10YR 2/2 or 3/3. Reaction is neutral or slightly alkaline.

Gaviota Series

Depth class: Very shallow and shallow
Drainage class: Well drained
Permeability: Moderately rapid
Landform: Hills and mountains
Parent material: Residual material from sandstone
Slope: 15 to 75 percent
Taxonomic class: Loamy, mixed, superactive, nonacid, thermic Lithic Xerorthents

Typical Pedon

Gaviota sandy loam in an area of Rock outcrop-Gaviota complex, 30 to 75 percent slopes, at an elevation of 823 meters (2,700 feet); about 2,450 feet west and 100 feet north of the southeast corner of sec. 12, T. 30. S., R. 17 E.; USGS California Valley topographic quadrangle; lat. 35 degrees 20 minutes 24 seconds N. and long. 120 degrees 6 minutes 7 seconds W.

A—0 to 20 centimeters (0 to 8 inches); brown (10YR 5/3) sandy loam, dark grayish brown (10YR 4/2) moist; moderate medium and coarse subangular blocky structure; slightly hard, friable, nonsticky and slightly plastic; few very fine and fine roots; few very fine tubular and common very fine interstitial pores; neutral; gradual irregular boundary.
R—20 to 28 centimeters (8 to 11 inches); hard, noncalcareous sandstone.

Range in Characteristics

Depth to hard sandstone ranges from 15 to 50 centimeters (6 to 20 inches). The content of gravel and cobbles ranges from 0 to 15 percent. Reaction is slightly acid or neutral.

The A horizon has dry color of 10YR 5/3, 5/4, 6/4, or 6/3. Moist color is 10YR 4/2, 4/3, or 4/4. The content of organic matter is less than 1 percent. In some pedons, the surface is slightly hydrophobic.

Some pedons have a C horizon.

Godde Series

Depth class: Shallow
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid
Landform: Mountains
Parent material: Residual material from hard sandstone

Slope: 30 to 75 percent
Taxonomic class: Loamy, mixed, superactive, mesic Lithic Haploxerolls

Typical Pedon

Godde sandy loam in an area of Godde-Xerorthents-Rock outcrop complex, 30 to 75 percent slopes, at an elevation of 1,512 meters (4,960 feet); about 900 feet north and 1,400 feet west of the southeast corner of sec. 16, T. 11 N., R. 21 E.; USGS Caliente Mountain topographic quadrangle; lat. 35 degrees 2 minutes 13 seconds N. and long. 119 degrees 45 minutes 35 seconds W.

O—1 to 0 centimeters (1/2 to 0 inches); oak leaf, twig, and grass litter.
A1—0 to 8 centimeters (0 to 3 inches); brown (10YR 5/3) sandy loam, very dark grayish brown (10YR 3/2) moist; massive; loose, nonsticky and nonplastic; many very fine roots; few very fine tubular and common very fine interstitial pores; 3 percent gravel; neutral; clear smooth boundary.
A2—8 to 36 centimeters (3 to 14 inches); brown (10YR 5/3) sandy loam, dark brown (10YR 3/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine and fine roots; few very fine and fine tubular and interstitial pores; 3 percent gravel; neutral; gradual wavy boundary.
R—36 to 64 centimeters (14 to 25 inches); hard, highly fractured sandstone; fractures are 1 to 13 centimeters (1/2 to 5 inches) apart.

Range in Characteristics

Depth to lithic contact ranges from 25 to 50 centimeters (10 to 20 inches). The content of gravel ranges from 0 to 10 percent throughout the profile.

The A horizon has dry color of 10YR 5/2 or 5/3. Moist color is 10YR 3/2 or 3/3.

Some pedons have a thin B horizon or C horizon between the A horizon and the bedrock. These thin horizons have dry color of 10YR 6/3, 4/4, or 5/4 and moist color of 10YR 3/3, 4/3, or 4/4.

Hillbrick Series

Depth class: Shallow
Drainage class: Well drained
Permeability: Moderately rapid
Landform: Hills and mountains
Parent material: Residual material from shale and sandstone
Slope: 9 to 75 percent
Taxonomic class: Loamy, mixed, superactive, calcareous, thermic Lithic Xerorthents

Typical Pedon

Hillbrick loam in an area of Beam-Panoza-Hillbrick complex, 30 to 50 percent slopes, at an elevation of 640 meters (2,100 feet); about 1,450 feet west and 2,950 feet north of the southeast corner of sec. 3, T. 32 S., R. 22 E.; USGS Fellows topographic quadrangle; lat. 35 degrees 10 minutes 4 seconds N. and long. 119 degrees 35 minutes 40 seconds W.

A—0 to 10 centimeters (0 to 4 inches); light brownish gray (10YR 6/2) loam, dark grayish brown (10YR 4/2) moist; moderate fine subangular blocky structure; slightly hard, friable, nonsticky and slightly plastic; few very fine roots; few very fine interstitial and tubular pores; violently effervescent; moderately alkaline; clear wavy boundary.
C—10 to 38 centimeters (4 to 15 inches); very pale brown (10YR 7/3) loam, brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, nonsticky and slightly plastic; few very fine roots; common very fine and fine tubular pores; 5 percent, by volume, shale fragments in the lower 4 inches; violently effervescent; moderately alkaline; gradual wavy boundary.
R—38 to 61 centimeters (15 to 24 inches); hard, fractured calcareous shale.

Range in Characteristics

Depth to hard bedrock ranges from 25 to 50 centimeters (10 to 20 inches).

The A horizon has dry color of 10YR 6/2, 6/3, or 6/4. Moist color is 10YR 4/2, 4/3, or 5/3. The texture is loam or sandy loam. The content of gravel ranges from 0 to 15 percent. Effervescence ranges from slight to violent.

The C horizon, where present, has dry color of 10YR 6/3 or 7/3. Moist color is 10YR 4/3 or 4/4. The texture is loam, sandy loam, or gravelly sandy loam. The content of gravel ranges from 0 to 25 percent.

Jenks Series

Depth class: Moderately deep
Drainage class: Well drained
Permeability: Moderately slow
Landform: Hills
Parent material: Residual material weathered from soft sandstone or shale
Slope: 2 to 50 percent

Taxonomic class: Fine-loamy, mixed, superactive, thermic Aridic Haploxerolls

Typical Pedon

Jenks clay loam, in an area of Beam-Panoza-Jenks complex, 15 to 30 percent slopes, at an elevation of 707 meters (2,320 feet); about 3.6 miles north of Highway 58 to telephone line on the road to the Las Yeguas Ranch and 300 feet uphill from dirt road by telephone line on magnetic bearing 280 degrees; about 400 feet north and 350 feet west of the southeast corner of sec. 13, T. 29 S., R. 18 E.; USGS Las Yeguas Ranch topographic quadrangle; lat. 35 degrees 23 minutes 48 seconds N. and long. 119 degrees 59 minutes 15 seconds W.

Ap—0 to 15 centimeters (0 to 6 inches); grayish brown (10YR 5/2) clay loam, dark brown (10YR 3/3) moist; cloddy; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; few very fine tubular pores; moderately alkaline (pH 8.0); clear smooth boundary.

A—15 to 41 centimeters (6 to 16 inches); brown (10YR 5/3) clay loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; slightly hard, friable, sticky and slightly plastic; few very fine roots; common very fine and fine tubular pores; moderately alkaline (pH 8.0); gradual wavy boundary.

Bt—41 to 69 centimeters (16 to 27 inches); variegated brown (10YR 5/3) and light yellowish brown (10YR 6/4) clay loam, variegated dark brown (10YR 4/3) and dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; slightly hard, friable, sticky and plastic; few very fine roots; common very fine and fine tubular pores; few thin clay films on peds; moderately alkaline (pH 8.0); clear wavy boundary.

Cr—69 to 89 centimeters (27 to 35 inches); variegated white (10YR 8/2) and very pale brown (10YR 8/3 and 7/3), weathered, calcareous, fine-grained sandstone.

Range in Characteristics

Depth to soft, calcareous sandstone or shale ranges from 50 to 100 centimeters (20 to 40 inches). The texture is clay loam or silty clay loam.

The A horizon has dry color of 10YR 5/2 or 5/3 or 2.5YR 4/2 or 5/2. Moist color is 10YR 3/2 or 3/3 or 2.5YR 3/2. The content of gravel ranges from 0 to 15 percent.

The Bt horizon has dry color of 10YR 5/2, 5/3, 6/2, 6/3, or 6/4. Moist color is 10YR 3/2, 3/3, 4/2, 4/3, 4/4, or 5/4. The content of gravel ranges from 0 to 15 percent.

Kilmer Series

Depth class: Moderately deep
Drainage class: Well drained
Permeability: Moderately slow
Landform: Hills and mountains
Parent material: Residual material from shale or sandstone
Slope: 9 to 75 percent
Taxonomic class: Fine-loamy, mixed, superactive, calcareous, thermic Typic Xerorthents

Typical Pedon

Kilmer loam in an area of Kilmer-Hillbrick complex, 15 to 50 percent slopes, at an elevation of 780 meters (2,560 feet); about 2,250 feet west and 1,100 feet south of the northeast corner of sec. 7, T. 29 S., R. 19 E.; USGS Las Yeguas Ranch topographic quadrangle; lat. 35 degrees 25 minutes 18 seconds N. and long. 119 degrees 58 minutes 32 seconds W.

A—0 to 28 centimeters (0 to 11 inches); pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; common very fine tubular pores; 12 percent gravel; violently effervescent; moderately alkaline; gradual wavy boundary.

C—28 to 74 centimeters (11 to 29 inches); pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine tubular pores; 10 percent gravel; violently effervescent; moderately alkaline; clear wavy boundary.

R—74 to 86 centimeters (29 to 34 inches); hard, calcareous sandstone.

Range in Characteristics

Depth to lithic contact with sandstone or shale ranges from 50 to 100 centimeters (20 to 40 inches). Effervescence ranges from slight to violent. Some pedons have carbonates that are segregated as filaments or seams. The content of gravel ranges from 0 to 15 percent.

The A horizon has dry color of 10YR 6/2 or 6/3 or 2.5Y 6/2. Moist color is 10YR 3/3, 4/2, 4/3, or 4/4. The texture is loam or clay loam

The C horizon has dry color of 10YR 6/3, 6/4, or

7/4. Moist color is 10YR 3/3, 4/3, 4/4, 5/3, or 5/4. The texture is loam or clay loam. The content of clay ranges from 18 to 35 percent.

Lithic Torriorthents

Depth class: Very shallow
Drainage class: Well drained to excessively drained
Permeability: Moderate and moderately rapid
Landform: Mountains
Parent material: Residual material from sandstone
Slope: 50 to 100 percent
Taxonomic class: Lithic Torriorthents

Reference Pedon

Lithic Torriorthents, in an area of Rock outcrop-Lithic Torriorthents complex, 50 to 100 percent slopes, at an elevation of 1,512 meters (4,960 feet); about 350 feet south from Caliente Peak lookout; about 1,460 feet west and 300 feet north of the southeast corner of sec. 16, T. 11 N., R. 21 E.; USGS Caliente Mountain topographic quadrangle; lat. 35 degrees 2 minutes 7 seconds N. and long. 119 degrees 45 minutes 37 seconds W.

A—0 to 10 centimeters (0 to 4 inches); light yellowish brown (2.5Y 6/4) sandy loam, olive brown (2.5Y 4/4) moist; single grain; loose, loose, nonsticky and nonplastic; common very fine and few fine roots; common very fine interstitial pores; 5 percent gravel; violently effervescent; moderately alkaline; clear wavy boundary.
R—10 to 23 centimeters (4 to 9 inches); hard, fractured sandstone.

Range in Characteristics

The reference pedon is an example of the Lithic Torriorthents in the survey area. Due to the highly variable nature of the Lithic Torriorthents, this pedon is not necessarily representative of these soils throughout the area.

Depth to soft or hard, massive or fractured sandstone ranges from 10 to 23 centimeters (4 to 9 inches).

The A horizon has dry color of 10YR 7/2, 6/3, or 6/4 or 2.5Y 7/4 or 6/4. The texture is coarse sandy loam, sandy loam, or loam. The content of gravel ranges from 5 to 35 percent. Effervescence ranges from none to violent.

Metz Series

Depth class: Very deep
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid
Landform: Flood plains
Parent material: Alluvium from mixed rock types
Slope: 0 to 5 percent
Taxonomic class: Sandy, mixed, thermic Typic Xerofluvents

Typical Pedon

Metz loamy sand, 0 to 5 percent slopes, at an elevation of 408 meters (1,340 feet); about 1,875 feet east and 2,000 feet south of the northwest corner of sec. 24, T. 28 S., R. 15 E.; USGS Camatta Ranch, California, topographic quadrangle; lat. 35 degrees 28 minutes 44 seconds N. and long. 120 degrees 18 minutes 46 seconds W.

A1—0 to 5 centimeters (0 to 2 inches); light brownish gray (10YR 6/2) loamy sand, dark grayish brown (10YR 4/2) moist; weak thin platy structure; slightly hard, loose, nonsticky and nonplastic; many very fine and few fine roots; common very fine interstitial pores; slightly alkaline; clear smooth boundary.
A2—5 to 25 centimeters (2 to 10 inches); light brownish gray (10YR 6/2) loamy sand, dark grayish brown (10YR 4/2) moist; massive; slightly hard, loose, nonsticky and nonplastic; common very fine and few fine roots; common very fine interstitial pores; neutral; gradual wavy boundary.
2C1—25 to 46 centimeters (10 to 18 inches); brown (10YR 5/3) sandy loam, brown (10YR 4/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; few very fine roots; common very fine interstitial pores; neutral; gradual wavy boundary.
3C2—46 to 102 centimeters (18 to 40 inches); pale brown (10YR 6/3) loamy sand, brown (10YR 5/3) moist; massive; slightly hard, loose, nonsticky and nonplastic; few very fine roots; common very fine interstitial pores; neutral; gradual wavy boundary.
4C3—102 to 140 centimeters (40 to 55 inches); very pale brown (10YR 7/3) sand, brown (10YR 5/3) moist; massive; loose, nonsticky and nonplastic; common very fine roots; common very fine interstitial pores; neutral; gradual wavy boundary.
5C4—140 to 160 centimeters (55 to 63 inches); light yellowish brown (10YR 6/4) coarse sand, brown (10YR 5/4) moist; massive; loose, nonsticky and nonplastic; common very fine interstitial pores; slightly alkaline.

Range in Characteristics

The textural control section consists of stratified layers of sand, loamy sand, loamy fine sand, sandy loam, fine sandy loam, and very fine sandy loam. The content of gravel ranges from 0 to 15 percent, although individual strata may be up to 35 percent.

The A horizon has dry color of 10YR 5/2, 5/3, 6/1, 6/2, or 6/3. Moist color is 10YR 4/2 or 4/3. Reaction ranges from moderately alkaline to neutral. The content of organic matter is less than 1 percent.

The C horizon has dry color of 10YR 5/3, 6/3, 7/3, or 6/4. Moist color is 10YR 4/3, 5/3, or 5/4. The texture is stratified coarse sand, sand, loamy sand, and sandy loam. Reaction is neutral or slightly alkaline.

Millsholm Series

Depth class: Shallow
Drainage class: Well drained
Permeability: Moderate
Landform: Hills and mountains
Parent material: Residual material from sandstone
Slope: 15 to 30 percent
Taxonomic class: Loamy, mixed, superactive, thermic Lithic Haploxerepts.

Typical Pedon

Millsholm loam in an area of Saltos-Millsholm complex, 15 to 30 percent slopes, at an elevation of 643 meters (2,110 feet); about 400 feet east and 2,000 feet north of the southwest corner of sec. 35, T. 30 S., R. 18 E.; USGS California Valley topographic quadrangle; lat. 35 degrees 16 minutes 13 seconds N. and long. 120 degrees 1 minute 15 seconds W.

A—0 to 5 centimeters (0 to 2 inches); brown (10YR 5/3) loam, brown (10YR 4/3) moist; moderate fine subangular blocky structure; hard, firm, slightly sticky and slightly plastic; few very fine roots; few very fine tubular pores; slightly alkaline; clear smooth boundary.

Bt—5 to 31 centimeters (2 to 12 inches); brown (10YR 5/3) loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; hard, firm, slightly sticky and slightly plastic; few very fine roots; common very fine tubular pores; few thin clay films on ped faces; slightly alkaline; clear smooth boundary.

R—31 to 38 centimeters (12 to 15 inches); unweathered sandstone that has calcareous coatings on fractures.

Range in Characteristics

Depth to lithic contact with sandstone ranges from 25 to 50 centimeters (10 to 20 inches).

The A horizon has dry color of 10YR 5/3 or 6/3.

The B horizon has dry color of 10YR 5/3, 6/3, or 6/4.

Muranch Series

Depth class: Moderately deep
Drainage class: Well drained
Permeability: Moderate
Landform: Hills and mountains
Parent material: Residual material from basalt
Slope: 30 to 75 percent
Taxonomic class: Loamy-skeletal, mixed, superactive, thermic Aridic Haploxerolls

Typical Pedon

Muranch loam in an area of Muranch-Xerorthents-Rock outcrop association, 30 to 75 percent slopes, at an elevation of 975 meters (3,200 feet); 35 paces west on ridgetop where the power pole road makes a U-turn, then 35 paces north downhill; about 2,300 feet east and 800 feet north of the southwest corner of sec. 33, T. 11 N., R. 25 W.; USGS Cuyama topographic quadrangle; lat. 34 degrees 59 minutes 32 seconds N. and long. 119 degrees 33 minutes 7 seconds W.

A1—0 to 8 centimeters (0 to 3 inches); brown (10YR 5/3) loam, dark brown (10YR 3/3) moist; moderate fine subangular blocky structure; slightly hard, friable, sticky and plastic; common very fine roots; few very fine tubular and common very fine interstitial pores; slightly alkaline (pH 7.5); clear smooth boundary.

A2—8 to 38 centimeters (3 to 15 inches); brown (10YR 5/3) loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; slightly hard, friable, sticky and plastic; few very fine and fine roots; common very fine and fine interstitial and common medium tubular pores; 5 percent pebbles; slightly alkaline (pH 7.5); gradual wavy boundary.

Bw—38 to 91 centimeters (15 to 36 inches); light yellowish brown (10YR 6/4) very gravelly loam, dark yellowish brown (10YR 3/4) moist; massive; slightly hard, friable, sticky and plastic; few very fine and fine and common medium roots; few very fine tubular and interstitial pores; 40 percent pebbles and 20 percent cobbles; moderately alkaline (pH 8.0); gradual wavy boundary.

R—91 to 100 centimeters (36 to 40 inches); very dark gray (10YR 3/1), hard, fractured basalt, black (10YR 2/1) moist.

Range in Characteristics

The depth to lithic contact with basalt and the thickness of the solum range from 50 to 100 centimeters (20 to 40 inches). The content of clay ranges from 20 to 27 percent throughout the profile.

Reaction is slightly alkaline or moderately alkaline throughout.

The A horizon has dry color of 10YR 5/2 or 5/3. Moist color is 10YR 3/2 or 3/3. The content of gravel ranges from 0 to 5 percent. The content of cobbles ranges from 0 to 5 percent.

The Bw horizon has dry color of 10YR 6/3 or 6/4 or 7.5YR 6/3. Moist color is 10YR 3/3, 3/4, 4/2, 4/3, or 4/4. The content of gravel ranges from 25 to 45 percent. The content of cobbles ranges from 15 to 30 percent.

Nacimiento Series

Depth class: Moderately deep
Drainage class: Well drained
Permeability: Moderately slow
Landform: Hills and mountains
Parent material: Residual material weathered from soft, calcareous sandstone or shale
Slope: 9 to 50 percent
Taxonomic class: Fine-loamy, mixed, superactive, thermic Calcic Haploxerolls

Typical Pedon

Nacimiento clay loam in an area of Balcom-Nacimiento complex, 30 to 50 percent slopes, at an elevation of 585 meters (1,920 feet); about 2,640 feet east and 990 feet south of the northwest corner of sec. 9, T. 27 S., R. 17 E.; USGS Holland Canyon topographic quadrangle; lat. 35 degrees 35 minutes 48 seconds N. and long. 120 degrees 8 minutes 54 seconds W.

A—0 to 25 centimeters (0 to 10 inches); grayish brown (10YR 5/2) clay loam, very dark grayish brown (10YR 3/2) moist; moderate medium and coarse angular blocky structure; hard, friable, sticky and plastic; common very fine roots; few very fine tubular pores; slightly effervescent; disseminated lime; moderately alkaline; clear wavy boundary.

Bk1—25 to 74 centimeters (10 to 29 inches); grayish brown (10YR 5/2) clay loam, dark grayish brown (10YR 4/2) moist; weak medium prismatic structure parting to weak medium subangular blocky; slightly hard, friable, sticky and plastic; common very fine roots; common very fine and few fine tubular pores; violently effervescent; carbonates that are segregated as common fine filaments; moderately alkaline; clear wavy boundary.

Bk2—74 to 94 centimeters (29 to 37 inches); light brownish gray (2.5Y 6/2) clay loam, grayish brown (2.5Y 5/2) moist; weak fine subangular blocky structure; slightly hard, friable, very sticky and very plastic; few very fine roots; few very fine and fine tubular pores; violently effervescent; carbonates that are segregated as common fine filaments; moderately alkaline; gradual broken boundary.

Cr—94 to 107 centimeters (37 to 42 inches); white (10YR 8/1), weathered, calcareous sandstone.

Range in Characteristics

Depth to weathered, calcareous sandstone or shale is 50 to 100 centimeters (20 to 40 inches).

The A horizon has dry color of 10YR 4/2, 5/2, or 5/3 or 2.5Y 5/2. Moist color is 10YR 3/2 or 3/3 or 2.5Y 3/2. Effervescence ranges from slight to violent.

The Bk horizon has dry color of 10YR 5/2, 6/2, or 6/3 or 2.5Y 5/2 or 6/2. Moist color is 10YR 4/2, 4/3, or 4/4 or 2.5Y 5/2. The texture is loam, clay loam, or silty clay loam.

Oceano Series

Depth class: Very deep
Drainage class: Excessively drained
Permeability: Rapid
Landform: Dunes
Parent material: Eolian deposits
Slope: 2 to 9 percent
Taxonomic class: Mixed, thermic Lamellic Xeropsamments

Typical Pedon

Oceano loamy sand in an area of Oceano loamy sand, 2 to 9 percent slopes, at an elevation of 305 meters (1,000 feet); 0.4 mile west of Santa Margarita Cemetery on Highway 58 and 0.4 mile south of the highway; Santa Margarita Land Grant, T. 29 S., R. 13 E.; USGS Santa Margarita topographic quadrangle; lat. 35 degrees 23 minutes 14 seconds N. and long 120 degrees 35 minutes 41 seconds W.

A—0 to 31 centimeters (0 to 12 inches); light brownish gray (10YR 6/2) loamy sand, dark grayish brown (10YR 4/2) moist; single grain; loose, nonsticky and nonplastic; many very fine roots; many very fine tubular and interstitial pores; slightly acid; clear wavy boundary.

C—31 to 152 centimeters (12 to 60 inches); light gray (10YR 7/2) loamy sand, grayish brown (10YR 5/2) moist; single grain; soft, very friable, nonsticky and nonplastic; common very fine roots, many very fine tubular and interstitial pores; 3 horizontal, broken lamellae 15 to 25 centimeters

(6 to 10 inches) apart and 0.5 to 1.0 centimeter (1/4 to 1/2 inch) wide below a depth of 64 centimeters (25 inches); slightly acid.

Range in Characteristics

The thickness of the A horizon ranges from 31 to 51 centimeters (12 to 20 inches).

Padres Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Landform: Alluvial fans and alluvial flats
Parent material: Alluvial material from sedimentary rocks
Slope: 0 to 9 percent
Taxonomic class: Coarse-loamy, mixed, superactive, thermic Typic Calcixerepts

Typical Pedon

Padres sandy loam, 2 to 9 percent slopes, at an elevation of 646 meters (2,120 feet); about 10.1 miles southeast on Simmler-Soda Lake Road from its intersection with Soda Lake-San Diego Creek Road, about 1.5 miles southwest on dirt road to just before fenced trail planting enclosure, and 539 feet from southeast corner post of abandoned oil well pump (on magnetic bearing 130 degrees); about 350 feet east and 110 feet south of the northwest corner of sec. 19, R. 21 E., T. 31 S.; USGS Painted Rock topographic quadrangle; lat. 35 degrees 13 minutes 8 seconds N. and long. 119 degrees 46 minutes 15 seconds W.

A1—0 to 8 centimeters (0 to 3 inches); light brownish gray (2.5Y 6/2) sandy loam, dark grayish brown (2.5Y 4/2) moist; weak thick platy structure; slightly hard, friable, nonsticky and slightly plastic; few very fine roots; few very fine discontinuous tubular pores; 5 percent gravel; electrical conductivity (EC) of 1.1 mmhos/cm; strongly effervescent; moderately alkaline (pH 8.0); clear smooth boundary.

A2—8 to 41 centimeters (3 to 16 inches); light gray (2.5Y 7/2) sandy loam, dark grayish brown (2.5Y 4/2) moist; massive; slightly hard, friable, nonsticky and slightly plastic; common very fine roots; few very fine discontinuous tubular and interstitial pores; 5 percent gravel; electrical conductivity (EC) of 0.6 mmhos/cm; violently effervescent; moderately alkaline (pH 8.0); gradual wavy boundary.

2Ck—41 to 76 centimeters (16 to 30 inches); pale yellow (2.5Y 7/4) gravelly coarse sandy loam, light olive brown (2.5Y 5/4) moist; massive; soft and slightly hard, very friable and friable, nonsticky and nonplastic; few very fine roots; few very fine discontinuous tubular and common very fine and fine interstitial pores; 30 percent gravel; electrical conductivity (EC) of 2.0 mmhos/cm; violently effervescent; carbonates that are segregated in spots as common fine filaments; moderately alkaline (pH 8.0); clear wavy boundary.

3Ck1—76 to 97 centimeters (30 to 38 inches); pale yellow (2.5Y 7/4) loam, light olive brown (2.5Y 5/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; common very fine discontinuous tubular pores; 5 percent gravel; electrical conductivity (EC) of 2.9 mmhos/cm; violently effervescent; carbonates that are segregated into common fine filaments; moderately alkaline (pH 8.0); gradual wavy boundary.

3Ck2—97 to 117 centimeters (38 to 46 inches); pale yellow (2.5Y 7/4) sandy loam, light olive brown (2.5Y 5/4) moist; massive; slightly hard, friable, nonsticky and slightly plastic; few very fine discontinuous tubular pores; 5 percent gravel; electrical conductivity (EC) of 2.9 mmhos/cm; violently effervescent; carbonates that are segregated into common fine filaments; moderately alkaline (pH 8.0) clear wavy boundary.

4Ck—117 to 158 centimeters (46 to 62 inches); light gray (2.5Y 7/2) gravelly coarse sandy loam, light olive brown (2.5Y 5/4) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine discontinuous tubular and common very fine interstitial pores; 30 percent gravel; electrical conductivity (EC) of 3.2 mmhos/cm; violently effervescent; carbonates that are segregated into few fine filaments; moderately alkaline (pH 8.0).

Range in Characteristics

The content of clay ranges from 8 to 18 percent.

The A horizon has dry color of 10YR 6/2 or 6/3 or 2.5Y 6/2 or 7/2. Moist color is 10YR 4/2, 4/3, 4/4, or 5/4 or 2.5Y 4/2 or 4/4. The texture is sandy loam or fine sandy loam. The content of gravel ranges from 0 to 15 percent. The content of cobbles ranges from 0 to 5 percent. Effervescence ranges from slight to violent. Reaction is slightly alkaline or moderately alkaline. Electrical conductivity (EC) ranges from 0.5 to 2.0 mmhos/cm. In some pedons, the A horizon is noncalcareous from a depth of 0 to 13 centimeters (0 to 5 inches).

The C horizon has dry color of 10YR 6/3, 6/4, 7/3, or 7/4 or 2.5Y 6/2, 7/2, or 7/4. Moist color is 10YR 4/2, 4/3, 4/4, or 5/4 or 2.5Y 4/4 or 5/4. The texture is gravelly coarse sandy loam, gravelly sandy loam, sandy loam, fine sandy loam, or loam. The content of gravel ranges from 0 to 35 percent. The content of cobbles ranges from 0 to 5 percent. Effervescence is strong or violent. Electrical conductivity (EC) ranges from 2.0 to 4.0 mmhos/cm and increases with depth.

Panoza Series

Depth class: Moderately deep
Drainage class: Well drained
Permeability: Moderate
Landform: Hills and mountains
Parent material: Residual material weathered from shale, sandstone, or conglomerate
Slope: 9 to 75 percent
Taxonomic class: Fine-loamy, mixed, superactive, thermic Calcic Haploxerepts.

Typical Pedon

Panoza loam in an area of Panoza-Beam complex, 30 to 50 percent, at an elevation of 689 meters (2,260 feet); about 8.5 miles southeast on Simmler-Soda Lake Road from its intersection with Soda Lake-San Diego Creek Road, about 0.5 mile southwest on dirt road just before the cattle guard, and 200 feet uphill from the north-northwest bend in the creek on magnetic bearing 308 degrees; about 1,570 feet north and 910 feet west of the southeast corner of sec. 12, T. 31 S., R. 20 E.; USGS Painted Rock topographic quadrangle; lat. 35 degrees 14 minutes 17 seconds N. and long. 119 degrees 46 minutes 32 seconds W.

A—0 to 15 centimeters (0 to 6 inches); pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; hard, friable, nonsticky and slightly plastic; common very fine roots; common very fine tubular and interstitial pores; 2 percent pebbles; strongly effervescent; moderately alkaline; gradual smooth boundary.

Bw—15 to 46 centimeters (6 to 18 inches); light gray (10YR 7/2) loam, brown (10YR 5/3) moist; common fine subangular blocky structure; slightly hard, very friable, nonsticky and slightly plastic; common very fine roots; common very fine tubular and interstitial pores; 5 percent pebbles; violently effervescent; moderately alkaline; gradual wavy boundary.

Bk—46 to 61 centimeters (18 to 24 inches); light gray (10YR 7/2) loam, pale brown (10YR 6/3) moist; weak fine subangular blocky structure; slightly hard, very friable, nonsticky and slightly plastic; common very fine roots; common very fine tubular pores; 5 percent pebbles; violently effervescent; carbonates that are segregated as few soft masses; moderately alkaline; clear wavy boundary.

Cr—61 to 76 centimeters (24 to 30 inches); white (10YR 8/1), soft, calcareous, coarse-grained sandstone.

Range in Characteristics

Depth to weathered shale, sandstone, or conglomerate ranges from 50 to 100 centimeters (20 to 40 inches). The content of gravel ranges from 0 to 10 percent. The content of cobbles and stones range from 0 to 35 percent throughout.

The A horizon has dry color of 10YR 6/3. Moist color is 10YR 4/2 or 4/3. Effervescence is strong or violent. The texture is loam or stony loam.

The B horizon has dry color of 10YR 6/3 or 7/2. The texture is loam, sandy loam, or stony loam. Carbonates are segregated as few to common soft masses in the Bk horizon.

Pinspring Series

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Slow
Landform: Alluvial flats
Parent material: Alluvium from mixed rock types
Slope: 0 to 5 percent
Taxonomic class: Fine-loamy, mixed, superactive, thermic Typic Haploxeralfs

Typical Pedon

Pinspring loam in an area of Yeguas-Pinspring complex, 2 to 5 percent slopes, at an elevation of 622 meters (2,040 feet); 1 mile north of highway 58 on the dirt road to the Las Yeguas Ranch, west 0.4 mile on farm road, and 173 feet south of the farm road on magnetic bearing SSE 164 degrees; about 2,100 feet west and 173 feet south of the northeast corner of sec. 35, T. 29 S., R. 18 E.; USGS California Valley topographic quadrangle; lat. 35 degrees 21 minutes 56 seconds N. and long. 120 degrees 00 minutes 40 seconds W.

Ap—0 to 15 centimeters (0 to 6 inches); grayish brown (2.5Y 5/2) loam, very dark grayish brown (2.5Y 3/2) moist; massive; hard, friable, sticky and slightly plastic; few very fine roots; few very fine tubular pores; neutral; clear smooth boundary.

A—15 to 36 centimeters (6 to 14 inches); grayish brown (2.5Y 5/2) loam, very dark grayish brown

(2.5Y 3/2) moist; massive; hard, friable, sticky and slightly plastic; few very fine roots; common very fine and few fine tubular pores; neutral; clear wavy boundary.

ABt—36 to 64 centimeters (14 to 25 inches); pale brown (10YR 6/3) loam, mixed dark brown (10YR 3/3) and brown (10YR 4/3) moist; massive; hard, friable, sticky and plastic; few very fine roots; common very fine and fine tubular pores; very few thin clay films in pores; slightly alkaline; clear wavy boundary.

Bt1—64 to 76 centimeters (25 to 30 inches); mixed light yellowish brown (10YR 6/4) and pale brown (10YR 6/3) clay loam, mixed yellowish brown and brown (10YR 5/4 and 4/3) moist; massive; hard, friable, sticky and plastic; common very fine and few fine tubular pores; few thin clay films on ped faces and in pores; few fine pressure faces on peds; few very fine manganese stains on ped faces; slightly alkaline; abrupt smooth boundary.

2Btq—76 to 99 centimeters (30 to 39 inches); very pale brown (10YR 7/4) discontinuous weakly silica-cemented sandy loam, yellowish brown (10YR 5/4) moist; weak very fine prismatic structure parting to moderate fine angular blocky; extremely hard, very firm, slightly sticky and nonplastic; few fine tubular pores; common thin clay films on ped faces; few fine and medium manganese stains on ped faces; moderately alkaline; gradual wavy boundary.

3Btk—99 to 135 centimeters (39 to 53 inches); yellow (2.5Y 7/6) loam, light olive brown (2.5Y 5/6) moist; weak very fine and fine prismatic structure parting to strong fine angular blocky; hard, friable, slightly sticky and slightly plastic; few fine tubular pores; many thin clay films on ped faces; few fine and medium manganese stains on ped faces; violently effervescent; carbonates that are segregated as common fine and medium soft masses; moderately alkaline; gradual wavy boundary.

4Bt2—135 to 158 centimeters (53 to 62 inches); pale yellow (2.5Y 7/4) loam, light olive brown (2.5Y 5/4) moist; weak fine angular blocky structure; hard, friable, slightly sticky and slightly plastic; few fine tubular pores; common thin clay films on ped faces; 8 percent pebbles; few fine and medium manganese stains on ped faces; moderately alkaline.

Range in Characteristics

The thickness of the solum ranges from 64 to 102 centimeters (25 to 40 inches). Not all pedons have an AB horizon.

The A horizon has dry color of 10YR 5/2, 5/3, 6/2, or 6/3 or 2.5Y 5/2 or 6/2. Moist color is 10YR 3/2, 3/3, or 4/3 or 2.5Y 3/2. The content of clay ranges from 18 to 27 percent. Reaction is neutral or slightly alkaline.

The Bt horizon has dry color of 10YR 6/3 or 6/4 or 2.5Y 6/2 or 6/4. Moist color is 10YR 3/3, 4/3, 4/4, or 5/4 or 2.5Y 4/2 or 4/4. The texture is clay loam or silty clay loam. The content of clay ranges from 27 to 35 percent. Reaction is slightly alkaline or moderately alkaline.

The 2Btq horizon has dry color of 10YR 6/4 or 7/4 or 2.5Y 6/4 or 7/4. Moist color is 10YR 4/4 or 5/4 or 2.5Y 4/4 or 5/4. The texture is sandy loam or gravelly coarse sandy loam. The content of clay ranges from 12 to 16 percent. The content of gravel ranges from 0 to 20 percent. Consistence is very hard or extremely hard when the soil is dry. Consistence is firm or extremely firm and brittle when the soil is moist. This horizon occurs at depths of 64 to 102 centimeters (25 to 40 inches) and is 15 to 38 centimeters (6 to 15 inches) thick. Reaction is slightly alkaline or moderately alkaline.

The 3Btk and 4Bt2 horizons are always present below the 2Btq horizon and are loam. They have dry color of 10YR 6/3, 6/4, or 7/4 or 2.5Y 6/4, 7/4, or 7/6. Moist color is 10YR 4/4 or 5/4 or 2.5Y 4/4, 5/4, or 5/6. The content of clay ranges from 18 to 27 percent. The content of gravel ranges from 0 to 10 percent. Effervescence ranges from none to violent, and carbonates are segregated as common fine and medium filaments, seams, or soft masses. Reaction is slightly alkaline or moderately alkaline.

Polonio Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Landform: Alluvial fans
Parent material: Alluvium from calcareous sedimentary rocks
Slope: 0 to 9 percent
Taxonomic class: Fine-loamy, mixed, superactive, thermic Calcic Haploxerepts

Typical Pedon

Polonio clay loam, 2 to 9 percent slopes, at an elevation of 463 meters (1,520 feet); about 600 feet west and 1,700 feet north of the southeast corner of sec. 33, T. 27 S., R. 15 E.; USGS Camatta Canyon, California, topographic quadrangle; lat. 35 degrees 31 minutes 56 seconds N. and long. 120 degrees 21 minutes 24 seconds W.

Ap—0 to 15 centimeters (0 to 6 inches); light brownish gray (10YR 6/2) clay loam, brown (10YR 4/3) moist; weak coarse subangular blocky structure; hard, friable, slightly sticky and plastic; common very fine roots; common very fine tubular pores; slightly effervescent; moderately alkaline; clear smooth boundary.
A—15 to 36 centimeters (6 to 14 inches); pale brown (10YR 6/3) clay loam, brown (10YR 4/3) moist; moderate fine subangular blocky; slightly hard, friable, slightly sticky and plastic; few very fine roots; common very fine and fine tubular pores; slightly effervescent; moderately alkaline; gradual wavy boundary.
Bk1—36 to 125 centimeters (14 to 49 inches); light yellowish brown (10YR 6/4) clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and plastic; few very fine roots; few very fine and fine tubular pores; strongly effervescent; carbonates that are segregated as many fine filaments and seams; moderately alkaline; gradual wavy boundary.
Bk2—125 to 175 centimeters (49 to 69 inches); brown (7.5YR 5/4) clay loam, dark brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and plastic; few very fine tubular pores; few thin clay films lining pores; violently effervescent; carbonates that are segregated as many fine filaments and seams; moderately alkaline.

Range in Characteristics

The content of gravel ranges from 0 to 35 percent throughout.

The A horizon has dry color of 10YR 5/2, 6/1, 6/2, or 6/3. Moist color is 10YR 4/1, 4/2, or 4/3. The texture is loam, clay loam, or gravelly loam. Effervescence ranges from slight to strong.

The Bk horizon has dry color of 7.5YR 5/4 or 10YR 5/4, 6/3, 6/4, 7/2, 7/3, 7/4, 8/3, or 8/4. Moist color is 7.5YR 4/4 or 10YR 4/2, 4/3, 4/4, 5/4, 6/2, 6/3, or 6/4. The texture is loam, clay loam, or silty clay loam.

Pyxo Series

Depth class: Moderately deep
Drainage class: Well drained
Permeability: Moderate
Landform: Hills
Parent material: Residuum weathered from soft, calcareous sandstone or shale
Slope: 15 to 50 percent
Taxonomic class: Coarse-loamy, mixed, superactive, thermic Typic Haplocambids

Typical Pedon

Pyxo loam on a 10 percent slope that is convex horizontally, linear vertically, and under annual grasses and allscale saltbush; about 10.5 kilometers (6.5 miles) northwest of Fellows; about 122 meters (400 feet) north and 610 meters (2,000 feet) west of southeast corner of sec. 4, T. 31 S., R. 22 E., Mount Diablo Base and Meridian; West Elk Hills topographic quadrangle; lat. 35 degrees 15 minutes 15 seconds N. and long. 119 degrees 36 minutes 46 seconds W. (When described on March 29, 1990, the soil was dry throughout.)

A—0 to 13 centimeters (0 to 5 inches); pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; moderate coarse and medium angular blocky structure; very friable, slightly hard, slightly sticky and slightly plastic; many very fine roots; common very fine tubular pores; slight effervescence; moderately alkaline (pH 8.0); clear wavy boundary.
Bk1—13 to 30 centimeters (5 to 12 inches); very pale brown (10YR 7/4) loam, yellowish brown (10YR 5/4) moist; weak medium and coarse angular blocky structure; very friable, slightly hard, slightly sticky and slightly plastic; common very fine roots; many very fine tubular pores; few fine threadlike carbonate masses; violently effervescent; strongly alkaline (pH 8.5); clear wavy boundary.
Bk2—30 to 56 centimeters (12 to 22 inches); very pale brown (10YR 7/3) loam, yellowish brown (10YR 5/4) moist; weak medium and coarse blocky structure; very friable, slightly hard, slightly sticky and slightly plastic; few very fine roots; common very fine tubular pores; few fine threadlike carbonate masses; violently effervescent; strongly alkaline (pH 8.5); clear wavy boundary.
Ck—56 to 76 centimeters (22 to 30 inches); very pale brown (10YR 8/2) sandy loam, light yellowish brown (10YR 6/4) moist; massive; very friable, slightly hard, slightly sticky and slightly plastic; few very fine roots; few very fine tubular pores; violently effervescent; strongly alkaline (pH 8.5); abrupt wavy boundary.
Crkm—76 to 79 centimeters (30 to 31 inches); shale; strongly cemented by carbonates.
Cr—79 centimeters (31 inches); soft shale.

Range in Characteristics

Depth to weathered bedrock is 50 to 100 centimeters (20 to 40 inches). Reaction is moderately alkaline or strongly alkaline throughout. Some pedons have a very gravelly horizon just above the Cr horizon.

The A horizon has dry color of 10YR 6/2, 6/3, 6/4, 7/2, 7/3, or 7/4. Moist color is 10YR 4/2, 4/3, 4/4, 5/2, 5/3, or 5/4. The texture commonly is loam and less commonly is sandy loam or gravelly loam. The content of clay ranges from 10 to 18 percent. The content of gravel ranges from 0 to 15 percent. Effervescence ranges from none to violent, and carbonates are disseminated.

The Bk horizon has dry color of 10YR 6/2, 6/3, 6/4, 7/2, 7/3, 7/4, or 8/2. Moist color is 10YR 4/2, 4/3, 4/4, 5/2, 5/3, 5/4, or 6/2 or N 6/0. The texture commonly is loam and less commonly is gravelly loam. The content of clay ranges from 10 to 18 percent. The content of gravel ranges from 0 to 20 percent. Effervescence is strong or violent, and carbonates are disseminated or soft filaments.

The C horizon, where present, has dry color of 10YR 6/2, 6/3, 6/4, 7/2, 7/3, 7/4, or 8/2. Moist color is 10YR 4/2, 4/3, 4/4, 5/2, 5/3, 5/4, 6/2, or 6/3. The texture is sandy loam, loam, gravelly sandy loam, or gravelly loam. The content of clay ranges from 5 to 18 percent clay. The content of gravel ranges from 0 to 20 percent. Effervescence is strong or violent, and carbonates are disseminated or soft filaments.

Reward Series

Depth class: Deep
Drainage class: Well drained
Permeability: Moderate
Landform: Hills and mountains
Parent material: Residual material from calcareous shale and sandstone
Slope: 15 to 50 percent
Taxonomic class: Fine-loamy, mixed, superactive, thermic Calcic Pachic Haploxerolls

Typical Pedon

Reward channery loam, 30 to 50 percent slopes, at an elevation of 798 meters (2,620 feet); about 400 feet south and 1,000 feet west of the northeast corner of sec. 2, T. 31 S., R. 21 E.; USGS Reward topographic quadrangle; lat. 35 degrees 15 minutes 42 seconds N. and long. 119 degrees 41 minutes 12 seconds W.

A1—0 to 23 centimeters (0 to 9 inches); grayish brown (10YR 5/2) channery loam, very dark grayish brown (10YR 3/2) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; many very fine roots; many very fine tubular and interstitial pores; 15 percent shale fragments; strongly effervescent; moderately alkaline; abrupt smooth boundary.

A2—23 to 61 centimeters (9 to 24 inches); grayish brown (10YR 5/2) channery loam, very dark grayish brown (10YR 3/2) moist; moderate fine granular structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine roots; many very fine and fine tubular and many very fine interstitial pores; 15 percent shale fragments; strongly effervescent; moderately alkaline; clear wavy boundary.

Bk1—61 to 99 centimeters (24 to 39 inches); grayish brown (10YR 5/2) channery loam, very dark grayish brown (10YR 3/2) moist; few prominent pockets of light brownish gray (10YR 6/2) loam, very dark grayish brown (10YR 3/2) moist; weak coarse subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine roots; many very fine and fine tubular and many very fine interstitial pores; 15 percent shale fragments; strongly effervescent; carbonates that are segregated as filaments or threads; moderately alkaline; clear smooth boundary.

Bk2—99 to 150 centimeters (39 to 59 inches); grayish brown (10YR 5/2) channery loam, very dark grayish brown (10YR 3/2) moist; weak coarse subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; many very fine and fine tubular and many very fine interstitial pores; 20 percent shale fragments; strongly effervescent; carbonates that are segregated as filaments or threads; moderately alkaline; abrupt wavy boundary.

R—150 to 165 centimeters (59 to 65 inches); fractured, calcareous shale.

Range in Characteristics

Depth to fractured calcareous shale ranges from 102 to 152 centimeters (40 to 60 inches).

The A horizon has dry color of 10YR 5/2 or 5/3. Moist color is 10YR 3/2 or 3/3. The content of shale ranges from 15 to 30 percent.

The Bk horizon is similar in color to the A horizon. In some pedons, it has distinct pockets that are light brownish gray (10YR 6/2). The texture is channery loam or channery clay loam. Effervescence is strong or violent, and carbonates are disseminated or segregated as filaments. In some pedons, the Bk horizon has some cobble-sized fragments of shale. The content of shale ranges from 15 to 35 percent.

Saltos Series

Depth class: Very shallow
Drainage class: Well drained
Permeability: Moderately slow
Landform: Hills and mountains
Parent material: Residual material weathered from sandstone
Slope: 15 to 75 percent
Taxonomic class: Loamy, mixed, superactive, thermic Lithic Mollic Haploxeralfs

Typical Pedon

Saltos sandy clay loam in an area of Gaviota-Saltos-Rock outcrop complex, 30 to 75 percent slopes, at an elevation of 780 meters (2,560 feet); about 0.5 mile southwest on road from the Chimineas Ranch Headquarters and 20 paces uphill from the rock outcrop; about 500 feet north and 100 feet west of the southeast corner of sec. 7, T. 32 S., R. 19 E.; USGS Chimineas Ranch topographic quadrangle; lat. 35 degrees 8 minutes 54 seconds N. and long. 119 degrees 58 minutes 9 seconds W.

O—0 to 1 centimeter (0 to 1/2 inch); chamise leaf litter.

A—1 to 10 centimeters (1/2 inch to 4 inches); yellowish brown (10YR 5/4) sandy clay loam, dark yellowish brown (10YR 3/4) moist; weak fine and medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; common very fine roots; few very fine interstitial and tubular pores; 10 percent gravel; moderately alkaline (pH 8.0); clear wavy boundary.

Btk—10 to 25 centimeters (4 to 10 inches); yellowish brown (10YR 5/4) gravelly clay loam, dark yellowish brown (10YR 4/4) moist; moderate fine subangular blocky structure; slightly hard, friable, sticky and slightly plastic; common very fine and fine roots; common very fine tubular and few very fine interstitial pores; very few thin clay films on ped faces and in pores; 22 percent gravel; strongly effervescent; carbonates that are segregated as few fine soft masses; moderately alkaline (pH 8.0); clear wavy boundary.

R—25 to 38 centimeters (10 to 15 inches); highly fractured sandstone.

Range in Characteristics

Depth to lithic contact ranges from 20 to 36 centimeters (8 to 14 inches). Reaction is slightly alkaline or moderately alkaline throughout. Effervescence ranges from none in the upper part to strong in the lower part.

The A horizon has dry color of 10YR 5/3 or 5/4. Moist color is 10YR 3/3 or 3/4. The texture is loam or sandy clay loam. The content of clay ranges from 20 to 25 percent. The content of gravel ranges from 5 to 15 percent.

The Btk horizon has dry color of 10YR 5/4 or 6/4 or 7.5YR 5/4 or 6/4. Moist color is 10YR 4/3, 4/4, or 5/6 or 7.5YR 3/4 or 4/4. The texture is loam, gravelly clay loam, or gravelly sandy clay loam. The content of clay ranges from 20 to 35 percent. The content of gravel ranges from 5 to 30 percent.

San Andreas Series

Depth class: Moderately deep
Drainage class: Well drained
Permeability: Moderately rapid
Landform: Hills and mountains
Parent material: Residual material from sandstone
Slope: 9 to 75 percent
Taxonomic class: Coarse-loamy, mixed, superactive, thermic Typic Haploxerolls

Typical Pedon

San Andreas fine sandy loam, in an area of San Timoteo-San Andreas-Bellyspring complex, 30 to 50 percent slopes, at an elevation of 518 meters (1,700 feet); about 450 feet north and 2,460 feet west of the southeast corner of sec. 31, T. 29 S., R. 17 E.; USGS La Panza topographic quadrangle; lat. 35 degrees 21 minutes 13 seconds N. and long. 120 degrees 1 minute 51 seconds W.

A—0 to 8 centimeters (0 to 3 inches); grayish brown (10YR 5/2) fine sandy loam, very dark grayish brown (10YR 3/2) moist; moderate fine granular and subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine roots; common very fine tubular and interstitial pores; slightly acid; clear smooth boundary.

Bw—8 to 56 centimeters (3 to 22 inches); brown (10YR 5/3) fine sandy loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; few very fine and fine roots; common very fine and fine tubular pores; slightly acid; gradual wavy boundary.

Cr—56 to 66 centimeters (22 to 26 inches); weathered sandstone.

Range in Characteristics

Depth to weathered sandstone ranges from 51 to 102 centimeters (20 to 40 inches). The content of gravel ranges from 0 to 10 percent. The content of cobbles ranges from 0 to 5 percent.

The A horizon has dry color of 10YR 5/2, 5/3, or 4/2. Moist color is 10YR 3/2 or 2/2.

The B horizon has dry color of 10YR 6/4, 6/3, or 5/3. Moist color is 10YR 3/3 or 2/3. The texture is fine sandy loam or sandy loam.

San Emigdio Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately rapid
Landform: Alluvial fans and flood plains
Parent material: Alluvium from calcareous sedimentary rocks
Slope: 0 to 9 percent
Taxonomic class: Coarse-loamy, mixed, superactive, calcareous, thermic Typic Xerofluvents

Typical Pedon

San Emigdio sandy loam, 2 to 9 percent slopes, at an elevation of 451 meters (1,480 feet); about 850 feet east and 2,310 feet north of the southwest corner of sec. 33, T. 27 S., R. 16 E.; USGS Camatta Canyon, California, topographic quadrangle; lat. 35 degrees 32 minutes 2 seconds N. and long. 120 degrees 15 minutes 44 seconds W.

A—0 to 23 centimeters (0 to 9 inches); pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; few very fine roots; common very fine tubular pores; strongly effervescent; moderately alkaline; clear smooth boundary.

C1—23 to 25 centimeters (9 to 10 inches); light yellowish brown (10YR 6/4) very fine sandy loam, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, friable, nonsticky and nonplastic; few very fine roots; few very fine tubular pores; strongly effervescent; moderately alkaline; abrupt smooth boundary.

C2—25 to 38 centimeters (10 to 15 inches); very pale brown (10YR 7/3) coarse sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; common very fine interstitial pores; violently effervescent; moderately alkaline; clear smooth boundary.

C3—38 to 76 centimeters (15 to 30 inches); very pale brown (10YR 7/3) sandy loam, brown (10YR 5/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine roots; common very fine tubular pores; violently effervescent; moderately alkaline; clear smooth boundary.

C4—76 to 99 centimeters (30 to 39 inches); pale brown (10YR 6/3) loam, brown (10YR 5/3) moist; massive; hard, friable, slightly sticky and slightly plastic; few very fine roots; few very fine and fine tubular pores; violently effervescent; moderately alkaline; clear smooth boundary.

C5—99 to 109 centimeters (39 to 43 inches); very pale brown (10YR 7/4) sandy loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine roots; few very fine tubular pores; violently effervescent; moderately alkaline; clear smooth boundary.

C6—109 to 130 centimeters (43 to 51 inches); very pale brown (10YR 7/4) very fine sandy loam, yellowish brown (10YR 5/4) moist; massive; hard, friable, nonsticky and nonplastic; few very fine roots; few very fine tubular pores; violently effervescent; moderately alkaline; clear smooth boundary.

C7—130 to 152 centimeters (51 to 60 inches); light yellowish brown (10YR 6/4) loam; brown (10YR 4/3) moist; massive; hard, friable, nonsticky and nonplastic; few very fine roots; few very fine tubular pores; violently effervescent; moderately alkaline.

Range in Characteristics

The textural control section consists of stratified layers of very fine sandy loam, fine sandy loam, sandy loam, coarse sandy loam, and loam and averages 12 to 18 percent clay. In some pedons, it is stratified with thin lenses of loamy sand, loamy coarse sand, or silt loam.

The A horizon has dry color of 10YR 6/2 or 6/3 or 2.5Y 6/2. The texture is sandy loam or loam. Effervescence ranges from slight to strong. The thickness of the A horizon ranges from 18 to 46 centimeters (7 to 18 inches).

The C horizon has dry color of 10YR 6/3, 6/4, 7/3, or 7/4. Moist color is 4/3, 4/4, 5/3, or 5/4. Effervescence ranges from slight to violent.

Santa Lucia Series

Depth class: Moderately deep
Drainage class: Well drained
Permeability: Moderate
Landform: Hills and mountains
Parent material: Residual material from shale
Slope: 15 to 75 percent
Taxonomic class: Clayey-skeletal, mixed, superactive, thermic Pachic Ultic Haploxerolls

Typical Pedon

Santa Lucia channery clay loam, 15 to 50 percent slopes, at an elevation of 534 meters (1,720 feet); about 3,100 feet west and 2,700 feet south of the northeast corner of sec. 28, T. 28 S., R. 15 E.; USGS Camatta Ranch, California, topographic quadrangle; lat. 35 degrees 27 minutes 43 seconds N. and long. 120 degrees 21 minutes 54 seconds W.

A1—0 to 10 centimeters (0 to 4 inches); dark gray (10YR 4/1) channery clay loam, very dark gray (10YR 3/1) moist; weak fine granular structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine roots; many very fine tubular pores; 30 percent, by volume, shale fragments; slightly acid; clear smooth boundary.

A2—10 to 28 centimeters (4 to 11 inches); dark gray (10YR 4/1) very channery clay loam, very dark gray (10YR 3/1) moist; moderate medium subangular blocky structure; slightly hard, very friable, sticky and plastic; few very fine, fine, and medium roots; many very fine, common fine, and few medium tubular pores; 40 percent, by volume, shale fragments; slightly acid; clear wavy boundary.

A3—28 to 53 centimeters (11 to 21 inches); dark grayish brown (10YR 4/2) very channery clay loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; slightly hard, friable, sticky and plastic; few very fine, fine, and medium roots; many very fine and few fine, medium, and coarse tubular pores; 40 percent shale fragments; 5 percent cobbles; moderately acid; clear wavy boundary.

R—53 centimeters (21 inches); hard shale.

Range in Characteristics

Depth to hard shale ranges from 51 to 102 centimeters (20 to 40 inches).

The A horizon has dry color of 10YR 4/1, 4/2, or 4/2. Moist color is 10YR 3/1 or 3/2. Reaction ranges from strongly acid to slightly acid. The A1 horizon has 15 to 35 percent channers and 0 to 10 percent cobbles. Below the A1 horizon, the content of channers ranges from 35 to 65 percent and The content of cobbles ranges from 0 to 10 percent.

San Timoteo Series

Depth class: Moderately deep
Drainage class: Well drained
Permeability: Moderately rapid
Landform: Hills and mountains
Parent material: Residual material from soft, calcareous sandstone
Slope: 15 to 75 percent
Taxonomic class: Coarse-loamy, mixed, superactive, calcareous, thermic Typic Xerorthents

Typical Pedon

San Timoteo sandy loam in an area of San Timoteo-San Andreas-Bellyspring complex, 30 to 50 percent slopes, at an elevation of 524 meters (1,720 feet); about 1,200 feet west and 400 feet north of the southeast corner of sec. 8, T. 28 S., R. 17 E.; USGS La Panza Ranch topographic quadrangle; lat. 35 degrees 29 minutes 58 seconds N. and long. 120 degrees 9 minutes 41 seconds W.

A—0 to 28 centimeters (0 to 11 inches); pale brown (10YR 6/3) sandy loam, dark brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine roots; common very fine tubular and interstitial pores; 3 percent gravel; strongly effervescent; moderately alkaline; clear smooth boundary.

C1—28 to 43 centimeters (11 to 17 inches); very pale brown (10YR 7/3) sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine roots; many very fine interstitial pores; 3 percent gravel; strongly effervescent; moderately alkaline; clear smooth boundary.

C2—43 to 64 centimeters (17 to 25 inches); very pale brown (10YR 7/4) sandy loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine roots; common very fine interstitial pores; 3 percent gravel; strongly effervescent; moderately alkaline; abrupt smooth boundary.

Cr—64 to 76 centimeters (25 to 30 inches); very pale brown (10YR 8/3 and 7/3) fine grained sandstone, pale brown and light yellowish brown (10YR 6/3 and 6/4) moist; fine and medium angular blocky rock structure that breaks down in water after 15 minutes of shaking; strongly effervescent.

Range in Characteristics

Depth to soft, calcareous sandstone ranges from 51 to 102 centimeters (20 to 40 inches). The content of clay ranges from 8 to 18 percent. The content of gravel ranges from 0 to 15 percent. Some pedons have 5 to 10 percent cobbles on the surface. Effervescence ranges from slight to violent.

The A horizon has dry color of 10YR 6/2, 6/3, or 6/4. Moist color is 10YR 4/2, 4/3, 4/4, or 5/4. The content of organic matter is assumed to be less than 1 percent.

The C horizon has dry color of 10YR 5/3, 5/4, 6/3, 7/2, 7/3, or 7/4. Moist color is 10YR 4/3, 4/4, 4/6, 5/3, or 5/4. The texture is sandy loam or loam.

Saucito Series

Depth class: Shallow
Drainage class: Well drained
Permeability: Moderately slow
Landform: Mountains
Parent material: Residual material from sandstone
Slope: 30 to 75 percent
Taxonomic class: Loamy-skeletal, mixed, superactive, thermic Lithic Haploxeralfs

Typical Pedon

Saucito sandy loam in area of Saucito-Akad-Rock outcrop complex, 30 to 75 percent slopes, at an elevation of 625 meters (2,050 feet); about 1.2 miles north of Highway 166 on Carrizo Canyon Road, about 1 mile east on jeep trail into Johnson Flat, and about .5 mile north of the windmill; about 1,900 feet north and 700 feet east of the southwest corner of sec. 32, T. 32 S., R. 19 E.; USGS Taylor Canyon topographic quadrangle; lat. 35 degrees 5 minutes 37 seconds N. and long. 119 degrees 57 minutes 59 seconds W.

A—0 to 8 centimeters (0 to 3 inches); brown (7.5YR 5/4) sandy loam, dark brown (7.5YR 3/2) moist; weak coarse subangular blocky structure; very hard, friable, nonsticky and nonplastic; common very fine and fine roots; common very fine interstitial pores; 10 percent gravel; moderately alkaline; clear wavy boundary.

Bt—8 to 46 centimeters (3 to 18 inches); reddish brown (5YR 4/4) very cobbly clay loam, dark reddish brown (5YR 3/4) moist; massive; hard, friable, sticky and plastic; few very fine and fine roots; few very fine interstitial pores; few thin clay films on ped faces and in pores; 25 percent gravel; 35 percent cobbles; strongly effervescent in spots; moderately alkaline; gradual wavy boundary.

R—46 to 53 centimeters (18 to 21 inches); hard sandstone.

Range in Characteristics

Depth to lithic contact ranges from 25 to 51 centimeters (10 to 20 inches).

The A horizon has dry color of 7.5YR 5/4 or 5YR 5/4 or 6/4. Moist color is 7.5YR 3/2, 3/4, or 4/4 or 5YR 4/4. The content of clay ranges from 10 to 18 percent. The content of gravel ranges from 5 to 15 percent. The content of cobbles ranges from 0 to 10 percent.

The Bt horizon has dry color of 7.5YR 4/4 or 5/4 or 5YR 4/4, 5/4, or 6/4. Moist color is 7.5YR 4/3, 3/4, or 4/4 or 5YR 3/3, 3/4, or 4/4. The content of gravel ranges from 25 to 35 percent gravel. The content of cobbles ranges from 10 to 35 percent. The texture is very cobbly clay loam or very gravelly clay loam. The content of clay ranges from 27 to 35 percent. Effervescence ranges from slight to strong.

Seaback Series

Depth class: Shallow
Drainage class: Well drained
Permeability: Moderate
Landform: Hills and mountains
Parent material: Residual material weathered from soft, calcareous sandstone, shale, or conglomerate
Slope: 9 to 75 percent
Taxonomic class: Loamy, mixed, superactive, thermic, shallow Calcic Haploxerepts

Typical Pedon

Seaback loam in an area of Seaback-Panoza-Jenks complex, 9 to 15 percent slopes, at an elevation of 695 meters (2,080 feet); about 6.3 miles north of the junction of Highway 58 and the Simmler-Bitterwater Road, then 3,500 feet east; 2,100 feet south and 2,100 feet west of the northeast corner of sec. 30, T. 28 S., R. 18 E., Mount Diablo Base and Meridian; USGS La Panza NE California Quadrangle; lat. 35 degrees 27 minutes 48 seconds N. and long. 120 degrees 4 minutes 28 seconds W. (When described on June 7, 1983, the soil was slightly moist from a depth of 0 to 9 inches and moist below a depth of 9 inches.)

A—0 to 23 centimeters (0 to 9 inches); light brownish gray (10YR 6/2) loam, dark grayish brown (10Y 4/2) moist; crusted surface; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and plastic; few very fine roots; few very fine tubular and interstitial pores; violently effervescent; disseminated carbonates; moderately alkaline (pH 8.0); gradual smooth boundary.

Bk—23 to 48 centimeters (9 to 19 inches); pale brown (10YR 6/3) loam, brown (10Y 4/3) moist; massive; slightly hard, friable, slightly sticky and plastic; few very fine roots; few very fine and fine tubular pores; violently effervescent; carbonates disseminated and segregated as few fine soft filaments; moderately alkaline (pH 8.0); clear wavy boundary.

Cr—48 to 58 centimeters (19 to 23 inches); soft, calcareous sandstone fractured into fragments 1 to 8 centimeters (1/2 to 3 inches) across.

Range in Characteristics

Depth to soft, calcareous sandstone or conglomerate is 25 to 51 centimeters (10 to 20 inches). The content of clay ranges from 12 to 30 percent. The content of gravel ranges from 0 to 5 percent.

The A horizon has dry color of 10YR 6/3, 6/2, or 5/2 or 2.5Y 6/3 or 6/2. Moist color is 10YR 4/3, 4/2, or 3/3 or 2.5Y 4/3 or 4/2. Effervescence is strong or violent.

The C horizon, where present, has dry color of 10YR 6/3, 5/4, or 5/2 or 2.5Y 6/3 or 5/4. Moist color is 10YR 5/4, 5/3, 4/4, 4/3, or 4/2 or 2/5Y 4/4. The texture is sandy loam, loam, or light clay loam.

Semper Series

Depth class: Moderately deep
Drainage class: Well drained
Permeability: Moderately rapid
Landform: Mountains
Parent material: Residual material from soft sandstone
Slope: 30 to 90 percent
Taxonomic class: Coarse-loamy, mixed, superactive, thermic Gypsic Haploxerepts

Typical Pedon

Semper very fine sandy loam in an area of Lithic Torriorthents-Semper-Rock outcrop complex, 50 to 75 percent slopes, at an elevation of 853 meters (2,800 feet); on road to pump house in Middle Canyon, 32 feet downhill (southwest) from the point where the road starts its cross-slope road cut; about 2,500 feet south and 800 feet west of the northeast corner of sec. 31, T. 11 N., R. 26 W.; USGS New Cuyama topographic quadrangle; lat. 34 degrees 59 minutes 56 seconds N. and long. 119 degrees 38 minutes 42 seconds W.

A—0 to 13 centimeters (0 to 5 inches); light yellowish brown (2.5Y 6/4) very fine sandy loam, light olive brown (2.5Y 5/4) moist; weak medium and fine subangular blocky structure; loose or slightly hard, friable, nonsticky and slightly plastic; common very fine roots; common very fine and fine tubular pores; strongly effervescent; calcium carbonate equivalent 1 percent; 1 percent gypsum; electrical conductivity (EC) of 2.5 mmhos/cm; moderately alkaline (pH 8.0); gradual smooth boundary.

Cky—13 to 56 centimeters (5 to 22 inches); pale yellow (2.5Y 7/4) very fine sandy loam, light olive brown (2.5Y 5/4) moist; massive; loose, friable, slightly sticky and nonplastic; common very fine and few fine roots decreasing in number with depth to few very fine and fine roots; common very fine tubular pores; violently effervescent; carbonates that are segregated into few fine soft filaments; calcium carbonate equivalent 2 percent; 17 percent gypsum, segregated as common medium and coarse concretions; electrical conductivity (EC) of 2.5 mmhos/cm; moderately alkaline (pH 8.0); clear irregular boundary.

Crk—56 to 66 centimeters (22 to 26 inches); soft sandstone; violently effervescent in spots on faces of fractures; calcium carbonate equivalent less than 0.5 percent.

Range in Characteristics

Depth to paralithic contact ranges from 51 to 102 centimeters (20 to 40 inches).

The A horizon has dry color of 10YR 6/3, 5/4, or 6/4 or 2.5Y 7/2, 5/4, 6/4, or 7/4. Moist color is 10YR 4/3, 5/3, or 5/4 or 2.5Y 4/4, 5/4, or 6/4. The content of clay ranges from 5 to 12 percent. Electrical conductivity (EC) ranges from 0.5 to 3.0 mmhos/cm. The content of gypsum ranges from 0 to 5 percent. The content of gravel ranges from 0 to 10 percent. Reaction is slightly alkaline or moderately alkaline.

The C horizon has dry color of 10YR 7/3, 6/4, or 7/4 or 2.5Y 7/2, 8/2, 6/4, or 7/4. Moist color is 10YR 4/3, 4/4, 5/4, or 6/4 or 2.5Y 4/4, 5/4, or 6/4. The texture is sandy loam, fine sandy loam, or very fine sandy loam. The content of clay ranges from 5 to 12 percent. Electrical conductivity (EC) ranges from 2 to 4 mmhos/cm. The content of gravel ranges from 0 to 15 percent. The content of gypsum ranges from 15 to 20 percent and includes crystals that are 1 to 20 millimeters wide and that make up 1 to 3 percent, by volume, of the horizon. Reaction is slightly alkaline or moderately alkaline.

Shimmon Series

Depth class: Moderately deep
Drainage class: Well drained
Permeability: Moderately slow
Landform: Hills and mountains
Parent material: Residual material from sandstone
Slope: 15 to 50 percent
Taxonomic class: Fine-loamy, mixed, superactive, thermic Typic Argixerolls

Typical Pedon

Shimmon fine sandy loam, 15 to 30 percent slopes, at an elevation of 476 meters (1,560 feet); about 650 feet east and 1,550 feet south of the northwest corner of sec. 36, T. 28 S., R. 15 E.; USGS Camatta Ranch, California, topographic quadrangle; lat. 35 degrees 27 minutes 2 seconds N. and long. 120 degrees 19 minutes 2 seconds W.

A1—0 to 8 centimeters (0 to 3 inches); dark gray (10YR 4/1) fine sandy loam, very dark gray (10YR 3/1) moist; moderate fine and medium granular structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine roots; few very fine tubular and interstitial pores; neutral; clear smooth boundary.

A2—8 to 31 centimeters (3 to 12 inches); dark gray (10YR 4/1) fine sandy loam, very dark gray (10YR 3/1) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine roots; common very fine and few fine and medium tubular pores; neutral; gradual wavy boundary.

Bt—31 to 53 centimeters (12 to 21 inches); grayish brown (10YR 5/2) sandy clay loam, very dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure; hard, friable, sticky and plastic; few very fine, fine, and medium roots; few very fine, fine, and medium tubular pores; many thin clay films on the faces of peds; slightly acid; clear wavy boundary.

Cr—53 to 81 centimeters (21 to 32 inches); weakly cemented, white sandstone.

Range in Characteristics

Depth to paralithic contact ranges from 51 to 102 centimeters (20 to 40 inches).

The A horizon has dry color of 10YR 4/1, 4/3, or 5/4. Moist color is 10YR 3/1 or 3/2. The texture is sandy loam or fine sandy loam. Reaction is neutral or slightly alkaline. The thickness of the horizon ranges from 25 to 31 centimeters (10 to 12 inches).

The Bt horizon has dry color of 7.5YR 4/3 or 10YR 4/2 or 5/2. Moist color is 7.5YR 3/3 or 4/4 or 10YR 3/2. Reaction ranges from moderately acid to slightly alkaline.

Sorrento Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate and moderately slow
Landform: Alluvial fans
Parent material: Alluvium from sedimentary rocks
Slope: 0 to 9 percent
Taxonomic class: Fine-loamy, mixed, superactive, thermic Calcic Haploxerolls

Typical Pedon

Sorrento loam, 2 to 9 percent slopes, at an elevation of 579 meters (1,900 feet); about 1,500 feet west and 2,200 feet south of the northeast corner of sec. 5, T. 27 S., R. 17 E.; USGS Holland Canyon topographic quadrangle; lat. 35 degrees 36 minutes 29 seconds N. and long. 120 degrees 9 minutes 44 seconds W.

A1—0 to 36 centimeters (0 to 14 inches); grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; strong medium and coarse angular blocky structure; hard, friable, slightly sticky and slightly plastic; common very fine roots; common very fine tubular pores; slightly alkaline; gradual smooth boundary.

A2—36 to 48 centimeters (14 to 19 inches); grayish brown (2.5Y 5/2) loam, very dark grayish brown (2.5Y 3/2) moist; moderate fine prismatic and angular blocky structure; hard, friable, sticky and plastic; common very fine roots; many very fine tubular pores; slightly alkaline; gradual wavy boundary.

Bt—48 to 84 centimeters (19 to 33 inches); grayish brown (2.5Y 5/2) loam, dark grayish brown (2.5Y 4/2) moist; weak fine prismatic and angular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; many very fine and few fine tubular pores; few thin clay films in pores and on ped faces; slightly alkaline; gradual wavy boundary.

Bk1—84 to 122 centimeters (33 to 48 inches); light brownish gray (2.5Y 6/2) loam, dark grayish brown (2.5Y 4/2) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; many very fine and few fine tubular pores; violently effervescent; carbonates that are segregated as large filaments and seams and few fine soft masses; moderately alkaline; gradual wavy boundary.

Bk2—122 to 145 centimeters (48 to 57 inches); light brownish gray (2.5Y 6/2) loam, dark grayish brown (2.5Y 4/2) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; many very fine tubular pores; violently effervescent; carbonates that are segregated as few medium filaments; moderately alkaline; gradual wavy boundary.

Bk3—145 to 170 centimeters (57 to 67 inches); pale olive (5Y 6/3) sandy clay loam, olive (5Y 4/3) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; common very fine tubular pores; strongly effervescent; carbonates that are segregated as few fine filaments; moderately alkaline.

Range in Characteristics

The A horizon has dry color of 10YR 5/2 or 5/3 or 2.5Y 5/2. Moist color is 10YR 3/2 or 3/3 or 2.5Y 3/2. Reaction is slightly alkaline or moderately alkaline. The thickness of the A horizon ranges from 28 to 51 centimeters (11 to 20 inches).

The Bt horizon has dry color of 10YR 6/2 or 2.5Y 5/2. Moist color is 10YR 4/2 or 2.5Y 4/2. Reaction is slightly alkaline or moderately alkaline. The texture is loam, sandy clay loam, or clay loam.

The Bk horizon has dry color of 10YR 7/4, 2.5Y 6/2, or 5Y 6/3. Moist color is 10YR 5/4, 2.5Y 4/2, or 5Y 4/3. The texture is clay loam, sandy clay loam, or loam. Effervescence is strong or violent.

Tajea Series

Depth class: Moderately deep
Drainage class: Well drained
Permeability: Moderately slow
Landform: Hills and mountains
Parent material: Residual material from hard sandstone
Slope: 15 to 50 percent
Taxonomic class: Fine-loamy, mixed, superactive, thermic Typic Argixerolls

Typical Pedon

Tajea loam in an area of Tajea-Saltos complex, 30 to 50 percent slopes, at an elevation of 695 meters (2,280 feet); about 2,620 feet north and 1,310 feet east of the southwest corner of sec. 26, T. 31 S., R. 18 E.; USGS Branch Mountain topographic quadrangle; lat. 35 degrees 11 minutes 54 seconds N. and long. 120 degrees 1 minute 5 seconds W.

A1—0 to 5 centimeters (0 to 2 inches); brown (10YR 5/3) loam, dark brown (10YR 3/3) moist; moderate fine granular structure; hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine interstitial and common very fine tubular pores; neutral; clear wavy boundary.

A2—5 to 25 centimeters (2 to 10 inches); brown (10YR 5/3) loam, dark brown (10YR 3/3) moist; weak coarse angular blocky structure; hard, friable, slightly sticky and slightly plastic; common very fine, fine, medium, and coarse roots; many very fine interstitial and common very fine tubular pores; neutral; gradual wavy boundary.

Bt1—25 to 51 centimeters (10 to 20 inches); light yellowish brown (10YR 6/4) clay loam, brown (10YR 4/3) moist; weak coarse angular blocky structure; hard, friable, sticky and plastic; common very fine and fine roots; many very fine interstitial and few very fine tubular pores; many thin clay films on ped faces and bridging mineral grains; slightly alkaline; gradual wavy boundary.

Bt2—51 to 69 centimeters (20 to 27 inches); light yellowish brown (10YR 6/4) gravelly clay loam, brown (10YR 4/3) moist; weak medium angular blocky structure; hard, friable, sticky and plastic; few very fine and common coarse roots; common very fine interstitial and few very fine tubular pores; many thin clay films on ped faces and bridging mineral grains; 25 percent gravel; slightly alkaline; gradual wavy boundary.

R—69 to 76 centimeters (27 to 30 inches); highly fractured sandstone.

Range in Characteristics

Depth to hard bedrock ranges from 51 to 102 centimeters (20 to 40 inches). Reaction is neutral or slightly alkaline.

The A horizon has dry color of 10YR 5/2 or 5/3 or 2.5YR 5/2. Moist color is 10YR 3/2 or 3/3 or 2.5YR 3/3.

The Bt horizon has dry color of 7.5YR 5/4 or 6/4 or 10YR 5/4, 6/3, or 6/4. Moist color is 7.5YR 3/4 or 4/4 or 10YR 3/3, 3/4, 4/3, or 4/4. The content of gravel ranges from 0 to 35 percent. The content of cobbles ranges from 0 to 5 percent. The texture is clay loam or gravelly clay loam.

Temblor Series

Depth class: Shallow
Drainage class: Well drained
Permeability: Moderately rapid
Landform: Hills and mountains
Parent material: Residual material from shale and sandstone
Slope: 30 to 75 percent
Taxonomic class: Loamy-skeletal, mixed, superactive, thermic Lithic Haploxerolls

Typical Pedon

Temblor very channery loam in an area of Aramburu-Temblor complex, 50 to 75 percent slopes, at an elevation of 939 meters (3,080 feet); about 2,500 feet east and 1,500 feet south the northwest corner of sec. 3, T. 30 S., R. 20 E.; USGS McKittrick

Summit topographic quadrangle; lat. 35 degrees 20 minutes 49 seconds N. and long. 119 degrees 49 minutes 6 seconds W.

A1—0 to 15 centimeters (0 to 6 inches); grayish brown (10YR 5/3) very channery loam, very dark brown (10YR 3/3) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; common very fine interstitial and few very fine tubular pores; 40 percent shale fragments; moderately alkaline; abrupt smooth boundary.

A2—15 to 33 centimeters (6 to 13 inches); brown (10YR 5/3) very channery loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine roots; common very fine tubular pores; 50 percent shale fragments; moderately alkaline; clear wavy boundary.

R—33 to 51 centimeters (13 to 20 inches); hard shale with fractures 2 to 10 centimeters apart; few very fine roots in fractures.

Range in Characteristics

Depth to lithic contact with shale or sandstone ranges from 25 to 51 centimeters (10 to 20 inches). The content of rock fragments, mostly angular shale, ranges from 35 to 50 percent.

The A horizon has dry color of 10YR 5/2 or 5/3. Moist color is 10YR 3/2 or 3/3.

Thomhill Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Landform: Alluvial fans and alluvial flats
Parent material: Alluvium from mixed rock types
Slope: 0 to 9 percent
Taxonomic class: Fine-loamy, mixed, superactive, thermic Calcic Haploxerolls

Typical Pedon

Thomhill loam, 2 to 5 percent slopes, at an elevation of 710 meters (2,330 feet); about 1,780 feet south and 1,350 feet west of the northeast corner of sec. 13, T. 29 S., R. 18 E.; USGS Las Yeguas Ranch topographic quadrangle; lat. 35 degrees 24 minutes 18 seconds N. and long. 119 degrees 59 minutes 27 seconds W.

Ap—0 to 5 centimeters (0 to 2 inches); grayish brown (2.5Y 5/2) loam, very dark grayish brown (2.5Y 3/2) moist; cloddy; hard, friable, slightly sticky and slightly plastic; common very fine roots; common very fine interstitial and few fine tubular pores; moderately alkaline (pH 8.0); clear smooth boundary.

A—5 to 33 centimeters (2 to 13 inches); grayish brown (2.5Y 5/2) loam, very dark grayish brown (2.5Y 3/2) moist; moderate medium and coarse subangular blocky structure; slightly hard and hard, friable, slightly sticky and slightly plastic; common very fine roots; common very fine tubular and few very fine interstitial pores; moderately alkaline (pH 8.0); gradual smooth boundary.

AB—33 to 56 centimeters (13 to 22 inches); light brownish gray (2.5Y 6/2) loam, dark grayish brown (2.5Y 4/2) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; common very fine tubular and interstitial and few fine tubular pores; moderately alkaline (pH 8.0); clear wavy boundary.

Bk1—56 to 66 centimeters (22 to 26 inches); light brownish gray (2.5Y 6/2) loam, dark grayish brown (2.5Y 4/2) moist; massive; slightly hard, friable, sticky and slightly plastic; few very fine roots; common very fine tubular and interstitial and few fine tubular pores; strongly effervescent; disseminated lime; moderately alkaline (pH 8.0); clear wavy boundary.

Bk2—66 to 86 centimeters (26 to 34 inches); light brownish gray (2.5Y 6/2) loam, dark grayish brown (2.5Y 4/2) moist; massive; slightly hard, friable, sticky and slightly plastic; few very fine roots; common very fine interstitial and many very fine tubular pores; strongly effervescent; carbonates that are segregated into few fine filaments, calcium carbonate equivalent 2; moderately alkaline (pH 8.0); gradual wavy boundary.

Bk3—86 to 102 centimeters (34 to 40 inches); light brownish gray (2.5Y 6/2) loam, dark grayish brown (2.5Y 4/2) moist; massive; slightly hard, friable, sticky and slightly plastic; few very fine roots; common very fine interstitial and many very fine tubular pores; strongly effervescent; carbonates that are segregated into common fine filaments, calcium carbonate equivalent 3; moderately alkaline (pH 8.0); gradual wavy boundary.

Bk4—102 to 135 centimeters (40 to 53 inches); light brownish gray (2.5Y 6/2) loam, dark grayish brown (2.5Y 4/2) moist; massive; slightly hard, friable, sticky and slightly plastic; few very fine roots; common very fine interstitial and many very fine tubular pores; strongly effervescent; carbonates that are segregated into many fine filaments, calcium carbonate equivalent 2; moderately alkaline (pH 8.0); gradual wavy boundary.

Bk5—135 to 163 centimeters (53 to 64 inches); light gray (2.5Y 7/2) loam, grayish brown (2.5Y 5/2) moist; massive; slightly hard, friable, sticky and slightly plastic; few very fine roots; common very fine interstitial and tubular pores; strongly effervescent; carbonates that are segregated into common fine filaments, calcium carbonate equivalent 3; moderately alkaline (pH 8.0).

Range in Characteristics

The content of gravel ranges from 0 to 5 percent throughout the profile. The content of clay ranges from 20 to 30 percent throughout the profile.

The A horizon has dry color of 10YR 5/2 or 5/3 or 2.5Y 5/2 or 5/3. Moist color is 10YR 3/2 or 3/3 or 2.5Y 3/2 or 3/3. Reaction is slightly alkaline or moderately alkaline.

The AB horizon has dry color of 10YR 6/2 or 7/2 or 2.5Y 6/2 or 7/2. Moist color is 10YR 4/2, 4/3, 4/4, or 5/4 or 2.5Y 4/2, 4/3, or 4/4. Effervescence is strong or violent.

The Bk horizon has dry color of 10YR 6/2 or 7/2 or 2.5Y 6/2 or 7/2. Moist color is 10YR 4/2, 4/3, 4/4, or 5/4 or 2.5Y 4/2, 5/2, 4/3, or 4/4. Effervescence is strong or violent, and carbonates are disseminated and segregated as few to many fine filaments or soft masses. The texture is loam, silt loam, or clay loam. In some pedons, the horizon has strata of sandy loam in the lower part.

Wasioja Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow
Landform: Fan remnants
Parent material: Alluvium from mixed rock types
Slope: 0 to 9 percent
Taxonomic class: Fine-loamy, mixed, superactive, thermic Typic Haploxeralfs

Typical Pedon

Wasioja sandy loam in an area of Padres-Wasioja complex, 2 to 9 percent slopes, at an elevation of 725 meters (2,380 feet); about 1,750 feet south and 890 feet west of the northeast corner of sec. 28, T. 31 S., R. 21 E.; USGS Panorama Hills topographic quadrangle; lat. 35 degrees 12 minutes 0 seconds N. and long. 119 degrees 43 minutes 20 seconds W.

A—0 to 13 centimeters (0 to 5 inches); pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; moderate coarse angular blocky structure; slightly hard, friable, nonsticky and slightly plastic; common very fine roots; few very fine tubular pores; very few thin clay films on ped faces and lining pores; neutral; clear wavy boundary.

Bt1—13 to 48 centimeters (5 to 19 inches); light yellowish brown (10YR 6/4) sandy clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; few very fine and fine tubular pores; few thin clay films on ped faces and lining pores; slightly alkaline; clear wavy boundary.

Bt2—48 to 69 centimeters (19 to 27 inches); light yellowish brown (10YR 6/4) sandy clay loam, dark yellowish brown (10YR 4/4) moist; moderate fine prismatic structure; slightly hard, friable, sticky and plastic; few very fine roots; few very fine and fine tubular pores; few thin clay films on ped faces and lining pores; moderately alkaline; gradual wavy boundary.

Bt3—69 to 84 centimeters (27 to 33 inches); light yellowish brown (10YR 6/4) sandy clay loam, yellowish brown (10YR 5/4) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; few very fine tubular pores; very few thin clay films on ped faces and lining pores; moderately alkaline; gradual wavy boundary.

2Ck1—84 to 114 centimeters (33 to 45 inches); light yellowish brown (10YR 6/4) gravelly sandy loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; common very fine interstitial and few very fine tubular pores; violently effervescent; carbonates that are segregated as common fine soft masses and filaments; moderately alkaline; gradual wavy boundary.

2Ck2—114 to 178 centimeters (45 to 70 inches); very pale brown (10YR 7/4) very gravelly loamy coarse sand, light yellowish brown (10YR 6/4) moist; single grain; loose; few very fine roots; many very fine interstitial pores; violently effervescent; carbonates that are segregated as many fine soft masses and filaments; moderately alkaline.

Range in Characteristics

The A horizon has dry color of 10YR 5/4, 6/2, or 6/3. Moist color is 10YR 4/2, 4/3, or 4/4. Reaction is neutral to moderately alkaline. The texture is sandy loam or loam.

The Bt horizon has dry color of 10YR 6/3, 6/4, or 7/4. Moist color is 10YR 4/3, 4/4, 5/4, or 6/4. The texture is clay loam or sandy clay loam. The thickness of the horizon ranges from 25 to 71 centimeters (10 to 28 inches).

The 2Ck horizon typically is a lithologic discontinuity. The texture is variable and ranges from very gravelly coarse loamy sand to loam. The content of gravel ranges from 10 to 50 percent.

Xeric Torriorthents

Depth class: Moderately deep and deep
Drainage class: Well drained
Permeability: Moderate and moderately rapid
Landform: Mountains
Parent material: Residual material from shale or sandstone
Slope: 30 to 75 percent
Taxonomic class: Xeric Torriorthents

Reference Pedon

Xeric Torriorthents, 30 to 50 percent slopes, at an elevation of 732 meters (2,400 feet); about 1.1 miles northeast on road uphill from quail guzzler located in pit at the second four-way trail intersection; about 1,100 feet west and 1,800 feet south of the northeast corner of sec. 36, T. 12 N., R. 25 W.; USGS Maricopa topographic quadrangle; lat. 35 degrees 5 minutes 11 seconds N. and long. 119 degrees 29 minutes 35 seconds W.

A—0 to 25 centimeters (0 to 10 inches); pale brown (10YR 6/3) channery sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine granular and subangular blocky structure; slightly hard, friable, nonsticky and slightly plastic; common very fine roots; common very fine tubular pores; 20 percent channers; violently effervescent; moderately alkaline; abrupt wavy boundary.

C1—25 to 61 centimeters (10 to 24 inches); white (10YR 8/2) very channery loam, very pale brown (10YR 7/3) moist; massive; slightly hard, friable, nonsticky and slightly plastic; few very fine roots; few very fine tubular and interstitial pores; 50 percent channers; violently effervescent; moderately alkaline; clear broken boundary.

C2—61 to 109 centimeters (24 to 43 inches); very pale brown (10YR 7/3) extremely gravelly sandy loam, brownish yellow (10YR 6/6) moist; massive; slightly hard, friable, nonsticky and nonplastic; few very fine roots; 60 to 65 percent shale fragments; slightly effervescent to strongly effervescent; moderately alkaline; gradual broken boundary.

R—109 to 135 centimeters (43 to 53 inches); highly fractured shale with fractures 1 to 2 1/2 inches apart; few very fine roots in fractures.

Range in Characteristics

The reference pedon is an example of the Xeric Torriorthents in the survey area. Due to the highly variable nature of the Xeric Torriorthents, this pedon is not necessarily representative of these soils throughout the survey area.

These soils range in depth from 51 to greater than 152 centimeters (20 to 60 inches). The texture is sandy loam and loam modified by gravel. The content of rock fragments ranges from 10 to 90 percent. Some pedons contain thin layers of gypsum crystals.

Xerofluvents

Depth class: Very deep
Drainage class: Moderately well drained and somewhat poorly drained
Permeability: Rapid to slow
Landform: Flood plains
Parent material: Alluvium from mixed rock types
Slope: 0 to 2 percent
Taxonomic class: Xerofluvents

Reference Pedon

Xerofluvents, 0 to 2 percent slopes, at an elevation of 399 meters (1,310 feet); about 100 feet north and 1,000 feet east of the southwest corner of sec. 1, T. 28 S., R. 16 E.; USGS Holland Canyon topographic quadrangle; lat. 35 degrees 30 minutes 47 seconds N. and long. 120 degrees 12 minutes 28 seconds W.

C—0 to 94 centimeters (0 to 37 inches); brown (10YR 5/3) stratified loamy sand and fine sandy loam, moist; few distinct dark yellowish brown (10YR 4/6) mottles, moist, from a depth of 15 to 37 inches; lens of silt loam from a depth of 30 to 35 inches; very friable, nonsticky and nonplastic; moderately alkaline; abrupt smooth boundary.

2Ab1—94 to 127 centimeters (37 to 50 inches); very dark gray (10YR 3/1) silty clay loam, moist; friable, slightly sticky and slightly plastic; violently effervescent; disseminated carbonates; moderately alkaline; clear smooth boundary.

2Ab2—127 to 140 centimeters (50 to 55 inches); very dark grayish brown (10YR 3/2) silty clay loam, moist; friable, slightly sticky and slightly plastic; violently effervescent; disseminated carbonates; moderately alkaline.

Range in Characteristics

The reference pedon is an example of the Xerofluvents in the survey area. Due to the highly variable nature of the Xerofluvents, this pedon is not necessarily representative of these soils throughout the survey area.

Depth to the buried A horizon ranges from 76 to 94 centimeters (30 to 37 inches).

The C horizon has dry color of 10YR 5/3 or 4/4. Moist color is 2.5Y 4/2. The texture is sand, gravelly sand, loamy sand, fine sandy loam, loam, gravelly loam, clay loam, or clay.

The 2Ab horizon has dry color of 10YR 3/1 or 3/2. Moist color is 10YR 3/3. The texture is gravelly loam, silty clay loam, or clay. The content of gravel ranges from 0 to 25 percent.

Xerorthents

Depth class: Shallow to deep
Drainage class: Well drained and somewhat excessively drained
Permeability: Moderate and moderately rapid
Landform: Mountains
Parent material: Residual material weathered from basalt, sandstone, or shale
Slope: 15 to 75 percent
Taxonomic class: Xerorthents

Reference Pedon

Xerorthents very gravelly loam in an area of Muranch-Xerorthents-Rock outcrop association, 30 to 75 percent slopes, at an elevation of 939 meters (3,080 feet); about 50 feet south from the U-turn on the power-line road; about 2,350 feet east and 500 feet north of the southwest corner of sec. 33, T. 11 N., R. 25 W.; USGS Cuyama topographic quadrangle; lat. 34 degrees 59 minutes 27 seconds N. and long. 119 degrees 33 minutes 6 seconds W.

A—0 to 31 centimeters (0 to 12 inches); pale brown (10YR 6/3) very gravelly loam, brown (10YR 4/3) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine and common medium and coarse roots; common very fine and few tubular pores; 40 percent gravel; moderately alkaline; gradual wavy boundary.

C1—31 to 48 centimeters (12 to 19 inches); light yellowish brown (10YR 6/4) very gravelly loam, dark yellowish brown (10YR 4/4) moist; massive; soft, friable, slightly sticky and slightly plastic; few very fine and fine roots; few very fine tubular pores; 60 percent gravel; moderately alkaline; gradual wavy boundary.

C2—48 to 66 centimeters (19 to 26 inches); light yellowish brown (10YR 6/4) extremely cobbly loam, dark yellowish brown (10YR 4/4) moist; massive; soft, friable, slightly sticky and slightly plastic; few very fine roots; few very fine tubular pores; 40 percent gravel and 40 percent cobbles; moderately alkaline; gradual wavy boundary.

R—66 to 71 centimeters (26 to 28 inches); hard, fractured basalt.

Range in Characteristics

The reference pedon is an example of the Xerorthents in the survey area. Due to the highly variable nature of the Xerorthents, this pedon is not necessarily representative of these soils throughout the survey area.

Depth to hard basalt or shale ranges from 13 to 152 centimeters (5 to 60 inches) but typically is 25 to 76 centimeters (10 to 30 inches). The texture of the fine-earth fraction is loamy sand, sandy loam, or loam. The content of coarse fragments ranges from 0 to 85 percent and typically increases with depth.

Yeguas Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Slow
Landform: Alluvial fans and alluvial flats
Parent material: Alluvium from mixed rock types
Slope: 0 to 5 percent
Taxonomic class: Fine, mixed, superactive, thermic Typic Haploxeralfs

Typical Pedon

Yeguas loam, in an area of Yeguas-Pinspring complex, 2 to 5 percent slopes, at an elevation of 630 meters (2,070 feet); near the second metal high-line tower, on the north side of the dirt road, east of the P.G.& E. substation in the Carrizo Plain, and from the tower's northeast leg 135 feet on magnetic bearing north 350 degrees and 105 feet on magnetic bearing east 80 degrees; about 2,600 feet east and 60 feet north of the southwest corner of sec. 22, T. 29 S., R. 18 E.; USGS La Panza NE topographic quadrangle; lat. 35 degrees 22 minutes 52 seconds N. and long. 120 degrees 1 minute 51 seconds W.

Ap1—0 to 8 centimeters (0 to 3 inches); grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; cloddy; hard, friable, slightly sticky and slightly plastic; few very fine roots; few very fine and fine tubular pores; slightly alkaline; clear smooth boundary.

Ap2—8 to 28 centimeters (3 to 11 inches); grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; massive; very hard, friable, slightly sticky and slightly plastic; few very fine roots; few very fine tubular pores; neutral; gradual smooth boundary.

A—28 to 48 centimeters (11 to 19 inches); grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; massive; hard, friable, slightly sticky and slightly plastic; few very fine roots; common very fine and few fine and medium tubular pores; slightly alkaline; gradual wavy boundary.

Bt1—48 to 61 centimeters (19 to 24 inches); mixed light brownish gray (10YR 6/2) and light yellowish brown (10YR 6/4) clay loam, mixed dark grayish brown (10YR 4/2) and yellowish brown (10YR 5/4) moist; massive; very hard, friable, sticky and plastic; few very fine roots; common very fine tubular pores; few thin clay films on ped faces and in pores; slightly alkaline; gradual wavy boundary.

Bt2—61 to 89 centimeters (24 to 35 inches); light yellowish brown (10YR 6/4) clay, yellowish brown (10YR 5/4) moist; strong medium and coarse angular blocky structure; very hard, friable, very sticky and plastic; few very fine roots, few very fine tubular pores; many moderately thick clay films on ped faces; slightly alkaline; clear wavy boundary.

Bt3—89 to 114 centimeters (35 to 45 inches); light yellowish brown (10YR 6/4) clay loam, yellowish brown (10YR 5/4) moist; moderate fine and medium angular blocky structure; hard, firm, slightly sticky and slightly plastic; common very fine and fine tubular pores; few thin clay films on ped faces; moderately alkaline; clear wavy boundary.

Bk—114 to 130 centimeters (45 to 51 inches); very pale brown (10YR 7/4) loam, yellowish brown (10YR 5/4) moist; moderate medium angular blocky structure; hard, friable, slightly sticky and slightly plastic; violently effervescent; carbonates that are segregated as common fine seams; moderately alkaline; clear wavy boundary.

2C—130 to 158 centimeters (51 to 62 inches); very pale brown (10YR 7/4) gravelly coarse sandy loam, yellowish brown (10YR 5/4) moist; massive; loose, loose, nonsticky and nonplastic; 15 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

The A horizon has dry color of 10YR 5/2, 5/3, 6/2, or 6/3 or 2.5Y 5/2 or 6/2. Moist color is 10YR 3/2 or 3/3 or 2.5Y 3/2. The content of clay ranges from 20 to 27 percent. The content of gravel ranges from 0 to 5 percent. Reaction ranges from neutral to moderately alkaline.

The Bt horizon has dry color of 10YR 5/2, 5/3, 5/4, 6/2, 6/3, or 6/4 or 2.5Y 5/2, 5/3, or 6/3. Moist color is 10YR 3/2, 3/3, 4/2, 4/3, 4/4, or 5/4 or 2.5Y 3/2, 3/3, 4/2, 4/3, or 4/4. The texture is clay loam or clay. The content of clay ranges from 35 to 45 percent. The content of gravel ranges from 0 to 10 percent. Reaction is slightly alkaline or moderately alkaline.

The Bk horizon has dry color of 10YR 6/3, 6/4, 7/2, 7/3, or 7/4 or 2.5Y 6/3, 6/4, or 7/2. Moist color is 10YR 4/2, 4/3, 4/4, 4/6, 5/3, 5/4, 6/4, or 7/4 or 2.5Y 4/4 or 5/4. The texture is loam or clay loam. The content of clay ranges from 18 to 32 percent. The content of gravel ranges from 0 to 10 percent. Reaction is slightly alkaline or moderately alkaline.

The 2C horizon is present in all pedons.

Formation of the Soils

By Lynn E. Moody, Ph.D., Soil Science Department, California Polytechnic State University, San Luis Obispo, California, and Ken Oster, Natural Resources Conservation Service

The soils in the Carrizo Plain area formed as a result of the history and conditions peculiar to the location. In general, soil is a natural body on the surface of the earth consisting of a mixture of rocks and minerals, organic matter, water, and air. Over time, these components combine and weather into a distinctive set of layers, or horizons. The nature and order of these horizons defines each kind of individual soil and determines how it behaves.

Diagnostic Horizons

Diagnostic horizons are layers in soils and are defined in “Soil Taxonomy” (Soil Survey Staff, 1999). Both diagnostic surface horizons, or epipedons, and diagnostic subsurface horizons occur in the Carrizo Plain area. The surface horizons include mollic and ochric epipedons, and the subsurface horizons include cambic, calcic, argillic, and natric horizons.

A mollic epipedon is characterized by an accumulation of humus (decomposed organic matter). Humus is dark colored and lends a dark, dull color to the surface horizon of some soils. In addition, humus contains nutrients essential to plant growth and helps glue soil particles together into granules. Soils that have a mollic epipedon tend to have a surface horizon that is dark, thick, fertile, and easily-worked (if not too rocky). In the survey area, a mollic epipedon is found in the soils of the Nacimiento and Aramburu series and in other soils at the higher elevations. These soils receive sufficient rainfall to support extensive plant populations. A mollic epipedon also occurs in the soils of the Elder and Reward series and other soils on annual grasslands. In these soils, additions of organic matter occur on an annual basis and the soil is biologically active.

An ochric epipedon consists of a surface horizon that is characterized by less humus, a lighter color, or less thickness than a mollic epipedon. An ochric epipedon occurs in the soils of the Beam series and other actively eroding soils where organic matter cannot readily accumulate. An ochric epipedon also occurs in the soils of the Padres series and other dry or hot soils where organic matter is rapidly decomposed. The soils of the Chicote series have an ochric epipedon because they are saline and vegetative cover is sparse. The soils of the Metz series have an ochric epipedon because fresh sediment is deposited faster than plants can add organic matter.

A calcic horizon is a subsurface horizon characterized by accumulations of substantial amounts of calcium carbonate. Calcium carbonate gives soil a light color and accumulates as filaments and rounded nodules in the early stages of formation. If present in large amounts, calcium carbonate commonly turns the soil horizon white. In some soils, a horizon may be completely cemented to almost rock-hard consistence by calcium carbonate. Such a horizon is called a petrocalcic horizon. In the Carrizo Plain area, a petrocalcic horizon is found in the soils of the Camatta series on high, ancient stream terraces.

An argillic horizon is a subsurface horizon characterized by accumulations of illuvial clay. Clay is commonly accompanied by iron oxides; therefore, an argillic horizon is commonly redder or brighter in color than the horizons above and below it. In the survey area, an argillic horizon is found in the soils of the Arbuckle series and other soils on older alluvial fans and relict alluvial flats, on stream terraces, and on stable slopes on hills and mountains.

A natric horizon is an argillic horizon that has a high content of illuvial sodium. Sodium compounds are very soluble; therefore, sodium tends to accumulate in soils that are lower on the landscape. Sodium causes clay particles to disperse in water, making them very mobile and easily moved by leaching. Natric horizons, therefore, can occur in soils that are geologically young. Argillic horizons, in contrast, are usually found in older soils. In the survey area, a natric horizon is found in the soils of the Chicote series and other soils on lake plains on the bolson floor, adjacent to Soda Lake.

Soil Forming Factors

The factors that affect the formation of a soil include climate, parent material, topography, living organisms, and time. Climate and living organisms are described under separate following headings. Time, topography, and parent material are described under the heading “Geologic Influences on the Soils.” Parent material, topography, climate, and living organisms are interrelated. For example, the resistance of rocks to weathering affects the height of hills or mountains and the steepness of slopes that develop on them. Elevation affects temperature and rainfall, and climate affects the nature of plant communities.

Climate

Hot, dry summers and cool, moister winters characterize the Carrizo Plain area. The climate is dominantly xeric in the northwestern part and xeric bordering on aridic in the southeastern part. The accumulation of organic matter in soils is limited by the growing season.

At the higher elevations, where the soil temperature regime is mesic, soil moisture is depleted later in the summer because of lower rates of evapotranspiration. At these higher elevations, the growing season extends later into the summer and plants contribute more organic matter to the soil. The lower temperatures also retard the decomposition of organic matter in the soil. Soils at the higher elevations may have a mollic epipedon. An example is the Godde soils, which are Lithic Haploxerolls.

In contrast, soil moisture is depleted early in the summer at the lower elevations on the east side of the survey area because of the higher rates of evapotranspiration where the soil temperature regime is thermic. At these lower elevations, the growing season ends early in the summer and plants contribute less organic matter to the soil. The higher temperatures accelerate the decomposition of organic matter in the soil. Soils at the lower elevations on the east side have ochric epipedons. An example is the Hillbrick soils, which are Lithic Xerorthents.

The climate promotes leaching of soils that are on stable landforms. Precipitation occurs primarily during the winter before the growing season starts. Much of the water, therefore, can percolate through the soil and carry a suspension or solution of soil material deeper into the soil profile. This leaching can carry suspended clay or solubilized carbonates into the subsoil. The subsoil in the Balcom soils has accumulated some calcium carbonate expressed as a Bk horizon. The subsoil in the Camatta soils on stable, high stream terraces has an extreme accumulation of calcium carbonate that has become cemented into a petrocalcic horizon. The subsoil in the Arbuckle soils on stable stream terraces has accumulated clay to the extent that the soils have an argillic horizon.

Living Organisms

The activities of living organisms, including flora, fauna, plants, and humans, influence the formation and morphology of soils. Living organism affect both the chemical and physical properties of the soil. Chemically, soil fauna and microorganisms recycle nutrients by decomposing dead plants. The nutrients that are thereby released raise the base status of the soil and make nutrients available for up-take by living plants. Some soil bacteria fix atmospheric nitrogen into the soil and improve soil fertility. Physically, plants, especially grasses that have fibrous roots, build mollic epipedons. The decomposition of roots darkens the soil by adding humus, and the humus acts as a glue to build soil structure. The burrowing of insects and mammals and the growth of roots mix the soil and ameliorate soil compaction. The burrows and root channels provide paths of preferential flow that increase infiltration of water.

The Elder soils display the effect of living organisms on the formation of soil. A plant community of grasses dominates the Elder soils. The grasses have produced a very dark brown mollic epipedon that has subangular blocky structure and moderately rapid permeability. In contrast, excess salts in the Chicote soils have suppressed the action of living organisms. The dominant plant in areas of the Chicote soils is saltbush. As a result, the Chicote soils have a light brownish gray ochric epipedon, angular blocky structure, and very slow permeability. A high content of clay and excess salts are the primary reasons the Chicote soils have very slow permeability, but the plant community is not vigorous enough to ameliorate this condition.

Geologic Influences on the Soils

A major stream flowing northwestward shaped the ancestral Carrizo Plain. About 2 million years ago, the entire area was uplifted about 300 meters. The Carrizo Plain was abandoned by the stream and is now a closed basin with internal drainage. The San Juan drainage system dissects the area northwest and west of the Carrizo Plain and is separated from the plain by a low divide formed by the San Juan Hills.

Most bedrock in the survey area consists of sedimentary rocks, which were deposited in horizontal layers in ocean water or fresh water. After deposition, the rocks were buried by younger sediments and lithified (cemented or compacted and hardened). More recently, faulting and folding resulting from the intense crustal plate movement in western California have folded and broken the rock layers, upending the layers and exposing them to the surface in strips and irregular patches.

Further fault movement has brought rocks in contact with each other in patterns differing from their sedimentary sequences. Because these rocks are the starting materials for soil formation in the hills and mountains, the soils also show a great deal of variation. A great number of soils occur in intermingled complexes or associations of two, three, or more soils rather than in discrete, somewhat homogeneous consociations dominated by a single type of soil.

Similar rock types produce similar soils. Sandstones and shales of the Monterey, Vaqueros, and Temblor Formations occur in the Temblor and Caliente Ranges. The Beam and Panoza soils are typical of the soils formed by weathering of these rock types. These soils, Xeric Haplocambids and Haploxerepts respectively, are shallow or moderately deep to soft rock and have minimal soil profile development. In contrast, Cretaceous marine sedimentary rocks occur mainly in the Temblor Range along the northeast edge of the area. These rocks contain minerals that weather to form soils having a high shrink-swell potential, including the Ayar and Aido soils. These soils are Vertisols and are also susceptible to slumping. The siliceous shales of the Monterey Formation are limited to the east edge of the survey area. These rocks weathered to form the Aramburu, Temblor, and Reward soils, which all are channery. Granitic rocks are found only in the La Panza Range on the southwest edge of the area near the headwaters of Camatta, Windmill, and Placer Creeks. Granitic rocks are coarse textured and very erodible. They weathered to form the shallow Cieneba coarse sandy loam soils.

Alluvium has collected as a parent material for some soils in “rift zones” near the San Andreas Fault. Fault traces represent areas of weakness in the earth’s crust. As movement occurs along a fault zone, downward subsidence or settling of the earth along the displacement creates a “rift zone.” Ground water and surface water can collect in the lowest areas along a rift zone, forming sag ponds and wet areas (Hill, 1984). Xerofluvents (wet soils on flood plains) have formed in some of these wet areas. Erosion from the surrounding scarps and hills has filled the rift zone of the San Andreas Fault with alluvium. The very deep San Emigdio and Polonio soils formed in this alluvium along Bitterwater Creek and on the Elkhorn Plain, respectively. Frequent additions of alluvium have produced the stratified San Emigdio soil and have restricted profile development in the Polonio soil.

The age and development of a soil depend on the stability of its landform. In the northwestern part of the survey area, fluvial systems form characteristic sequences of flood plains and terraces. The streams alternately deposit sediment or scour out soil material with each flood event. The soil material does not remain in place long enough to develop a soil profile. The Metz and San Emigdio soils formed on flood plains. They are both Xerofluvents and have profiles that are little different from their parent material. The higher lying terraces were flood plains but are now abandoned by the stream. Because these terraces are infrequently flooded, the soils on them commonly have a well developed soil profile. The Arbuckle soils formed in alluvium on old stream terraces. The landform has been stable long enough for the Arbuckle soils to develop an argillic horizon. The Camatta soils are on higher and older stream terraces. This landform has been stable long enough for the Camatta soils to develop a petrocalcic horizon.

Alluvial parent material also accumulated on the Carrizo Plain. The Carrizo Plain is a bolson; all water drains to its lowest point at Soda Lake. Sediment washing down from the surrounding hills formed stable alluvial fans on the toeslopes of the hills and formed alluvial flats out onto the floor of the plain. The lower fans and the flats are of similar age, and the same soil commonly occurs on both. Wasioja soils have a well developed argillic horizon and occur on both the alluvial fans and relict alluvial flats.

The parent material surrounding Soda Lake is salty. Water draining across the hills surrounding the Carrizo Plain accumulates salts from weathered rocks. The water eventually deposits the salts in the parent material on the lower Carrizo Plain around Soda Lake. Chicote soils formed on these lake plains, which were formerly inundated by Soda Lake during the wetter Pleistocene Epoch. Because of the stability of the surface of the lake plain and the high content of sodium in the parent material, a natric horizon has formed in the Chicote soils.

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Glossary

AASHTO classification. A system that classifies soils specifically for geotechnical engineering purposes related to highway and airfield construction. It is based on particle-size distribution and Atterberg limits.

AASHTO Group Index (GI). An empirical index number used to evaluate clayey and silty-clay materials.

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 fan. A low, outspread mass of loose material and/or rock material, commonly with gentle slopes, shaped like an open fan or a segment of a cone, deposited by a stream at the place where it issues from a narrow mountain valley or where a tributary stream is near or at its junction with the main stream. It is steepest near the mouth of the valley where its apex points upstream, and it slopes gently and convexly outward with a gradual decrease in gradient.

Alluvial flat. A nearly level, graded, alluvial surface between the piedmont slope and playa of a bolson or the axial-stream flood plain of a semi-bolson. This major landform may include both recent and relict components.

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

Alpha,alpha-dipyridyl. A dye that when dissolved in 1N ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction indicates a type of redoximorphic feature.

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.

Aridic moisture regime. A soil moisture regime in which no water is available for plants for more than half the cumulative time that the soil temperature at a depth of 50 centimeters is greater than 5 degrees Celsius and which has no period as long as 90 consecutive days when there is water available for plants while the soil temperature at a depth of 50 centimeters is continuously greater than 8 degrees Celsius.

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) (AWC). The volume of water that should be available to plants if the soil, inclusive of fragments, were at field capacity. It is commonly estimated as the amount of water held between field capacity and wilting point, with corrections for salinity, fragments, and rooting depth. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 2.5
Low	2.5 to 5
Moderate	5 to 7.5
High	7.5 to 10
Very high	more than 10

AWC. See Available water capacity.

Backslope. The position that forms the steepest and generally linear, middle portion of a hill slope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below. They may or may not include cliff segments (i.e. free faces). Backslopes are commonly erosional forms produced by mass movement, colluvial action, and running water.

Badland. An intricately dissected landscape characterized by a very fine drainage network that has high drainage densities; short, steep slopes; and narrow interfluves. Badlands develop on surfaces that have little or no vegetative cover, overlying unconsolidated or poorly cemented materials (clays, silts, or sand). In places, the materials include soluble minerals, such as gypsum or halite.

Bar (Microfeature). A small, sinuous or bow-shaped, ridge-like line separated from others like it by small channels. Bars are caused by fluvial processes, are common to flood plains and young alluvial terraces, and are constituent parts of bar-and-channel topography.

Bar (coastal bar). A generic term for any of various elongated offshore ridges, banks, or mounds of sand, gravel, or other unconsolidated material submerged at least at high tide then built up by the action of waves or currents, especially at the mouth of a river or estuary or at a slight distance offshore from the beach.

Bar (stream bar). A generic term for a ridge-like accumulation of sand, gravel, or other alluvial material formed in the channel, along the banks, or at the mouth of a stream where a decrease in velocity induces deposition; e.g. a channel bar or a meander bar.

Bar and channel. A local-scale topography of recurring, small, sinuous or bow-shaped ridges separated by shallow troughs irregularly spaced across low-relief flood plains. Slopes generally range from 2 to 6 percent. The effect is a subdued, sinuously undulating surface and is common on active flood plains. Differences in microelevation generally are less than 1 or 2 meters. The differences in elevation between bars and channels are largely controlled by the competency of the stream. The ridge-like bars commonly consist of sediments that are coarser than those is the low areas.

Basalt. A dark to medium-dark, commonly extrusive (locally intrusive as dikes), mafic igneous rock composed chiefly of calcic plagioclase (usually labrodorite) and clinopyroxene in a glassy or fine-grained groundmass. Basalt is the extrusive equivalent of gabbro.

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

Basin. The nearly level to gently sloping bottom surface of a wide structural depression between mountain ranges.

Basin floor. The nearly level, lower-most part of intermontane basins (i.e. bolsons and semi-bolsons). The floor includes all of the alluvial, eolian, and erosional landforms below the piedmont slope.

Bedrock. A general term for 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.

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.

Bolson. An internally drained (closed) intermontane basin into which drains from surrounding mountains converge inward toward a central depression.

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

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

Brush management. Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.

Bulk density. A measurement of the ovendried weight of the soil material less than 2 millimeters in size per unit volume of soil. Common measurements are taken at a water tension of $^1/_{10}$ bar, $^1/_3$ bar, or 15 bar. Bulk density influences plant growth and engineering applications. It is used to convert measurements from a weight basis to a volume basis. Within a family particle-size class, bulk density is an indicator of how well plant roots are able to extend into the soil. Bulk density is used to calculate porosity.

Calcareous soil. A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

Calcic horizon. A mineral soil horizon of secondary carbonate enrichment that is greater than 15 centimeters thick, has a $CaCO_3$ equivalent of greater than 150g kg^{-1}, and has at least 50g kg^{-1} more calcium carbonate equivalent than the underlying C horizon (SSSA, 1996).

Calcium carbonate equivalent. The quantity of carbonate (CO_3) in the soil expressed as $CaCO_3$ and as a weight percentage of the fraction less than 2 millimeters in size.

Caliche. A generic term for a prominent zone of secondary carbonate accumulation in surficial materials in warm, subhumid to arid areas. Both geologic and pedologic processes form caliche. Finely crystalline calcium carbonate forms a nearly continuous surface-coating and void-filling medium in geologic (parent) materials. Cementation ranges from weak in non-indurated forms to very strong in types that are indurated. Other minerals, such as carbonates, silicate, and sulfate, may be present as accessory cements. Most petrocalcic horizons and some calcic horizons are caliche.

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.

Cambic horizon. A mineral soil horizon that has a texture of loamy very fine sand or finer, has a soil structure rather than rock structure, contains some weatherable minerals, and is characterized by the alteration or removal of mineral material as indicated by mottling or gray colors, stronger chromas, or redder hues than in the underlying horizons, or the removal of carbonates. The cambic horizon is not cemented or indurated and has too little evidence of illuviation to meet the requirements of an argillic horizon (SSSA, 1996).

Canopy. The leafy crown of trees or shrubs. (See Crown.)

Canyon. A long, deep, narrow, very steep-sided valley that has high and 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.

Cathodic protection. The control of electrolytic corrosion of an underground or underwater metallic structure (as a pipeline) by application of an electric current in such a way that the structure is made to act as the cathode instead of anode of an electrolytic cell (Gove, 1966). (See Coatings for pipelines.)

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity (CEC). 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. (See Terracette.)

CEC. See Cation exchange capacity.

Channery soil material. Soil material that is, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.

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.

Clayey. A soil texture group consisting of sandy clay, silty clay, and clay.

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 dense, compact, slowly permeable layer in the subsoil that has a much higher content of clay than the overlying materials from which it is separated by a sharply defined boundary. A claypan is usually hard when dry and plastic or sticky 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.

Closed depression. A low area that is completely surrounded by higher ground and has no natural outlet.

Coarse fragments. See Rock fragments.

Coarse textured soil. Sand or loamy sand.

Coatings for pipelines. A coating that is primarily intended to provide a barrier to the flow of electricity and moisture, thereby preventing the formation of corrosion cells (Engineering Division, 1993).

Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Cobbly soil material. Material that is 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 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 percent.

Colluvium. Unconsolidated, unsorted earth material being transported or deposited on side slopes and/or at the base of slopes by mass movement (e.g. direct gravitational action) and by local unconcentrated runoff.

Compaction. The process by which soil grains are rearranged in a manner that decreases void space and brings the grains into closer contact with one another, thereby increasing the bulk density (SSSA, 1996).

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.

Conductivity of saturation extract. See Electrical conductivity.

Conglomerate. A coarse-grained, clastic sedimentary rock composed of rounded to subangular rock fragments larger than 2 millimeters in size. It commonly has a matrix of sand and finer textured material. Cements include silica, calcium carbonate, and iron oxides. Conglomerate is the consolidated equivalent of gravel.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the “Soil Survey Manual.”

Consociation, soil. A kind of map unit comprised of delineations, each of which shows the size, shape, and location of a landscape unit composed of one kind of component soil or one kind of miscellaneous area, plus allowable inclusions in either case.

Consolidated sandstone. Sandstone that disperses within a few hours when fragments are placed in water. The fragments are extremely hard or very hard when dry, are not easily crushed, and cannot be assigned a textural class by the usual field method.

Consolidated shale. Shale that disperses within a few hours when fragments are placed in water. The fragments are extremely hard or very hard when dry and are not easily crushed.

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Corrosion. Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production or a crop grown between trees and vines in orchards and vineyards.

Cropping system. Growing crops according to a planned system of rotation and management practices.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Cross-slope farming. Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Debris flow (mass movement). The process, associated sediments (debris flow deposit), or resultant landform characterized by a very rapid flow that is dominated by a sudden, downslope movement of a mass of rock, soil, and mud (in which more than 50 percent of the particles are larger than 2 millimeters). Whether saturated or comparatively dry, the mass behaves much as a viscous fluid.

Decreasers. The most heavily grazed climax range plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.

Deep soil. See Depth, soil.

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.

Depth to bedrock (in tables). Bedrock is too near the surface for the specified use.

Diatomaceous earth. A white, yellow, or light-gray siliceous earth composed predominantly of the opaline frustules of diatoms, accumulated especially in lakes or swamps, and containing a great variation in the amount and nature of impurities, such as spicules of sponges, radiolarian remains, clay minerals, silica sand, and alkaline earths. Diatomaceous earth is the unconsolidated equivalent of diatomite.

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.

Drainageway. A general term for a course or channel along which water moves in draining an area (SSSA, 1996).

Draw. A small stream channel, generally more open and with broader floor than a ravine or gulch.

Dryland farming. The practice of crop production without irrigation. Synonym: dryfarming.

Dune. A low mound, ridge, bank or hill of loose, windblown, granular material (generally sand), either bare or covered with vegetation, capable of movement from place to place but always retaining its characteristic shape.

Duripan. A subsurface soil horizon that is cemented by illuvial silica, usually opal or microcrystalline forms of silica, to the degree that less than 50 percent of the volume of air-dry fragments will slake in water or HCl (SSSA, 1996).

EC. See Electrical conductivity.

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.

Electrical conductivity (EC). The electrolytic conductivity of an extract from saturated soil paste.

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. Pertaining to material transported and deposited by the wind. Includes earth materials, such as dune sands, sand sheets, loess deposits, and clay.

Ephemeral stream. Generally a small stream, or upper reach of a stream, that flows only in direct response to precipitation. It receives no protracted supply from melting snow or other source, and its channel is, at all times, above the water table.

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 running water, waves, or moving ice and wind, or by such processes as mass wasting and corrosion (solution and other chemical processes). The term “geologic erosion” refers to natural erosion processes occurring over long (geologic) time spans. “Accelerated erosion” generically refers to erosion in excess of what is presumed or estimated to be naturally occurring levels and is a direct result of human activities.

Erosional pavement. A concentration of gravel or coarser fragments that remains on the surface after finer particles have been removed by running water or wind.

Escarpment. A relatively continuous cliff or relatively steep slope, produced by erosion or faulting, breaking the general continuity of more gently sloping land surfaces. The term is most commonly applied to cliffs produced by differential erosion, and it is commonly used synonymously with “scarp.”

Fallow. Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grain is grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.

Family, soil. The most specific hierarchical category in the soil taxonomy. Refer to the Classification of the Soils section.

Fan piedmont. The most extensive landform on piedmont slopes, formed by (1) the lateral, downslope coalescence of mountain-front alluvial fans into one generally smooth slope with or without the transverse undulations of the semiconical alluvial fans and (2) accretions of fan aprons.

Fan remnant A general term for a landform that is the remaining part of an older fan-landform, such as an alluvial fan, fan apron, inset fan, or fan skirt. It has been either dissected (an erosional fan remnant) or partially buried (a nonburied fan remnant). An erosional fan remnant must have a relatively flat summit that is a relict fan surface. A nonburied fan remnant is a relict surface in its entirety.

Fan terrace. See fan remnant.

Fault. A fracture or fracture zone of the earth having displacement along one side in respect to the other.

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*.

Fill slope. A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.

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

Firebreak. An area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.

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

Flood plain. The nearly level plain that borders a stream and is subject to inundation under flood-stage conditions unless protected artificially. It is typically a constructional landform built of sediment deposited during overflow and lateral migration of the streams.

Fluvial. Pertaining to rivers; produced by river action.

Foothills. A steeply sloping upland with hill relief (up to 300 meters) that fringes a mountain range or high-plateau escarpment.

Footslope. The position that forms the inner, gently inclined surface at the base of a hill slope. 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.

Fragments. Unattached, cemented pieces of bedrock, bedrocklike material, durinodes, concretions, and nodules 2 millimeters or larger in diameter and woody material 20 millimeters or larger in organic soils.

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. The microrelief of soils produced by expansion and contraction with changes in moisture. This microrelief is found in soils containing large amounts of smectitic clay, which swells and shrinks considerably with wetting and drying. Typically, it consists of a succession of microbasins and microknolls in nearly level areas or of microvalleys and microridges parallel to the direction of the slope. Synonyms: crabhole, Bay of Biscay, and hushabye.

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

Granitic. A term typically applied to an igneous intrusive rock of felsic to intermediate composition. Such rock is granitelike but not necessarily true granite. Granitic is commonly applied to granite, quartz monzonite, granodiorite, and diorite.

Granite. A felsic, igneous, intrusive rock containing quartz and orthoclase and smaller amounts of sodic plagioclase and, commonly, muscovite.

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

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

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

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

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

Gully. A small channel with steep sides caused by erosion and cut by concentrated but intermittent flow of water, usually during and immediately following heavy rains or after ice or snow melt. 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.

Gypsum (in tables). Hydrated calcium sulfates in the fraction of the soil less than 20 millimeters in size is a limitation affecting the specified soil use.

Halophytic. Vegetation that is adapted to growth in salty soils.

Hard bedrock. Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

Hardpan. A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.

Hard to reclaim (in tables). Reclamation is difficult after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Head out. To form a flower head.

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 generic term for an area of the land surface, rising as much as 300 meters above surrounding lowlands, generally of restricted summit area relative to surrounding surfaces and having a well-defined outline; hill slopes generally exceed 15 percent. The distinction between a hill and a mountain is often dependent on local usage.

Holocene. The epoch of the Quaternary Period of geologic time, extending from the end of the Pleistocene Epoch (about 10 to 12 thousand years ago) to the present.

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 rocks. Examples: 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.

Increasers. Species in the climax vegetation that increase in amount as the more desirable plants are reduced by close grazing. Increasers commonly are the shorter plants and the less palatable to livestock.

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.

Inset fan. A flood plain of an ephemeral stream that is confined between the fan remnants, ballenas, basin-floor remnants, or closely-opposed fan toeslopes of a basin.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Intermittent stream. A stream, or reach of a stream, that does not flow year-round (is commonly dry for 3 months or more months of the year) and whose channel is generally below the local water table. It flows only when it receives base flow solely during wet periods or when it receives ground-water discharge or protracted contributions from melting snow or other erratic surface and shallow subsurface sources.

Intrusive. Denoting igneous rocks derived from molten matter (magma) that invaded preexisting rocks and cooled below the surface of the earth.

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.

Level basin (paddy)—Water is applied to a level plain surrounded by levees or dike.

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.

K-factor. A measurement of potential soil erodibility caused by detachment of soil particles by water.

Lacustrine deposit. Clastic sediments and chemical precipitates deposited in lakes.

Lake plain. A surface marking the floor of an extinct lake, filled in by well sorted, stratified sediments.

Landslide. The rapid downhill movement of a mass of soil and loose rock, generally when wet or saturated. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

Leaching. The removal of soluble material from soil or other material by percolating water.

LEP. See Linear extensibility percent.

Linear extensibility percent (LEP). The linear expression of the volume difference of natural soil fabric at $^1/_3$-bar or $^1/_{10}$-bar water content and oven dryness. The volume change is reported as percent change for the whole soil.

Liquid limit (LL). The moisture content at which the soil passes from a plastic to a liquid state.

Lithic contact. A boundary between soil and continuous, coherent, underlying material. The underlying material must be sufficiently coherent to make digging with a spade impractical. If mineral, it must have a hardness of 3 or more (Mohs scale); and it has the property that gravel-sized chunks that can be broken out must not disperse with 15 hours shaking in water or sodium hexametaphosphate solution.

LL. See Liquid limit.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loamy. A soil texture group consisting of coarse sandy loam, sandy loam, fine sandy loam, very fine sandy loam, loam, silt loam, silt, clay loam, sandy clay loam, and silty clay loam soil (SSSA, 1996).

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.

Magma. Molten rock material that originates deep in the earth and solidifies to form igneous rocks (AGI, 1977).

Map unit. A conceptual group of one to many delineations identified by the same name in a soil survey. A map unit represents similar landscape areas comprised of either (1) one kind of component soil, plus inclusions; (2) two or more kinds of component soils, plus inclusions; (3) component soils and miscellaneous area, plus inclusions; (4) two or more kinds of component soils that may or may not occur together in various delineations but all have similar special use and management, plus inclusions; or (5) a miscellaneous area and included soils.

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.

Mesic temperature regime. See Temperature regime, soil.

Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement at depth in the earth's crust. Nearly all such rocks are crystalline. Examples: schist, gneiss, quartzite, slate, and marble.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately deep soil. See Depth, soil.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Moisture regime, soil. Refers to the presence or absence either of ground water or of water held at a tension of less than 1,500 kPa in the soil or in specific horizons during periods of the year.

Aridic.—In the aridic moisture regime, soils are dry for at least half of the year. Soils that have an aridic moisture regime typically occur in areas of arid climates. A few are in the semiarid climates and either have physical properties that keep them dry, such as a crusty surface that virtually precludes the infiltration of water, or are on steep slopes where runoff is high. Little or no leaching occurs in this moisture regime, and soluble salts accumulate in the soils if there is a source.

Torric.—See Aridic.

Xeric.—The typical moisture regime in areas of Mediterranean climates, where winters are moist and cool and summers are warm and dry. The moisture, which falls during the winter when potential evapotranspiration is at a minimum, is particularly effective for leaching. The mean annual soil temperature is lower than 22 degrees C, and the difference between the mean summer soil temperature and the mean winter soil temperature is 6 degrees C.

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;* size—*fine, medium,* and *coarse;* and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium,* from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse,* more than 15 millimeters (about 0.6 inch).

Mountain. A natural elevation of the land surface, rising more than 300 meters above surrounding lowlands, typically of restricted summit area relative to surrounding surfaces and generally having steep sides (a slope of more than 25 percent), with or without a considerable surface of bare rock. A mountain can occur as a single, isolated mass or in a group forming a chain or range. Mountains are formed primarily through tectonic activity and/or volcanic action and secondarily through differential erosion.

Mudstone. A blocky or massive, fine-grained sedimentary rock in which the proportions of clay and silt are approximately equal. Also, a general term that includes clay, silt, claystone, siltstone, shale, and argillite. Mudstone should be used as a general term only when the amounts of clay and silt are not known or cannot be precisely identified.

Mulch. A natural or artificial layer of plant residue or other materials, such as sand or paper, on the soil surface.

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Natric horizon. A special kind of argillic horizon that contains enough exchangeable sodium to have an adverse effect on the physical condition of the subsoil.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. Cemented bodies lacking visible internal structure. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up nodules. If formed in place, nodules of iron oxide or manganese oxide are considered types of redoximorphic concentrations.

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.

OM. See Organic matter.

Ochric epipedon. In a mineral soil, a surface horizon that is too light in color, too high in chroma, too low in organic carbon, or too thin to be a plaggen, mollic, umbric, anthropic, or histic epipedon or that is both hard and massive when dry.

Organic matter (OM). 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*.

Paralithic contact. A boundary between soil and continuous, coherent, underlying material. The underlying material is softer than the material in a lithic contact, can be dug with difficulty using a spade, has a hardness of less than 3 (Mohs scale) if a single mineral, and has the property that gravel-sized chunks that can be broken out partially disperse within 15 hours shaking in water or sodium hexametaphosphate solution.

Parent material. The unconsolidated and more or less chemically weathered mineral or organic matter from which the solum is developed by pedogenic processes.

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedon. The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Perched water table. The upper surface of unconfined ground water separated by an unsaturated zone from an underlying main body of ground water.

Pergelic temperature regime. See Temperature regime, soil.

Percolation. The downward 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:

Extremely slow	0.0 to 0.01 inch
Very slow	0.01 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

Petrocalcic horizon. A continuous, indurated calcic horizon that is cemented by calcium carbonate and, in places, by magnesium carbonate. A petrocalcic horizon cannot be penetrated with a spade or auger when dry, has dry fragments that do not slake in water, and is impenetrable to roots.

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.)

PI. See Plasticity index.

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Plasticity index (PI). 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.

Playa. A usually dry and nearly level lake plain that occupies the lowest parts of closed depressions, such as those occurring on intermontane basin floors. Temporary flooding occurs primarily in response to precipitation-runoff events. Playa deposits are fine grained and may or may not have a high water table and saline conditions.

Pleistocene. An epoch of the Quaternary Period of geologic time, following the Pliocene Epoch and preceding the Holocene (from approximately 2 million to 10 thousand years ago); also the corresponding (time-stratigraphic) "series" of earth materials.

Pliocene. The last epoch of the Tertiary Period of geologic time, following the Miocene Epoch and preceding the Pleistocene Epoch (approximately 5 to 2 million years ago); also, the corresponding (time-stratigraphic) "series" of earth materials.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Polygonal cracks. A network of curvilinear voids on the surface of a soil. These cracks open when a clayey soil dries and shrinks.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water is 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.

Quaternary. The second period of the Cenozoic Era of geologic time, extending from the end of the Tertiary Period (about 2 million years ago) to the present and comprising two epochs, the Pleistocene (Ice Age) and Holocene (Recent); also, the corresponding (time-stratigraphic) "system" of earth materials.

Range condition. The present composition of the plant community on a range site in relation to the potential natural plant community for that site. Range condition is expressed as excellent, good, fair, or poor on the basis of how much the present plant community has departed from the potential.

Rangeland. Land on which the potential natural vegetation is predominantly grasses, grasslike plants, forbs, or shrubs. It includes natural grasslands, savannas, many wetlands, some deserts, tundras, and areas that support certain forb and shrub communities.

Range site. An area of rangeland where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. A range site is the product of all the environmental factors responsible for its development. It is typified by an association of species that differ from those on other range sites in kind or proportion of species or total production.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

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.

Regeneration. The new growth of a natural plant community, developing from seed.

Regolith. All unconsolidated earth materials above the solid bedrock. It includes material weathered in place from all kinds of bedrock and alluvial, glacial, eolian, lacustrine, and pyroclastic deposits. Soil scientists regard as soil only that part of the regolith that is modified by organisms and soil-forming processes. Most engineers describe the whole regolith, even to a great depth, as “soil.”

Relief. The elevations or inequalities of a land surface, considered collectively.

Remnant. A remaining part of some larger landform or of a land surface that has been dissected or partially buried (Peterson, 1981).

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Rill. A small steep-sided channel caused by erosion and cut by concentrated but intermittent flow of water, usually during and immediately following moderate rains or after ice and snow melt. Generally, a rill is not an obstacle to wheeled vehicles and is shallow enough to be obliterated by ordinary tillage.

Riverwash. Barren alluvial areas of unstabilized sand, silt, clay, or gravel reworked frequently by stream activity.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, gravel, cobbles, stones, and boulders.

Rock outcrop. Exposures of bedrock other than lava and rock-lined pits (SSSA, 1996).

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 is expressed as the electrical conductivity of a saturation extract in millimhos per centimeter at 25 degrees C.

0 to 2	nonsaline
2 to 4	very slightly saline
4 to 8	slightly saline
8 to 16	moderately saline
More than 16	strongly saline

Saline-sodic soil. A soil containing sufficient exchangeable sodium to interfere with the growth of most crops and containing appreciable quantities of soluble salts. The exchangeable sodium ratio is greater than 0.15; the conductivity of the soil solution, at saturated water content, is greater than 4 dS/m (at 25 degrees C); and the pH is generally 8.5 or less in the saturated soil (SSSA, 1996).

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

Sandy. A soil texture group consisting of sand and loamy sand (SSSA, 1996).

Saprolite. Unconsolidated residual material underlying the soil and grading to hard bedrock below.

SAR. See Sodium adsorption ratio.

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Scarification. The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.

Scour. The powerful and concentrated clearing and digging action of flowing air, water, or ice, especially the results of flooding or the downward erosion caused by stream water sweeping away mud and silt on the outside curve of a bend.

Second bottom. The first terrace above the normal flood plain (or first bottom) of a river.

Sedimentary rock. A consolidated deposit of clastic particles, chemical precipitates, or organic remains accumulated at or near the surface of the earth under "normal" low temperature and pressure conditions. Sedimentary rocks include consolidated equivalents of alluvium, colluvium, drift, and eolian, lacustrine, and marine deposits, e.g., sandstone, siltstone, mudstone, claystone, shale, conglomerate, limestone, dolomite, and coal.

Seepage (in tables). The movement of water through the soil. Seepage adversely affects the specified use.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock formed by induration of clay, silty clay, or silty clay loam and having the tendency to split into thin layers.

Shallow soil. See Depth, soil.

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 hill slope. It is a transition from a 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.

Side slope. A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland water flow is predominantly parallel.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone. Sedimentary rock made up of dominantly silt-sized particles.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Slickensides. Polished and grooved surfaces produced by one mass sliding past another. In soils, slickensides may occur at the bases of slip surfaces on the steeper slopes; on faces of blocks, prisms, and columns; and in swelling clayey soils, where there is marked change in moisture content.

Slick spot. A small area of soil having a puddled, crusted, or smooth surface and an excess of exchangeable sodium. The soil generally is silty or clayey, is slippery when wet, and is low in productivity.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance. In this survey, classes for simple slopes are as follows:

Nearly level	0 to 2 percent
Gently sloping	2 to 5 percent
Moderately sloping	5 to 9 percent
Strongly sloping	9 to 15 percent
Moderately steep	15 to 30 percent
Steep	30 to 50 percent
Very steep	50 percent and higher

Classes for complex slopes are as follows:

Nearly level	0 to 2 percent
Undulating	2 to 5 percent
Gently rolling	5 to 9 percent
Rolling	9 to 15 percent
Hilly	15 to 30 percent
Steep	30 to 50 percent
Very steep	50 percent and higher

Slope aspect. The direction toward which the surface of the soil faces.

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

Sodicity. The degree to which a soil is affected by exchangeable sodium. Sodicity is expressed as a sodium adsorption ratio (SAR) of a saturation extract, or the ratio of Na^{+} to Ca^{++} + Mg^{++}. The degrees of sodicity and their respective ratios are:

Slight	less than 13:1
Moderate	13-30:1
Strong	more than 30:1

Sodium adsorption ratio (SAR). A measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration.

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil erodibility factors. Factors (Kw) and (Kf) are erodibility factors which quantify the susceptibility of soil to detachment by water. These erodibility factors predict the long-term average soil loss which results from sheet and rill erosion under various alternative combinations of crop systems and conservation techniques. Factor Kw considers the whole soil, and factor Kf indicates the erodibility of only the fine-earth fraction, which is the material less than 2.0 millimeters in diameter.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stone line. A sheet-like concentration of coarse fragments in surficial sediments. In cross section, only scattered fragments may mark the line or it may be a discrete layer of fragments. The fragments are more commonly pebbles or cobbles than stones. A stone line generally overlies material that was subject to weathering, soil formation, and erosion before deposition of the overlying material. Many stone lines seem to be buried erosion pavements, originally formed by running water on the land surface and concurrently covered by surficial sediment.

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.

Stratified. Formed, arranged, or laid down in layers. The term refers to geologic deposits. Layers in soils that result from the processes of soil formation are called horizons; those inherited from the parent material are called strata.

Stream channel. The hollow bed where a natural stream of surface water flows or may flow; the deepest or central part of the bed, formed by the main current and covered more or less continuously by water.

Stream terrace. One of a series of platforms in a stream valley, flanking and more or less parallel to the stream channel, originally formed near the level of the stream, and representing the dissected remnants of an abandoned flood plain, streambed, or valley floor produced during a former state of erosion or deposition.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsidence. The decrease in surface elevation as a result of the drainage of wet soils that have organic layers or semifluid, mineral layers.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum. The part of the soil below the solum.

Subsurface layer. Technically, the E horizon. Generally refers to a leached horizon lighter in color and lower in content of organic matter than the overlying surface layer.

Summer fallow. The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.

Summit. The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the “plow layer”, or the “Ap horizon.”

Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Tailwater. The water directly downstream of a structure.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. 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.

Temperature regime, soil. A system that categorizes for taxonomic purposes general, long-term soil temperature conditions at the standard depth of 20 inches or at the bedrock surface, whichever is shallower. The various regimes are defined according to the freezing point of water or to the high and low extremes for significant biological activity. The regimes, which are fully defined in “Keys to Soil Taxonomy,” are outlined as follows:

Pergelic.—Soils that have a mean annual temperature of less than 32 degrees F and that have permafrost.

Cryic.—Soils that have a mean annual temperature between 32 degrees F and 47 degrees F and which remain cold in summer.

Frigid. —Soils that have a mean annual temperature similar to that of the soils in the Cryic regime but that have an average summer temperature that is at least 9 degrees F warmer.

Mesic.—Soils in which the mean annual temperature is between 47 and 59 degrees F and the difference between summer and winter temperatures is greater than 9 degrees.

Thermic.—Soils in which the mean annual temperature is between 59 and 72 degrees F and the difference between mean summer and winter temperatures is greater than 9 degrees.

Hyperthermic.—Soils in which the mean annual temperature is greater than 72 degrees F and the difference between mean summer and mean winter temperatures is greater than 9 degrees.

Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

Terrace (geomorphology). A step-like surface, bordering a valley floor or shoreline, that represents the former position of a flood plain, lake, or seashore. The term is generally applied to both the relatively flat summit surface (tread), cut or built by stream or wave action, and the steeper descending slope (scarp, riser), graded to a lower base level of erosion. Practically, terraces are considered to be generally flat alluvial areas above the 100-year flood stage.

Terracette. Small, irregular step-like forms on steep hillslopes, especially in pasture, formed by creep or erosion of surficial materials that may or may not be induced by trampling of livestock.

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."

T factor. The soil loss tolerance factor. It is the maximum amount of erosion at which the quality of a soil as a medium for plant growth can be maintained. This quality of the soil includes (1) the surface soil as a seedbed for plants, (2) the atmosphere-soil interface needed to allow the entry of air and water into the soil and still protect the underlying soil from wind and water erosion, and (3) the total volume of soil as a reservoir for water and plant nutrients, which is preserved by minimizing soil loss.

Thermic temperature regime. See Temperature regime, soil.

Tillage. The manipulation, generally mechanical, of soil properties for any purpose. In agriculture, the term is usually restricted to the modification of soil conditions for crop production.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope. The outermost inclined surface at the base of a hill; part of a footslope.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Torric moisture regime. See Moisture regime, soil.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Unified soil classification. A system for classifying mineral and organic mineral soils for engineering purposes based on particle-size characteristics, liquid limit, and plasticity index.

Upland (geomorphology). An informal, general term for (1) the higher ground of a region, in contrast with a low-lying, adjacent area, such as a valley or plain; and (2) land at a higher elevation than the flood plain or low stream terrace; land above the footslope zone of the hillslope continuum.

Uplift (tectonic). A structurally high area in the earth's crust, produced by positive movements that raise or upthrust the rocks, as in a dome or arch.

Vadose. The unsaturated zone in the soil between the ground water surface and the capillary fringe.

Valley. An elongated depressional area primarily developed by stream action.

Valley fill. The unconsolidated sediment deposited by any agent (water, wind, ice, or mass wasting) so as to fill or partly fill a valley.

Variegation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Vegetative cover. The crown cover of all live plants in relation to the ground.

Vernal pool. Shallow surficial depressions that temporarily fill with water during winter and spring rains and desiccate during the dry summer months. They occur as small, poorly drained depressions perched above an impermeable or very slowly permeable soil horizon or bedrock (Smith and Verrill, 1998).

Very deep soil. See Depth, soil.

Very shallow soil. See Depth, soil.

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.

Water gap. An opening or fenced area that provides access to a developed or natural water supply and permits one watering facility to serve two or more pastures (SRM, 1974).

Water table. The upper surface of ground water or that level below which the soil is saturated by water. Also the top of an aquifer.

Waterspreading. Diverting runoff from natural channels by means of a system of dams, dikes, or ditches and spreading it over relatively flat surfaces.

WEG. See Wind erodibility group.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windbreak. A living barrier of trees or combination of trees and shrubs, commonly located adjacent to farm or ranch headquarters, designed to protect an area from cold or hot winds and drifting snow.

Wind erodibility group (WEG). A grouping of soils that have similar properties affecting their resistance to soil blowing in cultivated areas.

Windthrow. The uprooting and tipping over of trees by the wind.

Xeric moisture regime. See Moisture regime, soil.

Tables

Table 1.--Temperature and Precipitation

[Recorded in the period 1961-90 at Maricopa, California]

Month	Temperature						Precipitation				
	Average daily maximum	Average daily minimum	Average	2 years in 10 will have-- Maximum temperature higher than--	2 years in 10 will have-- Minimum temperature lower than--	Average number of growing degree days*	Average	2 years in 10 will have-- Less than--	2 years in 10 will have-- More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	*°F*	*°F*	*°F*	*°F*	*Units*	*In*	*In*	*In*		*In*
January-----	56.1	36.2	46.1	75	22	35	0.81	0.34	1.40	2	0.2
February----	62.7	41.6	52.1	80	29	100	1.38	0.37	2.49	2	0.0
March-------	67.7	44.8	56.2	86	31	201	1.12	0.30	1.95	2	0.0
April-------	74.9	49.1	62.0	95	35	347	0.56	0.21	1.12	1	0.0
May---------	84.0	55.9	69.9	104	40	597	0.24	0.06	0.71	0	0.0
June--------	92.4	63.5	77.9	109	48	822	0.04	0.06	0.24	0	0.0
July--------	97.8	68.8	83.3	110	54	1025	0.00	0.00	0.00	0	0.0
August------	95.9	67.8	81.9	107	53	979	0.08	0.05	0.60	0	0.0
September---	89.6	62.8	76.2	105	48	780	0.31	0.14	1.05	0	0.0
October-----	80.3	54.9	67.6	97	39	542	0.29	0.21	0.92	0	0.0
November----	66.0	44.3	55.1	84	30	172	0.81	0.29	1.41	2	0.0
December----	56.2	36.4	46.3	74	22	33	0.69	0.22	1.17	1	0.0
Yearly:											
Average---	76.9	52.2	64.6	---	---	---	---	---	---	---	---
Extreme---	115	15	---	111	20	---	---	---	---	---	---
Total-----	---	---	---	---	---	5633	6.34	2.91	8.06	10	0.2

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (50 degrees F).

Table 2.--Freeze Dates in Spring and Fall

[Recorded in the period 1961-90 at Maricopa, California]

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	Jan. 14	Feb. 8	Mar. 10
2 year in 10 later than--	Dec. 31	Jan. 27	Mar. 1
5 year in 10 later than--	---	Dec. 30	Feb. 10
First freezing temperature in fall:			
1 yr in 10 earlier than--	Dec. 6	Nov. 30	Nov. 15
2 yr in 10 earlier than--	Dec. 19	Dec. 8	Now. 22
5 yr in 10 earlier than--	Jan. 28	Dec. 24	Dec. 3

Table 3.--Growing Season

[Recorded in the period 1961-90 at Maricopa, California]

Probability	Daily Minimum Temperature During growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	*Days*	*Days*
9 years in 10	351	310	260
8 years in 10	> 365	326	273
5 years in 10	> 365	> 365	297
2 years in 10	> 365	> 365	320
1 year in 10	> 365	> 365	333

Table 4.--Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
100	Balcom loam, 50 to 75 percent slopes	8,930	1.6
101	Balcom-Nacimiento complex, 15 to 30 percent slopes	20,785	3.7
102	Balcom-Nacimiento complex, 30 to 50 percent slopes	30,065	5.3
103	Balcom-Nacimiento complex, 9 to 15 percent slopes	600	0.1
109	Capay clay, 0 to 2 percent slopes	180	*
110	Capay clay, 2 to 9 percent slopes	980	0.2
112	Calleguas-Balcom complex, 15 to 30 percent slopes	3,105	0.6
114	Calleguas-Nacimiento complex, 9 to 30 percent slopes	1,795	0.3
120	Hillbrick-Rock outcrop complex, 15 to 50 percent slopes	3,470	0.6
121	Hillbrick-Rock outcrop complex, 15 to 75 percent slopes	2,685	0.5
123	Lithic Torriorthents-Semper-Rock outcrop complex, 50 to 75 percent slopes	9,675	1.7
129	Kilmer-Hillbrick complex, 9 to 15 percent slopes	250	*
130	Kilmer-Hillbrick complex, 15 to 50 percent slopes	10,150	1.8
131	Kilmer-Hillbrick complex, 50 to 75 percent slopes	5,245	0.9
134	Kilmer-Nacimiento-Aido complex, 30 to 60 percent slopes	9,010	1.6
140	Choice silty clay, 15 to 30 percent slopes	5,740	1.0
149	San Emigdio sandy loam, 0 to 2 percent slopes	715	0.1
150	San Emigdio sandy loam, 2 to 9 percent slopes	5,320	0.9
154	San Emigdio loam, 0 to 2 percent slopes	370	*
155	San Emigdio loam, 2 to 9 percent slopes	675	0.1
159	Sorrento loam, 0 to 2 percent slopes	360	*
160	Sorrento loam, 2 to 9 percent slopes	1,630	0.3
169	Polonio loam, 0 to 2 percent slopes	2,785	0.5
170	Polonio loam, 2 to 9 percent slopes	21,535	3.8
173	Polonio gravelly loam, 2 to 9 percent slopes	990	0.2
174	Polonio-Thomhill complex, 0 to 2 percent slopes	160	*
175	Polonio-Thomhill complex, 2 to 9 percent slopes	5,870	1.0
179	Padres sandy loam, 0 to 2 percent slopes	595	0.1
180	Padres sandy loam, 2 to 9 percent slopes	23,800	4.2
182	Oceano loamy sand, 2 to 9 percent slopes	5	*
190	Reward channery loam, 15 to 30 percent slopes	160	*
191	Reward channery loam, 30 to 50 percent slopes	630	0.1
200	Aramburu very channery clay loam, 15 to 30 percent slopes	615	0.1
201	Aramburu very channery clay loam, 30 to 50 percent slopes	760	0.1
202	Aramburu very channery clay loam, 50 to 75 percent slopes	1,030	0.2
204	Aramburu-Temblor complex, 30 to 50 percent slopes	1,605	0.3
205	Aramburu-Temblor complex, 50 to 75 percent slopes	2,750	0.5
218	Seaback-Calleguas-Panoza complex, 30 to 50 percent slopes	3,235	0.6
219	Xerorthents-Badlands complex, 30 to 75 percent slopes	6,890	1.2
220	Beam-Panoza-Hillbrick complex, 15 to 30 percent slopes	4,340	0.8
221	Beam-Panoza-Hillbrick complex, 30 to 50 percent slopes	17,810	3.2
222	Beam-Panoza-Hillbrick complex, 50 to 75 percent slopes	27,295	4.8
227	Beam-Panoza complex, stony, 15 to 50 percent slopes	3,190	0.6
228	Beam-Panoza complex, stony, 50 to 75 percent slopes	4,015	0.7
229	Seaback-San Timoteo complex, 50 to 75 percent slopes	2,475	0.4
230	Padres-Wasioja complex, 2 to 9 percent slopes	3,055	0.5
240	Panoza-Beam complex, 15 to 30 percent slopes	16,670	3.0
241	Panoza-Beam complex, 30 to 50 percent slopes	9,720	1.7
242	Panoza-Beam complex, 50 to 75 percent slopes	2,460	0.4
248	Pyxo-Cochora association, 15 to 30 percent slopes	60	*
249	Xeric Torriorthents-Badlands complex, 30 to 75 percent slopes	2,475	0.4
250	Pyxo-Cochora-Badlands association, 15 to 75 percent slopes	210	*
251	Nacimiento clay loam, 15 to 30 percent slopes	1,915	0.3
252	Nacimiento clay loam, 30 to 50 percent slopes	855	0.2
261	Aido clay, 15 to 30 percent slopes	1,425	0.3
262	Aido clay, 30 to 50 percent slopes	1,520	0.3
263	Aido clay, 50 to 75 percent slopes	125	*
270	Ayar silty clay, 5 to 9 percent slopes	250	*
271	Ayar clay, 15 to 30 percent slopes	740	0.1
274	Ayar-Hillbrick-Aido complex, 15 to 30 percent slopes	1,630	0.3
275	Ayar-Hillbrick-Aido complex, 30 to 50 percent slopes	885	0.2
280	Seaback-Panoza-Jenks complex, 9 to 15 percent slopes	8,260	1.5
281	Seaback-Panoza-Jenks complex, 15 to 30 percent slopes	21,575	3.8
282	Seaback-Panoza-Jenks complex, 30 to 50 percent slopes	1,870	0.3
290	San Timoteo-San Andreas-Bellyspring complex, 15 to 30 percent slopes	2,975	0.5

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
291	San Timoteo-San Andreas-Bellyspring complex, 30 to 50 percent slopes	15,015	2.7
292	San Timoteo-San Andreas-Bellyspring complex, 50 to 75 percent slopes	8,000	1.4
301	Arbuckle sandy loam, 2 to 9 percent slopes	2,635	0.5
302	Arbuckle sandy loam, 9 to 15 percent slopes	3,450	0.6
303	Arbuckle sandy loam, 15 to 30 percent slopes	5,070	0.9
304	Arbuckle sandy loam, 30 to 50 percent slopes	16,365	2.9
306	Arbuckle sandy loam, 15 to 30 percent slopes, eroded	820	0.1
307	Arbuckle sandy loam, 30 to 50 percent slopes, eroded	305	*
310	Yeguas-Pinspring complex, 0 to 2 percent slopes	8,895	1.6
311	Yeguas-Pinspring complex, 2 to 5 percent slopes	8,655	1.5
321	Thomhill loam, 2 to 5 percent slopes	6,495	1.2
330	Jenks clay loam, 2 to 9 percent slopes	1,975	0.4
339	Arnold-San Andreas complex, 9 to 30 percent slopes	340	*
340	Arnold-San Andreas complex, 30 to 75 percent slopes	2,315	0.4
350	Cieneba coarse sandy loam, 30 to 75 percent slopes	3,660	0.6
360	Chicote complex, 0 to 2 percent slopes	10,200	1.8
361	Chicote complex, 2 to 5 percent slopes	7,750	1.4
362	Chicote complex, 5 to 9 percent slopes	5,030	0.9
371	Semper very fine sandy loam, 30 to 50 percent slopes	360	*
372	Semper very fine sandy loam, 50 to 75 percent slopes	7,235	1.3
375	Semper-Badlands association, 50 to 100 percent slopes	2,775	0.5
380	Muranch-Xerorthents-Rock outcrop association, 30 to 75 percent slopes	3,875	0.7
388	Rock outcrop-Gaviota complex, 30 to 75 percent slopes	2,830	0.5
391	Rock outcrop-Lithic Torriorthents complex, 50 to 100 percent slopes	1,865	0.3
401	Godde-Xerorthents-Rock outcrop complex, 30 to 75 percent slopes	4,430	0.8
408	Gaviota-San Andreas association, 15 to 30 percent slopes	15	*
409	Gaviota-Saltos-Rock outcrop complex, 30 to 75 percent slopes	6,915	1.2
410	Gaviota-Rock outcrop complex, 30 to 75 percent slopes	5,775	1.0
411	Tajea-Saltos complex, 15 to 30 percent slopes	4,270	0.8
412	Tajea-Saltos complex, 30 to 50 percent slopes	11,755	2.1
420	Bellyspring-Saltos-Rock outcrop complex, 50 to 75 percent slopes	3,390	0.6
430	Saucito-Akad-Rock outcrop complex, 30 to 75 percent slopes	3,640	0.6
440	Bellyspring-Panoza complex, 9 to 15 percent slopes	2,995	0.5
441	Bellyspring-Panoza complex, 15 to 30 percent slopes	4,760	0.8
442	Bellyspring-Panoza complex, 30 to 50 percent slopes	5,560	1.0
443	Bellyspring-Panoza-Beam complex, 50 to 75 percent slopes	150	*
445	Bellyspring-Xerorthents-Panoza complex 15 to 50 percent slopes	2,330	0.4
450	Botella loam, 2 to 9 percent slopes	450	*
460	Camatta loam, 5 to 30 percent slopes	2,100	0.4
470	Botella sandy loam, 2 to 9 percent slopes	400	*
474	Elder sandy loam, 0 to 2 percent slopes	2,365	0.4
475	Elder sandy loam, 2 to 9 percent slopes	3,005	0.5
480	Metz loamy sand, 0 to 5 percent slopes	890	0.2
490	Wasioja loam, 0 to 2 percent slopes	1,480	0.3
491	Wasioja sandy loam, 2 to 5 percent slopes	7,330	1.3
495	Wasioja-Polonio complex, 2 to 5 percent slopes	14,530	2.6
497	Wasioja-Pinspring-Yeguas complex, 2 to 5 percent slopes	970	0.2
512	Shimmon sandy loam, 30 to 50 percent slopes	355	*
520	Santa Lucia channery clay loam, 50 to 75 percent slopes	45	*
521	Santa Lucia channery clay loam, 15 to 30 percent slopes	190	*
522	Santa Lucia channery clay loam, 30 to 50 percent slopes	250	*
531	Saltos-Millsholm complex, 15 to 30 percent slopes	3,380	0.6
561	Chanac loam, 9 to 30 percent slopes	75	*
562	Chanac loam, 30 to 75 percent slopes	90	*
900	Pits	475	*
905	Xerofluvents-Riverwash association, 0 to 2 percent slopes	3,775	0.7
906	Xerofluvents, 0 to 2 percent slopes	215	*
908	Xerorthents very gravelly, 50 to 75 percent slopes	185	*
910	Playas ponded	3,685	0.7
911	Playas	2,745	0.5
912	Water	5	*
	Total	563,840	100.0

* Less than 0.1 percent.

Table 5.--Land Capability Classification

[Land capability is a system of grouping soils primarily on the basis of their capability to produce common cultivated crops and pasture plants without deteriorating over a long period of time]

Map symbol and soil name	Land Capability	
	N	I
100:		
Balcom	7e	---
101:		
Balcom	4e	4e
Nacimiento	4e	4e
102:		
Balcom	6e	---
Nacimiento	6e	6e
103:		
Balcom	4e	3e
Nacimiento	4e	3e
109:		
Capay	4s	2s
110:		
Capay	4e	3e
112:		
Calleguas	7e	---
Balcom	4e	4e
114:		
Calleguas	7e	---
Nacimiento	4e	4e
120:		
Hillbrick	7e	---
Rock outcrop	8	---
121:		
Hillbrick	7e	---
Rock outcrop	8	---
123:		
Lithic Torriorthents	7e	---
Semper	7e	---
Rock outcrop	8	---
129:		
Kilmer	4e	---
Hillbrick	7e	---

Table 5.--Land Capability Classification--
Continued

Map symbol and soil name	Land Capability N	Land Capability I
130:		
Kilmer	6e	---
Hillbrick	7e	---
131:		
Kilmer	7e	---
Hillbrick	7e	---
134:		
Kilmer	6e	---
Nacimiento	6e	---
Aido	7e	---
140:		
Choice	4e	4e
149:		
San Emigdio	4c	1
150:		
San Emigdio	4e	2e
154:		
San Emigdio	4c	1
155:		
San Emigdio	4e	2e
159:		
Sorrento	4c	1
160:		
Sorrento	4e	2e
169:		
Polonio	4c	1
170:		
Polonio	4e	3e
173:		
Polonio	4e	2e
174:		
Polonio	4c	1
Thomhill	4c	1
175:		
Polonio	4e	3e
Thomhill	4e	2e
179:		
Padres	4s	2s
180:		
Padres	4e	2e
182:		
Oceano	4e	4s

Table 5.--Land Capability Classification--
Continued

Map symbol and soil name	Land Capability N	Land Capability I
190:		
Reward	6e	---
191:		
Reward	6e	---
200:		
Aramburu	4e	---
201:		
Aramburu	6e	---
202:		
Aramburu	7e	---
204:		
Aramburu	6e	---
Temblor	7e	---
205:		
Aramburu	7e	---
Temblor	7e	---
218:		
Seaback	7e	---
Calleguas	7e	---
Panoza	6e	---
219:		
Xerorthents	7e	---
Badlands	8	---
220:		
Beam	7e	---
Panoza	4e	---
Hillbrick	7e	---
221:		
Beam	7e	---
Panoza	6e	---
Hillbrick	7e	---
222:		
Beam	7e	---
Panoza	7e	---
Hillbrick	7e	---
227:		
Beam	7e	---
Panoza	6e	---

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land Capability N	Land Capability I
228:		
Beam	7e	---
Panoza	7e	---
229:		
Seaback	7e	---
San Timoteo	7e	---
230:		
Padres	4e	2e
Wasioja	4e	2e
240:		
Panoza	4e	---
Beam	7e	---
241:		
Panoza	6e	---
Beam	7e	---
242:		
Panoza	7e	---
Beam	7e	---
248:		
Pyxo	7e	---
Cochora	7e	---
249:		
Xeric Torriorthents	7e	---
Badlands	8	---
250:		
Pyxo	7e	---
Cochora	7e	---
Badlands	8	---
251:		
Nacimiento	4e	4e
252:		
Nacimiento	6e	---
261:		
Aido	4e	---
262:		
Aido	6e	---
263:		
Aido	7e	---
270:		
Ayar	4e	---

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land Capability N	Land Capability I
271:		
Ayar	4e	4e
274:		
Ayar	4e	4e
Hillbrick	7e	---
Aido	4e	---
275:		
Ayar	6e	6e
Hillbrick	7e	---
Aido	6e	---
280:		
Seaback	7e	---
Panoza	4e	---
Jenks	4e	---
281:		
Seaback	7e	---
Panoza	4e	---
Jenks	4e	---
282:		
Seaback	7e	---
Panoza	6e	---
Jenks	6e	---
290:		
San Timoteo	4e	---
San Andreas	4e	---
Bellyspring	4e	---
291:		
San Timoteo	6e	---
San Andreas	6e	---
Bellyspring	6e	---
292:		
San Timoteo	7e	---
San Andreas	7e	---
Bellyspring	7e	---
301:		
Arbuckle	4e	2e
302:		
Arbuckle	4e	3e

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land Capability N	Land Capability I
303:		
Arbuckle	4e	4e
304:		
Arbuckle	6e	---
306:		
Arbuckle	4e	4e
307:		
Arbuckle	6e	---
310:		
Yeguas	4s	2s
Pinspring	4s	2s
311:		
Yeguas	4e	2e
Pinspring	4e	2e
321:		
Thomhill	4e	2e
330:		
Jenks	4e	---
339:		
Arnold	7e	---
San Andreas	4e	---
340:		
Arnold	7e	---
San Andreas	7e	---
350:		
Cieneba	7e	---
360:		
Chicote, silty clay loam	6s	4s
Chicote, silt loam	6s	4s
361:		
Chicote, silty clay loam	6e	4e
Chicote, silt loam	6e	4e
362:		
Chicote, silty clay loam	6e	4e
Chicote, silt loam	6e	4e
371:		
Semper	7e	---
372:		
Semper	7e	---

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land Capability N	Land Capability I
375:		
Semper	7e	---
Badlands	8	---
380:		
Muranch	7e	---
Xerorthents	7e	---
Rock outcrop	8	---
388:		
Rock outcrop	8	---
Gaviota	7e	---
391:		
Rock outcrop	8	---
Lithic Torriorthents	7e	---
401:		
Godde	7e	---
Xerorthents	7e	---
Rock outcrop	8	---
408:		
Gaviota	6e	---
San Andreas	4e	4e
409:		
Gaviota	7e	---
Saltos	7e	---
Rock outcrop	8	---
410:		
Gaviota	7e	---
Rock outcrop	8	---
411:		
Tajea	4e	---
Saltos	7e	---
412:		
Tajea	6e	---
Saltos	7e	---
420:		
Bellyspring	7e	---
Saltos	7e	---
Rock outcrop	8	---

Table 5.--Land Capability Classification--
Continued

Map symbol and soil name	Land Capability	
	N	I
430:		
Saucito	7e	---
Akad	7e	---
Rock outcrop	8	---
440:		
Bellyspring	4e	---
Panoza	4e	---
441:		
Bellyspring	4e	---
Panoza	4e	---
442:		
Bellyspring	6e	---
Panoza	6e	---
443:		
Bellyspring	7e	---
Beam	7e	---
Panoza	7e	---
445:		
Bellyspring	6e	---
Xerorthents	6e	---
Panoza	6e	---
450:		
Botella	4e	2e
460:		
Camatta	7e	---
470:		
Botella	4e	2e
474:		
Elder	4c	1
475:		
Elder	4e	2e
480:		
Metz	4s	2s
490:		
Wasioja	4c	1
491:		
Wasioja	4e	2e
495:		
Wasioja	4e	2e
Polonio	4e	2e

Table 5.--Land Capability Classification--Continued

Map symbol and soil name	Land Capability N	Land Capability I
497:		
Wasioja	4c	1
Pinspring	4e	2e
Yeguas	4e	2e
512:		
Shimmon	6e	---
520:		
Santa Lucia	7e	---
521:		
Santa Lucia	6e	---
522:		
Santa Lucia	6e	---
531:		
Saltos	7e	---
Millsholm	7e	---
561:		
Chanac	4e	4e
562:		
Chanac	7e	---
900:		
Pits	8	---
905:		
Xerofluvents	6w	6w
Riverwash	8	---
906:		
Xerofluvents	4w	3w
908:		
Xerorthents	7e	---
910:		
Playas ponded	8	---
911:		
Playas	8	---
912:		
Water	---	---

Table 6.--Prime Farmland

[Only the soils that are considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland. If a soil is prime farmland only under certain conditions, the conditions are specified in parentheses after the soil name]

Map symbol	Soil name
109	Capay clay, 0 to 2 percent slopes (where irrigated)
110	Capay clay, 2 to 9 percent slopes (where irrigated)
149	San Emigdio sandy loam, 0 to 2 percent slopes (where irrigated)
154	San Emigdio loam, 0 to 2 percent slopes (where irrigated)
159	Sorrento loam, 0 to 2 percent slopes (where irrigated)
160	Sorrento loam, 2 to 9 percent slopes (where irrigated)
169	Polonio loam, 0 to 2 percent slopes (where irrigated)
173	Polonio gravelly loam, 2 to 9 percent slopes (where irrigated)
174	Polonio-Thomhill complex, 0 to 2 percent slopes (where irrigated)
175	Polonio-Thomhill complex, 2 to 9 percent slopes (where irrigated)
179	Padres sandy loam, 0 to 2 percent slopes (where irrigated)
180	Padres sandy loam, 2 to 9 percent slopes (where irrigated)
182	Oceano loamy sand, 2 to 9 percent slopes (where irrigated)
310	Yeguas-Pinspring complex, 0 to 2 percent slopes (where irrigated)
311	Yeguas-Pinspring complex, 2 to 5 percent slopes (where irrigated)
321	Thomhill loam, 2 to 5 percent slopes (where irrigated)
450	Botella loam, 2 to 9 percent slopes (where irrigated)
470	Botella sandy loam, 2 to 9 percent slopes (where irrigated)
474	Elder sandy loam, 0 to 2 percent slopes (where irrigated)
475	Elder sandy loam, 2 to 9 percent slopes (where irrigated)
480	Metz loamy sand, 0 to 5 percent slopes (where irrigated)
490	Wasioja loam, 0 to 2 percent slopes (where irrigated)
491	Wasioja sandy loam, 2 to 5 percent slopes (where irrigated)
495	Wasioja-Polonio complex, 2 to 5 percent slopes (where irrigated)
497	Wasioja-Pinspring-Yeguas complex, 2 to 5 percent slopes (where irrigated)
906	Xerofluvents, 0 to 2 percent slopes (where irrigated)

Table 7.--Additional Soils of Statewide Importance

[Urban or built-up areas within the map units listed are not considered soils of statewide importance]

Map symbol	Map Unit name
150	San Emigdio sandy loam, 2 to 9 percent slopes
155	San Emigdio loam, 2 to 9 percent slopes
170	Polonio loam, 2 to 9 percent slopes
230	Padres-Wasioja complex, 2 to 9 percent slopes
270	Ayar silty clay, 5 to 9 percent slopes
301	Arbuckle sandy loam, 2 to 9 percent slopes
330	Jenks clay loam, 2 to 9 percent slopes
561	Chanac loam, 9 to 30 percent slopes

Table 8.--Rangeland Ecological Sites, Productivity, and Potential Natural Vegetation

Map symbol and soil name	Ecological site	Total dry-weight production: Favorable year	Total dry-weight production: Normal year	Total dry-weight production: Unfavorable year	Potential natural vegetation	Species composition by weight
		Lb/acre	Lb/acre	Lb/acre		Pct
100:						
Balcom	Loamy Upland 9-13" p.z.- R015XF031CA	3,000	2,200	1,400	Red brome (BRRU2)	30
					Soft chess (BRHOH)	15
					Wild oat (AVFA)	15
					Rattail fescue (VUMY)	10
					Nodding needlegrass (NACE)	5
					Pine bluegrass (POSC)	5
					Redstem filaree (ERCI6)	5
					Ripgut brome (BRDI3)	5
101:						
Balcom	Loamy Upland 9-13" p.z.- R015XF031CA	3,000	2,200	1,400	Red brome (BRRU2)	30
					Soft chess (BRHOH)	15
					Wild oat (AVFA)	15
					Rattail fescue (VUMY)	10
					Nodding needlegrass (NACE)	5
					Pine bluegrass (POSC)	5
					Redstem filaree (ERCI6)	5
					Ripgut brome (BRDI3)	5
Nacimiento	Fine Loamy 9-13" p.z.- R015XE020CA	3,200	2,800	2,200	Soft chess (BRHOH)	50
					Filaree (ERODI)	30
					Nodding needlegrass (NACE)	10
102:						
Balcom	Loamy Upland 9-13" p.z.- R015XF031CA	3,000	2,200	1,400	Red brome (BRRU2)	30
					Soft chess (BRHOH)	15
					Wild oat (AVFA)	15
					Rattail fescue (VUMY)	10
					Nodding needlegrass (NACE)	5
					Pine bluegrass (POSC)	5
					Redstem filaree (ERCI6)	5
					Ripgut brome (BRDI3)	5
Nacimiento	Fine Loamy 9-13" p.z.- R015XE020CA	3,200	2,800	2,200	Soft chess (BRHOH)	50
					Filaree (ERODI)	30
					Nodding needlegrass (NACE)	10
103:						
Balcom	Loamy Upland 9-13" p.z.- R015XF031CA	3,000	2,200	1,400	Red brome (BRRU2)	30
					Soft chess (BRHOH)	15
					Wild oat (AVFA)	15
					Rattail fescue (VUMY)	10
					Nodding needlegrass (NACE)	5
					Pine bluegrass (POSC)	5
					Redstem filaree (ERCI6)	5
					Ripgut brome (BRDI3)	5
Nacimiento	Fine Loamy 9-13" p.z.- R015XE020CA	3,200	2,800	2,200	Soft chess (BRHOH)	50
					Filaree (ERODI)	30
					Nodding needlegrass (NACE)	10
109:						
Capay	Clayey-R014XY003CA	2,900	2,200	1,400	Soft chess (BRHOH)	35
					Wild oat (AVFA)	25
					Red brome (BRRU2)	20
					Ripgut brome (BRDI3)	5
110:						
Capay	Clayey-R014XY003CA	2,900	2,200	1,400	Soft chess (BRHOH)	35
					Wild oat (AVFA)	25
					Red brome (BRRU2)	20
					Ripgut brome (BRDI3)	5

Table 8.--Rangeland Ecological Sites, Productivity, and Potential Natural Vegetation--Continued

Map symbol and soil name	Ecological site	Total dry-weight production: Favorable year	Normal year	Unfavorable year	Potential natural vegetation	Species composition by weight
		Lb/acre	Lb/acre	Lb/acre		Pct
112:						
Calleguas-------	Shallow Fine Loamy-R015XF038CA	3,400	2,400	1,600	Rattail fescue (VUMY)----------	20
					Soft chess (BRHOH)-------------	20
					Nodding needlegrass (NACE)-----	10
					Alvord oak (QUAL2)-------------	5
					Buckwheat (ERIOG)--------------	5
					Cheatgrass (BRTE)--------------	5
					Red brome (BRRU2)--------------	5
					Redstem filaree (ERCI6)--------	5
					Wild oat (AVFA)----------------	5
Balcom----------	Loamy Upland 9-13" p.z.-R015XF031CA	3,000	2,200	1,400	Red brome (BRRU2)--------------	30
					Soft chess (BRHOH)-------------	15
					Wild oat (AVFA)----------------	15
					Rattail fescue (VUMY)----------	10
					Nodding needlegrass (NACE)-----	5
					Pine bluegrass (POSC)----------	5
					Redstem filaree (ERCI6)--------	5
					Ripgut brome (BRDI3)-----------	5
114:						
Calleguas-------	Shallow Fine Loamy-R015XF038CA	3,400	2,400	1,600	Rattail fescue (VUMY)----------	20
					Soft chess (BRHOH)-------------	20
					Nodding needlegrass (NACE)-----	10
					Alvord oak (QUAL2)-------------	5
					Buckwheat (ERIOG)--------------	5
					Cheatgrass (BRTE)--------------	5
					Red brome (BRRU2)--------------	5
					Redstem filaree (ERCI6)--------	5
					Wild oat (AVFA)----------------	5
Nacimiento------	Fine Loamy 9-13" p.z.-R015XE020CA	3,200	2,800	2,200	Soft chess (BRHOH)-------------	50
					Filaree (ERODI)----------------	30
					Nodding needlegrass (NACE)-----	10
120:						
Hillbrick-------	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	2,200	1,400	800	Red brome (BRRU2)--------------	25
					Alvord oak (QUAL2)-------------	15
					Rattail fescue (VUMY)----------	10
					Chamise (ADFA)-----------------	5
					Goldenbush (ERICA2)------------	5
					Nodding needlegrass (NACE)-----	5
					Pine bluegrass (POSC)----------	5
					Snakeweed (GUTIE)--------------	5
					Soft chess (BRHOH)-------------	5
					Wild oat (AVFA)----------------	5
121:						
Hillbrick-------	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	2,600	1,600	900	Alvord oak (QUAL2)-------------	20
					Red brome (BRRU2)--------------	15
					Chamise (ADFA)-----------------	10
					Rattail fescue (VUMY)----------	10
					Soft chess (BRHOH)-------------	10
					Wild oat (AVFA)----------------	10
					Goldenbush (ERICA2)------------	5
					Nodding needlegrass (NACE)-----	5
					Pine bluegrass (POSC)----------	5

Table 8.--Rangeland Ecological Sites, Productivity, and Potential Natural Vegetation--Continued

Map symbol and soil name	Ecological site	Total dry-weight production: Favorable year	Normal year	Unfavorable year	Potential natural vegetation	Species composition by weight
		Lb/acre	Lb/acre	Lb/acre		Pct
123:						
Lithic Torriorthents--	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	1,600	1,000	600	Red brome (BRRU2)--------------	45
					Rattail fescue (VUMY)----------	15
					California buckwheat (ERFA2)---	5
					Desert needlegrass (ACSP12)----	5
					Goldenbush (ERICA2)------------	5
					Pine bluegrass (POSC)----------	5
					Schismus (SCHIS)---------------	5
					Snakeweed (GUTIE)--------------	5
Semper----------	Loamy Upland 9-13" p.z.-R015XF031CA	2,000	1,200	700	Red brome (BRRU2)--------------	40
					Goldenbush (ERICA2)------------	10
					Rattail fescue (VUMY)----------	10
					California juniper (JUCA7)-----	5
					Pine bluegrass (POSC)----------	5
					Redstem filaree (ERCI6)--------	5
					Snakeweed (GUTIE)--------------	5
					Soft chess (BRHOH)-------------	5
129:						
Kilmer----------	Loamy Upland 9-13" p.z.-R015XF031CA	3,000	2,500	800	Soft chess (BRHOH)-------------	30
					Red brome (BRRU2)--------------	20
					Brodiaea (BRODI)---------------	5
					Buckwheat (ERIOG)--------------	5
					Filaree (ERODI)----------------	5
					Pepperweed (LEPID)-------------	5
					Slender oat (AVBA)-------------	5
					Tomcat clover (TRTR2)----------	5
Hillbrick-------	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	1,800	1,200	800	Red brome (BRRU2)--------------	30
					Filaree (ERODI)----------------	10
					Soft chess (BRHOH)-------------	10
					California juniper (JUCA7)-----	5
					Buckwheat (ERIOG)--------------	5
					Fescue (FESTU)-----------------	5
					Purple needlegrass (NAPU4)-----	5
					Wild oat (AVFA)----------------	5
130:						
Kilmer----------	Loamy Upland 9-13" p.z.-R015XF031CA	3,000	2,200	1,400	Red brome (BRRU2)--------------	30
					Soft chess (BRHOH)-------------	15
					Wild oat (AVFA)----------------	15
					Rattail fescue (VUMY)----------	10
					Nodding needlegrass (NACE)-----	5
					Pine bluegrass (POSC)----------	5
					Redstem filaree (ERCI6)--------	5
					Ripgut brome (BRDI3)-----------	5
Hillbrick-------	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	2,600	1,600	900	Alvord oak (QUAL2)-------------	20
					Red brome (BRRU2)--------------	15
					Chamise (ADFA)-----------------	10
					Rattail fescue (VUMY)----------	10
					Soft chess (BRHOH)-------------	10
					Wild oat (AVFA)----------------	10
					Goldenbush (ERICA2)------------	5
					Nodding needlegrass (NACE)-----	5
					Pine bluegrass (POSC)----------	5

Table 8.--Rangeland Ecological Sites, Productivity, and Potential Natural Vegetation--Continued

Map symbol and soil name	Ecological site	Total dry-weight production: Favorable year	Normal year	Unfavorable year	Potential natural vegetation	Species composition by weight
		Lb/acre	Lb/acre	Lb/acre		Pct
131:						
Kilmer	Loamy Upland 9-13" p.z.-R015XF031CA	3,000	2,200	1,400	Red brome (BRRU2)	30
					Soft chess (BRHOH)	15
					Wild oat (AVFA)	15
					Rattail fescue (VUMY)	10
					Nodding needlegrass (NACE)	5
					Pine bluegrass (POSC)	5
					Redstem filaree (ERCI6)	5
					Ripgut brome (BRDI3)	5
Hillbrick	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	2,600	1,600	900	Alvord oak (QUAL2)	20
					Red brome (BRRU2)	15
					Chamise (ADFA)	10
					Rattail fescue (VUMY)	10
					Soft chess (BRHOH)	10
					Wild oat (AVFA)	10
					Goldenbush (ERICA2)	5
					Nodding needlegrass (NACE)	5
					Pine bluegrass (POSC)	5
134:						
Kilmer	Fine Loamy-R015XF011CA	2,400	1,800	1,200	Red brome (BRRU2)	40
					Rattail fescue (VUMY)	20
					Pine bluegrass (POSC)	10
					Redstem filaree (ERCI6)	10
					Goldenbush (ERICA2)	5
Nacimiento	Fine Loamy 9-13" p.z.-R015XE020CA	3,200	2,800	2,200	Soft chess (BRHOH)	50
					Filaree (ERODI)	30
					Nodding needlegrass (NACE)	10
Aido	Clayey Hills 10-14" p.z.-R015XF001CA	2,600	2,100	1,600	Soft chess (BRHOH)	40
					Red brome (BRRU2)	20
					Cheatgrass (BRTE)	5
					Deserttrumpet (ERIN4)	5
					Rattail fescue (VUMY)	5
					Ripgut brome (BRDI3)	5
					Wild oat (AVFA)	5
140:						
Choice	Clayey Hills 10-14" p.z.-R015XF001CA	2,900	2,200	1,400	Soft chess (BRHOH)	30
					Red brome (BRRU2)	25
					Wild oat (AVFA)	20
					Ripgut brome (BRDI3)	10
149:						
San Emigdio	Loamy Bottomland-R014XY001CA	2,000	1,500	1,000	Red brome (BRRU2)	35
					Soft chess (BRHOH)	20
					Foxtail fescue (FEME)	10
					Redstem filaree (ERCI6)	10
150:						
San Emigdio	Loamy Bottomland-R014XY001CA	2,000	1,500	1,000	Red brome (BRRU2)	35
					Soft chess (BRHOH)	20
					Foxtail fescue (FEME)	10
					Redstem filaree (ERCI6)	10
154:						
San Emigdio	Loamy Bottomland-R014XY001CA	2,000	1,500	1,000	Red brome (BRRU2)	35
					Soft chess (BRHOH)	20
					Foxtail fescue (FEME)	10
					Redstem filaree (ERCI6)	10

Table 8.--Rangeland Ecological Sites, Productivity, and Potential Natural Vegetation--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Potential natural vegetation	Species composition by weight
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
155:						
San Emigdio-----	Loamy Bottomland- R014XY001CA	2,000	1,500	1,000	Red brome (BRRU2)--------------	35
					Soft chess (BRHOH)-------------	20
					Foxtail fescue (FEME)----------	10
					Redstem filaree (ERCI6)--------	10
169:						
Polonio---------	Loamy Bottomland- R017XF071CA	2,800	2,200	1,500	Red brome (BRRU2)--------------	45
					Rattail fescue (VUMY)----------	25
					Redstem filaree (ERCI6)--------	15
					Wild oat (AVFA)----------------	5
170:						
Polonio---------	Loamy Bottomland- R017XF071CA	2,800	2,200	1,500	Red brome (BRRU2)--------------	45
					Rattail fescue (VUMY)----------	25
					Redstem filaree (ERCI6)--------	15
					Wild oat (AVFA)----------------	5
173:						
Polonio---------	Loamy Bottomland- R017XF071CA	2,800	2,200	1,500	Red brome (BRRU2)--------------	45
					Rattail fescue (VUMY)----------	25
					Redstem filaree (ERCI6)--------	15
					Wild oat (AVFA)----------------	5
174:						
Polonio---------	Loamy Bottomland- R017XF071CA	2,800	2,200	1,500	Red brome (BRRU2)--------------	45
					Rattail fescue (VUMY)----------	25
					Redstem filaree (ERCI6)--------	15
					Wild oat (AVFA)----------------	5
Thomhill--------	Loamy Bottomland- R017XF071CA	2,800	2,200	1,500	Red brome (BRRU2)--------------	45
					Rattail fescue (VUMY)----------	25
					Redstem filaree (ERCI6)--------	15
					Wild oat (AVFA)----------------	5
175:						
Polonio---------	Loamy Bottomland- R017XF071CA	2,800	2,200	1,500	Red brome (BRRU2)--------------	45
					Rattail fescue (VUMY)----------	25
					Redstem filaree (ERCI6)--------	15
					Wild oat (AVFA)----------------	5
Thomhill--------	Loamy Bottomland- R017XF071CA	2,800	2,200	1,500	Red brome (BRRU2)--------------	45
					Rattail fescue (VUMY)----------	25
					Redstem filaree (ERCI6)--------	15
					Wild oat (AVFA)----------------	5
179:						
Padres----------	Loamy Bottomland- R017XF071CA	2,800	2,200	1,500	Red brome (BRRU2)--------------	40
					Rattail fescue (VUMY)----------	25
					Redstem filaree (ERCI6)--------	15
					Wild oat (AVFA)----------------	5
180:						
Padres----------	Loamy Bottomland- R017XF071CA	2,800	2,200	1,500	Red brome (BRRU2)--------------	40
					Rattail fescue (VUMY)----------	25
					Redstem filaree (ERCI6)--------	15
					Wild oat (AVFA)----------------	5

Table 8.--Rangeland Ecological Sites, Productivity, and Potential Natural Vegetation--Continued

Map symbol and soil name	Ecological site	Total dry-weight production: Favorable year	Normal year	Unfavorable year	Potential natural vegetation	Species composition by weight
		Lb/acre	Lb/acre	Lb/acre		Pct
182:						
Oceano	Sandy Bottom-R014XE033CA	1,600	1,200	900	Soft chess (BRHOH)	10
					Wild oat (AVFA)	10
					California sagebrush (ARCA11)	5
					Blue oak (QUDO)	5
					Brome (BROMU)	5
					Chamise (ADFA)	5
					Clover (TRIFO)	5
					Fescue (FESTU)	5
					Lupine (LUPIN)	5
					Manzanita (ARCTO3)	5
					Needlegrass (STIPA)	5
					Ripgut brome (BRDI3)	5
190:						
Reward	Shaly Loam-R015XF035CA	3,300	2,300	1,400	Red brome (BRRU2)	50
					Rattail fescue (VUMY)	20
					Ripgut brome (BRDI3)	20
					Redstem filaree (ERCI6)	5
191:						
Reward	Shaly Loam-R015XF035CA	3,300	2,300	1,400	Red brome (BRRU2)	50
					Rattail fescue (VUMY)	20
					Ripgut brome (BRDI3)	20
					Redstem filaree (ERCI6)	5
200:						
Aramburu	Shaly Fine Loamy-R015XF036CA	3,600	2,600	1,700	Red brome (BRRU2)	20
					Soft chess (BRHOH)	15
					Alvord oak (QUAL2)	10
					California juniper (JUCA7)	10
					Miners lettuce (CLPE)	10
					Ripgut brome (BRDI3)	10
					Wild oat (AVFA)	10
					Cheatgrass (BRTE)	5
					Rattail fescue (VUMY)	5
201:						
Aramburu	Shaly Fine Loamy-R015XF036CA	3,600	2,600	1,700	Red brome (BRRU2)	20
					Soft chess (BRHOH)	15
					Alvord oak (QUAL2)	10
					California juniper (JUCA7)	10
					Miners lettuce (CLPE)	10
					Ripgut brome (BRDI3)	10
					Wild oat (AVFA)	10
					Cheatgrass (BRTE)	5
					Rattail fescue (VUMY)	5
202:						
Aramburu	Shaly Fine Loamy-R015XF036CA	3,600	2,600	1,700	Red brome (BRRU2)	20
					Soft chess (BRHOH)	15
					Alvord oak (QUAL2)	10
					California juniper (JUCA7)	10
					Miners lettuce (CLPE)	10
					Ripgut brome (BRDI3)	10
					Wild oat (AVFA)	10
					Cheatgrass (BRTE)	5
					Rattail fescue (VUMY)	5

Table 8.--Rangeland Ecological Sites, Productivity, and Potential Natural Vegetation--Continued

Map symbol and soil name	Ecological site	Total dry-weight production: Favorable year	Normal year	Unfavorable year	Potential natural vegetation	Species composition by weight
		Lb/acre	Lb/acre	Lb/acre		Pct
204:						
Aramburu--------	Shaly Fine Loamy- R015XF036CA	3,600	2,600	1,700	Red brome (BRRU2)--------------	20
					Soft chess (BRHOH)-------------	15
					Alvord oak (QUAL2)-------------	10
					California juniper (JUCA7)-----	10
					Miners lettuce (CLPE)----------	10
					Ripgut brome (BRDI3)-----------	10
					Wild oat (AVFA)----------------	10
					Cheatgrass (BRTE)--------------	5
					Rattail fescue (VUMY)----------	5
Temblor---------	Shallow Shaly Fine Loamy- R015XF037CA	2,300	1,800	1,200	Rattail fescue (VUMY)----------	30
					Red brome (BRRU2)--------------	20
					Nodding needlegrass (NACE)-----	10
					Redstem filaree (ERCI6)--------	10
					Alvord oak (QUAL2)-------------	5
					Clover (TRIFO)-----------------	5
					Snakeweed (GUTIE)--------------	5
205:						
Aramburu--------	Shaly Fine Loamy- R015XF036CA	3,600	2,600	1,700	Red brome (BRRU2)--------------	20
					Soft chess (BRHOH)-------------	15
					Alvord oak (QUAL2)-------------	10
					California juniper (JUCA7)-----	10
					Miners lettuce (CLPE)----------	10
					Ripgut brome (BRDI3)-----------	10
					Wild oat (AVFA)----------------	10
					Cheatgrass (BRTE)--------------	5
					Rattail fescue (VUMY)----------	5
Temblor---------	Shallow Shaly Fine Loamy- R015XF037CA	2,300	1,800	1,200	Rattail fescue (VUMY)----------	30
					Red brome (BRRU2)--------------	20
					Nodding needlegrass (NACE)-----	10
					Redstem filaree (ERCI6)--------	10
					Alvord oak (QUAL2)-------------	5
					Clover (TRIFO)-----------------	5
					Snakeweed (GUTIE)--------------	5
218:						
Seaback---------	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	1,700	1,000	700	Red brome (BRRU2)--------------	20
					Wild oat (AVFA)----------------	20
					Rattail fescue (VUMY)----------	15
					Nodding needlegrass (NACE)-----	10
					Soft chess (BRHOH)-------------	10
					Goldenbush (ERICA2)------------	5
					Ripgut brome (BRDI3)-----------	5
Calleguas-------	Shallow Fine Loamy- R015XF038CA	3,400	2,400	1,600	California juniper (JUCA7)-----	20
					Rattail fescue (VUMY)----------	20
					Soft chess (BRHOH)-------------	20
					Nodding needlegrass (NACE)-----	10
					Alvord oak (QUAL2)-------------	5
					Buckwheat (ERIOG)--------------	5
					Cheatgrass (BRTE)--------------	5
					Red brome (BRRU2)--------------	5
					Redstem filaree (ERCI6)--------	5
					Wild oat (AVFA)----------------	5

Table 8.--Rangeland Ecological Sites, Productivity, and Potential Natural Vegetation--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Potential natural vegetation	Species composition by weight
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
218:						
Panoza	Loamy Upland 9-13" p.z.-R015XF031CA	3,000	2,200	1,400	Red brome (BRRU2)	30
					Soft chess (BRHOH)	15
					Wild oat (AVFA)	15
					Rattail fescue (VUMY)	10
					Nodding needlegrass (NACE)	5
					Pine bluegrass (POSC)	5
					Redstem filaree (ERCI6)	5
					Ripgut brome (BRDI3)	5
219:						
Xerorthents	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	1,600	1,000	600	Red brome (BRRU2)	45
					Rattail fescue (VUMY)	15
					California buckwheat (ERFA2)	5
					Desert needlegrass (ACSP12)	5
					Goldenbush (ERICA2)	5
					Pine bluegrass (POSC)	5
					Schismus (SCHIS)	5
					Snakeweed (GUTIE)	5
220:						
Beam	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	1,600	1,000	600	Red brome (BRRU2)	45
					Rattail fescue (VUMY)	15
					California buckwheat (ERFA2)	5
					Desert needlegrass (ACSP12)	5
					Goldenbush (ERICA2)	5
					Pine bluegrass (POSC)	5
					Schismus (SCHIS)	5
					Snakeweed (GUTIE)	5
Panoza	Loamy Upland 9-13" p.z.-R015XF031CA	2,000	1,200	700	Red brome (BRRU2)	40
					Goldenbush (ERICA2)	10
					Rattail fescue (VUMY)	10
					California juniper (JUCA7)	5
					Pine bluegrass (POSC)	5
					Redstem filaree (ERCI6)	5
					Snakeweed (GUTIE)	5
					Soft chess (BRHOH)	5
220:						
Hillbrick	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	1,600	1,000	600	Red brome (BRRU2)	45
					Rattail fescue (VUMY)	15
					California buckwheat (ERFA2)	5
					Desert needlegrass (ACSP12)	5
					Goldenbush (ERICA2)	5
					Pine bluegrass (POSC)	5
					Schismus (SCHIS)	5
					Snakeweed (GUTIE)	5
221:						
Beam	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	1,600	1,000	600	Red brome (BRRU2)	45
					Rattail fescue (VUMY)	15
					California buckwheat (ERFA2)	5
					Desert needlegrass (ACSP12)	5
					Goldenbush (ERICA2)	5
					Pine bluegrass (POSC)	5
					Schismus (SCHIS)	5
					Snakeweed (GUTIE)	5

Table 8.--Rangeland Ecological Sites, Productivity, and Potential Natural Vegetation--Continued

Map symbol and soil name	Ecological site	Total dry-weight production: Favorable year	Total dry-weight production: Normal year	Total dry-weight production: Unfavorable year	Potential natural vegetation	Species composition by weight
		Lb/acre	Lb/acre	Lb/acre		Pct
221:						
Panoza----------	Loamy Upland 9-13" p.z.-R015XF031CA	2,000	1,200	700	Red brome (BRRU2)--------------	40
					Goldenbush (ERICA2)------------	10
					Rattail fescue (VUMY)----------	10
					California juniper (JUCA7)-----	5
					Pine bluegrass (POSC)----------	5
					Redstem filaree (ERCI6)--------	5
					Snakeweed (GUTIE)--------------	5
					Soft chess (BRHOH)-------------	5
Hillbrick-------	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	1,600	1,000	600	Red brome (BRRU2)--------------	45
					Rattail fescue (VUMY)----------	15
					California buckwheat (ERFA2)---	5
					Desert needlegrass (ACSP12)----	5
					Goldenbush (ERICA2)------------	5
					Pine bluegrass (POSC)----------	5
					Schismus (SCHIS)---------------	5
					Snakeweed (GUTIE)--------------	5
222:						
Beam-----------	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	1,600	1,000	600	Red brome (BRRU2)--------------	45
					Rattail fescue (VUMY)----------	15
					California buckwheat (ERFA2)---	5
					Desert needlegrass (ACSP12)----	5
					Goldenbush (ERICA2)------------	5
					Pine bluegrass (POSC)----------	5
					Schismus (SCHIS)---------------	5
					Snakeweed (GUTIE)--------------	5
Panoza----------	Loamy Upland 9-13" p.z.-R015XF031CA	2,000	1,200	700	Red brome (BRRU2)--------------	40
					Goldenbush (ERICA2)------------	10
					Rattail fescue (VUMY)----------	10
					California juniper (JUCA7)-----	5
					Pine bluegrass (POSC)----------	5
					Redstem filaree (ERCI6)--------	5
					Snakeweed (GUTIE)--------------	5
					Soft chess (BRHOH)-------------	5
Hillbrick-------	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	1,600	1,000	600	Red brome (BRRU2)--------------	45
					Rattail fescue (VUMY)----------	15
					California buckwheat (ERFA2)---	5
					Desert needlegrass (ACSP12)----	5
					Goldenbush (ERICA2)------------	5
					Pine bluegrass (POSC)----------	5
					Schismus (SCHIS)---------------	5
					Snakeweed (GUTIE)--------------	5
227:						
Beam-----------	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	1,600	1,000	600	Red brome (BRRU2)--------------	45
					Rattail fescue (VUMY)----------	15
					California buckwheat (ERFA2)---	5
					Desert needlegrass (ACSP12)----	5
					Goldenbush (ERICA2)------------	5
					Pine bluegrass (POSC)----------	5
					Schismus (SCHIS)---------------	5
					Snakeweed (GUTIE)--------------	5

Table 8.--Rangeland Ecological Sites, Productivity, and Potential Natural Vegetation--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Potential natural vegetation	Species composition by weight
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
227:						
Panoza	Loamy Upland 9-13" p.z.-R015XF031CA	2,000	1,200	700	Fescue (FESTU)	30
					Narrowleaf goldenbush (ERLI6)	25
					Pine bluegrass (POSC)	15
					Red brome (BRRU2)	10
					Bladderpod (LESQU)	5
					Golden-yarrow (ERCO25)	5
					Redstem filaree (ERCI6)	5
					California juniper (JUCA7)	1
					Ephedra (EPHED)	1
					Snakeweed (GUTIE)	1
228:						
Beam	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	1,600	1,000	600	Red brome (BRRU2)	45
					Rattail fescue (VUMY)	15
					California buckwheat (ERFA2)	5
					Desert needlegrass (ACSP12)	5
					Goldenbush (ERICA2)	5
					Pine bluegrass (POSC)	5
					Schismus (SCHIS)	5
					Snakeweed (GUTIE)	5
Panoza	Loamy Upland 9-13" p.z.-R015XF031CA	2,000	1,200	700	Fescue (FESTU)	30
					Narrowleaf goldenbush (ERLI6)	25
					Pine bluegrass (POSC)	15
					Red brome (BRRU2)	10
					Bladderpod (LESQU)	5
					Golden-yarrow (ERCO25)	5
					Redstem filaree (ERCI6)	5
					California juniper (JUCA7)	1
					Ephedra (EPHED)	1
					Snakeweed (GUTIE)	1
229:						
Seaback	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	1,700	1,000	600	Red brome (BRRU2)	20
					Wild oat (AVFA)	20
					Rattail fescue (VUMY)	15
					Nodding needlegrass (NACE)	10
					Soft chess (BRHOH)	10
					Goldenbush (ERICA2)	5
					Ripgut brome (BRDI3)	5
229:						
San Timoteo	Loamy Upland 9-13" p.z.-R015XF031CA	3,000	2,200	1,400	Red brome (BRRU2)	30
					Soft chess (BRHOH)	15
					Wild oat (AVFA)	15
					Rattail fescue (VUMY)	10
					Nodding needlegrass (NACE)	5
					Pine bluegrass (POSC)	5
					Redstem filaree (ERCI6)	5
					Ripgut brome (BRDI3)	5
230:						
Padres	Loamy Bottomland-R014XY001CA	2,800	2,200	1,500	Red brome (BRRU2)	50
					Pine bluegrass (POSC)	15
					Redstem filaree (ERCI6)	15
					Clover (TRIFO)	5
					Ephedra (EPHED)	1
					Fescue (FESTU)	1

Table 8.--Rangeland Ecological Sites, Productivity, and Potential Natural Vegetation--Continued

Map symbol and soil name	Ecological site	Total dry-weight production: Favorable year	Normal year	Unfavorable year	Potential natural vegetation	Species composition by weight
		Lb/acre	Lb/acre	Lb/acre		Pct
230:						
Wasioja----------	Loamy Bottomland- R014XY001CA	3,000	2,300	1,500	Soft chess (BRHOH)-------------	20
					Redstem filaree (ERCI6)--------	15
					Purple needlegrass (NAPU4)-----	10
					Red brome (BRRU2)--------------	10
					Ripgut brome (BRDI3)-----------	10
					Burclover (MEHI)---------------	5
					Mouse barley (HOMAG)-----------	5
					Wild oat (AVFA)----------------	5
240:						
Panoza----------	Loamy Upland 9-13" p.z.- R015XF031CA	2,500	1,700	1,000	Red brome (BRRU2)--------------	35
					Rattail fescue (VUMY)----------	10
					Soft chess (BRHOH)-------------	10
					Wild oat (AVFA)----------------	10
					Goldenbush (ERICA2)------------	5
					Nodding needlegrass (NACE)-----	5
					Pine bluegrass (POSC)----------	5
					Redstem filaree (ERCI6)--------	5
					Snakeweed (GUTIE)--------------	5
Beam------------	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	1,700	1,000	600	Red brome (BRRU2)--------------	20
					Wild oat (AVFA)----------------	20
					Rattail fescue (VUMY)----------	15
					Nodding needlegrass (NACE)-----	10
					Soft chess (BRHOH)-------------	10
					Goldenbush (ERICA2)------------	5
					Ripgut brome (BRDI3)-----------	5
241:						
Panoza----------	Loamy Upland 9-13" p.z.- R015XF031CA	2,000	1,200	700	Red brome (BRRU2)--------------	40
					Goldenbush (ERICA2)------------	10
					Rattail fescue (VUMY)----------	10
					California juniper (JUCA7)-----	5
					Pine bluegrass (POSC)----------	5
					Redstem filaree (ERCI6)--------	5
					Snakeweed (GUTIE)--------------	5
					Soft chess (BRHOH)-------------	5
Beam------------	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	1,700	1,000	600	Red brome (BRRU2)--------------	20
					Wild oat (AVFA)----------------	20
					Rattail fescue (VUMY)----------	15
					Nodding needlegrass (NACE)-----	10
					Soft chess (BRHOH)-------------	10
					Goldenbush (ERICA2)------------	5
					Ripgut brome (BRDI3)-----------	5
242:						
Panoza----------	Loamy Upland 9-13" p.z.- R015XF031CA	2,000	1,200	700	Red brome (BRRU2)--------------	40
					Goldenbush (ERICA2)------------	10
					Rattail fescue (VUMY)----------	10
					California juniper (JUCA7)-----	5
					Pine bluegrass (POSC)----------	5
					Redstem filaree (ERCI6)--------	5
					Snakeweed (GUTIE)--------------	5
					Soft chess (BRHOH)-------------	5
Beam------------	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	1,700	1,000	600	Red brome (BRRU2)--------------	20
					Wild oat (AVFA)----------------	20
					Rattail fescue (VUMY)----------	15
					Nodding needlegrass (NACE)-----	10
					Soft chess (BRHOH)-------------	10
					Goldenbush (ERICA2)------------	5
					Ripgut brome (BRDI3)-----------	5

Table 8.--Rangeland Ecological Sites, Productivity, and Potential Natural Vegetation--Continued

Map symbol and soil name	Ecological site	Total dry-weight production: Favorable year	Normal year	Unfavorable year	Potential natural vegetation	Species composition by weight
		Lb/acre	Lb/acre	Lb/acre		Pct
248:						
Pyxo	Loamy Upland 9-13" p.z.- R015XF031CA	2,000	1,200	700	Red brome (BRRU2)	50
					Filaree (ERODI)	10
					Allscale saltbush (ATPO)	5
					Clover (TRIFO)	5
					Foxtail fescue (FEME)	5
					Ripgut brome (BRDI3)	5
					Spinescale saltbush (ATSP)	5
Cochora	Loamy Upland 9-13" p.z.- R015XF031CA	1,900	1,100	600	Red brome (BRRU2)	50
					Allscale saltbush (ATPO)	10
					Redstem filaree (ERCI6)	10
					Foxtail fescue (FEME)	5
249:						
Xeric Torriorthents	Loamy Upland 9-13" p.z.- R015XF031CA	1,400	800	400	Red brome (BRRU2)	35
					Foxtail fescue (FEME)	30
					Allscale saltbush (ATPO)	10
					Clover (TRIFO)	5
					Filaree (ERODI)	5
					Other annual forbs (AAFF)	5
					Other annual grasses (AAGG)	5
					Ripgut brome (BRDI3)	5
250:						
Pyxo	Loamy Upland 9-13" p.z.- R015XF031CA	2,000	1,200	700	Red brome (BRRU2)	40
					Allscale saltbush (ATPO)	5
					Redstem filaree (ERCI6)	5
					Soft chess (BRHOH)	5
Cochora	Loamy Upland 9-13" p.z.- R015XF031CA	1,900	1,100	600	Red brome (BRRU2)	50
					Allscale saltbush (ATPO)	10
					Redstem filaree (ERCI6)	10
					Foxtail fescue (FEME)	5
251:						
Nacimiento	Fine Loamy-R015XF011CA	3,200	2,300	1,400	Soft chess (BRHOH)	55
					Red brome (BRRU2)	15
					Goldenbush (ERICA2)	5
					Nodding needlegrass (NACE)	5
					Rattail fescue (VUMY)	5
					Redstem filaree (ERCI6)	5
					Wild oat (AVFA)	5
252:						
Nacimiento	Fine Loamy-R015XF011CA	3,200	2,300	1,400	Soft chess (BRHOH)	55
					Red brome (BRRU2)	15
					Goldenbush (ERICA2)	5
					Nodding needlegrass (NACE)	5
					Rattail fescue (VUMY)	5
					Redstem filaree (ERCI6)	5
					Wild oat (AVFA)	5
261:						
Aido	Clayey Hills 10-14" p.z.- R015XF001CA	2,600	2,100	1,600	Soft chess (BRHOH)	40
					Red brome (BRRU2)	20
					Cheatgrass (BRTE)	5
					Deserttrumpet (ERIN4)	5
					Rattail fescue (VUMY)	5
					Ripgut brome (BRDI3)	5
					Wild oat (AVFA)	5

Table 8.--Rangeland Ecological Sites, Productivity, and Potential Natural Vegetation--Continued

Map symbol and soil name	Ecological site	Total dry-weight production: Favorable year	Normal year	Unfavorable year	Potential natural vegetation	Species composition by weight
		Lb/acre	Lb/acre	Lb/acre		Pct
262:						
Aido	Clayey Hills 10-14" p.z.-R015XF001CA	2,600	2,100	1,600	Soft chess (BRHOH)	40
					Red brome (BRRU2)	20
					Cheatgrass (BRTE)	5
					Deserttrumpet (ERIN4)	5
					Rattail fescue (VUMY)	5
					Ripgut brome (BRDI3)	5
					Wild oat (AVFA)	5
263:						
Aido	Clayey Hills 10-14" p.z.-R015XF001CA	2,600	2,100	1,600	Soft chess (BRHOH)	40
					Red brome (BRRU2)	20
					Cheatgrass (BRTE)	5
					Deserttrumpet (ERIN4)	5
					Rattail fescue (VUMY)	5
					Ripgut brome (BRDI3)	5
					Wild oat (AVFA)	5
270:						
Ayar	Clayey Hills 10-14" p.z.-R015XF001CA	3,200	2,800	1,500	Red brome (BRRU2)	20
					Filaree (ERODI)	15
					Clover (TRIFO)	10
					Needlegrass (STIPA)	10
					Ripgut brome (BRDI3)	10
					Foxtail fescue (FEME)	5
					Lupine (LUPIN)	5
					Soft chess (BRHOH)	5
					Wild oat (AVFA)	5
					Blue oak (QUDO)	1
					Juniper (JUNIP)	1
					Saltbush (ATRIP)	1
271:						
Ayar	Clayey Hills 10-14" p.z.-R015XF001CA	2,700	2,200	1,600	Soft chess (BRHOH)	50
					Wild oat (AVFA)	15
					Red brome (BRRU2)	10
					Ripgut brome (BRDI3)	10
					Cheatgrass (BRTE)	5
274:						
Ayar	Clayey Hills 10-14" p.z.-R015XF001CA	2,700	2,200	1,600	Soft chess (BRHOH)	50
					Wild oat (AVFA)	15
					Red brome (BRRU2)	10
					Ripgut brome (BRDI3)	10
					Cheatgrass (BRTE)	5
Hillbrick	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	1,800	1,200	800	Red brome (BRRU2)	30
					Filaree (ERODI)	10
					Soft chess (BRHOH)	10
					California juniper (JUCA7)	5
					Buckwheat (ERIOG)	5
					Fescue (FESTU)	5
					Purple needlegrass (NAPU4)	5
					Wild oat (AVFA)	5
Aido	Clayey Hills 10-14" p.z.-R015XF001CA	2,600	2,100	1,600	Soft chess (BRHOH)	40
					Red brome (BRRU2)	20
					Cheatgrass (BRTE)	5
					Deserttrumpet (ERIN4)	5
					Rattail fescue (VUMY)	5
					Ripgut brome (BRDI3)	5
					Wild oat (AVFA)	5

Table 8.--Rangeland Ecological Sites, Productivity, and Potential Natural Vegetation--Continued

Map symbol and soil name	Ecological site	Total dry-weight production: Favorable year	Normal year	Unfavorable year	Potential natural vegetation	Species composition by weight
		Lb/acre	Lb/acre	Lb/acre		Pct
275:						
Ayar------------	Clayey Hills 10-14" p.z.-R015XF001CA	2,600	2,200	1,800	Soft chess (BRHOH)-------------	55
					Clover (TRIFO)-----------------	10
					Ripgut brome (BRDI3)-----------	10
					Cheatgrass (BRTE)--------------	5
					Red brome (BRRU2)--------------	5
					Wild oat (AVFA)----------------	5
Hillbrick-------	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	1,800	1,200	800	Red brome (BRRU2)--------------	30
					Filaree (ERODI)----------------	10
					Soft chess (BRHOH)-------------	10
					California juniper (JUCA7)-----	5
					Buckwheat (ERIOG)--------------	5
					Fescue (FESTU)-----------------	5
					Purple needlegrass (NAPU4)-----	5
					Wild oat (AVFA)----------------	5
Aido------------	Clayey Hills 10-14" p.z.-R015XF001CA	2,600	2,100	1,600	Soft chess (BRHOH)-------------	40
					Red brome (BRRU2)--------------	20
					Cheatgrass (BRTE)--------------	5
					Deserttrumpet (ERIN4)----------	5
					Rattail fescue (VUMY)----------	5
					Ripgut brome (BRDI3)-----------	5
					Wild oat (AVFA)----------------	5
280:						
Seaback---------	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	1,700	1,000	600	Red brome (BRRU2)--------------	20
					Wild oat (AVFA)----------------	20
					Rattail fescue (VUMY)----------	15
					Nodding needlegrass (NACE)-----	10
					Soft chess (BRHOH)-------------	10
					Goldenbush (ERICA2)------------	5
					Ripgut brome (BRDI3)-----------	5
280:						
Panoza----------	Loamy Upland 9-13" p.z.-R015XF031CA	3,000	2,200	1,400	Red brome (BRRU2)--------------	30
					Soft chess (BRHOH)-------------	15
					Wild oat (AVFA)----------------	15
					Rattail fescue (VUMY)----------	10
					Nodding needlegrass (NACE)-----	5
					Pine bluegrass (POSC)----------	5
					Redstem filaree (ERCI6)--------	5
					Ripgut brome (BRDI3)-----------	5
Jenks-----------	Fine Loamy-R015XF011CA	3,100	2,200	1,400	Soft chess (BRHOH)-------------	40
					Red brome (BRRU2)--------------	15
					Rattail fescue (VUMY)----------	10
					Ripgut brome (BRDI3)-----------	10
					Wild oat (AVFA)----------------	10
					Goldenbush (ERICA2)------------	5
					Nodding needlegrass (NACE)-----	5
281:						
Seaback---------	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	1,700	1,000	600	Red brome (BRRU2)--------------	20
					Wild oat (AVFA)----------------	20
					Rattail fescue (VUMY)----------	15
					Nodding needlegrass (NACE)-----	10
					Soft chess (BRHOH)-------------	10
					Goldenbush (ERICA2)------------	5
					Ripgut brome (BRDI3)-----------	5

Table 8.--Rangeland Ecological Sites, Productivity, and Potential Natural Vegetation--Continued

Map symbol and soil name	Ecological site	Total dry-weight production: Favorable year	Normal year	Unfavorable year	Potential natural vegetation	Species composition by weight
		Lb/acre	Lb/acre	Lb/acre		Pct
281:						
Panoza----------	Loamy Upland 9-13" p.z.-R015XF031CA	2,500	1,700	1,000	Red brome (BRRU2)--------------	35
					Rattail fescue (VUMY)----------	10
					Soft chess (BRHOH)-------------	10
					Wild oat (AVFA)----------------	10
					Goldenbush (ERICA2)------------	5
					Nodding needlegrass (NACE)-----	5
					Pine bluegrass (POSC)----------	5
					Redstem filaree (ERCI6)--------	5
					Snakeweed (GUTIE)--------------	5
Jenks-----------	Fine Loamy-R015XF011CA	3,100	2,200	1,400	Soft chess (BRHOH)-------------	40
					Red brome (BRRU2)--------------	15
					Rattail fescue (VUMY)----------	10
					Ripgut brome (BRDI3)-----------	10
					Wild oat (AVFA)----------------	10
					Goldenbush (ERICA2)------------	5
					Nodding needlegrass (NACE)-----	5
282:						
Seaback---------	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	1,700	1,000	600	Red brome (BRRU2)--------------	20
					Wild oat (AVFA)----------------	20
					Rattail fescue (VUMY)----------	15
					Nodding needlegrass (NACE)-----	10
					Soft chess (BRHOH)-------------	10
					Goldenbush (ERICA2)------------	5
					Ripgut brome (BRDI3)-----------	5
282:						
Panoza----------	Loamy Upland 9-13" p.z.-R015XF031CA	2,500	1,700	1,000	Red brome (BRRU2)--------------	35
					Rattail fescue (VUMY)----------	10
					Soft chess (BRHOH)-------------	10
					Wild oat (AVFA)----------------	10
					Goldenbush (ERICA2)------------	5
					Nodding needlegrass (NACE)-----	5
					Pine bluegrass (POSC)----------	5
					Redstem filaree (ERCI6)--------	5
					Snakeweed (GUTIE)--------------	5
Jenks-----------	Fine Loamy-R015XF011CA	3,100	2,200	1,400	Soft chess (BRHOH)-------------	40
					Red brome (BRRU2)--------------	15
					Rattail fescue (VUMY)----------	10
					Ripgut brome (BRDI3)-----------	10
					Wild oat (AVFA)----------------	10
					Goldenbush (ERICA2)------------	5
					Nodding needlegrass (NACE)-----	5
290:						
San Timoteo-----	Loamy Upland 9-13" p.z.-R015XF031CA	3,000	2,200	1,400	Red brome (BRRU2)--------------	30
					Soft chess (BRHOH)-------------	15
					Wild oat (AVFA)----------------	15
					Rattail fescue (VUMY)----------	10
					Nodding needlegrass (NACE)-----	5
					Pine bluegrass (POSC)----------	5
					Redstem filaree (ERCI6)--------	5
					Ripgut brome (BRDI3)-----------	5
San Andreas-----	Loamy Upland 9-13" p.z.-R015XF031CA	3,000	2,200	1,400	Red brome (BRRU2)--------------	30
					Soft chess (BRHOH)-------------	15
					Wild oat (AVFA)----------------	15
					Rattail fescue (VUMY)----------	10
					Nodding needlegrass (NACE)-----	5
					Pine bluegrass (POSC)----------	5
					Redstem filaree (ERCI6)--------	5
					Ripgut brome (BRDI3)-----------	5

Table 8.--Rangeland Ecological Sites, Productivity, and Potential Natural Vegetation--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Potential natural vegetation	Species composition by weight
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
290:						
Bellyspring-----	Loamy Upland 9-13" p.z.- R015XF031CA	3,000	2,200	1,400	Red brome (BRRU2)--------------	30
					Soft chess (BRHOH)-------------	15
					Wild oat (AVFA)----------------	15
					Rattail fescue (VUMY)----------	10
					Nodding needlegrass (NACE)-----	5
					Pine bluegrass (POSC)----------	5
					Redstem filaree (ERCI6)--------	5
					Ripgut brome (BRDI3)-----------	5
291:						
San Timoteo-----	Loamy Upland 9-13" p.z.- R015XF031CA	3,000	2,200	1,400	Red brome (BRRU2)--------------	30
					Soft chess (BRHOH)-------------	15
					Wild oat (AVFA)----------------	15
					Rattail fescue (VUMY)----------	10
					Nodding needlegrass (NACE)-----	5
					Pine bluegrass (POSC)----------	5
					Redstem filaree (ERCI6)--------	5
					Ripgut brome (BRDI3)-----------	5
San Andreas-----	Loamy Upland 9-13" p.z.- R015XF031CA	3,000	2,200	1,400	Red brome (BRRU2)--------------	30
					Soft chess (BRHOH)-------------	15
					Wild oat (AVFA)----------------	15
					Rattail fescue (VUMY)----------	10
					Nodding needlegrass (NACE)-----	5
					Pine bluegrass (POSC)----------	5
					Redstem filaree (ERCI6)--------	5
					Ripgut brome (BRDI3)-----------	5
Bellyspring-----	Loamy Upland 9-13" p.z.- R015XF031CA	3,000	2,200	1,400	Red brome (BRRU2)--------------	30
					Soft chess (BRHOH)-------------	15
					Wild oat (AVFA)----------------	15
					Rattail fescue (VUMY)----------	10
					Nodding needlegrass (NACE)-----	5
					Pine bluegrass (POSC)----------	5
					Redstem filaree (ERCI6)--------	5
					Ripgut brome (BRDI3)-----------	5
292:						
San Timoteo-----	Loamy Upland 9-13" p.z.- R015XF031CA	3,000	2,200	1,400	Red brome (BRRU2)--------------	30
					Soft chess (BRHOH)-------------	15
					Wild oat (AVFA)----------------	15
					Rattail fescue (VUMY)----------	10
					Nodding needlegrass (NACE)-----	5
					Pine bluegrass (POSC)----------	5
					Redstem filaree (ERCI6)--------	5
					Ripgut brome (BRDI3)-----------	5
San Andreas-----	Loamy Upland 9-13" p.z.- R015XF031CA	3,000	2,200	1,400	Red brome (BRRU2)--------------	30
					Soft chess (BRHOH)-------------	15
					Wild oat (AVFA)----------------	15
					Rattail fescue (VUMY)----------	10
					Nodding needlegrass (NACE)-----	5
					Pine bluegrass (POSC)----------	5
					Redstem filaree (ERCI6)--------	5
					Ripgut brome (BRDI3)-----------	5
Bellyspring-----	Loamy Upland 9-13" p.z.- R015XF031CA	3,000	2,200	1,400	Red brome (BRRU2)--------------	30
					Soft chess (BRHOH)-------------	15
					Wild oat (AVFA)----------------	15
					Rattail fescue (VUMY)----------	10
					Pine bluegrass (POSC)----------	5
					Redstem filaree (ERCI6)--------	5
					Ripgut brome (BRDI3)-----------	5

Table 8.--Rangeland Ecological Sites, Productivity, and Potential Natural Vegetation--Continued

Map symbol and soil name	Ecological site	Total dry-weight production: Favorable year	Normal year	Unfavorable year	Potential natural vegetation	Species composition by weight
		Lb/acre	Lb/acre	Lb/acre		Pct
301:						
Arbuckle--------	Loamy Upland 9-13" p.z.- R015XF031CA	3,000	2,200	1,400	Red brome (BRRU2)--------------	30
					Soft chess (BRHOH)-------------	15
					Wild oat (AVFA)----------------	15
					Rattail fescue (VUMY)----------	10
					Nodding needlegrass (NACE)-----	5
					Pine bluegrass (POSC)----------	5
					Redstem filaree (ERCI6)--------	5
					Ripgut brome (BRDI3)-----------	5
302:						
Arbuckle--------	Loamy Upland 9-13" p.z.- R015XF031CA	3,000	2,200	1,400	Red brome (BRRU2)--------------	30
					Soft chess (BRHOH)-------------	15
					Wild oat (AVFA)----------------	15
					Rattail fescue (VUMY)----------	10
					Nodding needlegrass (NACE)-----	5
					Pine bluegrass (POSC)----------	5
					Redstem filaree (ERCI6)--------	5
					Ripgut brome (BRDI3)-----------	5
303:						
Arbuckle--------	Coarse Loamy-R015XE009CA	2,400	1,600	1,000	Redstem filaree (ERCI6)--------	20
					Soft chess (BRHOH)-------------	20
					Red brome (BRRU2)--------------	15
					Blue oak (QUDO)----------------	10
					Cheatgrass (BRTE)--------------	5
					Lupine (LUPIN)-----------------	5
					Pine bluegrass (POSC)----------	5
					Rattail fescue (VUMY)----------	5
					Ripgut brome (BRDI3)-----------	5
304:						
Arbuckle--------	Coarse Loamy-R015XE009CA	2,400	1,600	1,000	Redstem filaree (ERCI6)--------	20
					Soft chess (BRHOH)-------------	20
					Red brome (BRRU2)--------------	15
					Blue oak (QUDO)----------------	10
					Cheatgrass (BRTE)--------------	5
					Lupine (LUPIN)-----------------	5
					Pine bluegrass (POSC)----------	5
					Rattail fescue (VUMY)----------	5
					Ripgut brome (BRDI3)-----------	5
306:						
Arbuckle--------	Coarse Loamy-R015XE009CA	2,400	1,600	1,000	Redstem filaree (ERCI6)--------	20
					Soft chess (BRHOH)-------------	20
					Red brome (BRRU2)--------------	15
					Blue oak (QUDO)----------------	10
					Cheatgrass (BRTE)--------------	5
					Lupine (LUPIN)-----------------	5
					Pine bluegrass (POSC)----------	5
					Rattail fescue (VUMY)----------	5
					Ripgut brome (BRDI3)-----------	5
307:						
Arbuckle--------	Coarse Loamy-R015XE009CA	2,400	1,600	1,000	Redstem filaree (ERCI6)--------	20
					Soft chess (BRHOH)-------------	20
					Red brome (BRRU2)--------------	15
					Blue oak (QUDO)----------------	10
					Cheatgrass (BRTE)--------------	5
					Lupine (LUPIN)-----------------	5
					Pine bluegrass (POSC)----------	5
					Rattail fescue (VUMY)----------	5
					Ripgut brome (BRDI3)-----------	5

Table 8.--Rangeland Ecological Sites, Productivity, and Potential Natural Vegetation--Continued

Map symbol and soil name	Ecological site	Total dry-weight production: Favorable year	Normal year	Unfavorable year	Potential natural vegetation	Species composition by weight
		Lb/acre	Lb/acre	Lb/acre		Pct
310:						
Yeguas----------	Loamy Bottomland-R017XF071CA	2,800	2,200	1,500	Red brome (BRRU2)--------------	45
					Rattail fescue (VUMY)----------	25
					Redstem filaree (ERCI6)--------	15
					Wild oat (AVFA)----------------	5
Pinspring-------	Loamy Bottomland-R017XF071CA	2,800	2,200	1,500	Red brome (BRRU2)--------------	45
					Rattail fescue (VUMY)----------	25
					Redstem filaree (ERCI6)--------	15
					Wild oat (AVFA)----------------	5
311:						
Yeguas----------	Loamy Bottomland-R017XF071CA	2,800	2,200	1,500	Red brome (BRRU2)--------------	45
					Rattail fescue (VUMY)----------	25
					Redstem filaree (ERCI6)--------	15
					Wild oat (AVFA)----------------	5
Pinspring-------	Loamy Bottomland-R017XF071CA	2,800	2,200	1,500	Red brome (BRRU2)--------------	45
					Rattail fescue (VUMY)----------	25
					Redstem filaree (ERCI6)--------	15
					Wild oat (AVFA)----------------	5
321:						
Thomhill--------	Loamy Bottomland-R017XF071CA	2,800	2,200	1,500	Red brome (BRRU2)--------------	45
					Rattail fescue (VUMY)----------	25
					Redstem filaree (ERCI6)--------	15
					Wild oat (AVFA)----------------	5
330:						
Jenks-----------	Fine Loamy-R015XF011CA	3,200	2,300	1,400	Soft chess (BRHOH)-------------	55
					Red brome (BRRU2)--------------	15
					Goldenbush (ERICA2)------------	5
					Nodding needlegrass (NACE)-----	5
					Rattail fescue (VUMY)----------	5
					Redstem filaree (ERCI6)--------	5
					Wild oat (AVFA)----------------	5
339:						
Arnold----------	Sandy-R015XE031CA	1,200	800	400	Soft chess (BRHOH)-------------	40
					Blue oak (QUDO)----------------	10
					Cheatgrass (BRTE)--------------	5
					Lupine (LUPIN)-----------------	5
					Other annual forbs (AAFF)------	5
					Pine bluegrass (POSC)----------	5
					Rattail fescue (VUMY)----------	5
					Redstem filaree (ERCI6)--------	5
					Ripgut brome (BRDI3)-----------	5
San Andreas-----	Coarse Loamy-R015XE009CA	2,400	1,600	1,000	Redstem filaree (ERCI6)--------	20
					Soft chess (BRHOH)-------------	20
					Red brome (BRRU2)--------------	15
					Blue oak (QUDO)----------------	10
					Cheatgrass (BRTE)--------------	5
					Lupine (LUPIN)-----------------	5
					Pine bluegrass (POSC)----------	5
					Rattail fescue (VUMY)----------	5
					Ripgut brome (BRDI3)-----------	5

Table 8.--Rangeland Ecological Sites, Productivity, and Potential Natural Vegetation--Continued

Map symbol and soil name	Ecological site	Total dry-weight production: Favorable year	Total dry-weight production: Normal year	Total dry-weight production: Unfavorable year	Potential natural vegetation	Species composition by weight
		Lb/acre	Lb/acre	Lb/acre		Pct
340:						
Arnold	Sandy-R015XE031CA	1,200	800	400	Soft chess (BRHOH)	40
					Blue oak (QUDO)	10
					Cheatgrass (BRTE)	5
					Lupine (LUPIN)	5
					Other annual forbs (AAFF)	5
					Pine bluegrass (POSC)	5
					Rattail fescue (VUMY)	5
					Redstem filaree (ERCI6)	5
					Ripgut brome (BRDI3)	5
San Andreas	Coarse Loamy-R015XE009CA	2,400	1,600	1,000	Redstem filaree (ERCI6)	20
					Soft chess (BRHOH)	20
					Red brome (BRRU2)	15
					Blue oak (QUDO)	10
					Cheatgrass (BRTE)	5
					Lupine (LUPIN)	5
					Pine bluegrass (POSC)	5
					Rattail fescue (VUMY)	5
					Ripgut brome (BRDI3)	5
350:						
Cieneba	Shallow Coarse Loamy 10-16" p.z.-R015XE080CA	1,900	1,700	1,250	Chamise (ADFA)	35
					Buckbrush (CECU)	10
					Redstem filaree (ERCI6)	10
					Red brome (BRRU2)	10
					Needlegrass (STIPA)	5
					Rattail fescue (VUMY)	5
360:						
Chicote, silty clay loam	Fine Loamy Flat-R017XF031CA	3,000	1,800	1,300	Alkali barley (HODE2)	25
					Allscale saltbush (ATPO)	20
					Red brome (BRRU2)	20
					Pepperweed (LEPID)	5
					Rattail fescue (VUMY)	5
					Redstem filaree (ERCI6)	5
					Soft chess (BRHOH)	5
Chicote, silt loam	Fine Loamy Flat-R017XF031CA	3,000	1,800	1,300	Alkali barley (HODE2)	25
					Allscale saltbush (ATPO)	25
					Rattail fescue (VUMY)	10
					Red brome (BRRU2)	10
					Soft chess (BRHOH)	10
					Pepperweed (LEPID)	5
					Redstem filaree (ERCI6)	5
361:						
Chicote, silty clay loam	Fine Loamy Flat-R017XF031CA	3,000	1,800	1,300	Alkali barley (HODE2)	25
					Allscale saltbush (ATPO)	25
					Rattail fescue (VUMY)	10
					Red brome (BRRU2)	10
					Soft chess (BRHOH)	10
					Pepperweed (LEPID)	5
					Redstem filaree (ERCI6)	5

Table 8.--Rangeland Ecological Sites, Productivity, and Potential Natural Vegetation--Continued

Map symbol and soil name	Ecological site	Total dry-weight production: Favorable year	Normal year	Unfavorable year	Potential natural vegetation	Species composition by weight
		Lb/acre	Lb/acre	Lb/acre		Pct
361:						
Chicote, silt loam------	Fine Loamy Flat- R017XF031CA	3,000	1,800	1,300	Alkali barley (HODE2)----------	25
					Allscale saltbush (ATPO)-------	25
					Rattail fescue (VUMY)----------	10
					Red brome (BRRU2)--------------	10
					Soft chess (BRHOH)-------------	10
					Pepperweed (LEPID)-------------	5
					Redstem filaree (ERCI6)--------	5
362:						
Chicote, silty clay loam-	Fine Loamy Flat- R017XF031CA	3,000	1,800	1,300	Alkali barley (HODE2)----------	25
					Allscale saltbush (ATPO)-------	25
					Rattail fescue (VUMY)----------	10
					Red brome (BRRU2)--------------	10
					Soft chess (BRHOH)-------------	10
					Pepperweed (LEPID)-------------	5
					Redstem filaree (ERCI6)--------	5
Chicote, silt loam------	Fine Loamy Flat- R017XF031CA	3,000	1,800	1,300	Alkali barley (HODE2)----------	25
					Allscale saltbush (ATPO)-------	25
					Rattail fescue (VUMY)----------	10
					Red brome (BRRU2)--------------	10
					Soft chess (BRHOH)-------------	10
					Pepperweed (LEPID)-------------	5
					Redstem filaree (ERCI6)--------	5
371:						
Semper----------	Loamy Upland 9-13" p.z.- R015XF031CA	2,000	1,200	700	Red brome (BRRU2)--------------	40
					Goldenbush (ERICA2)------------	10
					Rattail fescue (VUMY)----------	10
					California juniper (JUCA7)-----	5
					Pine bluegrass (POSC)----------	5
					Redstem filaree (ERCI6)--------	5
					Snakeweed (GUTIE)--------------	5
					Soft chess (BRHOH)-------------	5
372:						
Semper----------	Loamy Upland 9-13" p.z.- R015XF031CA	2,000	1,200	700	Red brome (BRRU2)--------------	40
					Goldenbush (ERICA2)------------	10
					Rattail fescue (VUMY)----------	10
					California juniper (JUCA7)-----	5
					Pine bluegrass (POSC)----------	5
					Redstem filaree (ERCI6)--------	5
					Snakeweed (GUTIE)--------------	5
					Soft chess (BRHOH)-------------	5
375:						
Semper----------	Loamy Upland 9-13" p.z.- R015XF031CA	2,000	1,200	700	Red brome (BRRU2)--------------	40
					Goldenbush (ERICA2)------------	10
					Rattail fescue (VUMY)----------	10
					California juniper (JUCA7)-----	5
					Pine bluegrass (POSC)----------	5
					Redstem filaree (ERCI6)--------	5
					Snakeweed (GUTIE)--------------	5
					Soft chess (BRHOH)-------------	5

Table 8.--Rangeland Ecological Sites, Productivity, and Potential Natural Vegetation--Continued

Map symbol and soil name	Ecological site	Total dry-weight production: Favorable year	Normal year	Unfavorable year	Potential natural vegetation	Species composition by weight
		Lb/acre	Lb/acre	Lb/acre		Pct
380:						
Muranch	Loamy Upland 9-13" p.z.-R015XF031CA	2,000	1,200	700	Red brome (BRRU2)	40
					Goldenbush (ERICA2)	10
					Rattail fescue (VUMY)	10
					California juniper (JUCA7)	5
					Pine bluegrass (POSC)	5
					Redstem filaree (ERCI6)	5
					Snakeweed (GUTIE)	5
					Soft chess (BRHOH)	5
Xerorthents	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	1,600	1,000	600	Red brome (BRRU2)	45
					Rattail fescue (VUMY)	15
					California buckwheat (ERFA2)	5
					Desert needlegrass (ACSP12)	5
					Goldenbush (ERICA2)	5
					Pine bluegrass (POSC)	5
					Schismus (SCHIS)	5
					Snakeweed (GUTIE)	5
Gaviota	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	1,800	1,200	700	Alvord oak (QUAL2)	35
					Chamise (ADFA)	15
					Rattail fescue (VUMY)	10
					California buckwheat (ERFA2)	5
					Deervetch (LOTUS)	5
					Pine bluegrass (POSC)	5
					Red brome (BRRU2)	5
					Soft chess (BRHOH)	5
Lithic Torriorthents	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	1,600	1,000	600	Red brome (BRRU2)	45
					Rattail fescue (VUMY)	15
					California buckwheat (ERFA2)	5
					Desert needlegrass (ACSP12)	5
					Goldenbush (ERICA2)	5
					Pine bluegrass (POSC)	5
					Schismus (SCHIS)	5
					Snakeweed (GUTIE)	5
401:						
Godde	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	1,800	1,200	700	Red brome (BRRU2)	30
					Alvord oak (QUAL2)	25
					California juniper (JUCA7)	5
					Goldenbush (ERICA2)	5
					Nodding needlegrass (NACE)	5
					Pine bluegrass (POSC)	5
					Rattail fescue (VUMY)	5
					Redstem filaree (ERCI6)	5
					Snakeweed (GUTIE)	5
					Wildrye (ELYMU)	5
Xerorthents	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	1,800	1,200	700	Red brome (BRRU2)	30
					Alvord oak (QUAL2)	25
					California juniper (JUCA7)	5
					Goldenbush (ERICA2)	5
					Nodding needlegrass (NACE)	5
					Pine bluegrass (POSC)	5
					Rattail fescue (VUMY)	5
					Redstem filaree (ERCI6)	5
					Snakeweed (GUTIE)	5
					Wildrye (ELYMU)	5

Table 8.--Rangeland Ecological Sites, Productivity, and Potential Natural Vegetation--Continued

Map symbol and soil name	Ecological site	Total dry-weight production			Potential natural vegetation	Species composition by weight
		Favorable year	Normal year	Unfavorable year		
		Lb/acre	Lb/acre	Lb/acre		Pct
408:						
Gaviota	Shallow Coarse Loamy 10-16" p.z.-R015XE080CA	1,800	1,500	900	Chamise (ADFA)	20
					Buckbrush (CECU)	10
					Filaree (ERODI)	10
					Foxtail fescue (FEME)	10
					Manzanita (ARCTO3)	10
					Red brome (BRRU2)	10
					California buckwheat (ERFA2)	5
					California yerba santa (ERCA6)	5
					Oak (QUERC)	5
					Purple needlegrass (NAPU4)	5
					Wild oat (AVFA)	5
San Andreas	Loamy Upland 9-13" p.z.-R015XF031CA	5,000	4,300	3,650	Wild oat (AVFA)	20
					Soft chess (BRHOH)	15
					California live oak (QUAG)	10
					California scrub oak (QUDU)	5
					Filaree (ERODI)	5
					Oak (QUERC)	5
					Other annual grasses (AAGG)	5
					Ripgut brome (BRDI3)	5
409:						
Gaviota	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	1,800	1,200	700	Alvord oak (QUAL2)	35
					Chamise (ADFA)	15
					Rattail fescue (VUMY)	10
					California buckwheat (ERFA2)	5
					Deervetch (LOTUS)	5
					Pine bluegrass (POSC)	5
					Red brome (BRRU2)	5
					Soft chess (BRHOH)	5
Saltos	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	1,800	1,200	700	Alvord oak (QUAL2)	35
					Chamise (ADFA)	15
					Rattail fescue (VUMY)	10
					California buckwheat (ERFA2)	5
					Deervetch (LOTUS)	5
					Pine bluegrass (POSC)	5
					Red brome (BRRU2)	5
					Soft chess (BRHOH)	5
410:						
Gaviota	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	1,800	1,700	1,000	Alvord oak (QUAL2)	30
					Red brome (BRRU2)	20
					Chamise (ADFA)	10
					Rattail fescue (VUMY)	10
					Goldenbush (ERICA2)	5
					Pine bluegrass (POSC)	5
					Redstem filaree (ERCI6)	5
					Snakeweed (GUTIE)	5
411:						
Tajea	Loamy Upland 9-13" p.z.-R015XF031CA	1,800	1,400	1,100	Alvord oak (QUAL2)	20
					Blue oak (QUDO)	15
					Rattail fescue (VUMY)	15
					Red brome (BRRU2)	15
					Soft chess (BRHOH)	15
					Goldenbush (ERICA2)	5
					Pine bluegrass (POSC)	5
					Redstem filaree (ERCI6)	5

Table 8.--Rangeland Ecological Sites, Productivity, and Potential Natural Vegetation--Continued

Map symbol and soil name	Ecological site	Total dry-weight production: Favorable year	Normal year	Unfavorable year	Potential natural vegetation	Species composition by weight
		Lb/acre	Lb/acre	Lb/acre		Pct
411:						
Saltos----------	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	1,800	1,200	700	Alvord oak (QUAL2)------------	35
					Chamise (ADFA)----------------	15
					Rattail fescue (VUMY)----------	10
					California buckwheat (ERFA2)---	5
					Deervetch (LOTUS)-------------	5
					Pine bluegrass (POSC)----------	5
					Red brome (BRRU2)-------------	5
					Soft chess (BRHOH)------------	5
412:						
Tajea-----------	Loamy Upland 9-13" p.z.-R015XF031CA	1,800	1,400	1,100	Alvord oak (QUAL2)------------	20
					Blue oak (QUDO)---------------	15
					Rattail fescue (VUMY)----------	15
					Red brome (BRRU2)-------------	15
					Soft chess (BRHOH)------------	15
					Goldenbush (ERICA2)------------	5
					Pine bluegrass (POSC)----------	5
					Redstem filaree (ERCI6)--------	5
Saltos----------	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	1,800	1,200	700	Alvord oak (QUAL2)------------	35
					Chamise (ADFA)----------------	15
					Rattail fescue (VUMY)----------	10
					California buckwheat (ERFA2)---	5
					Deervetch (LOTUS)-------------	5
					Pine bluegrass (POSC)----------	5
					Red brome (BRRU2)-------------	5
					Soft chess (BRHOH)------------	5
420:						
Bellyspring-----	Loamy Upland 9-13" p.z.-R015XF031CA	1,800	1,400	1,100	Alvord oak (QUAL2)------------	20
					Blue oak (QUDO)---------------	15
					Rattail fescue (VUMY)----------	15
					Red brome (BRRU2)-------------	15
					Soft chess (BRHOH)------------	15
					Goldenbush (ERICA2)------------	5
					Pine bluegrass (POSC)----------	5
					Redstem filaree (ERCI6)--------	5
Saltos----------	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	1,800	1,200	700	Alvord oak (QUAL2)------------	35
					Chamise (ADFA)----------------	15
					Rattail fescue (VUMY)----------	10
					California buckwheat (ERFA2)---	5
					Deervetch (LOTUS)-------------	5
					Pine bluegrass (POSC)----------	5
					Red brome (BRRU2)-------------	5
					Soft chess (BRHOH)------------	5
430:						
Saucito---------	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	3,500	2,200	1,200	Alvord oak (QUAL2)------------	35
					Chamise (ADFA)----------------	15
					Rattail fescue (VUMY)----------	10
					California buckwheat (ERFA2)---	5
					Deervetch (LOTUS)-------------	5
					Pine bluegrass (POSC)----------	5
					Red brome (BRRU2)-------------	5
					Soft chess (BRHOH)------------	5
Akad------------	Loamy Upland 9-13" p.z.-R015XF031CA	1,800	1,400	1,100	Alvord oak (QUAL2)------------	20
					Blue oak (QUDO)---------------	15
					Rattail fescue (VUMY)----------	15
					Red brome (BRRU2)-------------	15
					Soft chess (BRHOH)------------	15
					Goldenbush (ERICA2)------------	5
					Pine bluegrass (POSC)----------	5
					Redstem filaree (ERCI6)--------	5

Table 8.--Rangeland Ecological Sites, Productivity, and Potential Natural Vegetation--Continued

Map symbol and soil name	Ecological site	Total dry-weight production: Favorable year	Total dry-weight production: Normal year	Total dry-weight production: Unfavorable year	Potential natural vegetation	Species composition by weight
		Lb/acre	Lb/acre	Lb/acre		Pct
440:						
Bellyspring	Loamy Upland 9-13" p.z.- R015XF031CA	2,500	1,700	1,000	Red brome (BRRU2)	35
					Rattail fescue (VUMY)	10
					Soft chess (BRHOH)	10
					Wild oat (AVFA)	10
					Goldenbush (ERICA2)	5
					Nodding needlegrass (NACE)	5
					Pine bluegrass (POSC)	5
					Redstem filaree (ERCI6)	5
					Snakeweed (GUTIE)	5
Panoza	Loamy Upland 9-13" p.z.- R015XF031CA	2,500	1,700	1,000	Red brome (BRRU2)	35
					Rattail fescue (VUMY)	10
					Soft chess (BRHOH)	10
					Wild oat (AVFA)	10
					Goldenbush (ERICA2)	5
					Nodding needlegrass (NACE)	5
					Pine bluegrass (POSC)	5
					Redstem filaree (ERCI6)	5
					Snakeweed (GUTIE)	5
441:						
Bellyspring	Loamy Upland 9-13" p.z.- R015XF031CA	2,000	1,200	700	Red brome (BRRU2)	40
					Goldenbush (ERICA2)	10
					Rattail fescue (VUMY)	10
					California juniper (JUCA7)	5
					Pine bluegrass (POSC)	5
					Redstem filaree (ERCI6)	5
					Snakeweed (GUTIE)	5
					Soft chess (BRHOH)	5
Panoza	Loamy Upland 9-13" p.z.- R015XF031CA	2,000	1,200	700	Red brome (BRRU2)	40
					Goldenbush (ERICA2)	10
					Rattail fescue (VUMY)	10
					California juniper (JUCA7)	5
					Pine bluegrass (POSC)	5
					Redstem filaree (ERCI6)	5
					Snakeweed (GUTIE)	5
					Soft chess (BRHOH)	5
442:						
Bellyspring	Loamy Upland 9-13" p.z.- R015XF031CA	2,000	1,200	700	Red brome (BRRU2)	40
					Goldenbush (ERICA2)	10
					Rattail fescue (VUMY)	10
					California juniper (JUCA7)	5
					Pine bluegrass (POSC)	5
					Redstem filaree (ERCI6)	5
					Snakeweed (GUTIE)	5
					Soft chess (BRHOH)	5
Panoza	Loamy Upland 9-13" p.z.- R015XF031CA	2,000	1,200	700	Red brome (BRRU2)	40
					Goldenbush (ERICA2)	10
					Rattail fescue (VUMY)	10
					California juniper (JUCA7)	5
					Pine bluegrass (POSC)	5
					Redstem filaree (ERCI6)	5
					Snakeweed (GUTIE)	5
					Soft chess (BRHOH)	5

Table 8.--Rangeland Ecological Sites, Productivity, and Potential Natural Vegetation--Continued

Map symbol and soil name	Ecological site	Total dry-weight production: Favorable year	Normal year	Unfavorable year	Potential natural vegetation	Species composition by weight
		Lb/acre	Lb/acre	Lb/acre		Pct
443:						
Bellyspring-----	Loamy Upland 9-13" p.z.-R015XF031CA	2,000	1,200	700	Red brome (BRRU2)--------------	40
					Goldenbush (ERICA2)------------	10
					Rattail fescue (VUMY)----------	10
					California juniper (JUCA7)-----	5
					Pine bluegrass (POSC)----------	5
					Redstem filaree (ERCI6)--------	5
					Snakeweed (GUTIE)--------------	5
					Soft chess (BRHOH)-------------	5
Beam------------	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	1,600	1,000	600	Red brome (BRRU2)--------------	45
					Rattail fescue (VUMY)----------	15
					California buckwheat (ERFA2)---	5
					Desert needlegrass (ACSP12)----	5
					Goldenbush (ERICA2)------------	5
					Pine bluegrass (POSC)----------	5
					Schismus (SCHIS)---------------	5
					Snakeweed (GUTIE)--------------	5
Panoza----------	Loamy Upland 9-13" p.z.-R015XF031CA	2,000	1,200	700	Red brome (BRRU2)--------------	40
					Goldenbush (ERICA2)------------	10
					Rattail fescue (VUMY)----------	10
					California juniper (JUCA7)-----	5
					Pine bluegrass (POSC)----------	5
					Redstem filaree (ERCI6)--------	5
					Snakeweed (GUTIE)--------------	5
					Soft chess (BRHOH)-------------	5
445:						
Bellyspring-----	Loamy Upland 9-13" p.z.-R015XF031CA	2,000	1,200	700	Red brome (BRRU2)--------------	40
					Goldenbush (ERICA2)------------	10
					Rattail fescue (VUMY)----------	10
					California juniper (JUCA7)-----	5
					Pine bluegrass (POSC)----------	5
					Redstem filaree (ERCI6)--------	5
					Snakeweed (GUTIE)--------------	5
					Soft chess (BRHOH)-------------	5
Xerorthents-----	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	1,600	1,000	600	Red brome (BRRU2)--------------	45
					Rattail fescue (VUMY)----------	15
					California buckwheat (ERFA2)---	5
					Desert needlegrass (ACSP12)----	5
					Goldenbush (ERICA2)------------	5
					Pine bluegrass (POSC)----------	5
					Schismus (SCHIS)---------------	5
					Snakeweed (GUTIE)--------------	5
Panoza----------	Loamy Upland 9-13" p.z.-R015XF031CA	2,000	1,200	700	Red brome (BRRU2)--------------	40
					Goldenbush (ERICA2)------------	10
					Rattail fescue (VUMY)----------	10
					California juniper (JUCA7)-----	5
					Pine bluegrass (POSC)----------	5
					Redstem filaree (ERCI6)--------	5
					Snakeweed (GUTIE)--------------	5
					Soft chess (BRHOH)-------------	5
450:						
Botella---------	Loamy Bottomland-R017XF071CA	2,800	2,000	1,500	Red brome (BRRU2)--------------	45
					Rattail fescue (VUMY)----------	25
					Redstem filaree (ERCI6)--------	15
					Wild oat (AVFA)----------------	5

Table 8.--Rangeland Ecological Sites, Productivity, and Potential Natural Vegetation--Continued

Map symbol and soil name	Ecological site	Total dry-weight production: Favorable year	Normal year	Unfavorable year	Potential natural vegetation	Species composition by weight
		Lb/acre	Lb/acre	Lb/acre		Pct
460:						
Camatta	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	1,700	1,000	600	Red brome (BRRU2)	20
					Wild oat (AVFA)	15
					Goldenbush (ERICA2)	10
					Nodding needlegrass (NACE)	10
					Soft chess (BRHOH)	10
					Rattail fescue (VUMY)	5
					Ripgut brome (BRDI3)	5
470:						
Botella	Loamy Bottomland-R014XY001CA	2,000	1,500	1,000	Red brome (BRRU2)	35
					Soft chess (BRHOH)	20
					Foxtail fescue (FEME)	10
					Redstem filaree (ERCI6)	10
474:						
Elder	Loamy Bottomland-R014XY001CA	2,000	1,500	1,000	Red brome (BRRU2)	35
					Soft chess (BRHOH)	20
					Foxtail fescue (FEME)	10
					Redstem filaree (ERCI6)	10
475:						
Elder	Loamy Bottomland-R014XY001CA	2,000	1,500	1,000	Red brome (BRRU2)	35
					Soft chess (BRHOH)	20
					Foxtail fescue (FEME)	10
					Redstem filaree (ERCI6)	10
480:						
Metz	Sandy Bottomland-R014XE026CA	1,200	900	500	Soft chess (BRHOH)	40
					Filaree (ERODI)	20
					Nodding needlegrass (NACE)	10
					Lupine (LUPIN)	5
					Rattail fescue (VUMY)	5
					Red brome (BRRU2)	5
490:						
Wasioja	Loamy Bottomland-R017XF071CA	2,800	2,200	1,500	Red brome (BRRU2)	40
					Rattail fescue (VUMY)	25
					Redstem filaree (ERCI6)	15
					Wild oat (AVFA)	5
491:						
Wasioja	Loamy Bottomland-R017XF071CA	2,800	2,200	1,500	Red brome (BRRU2)	40
					Rattail fescue (VUMY)	25
					Redstem filaree (ERCI6)	15
					Wild oat (AVFA)	5
495:						
Wasioja	Loamy Bottomland-R017XF071CA	2,800	2,200	1,500	Red brome (BRRU2)	45
					Rattail fescue (VUMY)	25
					Redstem filaree (ERCI6)	15
					Wild oat (AVFA)	5
Polonio	Loamy Bottomland-R017XF071CA	2,800	2,200	1,500	Red brome (BRRU2)	45
					Rattail fescue (VUMY)	25
					Redstem filaree (ERCI6)	15
					Wild oat (AVFA)	5
497:						
Wasioja	Loamy Bottomland-R017XF071CA	2,800	2,200	1,500	Red brome (BRRU2)	45
					Rattail fescue (VUMY)	25
					Redstem filaree (ERCI6)	15
					Wild oat (AVFA)	5

Table 8.--Rangeland Ecological Sites, Productivity, and Potential Natural Vegetation--Continued

Map symbol and soil name	Ecological site	Total dry-weight production: Favorable year	Normal year	Unfavorable year	Potential natural vegetation	Species composition by weight
		Lb/acre	Lb/acre	Lb/acre		Pct
497:						
Pinspring-------	Loamy Bottomland-R017XF071CA	2,800	2,200	1,500	Red brome (BRRU2)--------------	45
					Rattail fescue (VUMY)----------	25
					Redstem filaree (ERCI6)--------	15
					Wild oat (AVFA)----------------	5
Yeguas----------	Loamy Bottomland-R017XF071CA	2,800	2,200	1,500	Red brome (BRRU2)--------------	45
					Rattail fescue (VUMY)----------	25
					Redstem filaree (ERCI6)--------	15
					Wild oat (AVFA)----------------	5
512:						
Shimmon---------	Loamy North-R015XE106CA	2,850	2,250	1,700	Blue oak (QUDO)----------------	20
					Soft chess (BRHOH)-------------	10
					Wild oat (AVFA)----------------	10
					Ripgut brome (BRRI8)-----------	5
					Longtongue muttongrass (POLO)--	5
					Red brome (BRRU2)--------------	5
					Foxtail fescue (FEME)----------	5
					Oak (QUERC)--------------------	5
520:						
Santa Lucia-----	Gravelly Fine Loamy-R015XE103CA	2,100	1,700	1,500	Soft chess (BRHOH)-------------	15
					Ripgut brome (BRDI3)-----------	10
					Wild oat (AVFA)----------------	10
					California live oak (QUAG)-----	5
					Buckbrush (CECU)---------------	5
					Burclover (MEHI)---------------	5
					Clover (TRIFO)-----------------	5
					Fescue (FESTU)-----------------	5
					Purple needlegrass (NAPU4)-----	5
521:						
Santa Lucia-----	Gravelly Fine Loamy-R015XE103CA	2,100	1,700	1,500	Soft chess (BRHOH)-------------	15
					Blue oak (QUDO)----------------	15
					Wild oat (AVFA)----------------	10
					Filaree (ERODI)----------------	10
					Red brome (BRRU2)--------------	5
					Burclover (MEHI)---------------	5
					Oak (QUERC)--------------------	5
					Deervetch (LOTUS)--------------	5
					Buckbrush (CECU)---------------	5
522:						
Santa Lucia-----	Gravelly Fine Loamy-R015XE103CA	2,100	1,700	1,500	Soft chess (BRHOH)-------------	15
					Blue oak (QUDO)----------------	15
					Wild oat (AVFA)----------------	10
					Filaree (ERODI)----------------	10
					Red brome (BRRU2)--------------	5
					Burclover (MEHI)---------------	5
					Oak (QUERC)--------------------	5
					Deervetch (LOTUS)--------------	5
					Buckbrush (CECU)---------------	5
531:						
Saltos----------	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	1,800	1,200	700	Alvord oak (QUAL2)-------------	35
					Chamise (ADFA)-----------------	15
					Rattail fescue (VUMY)----------	10
					California buckwheat (ERFA2)---	5
					Deervetch (LOTUS)--------------	5
					Pine bluegrass (POSC)----------	5
					Red brome (BRRU2)--------------	5
					Soft chess (BRHOH)-------------	5

Table 8.--Rangeland Ecological Sites, Productivity, and Potential Natural Vegetation--Continued

Map symbol and soil name	Ecological site	Total dry-weight production: Favorable year	Total dry-weight production: Normal year	Total dry-weight production: Unfavorable year	Potential natural vegetation	Species composition by weight
		Lb/acre	Lb/acre	Lb/acre		Pct
531:						
Millsholm-------	Shallow Fine Loamy-R015XE043CA	1,500	1,400	1,200	Soft chess (BRHOH)-------------	15
					Wild oat (AVFA)----------------	15
					Filaree (ERODI)----------------	10
					Burclover (MEHI)---------------	5
					Red brome (BRRU2)--------------	5
					Fescue (FESTU)-----------------	5
561:						
Chanac----------	Loamy Slopes 9-12" p.z.-R015XE026CA	2,800	2,000	700	Soft chess (BRHOH)-------------	25
					Filaree (ERODI)----------------	15
					Red brome (BRRU2)--------------	15
					Wild oat (AVFA)----------------	15
					Burclover (MEHI)---------------	10
					Other perennial forbs (PPFF)---	5
					Purple needlegrass (NAPU4)-----	5
					Allscale saltbush (ATPO)-------	1
562:						
Chanac----------	Loamy Slopes 9-12" p.z.-R015XE026CA	2,800	2,000	700	Soft chess (BRHOH)-------------	25
					Filaree (ERODI)----------------	15
					Red brome (BRRU2)--------------	15
					Wild oat (AVFA)----------------	15
					Burclover (MEHI)---------------	10
					Other perennial forbs (PPFF)---	5
					Purple needlegrass (NAPU4)-----	5
					Allscale saltbush (ATPO)-------	1
908:						
Xerorthents-----	Limy Upland (shallow) 9-12" p.z.-R015XF034CA	1,600	1,000	600	Red brome (BRRU2)--------------	45
					Rattail fescue (VUMY)----------	15
					California buckwheat (ERFA2)---	5
					Desert needlegrass (ACSP12)----	5
					Goldenbush (ERICA2)------------	5
					Pine bluegrass (POSC)----------	5
					Schismus (SCHIS)---------------	5
					Snakeweed (GUTIE)--------------	5

Table 9.--Index of Common and Scientific Plant Names and Plant Symbols

Local common name	Scientific name	Plant symbol
Aleppo pine	Pinus halepensis	PIHA7
Alkali barley	Hordeum depressum	HODE2
Allscale saltbush	Atriplex polycarpa	ATPO
Alvord oak	Quercus X alvordiana	QUAL2
Arizona cypress	Cupressus arizonica	CUAR
Athel	Tamarix articulata	TAAR3
Big saltbush	Atriplex lentiformis	ATLE
Bladderpod	Lesquerella	LESQU
Blue oak	Quercus douglasii	QUDO
Bluegum eucalyptus	Eucalyptus globulus	EUGL
Brodiaea	Brodiaea	BRODI
Brome	Bromus	BROMU
Buckbrush	Ceanothus cuneatus	CECU
Buckwheat	Eriogonum spp.	ERIOG
Burclover	Medicago hispida	MEHI
California buckwheat	Eriogonum fasciculatum	ERFA2
California juniper	Juniperus californica	JUCA7
California live oak	Quercus agrifolia	QUAG
California sagebrush	Artemisia californica	ARCA11
California scrub oak	Quercus dumosa	QUDU
California yerba santa	Eriodictyon californicum	ERCA6
Carob	Ceratonia siliqua	CESI3
Chamise	Adenostoma fasciculatum	ADFA
Cheatgrass	Bromus tectorum	BRTE
Clover	Trifolium spp.	TRIFO
Deervetch	Lotus spp.	LOTUS
Desert needlegrass	Achnatherum speciosum	ACSP12
Deserttrumpet	Eriogonum inflatum	ERIN4
Eldarica pine	Pinus eldarica	PIEL7
Ephedra	Ephedra spp.	EPHED
Eucalyptus	Eucalyptus	EUCAL
Fescue	Festuca spp.	FESTU
Filaree	Erodium spp.	ERODI
Foxtail fescue	Festuca megalura	FEME
Golden-yarrow	Eriophyllum confertiflorum	ERCO25
Goldenbush	Ericameria spp.	ERICA2
Juniper	Juniperus	JUNIP
Longtongue muttongrass	Poa longiligula	POLO
Lupine	Lupinus spp.	LUPIN
Manzanita	Arctostaphylos spp.	ARCTO3
Miners lettuce	Claytonia perfoliata	CLPE
Mouse barley	Hordeum marinum ssp. gussonianum	HOMAG
Narrowleaf goldenbush	Ericameria linearifolia	ERLI6
Needlegrass	Stipa spp.	STIPA
Nodding needlegrass	Nassella cernua	NACE
Oak	Quercus spp.	QUERC
Oleander	Nerium oleander	NEOL
Other annual forbs	Unknown	AAFF
Other annual grasses	Unknown	AAGG
Other perennial forbs	Unknown	PPFF
Pepperweed	Lepidium spp.	LEPID
Pine bluegrass	Poa scabrella	POSC
Pink escallonia	Escallonia laevis	ESRU4
Pomegranate	Punica granatum	PUGR2
Purple needlegrass	Nassella pulchra	NAPU4
Rattail fescue	Vulpia myuros	VUMY
Red brome	Bromus rubens	BRRU2
Redstem filaree	Erodium cicutarium	ERCI6
Ripgut brome	Bromus diandrus	BRDI3
Ripgut brome	Bromus rigidus	BRRI8
Saltbush	Atriplex	ATRIP
Schismus	Schismus spp.	SCHIS
Slender oat	Avena barbata	AVBA
Smallcone ironwood	Casuarina cunninghamiana	CACU8
Snakeweed	Gutierrezia spp.	GUTIE
Soft chess	Bromus hordeaceus ssp. hordeaceus	BRHOH
Spinescale saltbush	Atriplex spinifera	ATSP
Tomcat clover	Trifolium tridentatum	TRTR2
Wild oat	Avena fatua	AVFA
Wildrye	Elymus	ELYMU

Table 10a.--Recreational Development (Part 1)

[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 potential limitation. The rating is based on the limitation with the highest value. Only the three highest value limitations are listed. There may be more limitations. Fine-earth fractions and coarse fragments are reported on a weight basis. A brief summary of the rating criteria and of the abbreviations used in describing the limitations is given at the end of the table]

Map symbol and soil name	Pct.	Camp areas: Limitation	Value	Picnic areas: Limitation	Value	Playgrounds: Limitation	Value
100:							
Balcom	75	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
101:							
Balcom	45	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Nacimiento	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
102:							
Balcom	45	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Nacimiento	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
103:							
Balcom	45	Moderate		Moderate		Severe	
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Nacimiento	30	Moderate		Moderate		Severe	
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes > 6%	1.00
109:							
Capay	80	Moderate		Moderate		Moderate	
		Surface clay > 40% and dry climate	0.50	Surface clay > 40% and dry climate	0.50	Surface clay > 40% and dry climate	0.50
		Permeability is .06-.6"/hr	0.46	Permeability is .06-.6"/hr	0.46	Permeability is .06-.6"/hr	0.46
110:							
Capay	80	Moderate		Moderate		Moderate	
		Surface clay > 40% and dry climate	0.50	Surface clay > 40% and dry climate	0.50	Slopes 2 to 6%	0.98
		Permeability is .06-.6"/hr	0.46	Permeability is .06-.6"/hr	0.46	Surface clay > 40% and dry climate	0.50
						Permeability is .06-.6"/hr	0.46

Table 10a.--Recreational Development (Part 1)--Continued

Map symbol and soil name	Pct.	Camp areas		Picnic areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
112:							
Calleguas-----------	45	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Balcom--------------	35	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
114:							
Calleguas-----------	55	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Nacimiento----------	20	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
120:							
Hillbrick-----------	65	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Rock outcrop--------	15	Not rated		Not rated		Not rated	
121:							
Hillbrick-----------	65	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Rock outcrop--------	15	Not rated		Not rated		Not rated	
123:							
Lithic Torriorthents	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
						Surface fragments (<3") 10-25%	0.44
Semper--------------	25	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Rock outcrop--------	20	Not rated		Not rated		Not rated	

Table 10a.--Recreational Development (Part 1)--Continued

Map symbol and soil name	Pct.	Camp areas: Limitation	Camp areas: Value	Picnic areas: Limitation	Picnic areas: Value	Playgrounds: Limitation	Playgrounds: Value
129:							
Kilmer--------------	40	Moderate		Moderate		Severe	
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
						Bedrock 20-40" and slope > 2%	0.50
Hillbrick-----------	35	Severe		Severe		Severe	
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Slopes > 6%	1.00
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Bedrock depth < 20"	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
130:							
Kilmer--------------	40	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
						Bedrock 20-40" and slope > 2%	0.50
Hillbrick-----------	35	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
131:							
Kilmer--------------	40	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
						Bedrock 20-40" and slope > 2%	0.50
Hillbrick-----------	35	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
134:							
Kilmer--------------	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
						Bedrock 20-40" and slope > 2%	0.50
Nacimiento----------	25	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Aido----------------	15	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Surface clay > 40% and dry climate	0.50	Surface clay > 40% and dry climate	0.50	Surface clay > 40% and dry climate	0.50
		Permeability is .06-.6"/hr	0.46	Permeability is .06-.6"/hr	0.46	Permeability is .06-.6"/hr	0.46

Table 10a.--Recreational Development (Part 1)--Continued

Map symbol and soil name	Pct.	Camp areas		Picnic areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
140:							
Choice	80	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Surface clay > 40% and dry climate	0.50	Surface clay > 40% and dry climate	0.50	Surface clay > 40% and dry climate	0.50
		Permeability is .06-.6"/hr	0.46	Permeability is .06-.6"/hr	0.46	Permeability is .06-.6"/hr	0.46
149:							
San Emigdio	80	Slight		Slight		Slight	
150:							
San Emigdio	80	Slight		Slight		Moderate	
						Slopes 2 to 6%	0.98
154:							
San Emigdio	85	Moderate		Moderate		Moderate	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
155:							
San Emigdio	85	Moderate		Moderate		Moderate	
		Dusty	0.50	Dusty	0.50	Slopes 2 to 6%	0.98
						Dusty	0.50
159:							
Sorrento	85	Moderate		Moderate		Moderate	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
160:							
Sorrento	85	Moderate		Moderate		Moderate	
		Dusty	0.50	Dusty	0.50	Slopes 2 to 6%	0.98
						Dusty	0.50
169:							
Polonio	75	Moderate		Moderate		Moderate	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
170:							
Polonio	65	Slight		Slight		Moderate	
						Slopes 2 to 6%	0.98
173:							
Polonio	85	Moderate		Moderate		Severe	
		Dusty	0.50	Dusty	0.50	Surface fragments (<3") >25%	1.00
		Fragments (<3") 25-50%	0.12	Fragments (<3") 25-50%	0.12	Slopes 2 to 6%	0.98
						Dusty	0.50
174:							
Polonio	50	Moderate		Moderate		Moderate	
		Dusty	0.50	Dusty	0.50	Dusty	0.50

Table 10a.--Recreational Development (Part 1)--Continued

Map symbol and soil name	Pct.	Camp areas: Limitation	Camp areas: Value	Picnic areas: Limitation	Picnic areas: Value	Playgrounds: Limitation	Playgrounds: Value
174:							
Thomhill	30	Moderate		Moderate		Moderate	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
175:							
Polonio	50	Moderate		Moderate		Moderate	
		Dusty	0.50	Dusty	0.50	Slopes 2 to 6%	0.98
						Dusty	0.50
Thomhill	30	Moderate		Moderate		Moderate	
		Dusty	0.50	Dusty	0.50	Slopes 2 to 6%	0.98
						Dusty	0.50
179:							
Padres	70	Slight		Slight		Moderate	
						Surface fragments (<3") 10-25%	0.03
						Fragments >3" 5 to 30%	0.00
180:							
Padres	65	Slight		Slight		Moderate	
						Slopes 2 to 6%	0.98
						Surface fragments (<3") 10-25%	0.03
						Fragments >3" 5 to 30%	0.00
182:							
Oceano	50	Moderate		Moderate		Moderate	
		Surface sand fractions 70 - 90% by wt.	0.88	Surface sand fractions 70 - 90% by wt.	0.88	Slopes 2 to 6%	0.98
						Surface sand fractions 70 - 90% by wt.	0.88
190:							
Reward	70	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Surface fragments (<3") >25%	1.00
		Fragments (<3") 25-50%	0.32	Fragments (<3") 25-50%	0.32	Dusty	0.50
191:							
Reward	70	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Surface fragments (<3") >25%	1.00
		Fragments (<3") 25-50%	0.32	Fragments (<3") 25-50%	0.32	Dusty	0.50
200:							
Aramburu	70	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Surface fragments (<3") >25%	1.00
						Bedrock 20-40" and slope > 2%	0.50

Table 10a.--Recreational Development (Part 1)--Continued

Map symbol and soil name	Pct.	Camp areas: Limitation	Camp areas: Value	Picnic areas: Limitation	Picnic areas: Value	Playgrounds: Limitation	Playgrounds: Value
201:							
Aramburu	65	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Surface fragments (<3") >25%	1.00
						Bedrock 20-40" and slope > 2%	0.50
202:							
Aramburu	65	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Surface fragments (<3") >25%	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
204:							
Aramburu	40	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Surface fragments (<3") >25%	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Temblor	35	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Surface fragments (<3") >25%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
205:							
Aramburu	35	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Surface fragments (<3") >25%	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Temblor	35	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Surface fragments (<3") >25%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
218:							
Seaback	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Calleguas	25	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Panoza	20	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50

Table 10a.--Recreational Development (Part 1)--Continued

Map symbol and soil name	Pct.	Camp areas		Picnic areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
219:							
Xerorthents	50	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Surface fragments (<3") >25%	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Badlands	35	Not rated		Not rated		Not rated	
220:							
Beam	35	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
Panoza	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Hillbrick	15	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
221:							
Beam	35	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
Panoza	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Hillbrick	15	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
222:							
Beam	35	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
Panoza	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Hillbrick	15	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
		Dusty	0.50	Dusty	0.50	Surface fragments (<3") 10-25%	0.78

Table 10a.--Recreational Development (Part 1)--Continued

Map symbol and soil name	Pct.	Camp areas		Picnic areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
227:							
Beam	40	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
						Fragments >3" 5 to 30%	0.92
Panoza	35	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Fragments > 3" > 30%	1.00
		Fragments >3" 25 to 75%	0.20	Fragments >3" 25 to 75%	0.20	Dusty	0.50
228:							
Beam	40	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
						Fragments >3" 5 to 30%	0.92
Panoza	35	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Fragments > 3" > 30%	1.00
		Fragments >3" 25 to 75%	0.20	Fragments >3" 25 to 75%	0.20	Dusty	0.50
229:							
Seaback	40	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
San Timoteo	35	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
						Fragments >3" 5 to 30%	0.20
						Surface fragments (<3") 10-25%	0.00
230:							
Padres	50	Slight		Slight		Moderate	
						Slopes 2 to 6%	0.98
						Surface fragments (<3") 10-25%	0.03
						Fragments >3" 5 to 30%	0.00
Wasioja	35	Slight		Slight		Moderate	
						Slopes 2 to 6%	0.98
240:							
Panoza	40	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50

Table 10a.--Recreational Development (Part 1)--Continued

Map symbol and soil name	Pct.	Camp areas Limitation	Value	Picnic areas Limitation	Value	Playgrounds Limitation	Value
240:							
Beam----------------	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
241:							
Panoza--------------	40	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Beam----------------	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
242:							
Panoza--------------	40	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Beam----------------	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
248:							
Pyxo----------------	55	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Cochora-------------	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
		Dusty	0.50	Dusty	0.50	Surface fragments (<3") 10-25%	0.78
249:							
Xeric Torriorthents-	50	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments (<3") 25-50%	0.46	Fragments (<3") 25-50%	0.46	Surface fragments (<3") >25%	1.00
Badlands------------	25	Not rated		Not rated		Not rated	
250:							
Pyxo----------------	40	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50

Table 10a.--Recreational Development (Part 1)--Continued

Map symbol and soil name	Pct.	Camp areas: Limitation	Camp areas: Value	Picnic areas: Limitation	Picnic areas: Value	Playgrounds: Limitation	Playgrounds: Value
250:							
Cochora	25	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
		Dusty	0.50	Dusty	0.50	Surface fragments (<3") 10-25%	0.78
Badlands	15	Not rated		Not rated		Not rated	
251:							
Nacimiento	75	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
						Surface fragments (<3") 10-25%	0.06
252:							
Nacimiento	75	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
						Surface fragments (<3") 10-25%	0.06
261:							
Aido	85	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Surface clay > 40% and dry climate	0.50	Surface clay > 40% and dry climate	0.50	Surface clay > 40% and dry climate	0.50
		Permeability is .06-.6"/hr	0.46	Permeability is .06-.6"/hr	0.46	Permeability is .06-.6"/hr	0.46
262:							
Aido	80	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Surface clay > 40% and dry climate	0.50	Surface clay > 40% and dry climate	0.50	Surface clay > 40% and dry climate	0.50
		Permeability is .06-.6"/hr	0.46	Permeability is .06-.6"/hr	0.46	Permeability is .06-.6"/hr	0.46
263:							
Aido	85	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Surface clay > 40% and dry climate	0.50	Surface clay > 40% and dry climate	0.50	Surface clay > 40% and dry climate	0.50
		Permeability is .06-.6"/hr	0.46	Permeability is .06-.6"/hr	0.46	Permeability is .06-.6"/hr	0.46
270:							
Ayar	80	Moderate		Moderate		Severe	
		Surface clay > 40% and dry climate	0.50	Surface clay > 40% and dry climate	0.50	Slopes > 6%	1.00
		Permeability is .06-.6"/hr	0.46	Permeability is .06-.6"/hr	0.46	Surface clay > 40% and dry climate	0.50
						Permeability is .06-.6"/hr	0.46

Table 10a.--Recreational Development (Part 1)--Continued

Map symbol and soil name	Pct.	Camp areas		Picnic areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
271:							
Ayar----------------	80	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Surface clay > 40% and dry climate	0.50	Surface clay > 40% and dry climate	0.50	Surface clay > 40% and dry climate	0.50
		Permeability is .06-.6"/hr	0.46	Permeability is .06-.6"/hr	0.46	Permeability is .06-.6"/hr	0.46
274:							
Ayar----------------	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Surface clay > 40% and dry climate	0.50	Surface clay > 40% and dry climate	0.50	Surface clay > 40% and dry climate	0.50
		Permeability is .06-.6"/hr	0.46	Permeability is .06-.6"/hr	0.46	Permeability is .06-.6"/hr	0.46
Hillbrick-----------	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Aido----------------	20	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Surface clay > 40% and dry climate	0.50	Surface clay > 40% and dry climate	0.50	Surface clay > 40% and dry climate	0.50
		Permeability is .06-.6"/hr	0.46	Permeability is .06-.6"/hr	0.46	Permeability is .06-.6"/hr	0.46
275:							
Ayar----------------	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Surface clay > 40% and dry climate	0.50	Surface clay > 40% and dry climate	0.50	Surface clay > 40% and dry climate	0.50
		Permeability is .06-.6"/hr	0.46	Permeability is .06-.6"/hr	0.46	Permeability is .06-.6"/hr	0.46
Hillbrick-----------	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Aido----------------	20	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Surface clay > 40% and dry climate	0.50	Surface clay > 40% and dry climate	0.50	Surface clay > 40% and dry climate	0.50
		Permeability is .06-.6"/hr	0.46	Permeability is .06-.6"/hr	0.46	Permeability is .06-.6"/hr	0.46
280:							
Seaback-------------	35	Severe		Severe		Severe	
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Slopes > 6%	1.00
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Bedrock depth < 20"	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50

Table 10a.--Recreational Development (Part 1)--Continued

Map symbol and soil name	Pct.	Camp areas		Picnic areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
280:							
Panoza	30	Moderate		Moderate		Severe	
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Jenks	15	Moderate		Moderate		Severe	
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes > 6%	1.00
						Surface fragments (<3") 10-25%	0.04
281:							
Seaback	35	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Panoza	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Jenks	15	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
						Surface fragments (<3") 10-25%	0.04
282:							
Seaback	35	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Panoza	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Jenks	15	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
						Surface fragments (<3") 10-25%	0.04
290:							
San Timoteo	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
						Fragments >3" 5 to 30%	0.20
						Surface fragments (<3") 10-25%	0.00
San Andreas	25	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00

Table 10a.--Recreational Development (Part 1)--Continued

Map symbol and soil name	Pct.	Camp areas		Picnic areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
290:							
Bellyspring---------	20	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
291:							
San Timoteo---------	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
						Fragments >3" 5 to 30%	0.20
						Surface fragments (<3") 10-25%	0.00
San Andreas---------	25	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Bellyspring---------	20	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
292:							
San Timoteo---------	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
						Fragments >3" 5 to 30%	0.20
						Surface fragments (<3") 10-25%	0.00
San Andreas---------	25	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Bellyspring---------	20	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
301:							
Arbuckle------------	70	Slight		Slight		Moderate	
						Slopes 2 to 6%	0.98
						Surface fragments (<3") 10-25%	0.08
302:							
Arbuckle------------	70	Moderate		Moderate		Severe	
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes > 6%	1.00
						Surface fragments (<3") 10-25%	0.08
303:							
Arbuckle------------	70	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
						Surface fragments (<3") 10-25%	0.08

Table 10a.--Recreational Development (Part 1)--Continued

Map symbol and soil name	Pct.	Camp areas		Picnic areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
304:							
Arbuckle------------	70	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
						Surface fragments (<3") 10-25%	0.08
306:							
Arbuckle------------	70	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
						Surface fragments (<3") 10-25%	0.08
307:							
Arbuckle------------	70	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
						Surface fragments (<3") 10-25%	0.08
310:							
Yeguas--------------	40	Moderate		Moderate		Moderate	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
		Permeability is .06-.6"/hr	0.46	Permeability is .06-.6"/hr	0.46	Permeability is .06-.6"/hr	0.46
Pinspring-----------	40	Moderate		Moderate		Moderate	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
311:							
Yeguas--------------	40	Moderate		Moderate		Moderate	
		Dusty	0.50	Dusty	0.50	Slopes 2 to 6%	0.50
		Permeability is .06-.6"/hr	0.46	Permeability is .06-.6"/hr	0.46	Dusty	0.50
						Permeability is .06-.6"/hr	0.46
Pinspring-----------	40	Moderate		Moderate		Moderate	
		Dusty	0.50	Dusty	0.50	Slopes 2 to 6%	0.50
						Dusty	0.50
321:							
Thomhill------------	80	Moderate		Moderate		Moderate	
		Dusty	0.50	Dusty	0.50	Slopes 2 to 6%	0.50
						Dusty	0.50
330:							
Jenks---------------	80	Slight		Slight		Moderate	
						Slopes 2 to 6%	0.98
						Surface fragments (<3") 10-25%	0.04
339:							
Arnold--------------	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00

Table 10a.--Recreational Development (Part 1)--Continued

Map symbol and soil name	Pct.	Camp areas Limitation	Value	Picnic areas Limitation	Value	Playgrounds Limitation	Value
339:							
San Andreas---------	20	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
340:							
Arnold--------------	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
San Andreas---------	20	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
350:							
Cieneba-------------	75	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
360:							
Chicote-------------	40	Severe		Severe		Severe	
		Flooding >= rare	1.00	Ponded (any duration)	1.00	Ponded (any duration)	1.00
		SAR > 12	1.00	Surface SAR >13	1.00	Surface SAR >13	1.00
		Ponded (any duration)	1.00	Permeability is .06-.6"/hr	0.50	Permeability is .06-.6"/hr	0.50
Chicote-------------	40	Severe		Severe		Severe	
		Flooding >= rare	1.00	Ponded (any duration)	1.00	Ponded (any duration)	1.00
		SAR > 12	1.00	Surface SAR >13	1.00	Surface SAR >13	1.00
		Ponded (any duration)	1.00	Dusty	0.50	Dusty	0.50
361:							
Chicote-------------	40	Severe		Severe		Severe	
		Flooding >= rare	1.00	Ponded (any duration)	1.00	Ponded (any duration)	1.00
		SAR > 12	1.00	Surface SAR >13	1.00	Surface SAR >13	1.00
		Ponded (any duration)	1.00	Permeability is .06-.6"/hr	0.50	Slopes 2 to 6%	0.50
Chicote-------------	40	Severe		Severe		Severe	
		Flooding >= rare	1.00	Ponded (any duration)	1.00	Ponded (any duration)	1.00
		SAR > 12	1.00	Surface SAR >13	1.00	Surface SAR >13	1.00
		Ponded (any duration)	1.00	Dusty	0.50	Slopes 2 to 6%	0.50
362:							
Chicote-------------	40	Severe		Severe		Severe	
		Flooding >= rare	1.00	Ponded (any duration)	1.00	Ponded (any duration)	1.00
		SAR > 12	1.00	Surface SAR >13	1.00	Slopes > 6%	1.00
		Ponded (any duration)	1.00	Permeability is .06-.6"/hr	0.50	Surface SAR >13	1.00
Chicote-------------	40	Severe		Severe		Severe	
		Flooding >= rare	1.00	Ponded (any duration)	1.00	Ponded (any duration)	1.00
		SAR > 12	1.00	Surface SAR >13	1.00	Slopes > 6%	1.00
		Ponded (any duration)	1.00	Dusty	0.50	Surface SAR >13	1.00

Table 10a.--Recreational Development (Part 1)--Continued

Map symbol and soil name	Pct.	Camp areas		Picnic areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
371:							
Semper--------------	50	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
372:							
Semper--------------	65	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
375:							
Semper--------------	40	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Badlands------------	25	Not rated		Not rated		Not rated	
380:							
Muranch-------------	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
						Bedrock 20-40" and slope > 2%	0.50
Xerorthents---------	25	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Surface fragments (<3") >25%	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Rock outcrop--------	20	Not rated		Not rated		Not rated	
388:							
Rock outcrop--------	50	Not rated		Not rated		Not rated	
Gaviota-------------	25	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
						Fragments >3" 5 to 30%	0.20
391:							
Rock outcrop--------	35	Not rated		Not rated		Not rated	
Lithic Torriorthents	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
						Surface fragments (<3") 10-25%	0.04

Table 10a.--Recreational Development (Part 1)--Continued

Map symbol and soil name	Pct.	Camp areas		Picnic areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
401:							
Godde	40	Severe Slopes > 15% Bedrock depth < 20"	 1.00 1.00	Severe Slopes > 15% Bedrock depth < 20"	 1.00 1.00	Severe Slopes > 6% Bedrock depth < 20" Surface fragments (<3") 10-25%	 1.00 1.00 0.18
Xerorthents	20	Severe Slopes > 15% Bedrock depth < 20"	 1.00 1.00	Severe Slopes > 15% Bedrock depth < 20"	 1.00 1.00	Severe Slopes > 6% Bedrock depth < 20" Surface fragments (<3") 10-25%	 1.00 1.00 0.44
Rock outcrop	15	Not rated		Not rated		Not rated	
408:							
Gaviota	35	Severe Slopes > 15% Bedrock depth < 20"	 1.00 1.00	Severe Slopes > 15% Bedrock depth < 20"	 1.00 1.00	Severe Slopes > 6% Bedrock depth < 20" Surface fragments (<3") 10-25%	 1.00 1.00 0.04
San Andreas	25	Severe Slopes > 15%	 1.00	Severe Slopes > 15%	 1.00	Severe Slopes > 6%	 1.00
409:							
Gaviota	35	Severe Slopes > 15% Bedrock depth < 20"	 1.00 1.00	Severe Slopes > 15% Bedrock depth < 20"	 1.00 1.00	Severe Slopes > 6% Bedrock depth < 20" Fragments >3" 5 to 30%	 1.00 1.00 0.20
Saltos	25	Severe Slopes > 15% Bedrock depth < 20"	 1.00 1.00	Severe Slopes > 15% Bedrock depth < 20"	 1.00 1.00	Severe Slopes > 6% Bedrock depth < 20"	 1.00 1.00
Rock outcrop	15	Not rated		Not rated		Not rated	
410:							
Gaviota	40	Severe Slopes > 15% Bedrock depth < 20"	 1.00 1.00	Severe Slopes > 15% Bedrock depth < 20"	 1.00 1.00	Severe Slopes > 6% Bedrock depth < 20" Fragments >3" 5 to 30%	 1.00 1.00 0.20
Rock outcrop	30	Not rated		Not rated		Not rated	
411:							
Tajea	40	Severe Slopes > 15% Dusty	 1.00 0.50	Severe Slopes > 15% Dusty	 1.00 0.50	Severe Slopes > 6% Dusty Bedrock 20-40" and slope > 2%	 1.00 0.50 0.50

Table 10a.--Recreational Development (Part 1)--Continued

Map symbol and soil name	Pct.	Camp areas: Limitation	Camp areas: Value	Picnic areas: Limitation	Picnic areas: Value	Playgrounds: Limitation	Playgrounds: Value
411:							
Saltos	40	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
412:							
Tajea	45	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
						Bedrock 20-40" and slope > 2%	0.50
Saltos	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
420:							
Bellyspring	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Surface fragments (<3") 10-25%	0.50
						Dusty	0.50
Saltos	25	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
430:							
Saucito	40	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
						Surface fragments (<3") 10-25%	0.28
Akad	25	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Bedrock 20-40" and slope > 2%	0.50
						Dusty	0.50
Rock outcrop	20	Not rated		Not rated		Not rated	
440:							
Bellyspring	35	Moderate		Moderate		Severe	
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes > 6%	1.00
Panoza	25	Moderate		Moderate		Severe	
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50

Table 10a.--Recreational Development (Part 1)--Continued

Map symbol and soil name	Pct.	Camp areas Limitation	Value	Picnic areas Limitation	Value	Playgrounds Limitation	Value
441:							
Bellyspring---------	35	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Panoza--------------	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
442:							
Bellyspring---------	35	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Panoza--------------	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
443:							
Bellyspring---------	35	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Beam----------------	25	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
Panoza--------------	25	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
445:							
Bellyspring---------	35	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
Xerorthents---------	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments (<3") > 50%	1.00	Fragments (<3") > 50%	1.00	Surface fragments (<3") >25%	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
Panoza--------------	15	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
450:							
Botella-------------	75	Moderate		Moderate		Moderate	
		Dusty	0.50	Dusty	0.50	Slopes 2 to 6%	0.98
						Dusty	0.50
						Surface fragments (<3") 10-25%	0.04

Table 10a.--Recreational Development (Part 1)--Continued

Map symbol and soil name	Pct.	Camp areas		Picnic areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
460:							
Camatta	75	Severe		Severe		Severe	
		Depth to pan < 20"	1.00	Depth to pan < 20"	1.00	Depth to cemented pan	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
470:							
Botella	85	Slight		Slight		Moderate	
						Slopes 2 to 6%	0.98
						Surface fragments (<3") 10-25%	0.04
474:							
Elder	80	Slight		Slight		Moderate	
						Surface fragments (<3") 10-25%	0.06
475:							
Elder	80	Slight		Slight		Moderate	
						Slopes 2 to 6%	0.98
						Surface fragments (<3") 10-25%	0.06
480:							
Metz	70	Severe		Slight		Moderate	
		Flooding >= rare	1.00			Slopes 2 to 6%	0.26
						Surface fragments (<3") 10-25%	0.04
490:							
Wasioja	75	Moderate		Moderate		Moderate	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
491:							
Wasioja	85	Slight		Slight		Moderate	
						Slopes 2 to 6%	0.50
495:							
Wasioja	60	Moderate		Moderate		Moderate	
		Dusty	0.50	Dusty	0.50	Slopes 2 to 6%	0.50
						Dusty	0.50
Polonio	20	Moderate		Moderate		Moderate	
		Dusty	0.50	Dusty	0.50	Slopes 2 to 6%	0.50
						Dusty	0.50
497:							
Wasioja	35	Moderate		Moderate		Moderate	
		Dusty	0.50	Dusty	0.50	Slopes 2 to 6%	0.50
						Dusty	0.50

Table 10a.--Recreational Development (Part 1)--Continued

Map symbol and soil name	Pct.	Camp areas		Picnic areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
497:							
Pinspring-----------	30	Moderate		Moderate		Moderate	
		Dusty	0.50	Dusty	0.50	Slopes 2 to 6%	0.50
						Dusty	0.50
Yeguas--------------	15	Moderate		Moderate		Moderate	
		Dusty	0.50	Dusty	0.50	Slopes 2 to 6%	0.50
		Permeability is .06-.6"/hr	0.46	Permeability is .06-.6"/hr	0.46	Dusty	0.50
						Permeability is .06-.6"/hr	0.46
512:							
Shimmon-------------	80	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
520:							
Santa Lucia---------	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments (<3") 25-50%	0.41	Fragments (<3") 25-50%	0.41	Surface fragments (<3") >25%	1.00
						Bedrock 20-40" and slope > 2%	0.50
521:							
Santa Lucia---------	80	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments (<3") 25-50%	0.45	Fragments (<3") 25-50%	0.45	Surface fragments (<3") >25%	1.00
						Bedrock 20-40" and slope > 2%	0.50
522:							
Santa Lucia---------	55	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments (<3") 25-50%	0.45	Fragments (<3") 25-50%	0.45	Surface fragments (<3") >25%	1.00
						Bedrock 20-40" and slope > 2%	0.50
531:							
Saltos--------------	45	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
Millsholm-----------	35	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00	Bedrock depth < 20"	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
561:							
Chanac--------------	85	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50

Table 10a.--Recreational Development (Part 1)--Continued

Map symbol and soil name	Pct.	Camp areas		Picnic areas		Playgrounds	
		Limitation	Value	Limitation	Value	Limitation	Value
562:							
Chanac--------------	90	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
900:							
Pits----------------	100	Not rated		Not rated		Not rated	
905:							
Xerofluvents--------	50	Severe		Moderate		Severe	
		Flooding >= rare	1.00	Frequent flooding	0.50	Flooding > Occasional	1.00
						Surface fragments (<3") 10-25%	0.43
Riverwash-----------	30	Severe		Severe		Severe	
		Flooding >= rare	1.00	Very dusty	1.00	Flooding > Occasional	1.00
		Wetness < 18" depth	1.00	Wetness < 12" depth	1.00	Wetness < 18" depth	1.00
		Very dusty	1.00	Surface sand fractions 70 - 90% by wt.	0.88	Very dusty	1.00
906:							
Xerofluvents--------	85	Severe		Severe		Severe	
		Flooding >= rare	1.00	Ponded (any duration)	1.00	Ponded (any duration)	1.00
		Ponded (any duration)	1.00			Occasional flooding	0.50
908:							
Xerorthents---------	85	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 6%	1.00
		Fragments (<3") 25-50%	0.97	Fragments (<3") 25-50%	0.97	Surface fragments (<3") >25%	1.00
910:							
Playas--------------	80	Not rated		Not rated		Not rated	
911:							
Playas--------------	85	Not rated		Not rated		Not rated	
912:							
Water---------------	100	Not rated		Not rated		Not rated	

The interpretation for camp areas evaluates the following soil properties at varying depths in the soil: flooding; ponding; wetness; slope; depth to bedrock; depth to a cemented pan; fragments less than, equal to, or greater than 3 inches in size; surface fragments greater than or equal to 10 inches in size; sodium content (SAR); salinity (EC); a clayey surface texture; Unified classes for a high content of organic matter (PT, OL, and OH); soil dustiness; and permeability that is too high, allowing seepage in some climates.

The interpretation for picnic areas evaluates the following soil properties at varying depths in the soil: flooding, ponding, wetness, slope, depth to bedrock, depth to a cemented pan, salinity (EC), pH, soil dustiness, fragments greater than 3 inches in size, the amount of sand or clay in the surface layer layer, surface fragments greater than or equal to 10 inches in size, Unified classes for a high content of organic matter (PT, OL, and OH), and permeability that is too high, allowing seepage in some climates.

The interpretation for playgrounds evaluates the following soil properties at varying depths in the soil: flooding; ponding; wetness; slope; depth to bedrock; depth to a cemented pan; fragments greater than, equal to, or less than 3 inches in size; Unified class for high content of organic matter (PT, OL, and OH); soil dustiness; content of sand or clay in the surface layer; surface fragments greater than or equal to 10 inches in size; pH; salinity (EC); and permeability that is too high, allowing seepage in some climates.

Table 10b.--Recreational Development (Part 2)

[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 potential limitation. The rating is based on the limitation with the highest value. Only the three highest value limitations are listed. There may be more limitations. Fine-earth fractions and coarse fragments are reported on a weight basis. A brief summary of the rating criteria and of the abbreviations used in describing the limitations is given at the end of the table]

Map symbol and soil name	Pct.	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, golf fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
100:							
Balcom--------------	75	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	Bedrock depth 20 to 40"	0.42
						AWC 2-4" to 40"	0.15
101:							
Balcom--------------	45	Moderate		Moderate		Severe	
		Slopes 15 - 25%	0.92	Dusty	0.50	Slopes > 15%	1.00
		Dusty	0.50			Bedrock depth 20 to 40"	0.42
						AWC 2-4" to 40"	0.15
Nacimiento----------	30	Moderate		Slight		Severe	
		Slopes 15 - 25%	0.92			Slopes > 15%	1.00
						Bedrock depth 20 to 40"	0.42
102:							
Balcom--------------	45	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	Bedrock depth 20 to 40"	0.42
						AWC 2-4" to 40"	0.15
Nacimiento----------	30	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
						Bedrock depth 20 to 40"	0.42
103:							
Balcom--------------	45	Moderate		Moderate		Moderate	
		Dusty	0.50	Dusty	0.50	Slopes 8 to 15%	0.63
						Bedrock depth 20 to 40"	0.42
						AWC 2-4" to 40"	0.15
Nacimiento----------	30	Slight		Slight		Moderate	
						Slopes 8 to 15%	0.63
						Bedrock depth 20 to 40"	0.42
109:							
Capay---------------	80	Moderate		Moderate		Severe	
		Surface clay > 40% and dry climate	0.50	Surface clay > 40% and dry climate	0.50	Clay in surface >= 40%	1.00

Table 10b.--Recreational Development (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and trails: Limitation	Value	Off-road motorcycle trails: Limitation	Value	Lawns, landscaping, golf fairways: Limitation	Value
110:							
Capay---------------	80	Moderate		Moderate		Severe	
		Surface clay > 40% and dry climate	0.50	Surface clay > 40% and dry climate	0.50	Clay in surface >= 40%	1.00
112:							
Calleguas-----------	45	Moderate		Moderate		Severe	
		Slopes 15 - 25%	0.92	Dusty	0.50	Slopes > 15%	1.00
		Dusty	0.50			Bedrock depth < 20"	1.00
						AWC < 2" to 40"	1.00
Balcom--------------	35	Moderate		Moderate		Severe	
		Slopes 15 - 25%	0.92	Dusty	0.50	Slopes > 15%	1.00
		Dusty	0.50			Bedrock depth 20 to 40"	0.42
						AWC 2-4" to 40"	0.15
114:							
Calleguas-----------	55	Moderate		Moderate		Severe	
		Slopes 15 - 25%	0.50	Dusty	0.50	Bedrock depth < 20"	1.00
		Dusty	0.50			AWC < 2" to 40"	1.00
						Slopes > 15%	1.00
Nacimiento----------	20	Moderate		Slight		Severe	
		Slopes 15 - 25%	0.50			Slopes > 15%	1.00
						Bedrock depth 20 to 40"	0.42
120:							
Hillbrick-----------	65	Severe		Moderate		Severe	
		Slopes > 25%	1.00	Slopes 25 to 40%	0.56	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	Bedrock depth < 20"	1.00
						AWC < 2" to 40"	0.99
Rock outcrop--------	15	Not rated		Not rated		Not rated	
121:							
Hillbrick-----------	65	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	Bedrock depth < 20"	1.00
						AWC < 2" to 40"	0.99
Rock outcrop--------	15	Not rated		Not rated		Not rated	
123:							
Lithic Torriorthents	30	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
						AWC < 2" to 40"	1.00
						Bedrock depth < 20"	1.00

Table 10b.--Recreational Development (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, golf fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
123:							
Semper	25	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	Bedrock depth 20 to 40"	0.42
						AWC 2-4" to 40"	0.22
Rock outcrop	20	Not rated		Not rated		Not rated	
129:							
Kilmer	40	Moderate		Moderate		Moderate	
		Dusty	0.50	Dusty	0.50	Slopes 8 to 15%	0.63
						Bedrock depth 20 to 40"	0.42
Hillbrick	35	Moderate		Moderate		Severe	
		Dusty	0.50	Dusty	0.50	Bedrock depth < 20"	1.00
						AWC < 2" to 40"	0.99
						Slopes 8 to 15%	0.63
130:							
Kilmer	40	Severe		Moderate		Severe	
		Slopes > 25%	1.00	Slopes 25 to 40%	0.56	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	Bedrock depth 20 to 40"	0.42
Hillbrick	35	Severe		Moderate		Severe	
		Slopes > 25%	1.00	Slopes 25 to 40%	0.56	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	Bedrock depth < 20"	1.00
						AWC < 2" to 40"	0.99
131:							
Kilmer	40	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	Bedrock depth 20 to 40"	0.42
Hillbrick	35	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	Bedrock depth < 20"	1.00
						AWC < 2" to 40"	0.99
134:							
Kilmer	30	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	Bedrock depth 20 to 40"	0.42
Nacimiento	25	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
						Bedrock depth 20 to 40"	0.42

Table 10b.--Recreational Development (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, golf fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
134:							
Aido----------------	15	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Surface clay > 40% and dry climate	0.50	Surface clay > 40% and dry climate	0.50	Clay in surface >= 40%	1.00
						Bedrock depth 20 to 40"	0.42
140:							
Choice--------------	80	Moderate		Moderate		Severe	
		Slopes 15 - 25%	0.92	Surface clay > 40% and dry	0.50	Slopes > 15%	1.00
		Surface clay > 40% and dry climate	0.50			Clay in surface >= 40%	1.00
149:							
San Emigdio---------	80	Slight		Slight		Slight	
150:							
San Emigdio---------	80	Slight		Slight		Slight	
154:							
San Emigdio---------	85	Moderate		Moderate		Slight	
		Dusty	0.50	Dusty	0.50		
155:							
San Emigdio---------	85	Moderate		Moderate		Slight	
		Dusty	0.50	Dusty	0.50		
159:							
Sorrento------------	85	Moderate		Moderate		Slight	
		Dusty	0.50	Dusty	0.50		
160:							
Sorrento------------	85	Moderate		Moderate		Slight	
		Dusty	0.50	Dusty	0.50		
169:							
Polonio-------------	75	Moderate		Moderate		Slight	
		Dusty	0.50	Dusty	0.50		
170:							
Polonio-------------	65	Slight		Slight		Slight	
173:							
Polonio-------------	85	Moderate		Moderate		Moderate	
		Dusty	0.50	Dusty	0.50	Fragments (gravel size) 25-50%	0.12
174:							
Polonio-------------	50	Moderate		Moderate		Slight	
		Dusty	0.50	Dusty	0.50		

Table 10b.--Recreational Development (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, golf fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
174:							
Thomhill------------	30	Moderate		Moderate		Slight	
		Dusty	0.50	Dusty	0.50		
175:							
Polonio-------------	50	Moderate		Moderate		Slight	
		Dusty	0.50	Dusty	0.50		
Thomhill------------	30	Moderate		Moderate		Slight	
		Dusty	0.50	Dusty	0.50		
179:							
Padres--------------	70	Slight		Slight		Moderate	
						Fragments >3" 5 to 30%	0.00
180:							
Padres--------------	65	Slight		Slight		Moderate	
						Fragments >3" 5 to 30%	0.00
182:							
Oceano--------------	50	Moderate		Moderate		Moderate	
		Surface sand fractions 70 - 90% by wt.	0.88	Surface sand fractions 70 - 90% by wt.	0.88	AWC 2-4" to 40"	0.69
190:							
Reward--------------	70	Moderate		Moderate		Severe	
		Slopes 15 - 25%	0.92	Dusty	0.50	Slopes > 15%	1.00
		Dusty	0.50			Fragments (gravel size) 25-50%	0.32
191:							
Reward--------------	70	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	Fragments (gravel size) 25-50%	0.32
200:							
Aramburu------------	70	Moderate		Slight		Severe	
		Slopes 15 - 25%	0.82			Slopes > 15%	1.00
						Fragments (gravel-size) >50%	1.00
						AWC 2-4" to 40"	0.85
201:							
Aramburu------------	65	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
						Fragments (gravel-size) >50%	1.00
						AWC 2-4" to 40"	0.85

Table 10b.--Recreational Development (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, golf fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
202:							
Aramburu------------	65	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	Fragments (gravel-size) >50%	1.00
						AWC 2-4" to 40"	0.85
204:							
Aramburu------------	40	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	Fragments (gravel-size) >50%	1.00
						AWC 2-4" to 40"	0.85
Temblor-------------	35	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	AWC < 2" to 40"	1.00
						Fragments (gravel-size) >50%	1.00
205:							
Aramburu------------	35	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	Fragments (gravel-size) >50%	1.00
						AWC 2-4" to 40"	0.85
Temblor-------------	35	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	AWC < 2" to 40"	1.00
						Fragments (gravel-size) >50%	1.00
218:							
Seaback-------------	30	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	AWC < 2" to 40"	1.00
						Bedrock depth < 20"	1.00
Calleguas-----------	25	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	Bedrock depth < 20"	1.00
						AWC < 2" to 40"	1.00
Panoza--------------	20	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	Bedrock depth 20 to 40"	0.42
						AWC 2-4" to 40"	0.07

Table 10b.--Recreational Development (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and trails: Limitation	Value	Off-road motorcycle trails: Limitation	Value	Lawns, landscaping, golf fairways: Limitation	Value
219:							
Xerorthents	50	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	Fragments (gravel-size) >50%	1.00
						AWC 2-4" to 40"	0.94
Badlands	35	Not rated		Not rated		Not rated	
220:							
Beam	35	Moderate		Slight		Severe	
		Slopes 15 - 25%	0.92			Slopes > 15%	1.00
						Bedrock depth < 20"	1.00
						AWC < 2" to 40"	1.00
Panoza	30	Moderate		Moderate		Severe	
		Slopes 15 - 25%	0.92	Dusty	0.50	Slopes > 15%	1.00
		Dusty	0.50			Bedrock depth 20 to 40"	0.42
						AWC 2-4" to 40"	0.07
Hillbrick	15	Moderate		Moderate		Severe	
		Slopes 15 - 25%	0.92	Dusty	0.50	Slopes > 15%	1.00
		Dusty	0.50			Bedrock depth < 20"	1.00
						AWC < 2" to 40"	0.99
221:							
Beam	35	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
						Bedrock depth < 20"	1.00
						AWC < 2" to 40"	1.00
Panoza	30	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	Bedrock depth 20 to 40"	0.42
						AWC 2-4" to 40"	0.07
Hillbrick	15	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	Bedrock depth < 20"	1.00
						AWC < 2" to 40"	0.99
222:							
Beam	35	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
						Bedrock depth < 20"	1.00
						AWC < 2" to 40"	1.00

Table 10b.--Recreational Development (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, golf fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
222:							
Panoza--------------	30	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	Bedrock depth 20 to 40"	0.42
						AWC 2-4" to 40"	0.07
Hillbrick-----------	15	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	Bedrock depth < 20"	1.00
						AWC < 2" to 40"	0.99
227:							
Beam----------------	40	Severe		Moderate		Severe	
		Slopes > 25%	1.00	Slopes 25 to 40%	0.56	Slopes > 15%	1.00
						AWC < 2" to 40"	1.00
						Bedrock depth < 20"	1.00
Panoza--------------	35	Severe		Moderate		Severe	
		Slopes > 25%	1.00	Slopes 25 to 40%	0.56	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	Fragments > 3" > 30%	1.00
		Fragments >3" 25 to 75%	0.20	Surface fragments (>3") 25-75%	0.20	Bedrock depth 20 to 40"	0.42
228:							
Beam----------------	40	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
						AWC < 2" to 40"	1.00
						Bedrock depth < 20"	1.00
Panoza--------------	35	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	Fragments > 3" > 30%	1.00
		Fragments >3" 25 to 75%	0.20	Surface fragments (>3") 25-75%	0.20	Bedrock depth 20 to 40"	0.42
229:							
Seaback-------------	40	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	AWC < 2" to 40"	1.00
						Bedrock depth < 20"	1.00
San Timoteo---------	35	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
						Bedrock depth 20 to 40"	0.42
						AWC 2-4" to 40"	0.24
230:							
Padres--------------	50	Slight		Slight		Moderate	
						Fragments >3" 5 to 30%	0.00

Table 10b.--Recreational Development (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and trails: Limitation	Value	Off-road motorcycle trails: Limitation	Value	Lawns, landscaping, golf fairways: Limitation	Value
230:							
Wasioja	35	Slight		Slight		Slight	
240:							
Panoza	40	Moderate		Moderate		Severe	
		Slopes 15 - 25%	0.92	Dusty	0.50	Slopes > 15%	1.00
		Dusty	0.50			Bedrock depth 20 to 40"	0.42
						AWC 2-4" to 40"	0.07
Beam	30	Moderate		Moderate		Severe	
		Slopes 15 - 25%	0.92	Dusty	0.50	Slopes > 15%	1.00
		Dusty	0.50			AWC < 2" to 40"	1.00
						Bedrock depth < 20"	1.00
241:							
Panoza	40	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	Bedrock depth 20 to 40"	0.42
						AWC 2-4" to 40"	0.07
Beam	30	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	AWC < 2" to 40"	1.00
						Bedrock depth < 20"	1.00
242:							
Panoza	40	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	Bedrock depth 20 to 40"	0.42
						AWC 2-4" to 40"	0.07
Beam	30	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	AWC < 2" to 40"	1.00
						Bedrock depth < 20"	1.00
248:							
Pyxo	55	Moderate		Moderate		Severe	
		Slopes 15 - 25%	0.88	Dusty	0.50	Slopes > 15%	1.00
		Dusty	0.50			Bedrock depth 20 to 40"	0.01
Cochora	30	Moderate		Moderate		Severe	
		Slopes 15 - 25%	0.88	Dusty	0.50	Slopes > 15%	1.00
		Dusty	0.50			AWC < 2" to 40"	1.00
						Bedrock depth < 20"	1.00

Table 10b.--Recreational Development (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, golf fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
249:							
Xeric Torriorthents-	50	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
						AWC 2-4" to 40"	0.67
						Fragments (gravel size) 25-50%	0.46
Badlands------------	25	Not rated		Not rated		Not rated	
250:							
Pyxo----------------	40	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	Bedrock depth 20 to 40"	0.65
Cochora-------------	25	Moderate		Moderate		Severe	
		Slopes 15 - 25%	0.88	Dusty	0.50	Slopes > 15%	1.00
		Dusty	0.50			AWC < 2" to 40"	1.00
						Bedrock depth < 20"	1.00
Badlands------------	15	Not rated		Not rated		Not rated	
251:							
Nacimiento----------	75	Moderate		Slight		Severe	
		Slopes 15 - 25%	0.92			Slopes > 15%	1.00
						Bedrock depth 20 to 40"	0.42
252:							
Nacimiento----------	75	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
						Bedrock depth 20 to 40"	0.42
261:							
Aido----------------	85	Moderate		Moderate		Severe	
		Slopes 15 - 25%	0.92	Surface clay > 40% and dry climate	0.50	Slopes > 15%	1.00
		Surface clay > 40% and dry climate	0.50			Clay in surface >= 40%	1.00
						Bedrock depth 20 to 40"	0.42
262:							
Aido----------------	80	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Surface clay > 40% and dry climate	0.50	Surface clay > 40% and dry climate	0.50	Clay in surface >= 40%	1.00
						Bedrock depth 20 to 40"	0.42
263:							
Aido----------------	85	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Surface clay > 40% and dry climate	0.50	Surface clay > 40% and dry climate	0.50	Clay in surface >= 40%	1.00
						Bedrock depth 20 to 40"	0.42

Table 10b.--Recreational Development (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and trails: Limitation	Value	Off-road motorcycle trails: Limitation	Value	Lawns, landscaping, golf fairways: Limitation	Value
270:							
Ayar	80	Moderate		Moderate		Severe	
		Surface clay > 40% and dry climate	0.50	Surface clay > 40% and dry climate	0.50	Clay in surface >= 40%	1.00
271:							
Ayar	80	Moderate		Moderate		Severe	
		Slopes 15 - 25%	0.92	Surface clay > 40% and dry climate	0.50	Slopes > 15%	1.00
		Surface clay > 40% and dry climate	0.50			Clay in surface >= 40%	1.00
274:							
Ayar	30	Moderate		Moderate		Severe	
		Slopes 15 - 25%	0.92	Surface clay > 40% and dry climate	0.50	Slopes > 15%	1.00
		Surface clay > 40% and dry climate	0.50			Clay in surface >= 40%	1.00
Hillbrick	30	Moderate		Moderate		Severe	
		Slopes 15 - 25%	0.92	Dusty	0.50	Slopes > 15%	1.00
		Dusty	0.50			Bedrock depth < 20"	1.00
						AWC < 2" to 40"	0.99
Aido	20	Moderate		Moderate		Severe	
		Slopes 15 - 25%	0.92	Surface clay > 40% and dry climate	0.50	Slopes > 15%	1.00
		Surface clay > 40% and dry climate	0.50			Clay in surface >= 40%	1.00
						Bedrock depth 20 to 40"	0.42
275:							
Ayar	30	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Surface clay > 40% and dry climate	0.50	Surface clay > 40% and dry climate	0.50	Clay in surface >= 40%	1.00
Hillbrick	30	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	Bedrock depth < 20"	1.00
						AWC < 2" to 40"	0.99
Aido	20	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Surface clay > 40% and dry climate	0.50	Surface clay > 40% and dry climate	0.50	Clay in surface >= 40%	1.00
						Bedrock depth 20 to 40"	0.42
280:							
Seaback	35	Moderate		Moderate		Severe	
		Dusty	0.50	Dusty	0.50	AWC < 2" to 40"	1.00
						Bedrock depth < 20"	1.00
						Slopes 8 to 15%	0.63

Table 10b.--Recreational Development (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and trails: Limitation	Value	Off-road motorcycle trails: Limitation	Value	Lawns, landscaping, golf fairways: Limitation	Value
280:							
Panoza	30	Moderate		Moderate		Moderate	
		Dusty	0.50	Dusty	0.50	Slopes 8 to 15%	0.63
						Bedrock depth 20 to 40"	0.42
						AWC 2-4" to 40"	0.07
Jenks	15	Slight		Slight		Moderate	
						Slopes 8 to 15%	0.63
						Bedrock depth 20 to 40"	0.42
281:							
Seaback	35	Moderate		Moderate		Severe	
		Slopes 15 - 25%	0.92	Dusty	0.50	Slopes > 15%	1.00
		Dusty	0.50			AWC < 2" to 40"	1.00
						Bedrock depth < 20"	1.00
Panoza	30	Moderate		Moderate		Severe	
		Slopes 15 - 25%	0.92	Dusty	0.50	Slopes > 15%	1.00
		Dusty	0.50			Bedrock depth 20 to 40"	0.42
						AWC 2-4" to 40"	0.07
Jenks	15	Moderate		Slight		Severe	
		Slopes 15 - 25%	0.92			Slopes > 15%	1.00
						Bedrock depth 20 to 40"	0.42
282:							
Seaback	35	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	AWC < 2" to 40"	1.00
						Bedrock depth < 20"	1.00
Panoza	30	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	Bedrock depth 20 to 40"	0.42
						AWC 2-4" to 40"	0.07
Jenks	15	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
						Bedrock depth 20 to 40"	0.42
290:							
San Timoteo	30	Moderate		Slight		Severe	
		Slopes 15 - 25%	0.92			Slopes > 15%	1.00
						Bedrock depth 20 to 40"	0.42
						AWC 2-4" to 40"	0.24
San Andreas	25	Moderate		Slight		Severe	
		Slopes 15 - 25%	0.92			Slopes > 15%	1.00
						Bedrock depth 20 to 40"	0.42
						AWC 2-4" to 40"	0.42

Table 10b.--Recreational Development (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and trails: Limitation	Value	Off-road motorcycle trails: Limitation	Value	Lawns, landscaping, golf fairways: Limitation	Value
290:							
Bellyspring---------	20	Moderate		Slight		Severe	
		Slopes 15 - 25%	0.92			Slopes > 15%	1.00
						Bedrock depth 20 to 40"	0.42
291:							
San Timoteo---------	30	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
						Bedrock depth 20 to 40"	0.42
						AWC 2-4" to 40"	0.24
San Andreas---------	25	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
						Bedrock depth 20 to 40"	0.42
						AWC 2-4" to 40"	0.42
Bellyspring---------	20	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
						Bedrock depth 20 to 40"	0.42
292:							
San Timoteo---------	30	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
						Bedrock depth 20 to 40"	0.42
						AWC 2-4" to 40"	0.24
San Andreas---------	25	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
						Bedrock depth 20 to 40"	0.42
						AWC 2-4" to 40"	0.42
Bellyspring---------	20	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
						Bedrock depth 20 to 40"	0.42
301:							
Arbuckle------------	70	Slight		Slight		Slight	
302:							
Arbuckle------------	70	Slight		Slight		Moderate	
						Slopes 8 to 15%	0.63
303:							
Arbuckle------------	70	Moderate		Slight		Severe	
		Slopes 15 - 25%	0.92			Slopes > 15%	1.00
304:							
Arbuckle------------	70	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00

Table 10b.--Recreational Development (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and trails: Limitation	Value	Off-road motorcycle trails: Limitation	Value	Lawns, landscaping, golf fairways: Limitation	Value
306:							
Arbuckle	70	Moderate		Slight		Severe	
		Slopes 15 - 25%	0.92			Slopes > 15%	1.00
307:							
Arbuckle	70	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
310:							
Yeguas	40	Moderate		Moderate		Slight	
		Dusty	0.50	Dusty	0.50		
Pinspring	40	Moderate		Moderate		Slight	
		Dusty	0.50	Dusty	0.50		
311:							
Yeguas	40	Moderate		Moderate		Slight	
		Dusty	0.50	Dusty	0.50		
Pinspring	40	Moderate		Moderate		Slight	
		Dusty	0.50	Dusty	0.50		
321:							
Thomhill	80	Moderate		Moderate		Slight	
		Dusty	0.50	Dusty	0.50		
330:							
Jenks	80	Slight		Slight		Moderate	
						Bedrock depth 20 to 40"	0.42
339:							
Arnold	30	Moderate		Slight		Severe	
		Slopes 15 - 25%	0.50			Slopes > 15%	1.00
						AWC 2-4" to 40"	0.64
San Andreas	20	Moderate		Slight		Severe	
		Slopes 15 - 25%	0.50			Slopes > 15%	1.00
						Bedrock depth 20 to 40"	0.42
						AWC 2-4" to 40"	0.00
340:							
Arnold	30	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
						AWC 2-4" to 40"	0.64
San Andreas	20	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
						Bedrock depth 20 to 40"	0.42
						AWC 2-4" to 40"	0.00

Table 10b.--Recreational Development (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, golf fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
350:							
Cieneba-------------	75	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
						AWC < 2" to 40"	1.00
						Bedrock depth < 20"	1.00
360:							
Chicote------------	40	Severe		Severe		Severe	
		Ponded (any duration)	1.00	Ponded (any duration)	1.00	Ponded (any duration)	1.00
						SAR > 12	1.00
						AWC 2-4" to 40"	0.20
Chicote------------	40	Severe		Severe		Severe	
		Ponded (any duration)	1.00	Ponded (any duration)	1.00	Ponded (any duration)	1.00
		Dusty	0.50	Dusty	0.50	SAR > 12	1.00
361:							
Chicote------------	40	Severe		Severe		Severe	
		Ponded (any duration)	1.00	Ponded (any duration)	1.00	Ponded (any duration)	1.00
						SAR > 12	1.00
						AWC 2-4" to 40"	0.20
Chicote------------	40	Severe		Severe		Severe	
		Ponded (any duration)	1.00	Ponded (any duration)	1.00	Ponded (any duration)	1.00
		Dusty	0.50	Dusty	0.50	SAR > 12	1.00
362:							
Chicote------------	40	Severe		Severe		Severe	
		Ponded (any duration)	1.00	Ponded (any duration)	1.00	Ponded (any duration)	1.00
						SAR > 12	1.00
						AWC 2-4" to 40"	0.20
Chicote------------	40	Severe		Severe		Severe	
		Ponded (any duration)	1.00	Ponded (any duration)	1.00	Ponded (any duration)	1.00
		Dusty	0.50	Dusty	0.50	SAR > 12	1.00
371:							
Semper-------------	50	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	Bedrock depth 20 to 40"	0.42
						AWC 2-4" to 40"	0.22
372:							
Semper-------------	65	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	Bedrock depth 20 to 40"	0.42
						AWC 2-4" to 40"	0.22

Table 10b.--Recreational Development (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, golf fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
375:							
Semper	40	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	Bedrock depth 20 to 40"	0.42
						AWC 2-4" to 40"	0.22
Badlands	25	Not rated		Not rated		Not rated	
380:							
Muranch	30	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	Bedrock depth 20 to 40"	0.42
						AWC 2-4" to 40"	0.06
Xerorthents	25	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	Fragments (gravel-size) >50%	1.00
						AWC 2-4" to 40"	0.94
Rock outcrop	20	Not rated		Not rated		Not rated	
388:							
Rock outcrop	50	Not rated		Not rated		Not rated	
Gaviota	25	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
						AWC < 2" to 40"	1.00
						Bedrock depth < 20"	1.00
391:							
Rock outcrop	35	Not rated		Not rated		Not rated	
Lithic Torriorthents	30	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
						AWC < 2" to 40"	1.00
						Bedrock depth < 20"	1.00
401:							
Godde	40	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
						AWC < 2" to 40"	1.00
						Bedrock depth < 20"	1.00
Xerorthents	20	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
						AWC < 2" to 40"	1.00
						Bedrock depth < 20"	1.00
Rock outcrop	15	Not rated		Not rated		Not rated	

Table 10b.--Recreational Development (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, golf fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
408:							
Gaviota	35	Moderate		Slight		Severe	
		Slopes 15 - 25%	0.92			Slopes > 15%	1.00
						AWC < 2" to 40"	1.00
						Bedrock depth < 20"	1.00
San Andreas	25	Moderate		Slight		Severe	
		Slopes 15 - 25%	0.92			Slopes > 15%	1.00
						Bedrock depth 20 to 40"	0.42
409:							
Gaviota	35	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
						AWC < 2" to 40"	1.00
						Bedrock depth < 20"	1.00
Saltos	25	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Bedrock depth < 20"	1.00
		K-factor >.35 and slopes > 8%	1.00			Slopes > 15%	1.00
						AWC < 2" to 40"	1.00
Rock outcrop	15	Not rated		Not rated		Not rated	
410:							
Gaviota	40	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
						AWC < 2" to 40"	1.00
						Bedrock depth < 20"	1.00
Rock outcrop	30	Not rated		Not rated		Not rated	
411:							
Tajea	40	Moderate		Moderate		Severe	
		Slopes 15 - 25%	0.92	Dusty	0.50	Slopes > 15%	1.00
		Dusty	0.50			Bedrock depth 20 to 40"	0.42
Saltos	40	Severe		Slight		Severe	
		K-factor >.35 and slopes > 8%	1.00			Bedrock depth < 20"	1.00
						Slopes > 15%	1.00
		Slopes 15 - 25%	0.92			AWC < 2" to 40"	1.00
412:							
Tajea	45	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	Bedrock depth 20 to 40"	0.42
Saltos	30	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Bedrock depth < 20"	1.00
		K-factor >.35 and slopes > 8%	1.00			Slopes > 15%	1.00
						AWC < 2" to 40"	1.00

Table 10b.--Recreational Development (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, golf fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
420:							
Bellyspring	30	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50		
Saltos	25	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Bedrock depth < 20"	1.00
		K-factor >.35 and slopes > 8%	1.00			Slopes > 15%	1.00
						AWC < 2" to 40"	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
430:							
Saucito	40	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
						AWC < 2" to 40"	1.00
						Bedrock depth < 20"	1.00
Akad	25	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	Bedrock depth 20 to 40"	0.84
						AWC 2-4" to 40"	0.53
Rock outcrop	20	Not rated		Not rated		Not rated	
440:							
Bellyspring	35	Slight		Slight		Moderate	
						Slopes 8 to 15%	0.63
						Bedrock depth 20 to 40"	0.42
Panoza	25	Moderate		Moderate		Moderate	
		Dusty	0.50	Dusty	0.50	Slopes 8 to 15%	0.63
						Bedrock depth 20 to 40"	0.42
						AWC 2-4" to 40"	0.07
441:							
Bellyspring	35	Moderate		Slight		Severe	
		Slopes 15 - 25%	0.92			Slopes > 15%	1.00
						Bedrock depth 20 to 40"	0.42
Panoza	30	Moderate		Moderate		Severe	
		Slopes 15 - 25%	0.92	Dusty	0.50	Slopes > 15%	1.00
		Dusty	0.50			Bedrock depth 20 to 40"	0.42
						AWC 2-4" to 40"	0.07
442:							
Bellyspring	35	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
						Bedrock depth 20 to 40"	0.42

Table 10b.--Recreational Development (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, golf fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
442:							
Panoza	30	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	Bedrock depth 20 to 40"	0.42
						AWC 2-4" to 40"	0.07
443:							
Bellyspring	35	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
						Bedrock depth 20 to 40"	0.42
Beam	25	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
						Bedrock depth < 20"	1.00
						AWC < 2" to 40"	1.00
Panoza	25	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	Bedrock depth 20 to 40"	0.42
						AWC 2-4" to 40"	0.07
445:							
Bellyspring	35	Severe		Moderate		Severe	
		Slopes > 25%	1.00	Slopes 25 to 40%	0.56	Slopes > 15%	1.00
						Bedrock depth 20 to 40"	0.42
Xerorthents	30	Severe		Moderate		Severe	
		Slopes > 25%	1.00	Slopes 25 to 40%	0.56	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	Fragments (gravel-size) >50%	1.00
						AWC 2-4" to 40"	0.94
Panoza	15	Severe		Moderate		Severe	
		Slopes > 25%	1.00	Slopes 25 to 40%	0.56	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50	Bedrock depth 20 to 40"	0.42
						AWC 2-4" to 40"	0.07
450:							
Botella	75	Moderate		Moderate		Slight	
		Dusty	0.50	Dusty	0.50		
460:							
Camatta	75	Moderate		Moderate		Severe	
		Dusty	0.50	Dusty	0.50	Depth to pan < 20"	1.00
		Slopes 15 - 25%	0.18			AWC < 2" to 40"	1.00
						Slopes > 15%	1.00
470:							
Botella	85	Slight		Slight		Slight	

Table 10b.--Recreational Development (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, golf fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
474:							
Elder	80	Slight		Slight		Slight	
475:							
Elder	80	Slight		Slight		Slight	
480:							
Metz	70	Slight		Slight		Moderate	
						AWC 2-4" to 40"	0.14
490:							
Wasioja	75	Moderate		Moderate		Slight	
		Dusty	0.50	Dusty	0.50		
491:							
Wasioja	85	Slight		Slight		Slight	
495:							
Wasioja	60	Moderate		Moderate		Slight	
		Dusty	0.50	Dusty	0.50		
Polonio	20	Moderate		Moderate		Slight	
		Dusty	0.50	Dusty	0.50		
497:							
Wasioja	35	Moderate		Moderate		Slight	
		Dusty	0.50	Dusty	0.50		
Pinspring	30	Moderate		Moderate		Slight	
		Dusty	0.50	Dusty	0.50		
Yeguas	15	Moderate		Moderate		Slight	
		Dusty	0.50	Dusty	0.50		
512:							
Shimmon	80	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
						Bedrock depth 20 to 40"	0.42
						AWC 2-4" to 40"	0.38
520:							
Santa Lucia	30	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
						AWC 2-4" to 40"	0.93
						Bedrock depth 20 to 40"	0.42

Table 10b.--Recreational Development (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, golf fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
521:							
Santa Lucia	80	Moderate		Slight		Severe	
		Slopes 15 - 25%	0.92			Slopes > 15%	1.00
						AWC 2-4" to 40"	0.95
						Fragments (gravel size) 25-50%	0.44
522:							
Santa Lucia	55	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
						AWC 2-4" to 40"	0.95
						Fragments (gravel size) 25-50%	0.44
531:							
Saltos	45	Severe		Moderate		Severe	
		K-factor >.35 and slopes > 8%	1.00	Slopes 25 to 40%	0.56	Bedrock depth < 20"	1.00
						Slopes > 15%	1.00
		Slopes > 25%	1.00			AWC < 2" to 40"	1.00
Millsholm	35	Moderate		Moderate		Severe	
		Slopes 15 - 25%	0.92	Dusty	0.50	Slopes > 15%	1.00
		Dusty	0.50			Bedrock depth < 20"	1.00
						AWC < 2" to 40"	1.00
561:							
Chanac	85	Moderate		Moderate		Severe	
		Slopes 15 - 25%	0.50	Dusty	0.50	Slopes > 15%	1.00
		Dusty	0.50				
562:							
Chanac	90	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
		Dusty	0.50	Dusty	0.50		
900:							
Pits	100	Not rated		Not rated		Not rated	
905:							
Xerofluvents	50	Moderate		Moderate		Moderate	
		Frequent flooding	0.50	Frequent flooding	0.50	Frequent flooding	0.90
						Loamy coarse sand surface	0.50
Riverwash	30	Severe		Severe		Severe	
		Very dusty	1.00	Very dusty	1.00	AWC < 2" to 40"	1.00
		Wetness < 12" depth	1.00	Wetness < 12" depth	1.00	Wetness < 12" depth	1.00
		Surface sand fractions 70 - 90% by wt.	0.88	Surface sand fractions 70 - 90% by wt.	0.88	Frequent flooding	0.90

Table 10b.--Recreational Development (Part 2)--Continued

Map symbol and soil name	Pct.	Paths and trails		Off-road motorcycle trails		Lawns, landscaping, golf fairways	
		Limitation	Value	Limitation	Value	Limitation	Value
906:							
Xerofluvents--------	85	Severe		Severe		Severe	
		Ponded (any duration)	1.00	Ponded (any duration)	1.00	Ponded (any duration)	1.00
						Occasional flooding	0.80
908:							
Xerorthents---------	85	Severe		Severe		Severe	
		Slopes > 25%	1.00	Slopes > 40%	1.00	Slopes > 15%	1.00
						Fragments (gravel size) 25-50%	0.97
						AWC 2-4" to 40"	0.35
910:							
Playas--------------	80	Not rated		Not rated		Not rated	
911:							
Playas--------------	85	Not rated		Not rated		Not rated	
912:							
Water---------------	100	Not rated		Not rated		Not rated	

The interpretation for paths and trails evaluates the following soil properties at varying depths in the soil: flooding; ponding; wetness; slope; fragments less than, equal to, or greater than 3 inches in size; the content of clay and sand in surface layer; surface fragments greater than or equal to 10 inches in size; Unified classes for a high content of organic matter (PT, OL, and OH); soil dustiness; and the susceptibility of the soil to erosion by water.

The interpretation for off-road motorcycle trails evaluates the following soil properties at varying depths in the soil: flooding, ponding, wetness, slope, soil dustiness, sand or clay content in the surface layer, and Unified classes for a high content of organic matter (PT, OL, and OH).

The interpretation for lawns, landscaping, and golf fairways evaluates the following soil properties at varying depths in the soil: flooding; ponding; wetness; slope; depth to bedrock; depth to a cemented pan; fragments greater than, equal to, or less than 3 inches in size; surface fragments greater than or equal to 10 inches in size; Unified class for high content of organic matter (PT, OL, and OH); soil dustiness; sand or clay content in the surface layer; pH; salinity (EC); sodium content (SAR); calcium carbonates; and sulfur content.

Table 11a.--Building Site Development (Part 1)

[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 potential limitation. The rating is based on the limitation with the highest value. Only the three highest value limitations are listed. There may be more limitations. Fine-earth fractions and coarse fragments are reported on a weight basis. A brief summary of the rating criteria and of the abbreviations used in describing the limitations is given at the end of the table]

Map symbol and soil name	Pct.	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
100:							
Balcom	75	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
				Bedrock (soft) from 20 to 40"	0.42		
101:							
Balcom	45	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
				Bedrock (soft) from 20 to 40"	0.42		
Nacimiento	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
				Bedrock (soft) from 20 to 40"	0.42		
102:							
Balcom	45	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
				Bedrock (soft) from 20 to 40"	0.42		
Nacimiento	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
				Bedrock (soft) from 20 to 40"	0.42		
103:							
Balcom	45	Moderate		Moderate		Severe	
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes > 8%	1.00
				Bedrock (soft) from 20 to 40"	0.42		
Nacimiento	30	Moderate		Moderate		Severe	
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
				Bedrock (soft) from 20 to 40"	0.42		

Table 11a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
109:							
Capay	80	Severe		Severe		Severe	
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00
110:							
Capay	80	Severe		Severe		Severe	
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00
						Slopes from 4% to 8%	0.47
112:							
Calleguas	45	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00
Balcom	35	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
				Bedrock (soft) from 20 to 40"	0.42		
114:							
Calleguas	55	Severe		Severe		Severe	
		Slopes > 15%	1.00	Bedrock (soft) < 20" depth	1.00	Slopes > 8%	1.00
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%	1.00	Bedrock (soft) < 20" depth	1.00
Nacimiento	20	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
				Bedrock (soft) from 20 to 40"	0.42		
120:							
Hillbrick	65	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) < 20" depth	1.00
Rock outcrop	15	Not Rated		Not Rated		Not Rated	
121:							
Hillbrick	65	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) < 20" depth	1.00
Rock outcrop	15	Not Rated		Not Rated		Not Rated	
123:							
Lithic Torriorthents	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) < 20" depth	1.00

Table 11a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
123:							
Semper----------------------------	25	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
				Bedrock (soft) from 20 to 40"	0.42		
Rock outcrop----------------------	20	Not Rated		Not Rated		Not Rated	
129:							
Kilmer----------------------------	40	Moderate		Severe		Severe	
		Slopes 8 to 15%	0.63	Bedrock (hard) < 40" depth	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.50	Slopes 8 to 15%	0.63	Shrink-swell (LEP 3-6)	0.50
		Bedrock (hard) from 20 to 40"	0.42	Shrink-swell (LEP 3-6)	0.50	Bedrock (hard) from 20 to 40"	0.42
Hillbrick-------------------------	35	Severe		Severe		Severe	
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Slopes > 8%	1.00
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Bedrock (hard) < 20" depth	1.00
130:							
Kilmer----------------------------	40	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.50	Bedrock (hard) < 40" depth	1.00	Shrink-swell (LEP 3-6)	0.50
		Bedrock (hard) from 20 to 40"	0.42	Shrink-swell (LEP 3-6)	0.50	Bedrock (hard) from 20 to 40"	0.42
Hillbrick-------------------------	35	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) < 20" depth	1.00
131:							
Kilmer----------------------------	40	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.50	Bedrock (hard) < 40" depth	1.00	Shrink-swell (LEP 3-6)	0.50
		Bedrock (hard) from 20 to 40"	0.42	Shrink-swell (LEP 3-6)	0.50	Bedrock (hard) from 20 to 40"	0.42
Hillbrick-------------------------	35	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) < 20" depth	1.00
134:							
Kilmer----------------------------	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.50	Bedrock (hard) < 40" depth	1.00	Shrink-swell (LEP 3-6)	0.50
		Bedrock (hard) from 20 to 40"	0.42	Shrink-swell (LEP 3-6)	0.50	Bedrock (hard) from 20 to 40"	0.42

Table 11a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
134:							
Nacimiento	25	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
				Bedrock (soft) from 20 to 40"	0.42		
Aido	15	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00
				Bedrock (soft) from 20 to 40"	0.42		
140:							
Choice	80	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00
149:							
San Emigdio	80	Slight		Slight		Slight	
150:							
San Emigdio	80	Slight		Slight		Moderate	
						Slopes from 4% to 8%	0.47
154:							
San Emigdio	85	Slight		Slight		Slight	
155:							
San Emigdio	85	Slight		Slight		Moderate	
						Slopes from 4% to 8%	0.47
159:							
Sorrento	85	Slight		Slight		Slight	
160:							
Sorrento	85	Slight		Slight		Moderate	
						Slopes from 4% to 8%	0.47
169:							
Polonio	75	Moderate		Moderate		Moderate	
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
170:							
Polonio	65	Moderate		Moderate		Moderate	
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
						Slopes from 4% to 8%	0.47

Table 11a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
173:							
Polonio	85	Slight		Slight		Moderate	
						Slopes from 4% to 8%	0.47
174:							
Polonio	50	Moderate		Moderate		Moderate	
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
Thomhill	30	Moderate		Moderate		Moderate	
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
175:							
Polonio	50	Moderate		Moderate		Moderate	
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
						Slopes from 4% to 8%	0.47
Thomhill	30	Moderate		Moderate		Moderate	
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
						Slopes from 4% to 8%	0.47
179:							
Padres	70	Slight		Slight		Slight	
180:							
Padres	65	Slight		Slight		Moderate	
						Slopes from 4% to 8%	0.47
182:							
Oceano	50	Slight		Slight		Moderate	
						Slopes from 4% to 8%	0.47
190:							
Reward	70	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
191:							
Reward	70	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
200:							
Aramburu	70	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) from 20 to 40"	0.42	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) from 20 to 40"	0.42

Table 11a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without basements: Limitation	Value	Dwellings with basements: Limitation	Value	Small commercial buildings: Limitation	Value
201:							
Aramburu-------------------------	65	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) from 20 to 40"	0.42	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) from 20 to 40"	0.42
202:							
Aramburu-------------------------	65	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) from 20 to 40"	0.42	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) from 20 to 40"	0.42
204:							
Aramburu-------------------------	40	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) from 20 to 40"	0.42	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) from 20 to 40"	0.42
Temblor--------------------------	35	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) < 20" depth	1.00
205:							
Aramburu-------------------------	35	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) from 20 to 40"	0.42	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) from 20 to 40"	0.42
Temblor--------------------------	35	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) < 20" depth	1.00
218:							
Seaback--------------------------	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00
Calleguas------------------------	25	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00
Panoza---------------------------	20	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
				Bedrock (soft) from 20 to 40"	0.42		

Table 11a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
219:							
Xerorthents	50	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) from 20 to 40"	0.42	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) from 20 to 40"	0.42
Badlands	35	Not Rated		Not Rated		Not Rated	
220:							
Beam	35	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00
Panoza	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
				Bedrock (soft) from 20 to 40"	0.42		
Hillbrick	15	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) < 20" depth	1.00
221:							
Beam	35	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00
Panoza	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
				Bedrock (soft) from 20 to 40"	0.42		
Hillbrick	15	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) < 20" depth	1.00
222:							
Beam	35	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00
Panoza	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
				Bedrock (soft) from 20 to 40"	0.42		
Hillbrick	15	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) < 20" depth	1.00

Table 11a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without basements: Limitation	Value	Dwellings with basements: Limitation	Value	Small commercial buildings: Limitation	Value
227:							
Beam----------------------------	40	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00
Panoza--------------------------	35	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.20	Bedrock (soft) from 20 to 40"	0.42	Fragments (>3") 25 to 50%	0.20
				Fragments (>3") 25 to 50%	0.20		
228:							
Beam----------------------------	40	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00
Panoza--------------------------	35	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Fragments (>3") 25 to 50%	0.20	Bedrock (soft) from 20 to 40"	0.42	Fragments (>3") 25 to 50%	0.20
				Fragments (>3") 25 to 50%	0.20		
229:							
Seaback-------------------------	40	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00
San Timoteo---------------------	35	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
				Bedrock (soft) from 20 to 40"	0.42		
230:							
Padres--------------------------	50	Slight		Slight		Moderate	
						Slopes from 4% to 8%	0.47
Wasioja-------------------------	35	Moderate		Slight		Moderate	
		Shrink-swell (LEP 3-6)	0.50			Shrink-swell (LEP 3-6)	0.50
						Slopes from 4% to 8%	0.47
240:							
Panoza--------------------------	40	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
				Bedrock (soft) from 20 to 40"	0.42		
Beam----------------------------	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00

Table 11a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
241:							
Panoza	40	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
				Bedrock (soft) from 20 to 40"	0.42		
Beam	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00
242:							
Panoza	40	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
				Bedrock (soft) from 20 to 40"	0.42		
Beam	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00
248:							
Pyxo	55	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
				Bedrock (soft) from 20 to 40"	0.01		
Cochora	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00
249:							
Xeric Torriorthents	50	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
				Bedrock (hard) < 40" depth	1.00		
Badlands	25	Not Rated		Not Rated		Not Rated	
250:							
Pyxo	40	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.50	Bedrock (soft) from 20 to 40"	0.64	Shrink-swell (LEP 3-6)	0.50
				Shrink-swell (LEP 3-6)	0.50		
Cochora	25	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00

Table 11a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
250:							
Badlands	15	Not Rated		Not Rated		Not Rated	
251:							
Nacimiento	75	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
				Bedrock (soft) from 20 to 40"	0.42		
252:							
Nacimiento	75	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
				Bedrock (soft) from 20 to 40"	0.42		
261:							
Aido	85	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00
				Bedrock (soft) from 20 to 40"	0.42		
262:							
Aido	80	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00
				Bedrock (soft) from 20 to 40"	0.42		
263:							
Aido	85	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00
				Bedrock (soft) from 20 to 40"	0.42		
270:							
Ayar	80	Severe		Severe		Severe	
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00
						Slopes from 4% to 8%	0.86
271:							
Ayar	80	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00

Table 11a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
274:							
Ayar	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00
Hillbrick	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) < 20" depth	1.00
Aido	20	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00
				Bedrock (soft) from 20 to 40"	0.42		
275:							
Ayar	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00
Hillbrick	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) < 20" depth	1.00
Aido	20	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00
				Bedrock (soft) from 20 to 40"	0.42		
280:							
Seaback	35	Moderate		Severe		Severe	
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00	Slopes > 8%	1.00
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Bedrock (soft) < 20" depth	1.00
Panoza	30	Moderate		Moderate		Severe	
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes > 8%	1.00
				Bedrock (soft) from 20 to 40"	0.42		
Jenks	15	Moderate		Moderate		Severe	
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
				Bedrock (soft) from 20 to 40"	0.42		

Table 11a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
281:							
Seaback	35	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00
Panoza	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
				Bedrock (soft) from 20 to 40"	0.42		
Jenks	15	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
				Bedrock (soft) from 20 to 40"	0.42		
282:							
Seaback	35	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00
Panoza	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
				Bedrock (soft) from 20 to 40"	0.42		
Jenks	15	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
				Bedrock (soft) from 20 to 40"	0.42		
290:							
San Timoteo	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
				Bedrock (soft) from 20 to 40"	0.42		
San Andreas	25	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
				Bedrock (soft) from 20 to 40"	0.42		
Bellyspring	20	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
				Bedrock (soft) from 20 to 40"	0.42		

Table 11a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
291:							
San Timoteo	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
				Bedrock (soft) from 20 to 40"	0.42		
San Andreas	25	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
				Bedrock (soft) from 20 to 40"	0.42		
Bellyspring	20	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
				Bedrock (soft) from 20 to 40"	0.42		
292:							
San Timoteo	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
				Bedrock (soft) from 20 to 40"	0.42		
San Andreas	25	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
				Bedrock (soft) from 20 to 40"	0.42		
Bellyspring	20	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
				Bedrock (soft) from 20 to 40"	0.42		
301:							
Arbuckle	70	Slight		Slight		Moderate	
						Slopes from 4% to 8%	0.47
302:							
Arbuckle	70	Moderate		Moderate		Severe	
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes > 8%	1.00
303:							
Arbuckle	70	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
304:							
Arbuckle	70	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00

Table 11a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
306:							
Arbuckle	70	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
307:							
Arbuckle	70	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
310:							
Yeguas	40	Moderate		Moderate		Moderate	
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
Pinspring	40	Moderate		Slight		Moderate	
		Shrink-swell (LEP 3-6)	0.50			Shrink-swell (LEP 3-6)	0.50
311:							
Yeguas	40	Moderate		Moderate		Moderate	
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
Pinspring	40	Moderate		Slight		Moderate	
		Shrink-swell (LEP 3-6)	0.50			Shrink-swell (LEP 3-6)	0.50
321:							
Thomhill	80	Moderate		Moderate		Moderate	
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
330:							
Jenks	80	Moderate		Moderate		Moderate	
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
				Bedrock (soft) from 20 to 40"	0.42	Slopes from 4% to 8%	0.47
339:							
Arnold	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
San Andreas	20	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
				Bedrock (soft) from 20 to 40"	0.42		
340:							
Arnold	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
San Andreas	20	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
				Bedrock (soft) from 20 to 40"	0.42		

Table 11a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
350:							
Cieneba----------------------------	75	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00
360:							
Chicote, silty clay loam----------	40	Severe		Severe		Severe	
		Ponded (any duration)	1.00	Ponded (any duration)	1.00	Ponded (any duration)	1.00
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >= rare	1.00
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00
Chicote, silt loam----------------	40	Severe		Severe		Severe	
		Ponded (any duration)	1.00	Ponded (any duration)	1.00	Ponded (any duration)	1.00
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >= rare	1.00
361:							
Chicote, silty clay loam----------	40	Severe		Severe		Severe	
		Ponded (any duration)	1.00	Ponded (any duration)	1.00	Ponded (any duration)	1.00
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >= rare	1.00
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00
Chicote, silt loam----------------	40	Severe		Severe		Severe	
		Ponded (any duration)	1.00	Ponded (any duration)	1.00	Ponded (any duration)	1.00
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >= rare	1.00
362:							
Chicote, silty clay loam----------	40	Severe		Severe		Severe	
		Ponded (any duration)	1.00	Ponded (any duration)	1.00	Ponded (any duration)	1.00
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >= rare	1.00
		Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00	Shrink-swell (LEP >6)	1.00
Chicote, silt loam----------------	40	Severe		Severe		Severe	
		Ponded (any duration)	1.00	Ponded (any duration)	1.00	Ponded (any duration)	1.00
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >= rare	1.00
						Slopes from 4% to 8%	0.86
371:							
Semper----------------------------	50	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
				Bedrock (soft) from 20 to 40"	0.42		
372:							
Semper----------------------------	65	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
				Bedrock (soft) from 20 to 40"	0.42		

Table 11a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
375:							
Semper	40	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
				Bedrock (soft) from 20 to 40"	0.42		
Badlands	25	Not Rated		Not Rated		Not Rated	
		Not Rated		Not Rated		Not Rated	
380:							
Muranch	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) from 20 to 40"	0.42	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) from 20 to 40"	0.42
Xerorthents	25	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) from 20 to 40"	0.42	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) from 20 to 40"	0.42
Rock outcrop	20	Not Rated		Not Rated		Not Rated	
388:							
Rock outcrop	50	Not Rated		Not Rated		Not Rated	
Gaviota	25	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) < 20" depth	1.00
391:							
Rock outcrop	35	Not Rated		Not Rated		Not Rated	
Lithic Torriorthents	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) < 20" depth	1.00
401:							
Godde	40	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) < 20" depth	1.00
Xerorthents	20	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) < 20" depth	1.00
Rock outcrop	15	Not Rated		Not Rated		Not Rated	

Table 11a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
408:							
Gaviota	35	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) < 20" depth	1.00
San Andreas	25	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
				Bedrock (soft) from 20 to 40"	0.42		
409:							
Gaviota	35	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) < 20" depth	1.00
Saltos	25	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) < 20" depth	1.00
Rock outcrop	15	Not Rated		Not Rated		Not Rated	
410:							
Gaviota	40	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) < 20" depth	1.00
Rock outcrop	30	Not Rated		Not Rated		Not Rated	
411:							
Tajea	40	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.50	Bedrock (hard) < 40" depth	1.00	Shrink-swell (LEP 3-6)	0.50
		Bedrock (hard) from 20 to 40"	0.42	Shrink-swell (LEP 3-6)	0.50	Bedrock (hard) from 20 to 40"	0.42
Saltos	40	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) < 20" depth	1.00
412:							
Tajea	45	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.50	Bedrock (hard) < 40" depth	1.00	Shrink-swell (LEP 3-6)	0.50
		Bedrock (hard) from 20 to 40"	0.42	Shrink-swell (LEP 3-6)	0.50	Bedrock (hard) from 20 to 40"	0.42
Saltos	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) < 20" depth	1.00

Table 11a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without basements: Limitation	Value	Dwellings with basements: Limitation	Value	Small commercial buildings: Limitation	Value
420:							
Bellyspring	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
				Bedrock (hard) from 40 to 60"	0.38		
Saltos	25	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) < 20" depth	1.00
Rock outcrop	20	Not Rated		Not Rated		Not Rated	
430:							
Saucito	40	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) < 20" depth	1.00
		Fragments (>3") 25 to 50%	0.02	Fragments (>3") 25 to 50%	0.02	Fragments (>3") 25 to 50%	0.02
Akad	25	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) from 20 to 40"	0.84	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) from 20 to 40"	0.84
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
Rock outcrop	20	Not Rated		Not Rated		Not Rated	
440:							
Bellyspring	35	Moderate		Moderate		Severe	
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
				Bedrock (soft) from 20 to 40"	0.42		
Panoza	25	Moderate		Moderate		Severe	
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes > 8%	1.00
				Bedrock (soft) from 20 to 40"	0.42		
441:							
Bellyspring	35	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
				Bedrock (soft) from 20 to 40"	0.42		

Table 11a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without basements: Limitation	Value	Dwellings with basements: Limitation	Value	Small commercial buildings: Limitation	Value
441:							
Panoza	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
				Bedrock (soft) from 20 to 40"	0.42		
442:							
Bellyspring	35	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
				Bedrock (soft) from 20 to 40"	0.42		
Panoza	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
				Bedrock (soft) from 20 to 40"	0.42		
443:							
Bellyspring	35	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
				Bedrock (soft) from 20 to 40"	0.42		
Beam	25	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00
Panoza	25	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
				Bedrock (soft) from 20 to 40"	0.42		
445:							
Bellyspring	35	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
				Bedrock (soft) from 20 to 40"	0.42		
Xerorthents	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) from 20 to 40"	0.42	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) from 20 to 40"	0.42

Table 11a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without basements: Limitation	Value	Dwellings with basements: Limitation	Value	Small commercial buildings: Limitation	Value
445:							
Panoza	15	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
				Bedrock (soft) from 20 to 40"	0.42		
450:							
Botella	75	Moderate		Moderate		Moderate	
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
						Slopes from 4% to 8%	0.47
460:							
Camatta	75	Severe		Severe		Severe	
		Thin pan <= 20"	1.00	Pan (thin) < 20" depth	1.00	Thin pan <= 20"	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
470:							
Botella	85	Moderate		Moderate		Moderate	
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
						Slopes from 4% to 8%	0.47
474:							
Elder	80	Slight		Slight		Slight	
475:							
Elder	80	Slight		Slight		Moderate	
						Slopes from 4% to 8%	0.47
480:							
Metz	70	Severe		Severe		Severe	
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >= rare	1.00
490:							
Wasioja	75	Moderate		Moderate		Moderate	
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
491:							
Wasioja	85	Moderate		Moderate		Moderate	
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
495:							
Wasioja	60	Moderate		Moderate		Moderate	
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
Polonio	20	Moderate		Moderate		Moderate	
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50

Table 11a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
497:							
Wasioja	35	Moderate		Moderate		Moderate	
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
Pinspring	30	Slight		Slight		Slight	
Yeguas	15	Moderate		Moderate		Moderate	
		Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50	Shrink-swell (LEP 3-6)	0.50
512:							
Shimmon	80	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
				Bedrock (soft) from 20 to 40"	0.42		
520:							
Santa Lucia	30	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) from 20 to 40"	0.42	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) from 20 to 40"	0.42
521:							
Santa Lucia	80	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) from 20 to 40"	0.42	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) from 20 to 40"	0.42
522:							
Santa Lucia	55	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) from 20 to 40"	0.42	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) from 20 to 40"	0.42
531:							
Saltos	45	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) < 20" depth	1.00
Millsholm	35	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00	Bedrock (hard) < 20" depth	1.00
561:							
Chanac	85	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
562:							
Chanac	90	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00

Table 11a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct.	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Limitation	Value	Limitation	Value	Limitation	Value
900:							
Pits	100	Not Rated		Not Rated		Not Rated	
905:							
Xerofluvents	50	Severe		Severe		Severe	
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >= rare	1.00
				Wetness from 2.5' to 6' depth	0.73		
Riverwash	30	Severe		Severe		Severe	
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >= rare	1.00
		Wetness < 18" depth	1.00	Wetness < 2.5' depth	1.00	Wetness < 18" depth	1.00
906:							
Xerofluvents	85	Severe		Severe		Severe	
		Ponded (any duration)	1.00	Ponded (any duration)	1.00	Ponded (any duration)	1.00
		Flooding >= rare	1.00	Flooding >= rare	1.00	Flooding >= rare	1.00
		Shrink-swell (LEP 3-6)	0.50	Wetness from 2.5' to 6' depth	0.73	Shrink-swell (LEP 3-6)	0.50
908:							
Xerorthents	85	Severe		Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 8%	1.00
				Bedrock (hard) from 40 to 60"	0.38		
910:							
Playas	80	Not Rated		Not Rated		Not Rated	
911:							
Playas	85	Not Rated		Not Rated		Not Rated	
912:							
Water	100	Not Rated		Not Rated		Not Rated	

The interpretation for dwellings without basements evaluates the following soil properties at varying depths in the soil: flooding, ponding, wetness, slope, subsidence of organic soils, shrink-swell potential expressed as linear extensibility percent (LEP), organic Unified classes for low soil strength (PT, OL, and OH), depth to hard or soft bedrock, depth to a thick or thin cemented pan, and fragments greater than 3 inches in size.

The interpretation for dwellings with basements evaluates the following soil properties at varying depths in the soil: flooding, ponding, wetness, slope, subsidence of organic soils, shrink-swell potential expressed as linear extensibility percent (LEP), organic Unified classes for low strength (PT, OL, and OH), depth to hard or soft bedrock, depth to a thick or thin cemented pan, and fragments greater than 3 inches in size.

The interpretation for small commercial buildings evaluates the following soil properties at varying depths in the soil: flooding, ponding, wetness, slope, subsidence of organic soils, shrink-swell potential expressed as linear extensibility percent (LEP), depth to hard or soft bedrock, depth to a thick or thin cemented pan, and fragments greater than 3 inches in size.

Table 11b.--Building Site Development (Part 2)

[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 potential limitation. The rating is based on the limitation with the highest value. Only the three highest value limitations are listed. There may be more limitations. Fine-earth fractions and coarse fragments are reported on a weight basis. A brief summary of the rating criteria and of the abbreviations used in describing the limitations is given at the end of the table]

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
100:					
Balcom	75	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		AASHTO GI 5-8 (soil strength)	0.22	Bedrock (soft) from 20 to 40"	0.42
				Caving potential is low	0.10
101:					
Balcom	45	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		AASHTO GI 5-8 (soil strength)	0.22	Bedrock (soft) from 20 to 40"	0.42
				Caving potential is low	0.10
Nacimiento	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		AASHTO GI > 8 (soil strength)	1.00	Bedrock (soft) from 20 to 40"	0.42
		Shrink-swell (LEP 3-6)	0.50	Caving potential is low	0.10
102:					
Balcom	45	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		AASHTO GI 5-8 (soil strength)	0.22	Bedrock (soft) from 20 to 40"	0.42
				Caving potential is low	0.10
Nacimiento	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		AASHTO GI > 8 (soil strength)	1.00	Bedrock (soft) from 20 to 40"	0.42
		Shrink-swell (LEP 3-6)	0.50	Caving potential is low	0.10
103:					
Balcom	45	Moderate		Moderate	
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63
		AASHTO GI 5-8 (soil strength)	0.22	Bedrock (soft) from 20 to 40"	0.42
				Caving potential is low	0.10
Nacimiento	30	Severe		Moderate	
		AASHTO GI > 8 (soil strength)	1.00	Slopes 8 to 15%	0.63
		Slopes 8 to 15%	0.63	Bedrock (soft) from 20 to 40"	0.42
		Shrink-swell (LEP 3-6)	0.50	Caving potential is low	0.10
109:					
Capay	80	Severe		Severe	
		AASHTO GI > 8 (soil strength)	1.00	Caving potential	1.00
		Shrink-swell (LEP >6)	1.00	Clay from 40 to 60%	0.50
110:					
Capay	80	Severe		Severe	
		AASHTO GI > 8 (soil strength)	1.00	Caving potential	1.00
		Shrink-swell (LEP >6)	1.00	Clay from 40 to 60%	0.50
112:					
Calleguas	45	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00
				Caving potential is low	0.10

Table 11b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets: Limitation	Value	Shallow excavations: Limitation	Value
112:					
Balcom----------------	35	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		AASHTO GI 5-8 (soil strength)	0.22	Bedrock (soft) from 20 to 40"	0.42
				Caving potential is low	0.10
114:					
Calleguas-------------	55	Severe		Severe	
		Slopes > 15%	1.00	Bedrock (soft) < 20" depth	1.00
		Bedrock (soft) < 20" depth	1.00	Slopes > 15%	1.00
				Caving potential is low	0.10
Nacimiento------------	20	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		AASHTO GI > 8 (soil strength)	1.00	Bedrock (soft) from 20 to 40"	0.42
		Shrink-swell (LEP 3-6)	0.50	Caving potential is low	0.10
120:					
Hillbrick-------------	65	Severe		Severe	
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00
		Bedrock (hard) < 20" depth	1.00	Slopes > 15%	1.00
				Caving potential is low	0.10
Rock outcrop----------	15	Not rated		Not rated	
121:					
Hillbrick-------------	65	Severe		Severe	
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00
		Bedrock (hard) < 20" depth	1.00	Slopes > 15%	1.00
				Caving potential is low	0.10
Rock outcrop----------	15	Not rated		Not rated	
123:					
Lithic Torriorthents--	30	Severe		Severe	
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00
		Bedrock (hard) < 20" depth	1.00	Slopes > 15%	1.00
				Caving potential is low	0.10
Semper----------------	25	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Bedrock (soft) from 20 to 40"	0.42
				Caving potential is low	0.10
Rock outcrop----------	20	Not rated		Not rated	
129:					
Kilmer----------------	40	Moderate		Severe	
		Slopes 8 to 15%	0.63	Bedrock (hard) < 40" depth	1.00
		Shrink-swell (LEP 3-6)	0.50	Slopes 8 to 15%	0.63
		Bedrock (hard) from 20 to 40"	0.42	Caving potential is low	0.10
Hillbrick-------------	35	Severe		Severe	
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63
				Caving potential is low	0.10
130:					
Kilmer----------------	40	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Shrink-swell (LEP 3-6)	0.50	Bedrock (hard) < 40" depth	1.00
		Bedrock (hard) from 20 to 40"	0.42	Caving potential is low	0.10

Table 11b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets: Limitation	Value	Shallow excavations: Limitation	Value
130:					
Hillbrick	35	Severe		Severe	
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00
		Bedrock (hard) < 20" depth	1.00	Slopes > 15%	1.00
				Caving potential is low	0.10
131:					
Kilmer	40	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Shrink-swell (LEP 3-6)	0.50	Bedrock (hard) < 40" depth	1.00
		Bedrock (hard) from 20 to 40"	0.42	Caving potential is low	0.10
Hillbrick	35	Severe		Severe	
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00
		Bedrock (hard) < 20" depth	1.00	Slopes > 15%	1.00
				Caving potential is low	0.10
134:					
Kilmer	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Shrink-swell (LEP 3-6)	0.50	Bedrock (hard) < 40" depth	1.00
		Bedrock (hard) from 20 to 40"	0.42	Caving potential is low	0.10
Nacimiento	25	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		AASHTO GI > 8 (soil strength)	1.00	Bedrock (soft) from 20 to 40"	0.42
		Shrink-swell (LEP 3-6)	0.50	Caving potential is low	0.10
Aido	15	Severe		Severe	
		AASHTO GI > 8 (soil strength)	1.00	Slopes > 15%	1.00
		Slopes > 15%	1.00	Caving potential	1.00
		Shrink-swell (LEP >6)	1.00	Clay from 40 to 60%	0.50
140:					
Choice	80	Severe		Severe	
		AASHTO GI > 8 (soil strength)	1.00	Slopes > 15%	1.00
		Slopes > 15%	1.00	Clay from 40 to 60%	0.50
		Shrink-swell (LEP >6)	1.00	Caving potential is low	0.10
149:					
San Emigdio	80	Slight		Moderate	
				Caving potential is low	0.10
150:					
San Emigdio	80	Slight		Moderate	
				Caving potential is low	0.10
154:					
San Emigdio	85	Slight		Moderate	
				Caving potential is low	0.10
155:					
San Emigdio	85	Slight		Moderate	
				Caving potential is low	0.10
159:					
Sorrento	85	Slight		Moderate	
				Caving potential is low	0.10
160:					
Sorrento	85	Slight		Moderate	
				Caving potential is low	0.10

Table 11b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets: Limitation	Value	Shallow excavations: Limitation	Value
169:					
Polonio---------------	75	Severe		Moderate	
		AASHTO GI > 8 (soil strength)	1.00	Caving potential is low	0.10
		Shrink-swell (LEP 3-6)	0.50		
170:					
Polonio---------------	65	Severe		Moderate	
		AASHTO GI > 8 (soil strength)	1.00	Caving potential is low	0.10
		Shrink-swell (LEP 3-6)	0.50		
173:					
Polonio---------------	85	Slight		Severe	
				Caving potential	1.00
174:					
Polonio---------------	50	Severe		Moderate	
		AASHTO GI > 8 (soil strength)	1.00	Caving potential is low	0.10
		Shrink-swell (LEP 3-6)	0.50		
Thomhill--------------	30	Severe		Moderate	
		AASHTO GI > 8 (soil strength)	1.00	Caving potential is low	0.10
		Shrink-swell (LEP 3-6)	0.50		
175:					
Polonio---------------	50	Severe		Moderate	
		AASHTO GI > 8 (soil strength)	1.00	Caving potential is low	0.10
		Shrink-swell (LEP 3-6)	0.50		
Thomhill--------------	30	Severe		Moderate	
		AASHTO GI > 8 (soil strength)	1.00	Caving potential is low	0.10
		Shrink-swell (LEP 3-6)	0.50		
179:					
Padres----------------	70	Slight		Severe	
				Caving potential	1.00
180:					
Padres----------------	65	Slight		Severe	
				Caving potential	1.00
182:					
Oceano----------------	50	Slight		Severe	
				Caving potential	1.00
190:					
Reward----------------	70	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Caving potential is low	0.10
191:					
Reward----------------	70	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Caving potential is low	0.10
200:					
Aramburu--------------	70	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Bedrock (hard) from 20 to 40"	0.42	Bedrock (hard) < 40" depth	1.00
				Caving potential is low	0.10
201:					
Aramburu--------------	65	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Bedrock (hard) from 20 to 40"	0.42	Bedrock (hard) < 40" depth	1.00
				Caving potential is low	0.10

Table 11b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets: Limitation	Value	Shallow excavations: Limitation	Value
202:					
Aramburu	65	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Bedrock (hard) from 20 to 40"	0.42	Bedrock (hard) < 40" depth	1.00
				Caving potential is low	0.10
204:					
Aramburu	40	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Bedrock (hard) from 20 to 40"	0.42	Bedrock (hard) < 40" depth	1.00
				Caving potential is low	0.10
Temblor	35	Severe		Severe	
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00
		Bedrock (hard) < 20" depth	1.00	Slopes > 15%	1.00
				Caving potential is low	0.10
205:					
Aramburu	35	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Bedrock (hard) from 20 to 40"	0.42	Bedrock (hard) < 40" depth	1.00
				Caving potential is low	0.10
Temblor	35	Severe		Severe	
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00
		Bedrock (hard) < 20" depth	1.00	Slopes > 15%	1.00
				Caving potential is low	0.10
218:					
Seaback	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00
				Caving potential is low	0.10
Calleguas	25	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00
				Caving potential is low	0.10
Panoza	20	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Bedrock (soft) from 20 to 40"	0.42
				Caving potential is low	0.10
219:					
Xerorthents	50	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Bedrock (hard) from 20 to 40"	0.42	Bedrock (hard) < 40" depth	1.00
				Caving potential is low	0.10
Badlands	35	Not rated		Not rated	
220:					
Beam	35	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00
				Caving potential is low	0.10
Panoza	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Bedrock (soft) from 20 to 40"	0.42
				Caving potential is low	0.10

Table 11b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets: Limitation	Value	Shallow excavations: Limitation	Value
220:					
Hillbrick-------------	15	Severe		Severe	
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00
		Bedrock (hard) < 20" depth	1.00	Slopes > 15%	1.00
				Caving potential is low	0.10
221:					
Beam------------------	35	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00
				Caving potential is low	0.10
Panoza----------------	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Bedrock (soft) from 20 to 40"	0.42
				Caving potential is low	0.10
Hillbrick-------------	15	Severe		Severe	
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00
		Bedrock (hard) < 20" depth	1.00	Slopes > 15%	1.00
				Caving potential is low	0.10
222:					
Beam------------------	35	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00
				Caving potential is low	0.10
Panoza----------------	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Bedrock (soft) from 20 to 40"	0.42
				Caving potential is low	0.10
Hillbrick-------------	15	Severe		Severe	
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00
		Bedrock (hard) < 20" depth	1.00	Slopes > 15%	1.00
				Caving potential is low	0.10
227:					
Beam------------------	40	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00
				Caving potential is low	0.10
Panoza----------------	35	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") 25 to 50%	0.20	Bedrock (soft) from 20 to 40"	0.42
				Fragments (>3") 25 to 50%	0.20
228:					
Beam------------------	40	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00
				Caving potential is low	0.10
Panoza----------------	35	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Fragments (>3") 25 to 50%	0.20	Bedrock (soft) from 20 to 40"	0.42
				Fragments (>3") 25 to 50%	0.20
229:					
Seaback---------------	40	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00
				Caving potential is low	0.10

Table 11b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
229:					
San Timoteo	35	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Bedrock (soft) from 20 to 40"	0.42
				Caving potential is low	0.10
230:					
Padres	50	Slight		Moderate	
				Caving potential is low	0.10
Wasioja	35	Moderate		Severe	
		Shrink-swell (LEP 3-6)	0.50	Caving potential	1.00
240:					
Panoza	40	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Bedrock (soft) from 20 to 40"	0.42
				Caving potential is low	0.10
Beam	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00
				Caving potential is low	0.10
241:					
Panoza	40	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Bedrock (soft) from 20 to 40"	0.42
				Caving potential is low	0.10
Beam	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00
				Caving potential is low	0.10
242:					
Panoza	40	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Bedrock (soft) from 20 to 40"	0.42
				Caving potential is low	0.10
Beam	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00
				Caving potential is low	0.10
248:					
Pyxo	55	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Shrink-swell (LEP 3-6)	0.50	Caving potential is low	0.10
				Bedrock (soft) from 20 to 40"	0.01
Cochora	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00
				Caving potential is low	0.10
249:					
Xeric Torriorthents	50	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Caving potential	1.00
				Bedrock (hard) < 40" depth	1.00
Badlands	25	Not rated		Not rated	

Table 11b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets: Limitation	Value	Shallow excavations: Limitation	Value
250:					
Pyxo	40	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Shrink-swell (LEP 3-6)	0.50	Bedrock (soft) from 20 to 40"	0.64
				Caving potential is low	0.10
Cochora	25	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00
				Caving potential is low	0.10
Badlands	15	Not rated		Not rated	
251:					
Nacimiento	75	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		AASHTO GI > 8 (soil strength)	1.00	Bedrock (soft) from 20 to 40"	0.42
		Shrink-swell (LEP 3-6)	0.50	Caving potential is low	0.10
252:					
Nacimiento	75	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		AASHTO GI > 8 (soil strength)	1.00	Bedrock (soft) from 20 to 40"	0.42
		Shrink-swell (LEP 3-6)	0.50	Caving potential is low	0.10
261:					
Aido	85	Severe		Severe	
		AASHTO GI > 8 (soil strength)	1.00	Slopes > 15%	1.00
		Slopes > 15%	1.00	Caving potential	1.00
		Shrink-swell (LEP >6)	1.00	Clay from 40 to 60%	0.50
262:					
Aido	80	Severe		Severe	
		AASHTO GI > 8 (soil strength)	1.00	Slopes > 15%	1.00
		Slopes > 15%	1.00	Caving potential	1.00
		Shrink-swell (LEP >6)	1.00	Clay from 40 to 60%	0.50
263:					
Aido	85	Severe		Severe	
		AASHTO GI > 8 (soil strength)	1.00	Slopes > 15%	1.00
		Slopes > 15%	1.00	Caving potential	1.00
		Shrink-swell (LEP >6)	1.00	Clay from 40 to 60%	0.50
270:					
Ayar	80	Severe		Severe	
		AASHTO GI > 8 (soil strength)	1.00	Caving potential	1.00
		Shrink-swell (LEP >6)	1.00	Clay from 40 to 60%	0.12
271:					
Ayar	80	Severe		Severe	
		AASHTO GI > 8 (soil strength)	1.00	Slopes > 15%	1.00
		Slopes > 15%	1.00	Caving potential	1.00
		Shrink-swell (LEP >6)	1.00	Clay from 40 to 60%	0.12
274:					
Ayar	30	Severe		Severe	
		AASHTO GI > 8 (soil strength)	1.00	Slopes > 15%	1.00
		Slopes > 15%	1.00	Caving potential	1.00
		Shrink-swell (LEP >6)	1.00	Clay from 40 to 60%	0.12
Hillbrick	30	Severe		Severe	
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00
		Bedrock (hard) < 20" depth	1.00	Slopes > 15%	1.00
				Caving potential is low	0.10

Table 11b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
274:					
Aido------------------	20	Severe		Severe	
		AASHTO GI > 8 (soil strength)	1.00	Slopes > 15%	1.00
		Slopes > 15%	1.00	Caving potential	1.00
		Shrink-swell (LEP >6)	1.00	Clay from 40 to 60%	0.50
275:					
Ayar------------------	30	Severe		Severe	
		AASHTO GI > 8 (soil strength)	1.00	Slopes > 15%	1.00
		Slopes > 15%	1.00	Caving potential	1.00
		Shrink-swell (LEP >6)	1.00	Clay from 40 to 60%	0.12
Hillbrick-------------	30	Severe		Severe	
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00
		Bedrock (hard) < 20" depth	1.00	Slopes > 15%	1.00
				Caving potential is low	0.10
Aido------------------	20	Severe		Severe	
		AASHTO GI > 8 (soil strength)	1.00	Slopes > 15%	1.00
		Slopes > 15%	1.00	Caving potential	1.00
		Shrink-swell (LEP >6)	1.00	Clay from 40 to 60%	0.50
280:					
Seaback---------------	35	Moderate		Severe	
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63
				Caving potential is low	0.10
Panoza----------------	30	Moderate		Moderate	
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63
				Bedrock (soft) from 20 to 40"	0.42
				Caving potential is low	0.10
Jenks-----------------	15	Severe		Moderate	
		AASHTO GI > 8 (soil strength)	1.00	Slopes 8 to 15%	0.63
		Slopes 8 to 15%	0.63	Bedrock (soft) from 20 to 40"	0.42
		Shrink-swell (LEP 3-6)	0.50	Caving potential is low	0.10
281:					
Seaback---------------	35	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00
				Caving potential is low	0.10
Panoza----------------	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Bedrock (soft) from 20 to 40"	0.42
				Caving potential is low	0.10
Jenks-----------------	15	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		AASHTO GI > 8 (soil strength)	1.00	Bedrock (soft) from 20 to 40"	0.42
		Shrink-swell (LEP 3-6)	0.50	Caving potential is low	0.10
282:					
Seaback---------------	35	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00
				Caving potential is low	0.10
Panoza----------------	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Bedrock (soft) from 20 to 40"	0.42
				Caving potential is low	0.10

Table 11b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
282:					
Jenks-----------------	15	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		AASHTO GI > 8 (soil strength)	1.00	Bedrock (soft) from 20 to 40"	0.42
		Shrink-swell (LEP 3-6)	0.50	Caving potential is low	0.10
290:					
San Timoteo-----------	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Bedrock (soft) from 20 to 40"	0.42
				Caving potential is low	0.10
San Andreas-----------	25	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Bedrock (soft) from 20 to 40"	0.42
				Caving potential is low	0.10
Bellyspring-----------	20	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		AASHTO GI 5-8 (soil strength)	0.78	Bedrock (soft) from 20 to 40"	0.42
		Shrink-swell (LEP 3-6)	0.50	Caving potential is low	0.10
291:					
San Timoteo-----------	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Bedrock (soft) from 20 to 40"	0.42
				Caving potential is low	0.10
San Andreas-----------	25	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Bedrock (soft) from 20 to 40"	0.42
				Caving potential is low	0.10
Bellyspring-----------	20	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		AASHTO GI 5-8 (soil strength)	0.78	Bedrock (soft) from 20 to 40"	0.42
		Shrink-swell (LEP 3-6)	0.50	Caving potential is low	0.10
292:					
San Timoteo-----------	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Bedrock (soft) from 20 to 40"	0.42
				Caving potential is low	0.10
San Andreas-----------	25	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Bedrock (soft) from 20 to 40"	0.42
				Caving potential is low	0.10
Bellyspring-----------	20	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		AASHTO GI 5-8 (soil strength)	0.78	Bedrock (soft) from 20 to 40"	0.42
		Shrink-swell (LEP 3-6)	0.50	Caving potential is low	0.10
301:					
Arbuckle--------------	70	Slight		Severe	
				Caving potential	1.00
302:					
Arbuckle--------------	70	Moderate		Severe	
		Slopes 8 to 15%	0.63	Caving potential	1.00
				Slopes 8 to 15%	0.63

Table 11b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
303:					
Arbuckle	70	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Caving potential	1.00
304:					
Arbuckle	70	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Caving potential	1.00
306:					
Arbuckle	70	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Caving potential	1.00
307:					
Arbuckle	70	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Caving potential	1.00
310:					
Yeguas	40	Severe		Severe	
		AASHTO GI > 8 (soil strength)	1.00	Caving potential	1.00
		Shrink-swell (LEP 3-6)	0.50		
Pinspring	40	Severe		Moderate	
		AASHTO GI > 8 (soil strength)	1.00	Caving potential is low	0.10
		Shrink-swell (LEP 3-6)	0.50		
311:					
Yeguas	40	Severe		Severe	
		AASHTO GI > 8 (soil strength)	1.00	Caving potential	1.00
		Shrink-swell (LEP 3-6)	0.50		
Pinspring	40	Severe		Moderate	
		AASHTO GI > 8 (soil strength)	1.00	Caving potential is low	0.10
		Shrink-swell (LEP 3-6)	0.50		
321:					
Thomhill	80	Severe		Moderate	
		AASHTO GI > 8 (soil strength)	1.00	Caving potential is low	0.10
		Shrink-swell (LEP 3-6)	0.50		
330:					
Jenks	80	Severe		Moderate	
		AASHTO GI > 8 (soil strength)	1.00	Bedrock (soft) from 20 to 40"	0.42
		Shrink-swell (LEP 3-6)	0.50	Caving potential is low	0.10
339:					
Arnold	30	Severe		Severe	
		Slopes > 15%	1.00	Caving potential	1.00
				Slopes > 15%	1.00
San Andreas	20	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Bedrock (soft) from 20 to 40"	0.42
				Caving potential is low	0.10
340:					
Arnold	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Caving potential	1.00

Table 11b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets: Limitation	Value	Shallow excavations: Limitation	Value
340:					
San Andreas-----------	20	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Bedrock (soft) from 20 to 40"	0.42
				Caving potential is low	0.10
350:					
Cieneba---------------	75	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00
				Caving potential is low	0.10
360:					
Chicote---------------	40	Severe		Severe	
		AASHTO GI > 8 (soil strength)	1.00	Ponded (any duration)	1.00
		Shrink-swell (LEP >6)	1.00	Clay from 40 to 60%	0.50
		Ponded (any duration)	1.00	Caving potential is low	0.10
Chicote---------------	40	Severe		Severe	
		Ponded (any duration)	1.00	Ponded (any duration)	1.00
		AASHTO GI > 8 (soil strength)	1.00	Clay from 40 to 60%	0.50
		Flooding = rare	0.50	Caving potential is low	0.10
361:					
Chicote---------------	40	Severe		Severe	
		AASHTO GI > 8 (soil strength)	1.00	Ponded (any duration)	1.00
		Shrink-swell (LEP >6)	1.00	Clay from 40 to 60%	0.50
		Ponded (any duration)	1.00	Caving potential is low	0.10
Chicote---------------	40	Severe		Severe	
		Ponded (any duration)	1.00	Ponded (any duration)	1.00
		AASHTO GI > 8 (soil strength)	1.00	Clay from 40 to 60%	0.50
		Flooding = rare	0.50	Caving potential is low	0.10
362:					
Chicote---------------	40	Severe		Severe	
		AASHTO GI > 8 (soil strength)	1.00	Ponded (any duration)	1.00
		Shrink-swell (LEP >6)	1.00	Clay from 40 to 60%	0.50
		Ponded (any duration)	1.00	Caving potential is low	0.10
Chicote---------------	40	Severe		Severe	
		Ponded (any duration)	1.00	Ponded (any duration)	1.00
		AASHTO GI > 8 (soil strength)	1.00	Clay from 40 to 60%	0.50
		Flooding = rare	0.50	Caving potential is low	0.10
371:					
Semper----------------	50	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Bedrock (soft) from 20 to 40"	0.42
				Caving potential is low	0.10
372:					
Semper----------------	65	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Bedrock (soft) from 20 to 40"	0.42
				Caving potential is low	0.10
375:					
Semper----------------	40	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Bedrock (soft) from 20 to 40"	0.42
				Caving potential is low	0.10
Badlands--------------	25	Not rated		Not rated	

Table 11b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets: Limitation	Value	Shallow excavations: Limitation	Value
380:					
Muranch	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Bedrock (hard) from 20 to 40"	0.42	Caving potential	1.00
				Bedrock (hard) < 40" depth	1.00
Xerorthents	25	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Bedrock (hard) from 20 to 40"	0.42	Bedrock (hard) < 40" depth	1.00
				Caving potential is low	0.10
Rock outcrop	20	Not rated		Not rated	
388:					
Rock outcrop	50	Not rated		Not rated	
Gaviota	25	Severe		Severe	
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00
		Bedrock (hard) < 20" depth	1.00	Slopes > 15%	1.00
				Caving potential is low	0.10
391:					
Rock outcrop	35	Not rated		Not rated	
Lithic Torriorthents	30	Severe		Severe	
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00
		Bedrock (hard) < 20" depth	1.00	Slopes > 15%	1.00
				Caving potential is low	0.10
401:					
Godde	40	Severe		Severe	
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00
		Bedrock (hard) < 20" depth	1.00	Slopes > 15%	1.00
				Caving potential is low	0.10
Xerorthents	20	Severe		Severe	
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00
		Bedrock (hard) < 20" depth	1.00	Slopes > 15%	1.00
				Caving potential is low	0.10
Rock outcrop	15	Not rated		Not rated	
408:					
Gaviota	35	Severe		Severe	
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00
		Bedrock (hard) < 20" depth	1.00	Slopes > 15%	1.00
				Caving potential is low	0.10
San Andreas	25	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Bedrock (soft) from 20 to 40"	0.42
				Caving potential is low	0.10
409:					
Gaviota	35	Severe		Severe	
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00
		Bedrock (hard) < 20" depth	1.00	Slopes > 15%	1.00
				Caving potential is low	0.10
Saltos	25	Severe		Severe	
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Caving potential is low	0.10
Rock outcrop	15	Not rated		Not rated	

Table 11b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
410:					
Gaviota---------------	40	Severe		Severe	
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00
		Bedrock (hard) < 20" depth	1.00	Slopes > 15%	1.00
				Caving potential is low	0.10
Rock outcrop----------	30	Not rated		Not rated	
411:					
Tajea-----------------	40	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		AASHTO GI > 8 (soil strength)	1.00	Caving potential	1.00
		Shrink-swell (LEP 3-6)	0.50	Bedrock (hard) < 40" depth	1.00
Saltos----------------	40	Severe		Severe	
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Caving potential is low	0.10
412:					
Tajea-----------------	45	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		AASHTO GI > 8 (soil strength)	1.00	Caving potential	1.00
		Shrink-swell (LEP 3-6)	0.50	Bedrock (hard) < 40" depth	1.00
Saltos----------------	30	Severe		Severe	
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Caving potential is low	0.10
420:					
Bellyspring-----------	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Shrink-swell (LEP 3-6)	0.50	Caving potential	1.00
				Bedrock (hard) from 40 to 60"	0.38
Saltos----------------	25	Severe		Severe	
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Caving potential is low	0.10
Rock outcrop----------	20	Not rated		Not rated	
430:					
Saucito---------------	40	Severe		Severe	
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00
		Bedrock (hard) < 20" depth	1.00	Slopes > 15%	1.00
		Fragments (>3") 25 to 50%	0.02	Caving potential is low	0.10
Akad------------------	25	Severe		Severe	
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00
		Bedrock (hard) from 20 to 40"	0.84	Slopes > 15%	1.00
		Shrink-swell (LEP 3-6)	0.50	Caving potential	1.00
Rock outcrop----------	20	Not rated		Not rated	
440:					
Bellyspring-----------	35	Moderate		Severe	
		AASHTO GI 5-8 (soil strength)	0.78	Caving potential	1.00
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63
		Shrink-swell (LEP 3-6)	0.50	Bedrock (soft) from 20 to 40"	0.42
Panoza----------------	25	Moderate		Moderate	
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63
				Bedrock (soft) from 20 to 40"	0.42
				Caving potential is low	0.10

Table 11b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
441:					
Bellyspring-----------	35	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		AASHTO GI 5-8 (soil strength)	0.78	Caving potential	1.00
		Shrink-swell (LEP 3-6)	0.50	Bedrock (soft) from 20 to 40"	0.42
Panoza----------------	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Bedrock (soft) from 20 to 40"	0.42
				Caving potential is low	0.10
442:					
Bellyspring-----------	35	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		AASHTO GI 5-8 (soil strength)	0.78	Caving potential	1.00
		Shrink-swell (LEP 3-6)	0.50	Bedrock (soft) from 20 to 40"	0.42
Panoza----------------	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Bedrock (soft) from 20 to 40"	0.42
				Caving potential is low	0.10
443:					
Bellyspring-----------	35	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		AASHTO GI 5-8 (soil strength)	0.78	Caving potential	1.00
		Shrink-swell (LEP 3-6)	0.50	Bedrock (soft) from 20 to 40"	0.42
Beam------------------	25	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Bedrock (soft) < 20" depth	1.00	Bedrock (soft) < 20" depth	1.00
				Caving potential is low	0.10
Panoza----------------	25	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Bedrock (soft) from 20 to 40"	0.42
				Caving potential is low	0.10
445:					
Bellyspring-----------	35	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		AASHTO GI 5-8 (soil strength)	0.78	Caving potential	1.00
		Shrink-swell (LEP 3-6)	0.50	Bedrock (soft) from 20 to 40"	0.42
Xerorthents-----------	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Bedrock (hard) from 20 to 40"	0.42	Bedrock (hard) < 40" depth	1.00
				Caving potential is low	0.10
Panoza----------------	15	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Bedrock (soft) from 20 to 40"	0.42
				Caving potential is low	0.10
450:					
Botella---------------	75	Moderate		Moderate	
		Shrink-swell (LEP 3-6)	0.50	Caving potential is low	0.10
460:					
Camatta---------------	75	Severe		Severe	
		Thin pan <= 20"	1.00	Depth to pan < 40"	1.00
		Slopes > 15%	1.00	Pan (thin) < 20" depth	1.00
				Slopes > 15%	1.00

Table 11b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
470:					
Botella---------------	85	Moderate		Moderate	
		Shrink-swell (LEP 3-6)	0.50	Caving potential is low	0.10
474:					
Elder-----------------	80	Slight		Moderate	
				Caving potential is low	0.10
475:					
Elder-----------------	80	Slight		Moderate	
				Caving potential is low	0.10
480:					
Metz------------------	70	Moderate		Severe	
		Flooding = rare	0.50	Caving potential	1.00
490:					
Wasioja---------------	75	Moderate		Moderate	
		Shrink-swell (LEP 3-6)	0.50	Caving potential is low	0.10
		AASHTO GI 5-8 (soil strength)	0.22		
491:					
Wasioja---------------	85	Moderate		Moderate	
		AASHTO GI 5-8 (soil strength)	0.78	Caving potential is low	0.10
		Shrink-swell (LEP 3-6)	0.50		
495:					
Wasioja---------------	60	Moderate		Moderate	
		AASHTO GI 5-8 (soil strength)	0.78	Caving potential is low	0.10
		Shrink-swell (LEP 3-6)	0.50		
Polonio---------------	20	Severe		Moderate	
		AASHTO GI > 8 (soil strength)	1.00	Caving potential is low	0.10
		Shrink-swell (LEP 3-6)	0.50		
497:					
Wasioja---------------	35	Moderate		Moderate	
		Shrink-swell (LEP 3-6)	0.50	Caving potential is low	0.10
		AASHTO GI 5-8 (soil strength)	0.22		
Pinspring-------------	30	Moderate		Moderate	
		AASHTO GI 5-8 (soil strength)	0.78	Caving potential is low	0.10
Yeguas----------------	15	Severe		Severe	
		AASHTO GI > 8 (soil strength)	1.00	Caving potential	1.00
		Shrink-swell (LEP 3-6)	0.50		
512:					
Shimmon---------------	80	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Bedrock (soft) from 20 to 40"	0.42
				Caving potential is low	0.10
520:					
Santa Lucia-----------	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Bedrock (hard) from 20 to 40"	0.42	Bedrock (hard) < 40" depth	1.00
				Caving potential is low	0.10
521:					
Santa Lucia-----------	80	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Bedrock (hard) from 20 to 40"	0.42	Bedrock (hard) < 40" depth	1.00
				Caving potential is low	0.10

Table 11b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets: Limitation	Value	Shallow excavations: Limitation	Value
522:					
Santa Lucia	55	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
		Bedrock (hard) from 20 to 40"	0.42	Bedrock (hard) < 40" depth	1.00
				Caving potential is low	0.10
531:					
Saltos	45	Severe		Severe	
		Bedrock (hard) < 20" depth	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Caving potential is low	0.10
Millsholm	35	Severe		Severe	
		Slopes > 15%	1.00	Bedrock (hard) < 40" depth	1.00
		Bedrock (hard) < 20" depth	1.00	Slopes > 15%	1.00
				Caving potential is low	0.10
561:					
Chanac	85	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Caving potential is low	0.10
562:					
Chanac	90	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Caving potential is low	0.10
900:					
Pits	100	Not rated		Not rated	
905:					
Xerofluvents	50	Severe		Severe	
		Flooding >= occasional	1.00	Caving potential	1.00
				Wetness from 2.5' to 6' depth	0.73
				Very frequent flooding	0.50
Riverwash	30	Severe		Severe	
		Flooding >= occasional	1.00	Wetness < 2.5' depth	1.00
		Wetness < 12" depth	1.00	Caving potential	1.00
				Very frequent flooding	0.50
906:					
Xerofluvents	85	Severe		Severe	
		Ponded (any duration)	1.00	Ponded (any duration)	1.00
		Flooding >= occasional	1.00	Caving potential	1.00
		Shrink-swell (LEP 3-6)	0.50	Wetness from 2.5' to 6' depth	0.73
908:					
Xerorthents	85	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 15%	1.00
				Caving potential	1.00
				Bedrock (hard) from 40 to 60"	0.38
910:					
Playas	80	Not rated		Not rated	

Table 11b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct.	Local roads and streets		Shallow excavations	
		Limitation	Value	Limitation	Value
911:					
Playas----------------	85	Not rated		Not rated	
912:					
Water-----------------	100	Not rated		Not rated	

The interpretation for local roads and streets evaluates the following soil properties at varying depths in the soil: flooding, ponding, wetness, slope, organic Unified classes for low soil strength (PT, OL, and OH), amount of clay, depth to hard or soft bedrock, depth to a thick or thin cemented pan, fragments greater than 3 inches in size, soil bulk density, and the potential of the soil to cave.

The interpretation for shallow excavation evaluates the following soil properties at varying depths in the soil: flooding, ponding, wetness, slope, subsidence of organic soils, shrink-swell potential expressed as linear extensibility percent (LEP), potential frost action, depth to hard or soft bedrock, depth to a thick or thin cemented pan, fragments greater than 3 inches in size, and soil strength expressed as an AASHTO group index number (AASHTO GI).

Table 12a.--Sanitary Facilities (Part 1)

[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 potential limitation. The rating is based on the limitation with the highest value. Only the three highest value limitations are listed. There may be more limitations. Fine-earth fractions and coarse fragments are reported on a weight basis. A brief summary of the rating criteria and of the abbreviations used in describing the limitations is given at the end of the table]

Map symbol and soil name	Pct.	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
100:					
Balcom	75	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
101:					
Balcom	45	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
Nacimiento	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
102:					
Balcom	45	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
Nacimiento	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
103:					
Balcom	45	Severe		Severe	
		Depth to bedrock < 40"	1.00	Slopes > 8%	1.00
		Slopes 8 to 15%	0.63	Bedrock (soft) < 40" depth	1.00
Nacimiento	30	Severe		Severe	
		Depth to bedrock < 40"	1.00	Slopes > 8%	1.00
		Slopes 8 to 15%	0.63	Bedrock (soft) < 40" depth	1.00
109:					
Capay	80	Severe		Slight	
		Permeability < .6"/hr in 24-72"	1.00		
110:					
Capay	80	Severe		Moderate	
		Permeability < .6"/hr in 24-72"	1.00	Slopes 2 to 8%	0.67
112:					
Calleguas	45	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00		
Balcom	35	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
114:					
Calleguas	55	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Impermeable above 24"	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00		
Nacimiento	20	Severe		Severe	
		Depth to bedrock < 40"	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00	Bedrock (soft) < 40" depth	1.00

Table 12a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
120:					
Hillbrick----------------	65	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00		
Rock outcrop-------------	15	Not rated		Not rated	
121:					
Hillbrick----------------	65	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00		
Rock outcrop-------------	15	Not rated		Not rated	
123:					
Lithic Torriorthents-----	30	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00		
Semper-------------------	25	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Permeability > 2"/hr (seepage)	1.00
				Bedrock (soft) < 40" depth	1.00
Rock outcrop-------------	20	Not rated		Not rated	
129:					
Kilmer-------------------	40	Severe		Severe	
		Permeability < .6"/hr in 24-72"	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes 8 to 15%	0.63		
Hillbrick----------------	35	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Impermeable above 24"	1.00	Slopes > 8%	1.00
		Slopes 8 to 15%	0.63		
130:					
Kilmer-------------------	40	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-72"	1.00	Bedrock (hard) < 40" depth	1.00
		Depth to bedrock < 40"	1.00		
Hillbrick----------------	35	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00		
131:					
Kilmer-------------------	40	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-72"	1.00	Bedrock (hard) < 40" depth	1.00
		Depth to bedrock < 40"	1.00		
Hillbrick----------------	35	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00		

Table 12a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
134:					
Kilmer	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-72"	1.00	Bedrock (hard) < 40" depth	1.00
		Depth to bedrock < 40"	1.00		
Nacimiento	25	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
Aido	15	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
140:					
Choice	80	Severe		Severe	
		Permeability < .6"/hr in 24-72"	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00	Bedrock (soft) from 40 to 60"	0.42
		Depth to bedrock 40 - 72"	0.78		
149:					
San Emigdio	80	Slight		Severe	
				Permeability > 2"/hr (seepage)	1.00
150:					
San Emigdio	80	Slight		Severe	
				Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 8%	0.67
154:					
San Emigdio	85	Slight		Severe	
				Permeability > 2"/hr (seepage)	1.00
155:					
San Emigdio	85	Slight		Severe	
				Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 8%	0.67
159:					
Sorrento	85	Moderate		Moderate	
		Permeability from .6 - 2"/hr	0.68	Permeability .6-2"/hr (some seepage)	0.32
160:					
Sorrento	85	Moderate		Moderate	
		Permeability from .6 - 2"/hr	0.68	Slopes 2 to 8%	0.67
				Permeability .6-2"/hr (some seepage)	0.32
169:					
Polonio	75	Severe		Slight	
		Permeability < .6"/hr in 24-72"	1.00		
170:					
Polonio	65	Severe		Moderate	
		Permeability < .6"/hr in 24-72"	1.00	Slopes 2 to 8%	0.67
173:					
Polonio	85	Severe		Moderate	
		Permeability < .6"/hr in 24-72"	1.00	Slopes 2 to 8%	0.67
174:					
Polonio	50	Severe		Slight	
		Permeability < .6"/hr in 24-72"	1.00		

Table 12a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic tank absorption fields: Limitation	Value	Sewage lagoons: Limitation	Value
174:					
Thomhill-----------------	30	Moderate		Moderate	
		Permeability from .6 - 2"/hr	0.68	Permeability .6-2"/hr (some seepage)	0.32
175:					
Polonio------------------	50	Severe		Moderate	
		Permeability < .6"/hr in 24-72"	1.00	Slopes 2 to 8%	0.67
Thomhill-----------------	30	Moderate		Moderate	
		Permeability from .6 - 2"/hr	0.68	Slopes 2 to 8%	0.67
				Permeability .6-2"/hr (some seepage)	0.32
179:					
Padres-------------------	70	Moderate		Severe	
		Permeability from .6 - 2"/hr	0.50	Permeability > 2"/hr (seepage)	1.00
180:					
Padres-------------------	65	Moderate		Severe	
		Permeability from .6 - 2"/hr	0.50	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 8%	0.67
182:					
Oceano-------------------	50	Severe		Moderate	
		Permeability > 6"/hr above 60"	1.00	Slopes 2 to 8%	0.67
190:					
Reward-------------------	70	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock 40 - 72"	0.78	Bedrock (soft) from 40 to 60"	0.42
		Permeability from .6 - 2"/hr	0.50	Permeability .6-2"/hr (some seepage)	0.32
191:					
Reward-------------------	70	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock 40 - 72"	0.78	Bedrock (soft) from 40 to 60"	0.42
		Permeability from .6 - 2"/hr	0.50	Permeability .6-2"/hr (some seepage)	0.32
200:					
Aramburu-----------------	70	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
201:					
Aramburu-----------------	65	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
202:					
Aramburu-----------------	65	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
204:					
Aramburu-----------------	40	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
Temblor------------------	35	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00		

Table 12a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
205:					
Aramburu	35	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
Temblor	35	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00		
218:					
Seaback	30	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00		
Calleguas	25	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00		
Panoza	20	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Permeability from .6 - 2"/hr	0.50	Permeability .6-2"/hr (some seepage)	0.50
219:					
Xerorthents	50	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
				Permeability > 2"/hr (seepage)	1.00
Badlands	35	Not rated		Not rated	
220:					
Beam	35	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00		
Panoza	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Permeability from .6 - 2"/hr	0.50	Permeability .6-2"/hr (some seepage)	0.50
Hillbrick	15	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00		
221:					
Beam	35	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00		
Panoza	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Permeability from .6 - 2"/hr	0.50	Permeability .6-2"/hr (some seepage)	0.50

Table 12a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
221:					
Hillbrick----------------	15	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00		
222:					
Beam---------------------	35	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00		
Panoza-------------------	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Permeability from .6 - 2"/hr	0.50	Permeability .6-2"/hr (some seepage)	0.50
Hillbrick----------------	15	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00		
227:					
Beam---------------------	40	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00	Fragments (>3") 20-35%	0.22
Panoza-------------------	35	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Permeability from .6 - 2"/hr	0.50	Fragments (>3") 20-35%	0.98
228:					
Beam---------------------	40	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00	Fragments (>3") 20-35%	0.22
Panoza-------------------	35	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Permeability from .6 - 2"/hr	0.50	Fragments (>3") 20-35%	0.98
229:					
Seaback------------------	40	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00		
San Timoteo--------------	35	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Permeability > 2"/hr (seepage)	1.00
				Bedrock (soft) < 40" depth	1.00
230:					
Padres-------------------	50	Slight		Severe	
				Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 8%	0.67
Wasioja------------------	35	Severe		Severe	
		Permeability < .6"/hr in 24-72"	1.00	Permeability > 2"/hr (seepage)	1.00
		Permeability > 6"/hr above 60"	1.00	Slopes 2 to 8%	0.67

Table 12a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
240:					
Panoza	40	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Permeability from .6 - 2"/hr	0.50	Permeability .6-2"/hr (some seepage)	0.50
Beam	30	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00		
241:					
Panoza	40	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Permeability from .6 - 2"/hr	0.50	Permeability .6-2"/hr (some seepage)	0.50
Beam	30	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00		
242:					
Panoza	40	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Permeability from .6 - 2"/hr	0.50	Permeability .6-2"/hr (some seepage)	0.50
Beam	30	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00		
248:					
Pyxo	55	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Permeability from .6 - 2"/hr	0.50	Permeability .6-2"/hr (some seepage)	0.50
Cochora	30	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00	Permeability > 2"/hr (seepage)	1.00
249:					
Xeric Torriorthents	50	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Permeability > 2"/hr (seepage)	1.00
				Bedrock (hard) < 40" depth	1.00
Badlands	25	Not rated		Not rated	
		Not rated		Not rated	
250:					
Pyxo	40	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Permeability from .6 - 2"/hr	0.50	Permeability .6-2"/hr (some seepage)	0.50

Table 12a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic tank absorption fields: Limitation	Value	Sewage lagoons: Limitation	Value
250:					
Cochora------------------	25	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00		
Badlands-----------------	15	Not rated		Not rated	
251:					
Nacimiento---------------	75	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
252:					
Nacimiento---------------	75	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
261:					
Aido---------------------	85	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
262:					
Aido---------------------	80	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
263:					
Aido---------------------	85	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
270:					
Ayar---------------------	80	Severe		Moderate	
		Permeability < .6"/hr in 24-72"	1.00	Slopes 2 to 8%	0.83
		Depth to bedrock 40 - 72"	0.52	Bedrock (soft) from 40 to 60"	0.08
271:					
Ayar---------------------	80	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock 40 - 72"	0.52	Bedrock (soft) from 40 to 60"	0.08
274:					
Ayar---------------------	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock 40 - 72"	0.52	Bedrock (soft) from 40 to 60"	0.08
Hillbrick----------------	30	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00		
Aido---------------------	20	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
275:					
Ayar---------------------	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock 40 - 72"	0.52	Bedrock (soft) from 40 to 60"	0.08
Hillbrick----------------	30	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00		

Table 12a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
275:					
Aido	20	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
280:					
Seaback	35	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Impermeable above 24"	1.00	Slopes > 8%	1.00
		Slopes 8 to 15%	0.63		
Panoza	30	Severe		Severe	
		Depth to bedrock < 40"	1.00	Slopes > 8%	1.00
		Slopes 8 to 15%	0.63	Bedrock (soft) < 40" depth	1.00
		Permeability from .6 - 2"/hr	0.50	Permeability .6-2"/hr (some seepage)	0.50
Jenks	15	Severe		Severe	
		Permeability < .6"/hr in 24-72"	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Slopes 8 to 15%	0.63		
281:					
Seaback	35	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00		
Panoza	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Permeability from .6 - 2"/hr	0.50	Permeability .6-2"/hr (some seepage)	0.50
Jenks	15	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-72"	1.00	Bedrock (soft) < 40" depth	1.00
		Depth to bedrock < 40"	1.00		
282:					
Seaback	35	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00		
Panoza	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Permeability from .6 - 2"/hr	0.50	Permeability .6-2"/hr (some seepage)	0.50
Jenks	15	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-72"	1.00	Bedrock (soft) < 40" depth	1.00
		Depth to bedrock < 40"	1.00		
290:					
San Timoteo	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Permeability > 2"/hr (seepage)	1.00
				Bedrock (soft) < 40" depth	1.00
San Andreas	25	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Permeability > 2"/hr (seepage)	1.00
				Bedrock (soft) < 40" depth	1.00

Table 12a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic tank absorption fields: Limitation	Value	Sewage lagoons: Limitation	Value
290:					
Bellyspring--------------	20	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-72"	1.00	Permeability > 2"/hr (seepage)	1.00
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
291:					
San Timoteo--------------	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Permeability > 2"/hr (seepage)	1.00
				Bedrock (soft) < 40" depth	1.00
San Andreas--------------	25	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Permeability > 2"/hr (seepage)	1.00
				Bedrock (soft) < 40" depth	1.00
Bellyspring--------------	20	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-72"	1.00	Permeability > 2"/hr (seepage)	1.00
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
292:					
San Timoteo--------------	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Permeability > 2"/hr (seepage)	1.00
				Bedrock (soft) < 40" depth	1.00
San Andreas--------------	25	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Permeability > 2"/hr (seepage)	1.00
				Bedrock (soft) < 40" depth	1.00
Bellyspring--------------	20	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-72"	1.00	Permeability > 2"/hr (seepage)	1.00
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
301:					
Arbuckle-----------------	70	Severe		Severe	
		Permeability < .6"/hr in 24-72"	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 8%	0.67
302:					
Arbuckle-----------------	70	Severe		Severe	
		Permeability < .6"/hr in 24-72"	1.00	Slopes > 8%	1.00
		Slopes 8 to 15%	0.63	Permeability > 2"/hr (seepage)	1.00
303:					
Arbuckle-----------------	70	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-72"	1.00	Permeability > 2"/hr (seepage)	1.00
304:					
Arbuckle-----------------	70	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-72"	1.00	Permeability > 2"/hr (seepage)	1.00
306:					
Arbuckle-----------------	70	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-72"	1.00	Permeability > 2"/hr (seepage)	1.00

Table 12a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
307:					
Arbuckle	70	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-72"	1.00	Permeability > 2"/hr (seepage)	1.00
310:					
Yeguas	40	Severe		Severe	
		Permeability < .6"/hr in 24-72"	1.00	Permeability > 2"/hr (seepage)	1.00
Pinspring	40	Severe		Moderate	
		Permeability < .6"/hr in 24-72"	1.00	Permeability .6-2"/hr (some seepage)	0.50
311:					
Yeguas	40	Severe		Severe	
		Permeability < .6"/hr in 24-72"	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 8%	0.33
Pinspring	40	Severe		Moderate	
		Permeability < .6"/hr in 24-72"	1.00	Permeability .6-2"/hr (some seepage)	0.50
				Slopes 2 to 8%	0.33
321:					
Thomhill	80	Moderate		Moderate	
		Permeability from .6 - 2"/hr	0.68	Slopes 2 to 8%	0.33
				Permeability .6-2"/hr (some seepage)	0.32
330:					
Jenks	80	Severe		Severe	
		Permeability < .6"/hr in 24-72"	1.00	Bedrock (soft) < 40" depth	1.00
		Depth to bedrock < 40"	1.00	Slopes 2 to 8%	0.67
339:					
Arnold	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability > 6"/hr above 60"	1.00	Permeability > 2"/hr (seepage)	1.00
		Depth to bedrock 40 - 72"	0.78	Bedrock (soft) from 40 to 60"	0.42
San Andreas	20	Severe		Severe	
		Depth to bedrock < 40"	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00	Permeability > 2"/hr (seepage)	1.00
				Bedrock (soft) < 40" depth	1.00
340:					
Arnold	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability > 6"/hr above 60"	1.00	Permeability > 2"/hr (seepage)	1.00
		Depth to bedrock 40 - 72"	0.78	Bedrock (soft) from 40 to 60"	0.42
San Andreas	20	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Permeability > 2"/hr (seepage)	1.00
				Bedrock (soft) < 40" depth	1.00
350:					
Cieneba	75	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00		

Table 12a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic tank absorption fields: Limitation	Value	Sewage lagoons: Limitation	Value
360:					
Chicote, silty clay loam-	40	Severe		Severe	
		Permeability < .6"/hr in 24-72"	1.00	Ponded (any duration)	1.00
		Ponded (any duration)	1.00	Flooding = rare	0.50
		Flooding = rare	0.50		
Chicote, silt loam-------	40	Severe		Severe	
		Ponded (any duration)	1.00	Ponded (any duration)	1.00
		Permeability < .6"/hr in 24-72"	1.00	Permeability > 2"/hr (seepage)	1.00
		Flooding = rare	0.50	Flooding = rare	0.50
361:					
Chicote, silty clay loam-	40	Severe		Severe	
		Permeability < .6"/hr in 24-72"	1.00	Ponded (any duration)	1.00
		Ponded (any duration)	1.00	Flooding = rare	0.50
		Flooding = rare	0.50	Slopes 2 to 8%	0.33
Chicote, silt loam-------	40	Severe		Severe	
		Ponded (any duration)	1.00	Ponded (any duration)	1.00
		Permeability < .6"/hr in 24-72"	1.00	Permeability > 2"/hr (seepage)	1.00
		Flooding = rare	0.50	Flooding = rare	0.50
362:					
Chicote, silty clay loam-	40	Severe		Severe	
		Permeability < .6"/hr in 24-72"	1.00	Ponded (any duration)	1.00
		Ponded (any duration)	1.00	Slopes 2 to 8%	0.83
		Flooding = rare	0.50	Flooding = rare	0.50
Chicote, silt loam-------	40	Severe		Severe	
		Ponded (any duration)	1.00	Ponded (any duration)	1.00
		Permeability < .6"/hr in 24-72"	1.00	Permeability > 2"/hr (seepage)	1.00
		Flooding = rare	0.50	Slopes 2 to 8%	0.83
371:					
Semper-------------------	50	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Permeability > 2"/hr (seepage)	1.00
				Bedrock (soft) < 40" depth	1.00
372:					
Semper-------------------	65	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Permeability > 2"/hr (seepage)	1.00
				Bedrock (soft) < 40" depth	1.00
375:					
Semper-------------------	40	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Permeability > 2"/hr (seepage)	1.00
				Bedrock (soft) < 40" depth	1.00
Badlands-----------------	25	Not rated		Not rated	
380:					
Muranch------------------	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
				Permeability .6-2"/hr (some seepage)	0.50
Xerorthents--------------	25	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
				Permeability > 2"/hr (seepage)	1.00
Rock outcrop-------------	20	Not rated		Not rated	

Table 12a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
388:					
Rock outcrop-------------	50	Not rated		Not rated	
Gaviota------------------	25	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00		
391:					
Rock outcrop-------------	35	Not rated		Not rated	
Lithic Torriorthents-----	30	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00		
401:					
Godde--------------------	40	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00		
Xerorthents--------------	20	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00		
Rock outcrop-------------	15	Not rated		Not rated	
408:					
Gaviota------------------	35	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00		
San Andreas--------------	25	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Permeability > 2"/hr (seepage)	1.00
				Bedrock (soft) < 40" depth	1.00
409:					
Gaviota------------------	35	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00		
Saltos-------------------	25	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00		
Rock outcrop-------------	15	Not rated		Not rated	
410:					
Gaviota------------------	40	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00		
Rock outcrop-------------	30	Not rated		Not rated	
411:					
Tajea--------------------	40	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-72"	1.00	Bedrock (hard) < 40" depth	1.00
		Depth to bedrock < 40"	1.00		

Table 12a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic tank absorption fields: Limitation	Value	Sewage lagoons: Limitation	Value
411:					
Saltos-------------------	40	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00		
412:					
Tajea--------------------	45	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-72"	1.00	Bedrock (hard) < 40" depth	1.00
		Depth to bedrock < 40"	1.00		
Saltos-------------------	30	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00		
420:					
Bellyspring--------------	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock 40 - 72"	0.77	Bedrock (hard) from 40 to 60"	0.38
Saltos-------------------	25	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00		
Rock outcrop-------------	20	Not rated		Not rated	
430:					
Saucito------------------	40	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00	Fragments (>3") 20-35%	0.74
Akad---------------------	25	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
				Fragments (>3") 20-35%	0.03
Rock outcrop-------------	20	Not rated		Not rated	
440:					
Bellyspring--------------	35	Severe		Severe	
		Permeability < .6"/hr in 24-72"	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Permeability > 2"/hr (seepage)	1.00
		Slopes 8 to 15%	0.63	Bedrock (soft) < 40" depth	1.00
Panoza-------------------	25	Severe		Severe	
		Depth to bedrock < 40"	1.00	Slopes > 8%	1.00
		Slopes 8 to 15%	0.63	Bedrock (soft) < 40" depth	1.00
		Permeability from .6 - 2"/hr	0.50	Permeability .6-2"/hr (some seepage)	0.50
441:					
Bellyspring--------------	35	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-72"	1.00	Permeability > 2"/hr (seepage)	1.00
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
Panoza-------------------	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Permeability from .6 - 2"/hr	0.50	Permeability .6-2"/hr (some seepage)	0.50

Table 12a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
442:					
Bellyspring	35	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Permeability > 2"/hr (seepage)	1.00
				Bedrock (soft) < 40" depth	1.00
Panoza	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Permeability from .6 - 2"/hr	0.50	Permeability .6-2"/hr (some seepage)	0.50
443:					
Bellyspring	35	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Permeability > 2"/hr (seepage)	1.00
				Bedrock (soft) < 40" depth	1.00
Beam	25	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00		
Panoza	25	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Permeability from .6 - 2"/hr	0.50	Permeability .6-2"/hr (some seepage)	0.50
445:					
Bellyspring	35	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-72"	1.00	Permeability > 2"/hr (seepage)	1.00
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
Xerorthents	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
				Permeability > 2"/hr (seepage)	1.00
Panoza	15	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
		Permeability from .6 - 2"/hr	0.50	Permeability .6-2"/hr (some seepage)	0.50
450:					
Botella	75	Severe		Severe	
		Permeability < .6"/hr in 24-72"	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 8%	0.67
460:					
Camatta	75	Severe		Severe	
		Depth to pan < 40"	1.00	Depth to pan < 40"	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
470:					
Botella	85	Severe		Severe	
		Permeability < .6"/hr in 24-72"	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 8%	0.67
474:					
Elder	80	Slight		Severe	
				Permeability > 2"/hr (seepage)	1.00

Table 12a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
475:					
Elder	80	Slight		Severe	
				Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 8%	0.67
480:					
Metz	70	Moderate		Severe	
		Flooding = rare	0.50	Permeability > 2"/hr (seepage)	1.00
				Flooding = rare	0.50
				Slopes 2 to 8%	0.17
490:					
Wasioja	75	Severe		Moderate	
		Permeability < .6"/hr in 24-72"	1.00	Permeability .6-2"/hr (some seepage)	0.50
491:					
Wasioja	85	Severe		Moderate	
		Permeability < .6"/hr in 24-72"	1.00	Slopes 2 to 8%	0.33
495:					
Wasioja	60	Severe		Moderate	
		Permeability < .6"/hr in 24-72"	1.00	Slopes 2 to 8%	0.33
Polonio	20	Severe		Moderate	
		Permeability < .6"/hr in 24-72"	1.00	Slopes 2 to 8%	0.33
497:					
Wasioja	35	Severe		Moderate	
		Permeability < .6"/hr in 24-72"	1.00	Permeability .6-2"/hr (some seepage)	0.50
				Slopes 2 to 8%	0.33
Pinspring	30	Severe		Severe	
		Permeability < .6"/hr in 24-72"	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 8%	0.33
Yeguas	15	Severe		Severe	
		Permeability < .6"/hr in 24-72"	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 8%	0.33
512:					
Shimmon	80	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (soft) < 40" depth	1.00
520:					
Santa Lucia	30	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
				Permeability .6-2"/hr (some seepage)	0.50
521:					
Santa Lucia	80	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
				Permeability .6-2"/hr (some seepage)	0.50
522:					
Santa Lucia	55	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
				Permeability .6-2"/hr (some seepage)	0.50

Table 12a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct.	Septic tank absorption fields		Sewage lagoons	
		Limitation	Value	Limitation	Value
531:					
Saltos	45	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00		
Millsholm	35	Severe		Severe	
		Depth to bedrock < 40"	1.00	Bedrock (hard) < 40" depth	1.00
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Impermeable above 24"	1.00		
561:					
Chanac	85	Severe		Severe	
		Permeability < .6"/hr in 24-72"	1.00	Slopes > 8%	1.00
		Slopes > 15%	1.00		
562:					
Chanac	90	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Permeability < .6"/hr in 24-72"	1.00		
900:					
Pits	100	Not rated		Not rated	
905:					
Xerofluvents	50	Severe		Severe	
		Flooding >= occasional	1.00	Flooding >= occasional	1.00
		Wetness < 4' depth	1.00	Permeability > 2"/hr (seepage)	1.00
		Permeability > 6"/hr above 60"	1.00		
Riverwash	30	Severe		Severe	
		Flooding >= occasional	1.00	Flooding >= occasional	1.00
		Wetness < 4' depth	1.00	Permeability > 2"/hr (seepage)	1.00
		Permeability > 6"/hr above 60"	1.00		
906:					
Xerofluvents	85	Severe		Severe	
		Flooding >= occasional	1.00	Ponded (any duration)	1.00
		Ponded (any duration)	1.00	Flooding >= occasional	1.00
		Wetness < 4' depth	1.00	Permeability > 2"/hr (seepage)	1.00
908:					
Xerorthents	85	Severe		Severe	
		Slopes > 15%	1.00	Slopes > 8%	1.00
		Depth to bedrock 40 - 72"	0.77	Permeability > 2"/hr (seepage)	1.00
				Bedrock (hard) from 40 to 60"	0.38
910:					
Playas	80	Not rated		Not rated	
911:					
Playas	85	Not rated		Not rated	
912:					
Water	100	Not rated		Not rated	

The interpretation for septic tank absorption fields evaluates the following soil properties at varying depths in the soil: flooding; ponding; wetness; slope; subsidence of organic soils; depth to hard or soft bedrock; depth to a cemented pan; permeability that is too fast, allowing seepage; permeability that is too slow; and an impermeable layer at a shallow depth.

The interpretation for sewage lagoons evaluates the following soil properties at varying depths in the soil: flooding, ponding, wetness, slope, organic Unified classes for low strength (PT, OL, and OH), depth to hard or soft bedrock, depth to a cemented pan, fragments greater than 3 inches in size, and permeability that is too fast, allowing seepage.

Table 12b.--Sanitary Facilities (Part 2)

[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 potential limitation. The rating is based on the limitation with the highest value. Only the three highest value limitations are listed. There may be more limitations. Fine-earth fractions and coarse fragments are reported on a weight basis. A brief summary of the rating criteria and of the abbreviations used in describing the limitations is given at the end of the table]

Map symbol and soil name	Pct.	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
100:							
Balcom	75	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
101:							
Balcom	45	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
Nacimiento	30	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
		Clay loam, silty clay, silty clay loam	0.50			Silt or clay textures from 10-60"	0.50
102:							
Balcom	45	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
Nacimiento	30	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
		Clay loam, silty clay, silty clay loam	0.50			Silt or clay textures from 10-60"	0.50
103:							
Balcom	45	Severe		Severe		Poor	
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63

Table 12b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
103:							
Nacimiento	30	Severe		Severe		Poor	
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63
		Clay loam, silty clay, silty clay loam	0.50			Silt or clay textures from 10-60"	0.50
109:							
Capay	80	Severe		Slight		Poor	
		Clay or silty clay	1.00			Silty clay or clay 10-60"	1.00
						Clay or silty clay	1.00
						Packing (OL, OH, CH, or MH)	1.00
110:							
Capay	80	Severe		Slight		Poor	
		Clay or silty clay	1.00			Silty clay or clay 10-60"	1.00
						Clay or silty clay	1.00
						Packing (OL, OH, CH, or MH)	1.00
112:							
Calleguas	45	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%	1.00
Balcom	35	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
114:							
Calleguas	55	Severe		Severe		Poor	
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
Nacimiento	20	Severe		Severe		Poor	
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Clay loam, silty clay, silty clay loam	0.50			Silt or clay textures from 10-60"	0.50

Table 12b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
120:							
Hillbrick-------------------------	65	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%	1.00
						Permeability > 2.0 in/hr	0.50
		Seepage in bottom layer	1.00				
Rock outcrop----------------------	15	Not rated		Not rated		Not rated	
121:							
Hillbrick-------------------------	65	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%	1.00
						Permeability > 2.0 in/hr	0.50
		Seepage in bottom layer	1.00				
Rock outcrop----------------------	15	Not rated		Not rated		Not rated	
123:							
Lithic Torriorthents--------------	30	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00			Slopes > 15%	1.00
						Texture is s, fs, cos, sg	1.00
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00				
Semper----------------------------	25	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
				Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.50
Rock outcrop----------------------	20	Not rated		Not rated		Not rated	
129:							
Kilmer----------------------------	40	Severe		Severe		Poor	
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
				Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63
		Slopes 8 to 15%	0.63				
Hillbrick-------------------------	35	Severe		Severe		Poor	
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
				Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63
		Seepage in bottom layer	1.00			Permeability > 2.0 in/hr	0.50
		Slopes 8 to 15%	0.63				

Table 12b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary landfill trench type: Limitation	Value	Sanitary landfill area type: Limitation	Value	Daily cover for landfill: Limitation	Value
130:							
Kilmer---------------------------	40	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
Hillbrick------------------------	35	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%	1.00
						Permeability > 2.0 in/hr	0.50
		Seepage in bottom layer	1.00				
131:							
Kilmer---------------------------	40	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
Hillbrick------------------------	35	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%	1.00
						Permeability > 2.0 in/hr	0.50
		Seepage in bottom layer	1.00				
134:							
Kilmer---------------------------	30	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
Nacimiento-----------------------	25	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
						Silt or clay textures from 10-60"	0.50
		Clay loam, silty clay, silty clay loam	0.50				
Aido-----------------------------	15	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00			Depth to bedrock < 40"	1.00
						Packing (OL, OH, CH, or MH)	1.00
140:							
Choice---------------------------	80	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.42	Silty clay or clay 10-60"	1.00
						Clay or silty clay	1.00
		Clay or silty clay	1.00				

Table 12b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary landfill trench type: Limitation	Value	Sanitary landfill area type: Limitation	Value	Daily cover for landfill: Limitation	Value
149:							
San Emigdio	80	Severe		Severe		Fair	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.50
150:							
San Emigdio	80	Severe		Severe		Fair	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.50
154:							
San Emigdio	85	Severe		Severe		Fair	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.50
155:							
San Emigdio	85	Severe		Severe		Fair	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.50
159:							
Sorrento	85	Slight		Slight		Good	
160:							
Sorrento	85	Slight		Slight		Good	
169:							
Polonio	75	Moderate		Slight		Fair	
		Clay loam, silty clay, silty clay loam	0.50			Silt or clay textures from 10-60"	0.50
						Clay loam, silty clay, silty clay loam	0.50
170:							
Polonio	65	Moderate		Slight		Fair	
		Clay loam, silty clay, silty clay loam	0.50			Silt or clay textures from 10-60"	0.50
						Clay loam, silty clay, silty clay loam	0.50
173:							
Polonio	85	Slight		Slight		Fair	
						Fragments (<75mm) 25-50%	0.15
174:							
Polonio	50	Moderate		Slight		Fair	
		Clay loam, silty clay, silty clay loam	0.50			Silt or clay textures from 10-60"	0.50
						Clay loam, silty clay, silty clay loam	0.50
Thomhill	30	Slight		Slight		Good	

Table 12b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
175:							
Polonio	50	Moderate		Slight		Fair	
		Clay loam, silty clay, silty clay loam	0.50			Silt or clay textures from 10-60"	0.50
						Clay loam, silty clay, silty clay loam	0.50
Thomhill	30	Slight		Slight		Good	
179:							
Padres	70	Slight		Severe		Good	
				Seepage in 20-40" depth	1.00		
180:							
Padres	65	Slight		Severe		Good	
				Seepage in 20-40" depth	1.00		
182:							
Oceano	50	Severe		Severe		Poor	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Texture is lcos, ls, lfs, vfs	0.50
190:							
Reward	70	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.42	Depth to bedrock from 40-60"	0.42
						Fragments (<75mm) 25-50%	0.37
191:							
Reward	70	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.42	Depth to bedrock from 40-60"	0.42
						Fragments (<75mm) 25-50%	0.37
200:							
Aramburu	70	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
		Clay loam, silty clay, silty clay loam	0.50			Fragments (<75mm) 25-50%	0.88

Table 12b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
201:							
Aramburu	65	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
						Fragments (<75mm) 25-50%	0.88
		Clay loam, silty clay, silty clay loam	0.50				
202:							
Aramburu	65	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
						Fragments (<75mm) 25-50%	0.88
204:							
Aramburu	40	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
						Fragments (<75mm) 25-50%	0.88
Temblor	35	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%	1.00
						Fragments (<75mm) > 50%	1.00
205:							
Aramburu	35	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
						Fragments (<75mm) 25-50%	0.88
Temblor	35	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%	1.00
						Fragments (<75mm) > 50%	1.00
218:							
Seaback	30	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00				
Calleguas	25	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%	1.00

Table 12b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
218:							
Panoza	20	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
219:							
Xerorthents	50	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
				Seepage in 20-40" depth	1.00	Fragments (<75mm) 25-50%	0.97
Badlands	35	Not rated		Not rated		Not rated	
220:							
Beam	35	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00			Slopes > 15%	1.00
						Permeability > 2.0 in/hr	0.50
Panoza	30	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
Hillbrick	15	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00			Permeability > 2.0 in/hr	0.50
221:							
Beam	35	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00			Slopes > 15%	1.00
						Permeability > 2.0 in/hr	0.50
Panoza	30	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
Hillbrick	15	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00			Permeability > 2.0 in/hr	0.50

Table 12b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
222:							
Beam	35	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00			Slopes > 15%	1.00
						Permeability > 2.0 in/hr	0.50
Panoza	30	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
Hillbrick	15	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00			Permeability > 2.0 in/hr	0.50
227:							
Beam	40	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00			Slopes > 15%	1.00
						Permeability > 2.0 in/hr	0.50
Panoza	35	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
						Fragments (>3") 25-50%	0.20
228:							
Beam	40	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00			Slopes > 15%	1.00
						Permeability > 2.0 in/hr	0.50
Panoza	35	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
						Fragments (>3") 25-50%	0.20
229:							
Seaback	40	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00				

Table 12b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary landfill trench type: Limitation	Value	Sanitary landfill area type: Limitation	Value	Daily cover for landfill: Limitation	Value
229:							
San Timoteo	35	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
				Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.50
230:							
Padres	50	Severe		Severe		Fair	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.50
Wasioja	35	Severe		Severe		Poor	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50			Texture is lcos, ls, lfs, vfs	0.50
240:							
Panoza	40	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
Beam	30	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00			Slopes > 15%	1.00
241:							
Panoza	40	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
Beam	30	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00			Slopes > 15%	1.00
242:							
Panoza	40	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
Beam	30	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00			Slopes > 15%	1.00

Table 12b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
248:							
Pyxo	55	Severe Slopes > 15% Lithic or paralithic bedrock < 72"	 1.00 1.00	Severe Slopes > 15%	 1.00	Poor Slopes > 15% Depth to bedrock < 40"	 1.00 1.00
Cochora	30	Severe Slopes > 15% Lithic or paralithic bedrock < 72"	 1.00 1.00	Severe Slopes > 15%	 1.00	Poor Depth to bedrock < 40" Slopes > 15% Permeability > 2.0 in/hr	 1.00 1.00 0.50
249:							
Xeric Torriorthents	50	Severe Slopes > 15% Lithic or paralithic bedrock < 72"	 1.00 1.00	Severe Slopes > 15%	 1.00	Poor Fragments (<75mm) > 50% Slopes > 15% Depth to bedrock from 40-60"	 1.00 1.00 1.00
Badlands	25	Not rated		Not rated		Not rated	
250:							
Pyxo	40	Severe Slopes > 15% Lithic or paralithic bedrock < 72"	 1.00 1.00	Severe Slopes > 15%	 1.00	Poor Slopes > 15% Depth to bedrock < 40"	 1.00 1.00
Cochora	25	Severe Slopes > 15% Lithic or paralithic bedrock < 72"	 1.00 1.00	Severe Slopes > 15%	 1.00	Poor Depth to bedrock < 40" Slopes > 15% Permeability > 2.0 in/hr	 1.00 1.00 0.50
Badlands	15	Not rated		Not rated		Not rated	
251:							
Nacimiento	75	Severe Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	 1.00 1.00 0.50	Severe Slopes > 15% Bedrock depth < 40"	 1.00 1.00	Poor Slopes > 15% Depth to bedrock < 40" Silt or clay textures from 10-60"	 1.00 1.00 0.50
252:							
Nacimiento	75	Severe Slopes > 15% Lithic or paralithic bedrock < 72" Clay loam, silty clay, silty clay loam	 1.00 1.00 0.50	Severe Slopes > 15% Bedrock depth < 40"	 1.00 1.00	Poor Slopes > 15% Depth to bedrock < 40" Silt or clay textures from 10-60"	 1.00 1.00 0.50

Table 12b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct.	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
261:							
Aido	85	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00			Depth to bedrock < 40"	1.00
						Packing (OL, OH, CH, or MH)	1.00
262:							
Aido	80	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00			Depth to bedrock < 40"	1.00
						Packing (OL, OH, CH, or MH)	1.00
263:							
Aido	85	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00			Depth to bedrock < 40"	1.00
						Packing (OL, OH, CH, or MH)	1.00
270:							
Ayar	80	Severe		Moderate		Poor	
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.08	Silty clay or clay 10-60"	1.00
						Clay or silty clay	1.00
		Clay or silty clay	1.00			Packing (OL, OH, CH, or MH)	1.00
271:							
Ayar	80	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.08	Silty clay or clay 10-60"	1.00
						Packing (OL, OH, CH, or MH)	1.00
		Clay or silty clay	1.00				
274:							
Ayar	30	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.08	Silty clay or clay 10-60"	1.00
						Packing (OL, OH, CH, or MH)	1.00
		Clay or silty clay	1.00				
Hillbrick	30	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%	1.00
						Permeability > 2.0 in/hr	0.50
		Seepage in bottom layer	1.00				
Aido	20	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00			Depth to bedrock < 40"	1.00
						Packing (OL, OH, CH, or MH)	1.00

Table 12b.--Sanitary Facilities--Continued

Map symbol and soil name	Pct.	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
275:							
Ayar	30	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.08	Silty clay or clay 10-60"	1.00
						Packing (OL, OH, CH, or MH)	1.00
		Clay or silty clay	1.00				
Hillbrick	30	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%	1.00
						Permeability > 2.0 in/hr	0.50
		Seepage in bottom layer	1.00				
Aido	20	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00			Depth to bedrock < 40"	1.00
						Packing (OL, OH, CH, or MH)	1.00
280:							
Seaback	35	Severe		Severe		Poor	
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
				Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63
		Seepage in bottom layer	1.00				
		Slopes 8 to 15%	0.63				
Panoza	30	Severe		Severe		Poor	
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
				Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63
		Slopes 8 to 15%	0.63				
Jenks	15	Severe		Moderate		Poor	
		Lithic or paralithic bedrock < 72"	1.00	Slopes 8 to 15%	0.63	Depth to bedrock < 40"	1.00
						Slopes 8 to 15%	0.63
		Slopes 8 to 15%	0.63				
281:							
Seaback	35	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00				
Panoza	30	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00

Table 12b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
281:							
Jenks	15	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00			Depth to bedrock < 40"	1.00
282:							
Seaback	35	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00				
Panoza	30	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
Jenks	15	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00			Depth to bedrock < 40"	1.00
290:							
San Timoteo	30	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
				Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.50
San Andreas	25	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
				Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.50
Bellyspring	20	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
				Seepage in 20-40" depth	1.00		
		Fragments (3-10") 15-35%	0.08				
291:							
San Timoteo	30	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
				Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.50

Table 12b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
291:							
San Andreas	25	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
				Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.50
Bellyspring	20	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
				Seepage in 20-40" depth	1.00		
		Fragments (3-10") 15-35%	0.08				
292:							
San Timoteo	30	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
				Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.50
San Andreas	25	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
				Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.50
Bellyspring	20	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
				Seepage in 20-40" depth	1.00		
		Fragments (3-10") 15-35%	0.08				
301:							
Arbuckle	70	Severe		Severe		Fair	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.50
302:							
Arbuckle	70	Severe		Severe		Fair	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Slopes 8 to 15%	0.63
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63	Permeability > 2.0 in/hr	0.50
303:							
Arbuckle	70	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.50
304:							
Arbuckle	70	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.50

Table 12b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
306:							
Arbuckle	70	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.50
307:							
Arbuckle	70	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.50
310:							
Yeguas	40	Severe		Slight		Poor	
		Seepage in bottom layer	1.00			Packing (OL, OH, CH, or MH)	1.00
		Clay loam, silty clay, silty clay loam	0.50			Silt or clay textures from 10-60"	0.50
						Clay loam, silty clay, silty clay loam	0.50
Pinspring	40	Slight		Slight		Good	
311:							
Yeguas	40	Severe		Slight		Poor	
		Seepage in bottom layer	1.00			Silty clay or clay 10-60"	1.00
		Clay or silty clay	1.00			Packing (OL, OH, CH, or MH)	1.00
						Clay or silty clay	1.00
Pinspring	40	Slight		Slight		Good	
321:							
Thomhill	80	Slight		Slight		Good	
330:							
Jenks	80	Severe		Slight		Poor	
		Lithic or paralithic bedrock < 72"	1.00			Depth to bedrock < 40"	1.00
339:							
Arnold	30	Severe		Severe		Poor	
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
				Slopes > 15%	1.00	Slopes > 15%	1.00
		Slopes > 15%	1.00	Bedrock depth from 40-60"	0.42	Texture is lcos, ls, lfs, vfs	0.50
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50				
San Andreas	20	Severe		Severe		Poor	
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
				Slopes > 15%	1.00	Slopes > 15%	1.00
		Slopes > 15%	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.50

Table 12b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
340:							
Arnold	30	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Sandy textures (cosl, ls, lfs, or lvfs)	0.50	Bedrock depth from 40-60"	0.42	Texture is lcos, ls, lfs, vfs	0.50
San Andreas	20	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
				Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.50
350:							
Cieneba	75	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%	1.00
						Permeability > 2.0 in/hr	0.50
360:							
Chicote, silty clay loam	40	Severe		Severe		Poor	
		Ponded (any duration)	1.00	Ponded (any duration)	1.00	Ponded (any duration)	1.00
		SAR >13 and not aridic climate	1.00	Rare flooding	0.40	SAR >13 and not aridic climate	1.00
		Clay or silty clay	1.00			Silty clay or clay 10-60"	1.00
Chicote, silt loam	40	Severe		Severe		Poor	
		Ponded (any duration)	1.00	Ponded (any duration)	1.00	Ponded (any duration)	1.00
		SAR >13 and not aridic climate	1.00	Seepage in 20-40" depth	1.00	SAR >13 and not aridic climate	1.00
		Seepage in bottom layer	1.00	Rare flooding	0.40	Permeability > 2.0 in/hr	0.21
361:							
Chicote, silty clay loam	40	Severe		Severe		Poor	
		Ponded (any duration)	1.00	Ponded (any duration)	1.00	Ponded (any duration)	1.00
		SAR >13 and not aridic climate	1.00	Rare flooding	0.40	SAR >13 and not aridic climate	1.00
		Clay or silty clay	1.00			Silty clay or clay 10-60"	1.00
Chicote, silt loam	40	Severe		Severe		Poor	
		Ponded (any duration)	1.00	Ponded (any duration)	1.00	Ponded (any duration)	1.00
		SAR >13 and not aridic climate	1.00	Seepage in 20-40" depth	1.00	SAR >13 and not aridic climate	1.00
		Seepage in bottom layer	1.00	Rare flooding	0.40	Permeability > 2.0 in/hr	0.21

Table 12b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
362:							
Chicote, silty clay loam	40	Severe		Severe		Poor	
		Ponded (any duration)	1.00	Ponded (any duration)	1.00	Ponded (any duration)	1.00
		SAR >13 and not aridic climate	1.00	Rare flooding	0.40	SAR >13 and not aridic climate	1.00
		Clay or silty clay	1.00			Silty clay or clay 10-60"	1.00
Chicote, silt loam	40	Severe		Severe		Poor	
		Ponded (any duration)	1.00	Ponded (any duration)	1.00	Ponded (any duration)	1.00
		SAR >13 and not aridic climate	1.00	Seepage in 20-40" depth	1.00	SAR >13 and not aridic climate	1.00
				Rare flooding	0.40		
		Seepage in bottom layer	1.00			Permeability > 2.0 in/hr	0.21
371:							
Semper	50	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
				Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.50
372:							
Semper	65	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
				Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.50
375:							
Semper	40	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
				Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.50
Badlands	25	Not rated		Not rated		Not rated	
380:							
Muranch	30	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00			Depth to bedrock < 40"	1.00
		Fragments (3-10") 15-35%	0.13				
Xerorthents	25	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
				Seepage in 20-40" depth	1.00	Fragments (<75mm) 25-50%	0.97
Rock outcrop	20	Not rated		Not rated		Not rated	
388:							
Rock outcrop	50	Not rated		Not rated		Not rated	

Table 12b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary landfill trench type: Limitation	Value	Sanitary landfill area type: Limitation	Value	Daily cover for landfill: Limitation	Value
388:							
Gaviota	25	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%	1.00
391:							
Rock outcrop	35	Not rated		Not rated		Not rated	
Lithic Torriorthents	30	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00			Slopes > 15%	1.00
						Texture is s, fs, cos, sg	1.00
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00				
401:							
Godde	40	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%	1.00
						Permeability > 2.0 in/hr	0.50
Xerorthents	20	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%	1.00
Rock outcrop	15	Not rated		Not rated		Not rated	
408:							
Gaviota	35	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%	1.00
						Permeability > 2.0 in/hr	0.50
San Andreas	25	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
				Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.50
409:							
Gaviota	35	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%	1.00

Table 12b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
409:							
Saltos	25	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%	1.00
Rock outcrop	15	Not rated		Not rated		Not rated	
410:							
Gaviota	40	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%	1.00
Rock outcrop	30	Not rated		Not rated		Not rated	
411:							
Tajea	40	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
		Clay loam, silty clay, silty clay loam	0.50			Silt or clay textures from 10-60"	0.50
Saltos	40	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%	1.00
412:							
Tajea	45	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
		Clay loam, silty clay, silty clay loam	0.50			Silt or clay textures from 10-60"	0.50
Saltos	30	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%	1.00
420:							
Bellyspring	30	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth from 40-60"	0.39	Silt or clay textures from 10-60"	0.50
		Clay loam, silty clay, silty clay loam	0.50			Clay loam, silty clay, silty clay loam	0.50

Table 12b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
420:							
Saltos	25	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
430:							
Saucito	40	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%	1.00
		Fragments (3-10") 15-35%	0.74			Silt or clay textures from 10-60"	0.50
Akad	25	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%	1.00
		Clay loam, silty clay, silty clay loam	0.50			Silt or clay textures from 10-60"	0.50
Rock outcrop	20	Not rated		Not rated		Not rated	
440:							
Bellyspring	35	Severe		Severe		Poor	
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
				Seepage in 20-40" depth	1.00	Slopes 8 to 15%	0.63
		Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63		
		Fragments (3-10") 15-35%	0.08				
Panoza	25	Severe		Severe		Poor	
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
				Slopes 8 to 15%	0.63	Slopes 8 to 15%	0.63
		Slopes 8 to 15%	0.63				
441:							
Bellyspring	35	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
				Seepage in 20-40" depth	1.00		
		Fragments (3-10") 15-35%	0.08				
Panoza	30	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00

Table 12b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
442:							
Bellyspring	35	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
				Seepage in 20-40" depth	1.00	Silt or clay textures from 10-60"	0.50
		Clay loam, silty clay, silty clay loam	0.50				
Panoza	30	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
443:							
Bellyspring	35	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
				Seepage in 20-40" depth	1.00		
Beam	25	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00			Slopes > 15%	1.00
						Permeability > 2.0 in/hr	0.50
Panoza	25	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
445:							
Bellyspring	35	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
				Seepage in 20-40" depth	1.00		
		Fragments (3-10") 15-35%	0.08				
Xerorthents	30	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
				Seepage in 20-40" depth	1.00	Fragments (<75mm) 25-50%	0.97
Panoza	15	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
450:							
Botella	75	Severe		Severe		Good	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00		

Table 12b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
460:							
Camatta	75	Severe		Severe		Poor	
		Thin pan < 72" deep	1.00	Slopes > 15%	1.00	Depth to pan < 40"	1.00
		Slopes > 15%	1.00			Slopes > 15%	1.00
470:							
Botella	85	Severe		Severe		Good	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00		
474:							
Elder	80	Severe		Severe		Fair	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.50
475:							
Elder	80	Severe		Severe		Fair	
		Seepage in bottom layer	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	0.50
480:							
Metz	70	Severe		Severe		Poor	
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00	Seepage in 20-40" depth	1.00	Texture is s, fs, cos, sg	1.00
		Seepage in bottom layer	1.00	Rare flooding	0.40	Permeability > 2.0 in/hr	0.57
		Flooding = rare	0.50				
490:							
Wasioja	75	Moderate		Slight		Fair	
		Clay loam, silty clay, silty clay loam	0.50			Silt or clay textures from 10-60"	0.50
						Clay loam, silty clay, silty clay loam	0.50
491:							
Wasioja	85	Moderate		Slight		Fair	
		Clay loam, silty clay, silty clay loam	0.50			Silt or clay textures from 10-60"	0.50
						Clay loam, silty clay, silty clay loam	0.50
495:							
Wasioja	60	Moderate		Slight		Fair	
		Clay loam, silty clay, silty clay loam	0.50			Silt or clay textures from 10-60"	0.50
						Clay loam, silty clay, silty clay loam	0.50
Polonio	20	Slight		Slight		Good	

Table 12b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
497:							
Wasioja----------------------------	35	Moderate		Slight		Fair	
		Clay loam, silty clay, silty clay loam	0.50			Silt or clay textures from 10-60"	0.50
						Clay loam, silty clay, silty clay loam	0.50
Pinspring--------------------------	30	Slight		Severe		Good	
				Seepage in 20-40" depth	1.00		
Yeguas-----------------------------	15	Severe		Slight		Poor	
		Seepage in bottom layer	1.00			Packing (OL, OH, CH, or MH)	1.00
		Clay loam, silty clay, silty clay loam	0.50			Silt or clay textures from 10-60"	0.50
						Clay loam, silty clay, silty clay loam	0.50
512:							
Shimmon----------------------------	80	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
520:							
Santa Lucia------------------------	30	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
						Fragments (<75mm) 25-50%	0.96
		Clay loam, silty clay, silty clay loam	0.50				
521:							
Santa Lucia------------------------	80	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
						Fragments (<75mm) 25-50%	0.89
		Clay loam, silty clay, silty clay loam	0.50				
522:							
Santa Lucia------------------------	55	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Depth to bedrock < 40"	1.00
						Fragments (<75mm) 25-50%	0.89
		Clay loam, silty clay, silty clay loam	0.50				

Table 12b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
531:							
Saltos	45	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%	1.00
Millsholm	35	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Depth to bedrock < 40"	1.00
		Lithic or paralithic bedrock < 72"	1.00	Bedrock depth < 40"	1.00	Slopes > 15%	1.00
		Seepage in bottom layer	1.00				
561:							
Chanac	85	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
562:							
Chanac	90	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
900:							
Pits	100	Not rated		Not rated		Not rated	
905:							
Xerofluvents	50	Severe		Severe		Poor	
		Flooding >= occasional	1.00	Wetness < 5' depth	1.00	Texture is s, fs, cos, sg	1.00
		Wetness < 6' depth	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Sandy textures (cos, s, fs, lcos, or vfs)	1.00	Frequent flooding	0.80	Fragments (<75mm) 25-50%	0.01
Riverwash	30	Severe		Severe		Poor	
		Flooding >= occasional	1.00	Wetness < 5' depth	1.00	Texture is s, fs, cos, sg	1.00
		Wetness < 6' depth	1.00	Seepage in 20-40" depth	1.00	Permeability > 2.0 in/hr	1.00
		Seepage in bottom layer	1.00	Frequent flooding	0.80	Wetness < 18" depth	1.00
906:							
Xerofluvents	85	Severe		Severe		Poor	
		Flooding >= occasional	1.00	Ponded (any duration)	1.00	Ponded (any duration)	1.00
		Wetness < 6' depth	1.00	Wetness < 5' depth	1.00	Permeability > 2.0 in/hr	1.00
		Ponded (any duration)	1.00	Seepage in 20-40" depth	1.00	Texture is lcos, ls, lfs, vfs	0.50
908:							
Xerorthents	85	Severe		Severe		Poor	
		Slopes > 15%	1.00	Slopes > 15%	1.00	Slopes > 15%	1.00
		Lithic or paralithic bedrock < 72"	1.00	Seepage in 20-40" depth	1.00	Fragments (<75mm) > 50%	1.00
				Bedrock depth from 40-60"	0.39	Depth to bedrock from 40-60"	0.39

Table 12b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct.	Sanitary landfill trench type		Sanitary landfill area type		Daily cover for landfill	
		Limitation	Value	Limitation	Value	Limitation	Value
910:							
Playas	80	Not rated		Not rated		Not rated	
911:							
Playas	85	Not rated		Not rated		Not rated	
912:							
Water	100	Not rated		Not rated		Not rated	

Abbreviations for textures: cos, coarse sand; cosl, coarse sandy loam; fs, fine sand; lcos, loamy coarse sand; lfs, loamy fine sand; ls, loamy sand; lvfs loamy very fine sand; s, sand; and sg, sand and gravel.

The interpretation for trench sanitary landfills evaluates the following soil properties at varying depths in the soil: flooding, ponding, wetness, slope, depth to hard or soft bedrock, depth to a thick or thin cemented pan, fragments 3 to 10 inches in size, sodium content (SAR), soil pH, clayey or sandy textures, and permeability that is too high, allowing seepage in some climates.

The interpretation for area sanitary landfills evaluates the following soil properties at varying depths in the soil: flooding, ponding, wetness, slope, depth to bedrock, depth to a cemented pan, and permeability that is too high, allowing seepage in some climates.

The interpretation for daily cover for landfill evaluates the following soil properties at varying depths in the soil: ponding, wetness, slope, depth to bedrock, depth to a cemented pan, fragments greater than or less than 3 inches in size, Unified class for peat (PT), Unified classes for packing (OL, OH, CH, and MH), sandy or clayey textures, pH, carbonates, sodium content (SAR), salinity (EC), soil climate, kaolinitic mineralogy, and permeability that is too high, allowing seepage.

Table 13a.--Construction Materials (Part 1)

[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 closer the value is to 0, the greater the potential limitation. Values of 0 are absolute limitations based on the soil property criteria used to develop the interpretation. Values closer to 1.0 have less of a limitation. Limiting features with values equal to 1.0 have absolutely no limitation and are not shown in this report. Rating classes are determined by the most limiting value. Fine-earth fractions and fragment limiting features are reported on a weight basis. A brief summary of the rating criteria and of the abbreviations used in the describing the limitations is given at the end of the table]

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class and limiting features	Value	Potential source of sand: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
100:							
Balcom	75	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock 20 to 40"	0.54
101:							
Balcom	45	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock 20 to 40"	0.54
Nacimiento	30	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock 20 to 40"	0.54
102:							
Balcom	45	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock 20 to 40"	0.54
Nacimiento	30	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock 20 to 40"	0.54
103:							
Balcom	45	Poor source		Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope 12 to 15%	0.37
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock 20 to 40"	0.54
Nacimiento	30	Poor source		Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope 12 to 15%	0.37
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock 20 to 40"	0.54

Table 13a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class and limiting features	Value	Potential source of sand: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
109:							
Capay	80	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00		
110:							
Capay	80	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00		
112:							
Calleguas	45	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00
						Clay 27 to 40%	0.98
Balcom	35	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock 20 to 40"	0.54
114:							
Calleguas	55	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Depth to bedrock < 20"	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Slope > 15%	0.00
						Clay 27 to 40%	0.98
Nacimiento	20	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock 20 to 40"	0.54
120:							
Hillbrick	65	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00
						Rock fragment content	0.98
Rock outcrop	15	Not rated		Not rated		Not rated	
121:							
Hillbrick	65	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00
						Rock fragment content	0.95

Table 13a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class and limiting features	Value	Potential source of sand: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
121:							
Rock outcrop	15	Not rated		Not rated		Not rated	
123:							
Lithic Torriorthents	30	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00
						Rock fragment content	0.76
Semper	25	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock 20 to 40"	0.54
Rock outcrop	20	Not rated		Not rated		Not rated	
129:							
Kilmer	40	Poor source		Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope 12 to 15%	0.37
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock 20 to 40"	0.54
						Rock fragment content	0.98
Hillbrick	35	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Depth to bedrock < 20"	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Slope 12 to 15%	0.37
						Rock fragment content	0.98
130:							
Kilmer	40	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock 20 to 40"	0.54
						Rock fragment content	0.98
Hillbrick	35	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00
						Rock fragment content	0.98
131:							
Kilmer	40	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock 20 to 40"	0.54
						Rock fragment content	0.98

Table 13a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class and limiting features	Value	Potential source of sand: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
131:							
Hillbrick-----------	35	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00
						Rock fragment content	0.98
134:							
Kilmer--------------	30	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock 20 to 40"	0.54
						Rock fragment content	0.98
						Clay 27 to 40%	0.98
Nacimiento----------	25	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock 20 to 40"	0.54
Aido----------------	15	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%	0.00
						Depth to bedrock 20 to 40"	0.54
						Rock fragment content	0.72
140:							
Choice--------------	80	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%	0.00
149:							
San Emigdio---------	80	Poor source		Fair source		Good source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00		
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.08		
150:							
San Emigdio---------	80	Poor source		Fair source		Good source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00		
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.08		

Table 13a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class and limiting features	Value	Potential source of sand: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
154:							
San Emigdio---------	85	Poor source		Poor source		Good source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00		
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00		
155:							
San Emigdio---------	85	Poor source		Poor source		Good source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00		
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00		
159:							
Sorrento-----------	85	Poor source		Poor source		Good source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00		
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00		
160:							
Sorrento-----------	85	Poor source		Poor source		Good source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00		
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00		
169:							
Polonio------------	75	Poor source		Poor source		Good source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00		
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00		
170:							
Polonio------------	65	Poor source		Poor source		Good source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00		
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00		
173:							
Polonio------------	85	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Rock fragment content	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Hard to reclaim	0.84
174:							
Polonio------------	50	Poor source		Poor source		Good source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00		
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00		

Table 13a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
174:							
Thomhill	30	Poor source		Poor source		Good source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00		
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00		
175:							
Polonio	50	Poor source		Poor source		Good source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00		
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00		
Thomhill	30	Poor source		Poor source		Good source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00		
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00		
179:							
Padres	70	Poor source		Fair source		Fair source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Rock fragment content	0.97
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.04		
180:							
Padres	65	Poor source		Fair source		Fair source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Rock fragment content	0.97
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.04		
182:							
Oceano	50	Poor source		Fair source		Poor source	
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.50	Sand fractions > 85%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.50		
190:							
Reward	70	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragment content	0.00
						Hard to reclaim	0.50
191:							
Reward	70	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragment content	0.00
						Hard to reclaim	0.50

Table 13a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class and limiting features	Value	Potential source of sand: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
200:							
Aramburu------------	70	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragment content	0.00
						Depth to bedrock 20 to 40"	0.54
						Clay 27 to 40%	0.98
201:							
Aramburu------------	65	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragment content	0.00
						Depth to bedrock 20 to 40"	0.54
						Clay 27 to 40%	0.98
202:							
Aramburu------------	65	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragment content	0.00
						Depth to bedrock 20 to 40"	0.54
						Clay 27 to 40%	0.98
204:							
Aramburu------------	40	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragment content	0.00
						Depth to bedrock 20 to 40"	0.54
						Clay 27 to 40%	0.98
Temblor-------------	35	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragment content	0.00
						Depth to bedrock < 20"	0.00
205:							
Aramburu------------	35	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragment content	0.00
						Depth to bedrock 20 to 40"	0.54
						Clay 27 to 40%	0.98

Table 13a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class and limiting features	Value	Potential source of sand: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
205:							
Temblor	35	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragment content	0.00
						Depth to bedrock < 20"	0.00
218:							
Seaback	30	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00
Calleguas	25	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00
						Clay 27 to 40%	0.98
Panoza	20	Poor source		Fair source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.00	Depth to bedrock 20 to 40"	0.54
219:							
Xerorthents	50	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragment content	0.00
						Depth to bedrock 20 to 40"	0.54
Badlands	35	Not rated		Not rated		Not rated	
220:							
Beam	35	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00
Panoza	30	Poor source		Fair source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.00	Depth to bedrock 20 to 40"	0.54
Hillbrick	15	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00
						Rock fragment content	0.98

Table 13a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class and limiting features	Value	Potential source of sand: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
221:							
Beam	35	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00
Panoza	30	Poor source		Fair source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.00	Depth to bedrock 20 to 40"	0.54
Hillbrick	15	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00
						Rock fragment content	0.98
222:							
Beam	35	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00
Panoza	30	Poor source		Fair source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.00	Depth to bedrock 20 to 40"	0.54
Hillbrick	15	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00
						Rock fragment content	0.50
227:							
Beam	40	Poor source		Fair source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.01	Depth to bedrock < 20"	0.00
Panoza	35	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragment content	0.24
						Depth to bedrock 20 to 40"	0.54

Table 13a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class and limiting features	Value	Potential source of sand: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
228:							
Beam	40	Poor source		Fair source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.01	Depth to bedrock < 20"	0.00
Panoza	35	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragment content	0.24
						Depth to bedrock 20 to 40"	0.54
229:							
Seaback	40	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00
San Timoteo	35	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock 20 to 40"	0.54
						Rock fragment content	0.98
230:							
Padres	50	Poor source		Fair source		Fair source	
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.04	Rock fragment content	0.97
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.04		
Wasioja	35	Poor source		Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Hard to reclaim	0.32
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00		
240:							
Panoza	40	Poor source		Fair source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.00	Depth to bedrock 20 to 40"	0.54
Beam	30	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00

Table 13a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class and limiting features	Value	Potential source of sand: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
241:							
Panoza	40	Poor source		Fair source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.00	Depth to bedrock 20 to 40"	0.54
Beam	30	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00
242:							
Panoza	40	Poor source		Fair source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.00	Depth to bedrock 20 to 40"	0.54
Beam	30	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00
248:							
Pyxo	55	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock 20 to 40"	0.94
						SAR 4 to 13	0.98
Cochora	30	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00
						Rock fragment content	0.50
249:							
Xeric Torriorthents	50	Poor source		Fair source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.02	Hard to reclaim	0.00
						Rock fragment content	0.00
Badlands	25	Not rated		Not rated		Not rated	
250:							
Pyxo	40	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock 20 to 40"	0.42
						SAR 4 to 13	0.98

Table 13a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
250:							
Cochora	25	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00
						Rock fragment content	0.50
Badlands	15	Not rated		Not rated		Not rated	
251:							
Nacimiento	75	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock 20 to 40"	0.54
						Rock fragment content	0.97
252:							
Nacimiento	75	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock 20 to 40"	0.54
						Rock fragment content	0.97
261:							
Aido	85	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%	0.00
						Depth to bedrock 20 to 40"	0.54
						Rock fragment content	0.72
262:							
Aido	80	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%	0.00
						Depth to bedrock 20 to 40"	0.54
						Rock fragment content	0.72
263:							
Aido	85	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%	0.00
						Depth to bedrock 20 to 40"	0.54
						Rock fragment content	0.72

Table 13a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class and limiting features	Value	Potential source of sand: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
270:							
Ayar----------------	80	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00		
271:							
Ayar----------------	80	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%	0.00
274:							
Ayar----------------	30	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%	0.00
Hillbrick-----------	30	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00
						Rock fragment content	0.98
Aido----------------	20	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%	0.00
						Depth to bedrock 20 to 40"	0.54
						Rock fragment content	0.72
275:							
Ayar----------------	30	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%	0.00
Hillbrick-----------	30	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00
						Rock fragment content	0.98
Aido----------------	20	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Clay > 40%	0.00
						Depth to bedrock 20 to 40"	0.54
						Rock fragment content	0.72

Table 13a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class and limiting features	Value	Potential source of sand: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
280:							
Seaback-------------	35	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Depth to bedrock < 20"	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Slope 12 to 15%	0.37
Panoza--------------	30	Poor source		Fair source		Fair source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope 12 to 15%	0.37
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.00	Depth to bedrock 20 to 40"	0.54
Jenks---------------	15	Poor source		Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope 12 to 15%	0.37
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock 20 to 40"	0.54
						Rock fragment content	0.98
						Clay 27 to 40%	0.98
281:							
Seaback-------------	35	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00
Panoza--------------	30	Poor source		Fair source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.00	Depth to bedrock 20 to 40"	0.54
Jenks---------------	15	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock 20 to 40"	0.54
						Rock fragment content	0.98
						Clay 27 to 40%	0.98
282:							
Seaback-------------	35	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00
Panoza--------------	30	Poor source		Fair source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.00	Depth to bedrock 20 to 40"	0.54

Table 13a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class and limiting features	Value	Potential source of sand: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
282:							
Jenks	15	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock 20 to 40"	0.54
						Rock fragment content	0.98
						Clay 27 to 40%	0.98
290:							
San Timoteo	30	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock 20 to 40"	0.54
						Rock fragment content	0.98
San Andreas	25	Poor source		Fair source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.03	Depth to bedrock 20 to 40"	0.54
Bellyspring	20	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragment content	0.00
						Depth to bedrock 20 to 40"	0.54
291:							
San Timoteo	30	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock 20 to 40"	0.54
						Rock fragment content	0.98
San Andreas	25	Poor source		Fair source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.03	Depth to bedrock 20 to 40"	0.54
Bellyspring	20	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragment content	0.00
						Depth to bedrock 20 to 40"	0.54

Table 13a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class and limiting features	Value	Potential source of sand: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
292:							
San Timoteo---------	30	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock 20 to 40"	0.54
						Rock fragment content	0.98
San Andreas---------	25	Poor source		Fair source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.03	Depth to bedrock 20 to 40"	0.54
Bellyspring---------	20	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragment content	0.00
						Depth to bedrock 20 to 40"	0.54
301:							
Arbuckle------------	70	Poor source		Fair source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.06	Rock fragment content	0.68
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.10		
302:							
Arbuckle------------	70	Poor source		Fair source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.06	Slope 12 to 15%	0.37
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.10	Rock fragment content	0.68
303:							
Arbuckle------------	70	Poor source		Fair source		Poor source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.06	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.10	Rock fragment content	0.68
304:							
Arbuckle------------	70	Poor source		Fair source		Poor source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.06	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.10	Rock fragment content	0.68
306:							
Arbuckle------------	70	Poor source		Fair source		Poor source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.06	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.10	Rock fragment content	0.68

Table 13a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class and limiting features	Value	Potential source of sand: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
307:							
Arbuckle	70	Poor source		Fair source		Poor source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.06	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.10	Rock fragment content	0.68
310:							
Yeguas	40	Poor source		Poor source		Good source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00		
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00		
Pinspring	40	Poor source		Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay 27 to 40%	0.98
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00		
311:							
Yeguas	40	Poor source		Poor source		Good source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00		
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00		
Pinspring	40	Poor source		Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay 27 to 40%	0.98
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00		
321:							
Thomhill	80	Poor source		Poor source		Good source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00		
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00		
330:							
Jenks	80	Poor source		Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Depth to bedrock 20 to 40"	0.54
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragment content	0.98
						Clay 27 to 40%	0.98
339:							
Arnold	30	Poor source		Fair source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.16	Sand fractions 75-85%	0.50

Table 13a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class and limiting features	Value	Potential source of sand: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
339:							
San Andreas---------	20	Poor source		Fair source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.03	Depth to bedrock 20 to 40"	0.54
340:							
Arnold--------------	30	Poor source		Fair source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.16	Sand fractions 75-85%	0.50
San Andreas---------	20	Poor source		Fair source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.03	Depth to bedrock 20 to 40"	0.54
350:							
Cieneba-------------	75	Poor source		Fair source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.04	Depth to bedrock < 20"	0.00
360:							
Chicote-------------	40	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	SAR > 13	0.00
						EC > 8 mmhos	0.00
Chicote-------------	40	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	SAR > 13	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	EC > 8 mmhos	0.00
361:							
Chicote-------------	40	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	SAR > 13	0.00
						EC > 8 mmhos	0.00
Chicote-------------	40	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	SAR > 13	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	EC > 8 mmhos	0.00

Table 13a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class and limiting features	Value	Potential source of sand: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
362:							
Chicote	40	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Clay > 40%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	SAR > 13	0.00
						EC > 8 mmhos	0.00
Chicote	40	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	SAR > 13	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	EC > 8 mmhos	0.00
371:							
Semper	50	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock 20 to 40"	0.54
372:							
Semper	65	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock 20 to 40"	0.54
375:							
Semper	40	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock 20 to 40"	0.54
Badlands	25	Not rated		Not rated		Not rated	
380:							
Muranch	30	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragment content	0.00
						Depth to bedrock 20 to 40"	0.54
Xerorthents	25	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragment content	0.00
						Depth to bedrock 20 to 40"	0.54
Rock outcrop	20	Not rated		Not rated		Not rated	
388:							
Rock outcrop	50	Not rated		Not rated		Not rated	

Table 13a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class and limiting features	Value	Potential source of sand: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
388:							
Gaviota	25	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00
						Rock fragment content	0.68
391:							
Rock outcrop	35	Not rated		Not rated		Not rated	
Lithic Torriorthents	30	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00
401:							
Godde	40	Poor source		Fair source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.03	Depth to bedrock < 20"	0.00
						Rock fragment content	0.88
Xerorthents	20	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00
						Rock fragment content	0.76
Rock outcrop	15	Not rated		Not rated		Not rated	
408:							
Gaviota	35	Poor source		Fair source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.00	Depth to bedrock < 20"	0.00
						Rock fragment content	0.97
San Andreas	25	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock 20 to 40"	0.54
409:							
Gaviota	35	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00
						Rock fragment content	0.68
Saltos	25	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00
						Rock fragment content	0.72

Table 13a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class and limiting features	Value	Potential source of sand: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
409:							
Rock outcrop	15	Not rated		Not rated		Not rated	
410:							
Gaviota	40	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00
						Rock fragment content	0.68
Rock outcrop	30	Not rated		Not rated		Not rated	
411:							
Tajea	40	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock 20 to 40"	0.54
						Clay 27 to 40%	0.92
						Rock fragment content	0.98
Saltos	40	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00
						Rock fragment content	0.72
412:							
Tajea	45	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock 20 to 40"	0.54
						Clay 27 to 40%	0.92
						Rock fragment content	0.98
Saltos	30	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00
						Rock fragment content	0.72
420:							
Bellyspring	30	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragment content	0.72
Saltos	25	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00
						Rock fragment content	0.72

Table 13a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class and limiting features	Value	Potential source of sand: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
420:							
Rock outcrop--------	20	Not rated		Not rated		Not rated	
430:							
Saucito-------------	40	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragment content	0.00
						Depth to bedrock < 20"	0.00
						Clay 27 to 40%	0.98
Akad----------------	25	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragment content	0.00
						Depth to bedrock 20 to 40"	0.28
Rock outcrop--------	20	Not rated		Not rated		Not rated	
440:							
Bellyspring---------	35	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Rock fragment content	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Slope 12 to 15%	0.37
						Depth to bedrock 20 to 40"	0.54
Panoza--------------	25	Poor source		Fair source		Fair source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope 12 to 15%	0.37
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.00	Depth to bedrock 20 to 40"	0.54
441:							
Bellyspring---------	35	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragment content	0.00
						Depth to bedrock 20 to 40"	0.54
Panoza--------------	30	Poor source		Fair source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.00	Depth to bedrock 20 to 40"	0.54
442:							
Bellyspring---------	35	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock 20 to 40"	0.54

Table 13a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class and limiting features	Value	Potential source of sand: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
442:							
Panoza	30	Poor source		Fair source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.00	Depth to bedrock 20 to 40"	0.54
443:							
Bellyspring	35	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock 20 to 40"	0.54
Beam	25	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00
Panoza	25	Poor source		Fair source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.00	Depth to bedrock 20 to 40"	0.54
445:							
Bellyspring	35	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragment content	0.00
						Depth to bedrock 20 to 40"	0.54
Xerorthents	30	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragment content	0.00
						Depth to bedrock 20 to 40"	0.54
Panoza	15	Poor source		Fair source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.00	Depth to bedrock 20 to 40"	0.54
450:							
Botella	75	Poor source		Fair source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.02	Rock fragment content	0.98
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.04	Clay 27 to 40%	0.98

Table 13a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class and limiting features	Value	Potential source of sand: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
460:							
Camatta-------------	75	Poor source		Fair source		Poor source	
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Depth to pan < 20"	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.08	Slope > 15%	0.00
						Bulk density >1.8 in 20" depth	0.00
470:							
Botella-------------	85	Poor source		Fair source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.02	Rock fragment content	0.98
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.04	Clay 27 to 40%	0.98
474:							
Elder---------------	80	Poor source		Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Rock fragment content	0.97
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00		
475:							
Elder---------------	80	Poor source		Poor source		Fair source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Rock fragment content	0.97
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00		
480:							
Metz----------------	70	Poor source		Fair source		Fair source	
		Bottom layer not a source	0.00	Thickest layer possible source	0.08	Rock fragment content	0.97
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.09		
490:							
Wasioja-------------	75	Poor source		Poor source		Good source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00		
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00		
491:							
Wasioja-------------	85	Poor source		Fair source		Good source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00		
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.08		
495:							
Wasioja-------------	60	Poor source		Poor source		Good source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00		
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00		

Table 13a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class and limiting features	Value	Potential source of sand: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
495:							
Polonio	20	Poor source		Poor source		Good source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00		
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00		
497:							
Wasioja	35	Poor source		Poor source		Good source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00		
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00		
Pinspring	30	Poor source		Poor source		Good source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00		
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00		
Yeguas	15	Poor source		Poor source		Good source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00		
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00		
512:							
Shimmon	80	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock 20 to 40"	0.54
520:							
Santa Lucia	30	Fair source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer possible source	0.062	Thickest layer not a source	0.00	Rock fragment content	0.00
						Clay > 40%	0.00
						Depth to bedrock 20 to 40"	0.54
521:							
Santa Lucia	80	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragment content	0.00
						Depth to bedrock 20 to 40"	0.54
						Clay 27 to 40%	0.98

Table 13a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class and limiting features	Value	Potential source of sand: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
522:							
Santa Lucia---------	55	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragment content	0.00
						Depth to bedrock 20 to 40"	0.54
						Clay 27 to 40%	0.98
531:							
Saltos--------------	45	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00
						Rock fragment content	0.72
Millsholm-----------	35	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Depth to bedrock < 20"	0.00
561:							
Chanac--------------	85	Poor source		Fair source		Poor source	
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.00		
562:							
Chanac--------------	90	Poor source		Fair source		Poor source	
		Bottom layer not a source	0.00	Thickest layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Bottom layer is a possible source	0.00		
900:							
Pits----------------	100	Not rated		Not rated		Not rated	
905:							
Xerofluvents--------	50	Poor source		Fair source		Fair source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Hard to reclaim	0.50
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.00	Rock fragment content	0.72
Riverwash-----------	30	Poor source		Fair source		Fair source	
		Bottom layer not a source	0.00	Bottom layer is a possible source	0.22	Wetness from 1 to 3'	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer possible source	0.50	Sand fractions 75-85%	0.22
						Rock fragment content	0.97

Table 13a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class and limiting features	Value	Potential source of sand: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
906:							
Xerofluvents	85	Poor source		Poor source		Good source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00		
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00		
908:							
Xerorthents	85	Poor source		Poor source		Poor source	
		Bottom layer not a source	0.00	Bottom layer not a source	0.00	Slope > 15%	0.00
		Thickest layer not a source due to fines or thin layer	0.00	Thickest layer not a source	0.00	Rock fragment content	0.00
910:							
Playas	80	Not rated		Not rated		Not rated	
911:							
Playas	85	Not rated		Not rated		Not rated	
912:							
Water	100	Not rated		Not rated		Not rated	

The interpretation for gravel source evaluates coarse fragments greater than 0.2 inches in size in the bottom layer or in the thickest layer of the soil.

The interpretation for sand source evaluates the amount of sand and fine gravel in the thickest layer or in the bottom layer of the soil. Organic soil layers that have the Unified engineering class for peat (PT) are also evaluated.

The interpretation for topsoil source evaluates the following soil properties at varying depths: calcium carbonate content, clay content, soil bulk density, sand content, soil wetness, coarse fragments 0.2 to 3 inches in size, fragments greater than 3 inches in size, content of organic matter (OM), sodium content expressed as the sodium adsorption ratio (SAR), salinity expressed as mmhos/cm of electrical conductivity (EC), depth to bedrock, slope, and pH.

Table 13b.--Construction Materials (Part 2)

[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 closer the value is to 0, the greater the potential limitation. Values of 0 are absolute limitations based on the soil property criteria used to develop the interpretation. Values closer to 1.0 have less of a limitation. Limiting features with values equal to 1 have absolutely no limitation and are not shown in this report. Rating classes are determined by the most limiting value. Fine-earth fractions and fragment limiting features are reported on a weight basis. A brief summary of the rating criteria and of the abbreviations used in describing the limitations is given at the end of the table]

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value
100:					
Balcom----------------	75	Fair source		Poor source	
		AWC 3 - 6" to 60" depth	0.05	Slopes > 25%	0.00
		OM is .5 to 1%	0.50	Depth to bedrock < 40"	0.00
				AASHTO GI 5 to 8	0.78
101:					
Balcom----------------	45	Fair source		Poor source	
		AWC 3 - 6" to 60" depth	0.05	Depth to bedrock < 40"	0.00
		OM is .5 to 1%	0.50	Slopes 15 to 25%	0.08
				AASHTO GI 5 to 8	0.78
Nacimiento-----------	30	Poor source		Poor source	
		OM < .5%	0.00	Depth to bedrock < 40"	0.00
		AWC 3 - 6" to 60" depth	0.95	AASHTO GI > 8	0.00
				Slopes 15 to 25%	0.08
				LEP 3 to 9	0.75
102:					
Balcom----------------	45	Fair source		Poor source	
		AWC 3 - 6" to 60" depth	0.05	Slopes > 25%	0.00
		OM is .5 to 1%	0.50	Depth to bedrock < 40"	0.00
				AASHTO GI 5 to 8	0.78
Nacimiento-----------	30	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.95	Depth to bedrock < 40"	0.00
				AASHTO GI > 8	0.00
				LEP 3 to 9	0.75
103:					
Balcom----------------	45	Fair source		Poor source	
		AWC 3 - 6" to 60" depth	0.05	Depth to bedrock < 40"	0.00
		OM is .5 to 1%	0.50	AASHTO GI 5 to 8	0.78
Nacimiento-----------	30	Poor source		Poor source	
		OM < .5%	0.00	Depth to bedrock < 40"	0.00
		AWC 3 - 6" to 60" depth	0.95	AASHTO GI > 8	0.00
				LEP 3 to 9	0.75
109:					
Capay-----------------	80	Poor source		Poor source	
		Clay > 40%	0.00	AASHTO GI > 8	0.00
				LEP 3 to 9	0.25
110:					
Capay-----------------	80	Poor source		Poor source	
		Clay > 40%	0.00	AASHTO GI > 8	0.00
				LEP 3 to 9	0.25
112:					
Calleguas-------------	45	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		Clay 27 to 40%	0.98	Slopes 15 to 25%	0.08

Table 13b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value
112:					
Balcom----------------	35	Fair source		Poor source	
		AWC 3 - 6" to 60" depth	0.05	Depth to bedrock < 40"	0.00
		OM is .5 to 1%	0.50	Slopes 15 to 25%	0.08
				AASHTO GI 5 to 8	0.78
114:					
Calleguas-------------	55	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		Clay 27 to 40%	0.98	Slopes 15 to 25%	0.50
Nacimiento------------	20	Poor source		Poor source	
		OM < .5%	0.00	Depth to bedrock < 40"	0.00
		AWC 3 - 6" to 60" depth	0.95	AASHTO GI > 8	0.00
				Slopes 15 to 25%	0.50
				LEP 3 to 9	0.75
120:					
Hillbrick-------------	65	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM < .5%	0.00	Slopes > 25%	0.00
Rock outcrop----------	15	Not rated		Not rated	
121:					
Hillbrick-------------	65	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM < .5%	0.00	Slopes > 25%	0.00
Rock outcrop----------	15	Not rated		Not rated	
123:					
Lithic Torriorthents--	30	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM < .5%	0.00	Slopes > 25%	0.00
Semper----------------	25	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.03	Depth to bedrock < 40"	0.00
		K-factor .10 -.35	0.68		
Rock outcrop----------	20	Not rated		Not rated	
129:					
Kilmer----------------	40	Poor source		Poor source	
		OM < .5%	0.00	Depth to bedrock < 40"	0.00
		AWC 3 - 6" to 60" depth	0.65	LEP 3 to 9	0.79
Hillbrick-------------	35	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM < .5%	0.00		
130:					
Kilmer----------------	40	Poor source		Poor source	
		OM < .5%	0.00	Depth to bedrock < 40"	0.00
		AWC 3 - 6" to 60" depth	0.65	Slopes > 25%	0.00
				LEP 3 to 9	0.79
Hillbrick-------------	35	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM < .5%	0.00	Slopes > 25%	0.00

Table 13b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value
131:					
Kilmer----------------	40	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.65	Depth to bedrock < 40"	0.00
				LEP 3 to 9	0.79
Hillbrick-------------	35	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM < .5%	0.00	Slopes > 25%	0.00
134:					
Kilmer----------------	30	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.65	Depth to bedrock < 40"	0.00
		Clay 27 to 40%	0.98	LEP 3 to 9	0.79
Nacimiento------------	25	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.95	Depth to bedrock < 40"	0.00
				AASHTO GI > 8	0.00
				LEP 3 to 9	0.75
Aido------------------	15	Poor source		Poor source	
		Clay > 40%	0.00	Slopes > 25%	0.00
		OM < .5%	0.00	AASHTO GI > 8	0.00
		AWC 3 - 6" to 60" depth	0.58	Depth to bedrock < 40"	0.00
				LEP 3 to 9	0.25
140:					
Choice----------------	80	Poor source		Poor source	
		Clay > 40%	0.00	AASHTO GI > 8	0.00
		OM < .5%	0.00	Slopes 15 to 25%	0.08
				LEP 3 to 9	0.35
				Depth to bedrock 40 to 60"	0.58
149:					
San Emigdio-----------	80	Poor source		Good source	
		OM < .5%	0.00		
150:					
San Emigdio-----------	80	Poor source		Good source	
		OM < .5%	0.00		
154:					
San Emigdio-----------	85	Poor source		Good source	
		OM < .5%	0.00		
155:					
San Emigdio-----------	85	Poor source		Good source	
		OM < .5%	0.00		
159:					
Sorrento--------------	85	Poor source		Good source	
		OM < .5%	0.00		
160:					
Sorrento--------------	85	Poor source		Good source	
		OM < .5%	0.00		
169:					
Polonio---------------	75	Poor source		Poor source	
		OM < .5%	0.00	AASHTO GI > 8	0.00
				LEP 3 to 9	0.79

Table 13b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value
170:					
Polonio---------------	65	Poor source		Poor source	
		OM < .5%	0.00	AASHTO GI > 8	0.00
				LEP 3 to 9	0.75
173:					
Polonio---------------	85	Poor source		Good source	
		OM < .5%	0.00		
174:					
Polonio---------------	50	Poor source		Poor source	
		OM < .5%	0.00	AASHTO GI > 8	0.00
				LEP 3 to 9	0.79
Thomhill--------------	30	Poor source		Poor source	
		OM < .5%	0.00	AASHTO GI > 8	0.00
				LEP 3 to 9	0.78
175:					
Polonio---------------	50	Poor source		Poor source	
		OM < .5%	0.00	AASHTO GI > 8	0.00
				LEP 3 to 9	0.79
Thomhill--------------	30	Poor source		Poor source	
		OM < .5%	0.00	AASHTO GI > 8	0.00
				LEP 3 to 9	0.78
179:					
Padres----------------	70	Fair source		Good source	
		OM is .5 to 1%	0.50		
180:					
Padres----------------	65	Fair source		Good source	
		OM is .5 to 1%	0.50		
182:					
Oceano----------------	50	Poor source		Good source	
		Sand fractions > 85%	0.00		
		WEG = 1 or 2	0.00		
		AWC 3 - 6" to 60" depth	0.35		
		OM is .5 to 1%	0.50		
190:					
Reward----------------	70	Good source		Fair source	
				Slopes 15 to 25%	0.08
				Depth to bedrock 40 to 60"	0.58
191:					
Reward----------------	70	Good source		Poor source	
				Slopes > 25%	0.00
				Depth to bedrock 40 to 60"	0.58
200:					
Aramburu--------------	70	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		Clay 27 to 40%	0.98	Slopes 15 to 25%	0.18
201:					
Aramburu--------------	65	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Slopes > 25%	0.00
		Clay 27 to 40%	0.98	Depth to bedrock < 40"	0.00
202:					
Aramburu--------------	65	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Slopes > 25%	0.00
		Clay 27 to 40%	0.98	Depth to bedrock < 40"	0.00

Table 13b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value
204:					
Aramburu	40	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Slopes > 25%	0.00
		Clay 27 to 40%	0.98	Depth to bedrock < 40"	0.00
Temblor	35	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
				Slopes > 25%	0.00
205:					
Aramburu	35	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Slopes > 25%	0.00
		Clay 27 to 40%	0.98	Depth to bedrock < 40"	0.00
Temblor	35	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
				Slopes > 25%	0.00
218:					
Seaback	30	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM < .5%	0.00	Slopes > 25%	0.00
Calleguas	25	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		Clay 27 to 40%	0.98	Slopes > 25%	0.00
Panoza	20	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.10	Depth to bedrock < 40"	0.00
219:					
Xerorthents	50	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Slopes > 25%	0.00
		OM is .5 to 1%	0.50	Depth to bedrock < 40"	0.00
Badlands	35	Not rated		Not rated	
220:					
Beam	35	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM is .5 to 1%	0.50	Slopes 15 to 25%	0.08
Panoza	30	Poor source		Poor source	
		OM < .5%	0.00	Depth to bedrock < 40"	0.00
		AWC 3 - 6" to 60" depth	0.10	Slopes 15 to 25%	0.08
Hillbrick	15	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM < .5%	0.00	Slopes 15 to 25%	0.08
221:					
Beam	35	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM is .5 to 1%	0.50	Slopes > 25%	0.00
Panoza	30	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.10	Depth to bedrock < 40"	0.00
Hillbrick	15	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM < .5%	0.00	Slopes > 25%	0.00

Table 13b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value
222:					
Beam------------------	35	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM is .5 to 1%	0.50	Slopes > 25%	0.00
Panoza----------------	30	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.10	Depth to bedrock < 40"	0.00
Hillbrick-------------	15	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM < .5%	0.00	Slopes > 25%	0.00
227:					
Beam------------------	40	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		Fragments >10" are 5-15%	0.07	Slopes > 25%	0.00
		OM is .5 to 1%	0.50		
Panoza----------------	35	Poor source		Poor source	
		OM < .5%	0.00	Depth to bedrock < 40"	0.00
		Fragments >10" are > 15%	0.00	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.01		
228:					
Beam------------------	40	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		Fragments >10" are 5-15%	0.07	Slopes > 25%	0.00
		OM is .5 to 1%	0.50		
Panoza----------------	35	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		Fragments >10" are > 15%	0.00	Depth to bedrock < 40"	0.00
		AWC 3 - 6" to 60" depth	0.01		
229:					
Seaback---------------	40	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM < .5%	0.00	Slopes > 25%	0.00
San Timoteo-----------	35	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.02	Depth to bedrock < 40"	0.00
230:					
Padres----------------	50	Poor source		Good source	
		OM < .5%	0.00		
Wasioja---------------	35	Poor source		Good source	
		OM < .5%	0.00		
240:					
Panoza----------------	40	Poor source		Poor source	
		OM < .5%	0.00	Depth to bedrock < 40"	0.00
		AWC 3 - 6" to 60" depth	0.10	Slopes 15 to 25%	0.08
Beam------------------	30	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM < .5%	0.00	Slopes 15 to 25%	0.08
241:					
Panoza----------------	40	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.10	Depth to bedrock < 40"	0.00

Table 13b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value
241:					
Beam------------------	30	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM < .5%	0.00	Slopes > 25%	0.00
242:					
Panoza----------------	40	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.10	Depth to bedrock < 40"	0.00
Beam------------------	30	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM < .5%	0.00	Slopes > 25%	0.00
248:					
Pyxo------------------	55	Poor source		Poor source	
		OM < .5%	0.00	Depth to bedrock < 40"	0.00
		SAR from 4 to 13	0.97	Slopes 15 to 25%	0.12
		AWC > 6" to 60" depth	0.99	LEP 3 to 9	0.77
Cochora---------------	30	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM < .5%	0.00	Slopes 15 to 25%	0.12
249:					
Xeric Torriorthents---	50	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		AWC < 3" to 60" depth	0.00	Depth to bedrock 40 to 60"	0.00
Badlands--------------	25	Not rated		Not rated	
250:					
Pyxo------------------	40	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.35	Depth to bedrock < 40"	0.00
		SAR from 4 to 13	0.97	LEP 3 to 9	0.75
Cochora---------------	25	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM < .5%	0.00	Slopes 15 to 25%	0.12
Badlands--------------	15	Not rated		Not rated	
251:					
Nacimiento------------	75	Poor source		Poor source	
		OM < .5%	0.00	Depth to bedrock < 40"	0.00
		AWC 3 - 6" to 60" depth	0.95	AASHTO GI > 8	0.00
				Slopes 15 to 25%	0.08
				LEP 3 to 9	0.75
252:					
Nacimiento------------	75	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.95	Depth to bedrock < 40"	0.00
				AASHTO GI > 8	0.00
				LEP 3 to 9	0.75
261:					
Aido------------------	85	Poor source		Poor source	
		Clay > 40%	0.00	AASHTO GI > 8	0.00
		OM < .5%	0.00	Depth to bedrock < 40"	0.00
		AWC 3 - 6" to 60" depth	0.58	Slopes 15 to 25%	0.08
				LEP 3 to 9	0.25

Table 13b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value
262:					
Aido------------------	80	Poor source		Poor source	
		Clay > 40%	0.00	Slopes > 25%	0.00
		OM < .5%	0.00	AASHTO GI > 8	0.00
		AWC 3 - 6" to 60" depth	0.58	Depth to bedrock < 40"	0.00
				LEP 3 to 9	0.25
263:					
Aido------------------	85	Poor source		Poor source	
		Clay > 40%	0.00	Slopes > 25%	0.00
		OM < .5%	0.00	AASHTO GI > 8	0.00
		AWC 3 - 6" to 60" depth	0.58	Depth to bedrock < 40"	0.00
				LEP 3 to 9	0.25
270:					
Ayar------------------	80	Poor source		Poor source	
		Clay > 40%	0.00	AASHTO GI > 8	0.00
		OM is .5 to 1%	0.50	LEP 3 to 9	0.38
				Depth to bedrock 40 to 60"	0.92
271:					
Ayar------------------	80	Poor source		Poor source	
		Clay > 40%	0.00	AASHTO GI > 8	0.00
		OM is .5 to 1%	0.50	Slopes 15 to 25%	0.08
				LEP 3 to 9	0.25
				Depth to bedrock 40 to 60"	0.92
274:					
Ayar------------------	30	Poor source		Poor source	
		Clay > 40%	0.00	AASHTO GI > 8	0.00
		OM is .5 to 1%	0.50	Slopes 15 to 25%	0.08
				LEP 3 to 9	0.25
				Depth to bedrock 40 to 60"	0.92
Hillbrick-------------	30	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM < .5%	0.00	Slopes 15 to 25%	0.08
Aido------------------	20	Poor source		Poor source	
		Clay > 40%	0.00	AASHTO GI > 8	0.00
		OM < .5%	0.00	Depth to bedrock < 40"	0.00
		AWC 3 - 6" to 60" depth	0.58	Slopes 15 to 25%	0.08
				LEP 3 to 9	0.25
275:					
Ayar------------------	30	Poor source		Poor source	
		Clay > 40%	0.00	Slopes > 25%	0.00
		OM is .5 to 1%	0.50	AASHTO GI > 8	0.00
				LEP 3 to 9	0.25
				Depth to bedrock 40 to 60"	0.92
Hillbrick-------------	30	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM < .5%	0.00	Slopes > 25%	0.00
Aido------------------	20	Poor source		Poor source	
		Clay > 40%	0.00	Slopes > 25%	0.00
		OM < .5%	0.00	AASHTO GI > 8	0.00
		AWC 3 - 6" to 60" depth	0.58	Depth to bedrock < 40"	0.00
				LEP 3 to 9	0.25
280:					
Seaback---------------	35	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM < .5%	0.00		

Table 13b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value
280:					
Panoza----------------	30	Poor source		Poor source	
		OM < .5%	0.00	Depth to bedrock < 40"	0.00
		AWC 3 - 6" to 60" depth	0.10		
Jenks-----------------	15	Fair source		Poor source	
		AWC 3 - 6" to 60" depth	0.76	Depth to bedrock < 40"	0.00
		Clay 27 to 40%	0.98	AASHTO GI > 8	0.00
				LEP 3 to 9	0.87
281:					
Seaback---------------	35	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM < .5%	0.00	Slopes 15 to 25%	0.08
Panoza----------------	30	Poor source		Poor source	
		OM < .5%	0.00	Depth to bedrock < 40"	0.00
		AWC 3 - 6" to 60" depth	0.10	Slopes 15 to 25%	0.08
Jenks-----------------	15	Fair source		Poor source	
		AWC 3 - 6" to 60" depth	0.76	Depth to bedrock < 40"	0.00
		Clay 27 to 40%	0.98	AASHTO GI > 8	0.00
				Slopes 15 to 25%	0.08
				LEP 3 to 9	0.87
282:					
Seaback---------------	35	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM < .5%	0.00	Slopes > 25%	0.00
Panoza----------------	30	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.10	Depth to bedrock < 40"	0.00
Jenks-----------------	15	Fair source		Poor source	
		AWC 3 - 6" to 60" depth	0.76	Slopes > 25%	0.00
		Clay 27 to 40%	0.98	Depth to bedrock < 40"	0.00
				AASHTO GI > 8	0.00
				LEP 3 to 9	0.87
290:					
San Timoteo-----------	30	Poor source		Poor source	
		OM < .5%	0.00	Depth to bedrock < 40"	0.00
		AWC 3 - 6" to 60" depth	0.02	Slopes 15 to 25%	0.08
San Andreas-----------	25	Poor source		Poor source	
		OM < .5%	0.00	Depth to bedrock < 40"	0.00
		AWC 3 - 6" to 60" depth	0.00	Slopes 15 to 25%	0.08
		K-factor .10 -.35	0.68		
Bellyspring-----------	20	Poor source		Poor source	
		OM < .5%	0.00	Depth to bedrock < 40"	0.00
		AWC 3 - 6" to 60" depth	0.35	Slopes 15 to 25%	0.08
				AASHTO GI 5 to 8	0.22
				LEP 3 to 9	0.83
				Fragments >3" < 25%	1.00
291:					
San Timoteo-----------	30	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.02	Depth to bedrock < 40"	0.00

Table 13b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value
291:					
San Andreas-----------	25	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		K-factor .10 -.35	0.68		
Bellyspring-----------	20	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.35	Depth to bedrock < 40"	0.00
				AASHTO GI 5 to 8	0.22
				LEP 3 to 9	0.83
				Fragments >3" < 25%	1.00
292:					
San Timoteo-----------	30	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.02	Depth to bedrock < 40"	0.00
San Andreas-----------	25	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		K-factor .10 -.35	0.68		
Bellyspring-----------	20	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.35	Depth to bedrock < 40"	0.00
				AASHTO GI 5 to 8	0.22
				LEP 3 to 9	0.83
				Fragments >3" < 25%	1.00
301:					
Arbuckle--------------	70	Poor source		Good source	
		OM < .5%	0.00		
302:					
Arbuckle--------------	70	Poor source		Good source	
		OM < .5%	0.00		
303:					
Arbuckle--------------	70	Poor source		Fair source	
		OM < .5%	0.00	Slopes 15 to 25%	0.08
304:					
Arbuckle--------------	70	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
306:					
Arbuckle--------------	70	Poor source		Fair source	
		OM < .5%	0.00	Slopes 15 to 25%	0.08
307:					
Arbuckle--------------	70	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
310:					
Yeguas----------------	40	Good source		Good source	
		K-factor < .10	0.99		
Pinspring-------------	40	Poor source		Fair source	
		OM < .5%	0.00	AASHTO GI 5 to 8	0.78
		K-factor .10 -.35	0.90		
		Clay 27 to 40%	0.98		

Table 13b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value
311:					
Yeguas----------------	40	Good source		Good source	
		K-factor < .10	0.99		
Pinspring-------------	40	Poor source		Fair source	
		OM < .5%	0.00	AASHTO GI 5 to 8	0.78
		K-factor .10 -.35	0.90		
		Clay 27 to 40%	0.98		
321:					
Thomhill--------------	80	Poor source		Poor source	
		OM < .5%	0.00	AASHTO GI > 8	0.00
				LEP 3 to 9	0.78
330:					
Jenks-----------------	80	Fair source		Poor source	
		AWC 3 - 6" to 60" depth	0.76	Depth to bedrock < 40"	0.00
		Clay 27 to 40%	0.98	AASHTO GI > 8	0.00
				LEP 3 to 9	0.87
339:					
Arnold----------------	30	Poor source		Fair source	
		WEG = 1 or 2	0.00	Slopes 15 to 25%	0.50
		OM < .5%	0.00	Depth to bedrock 40 to 60"	0.58
		AWC 3 - 6" to 60" depth	0.01		
		Sand fractions 75 to 85%	0.88		
San Andreas-----------	20	Poor source		Poor source	
		OM < .5%	0.00	Depth to bedrock < 40"	0.00
		AWC 3 - 6" to 60" depth	0.24	Slopes 15 to 25%	0.50
		K-factor .10 -.35	0.68		
340:					
Arnold----------------	30	Poor source		Poor source	
		WEG = 1 or 2	0.00	Slopes > 25%	0.00
		OM < .5%	0.00	Depth to bedrock 40 to 60"	0.58
		AWC 3 - 6" to 60" depth	0.01		
		Sand fractions 75 to 85%	0.88		
San Andreas-----------	20	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.24	Depth to bedrock < 40"	0.00
		K-factor .10 -.35	0.68		
350:					
Cieneba---------------	75	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM is .5 to 1%	0.50	Slopes > 25%	0.00
360:					
Chicote---------------	40	Poor source		Poor source	
		Clay > 40%	0.00	LEP > 9	0.00
		OM < .5%	0.00	AASHTO GI > 8	0.00
		SAR > 13	0.00		
		EC > 16 mmhos/cm	0.00		
		AWC 3 - 6" to 60" depth	0.84		
		K-factor .10 -.35	0.90		
Chicote---------------	40	Poor source		Poor source	
		OM < .5%	0.00	AASHTO GI > 8	0.00
		SAR > 13	0.00		
		Maximum pH > 8.5	0.00		
		EC > 16 mmhos/cm	0.00		

Table 13b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value
361:					
Chicote---------------	40	Poor source		Poor source	
		Clay > 40%	0.00	LEP > 9	0.00
		OM < .5%	0.00	AASHTO GI > 8	0.00
		SAR > 13	0.00		
		EC > 16 mmhos/cm	0.00		
		AWC 3 - 6" to 60" depth	0.84		
		K-factor .10 -.35	0.90		
Chicote---------------	40	Poor source		Poor source	
		OM < .5%	0.00	AASHTO GI > 8	0.00
		SAR > 13	0.00		
		Maximum pH > 8.5	0.00		
		EC > 16 mmhos/cm	0.00		
362:					
Chicote---------------	40	Poor source		Poor source	
		Clay > 40%	0.00	LEP > 9	0.00
		OM < .5%	0.00	AASHTO GI > 8	0.00
		SAR > 13	0.00		
		EC > 16 mmhos/cm	0.00		
		AWC 3 - 6" to 60" depth	0.84		
		K-factor .10 -.35	0.90		
Chicote---------------	40	Poor source		Poor source	
		OM < .5%	0.00	AASHTO GI > 8	0.00
		SAR > 13	0.00		
		Maximum pH > 8.5	0.00		
		EC > 16 mmhos/cm	0.00		
371:					
Semper----------------	50	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.03	Depth to bedrock < 40"	0.00
		K-factor .10 -.35	0.68		
372:					
Semper----------------	65	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.03	Depth to bedrock < 40"	0.00
		K-factor .10 -.35	0.68		
375:					
Semper----------------	40	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.03	Depth to bedrock < 40"	0.00
		K-factor .10 -.35	0.68		
Badlands--------------	25	Not rated		Not rated	
380:					
Muranch---------------	30	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.10	Depth to bedrock < 40"	0.00
				Fragments >3" = 25 to 50%	0.85
Xerorthents-----------	25	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Slopes > 25%	0.00
		OM is .5 to 1%	0.50	Depth to bedrock < 40"	0.00
Rock outcrop----------	20	Not rated		Not rated	
388:					
Rock outcrop----------	50	Not rated		Not rated	

Table 13b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value
388:					
Gaviota	25	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM is .5 to 1%	0.50	Slopes > 25%	0.00
391:					
Rock outcrop	35	Not rated		Not rated	
Lithic Torriorthents	30	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM < .5%	0.00	Slopes > 25%	0.00
401:					
Godde	40	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
				Slopes > 25%	0.00
Xerorthents	20	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM is .5 to 1%	0.50	Slopes > 25%	0.00
Rock outcrop	15	Not rated		Not rated	
408:					
Gaviota	35	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM is .5 to 1%	0.50	Slopes 15 to 25%	0.08
San Andreas	25	Fair source		Poor source	
		AWC 3 - 6" to 60" depth	0.29	Depth to bedrock < 40"	0.00
		OM is .5 to 1%	0.50	Slopes 15 to 25%	0.08
409:					
Gaviota	35	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM is .5 to 1%	0.50	Slopes > 25%	0.00
Saltos	25	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM < .5%	0.00	Slopes > 25%	0.00
Rock outcrop	15	Not rated		Not rated	
410:					
Gaviota	40	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM is .5 to 1%	0.50	Slopes > 25%	0.00
Rock outcrop	30	Not rated		Not rated	
411:					
Tajea	40	Poor source		Poor source	
		OM < .5%	0.00	Depth to bedrock < 40"	0.00
		AWC 3 - 6" to 60" depth	0.53	AASHTO GI > 8	0.00
		Clay 27 to 40%	0.92	Slopes 15 to 25%	0.08
				LEP 3 to 9	0.85
Saltos	40	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM < .5%	0.00	Slopes 15 to 25%	0.08

Table 13b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value
412:					
Tajea-----------------	45	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.53	Depth to bedrock < 40"	0.00
		Clay 27 to 40%	0.92	AASHTO GI > 8	0.00
				LEP 3 to 9	0.85
Saltos----------------	30	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM < .5%	0.00	Slopes > 25%	0.00
420:					
Bellyspring-----------	30	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
				Depth to bedrock 40 to 60"	0.61
				LEP 3 to 9	0.77
Saltos----------------	25	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM < .5%	0.00	Slopes > 25%	0.00
Rock outcrop----------	20	Not rated		Not rated	
430:					
Saucito---------------	40	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM < .5%	0.00	Slopes > 25%	0.00
		Fragments 3-10" 25 to 50%	0.98	Fragments >3" = 25 to 50%	0.94
		Clay 27 to 40%	0.98		
Akad------------------	25	Poor source		Poor source	
		OM < .5%	0.00	Depth to bedrock < 40"	0.00
		AWC < 3" to 60" depth	0.00	Slopes > 25%	0.00
				LEP 3 to 9	0.85
				Fragments >3" = 25 to 50%	0.97
Rock outcrop----------	20	Not rated		Not rated	
440:					
Bellyspring-----------	35	Poor source		Poor source	
		OM < .5%	0.00	Depth to bedrock < 40"	0.00
		AWC 3 - 6" to 60" depth	0.35	AASHTO GI 5 to 8	0.22
				LEP 3 to 9	0.83
				Fragments >3" < 25%	1.00
Panoza----------------	25	Poor source		Poor source	
		OM < .5%	0.00	Depth to bedrock < 40"	0.00
		AWC 3 - 6" to 60" depth	0.10		
441:					
Bellyspring-----------	35	Poor source		Poor source	
		OM < .5%	0.00	Depth to bedrock < 40"	0.00
		AWC 3 - 6" to 60" depth	0.35	Slopes 15 to 25%	0.08
				AASHTO GI 5 to 8	0.22
				LEP 3 to 9	0.83
				Fragments >3" < 25%	1.00
Panoza----------------	30	Poor source		Poor source	
		OM < .5%	0.00	Depth to bedrock < 40"	0.00
		AWC 3 - 6" to 60" depth	0.10	Slopes 15 to 25%	0.08

Table 13b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value
442:					
Bellyspring-----------	35	Fair source		Poor source	
		AWC 3 - 6" to 60" depth	0.41	Slopes > 25%	0.00
		OM is .5 to 1%	0.50	Depth to bedrock < 40"	0.00
				AASHTO GI 5 to 8	0.22
Panoza----------------	30	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.10	Depth to bedrock < 40"	0.00
443:					
Bellyspring-----------	35	Fair source		Poor source	
		AWC 3 - 6" to 60" depth	0.41	Slopes > 25%	0.00
		OM is .5 to 1%	0.50	Depth to bedrock < 40"	0.00
				AASHTO GI 5 to 8	0.22
Beam------------------	25	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM is .5 to 1%	0.50	Slopes > 25%	0.00
Panoza----------------	25	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.10	Depth to bedrock < 40"	0.00
445:					
Bellyspring-----------	35	Poor source		Poor source	
		OM < .5%	0.00	Depth to bedrock < 40"	0.00
		AWC 3 - 6" to 60" depth	0.35	Slopes > 25%	0.00
				AASHTO GI 5 to 8	0.22
				LEP 3 to 9	0.83
				Fragments >3" < 25%	1.00
Xerorthents-----------	30	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM is .5 to 1%	0.50	Slopes > 25%	0.00
Panoza----------------	15	Poor source		Poor source	
		OM < .5%	0.00	Depth to bedrock < 40"	0.00
		AWC 3 - 6" to 60" depth	0.10	Slopes > 25%	0.00
450:					
Botella---------------	75	Fair source		Fair source	
		Clay 27 to 40%	0.98	LEP 3 to 9	0.75
460:					
Camatta---------------	75	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to pan < 40"	0.00
		OM is .5 to 1%	0.50	Slopes 15 to 25%	0.82
		Calcium carbonates 15 to 40%	0.68		
470:					
Botella---------------	85	Fair source		Fair source	
		Clay 27 to 40%	0.98	LEP 3 to 9	0.75
474:					
Elder-----------------	80	Good source		Good source	
475:					
Elder-----------------	80	Good source		Good source	

Table 13b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value
480:					
Metz	70	Poor source		Good source	
		WEG = 1 or 2	0.00		
		OM is .5 to 1%	0.50		
		K-factor .10 -.35	0.68		
		AWC 3 - 6" to 60" depth	0.97		
490:					
Wasioja	75	Poor source		Fair source	
		OM < .5%	0.00	AASHTO GI 5 to 8	0.78
				LEP 3 to 9	0.94
491:					
Wasioja	85	Poor source		Fair source	
		OM < .5%	0.00	AASHTO GI 5 to 8	0.22
				LEP 3 to 9	0.75
495:					
Wasioja	60	Poor source		Fair source	
		OM < .5%	0.00	AASHTO GI 5 to 8	0.22
		K-factor < .10	0.99	LEP 3 to 9	0.75
Polonio	20	Poor source		Poor source	
		OM < .5%	0.00	AASHTO GI > 8	0.00
				LEP 3 to 9	0.79
497:					
Wasioja	35	Poor source		Fair source	
		OM < .5%	0.00	AASHTO GI 5 to 8	0.78
				LEP 3 to 9	0.94
Pinspring	30	Fair source		Good source	
		K-factor .10 -.35	0.90		
Yeguas	15	Good source		Good source	
		K-factor < .10	0.99		
512:					
Shimmon	80	Fair source		Poor source	
		AWC 3 - 6" to 60" depth	0.00	Slopes > 25%	0.00
				Depth to bedrock < 40"	0.00
520:					
Santa Lucia	30	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Slopes > 25%	0.00
		Clay > 40%	0.00	Depth to bedrock < 40"	0.00
521:					
Santa Lucia	80	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		Clay 27 to 40%	0.98	Slopes 15 to 25%	0.08
522:					
Santa Lucia	55	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Slopes > 25%	0.00
		Clay 27 to 40%	0.98	Depth to bedrock < 40"	0.00
531:					
Saltos	45	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM < .5%	0.00	Slopes > 25%	0.00
Millsholm	35	Poor source		Poor source	
		AWC < 3" to 60" depth	0.00	Depth to bedrock < 40"	0.00
		OM < .5%	0.00	Slopes 15 to 25%	0.08

Table 13b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value
561:					
Chanac	85	Poor source		Fair source	
		OM < .5%	0.00	Slopes 15 to 25%	0.50
		K-factor < .10	0.99		
562:					
Chanac	90	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		K-factor < .10	0.99		
900:					
Pits	100	Not rated		Not rated	
905:					
Xerofluvents	50	Poor source		Good source	
		WEG = 1 or 2	0.00		
		OM < .5%	0.00		
Riverwash	30	Poor source		Fair source	
		WEG = 1 or 2	0.00	Wetness from 1 to 3'	0.00
		OM < .5%	0.00		
		AWC < 3" to 60" depth	0.00		
		Sand fractions 75 to 85%	0.50		
906:					
Xerofluvents	85	Poor source		Fair source	
		OM < .5%	0.00	LEP 3 to 9	0.75
908:					
Xerorthents	85	Poor source		Poor source	
		OM < .5%	0.00	Slopes > 25%	0.00
		AWC 3 - 6" to 60" depth	0.04	Depth to bedrock 40 to 60"	0.61
910:					
Playas	80	Not rated		Not rated	
911:					
Playas	85	Not rated		Not rated	
912:					
Water	100	Not rated		Not rated	

The interpretation for reclamation material source evaluates the following soil properties at varying depths in the soil: the content of sand, clay, and fragments; the wind erodibility group (WEG); available water capacity (AWC); pH; salinity (EC); amount of sodium (SAR); carbonates; and the susceptibility of the soil to erosion by water (K-factor).

The interpretation for roadfill source evaluates the following soil properties at varying depths in the soil: shrink-swell potential expressed as linear extensibility percent (LEP), depth to rock or cemented pan, wetness, slope, soil strength expressed as AASHTO Group Index number (AASHTO GI), and content of rock fragments.

Table 14.--Water Management

[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 potential limitation. The rating is based on the limitation with the highest value. Only the three highest value limitations are lisited. There may be more limitations. Fine-earth fractions and coarse fragments are reported on a weight basis. A brief summary of the rating criteria and of the abbreviations used in describing the limitations is given at the end of the table]

Map symbol and soil name	Pct.	Embankments, dikes, and levees		Pond reservoir areas	
		Limitation	Value	Limitation	Value
100:					
Balcom----------------	75	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Depth to bedrock from 20-60"	0.85
101:					
Balcom----------------	45	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Depth to bedrock from 20-60"	0.85
Nacimiento------------	30	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
		High piping potential	0.50	Depth to bedrock from 20-60"	0.85
		Shrink-swell (LEP 3-6)	0.50		
102:					
Balcom----------------	45	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Depth to bedrock from 20-60"	0.85
Nacimiento------------	30	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
		High piping potential	0.50	Depth to bedrock from 20-60"	0.85
		Shrink-swell (LEP 3-6)	0.50		
103:					
Balcom----------------	45	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Depth to bedrock from 20-60"	0.85
Nacimiento------------	30	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
		High piping potential	0.50	Depth to bedrock from 20-60"	0.85
		Shrink-swell (LEP 3-6)	0.50		
109:					
Capay-----------------	80	Severe		Slight	
		Shrink-swell (LEP >6)	1.00		
		MH or CH Unified and PI <40%	0.50		
110:					
Capay-----------------	80	Severe		Moderate	
		Shrink-swell (LEP >6)	1.00	Slopes 2 to 7%	0.66
112:					
Calleguas-------------	45	Severe		Severe	
		Thin layer	1.00	Slopes > 7%	1.00
				Depth to bedrock < 20"	1.00
Balcom----------------	35	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Depth to bedrock from 20-60"	0.85
114:					
Calleguas-------------	55	Severe		Severe	
		Thin layer	1.00	Slopes > 7%	1.00
				Depth to bedrock < 20"	1.00

Table 14.--Water Management--Continued

Map symbol and soil name	Pct.	Embankments, dikes, and levees: Limitation	Value	Pond reservoir areas: Limitation	Value
114:					
Nacimiento------------	20	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
		High piping potential	0.50	Depth to bedrock from 20-60"	0.85
		Shrink-swell (LEP 3-6)	0.50		
120:					
Hillbrick-------------	65	Severe		Severe	
		Very high piping potential	1.00	Slopes > 7%	1.00
		Thin layer	1.00	Depth to bedrock < 20"	1.00
Rock outcrop----------	15	Not rated		Not rated	
121:					
Hillbrick-------------	65	Severe		Severe	
		Very high piping potential	1.00	Slopes > 7%	1.00
		Thin layer	1.00	Depth to bedrock < 20"	1.00
Rock outcrop----------	15	Not rated		Not rated	
123:					
Lithic Torriorthents--	30	Severe		Severe	
		Thin layer	1.00	Slopes > 7%	1.00
		Slight seepage problem	0.10	Depth to bedrock < 20"	1.00
Semper----------------	25	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
		High piping potential	0.76	Permeability > 2"/hr (seepage)	1.00
				Gypsum >15% to 80" depth	1.00
Rock outcrop----------	20	Not rated		Not rated	
129:					
Kilmer----------------	40	Moderate		Severe	
		High piping potential	0.91	Slopes > 7%	1.00
		Thin layer	0.85	Depth to bedrock from 20-60"	0.85
		Shrink-swell (LEP 3-6)	0.50		
Hillbrick-------------	35	Severe		Severe	
		Very high piping potential	1.00	Slopes > 7%	1.00
		Thin layer	1.00	Depth to bedrock < 20"	1.00
130:					
Kilmer----------------	40	Moderate		Severe	
		High piping potential	0.91	Slopes > 7%	1.00
		Thin layer	0.85	Depth to bedrock from 20-60"	0.85
		Shrink-swell (LEP 3-6)	0.50		
Hillbrick-------------	35	Severe		Severe	
		Very high piping potential	1.00	Slopes > 7%	1.00
		Thin layer	1.00	Depth to bedrock < 20"	1.00
131:					
Kilmer----------------	40	Moderate		Severe	
		High piping potential	0.91	Slopes > 7%	1.00
		Thin layer	0.85	Depth to bedrock from 20-60"	0.85
		Shrink-swell (LEP 3-6)	0.50		
Hillbrick-------------	35	Severe		Severe	
		Very high piping potential	1.00	Slopes > 7%	1.00
		Thin layer	1.00	Depth to bedrock < 20"	1.00
134:					
Kilmer----------------	30	Moderate		Severe	
		High piping potential	0.91	Slopes > 7%	1.00
		Thin layer	0.85	Depth to bedrock from 20-60"	0.85
		Shrink-swell (LEP 3-6)	0.50		

Table 14.--Water Management--Continued

Map symbol and soil name	Pct.	Embankments, dikes, and levees: Limitation	Value	Pond reservoir areas: Limitation	Value
134:					
Nacimiento	25	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
		High piping potential	0.50	Depth to bedrock from 20-60"	0.85
		Shrink-swell (LEP 3-6)	0.50		
Aido	15	Severe		Severe	
		Shrink-swell (LEP >6)	1.00	Slopes > 7%	1.00
		Thin layer	0.85	Depth to bedrock from 20-60"	0.85
140:					
Choice	80	Severe		Severe	
		Shrink-swell (LEP >6)	1.00	Slopes > 7%	1.00
		MH or CH Unified and PI <40%	0.50	Depth to bedrock from 20-60"	0.11
		Thin layer	0.11		
149:					
San Emigdio	80	Severe		Severe	
		Very high piping potential	1.00	Permeability > 2"/hr (seepage)	1.00
150:					
San Emigdio	80	Severe		Severe	
		Very high piping potential	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 7%	0.66
154:					
San Emigdio	85	Severe		Severe	
		Very high piping potential	1.00	Permeability > 2"/hr (seepage)	1.00
155:					
San Emigdio	85	Severe		Severe	
		Very high piping potential	1.00	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 7%	0.66
159:					
Sorrento	85	Moderate		Moderate	
		High piping potential	0.55	Permeability .6-2"/hr (some seepage)	0.32
160:					
Sorrento	85	Moderate		Moderate	
		High piping potential	0.55	Slopes 2 to 7%	0.66
				Permeability .6-2"/hr (some seepage)	0.32
169:					
Polonio	75	Moderate		Slight	
		High piping potential	0.58		
		Shrink-swell (LEP 3-6)	0.50		
170:					
Polonio	65	Moderate		Moderate	
		Shrink-swell (LEP 3-6)	0.50	Slopes 2 to 7%	0.66
		High piping potential	0.48		
173:					
Polonio	85	Slight		Moderate	
				Slopes 2 to 7%	0.66
174:					
Polonio	50	Moderate		Slight	
		High piping potential	0.58		
		Shrink-swell (LEP 3-6)	0.50		
Thomhill	30	Moderate		Moderate	
		High piping potential	0.51	Permeability .6-2"/hr (some seepage)	0.32
		Shrink-swell (LEP 3-6)	0.50		

Table 14.--Water Management--Continued

Map symbol and soil name	Pct.	Embankments, dikes, and levees: Limitation	Value	Pond reservoir areas: Limitation	Value
175:					
Polonio	50	Moderate		Moderate	
		High piping potential	0.58	Slopes 2 to 7%	0.66
		Shrink-swell (LEP 3-6)	0.50		
Thomhill	30	Moderate		Moderate	
		High piping potential	0.51	Slopes 2 to 7%	0.66
		Shrink-swell (LEP 3-6)	0.50	Permeability .6-2"/hr (some seepage)	0.32
179:					
Padres	70	Slight		Severe	
				Permeability > 2"/hr (seepage)	1.00
180:					
Padres	65	Slight		Severe	
				Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 7%	0.66
182:					
Oceano	50	Severe		Moderate	
		Seepage problem	1.00	Slopes 2 to 7%	0.66
190:					
Reward	70	Moderate		Severe	
		Thin layer	0.11	Slopes > 7%	1.00
				Permeability .6-2"/hr (some seepage)	0.32
				Depth to bedrock from 20-60"	0.11
191:					
Reward	70	Moderate		Severe	
		Thin layer	0.11	Slopes > 7%	1.00
				Permeability .6-2"/hr (some seepage)	0.32
				Depth to bedrock from 20-60"	0.11
200:					
Aramburu	70	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Depth to bedrock from 20-60"	0.85
201:					
Aramburu	65	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Depth to bedrock from 20-60"	0.85
202:					
Aramburu	65	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Depth to bedrock from 20-60"	0.85
204:					
Aramburu	40	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Depth to bedrock from 20-60"	0.85
Temblor	35	Severe		Severe	
		Thin layer	1.00	Slopes > 7%	1.00
				Depth to bedrock < 20"	1.00
205:					
Aramburu	35	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Depth to bedrock from 20-60"	0.85
Temblor	35	Severe		Severe	
		Thin layer	1.00	Slopes > 7%	1.00
				Depth to bedrock < 20"	1.00

Table 14.--Water Management--Continued

Map symbol and soil name	Pct.	Embankments, dikes, and levees		Pond reservoir areas	
		Limitation	Value	Limitation	Value
218:					
Seaback---------------	30	Severe		Severe	
		Thin layer	1.00	Slopes > 7%	1.00
				Depth to bedrock < 20"	1.00
Calleguas-------------	25	Severe		Severe	
		Thin layer	1.00	Slopes > 7%	1.00
				Depth to bedrock < 20"	1.00
Panoza----------------	20	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Depth to bedrock from 20-60"	0.85
				Permeability .6-2"/hr (some seepage)	0.50
219:					
Xerorthents-----------	50	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
				Depth to bedrock from 20-60"	0.85
Badlands--------------	35	Not rated		Not rated	
220:					
Beam------------------	35	Severe		Severe	
		Thin layer	1.00	Slopes > 7%	1.00
				Depth to bedrock < 20"	1.00
Panoza----------------	30	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Depth to bedrock from 20-60"	0.85
				Permeability .6-2"/hr (some seepage)	0.50
Hillbrick-------------	15	Severe		Severe	
		Very high piping potential	1.00	Slopes > 7%	1.00
		Thin layer	1.00	Depth to bedrock < 20"	1.00
221:					
Beam------------------	35	Severe		Severe	
		Thin layer	1.00	Slopes > 7%	1.00
				Depth to bedrock < 20"	1.00
Panoza----------------	30	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Depth to bedrock from 20-60"	0.85
				Permeability .6-2"/hr (some seepage)	0.50
Hillbrick-------------	15	Severe		Severe	
		Very high piping potential	1.00	Slopes > 7%	1.00
		Thin layer	1.00	Depth to bedrock < 20"	1.00
222:					
Beam------------------	35	Severe		Severe	
		Thin layer	1.00	Slopes > 7%	1.00
				Depth to bedrock < 20"	1.00
Panoza----------------	30	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Depth to bedrock from 20-60"	0.85
				Permeability .6-2"/hr (some seepage)	0.50
Hillbrick-------------	15	Severe		Severe	
		Thin layer	1.00	Slopes > 7%	1.00
		Very high piping potential	1.00	Depth to bedrock < 20"	1.00

Table 14.--Water Management--Continued

Map symbol and soil name	Pct.	Embankments, dikes, and levees		Pond reservoir areas	
		Limitation	Value	Limitation	Value
227:					
Beam	40	Severe		Severe	
		Thin layer	1.00	Slopes > 7%	1.00
		Fragments (>3") 15-35%	0.22	Depth to bedrock < 20"	1.00
Panoza	35	Moderate		Severe	
		Fragments (>3") 15-35%	0.98	Slopes > 7%	1.00
		Thin layer	0.85	Depth to bedrock from 20-60"	0.85
				Permeability .6-2"/hr (some seepage)	0.50
228:					
Beam	40	Severe		Severe	
		Thin layer	1.00	Slopes > 7%	1.00
		Fragments (>3") 15-35%	0.22	Depth to bedrock < 20"	1.00
Panoza	35	Moderate		Severe	
		Fragments (>3") 15-35%	0.98	Slopes > 7%	1.00
		Thin layer	0.85	Depth to bedrock from 20-60"	0.85
				Permeability .6-2"/hr (some seepage)	0.50
229:					
Seaback	40	Severe		Severe	
		Thin layer	1.00	Slopes > 7%	1.00
				Depth to bedrock < 20"	1.00
San Timoteo	35	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
				Depth to bedrock from 20-60"	0.85
230:					
Padres	50	Slight		Severe	
				Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 7%	0.66
Wasioja	35	Moderate		Severe	
		Possible seepage problem	0.50	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 7%	0.66
240:					
Panoza	40	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Depth to bedrock from 20-60"	0.85
				Permeability .6-2"/hr (some seepage)	0.50
Beam	30	Severe		Severe	
		Thin layer	1.00	Slopes > 7%	1.00
				Depth to bedrock < 20"	1.00
241:					
Panoza	40	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Depth to bedrock from 20-60"	0.85
				Permeability .6-2"/hr (some seepage)	0.50
Beam	30	Severe		Severe	
		Thin layer	1.00	Slopes > 7%	1.00
				Depth to bedrock < 20"	1.00
242:					
Panoza	40	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Depth to bedrock from 20-60"	0.85
				Permeability .6-2"/hr (some seepage)	0.50

Table 14.--Water Management--Continued

Map symbol and soil name	Pct.	Embankments, dikes, and levees: Limitation	Value	Pond reservoir areas: Limitation	Value
242:					
Beam	30	Severe		Severe	
		Thin layer	1.00	Slopes > 7%	1.00
				Depth to bedrock < 20"	1.00
248:					
Pyxo	55	Severe		Severe	
		Very high piping potential	1.00	Slopes > 7%	1.00
		Thin layer	0.56	Depth to bedrock from 20-60"	0.56
		Shrink-swell (LEP 3-6)	0.50	Permeability .6-2"/hr (some seepage)	0.50
Cochora	30	Severe		Severe	
		Thin layer	1.00	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
				Depth to bedrock < 20"	1.00
249:					
Xeric Torriorthents	50	Moderate		Severe	
		Thin layer	0.46	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
				Depth to bedrock from 20-60"	0.46
Badlands	25	Not rated		Not rated	
250:					
Pyxo	40	Severe		Severe	
		Very high piping potential	1.00	Slopes > 7%	1.00
		Thin layer	0.91	Depth to bedrock from 20-60"	0.91
		Shrink-swell (LEP 3-6)	0.50	Permeability .6-2"/hr (some seepage)	0.50
Cochora	25	Severe		Severe	
		Thin layer	1.00	Slopes > 7%	1.00
				Depth to bedrock < 20"	1.00
Badlands	15	Not rated		Not rated	
251:					
Nacimiento	75	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
		High piping potential	0.50	Depth to bedrock from 20-60"	0.85
		Shrink-swell (LEP 3-6)	0.50		
252:					
Nacimiento	75	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
		High piping potential	0.50	Depth to bedrock from 20-60"	0.85
		Shrink-swell (LEP 3-6)	0.50		
261:					
Aido	85	Severe		Severe	
		Shrink-swell (LEP >6)	1.00	Slopes > 7%	1.00
		Thin layer	0.85	Depth to bedrock from 20-60"	0.85
262:					
Aido	80	Severe		Severe	
		Shrink-swell (LEP >6)	1.00	Slopes > 7%	1.00
		Thin layer	0.85	Depth to bedrock from 20-60"	0.85
263:					
Aido	85	Severe		Severe	
		Shrink-swell (LEP >6)	1.00	Slopes > 7%	1.00
		Thin layer	0.85	Depth to bedrock from 20-60"	0.85
270:					
Ayar	80	Severe		Moderate	
		Shrink-swell (LEP >6)	1.00	Slopes 2 to 7%	0.91
		Thin layer	0.02	Depth to bedrock from 20-60"	0.02

Table 14.--Water Management--Continued

Map symbol and soil name	Pct.	Embankments, dikes, and levees: Limitation	Value	Pond reservoir areas: Limitation	Value
271:					
Ayar	80	Severe		Severe	
		Shrink-swell (LEP >6)	1.00	Slopes > 7%	1.00
		Thin layer	0.02	Depth to bedrock from 20-60"	0.02
274:					
Ayar	30	Severe		Severe	
		Shrink-swell (LEP >6)	1.00	Slopes > 7%	1.00
		Thin layer	0.02	Depth to bedrock from 20-60"	0.02
Hillbrick	30	Severe		Severe	
		Very high piping potential	1.00	Slopes > 7%	1.00
		Thin layer	1.00	Depth to bedrock < 20"	1.00
Aido	20	Severe		Severe	
		Shrink-swell (LEP >6)	1.00	Slopes > 7%	1.00
		Thin layer	0.85	Depth to bedrock from 20-60"	0.85
275:					
Ayar	30	Severe		Severe	
		Shrink-swell (LEP >6)	1.00	Slopes > 7%	1.00
		Thin layer	0.02	Depth to bedrock from 20-60"	0.02
Hillbrick	30	Severe		Severe	
		Very high piping potential	1.00	Slopes > 7%	1.00
		Thin layer	1.00	Depth to bedrock < 20"	1.00
Aido	20	Severe		Severe	
		Shrink-swell (LEP >6)	1.00	Slopes > 7%	1.00
		Thin layer	0.85	Depth to bedrock from 20-60"	0.85
280:					
Seaback	35	Severe		Severe	
		Thin layer	1.00	Slopes > 7%	1.00
				Depth to bedrock < 20"	1.00
Panoza	30	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Depth to bedrock from 20-60"	0.85
				Permeability .6-2"/hr (some seepage)	0.50
Jenks	15	Moderate		Severe	
		High piping potential	0.88	Slopes > 7%	1.00
		Thin layer	0.85	Depth to bedrock from 20-60"	0.85
		Shrink-swell (LEP 3-6)	0.50		
281:					
Seaback	35	Severe		Severe	
		Thin layer	1.00	Slopes > 7%	1.00
				Depth to bedrock < 20"	1.00
Panoza	30	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Depth to bedrock from 20-60"	0.85
				Permeability .6-2"/hr (some seepage)	0.50
Jenks	15	Moderate		Severe	
		High piping potential	0.88	Slopes > 7%	1.00
		Thin layer	0.85	Depth to bedrock from 20-60"	0.85
		Shrink-swell (LEP 3-6)	0.50		
282:					
Seaback	35	Severe		Severe	
		Thin layer	1.00	Slopes > 7%	1.00
				Depth to bedrock < 20"	1.00

Table 14.--Water Management--Continued

Map symbol and soil name	Pct.	Embankments, dikes, and levees		Pond reservoir areas	
		Limitation	Value	Limitation	Value
282:					
Panoza----------------	30	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Depth to bedrock from 20-60"	0.85
				Permeability .6-2"/hr (some seepage)	0.50
Jenks-----------------	15	Moderate		Severe	
		High piping potential	0.88	Slopes > 7%	1.00
		Thin layer	0.85	Depth to bedrock from 20-60"	0.85
		Shrink-swell (LEP 3-6)	0.50		
290:					
San Timoteo-----------	30	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
				Depth to bedrock from 20-60"	0.85
San Andreas-----------	25	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
				Depth to bedrock from 20-60"	0.85
Bellyspring-----------	20	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
		High piping potential	0.83	Permeability > 2"/hr (seepage)	1.00
		Shrink-swell (LEP 3-6)	0.50	Depth to bedrock from 20-60"	0.85
291:					
San Timoteo-----------	30	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
				Depth to bedrock from 20-60"	0.85
San Andreas-----------	25	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
				Depth to bedrock from 20-60"	0.85
Bellyspring-----------	20	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
		High piping potential	0.83	Permeability > 2"/hr (seepage)	1.00
		Shrink-swell (LEP 3-6)	0.50	Depth to bedrock from 20-60"	0.85
292:					
San Timoteo-----------	30	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
				Depth to bedrock from 20-60"	0.85
San Andreas-----------	25	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
				Depth to bedrock from 20-60"	0.85
Bellyspring-----------	20	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
		High piping potential	0.83	Permeability > 2"/hr (seepage)	1.00
		Shrink-swell (LEP 3-6)	0.50	Depth to bedrock from 20-60"	0.85
301:					
Arbuckle--------------	70	Slight		Severe	
				Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 7%	0.66

Table 14.--Water Management--Continued

Map symbol and soil name	Pct.	Embankments, dikes, and levees: Limitation	Value	Pond reservoir areas: Limitation	Value
302:					
Arbuckle	70	Slight		Severe	
				Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
303:					
Arbuckle	70	Slight		Severe	
				Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
304:					
Arbuckle	70	Slight		Severe	
				Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
306:					
Arbuckle	70	Slight		Severe	
				Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
307:					
Arbuckle	70	Slight		Severe	
				Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
310:					
Yeguas	40	Moderate		Severe	
		High piping potential	0.91	Permeability > 2"/hr (seepage)	1.00
		Shrink-swell (LEP 3-6)	0.50		
		MH or CH Unified and PI <40%	0.50		
Pinspring	40	Moderate		Moderate	
		High piping potential	0.77	Permeability .6-2"/hr (some seepage)	0.50
311:					
Yeguas	40	Moderate		Severe	
		High piping potential	0.91	Permeability > 2"/hr (seepage)	1.00
		Shrink-swell (LEP 3-6)	0.50	Slopes 2 to 7%	0.08
		MH or CH Unified and PI <40%	0.50		
Pinspring	40	Moderate		Moderate	
		High piping potential	0.77	Permeability .6-2"/hr (some seepage)	0.50
				Slopes 2 to 7%	0.08
321:					
Thomhill	80	Moderate		Moderate	
		High piping potential	0.51	Permeability .6-2"/hr (some seepage)	0.32
		Shrink-swell (LEP 3-6)	0.50	Slopes 2 to 7%	0.08
330:					
Jenks	80	Moderate		Moderate	
		High piping potential	0.88	Depth to bedrock from 20-60"	0.85
		Thin layer	0.85	Slopes 2 to 7%	0.66
		Shrink-swell (LEP 3-6)	0.50		
339:					
Arnold	30	Severe		Severe	
		Seepage problem	1.00	Slopes > 7%	1.00
		Thin layer	0.11	Permeability > 2"/hr (seepage)	1.00
				Depth to bedrock from 20-60"	0.11
San Andreas	20	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
				Depth to bedrock from 20-60"	0.85

Table 14.--Water Management--Continued

Map symbol and soil name	Pct.	Embankments, dikes, and levees: Limitation	Value	Pond reservoir areas: Limitation	Value
340:					
Arnold----------------	30	Severe		Severe	
		Seepage problem	1.00	Slopes > 7%	1.00
		Thin layer	0.11	Permeability > 2"/hr (seepage)	1.00
				Depth to bedrock from 20-60"	0.11
San Andreas-----------	20	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
				Depth to bedrock from 20-60"	0.85
350:					
Cieneba---------------	75	Severe		Severe	
		Thin layer	1.00	Slopes > 7%	1.00
				Depth to bedrock < 20"	1.00
360:					
Chicote---------------	40	Severe		Severe	
		Ponded (any duration)	1.00	Gypsum >15% to 80" depth	1.00
		Shrink-swell (LEP >6)	1.00		
		EC > 16 mmhos/cm	1.00		
Chicote---------------	40	Severe		Severe	
		Ponded (any duration)	1.00	Permeability > 2"/hr (seepage)	1.00
		Very high piping potential	1.00	Gypsum >15% to 80" depth	1.00
		EC > 16 mmhos/cm	1.00		
361:					
Chicote---------------	40	Severe		Severe	
		Ponded (any duration)	1.00	Gypsum >15% to 80" depth	1.00
		Shrink-swell (LEP >6)	1.00	Slopes 2 to 7%	0.08
		EC > 16 mmhos/cm	1.00		
Chicote---------------	40	Severe		Severe	
		Ponded (any duration)	1.00	Permeability > 2"/hr (seepage)	1.00
		Very high piping potential	1.00	Gypsum >15% to 80" depth	1.00
		EC > 16 mmhos/cm	1.00	Slopes 2 to 7%	0.08
362:					
Chicote---------------	40	Severe		Severe	
		Ponded (any duration)	1.00	Gypsum >15% to 80" depth	1.00
		Shrink-swell (LEP >6)	1.00	Slopes 2 to 7%	0.91
		EC > 16 mmhos/cm	1.00		
Chicote---------------	40	Severe		Severe	
		Ponded (any duration)	1.00	Permeability > 2"/hr (seepage)	1.00
		Very high piping potential	1.00	Gypsum >15% to 80" depth	1.00
		EC > 16 mmhos/cm	1.00	Slopes 2 to 7%	0.91
371:					
Semper----------------	50	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
		High piping potential	0.76	Permeability > 2"/hr (seepage)	1.00
				Gypsum >15% to 80" depth	1.00
372:					
Semper----------------	65	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
		High piping potential	0.76	Permeability > 2"/hr (seepage)	1.00
				Gypsum >15% to 80" depth	1.00
375:					
Semper----------------	40	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
		High piping potential	0.76	Permeability > 2"/hr (seepage)	1.00
				Gypsum >15% to 80" depth	1.00

Table 14.--Water Management--Continued

Map symbol and soil name	Pct.	Embankments, dikes, and levees: Limitation	Value	Pond reservoir areas: Limitation	Value
375:					
Badlands	25	Not rated		Not rated	
380:					
Muranch	30	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
		Fragments (>3") 15-35%	0.14	Depth to bedrock from 20-60"	0.85
				Permeability .6-2"/hr (some seepage)	0.50
Xerorthents	25	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
				Depth to bedrock from 20-60"	0.85
Rock outcrop	20	Not rated		Not rated	
388:					
Rock outcrop	50	Not rated		Not rated	
Gaviota	25	Severe		Severe	
		Thin layer	1.00	Slopes > 7%	1.00
				Depth to bedrock < 20"	1.00
391:					
Rock outcrop	35	Not rated		Not rated	
Lithic Torriorthents	30	Severe		Severe	
		Thin layer	1.00	Slopes > 7%	1.00
		Slight seepage problem	0.10	Depth to bedrock < 20"	1.00
401:					
Godde	40	Severe		Severe	
		Thin layer	1.00	Slopes > 7%	1.00
				Depth to bedrock < 20"	1.00
Xerorthents	20	Severe		Severe	
		Thin layer	1.00	Slopes > 7%	1.00
				Depth to bedrock < 20"	1.00
Rock outcrop	15	Not rated		Not rated	
408:					
Gaviota	35	Severe		Severe	
		Thin layer	1.00	Slopes > 7%	1.00
				Depth to bedrock < 20"	1.00
San Andreas	25	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
				Depth to bedrock from 20-60"	0.85
409:					
Gaviota	35	Severe		Severe	
		Thin layer	1.00	Slopes > 7%	1.00
				Depth to bedrock < 20"	1.00
Saltos	25	Severe		Severe	
		Thin layer	1.00	Slopes > 7%	1.00
				Depth to bedrock < 20"	1.00
Rock outcrop	15	Not rated		Not rated	
410:					
Gaviota	40	Severe		Severe	
		Thin layer	1.00	Slopes > 7%	1.00
				Depth to bedrock < 20"	1.00

Table 14.--Water Management--Continued

Map symbol and soil name	Pct.	Embankments, dikes, and levees		Pond reservoir areas	
		Limitation	Value	Limitation	Value
410:					
Rock outcrop----------	30	Not rated		Not rated	
411:					
Tajea-----------------	40	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
		Shrink-swell (LEP 3-6)	0.50	Depth to bedrock from 20-60"	0.85
Saltos----------------	40	Severe		Severe	
		Thin layer	1.00	Slopes > 7%	1.00
				Depth to bedrock < 20"	1.00
412:					
Tajea-----------------	45	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
		Shrink-swell (LEP 3-6)	0.50	Depth to bedrock from 20-60"	0.85
Saltos----------------	30	Severe		Severe	
		Thin layer	1.00	Slopes > 7%	1.00
				Depth to bedrock < 20"	1.00
420:					
Bellyspring-----------	30	Moderate		Severe	
		High piping potential	0.50	Slopes > 7%	1.00
		Shrink-swell (LEP 3-6)	0.50	Depth to bedrock from 20-60"	0.10
		Thin layer	0.10		
Saltos----------------	25	Severe		Severe	
		Thin layer	1.00	Slopes > 7%	1.00
				Depth to bedrock < 20"	1.00
Rock outcrop----------	20	Not rated		Not rated	
430:					
Saucito---------------	40	Severe		Severe	
		Thin layer	1.00	Slopes > 7%	1.00
		Fragments (>3") 15-35%	0.74	Depth to bedrock < 20"	1.00
Akad------------------	25	Moderate		Severe	
		Thin layer	0.96	Slopes > 7%	1.00
		Shrink-swell (LEP 3-6)	0.50	Depth to bedrock from 20-60"	0.96
		Fragments (>3") 15-35%	0.03		
Rock outcrop----------	20	Not rated		Not rated	
440:					
Bellyspring-----------	35	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
		High piping potential	0.83	Permeability > 2"/hr (seepage)	1.00
		Shrink-swell (LEP 3-6)	0.50	Depth to bedrock from 20-60"	0.85
Panoza----------------	25	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Depth to bedrock from 20-60"	0.85
				Permeability .6-2"/hr (some seepage)	0.50
441:					
Bellyspring-----------	35	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
		High piping potential	0.83	Permeability > 2"/hr (seepage)	1.00
		Shrink-swell (LEP 3-6)	0.50	Depth to bedrock from 20-60"	0.85
Panoza----------------	30	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Depth to bedrock from 20-60"	0.85
				Permeability .6-2"/hr (some seepage)	0.50

Table 14.--Water Management--Continued

Map symbol and soil name	Pct.	Embankments, dikes, and levees		Pond reservoir areas	
		Limitation	Value	Limitation	Value
442:					
Bellyspring-----------	35	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
		Shrink-swell (LEP 3-6)	0.50	Permeability > 2"/hr (seepage)	1.00
				Depth to bedrock from 20-60"	0.85
Panoza----------------	30	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Depth to bedrock from 20-60"	0.85
				Permeability .6-2"/hr (some seepage)	0.50
443:					
Bellyspring-----------	35	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
		Shrink-swell (LEP 3-6)	0.50	Permeability > 2"/hr (seepage)	1.00
				Depth to bedrock from 20-60"	0.85
Beam------------------	25	Severe		Severe	
		Thin layer	1.00	Slopes > 7%	1.00
				Depth to bedrock < 20"	1.00
Panoza----------------	25	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Depth to bedrock from 20-60"	0.85
				Permeability .6-2"/hr (some seepage)	0.50
445:					
Bellyspring-----------	35	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
		High piping potential	0.83	Permeability > 2"/hr (seepage)	1.00
		Shrink-swell (LEP 3-6)	0.50	Depth to bedrock from 20-60"	0.85
Xerorthents-----------	30	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
				Depth to bedrock from 20-60"	0.85
Panoza----------------	15	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Depth to bedrock from 20-60"	0.85
				Permeability .6-2"/hr (some seepage)	0.50
450:					
Botella---------------	75	Moderate		Severe	
		Shrink-swell (LEP 3-6)	0.50	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 7%	0.66
460:					
Camatta---------------	75	Severe		Severe	
		Thin layer	1.00	Depth to pan < 20"	1.00
				Slopes > 7%	1.00
470:					
Botella---------------	85	Moderate		Severe	
		Shrink-swell (LEP 3-6)	0.50	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 7%	0.66
474:					
Elder-----------------	80	Slight		Severe	
				Permeability > 2"/hr (seepage)	1.00
475:					
Elder-----------------	80	Slight		Severe	
				Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 7%	0.66

Table 14.--Water Management--Continued

Map symbol and soil name	Pct.	Embankments, dikes, and levees: Limitation	Value	Pond reservoir areas: Limitation	Value
480:					
Metz	70	Slight		Severe	
				Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 7%	0.00
490:					
Wasioja	75	Moderate		Moderate	
		High piping potential	0.91	Permeability .6-2"/hr (some seepage)	0.50
		Shrink-swell (LEP 3-6)	0.50		
491:					
Wasioja	85	Moderate		Moderate	
		High piping potential	0.50	Slopes 2 to 7%	0.08
		Shrink-swell (LEP 3-6)	0.50		
495:					
Wasioja	60	Moderate		Moderate	
		High piping potential	0.50	Slopes 2 to 7%	0.08
		Shrink-swell (LEP 3-6)	0.50		
Polonio	20	Moderate		Moderate	
		High piping potential	0.58	Slopes 2 to 7%	0.08
		Shrink-swell (LEP 3-6)	0.50		
497:					
Wasioja	35	Moderate		Moderate	
		High piping potential	0.91	Permeability .6-2"/hr (some seepage)	0.50
		Shrink-swell (LEP 3-6)	0.50	Slopes 2 to 7%	0.08
Pinspring	30	Moderate		Severe	
		High piping potential	0.87	Permeability > 2"/hr (seepage)	1.00
				Slopes 2 to 7%	0.08
Yeguas	15	Moderate		Severe	
		High piping potential	0.91	Permeability > 2"/hr (seepage)	1.00
		Shrink-swell (LEP 3-6)	0.50	Slopes 2 to 7%	0.08
		MH or CH Unified and PI <40%	0.50		
512:					
Shimmon	80	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Depth to bedrock from 20-60"	0.85
520:					
Santa Lucia	30	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Depth to bedrock from 20-60"	0.85
				Permeability .6-2"/hr (some seepage)	0.50
521:					
Santa Lucia	80	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Depth to bedrock from 20-60"	0.85
				Permeability .6-2"/hr (some seepage)	0.50
522:					
Santa Lucia	55	Moderate		Severe	
		Thin layer	0.85	Slopes > 7%	1.00
				Depth to bedrock from 20-60"	0.85
				Permeability .6-2"/hr (some seepage)	0.50
531:					
Saltos	45	Severe		Severe	
		Thin layer	1.00	Slopes > 7%	1.00
				Depth to bedrock < 20"	1.00

Table 14.--Water Management--Continued

Map symbol and soil name	Pct.	Embankments, dikes, and levees		Pond reservoir areas	
		Limitation	Value	Limitation	Value
531:					
Millsholm	35	Severe		Severe	
		Thin layer	1.00	Slopes > 7%	1.00
				Depth to bedrock < 20"	1.00
561:					
Chanac	85	Slight		Severe	
				Slopes > 7%	1.00
562:					
Chanac	90	Slight		Severe	
				Slopes > 7%	1.00
900:					
Pits	100	Not rated		Not rated	
905:					
Xerofluvents	50	Moderate		Severe	
		Possible seepage problem	0.50	Permeability > 2"/hr (seepage)	1.00
		Wetness between 2-4'	0.02		
Riverwash	30	Severe		Severe	
		Wetness < 2' depth	1.00	Permeability > 2"/hr (seepage)	1.00
		Seepage problem	1.00		
906:					
Xerofluvents	85	Severe		Severe	
		Ponded (any duration)	1.00	Permeability > 2"/hr (seepage)	1.00
		Shrink-swell (LEP 3-6)	0.50		
		High piping potential	0.17		
908:					
Xerorthents	85	Slight		Severe	
		Thin layer	0.10	Slopes > 7%	1.00
				Permeability > 2"/hr (seepage)	1.00
				Depth to bedrock from 20-60"	0.10
910:					
Playas	80	Not rated		Not rated	
911:					
Playas	85	Not rated		Not rated	
912:					
Water	100	Not rated		Not rated	

The interpretation for embankments, dikes, and leeves evaluates the following soil properties at varying depths in the soil: ponding; wetness; depth to a restrictive layer; fragments greater than 3 inches in size; salinity (EC); Unified classes for high content of organic matter (PT, OL, and OH); Unified classes that are hard to pack (MH and CH); permeability that is too high, allowing seepage; piping as determined by Atterberg limits of liquid limit (LL) and plasticity index (PI); sodium content (SAR); and gypsum content.

The interpretation for pond reservoir areas evaluates the following soil properties at varying depths in the soil: slope, depth to hard or soft bedrock, depth to a cemented pan, marly textures, gypsum content, and permeability that is too high, allowing seepage.

Table 15.--Engineering Index Properties

[Absence of an entry indicates that the data were not estimated]

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				*Pct*	*Pct*					*Pct*	
100:												
Balcom----------	0-23	Loam	ML	A-4	0	0	95-100	85-100	75-95	60-75	25-35	10-15
	23-54	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
101:												
Balcom----------	0-23	Loam	ML	A-4	0	0	95-100	85-100	75-95	60-75	25-35	10-15
	23-54	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Nacimiento------	0-10	Clay loam	CL, ML	A-6, A-7	0	0	100	100	90-100	70-80	35-45	10-20
	10-37	Clay loam, silty clay loam, loam	CL, ML	A-6, A-7	0	0	100	100	85-100	60-95	35-45	10-20
	37-42	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
102:												
Balcom----------	0-23	Loam	ML	A-4	0	0	95-100	85-100	75-95	60-75	25-35	10-15
	23-54	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Nacimiento------	0-10	Clay loam	CL, ML	A-6, A-7	0	0	100	100	90-100	70-80	35-45	10-20
	10-37	Clay loam, silty clay loam, loam	CL, ML	A-6, A-7	0	0	100	100	85-100	60-95	35-45	10-20
	37-42	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
103:												
Balcom----------	0-23	Loam	ML	A-4	0	0	95-100	85-100	75-95	60-75	25-35	10-15
	23-54	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Nacimiento------	0-10	Clay loam	CL, ML	A-6, A-7	0	0	100	100	90-100	70-80	35-45	10-20
	10-37	Clay loam, silty clay loam, loam	CL, ML	A-6, A-7	0	0	100	100	85-100	60-95	35-45	10-20
	37-42	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
109:												
Capay-----------	0-20	Clay	CH, CL	A-7	0	0	100	100	95-100	85-95	40-60	20-35
	20-64	Clay, silty clay	CH, CL	A-7	0	0	100	100	95-100	85-95	40-60	20-35

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
110:												
Capay-----------	0-20	Clay	CH, CL	A-7	0	0	100	100	95-100	85-95	40-60	20-35
	20-64	Clay, silty clay	CH, CL	A-7	0	0	100	100	95-100	85-95	40-60	20-35
112:												
Calleguas-------	0-2	Loam	CL, CL-ML	A-6	0	0	95-100	90-100	75-95	55-75	30-35	10-15
	2-9	Clay loam		A-6, A-7	0	0	95-100	90-100	80-100	65-80	35-45	15-20
	9-17	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Balcom----------	0-23	Loam	ML	A-4	0	0	95-100	85-100	75-95	60-75	25-35	10-15
	23-54	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
114:												
Calleguas-------	0-2	Loam	CL, CL-ML	A-6	0	0	95-100	90-100	75-95	55-75	30-35	10-15
	2-9	Clay loam		A-6, A-7	0	0	95-100	90-100	80-100	65-80	35-45	15-20
	9-17	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Nacimiento------	0-10	Clay loam	CL, ML	A-6, A-7	0	0	100	100	90-100	70-80	35-45	10-20
	10-37	Clay loam, silty clay loam, loam	CL, ML	A-6, A-7	0	0	100	100	85-100	60-95	35-45	10-20
	37-42	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
120:												
Hillbrick-------	0-15	Loam	ML, SM	A-4	0	0	85-100	75-100	65-95	50-75	25-35	NP-10
	15-24	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop----	0-60				---	---	---	---	---	---	---	---
121:												
Hillbrick-------	0-15	Loam	ML, SM	A-4	0	0	85-100	75-100	65-95	50-75	25-35	NP-10
	15-24	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
123:												
Lithic Torriorthents--	0-5	Gravelly sandy loam	SM, SC-SM	A-2-4	0	0	85-95	75-90	50-65	30-35	0-20	NP-5
	5-9	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				*Pct*	*Pct*					*Pct*	
123:												
Semper----------	0-5	Very fine sandy loam	ML	A-4	0	0	100	100	85-95	50-65	20-30	NP-5
	5-22	Very fine sandy loam, fine sandy loam, sandy loam	ML	A-4	0	0	100	100	85-95	50-65	20-30	NP-5
	22-26	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop----	0-60				---	---	---	---	---	---	---	---
129:												
Kilmer----------	0-29	Loam	CL-ML, ML	A-4, A-6	0	0	85-100	75-100	65-95	45-75	25-40	5-20
	29-34	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Hillbrick-------	0-15	Loam	ML, SM	A-4	0	0	85-100	75-100	65-95	50-75	25-35	NP-10
	15-24	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
130:												
Kilmer----------	0-29	Loam	CL-ML, ML	A-4, A-6	0	0	85-100	75-100	65-95	45-75	25-40	5-20
	29-34	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Hillbrick-------	0-15	Loam	ML, SM	A-4	0	0	85-100	75-100	65-95	50-75	25-35	NP-10
	15-24	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
131:												
Kilmer----------	0-29	Loam	CL-ML, ML	A-4, A-6	0	0	85-100	75-100	65-95	45-75	25-40	5-20
	29-34	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Hillbrick-------	0-15	Loam	ML, SM	A-4	0	0	85-100	75-100	65-95	50-75	25-35	NP-10
	15-24	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
134:												
Kilmer----------	0-29	Loam	CL-ML, ML	A-4, A-6	0	0	85-100	75-100	65-95	45-75	25-40	5-20
	29-34	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
134:												
Nacimiento------	0-10	Clay loam	CL, ML	A-6, A-7	0	0	100	100	90-100	70-80	35-45	10-20
	10-37	Clay loam, silty clay loam, loam	CL, ML	A-6, A-7	0	0	100	100	85-100	60-95	35-45	10-20
	37-42	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Aido------------	0-8	Clay	CH, CL	A-7	0	0	95-100	95-100	90-95	75-90	45-60	20-35
	8-38	Clay	CH, CL	A-7	0	0	80-95	75-90	75-90	70-85	45-65	20-35
	38-50	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
140:												
Choice----------	0-6	Silty clay	CH, CL	A-7	0	0	95-100	95-100	90-100	80-95	45-60	20-35
	6-47	Silty clay, clay	CH, CL	A-7	0	0	95-100	95-100	90-100	80-95	45-60	20-35
	47-57	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
149:												
San Emigdio-----	0-9	Sandy loam	SC-SM, SM	A-4	0	0	100	100	60-70	30-40	20-30	NP-5
	9-60	Stratified coarse sandy loam to loam	ML, SM	A-4	0	0	100	100	60-95	30-75	20-30	NP-5
150:												
San Emigdio-----	0-9	Sandy loam	SC-SM, SM	A-4	0	0	100	100	60-70	30-40	20-30	NP-5
	9-60	Stratified coarse sandy loam to loam	ML, SM	A-4	0	0	100	100	60-95	30-75	20-30	NP-5
154:												
San Emigdio-----	0-9	Loam	CL-ML, ML	A-4	0	0	100	100	85-95	65-75	20-30	NP-5
	9-60	Stratified coarse sandy loam to loam	ML, SM	A-4	0	0	100	100	60-95	30-75	20-30	NP-5
155:												
San Emigdio-----	0-9	Loam	CL-ML, ML	A-4	0	0	100	100	85-95	65-75	20-30	NP-5
	9-60	Stratified coarse sandy loam to loam	ML, SM	A-4	0	0	100	100	60-95	30-75	20-30	NP-5
159:												
Sorrento--------	0-19	Loam	CL-ML, CL	A-6	0	0	100	100	85-95	60-75	30-35	10-15
	19-67	Loam, sandy clay loam	CL, SC	A-6, A-2-6	0	0	100	100	80-100	35-80	30-40	10-20

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				*Pct*	*Pct*					*Pct*	
160:												
Sorrento--------	0-19	Loam	CL-ML, CL	A-6	0	0	100	100	85-95	60-75	30-35	10-15
	19-67	Loam, sandy clay loam	CL, SC	A-6, A-2-6	0	0	100	100	80-100	35-80	30-40	10-20
169:												
Polonio---------	0-14	Loam	ML	A-4	0	0	100	100	85-95	60-75	25-35	NP-10
	14-69	Clay loam, silty clay loam, loam	CL	A-6, A-7	0	0	100	100	85-100	65-95	30-45	10-20
170:												
Polonio---------	0-14	Clay loam	CL	A-6, A-7	0	0	100	100	90-100	70-80	35-45	15-20
	14-69	Clay loam, silty clay loam, loam	CL	A-6, A-7	0	0	100	100	85-100	65-95	30-45	10-20
173:												
Polonio---------	0-12	Gravelly loam	SM, GM	A-4	0	0-5	55-80	50-75	45-70	35-50	25-35	NP-10
	12-60	Gravelly loam	CL, GC	A-6, A-7	0	0	55-80	50-75	45-70	35-50	30-45	10-20
174:												
Polonio---------	0-14	Loam	ML	A-4	0	0	100	100	85-95	60-75	25-35	NP-10
	14-69	Clay loam, silty clay loam, loam	CL	A-6, A-7	0	0	100	100	85-100	65-95	30-45	10-20
Thomhill--------	0-13	Loam	CL-ML, ML	A-4	0	0	95-100	90-100	75-95	55-75	30-35	10-15
	13-64	Loam, clay loam, silt loam	CL	A-6, A-7	0	0	95-100	90-100	75-100	55-90	30-40	10-20
175:												
Polonio---------	0-14	Loam	ML	A-4	0	0	100	100	85-95	60-75	25-35	NP-10
	14-69	Clay loam, silty clay loam, loam	CL	A-6, A-7	0	0	100	100	85-100	65-95	30-45	10-20
Thomhill--------	0-13	Loam	CL-ML, ML	A-4	0	0	95-100	90-100	75-95	55-75	30-35	10-15
	13-60	Loam, clay loam, silt loam	CL	A-6, A-7	0	0	95-100	90-100	75-100	55-90	30-40	10-20

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments >10 inches	Fragments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
179:												
Padres----------	0-16	Sandy loam	SM	A-4, A-2-4	0	0-10	85-100	75-100	50-70	30-40	20-30	NP-5
	16-30	Gravelly coarse sandy loam	GM, SM	A-2-4	0	0-10	75-85	50-75	30-50	15-30	20-30	NP-5
	30-62	Gravelly coarse sandy loam, sandy loam, loam	ML, SM	A-4, A-2-4	0	0-10	75-100	50-100	30-95	15-75	20-30	NP-5
180:												
Padres----------	0-16	Sandy loam	SM	A-2-4, A-4	0	0-10	85-100	75-100	50-70	30-40	20-30	NP-5
	16-30	Gravelly coarse sandy loam	GM, SM	A-2-4	0	0-10	75-85	50-75	30-50	15-30	20-30	NP-5
	30-62	Gravelly coarse sandy loam, sandy loam, loam	ML, SM	A-4, A-2-4	0	0-10	75-100	50-100	30-95	15-75	20-30	NP-5
182:												
Oceano----------	0-60	Loamy sand	SM	A-2, A-3	0	0	100	100	50-65	5-25	---	NP
190:												
Reward----------	0-24	Channery loam	GM, SM	A-4	0	0	75-85	55-75	50-65	35-50	30-35	NP-10
	24-59	Channery clay loam, channery loam	GC-GM, GM, SC-SM, SM	A-4, A-6	0	0-5	70-85	50-75	40-65	35-50	30-45	5-15
	59-65	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
191:												
Reward----------	0-24	Channery loam	GM, SM	A-4	0	0	75-85	55-75	50-65	35-50	30-35	NP-10
	24-59	Channery clay loam, channery loam	GC-GM, GM, SC-SM, SM	A-4, A-6	0	0-5	70-85	50-75	40-65	35-50	30-45	5-15
	59-65	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
200:												
Aramburu--------	0-23	Very channery clay loam	GC	A-2, A-6	0	0	65-75	35-50	30-50	25-40	30-40	10-15
	23-30	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
201:												
Aramburu--------	0-23	Very channery clay loam	GC	A-2, A-6	0	0	65-75	35-50	30-50	25-40	30-40	10-15
	23-30	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				*Pct*	*Pct*					*Pct*	
202:												
Aramburu--------	0-23	Very channery loam			0	0	65-75	35-50	30-50	25-40	30-40	10-15
	23-30	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
204:												
Aramburu--------	0-23	Very channery loam			0	0	65-75	35-50	30-50	25-40	30-40	10-15
	23-30	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Temblor---------	0-13	Very channery loam	GC-GM, GC	A-2-4	0	0	65-75	35-50	30-50	25-40	25-35	5-10
	13-20	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
205:												
Aramburu--------	0-23	Very channery loam			0	0	65-75	35-50	30-50	25-40	30-40	10-15
	23-30	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Temblor---------	0-13	Very channery loam	GM	A-2	0	0	45-60	35-50	30-45	25-35	25-35	NP-10
	13-17	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
218:												
Seaback---------	0-9	Loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	75-95	55-75	25-35	5-15
	9-19	Loam	CL-ML, CL	A-4, A-6	---	---	85-100	90-100	75-95	55-75	25-35	5-15
	19-23	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Calleguas-------	0-2	Loam	CL, CL-ML	A-6	0	0	95-100	90-100	75-95	55-75	30-35	10-15
	2-9	Clay loam		A-6, A-7	0	0	95-100	90-100	80-100	65-80	35-45	15-20
	9-17	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Panoza----------	0-6	Loam	SM, SC-SM, ML, CL-ML	A-4	0	0	95-100	85-100	65-90	40-55	20-30	NP-10
	6-24	Loam, sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	95-100	85-100	65-90	40-55	20-30	NP-10
	24-30	Weathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
219:												
Xerorthents-----	0-12	Very gravelly loam	GM, SM	A-1-b, A-4, A-2-4	0	0	60-80	25-60	20-55	15-45	25-30	5-10
	12-19	Very gravelly sandy loam, very gravelly loam	GM, SM	A-4, A-2-4, A-1-b	0	0	60-80	25-60	15-55	5-45	20-30	5-10
	19-26	Extremely cobbly sandy loam, extremely cobbly loam	GM, SM	A-2-4, A-1-b	0	45-60	55-75	10-45	5-40	0-30	20-30	5-10
	26-28	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Badlands--------	0-60	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
220:												
Beam-----------	0-15	Fine sandy loam	SM	A-4	0	0	95-100	85-100	65-85	45-55	20-30	NP-5
	15-23	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Panoza----------	0-6	Loam	SM, SC-SM, ML, CL-ML	A-4	0	0	95-100	85-100	65-90	40-55	20-30	NP-10
	6-24	Loam, sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	95-100	85-100	65-90	40-55	20-30	NP-10
	24-30	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Hillbrick-------	0-15	Loam	ML, SM	A-4	0	0	85-100	75-100	65-95	50-75	25-35	NP-10
	15-24	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
221:												
Beam-----------	0-15	Fine sandy loam	SM	A-4	0	0	95-100	85-100	65-85	45-55	20-30	NP-5
	15-23	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Panoza----------	0-6	Loam	SM, SC-SM, ML, CL-ML	A-4	0	0	95-100	85-100	65-90	40-55	20-30	NP-10
	6-24	Loam, sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	95-100	85-100	65-90	40-55	20-30	NP-10
	24-30	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Hillbrick-------	0-15	Loam	ML, SM	A-4	0	0	85-100	75-100	65-95	50-75	25-35	NP-10
	15-24	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
222:												
Beam------------	0-15	Fine sandy loam	SM	A-4	0	0	95-100	85-100	65-85	45-55	20-30	NP-5
	15-23	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Panoza----------	0-6	Loam	SM, SC-SM, ML, CL-ML	A-4	0	0	95-100	85-100	65-90	40-55	20-30	NP-10
	6-24	Loam, sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	95-100	85-100	65-90	40-55	20-30	NP-10
	24-30	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Hillbrick-------	0-15	Loam	ML, SM	A-4	0	0	80-100	60-100	50-95	35-75	25-35	NP-10
	15-24	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
227:												
Beam------------	0-15	Stony fine sandy loam	SM	A-4	15-25	0-10	90-100	80-100	60-85	35-50	20-30	NP-5
	15-23	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Panoza----------	0-6	Stony loam	ML, CL-ML	A-4	15-30	10-25	85-100	75-100	65-95	50-75	20-30	NP-10
	6-24	Stony loam	SC-SM, ML	A-4	15-30	10-25	85-100	75-95	65-95	50-75	20-30	NP-10
	24-30	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
228:												
Beam------------	0-15	Stony fine sandy loam	SM	A-4	15-25	0-10	90-100	80-100	60-85	35-50	20-30	NP-5
	15-23	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Panoza----------	0-6	Stony loam	ML, CL-ML	A-4	15-30	10-25	85-100	75-100	65-95	50-75	20-30	NP-10
	6-24	Stony loam	SC-SM, ML	A-4	15-30	10-25	85-100	75-95	65-95	50-75	20-30	NP-10
	24-30	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
229:												
Seaback---------	0-9	Loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	75-95	55-75	25-35	5-15
	9-19	Loam	CL-ML, CL	A-6, A-4	---	---	85-100	90-100	75-95	55-75	25-35	5-15
	19-23	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
San Timoteo-----	0-11	Sandy loam	SM	A-4	0	10-15	85-100	75-100	50-70	30-40	20-30	NP-5
	11-25	Sandy loam, loam	ML, SM	A-4	0	0	85-100	75-100	50-95	40-75	20-30	NP-5
	25-30	Weathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				*Pct*	*Pct*					*Pct*	
230:												
Padres----------	0-6	Sandy loam	SM	A-4	0	0-10	85-100	75-100	50-70	30-40	20-30	NP-5
	6-60	Sandy loam, gravelly coarse sandy loam	SM	A-4	0	0-10	85-100	75-100	50-70	30-40	20-30	NP-5
Wasioja---------	0-5	Sandy loam	SM, SC-SM	A-2-4, A-4	0	0	100	100	60-70	30-40	15-25	NP-5
	5-33	Sandy clay loam, clay loam	CL	A-6	0	0	100	100	80-100	35-80	25-40	10-20
	33-70	Stratified very gravelly loamy coarse sand to gravelly sandy loam	SC-SM, SM	A-2, A-4	0	0	65-95	35-85	20-75	10-50	20-30	NP-10
240:												
Panoza----------	0-6	Loam	SM, SC-SM, ML, CL-ML	A-4	0	0	95-100	85-100	65-90	40-55	20-30	NP-10
	6-24	Loam, sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	95-100	85-100	65-90	40-55	20-30	NP-10
	24-30	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Beam------------	0-3	Loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	75-95	55-75	25-35	5-15
	3-11	Loam	CL-ML, CL	A-6, A-4	---	---	85-100	90-100	75-95	55-75	25-35	5-15
	11-15	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
241:												
Panoza----------	0-6	Loam	SM, SC-SM, ML, CL-ML	A-4	0	0	95-100	85-100	65-90	40-55	20-30	NP-10
	6-24	Loam, sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	95-100	85-100	65-90	40-55	20-30	NP-10
	24-30	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Beam------------	0-3	Loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	75-95	55-75	25-35	5-15
	3-11	Loam	CL-ML, CL	A-6, A-4	---	---	85-100	90-100	75-95	55-75	25-35	5-15
	11-15	Weathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				*Pct*	*Pct*					*Pct*	
242:												
Panoza----------	0-6	Loam	SM, SC-SM, ML, CL-ML	A-4	0	0	95-100	85-100	65-90	40-55	20-30	NP-10
	6-24	Loam, sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	95-100	85-100	65-90	40-55	20-30	NP-10
	24-30	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Beam-----------	0-3	Loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	75-95	55-75	25-35	5-15
	3-11	Loam	CL-ML, CL	A-6, A-4	---	---	85-100	90-100	75-95	55-75	25-35	5-15
	11-15	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
248:												
Pyxo-----------	0-11	Loam	CL, CL-ML, ML	A-4	0	0	85-100	80-100	70-90	50-70	25-35	5-10
	11-38	Loam, clay loam	CL, CL-ML	A-4, A-6	0	0	85-100	80-100	75-95	50-80	25-40	5-15
	38-40	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Cochora---------	0-9	Loam	SM	A-4	0	0	85-95	70-90	50-70	40-50	15-25	NP-5
	9-15	Sandy loam	SM	A-4, A-2-4	0	0	85-95	70-90	50-65	30-50	15-25	NP-5
	---	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
249:												
Xeric Torriorthents--	0-10	Gravelly sandy loam	SM, GM	A-1-b, A-2-4	0	0	75-90	50-75	30-50	15-30	20-25	5-10
	10-24	Very gravelly loam, very gravelly sandy loam	GM, SM	A-2-4, A-1-b	0	0	60-75	25-50	15-50	10-40	20-30	5-10
	24-43	Extremely gravelly sandy loam, extremely gravelly loam	GM, SM	A-2-4, A-1-b	0	0	60-65	20-25	10-20	5-15	20-30	5-10
	43-53	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Badlands--------	0-60				---	---	---	---	---	---	---	---
250:												
Pyxo-----------	0-6	Loam	CL, CL-ML, ML	A-4	0	0	85-100	80-100	70-90	50-70	25-35	5-10
	6-28	Loam, clay loam	CL, CL-ML	A-4, A-6	0	0	85-100	80-100	75-95	50-80	25-40	5-15
	28-32	Weathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
250:												
Cochora----------	0-3	Loam	SM	A-4	0	0	85-95	70-90	50-70	40-50	15-25	NP-5
	3-9	Sandy loam, loam, gravelly loam	SM	A-2-4, A-4	0	0	85-95	70-90	50-65	30-50	15-25	NP-5
	---	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Badlands---------	0-60				---	---	---	---	---	---	---	---
251:												
Nacimiento-------	0-10	Clay loam	CL, ML	A-6, A-7	0	0	80-100	75-100	70-95	65-85	35-45	10-20
	10-37	Clay loam, silty clay loam, loam	CL, ML	A-6, A-7	0	0	80-100	75-100	70-95	65-85	35-45	10-20
	37-41	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
252:												
Nacimiento-------	0-10	Clay loam	CL, ML	A-6, A-7	0	0	80-100	75-100	70-95	65-85	35-45	10-20
	10-37	Clay loam, silty clay loam, loam	CL, ML	A-6, A-7	0	0	80-100	75-100	70-95	65-85	35-45	10-20
	37-41	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
261:												
Aido-------------	0-8	Clay	CH, CL	A-7	0	0	95-100	95-100	90-95	75-90	45-60	20-35
	8-38	Clay, silty clay	CH, CL	A-7	0	0	80-95	75-90	75-90	70-85	45-65	20-35
	38-50	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
262:												
Aido-------------	0-8	Clay	CH, CL	A-7	0	0	95-100	95-100	90-95	75-90	45-60	20-35
	8-38	Clay, silty clay	CH, CL	A-7	0	0	80-95	75-90	75-90	70-85	45-65	20-35
	38-50	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
263:												
Aido-------------	0-8	Clay	CH, CL	A-7	0	0	95-100	95-100	90-95	75-90	45-60	20-35
	8-38	Clay, silty clay	CH, CL	A-7	0	0	80-95	75-90	75-90	70-85	45-65	20-35
	38-50	Weathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments >10 inches	Fragments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas-ticity index
	In				*Pct*	*Pct*					*Pct*	
270:												
Ayar------------	0-11	Silty clay	CH	A-7	0	0	100	95-100	90-100	85-100	50-60	25-35
	11-44	Clay, silty clay, clay loam	CH, CL	A-7	0	0	100	95-100	90-100	75-100	40-70	20-35
	44-48	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
271:												
Ayar------------	0-19	Clay	CH	A-7	0	0	100	95-100	90-100	85-100	50-60	25-35
	19-56	Clay	CH	A-7	0	0	100	95-100	90-100	75-100	50-60	25-35
	56-63	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
274:												
Ayar------------	0-19	Clay	CH	A-7	0	0	100	95-100	90-100	85-100	50-60	25-35
	19-56	Clay	CH	A-7	0	0	100	95-100	90-100	75-100	50-60	25-35
	56-63	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Hillbrick-------	0-15	Loam	ML, SM	A-4	0	0	85-100	75-100	65-95	50-75	25-35	NP-10
	15-24	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Aido------------	0-8	Clay	CH, CL	A-7	0	0	95-100	95-100	90-95	75-90	45-60	20-35
	8-38	Clay, silty clay	CH, CL	A-7	0	0	80-95	75-90	75-90	70-85	45-65	20-35
	38-50	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
275:												
Ayar------------	0-19	Clay	CH	A-7	0	0	100	95-100	90-100	85-100	50-60	25-35
	19-56	Clay	CH	A-7	0	0	100	95-100	90-100	75-100	50-60	25-35
	56-63	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Hillbrick-------	0-15	Loam	ML, SM	A-4	0	0	85-100	75-100	65-95	50-75	25-35	NP-10
	15-24	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Aido------------	0-8	Clay	CH, CL	A-7	0	0	95-100	95-100	90-95	75-90	45-60	20-35
	8-38	Clay, silty clay	CH, CL	A-7	0	0	80-95	75-90	75-90	70-85	45-65	20-35
	38-50	Weathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
280:												
Seaback---------	0-9	Loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	75-95	55-75	25-35	5-15
	9-19	Loam	CL-ML, CL	A-6, A-4	---	---	85-100	90-100	75-95	55-75	25-35	5-15
	19-23	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Panoza----------	0-6	Loam	SM, SC-SM, ML, CL-ML	A-4	0	0	95-100	85-100	65-90	40-55	20-30	NP-10
	6-24	Loam, sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	95-100	85-100	65-90	40-55	20-30	NP-10
	24-30	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Jenks-----------	0-27	Clay loam, silty clay loam	SM	A-4	0	0	85-100	75-100	70-95	60-85	30-40	10-20
	27-35	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
281:												
Seaback---------	0-9	Loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	75-95	55-75	25-35	5-15
	9-19	Loam	CL-ML, CL	A-6, A-4	---	---	85-100	90-100	75-95	55-75	25-35	5-15
	19-23	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Panoza----------	0-6	Loam	SM, SC-SM, ML, CL-ML	A-4	0	0	95-100	85-100	65-90	40-55	20-30	NP-10
	6-24	Loam, sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	95-100	85-100	65-90	40-55	20-30	NP-10
	24-30	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Jenks-----------	0-27	Clay loam, silty clay loam	SM	A-4	0	0	85-100	75-100	70-95	60-85	30-40	10-20
	27-35	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
282:												
Seaback---------	0-9	Loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	75-95	55-75	25-35	5-15
	9-19	Loam	CL-ML, CL	A-6, A-4	---	---	85-100	90-100	75-95	55-75	25-35	5-15
	19-23	Weathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
282:												
Panoza----------	0-6	Loam	SM, SC-SM, ML, CL-ML	A-4	0	0	95-100	85-100	65-90	40-55	20-30	NP-10
	6-24	Loam, sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	95-100	85-100	65-90	40-55	20-30	NP-10
	24-30	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Jenks-----------	0-27	Clay loam, silty clay loam	SM	A-4	0	0	85-100	75-100	70-95	60-85	30-40	10-20
	27-35	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
290:												
San Timoteo-----	0-11	Sandy loam	SM	A-4	0	10-15	85-100	75-100	50-70	30-40	20-30	NP-5
	11-25	Sandy loam, loam	ML, SM	A-4	0	0	85-100	75-100	50-95	40-75	20-30	NP-5
	25-30	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
San Andreas-----	0-3	Fine sandy loam	SM, ML	A-4	0	0	95-100	85-100	55-70	30-40	20-30	NP-5
	3-22	Sandy loam, fine sandy loam, very fine sandy loam	ML, SM	A-4	0	0	95-100	85-100	55-85	30-55	20-35	NP-10
	22-26	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Bellyspring-----	0-7	Sandy loam	SM	A-4	0	0	95-100	85-100	55-70	30-40	20-30	NP-5
	7-27	Cobbly clay loam, cobbly sandy clay loam	CL, SC	A-6	0	25-30	90-100	80-100	75-100	45-80	30-40	10-20
	27-36	Coarse sandy loam, loamy coarse sand	SM	A-2-4	0	0-10	85-100	75-100	50-70	30-40	20-30	NP-5
	36-40	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
291:												
San Timoteo-----	0-11	Sandy loam	SM	A-4	0	10-15	85-100	75-100	50-70	30-40	20-30	NP-5
	11-25	Sandy loam, loam	ML, SM	A-4	0	0	85-100	75-100	50-95	40-75	20-30	NP-5
	25-30	Weathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
291:												
San Andreas-----	0-3	Fine sandy loam	SM, ML	A-4	0	0	95-100	85-100	55-70	30-40	20-30	NP-5
	3-22	Sandy loam, fine sandy loam, very fine sandy loam	ML, SM	A-4	0	0	95-100	85-100	55-85	30-55	20-35	NP-10
	22-26	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Bellyspring-----	0-7	Sandy loam	SM	A-4	0	0	95-100	85-100	55-70	30-40	20-30	NP-5
	7-27	Cobbly clay loam, cobbly sandy clay loam	CL, SC	A-6	0	25-30	90-100	80-100	75-100	45-80	30-40	10-20
	27-36	Coarse sandy loam, loamy coarse sand	SM	A-2-4	0	0-10	85-100	75-100	50-70	30-40	20-30	NP-5
	36-40	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
292:												
San Timoteo-----	0-11	Sandy loam	SM	A-4	0	10-15	85-100	75-100	50-70	30-40	20-30	NP-5
	11-25	Sandy loam, loam	ML, SM	A-4	0	0	85-100	75-100	50-95	40-75	20-30	NP-5
	25-30	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
San Andreas-----	0-3	Fine sandy loam	SM, ML	A-4	0	0	95-100	85-100	55-70	30-40	20-30	NP-5
	3-22	Sandy loam, fine sandy loam, very fine sandy loam	ML, SM	A-4	0	0	95-100	85-100	55-85	30-55	20-35	NP-10
	22-26	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Bellyspring-----	0-7	Sandy loam	SM	A-4	0	0	95-100	85-100	55-70	30-40	20-30	NP-5
	7-27	Cobbly clay loam, cobbly sandy clay loam	CL, SC	A-6	0	25-30	90-100	80-100	75-100	45-80	30-40	10-20
	27-36	Coarse sandy loam, loamy coarse sand	SM	A-2-4	0	0-10	85-100	75-100	50-70	30-40	20-30	NP-5
	36-40	Weathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				*Pct*	*Pct*					*Pct*	
301:												
Arbuckle--------	0-11	Sandy loam	SM	A-4	0	0	85-100	75-100	40-70	25-40	20-30	NP-5
	11-34	Sandy loam	SM	A-4	0	0-10	85-95	75-90	40-65	25-35	20-30	NP-5
	34-55	Sandy clay loam, clay loam	SC, CL	A-6	0	0-10	85-95	75-90	65-90	30-70	25-40	10-20
	55-65	Coarse sandy loam	SM	A-4	0	0-25	85-100	70-100	40-70	25-40	20-30	NP-5
	65-73	Loamy coarse sand	SM	A-1, A-2-4	0	0-25	85-100	70-100	35-75	15-30	0-15	NP
302:												
Arbuckle--------	0-11	Sandy loam	SM	A-4	0	0	85-100	75-100	40-70	25-40	20-30	NP-5
	11-34	Sandy loam	SM	A-4	0	0-10	85-95	75-90	40-65	25-35	20-30	NP-5
	34-55	Sandy clay loam, clay loam	SC, CL	A-6	0	0-10	85-95	75-90	65-90	30-70	25-40	10-20
	55-65	Coarse sandy loam	SM	A-4	0	0-25	85-100	70-100	40-70	25-40	20-30	NP-5
	65-73	Loamy coarse sand	SM	A-1, A-2-4	0	0-25	85-100	70-100	35-75	15-30	0-15	NP
303:												
Arbuckle--------	0-11	Sandy loam	SM	A-4	0	0	85-100	75-100	40-70	25-40	20-30	NP-5
	11-34	Sandy loam	SM	A-4	0	0-10	85-95	75-90	40-65	25-35	20-30	NP-5
	34-55	Sandy clay loam, clay loam	SC, CL	A-6	0	0-10	85-95	75-90	65-90	30-70	25-40	10-20
	55-65	Coarse sandy loam	SM	A-4	0	0-25	85-100	70-100	40-70	25-40	20-30	NP-5
	65-73	Loamy coarse sand	SM	A-1, A-2-4	0	0-25	85-100	70-100	35-75	15-30	0-15	NP
304:												
Arbuckle--------	0-11	Sandy loam	SM	A-4	0	0	85-100	75-100	40-70	25-40	20-30	NP-5
	11-34	Sandy loam	SM	A-4	0	0-10	85-95	75-90	40-65	25-35	20-30	NP-5
	34-55	Sandy clay loam, clay loam	SC, CL	A-6	0	0-10	85-95	75-90	65-90	30-70	25-40	10-20
	55-65	Coarse sandy loam	SM	A-4	0	0-25	85-100	70-100	40-70	25-40	20-30	NP-5
	65-73	Loamy coarse sand	SM	A-1, A-2-4	0	0-25	85-100	70-100	35-75	15-30	0-15	NP

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
306:												
Arbuckle--------	0-11	Sandy loam	SM	A-4	0	0	85-100	75-100	40-70	25-40	20-30	NP-5
	11-34	Sandy loam	SM	A-4	0	0-10	85-95	75-90	40-65	25-35	20-30	NP-5
	34-55	Sandy clay loam, clay loam	SC, CL	A-6	0	0-10	85-95	75-90	65-90	30-70	25-40	10-20
	55-65	Coarse sandy loam	SM	A-4	0	0-25	85-100	70-100	40-70	25-40	20-30	NP-5
	65-73	Loamy coarse sand	SM	A-1, A-2-4	0	0-25	85-100	70-100	35-75	15-30	0-15	NP
307:												
Arbuckle--------	0-11	Sandy loam	SM	A-4	0	0	85-100	75-100	40-70	25-40	20-30	NP-5
	11-34	Sandy loam	SM	A-4	0	0-10	85-95	75-90	40-65	25-35	20-30	NP-5
	34-55	Sandy clay loam, clay loam	SC, CL	A-6	0	0-10	85-95	75-90	65-90	30-70	25-40	10-20
	55-65	Coarse sandy loam	SM	A-4	0	0-25	85-100	70-100	40-70	25-40	20-30	NP-5
	65-73	Loamy coarse sand	SM	A-1, A-2-4	0	0-25	85-100	70-100	35-75	15-30	0-15	NP
310:												
Yeguas----------	0-19	Loam	CL-ML, ML	A-4	0	0	95-100	90-100	80-90	60-70	25-35	5-10
	19-35	Clay loam, clay	CH, CL	A-6, A-7	0	0	90-100	85-100	80-90	65-85	35-55	15-30
	35-51	Loam, clay loam	CL, CL-ML	A-4, A-6	0	0	80-100	75-100	70-80	50-60	25-35	5-15
	51-62	Gravelly coarse sandy loam	SM	A-1, A-2	0	0	65-80	60-75	35-50	20-30	20-30	NP-5
Pinspring-------	0-14	Loam	CL	A-6	0	0	95-100	85-100	75-95	60-75	30-35	10-15
	14-30	Clay loam	CL	A-6, A-7	0	0	95-100	85-100	80-100	65-95	35-45	15-20
	30-39	Sandy loam	SC, SC-SM	A-2-4, A-2-6	0	0	85-100	70-100	40-70	20-40	25-30	5-10
	39-60	Loam			0	0	95-100	85-100	80-95	55-75	30-35	10-15
311:												
Yeguas----------	0-19	Loam	CL-ML, ML	A-4	0	0	95-100	90-100	80-90	60-70	25-35	5-10
	19-35	Clay loam, clay	CH, CL	A-6, A-7	0	0	90-100	85-100	80-90	65-85	35-55	15-30
	35-51	Loam, clay loam	CL, CL-ML	A-4, A-6	0	0	80-100	75-100	70-80	50-60	25-35	5-15
	51-62	Gravelly coarse sandy loam	SM	A-1, A-2	0	0	65-80	60-75	35-50	20-30	20-30	NP-5
Pinspring-------	0-14	Loam	CL	A-6	0	0	95-100	85-100	75-95	60-75	30-35	10-15
	14-30	Clay loam	CL	A-6, A-7	0	0	95-100	85-100	80-100	65-95	35-45	15-20
	30-39	Sandy loam	SC, SC-SM	A-2-4, A-2-6	0	0	85-100	70-100	40-70	20-40	25-30	5-10
	39-60	Loam			0	0	95-100	85-100	80-95	55-75	30-35	10-15

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				*Pct*	*Pct*					*Pct*	
321:												
Thomhill--------	0-13	Loam	CL-ML, ML	A-4	0	0	95-100	90-100	75-95	55-75	30-35	10-15
	13-60	Loam, clay loam, silt loam	CL	A-6, A-7	0	0	95-100	90-100	75-100	55-90	30-40	10-20
330:												
Jenks-----------	0-27	Clay loam, silty clay loam	SM	A-4	0	0	85-100	75-100	70-95	60-85	30-40	10-20
	27-35	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
339:												
Arnold----------	0-6	Loamy sand	SM	A-2	0	0	90-100	85-100	50-80	20-35	0-14	NP
	6-44	Sand, loamy sand	SM, SP-SM	A-1, A-2, A-3	0	0	90-100	85-100	40-80	5-30	0-14	NP
	44-48	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
San Andreas-----	0-11	Sandy loam	ML, SM	A-4	0	0	95-100	85-100	55-70	30-40	20-30	NP-5
	11-29	Sandy loam, fine sandy loam, very fine sandy loam	ML, SM	A-4	0	0	95-100	85-100	55-85	30-55	20-35	NP-10
	29-33	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
340:												
Arnold----------	0-6	Loamy sand	SM	A-2	0	0	90-100	85-100	50-80	20-35	0-14	NP
	6-44	Sand, loamy sand	SM, SP-SM	A-1, A-2, A-3	0	0	90-100	85-100	40-80	5-30	0-14	NP
	44-48	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
San Andreas-----	0-11	Sandy loam	SM, ML	A-4	0	0	95-100	85-100	55-70	30-40	20-30	NP-5
	11-29	Sandy loam, fine sandy loam, very fine sandy loam	ML, SM	A-4	0	0	95-100	85-100	55-85	30-55	20-35	NP-10
	29-33	Weathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				*Pct*	*Pct*					*Pct*	
350:												
Cieneba----------	0-15	Coarse sandy loam	SM	A-2, A-4	0	0	95-100	85-100	55-70	30-40	10-20	NP-5
	15-20	Weathered bedrock	---	---	0	0	---	---	---	---	---	---
360:												
Chicote----------	0-2	Silty clay loam	CH, CL	A-7	0	0	100	100	95-100	85-95	45-55	25-35
	2-12	Clay	CH	A-7	0	0	100	100	90-100	75-95	55-75	35-50
	12-61	Clay	CH	A-7	0	0	100	100	90-100	75-95	55-75	35-50
Chicote----------	0-5	Silt loam	CL	A-6	0	0	100	100	90-100	70-90	30-40	10-20
	5-14	Clay	CH	A-7	0	0	100	100	90-100	75-95	55-75	35-50
	14-24	Silty clay loam	CH, CL	A-7	0	0	100	100	95-100	85-95	45-55	25-35
	24-60	Silt loam	CL	A-6	0	0	100	100	90-100	70-90	30-40	10-20
361:												
Chicote----------	0-2	Silty clay loam	CH, CL	A-7	0	0	100	100	95-100	85-95	45-55	25-35
	2-12	Clay	CH	A-7	0	0	100	100	90-100	75-95	55-75	35-50
	12-61	Clay	CH	A-7	0	0	100	100	90-100	75-95	55-75	35-50
Chicote----------	0-5	Silt loam	CL	A-6	0	0	100	100	90-100	70-90	30-40	10-20
	5-14	Clay	CH	A-7	0	0	100	100	90-100	75-95	55-75	35-50
	14-24	Silty clay loam	CH, CL	A-7	0	0	100	100	95-100	85-95	45-55	25-35
	24-60	Silt loam	CL	A-6	0	0	100	100	90-100	70-90	30-40	10-20
362:												
Chicote----------	0-2	Silty clay loam	CH, CL	A-7	0	0	100	100	95-100	85-95	45-55	25-35
	2-12	Clay	CH	A-7	0	0	100	100	90-100	75-95	55-75	35-50
	12-61	Clay	CH	A-7	0	0	100	100	90-100	75-95	55-75	35-50
Chicote----------	0-5	Silt loam	CL	A-6	0	0	100	100	90-100	70-90	30-40	10-20
	5-14	Clay	CH	A-7	0	0	100	100	90-100	75-95	55-75	35-50
	14-24	Silty clay loam	CH, CL	A-7	0	0	100	100	95-100	85-95	45-55	25-35
	24-60	Silt loam	CL	A-6	0	0	100	100	90-100	70-90	30-40	10-20
371:												
Semper-----------	0-5	Very fine sandy loam	ML	A-4	0	0	100	100	85-95	50-65	20-30	NP-5
	5-22	Very fine sandy loam, fine sandy loam, sandy loam	ML	A-4	0	0	100	100	85-95	50-65	20-30	NP-5
	22-26	Weathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				*Pct*	*Pct*					*Pct*	
372:												
Semper----------	0-5	Very fine sandy loam	ML	A-4	0	0	100	100	85-95	50-65	20-30	NP-5
	5-22	Very fine sandy loam, fine sandy loam, sandy loam	ML	A-4	0	0	100	100	85-95	50-65	20-30	NP-5
	22-26	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
375:												
Semper----------	0-5	Very fine sandy loam	ML	A-4	0	0	100	100	85-95	50-65	20-30	NP-5
	5-22	Very fine sandy loam, fine sandy loam, sandy loam	ML	A-4	0	0	100	100	85-95	50-65	20-30	NP-5
	22-26	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Badlands--------	0-60				---	---	---	---	---	---	---	---
380:												
Muranch---------	0-15	Loam	CL-ML, ML	A-4	0	0-10	95-100	90-100	80-90	55-70	25-35	5-10
	15-36	Very gravelly loam, very cobbly loam	GC-GM, GM	A-2, A-4	0	25-45	60-80	25-55	20-50	15-40	25-35	5-10
	36-40	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Xerorthents-----	0-12	Very gravelly loam	GM, SM	A-1-b, A-4, A-2-4	0	0	60-80	25-60	20-55	15-45	25-30	5-10
	12-19	Very gravelly sandy loam, very gravelly loam	GM, SM	A-4, A-2-4, A-1-b	0	0	60-80	25-60	15-55	5-45	20-30	5-10
	19-26	Extremely cobbly sandy loam, extremely cobbly loam	GM, SM	A-2-4, A-1-b	0	45-60	55-75	10-45	5-40	0-30	20-30	5-10
	26-28	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				*Pct*	*Pct*					*Pct*	
388:												
Rock outcrop----	0-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Gaviota---------	0-8	Sandy loam	SM	A-4	0	0-25	85-100	75-100	50-70	30-40	20-30	NP-5
	8-11	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
391:												
Rock outcrop----	0-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Lithic Torriorthents--	0-4	Sandy loam	SM, SC-SM	A-2-4	0	0	85-100	75-100	50-70	30-40	0-20	NP-5
	4-9	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
401:												
Godde-----------	0-14	Sandy loam	SC-SM, SM	A-2, A-4	---	0-5	85-100	75-95	50-85	25-50	15-25	NP-10
	14-18	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Xerorthents-----	0-7	Sandy loam	SM	A-4	0	0	85-100	75-100	50-70	30-40	20-25	NP-5
	7-11	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
408:												
Gaviota---------	0-15	Sandy loam	SM	A-4	0	0-5	80-100	75-100	55-70	30-50	20-30	NP-5
	15-19	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
San Andreas-----	0-11	Sandy loam	ML, SM	A-4	0	0	90-100	80-100	70-90	35-60	10-40	NP-10
	11-29	Sandy loam, fine sandy loam, loam	ML, SM	A-4	0	0	90-100	80-100	70-90	35-60	10-40	NP-10
	29-33	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
409:												
Gaviota---------	0-8	Sandy loam	SM	A-4	0	0-25	85-100	75-100	50-70	30-40	20-30	NP-5
	8-11	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
409:												
Saltos----------	0-.5	Slightly decomposed plant material			---	---	---	---	---	---	---	---
	.5-4	Loam	CL	A-6	0	0	85-95	75-90	65-85	50-70	30-35	10-15
	4-10	Loam, clay loam, sandy clay loam	CL	A-6	0	0	85-95	75-90	65-85	50-70	30-35	10-15
	10-15	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
410:												
Gaviota---------	0-8	Sandy loam	SM	A-4	0	0-25	85-100	75-100	50-70	30-40	20-30	NP-5
	8-11	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
411:												
Tajea-----------	0-10	Loam	CL	A-6	0	0	100	100	85-95	60-75	30-35	1-15
	10-20	Clay loam	CL	A-6	0	0-10	85-100	75-100	80-100	55-80	35-40	15-20
	20-27	Gravelly clay loam, clay loam	CL	A-6	0	0-10	75-90	50-75	45-70	35-50	35-40	15-20
	27-30	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Saltos----------	0-.5	Slightly decomposed plant material			---	---	---	---	---	---	---	---
	.5-4	Sandy clay loam	CL	A-6	0	0	85-95	75-90	65-80	40-50	30-35	10-15
	4-10	Gravelly clay loam, gravelly sandy clay loam, sandy clay loam	CL	A-6	0	0	85-95	75-90	45-70	45-65	30-35	10-15
	10-15	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
412:												
Tajea-----------	0-10	Loam	CL	A-6	0	0	100	100	85-95	60-75	30-35	1-15
	10-20	Clay loam	CL	A-6	0	0-10	85-100	75-100	80-100	55-80	35-40	15-20
	20-27	Gravelly clay loam, clay loam	CL	A-6	0	0-10	75-90	50-75	45-70	35-50	35-40	15-20
	27-30	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Saltos----------	0-.5	Slightly decomposed plant material			---	---	---	---	---	---	---	---
	.5-4	Loam	CL	A-6	0	0	85-95	75-90	65-85	50-70	30-35	10-15
	4-10	Loam, clay loam, sandy clay loam	CL	A-6	0	0	85-95	75-90	65-85	50-70	30-35	10-15
	10-15	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
420:												
Bellyspring-----	0-12	Loam	CL-ML, ML	A-4	0	0	80-95	75-90	65-75	50-60	25-35	5-10
	12-55	Gravelly clay loam	CL, SC	A-6	0	0	80-95	75-90	65-75	40-70	30-40	10-20
	55-59	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Saltos----------	0-.5	Slightly decomposed plant material			---	---	---	---	---	---	---	---
	.5-4	Loam	CL	A-6	0	0	85-95	75-90	65-85	50-70	30-35	10-15
	4-10	Loam, clay loam, sandy clay loam	CL	A-6	0	0	85-95	75-90	65-85	50-70	30-35	10-15
	10-15	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
430:												
Saucito---------	0-3	Sandy loam	SM	A-2	---	0-15	85-95	75-90	50-65	25-35	20-30	NP-5
	3-18	Very gravelly clay loam, very cobbly clay loam	GC	A-2, A-6	---	15-50	65-80	35-60	30-60	25-50	30-40	10-20
	18-28	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				*Pct*	*Pct*					*Pct*	
430:												
Akad------------	0-5	Loam	CL-ML, ML	A-4	0	0-10	90-100	85-100	75-95	60-75	25-35	5-10
	5-23	Very gravelly clay loam, very gravelly sandy clay loam	GC	A-2, A-6	0	15-30	60-80	25-60	20-60	10-50	30-40	10-20
	23-25	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
440:												
Bellyspring-----	0-7	Sandy loam	SM	A-4	0	0	95-100	85-100	55-70	30-40	20-30	NP-5
	7-27	Cobbly clay loam, cobbly sandy clay loam	CL, SC	A-6	0	25-30	90-100	80-100	75-100	45-80	30-40	10-20
	27-36	Coarse sandy loam, loamy coarse sand	SM	A-2-4	0	0-10	85-100	75-100	50-70	30-40	20-30	NP-5
	36-40	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Panoza----------	0-6	Loam	SM, SC-SM, ML, CL-ML	A-4	0	0	95-100	85-100	65-90	40-55	20-30	NP-10
	6-24	Loam, sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	95-100	85-100	65-90	40-55	20-30	NP-10
	24-30	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
441:												
Bellyspring-----	0-7	Sandy loam	SM	A-4	0	0	95-100	85-100	55-70	30-40	20-30	NP-5
	7-27	Cobbly clay loam, cobbly sandy clay loam	CL, SC	A-6	0	25-30	90-100	80-100	75-100	45-80	30-40	10-20
	27-36	Coarse sandy loam, loamy coarse sand	SM	A-2-4	0	0-10	85-100	75-100	50-70	30-40	20-30	NP-5
	36-40	Weathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
441:												
Panoza----------	0-6	Loam	SM, SC-SM, ML, CL-ML	A-4	0	0	95-100	85-100	65-90	40-55	20-30	NP-10
	6-24	Loam, sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	95-100	85-100	65-90	40-55	20-30	NP-10
	24-30	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
442:												
Bellyspring-----	0-13	Sandy loam, loam	SM, ML	A-4	0	0	95-100	85-100	55-95	30-75	20-30	NP-5
	13-23	Clay loam, sandy clay loam	CL, SC	A-6	0	0-25	95-100	85-100	75-100	45-80	30-40	10-20
	23-38	Gravelly sandy loam, gravelly coarse sandy loam	SM	A-2	0	0-15	80-90	60-75	35-50	15-30	20-30	NP-5
	38-48	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Panoza----------	0-6	Loam	SC-SM, ML, CL-ML, SM	A-4	0	0	95-100	85-100	65-90	40-55	20-30	NP-10
	6-24	Loam, sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	95-100	85-100	65-90	40-55	20-30	NP-10
	24-30	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
443:												
Bellyspring-----	0-13	Sandy loam, loam	SM, ML	A-4	0	0	95-100	85-100	55-95	30-75	20-30	NP-5
	13-23	Clay loam, sandy clay loam	CL, SC	A-6	0	0-25	95-100	85-100	75-100	45-80	30-40	10-20
	23-38	Gravelly sandy loam, gravelly coarse sandy loam	SM	A-2	0	0-15	80-90	60-75	35-50	15-30	20-30	NP-5
	38-48	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Beam-----------	0-15	Fine sandy loam	SM	A-4	0	0	95-100	85-100	65-85	45-55	20-30	NP-5
	15-23	Weathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
443:												
Panoza----------	0-6	Loam	SM, SC-SM, ML, CL-ML	A-4	0	0	95-100	85-100	65-90	40-55	20-30	NP-10
	6-24	Loam, sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	95-100	85-100	65-90	40-55	20-30	NP-10
	24-30	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
445:												
Bellyspring-----	0-7	Sandy loam	SM	A-4	0	0	95-100	85-100	55-70	30-40	20-30	NP-5
	7-27	Cobbly clay loam, cobbly sandy clay loam	CL, SC	A-6	0	25-30	90-100	80-100	75-100	45-80	30-40	10-20
	27-36	Coarse sandy loam, loamy coarse sand	SM	A-2-4	0	0-10	85-100	75-100	50-70	30-40	20-30	NP-5
	36-40	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Xerorthents-----	0-12	Very gravelly loam	GM, SM	A-1-b, A-4, A-2-4	0	0	60-80	25-60	20-55	15-45	25-30	5-10
	12-19	Very gravelly sandy loam, very gravelly loam	GM, SM	A-4, A-2-4, A-1-b	0	0	60-80	25-60	15-55	5-45	20-30	5-10
	19-26	Extremely cobbly sandy loam, extremely cobbly loam	GM, SM	A-2-4, A-1-b	0	45-60	55-75	10-45	5-40	0-30	20-30	5-10
	26-28	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Panoza----------	0-6	Loam	SM, SC-SM, ML, CL-ML	A-4	0	0	95-100	85-100	65-90	40-55	20-30	NP-10
	6-24	Loam, sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	95-100	85-100	65-90	40-55	20-30	NP-10
	24-30	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
450:												
Botella---------	0-14	Loam	CL	A-6	0	0	85-100	75-100	65-95	30-35	30-35	10-15
	14-39	Clay loam, sandy clay loam, silty clay loam	CL	A-6, A-7	0	0	85-100	75-100	65-100	35-45	35-45	15-20
	39-60	Sandy loam	SC-SM, SC	A-2-4	0	0	85-100	75-100	50-70	30-40	20-30	5-10

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
460:												
Camatta---------	0-8	Loam	ML, CL-ML	A-4	0	0	100	100	85-95	60-75	20-30	5-10
	8-13	Indurated			---	---	---	---	---	---	---	---
	13-60	Sandy loam	SM, SC-SM	A-2-4, A-4	0	0	100	100	60-70	30-40	0-25	NP-5
470:												
Botella---------	0-14	Sandy loam	SC-SM, SC	A-2-4	0	0	85-100	75-100	50-70	30-40	20-30	5-10
	14-39	Clay loam, sandy clay loam, silty clay loam	CL	A-6, A-7	0	0	85-100	75-100	65-100	35-45	35-45	15-20
	39-60	Sandy loam	SC-SM, SC	A-2-4	0	0	85-100	75-100	50-70	30-40	20-30	5-10
474:												
Elder-----------	0-21	Sandy loam	SM	A-4	0	0	80-100	75-100	50-70	35-50	20-30	NP-5
	21-67	Sandy loam, coarse sandy loam	SM	A-4	0	0	80-100	75-100	50-70	35-50	20-30	NP-5
475:												
Elder-----------	0-21	Sandy loam	SM	A-4	0	0	80-100	75-100	50-70	35-50	20-30	NP-5
	21-67	Sandy loam, coarse sandy loam	SM	A-4	0	0	80-100	75-100	50-70	35-50	20-30	NP-5
480:												
Metz------------	0-10	Loamy sand	SM	A-1, A-2	0	0-5	85-100	75-100	35-70	20-35	0-14	NP
	10-63	Stratified coarse sand to sandy loam	SM	A-1, A-2	0	0-5	85-100	75-100	50-70	10-40	20-30	NP-5
490:												
Wasioja---------	0-9	Loam	CL, CL-ML	A-4	0	0	100	100	85-95	60-75	20-30	5-10
	9-40	Sandy clay loam, clay loam	CL, SC	A-6	0	0	100	100	80-100	35-80	30-40	10-20
	40-60	Loam	CL, CL-ML	A-4	---	0	85-95	85-100	75-95	60-75	10-30	5-10
491:												
Wasioja---------	0-10	Sandy loam	SM	A-2, A-4	0	0	100	100	60-70	30-40	15-25	NP-5
	10-60	Sandy clay loam, clay loam, loam	CL, SC	A-6	0	0	85-95	85-100	75-100	50-80	25-40	10-20
495:												
Wasioja---------	0-10	Loam	CL, CL-ML	A-4	0	0	100	100	85-95	60-75	20-30	5-10
	10-60	Sandy clay loam, clay loam	CL, SC	A-6	0	0	85-95	85-100	75-100	50-80	25-40	10-20

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
495:												
Polonio---------	0-14	Loam	ML	A-4	0	0	100	100	85-95	60-75	25-35	NP-10
	14-69	Clay loam, silty clay loam, loam	CL	A-6, A-7	0	0	100	100	85-100	65-95	30-45	10-20
497:												
Wasioja---------	0-9	Loam	CL, CL-ML	A-4	0	0	100	100	85-95	60-75	20-30	5-10
	9-40	Sandy clay loam, clay loam	CL, SC	A-6	0	0	100	100	80-100	35-80	30-40	10-20
	40-60	Loam	CL, CL-ML	A-4	---	0	85-95	85-100	75-95	60-75	10-30	5-10
Pinspring-------	0-25	Loam	CL	A-6	0	0	100	100	85-95	60-75	30-35	10-15
	25-30	Clay loam, silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	70-95	35-45	15-20
	30-39	Sandy loam		A-4	0	0	95-100	85-100	55-70	30-40	20-25	5-10
	39-62	Loam, gravelly coarse sandy loam	SC, SC-SM	A-2-4, A-2-6	0	0	95-100	85-100	75-95	50-70	30-35	10-15
Yeguas----------	0-19	Loam	CL-ML, ML	A-4	0	0	95-100	90-100	80-90	60-70	25-35	5-10
	19-35	Clay loam, clay	CH, CL	A-6, A-7	0	0	90-100	85-100	80-90	65-85	35-55	15-30
	35-51	Loam, clay loam	CL, CL-ML	A-4, A-6	0	0	80-100	75-100	70-80	50-60	25-35	5-15
	51-62	Gravelly coarse sandy loam	SM	A-1, A-2	0	0	65-80	60-75	35-50	20-30	20-30	NP-5
512:												
Shimmon---------	0-12	Fine sandy loam	SC-SM, SC	A-4	0	0	100	100	75-85	40-50	25-30	5-10
	12-21	Sandy clay loam	SC	A-6	0	0	100	100	80-90	35-50	30-40	10-20
	21-32	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
520:												
Santa Lucia-----	0-4	Channery clay loam	CH, CL, GC	A-6, A-7	0	0-5	55-80	50-75	45-70	35-60	35-55	15-25
	4-21	Very channery clay loam	GC	A-2	0	0-5	30-65	25-50	20-45	10-35	35-55	15-25
	21-25	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
521:												
Santa Lucia-----	0-4	Channery clay loam	SC, GC	A-6, A-7	0	0-15	70-90	45-75	40-70	35-50	35-45	15-20
	4-21	Very channery clay loam	GC, SC	A-2-7, A-2-6	0	0-15	55-75	15-75	15-50	10-40	35-45	15-20
	21-25	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				*Pct*	*Pct*					*Pct*	
522:												
Santa Lucia-----	0-4	Channery clay loam	SC, GC	A-6, A-7	0	0-15	70-90	45-75	40-70	35-50	35-45	15-20
	4-21	Very channery clay loam	GC, SC	A-2-7, A-2-6	0	0-15	55-75	15-75	15-50	10-40	35-45	15-20
	21-25	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
531:												
Saltos----------	0-.5	Slightly decomposed plant material			---	---	---	---	---	---	---	---
	.5-4	Loam	CL	A-6	0	0	85-95	75-90	65-85	50-70	30-35	10-15
	4-10	Loam, clay loam, sandy clay loam	CL	A-6	0	0	85-95	75-90	65-85	50-70	30-35	10-15
	10-15	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Millsholm-------	0-2	Loam	CL	A-6	0	0	100	100	85-95	60-75	30-35	10-15
	2-12	Loam	CL	A-6	0	0	100	100	85-95	60-75	30-35	10-15
	12-15	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
561:												
Chanac----------	0-12	Loam	CL, CL-ML	A-4, A-6	0	0	90-100	85-100	70-95	55-65	25-40	5-15
	12-21	Loam, sandy clay loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0	90-100	85-100	70-100	40-75	25-40	5-15
	21-60	Fine sandy loam, sandy loam, loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	90-100	85-100	50-75	30-60	20-35	NP-10
562:												
Chanac----------	0-12	Loam	CL, CL-ML	A-4, A-6	0	0	90-100	85-100	70-95	55-65	25-40	5-15
	12-21	Loam, sandy clay loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0	90-100	85-100	70-100	40-75	25-40	5-15
	21-60	Fine sandy loam, sandy loam, loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	90-100	85-100	50-75	30-60	20-35	NP-10
900:												
Pits------------	0-60	Variable			---	---	---	---	---	---	---	---

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
905:												
Xerofluvents----	0-10	Sand	SM	A-1, A-2	---	0-5	80-95	75-90	40-65	10-25	0-14	NP
	10-30	Stratified sand to loam	SM	A-2, A-4	---	0-5	80-95	75-90	40-75	25-50	20-35	NP-10
	30-60	Stratified gravelly sand to gravelly loam	SM, SP-SM	A-1, A-2, A-4	---	0-5	55-75	50-75	30-60	10-45	20-35	NP-10
Riverwash-------	0-6	Sand	SP, SP-SM, SW, SW-SM	A-1, A-3	---	0-5	80-100	75-100	30-60	0-10	0-14	NP
	6-60	Stratified coarse sand to sandy loam	SM, SP, SP-SM	A-1, A-2, A-3	---	0-5	80-100	75-100	40-70	0-20	0-14	NP
906:												
Xerofluvents----	0-15	Stratified loamy sand to fine sandy loam	SC, SP	A-2, A-4	0	0	100	100	50-100	15-95	0-50	NP-30
	15-37	Stratified loamy sand to fine sandy loam to silt loam	SC, SP	A-2, A-4	0	0	100	100	50-100	15-95	0-50	NP-30
	37-55	Stratified gravelly loam to silty clay loam to clay	SC	A-6, A-7	0	0	80-100	60-100	50-100	35-95	30-50	10-30
908:												
Xerorthents-----	0-2	Very gravelly coarse sandy loam	GM, SM	A-1-b, A-2-4	0	0	60-80	45-60	25-40	10-25	20-25	NP-5
	2-42	Very gravelly sandy loam, very gravelly loam	GM, SM	A-4, A-2-4, A-1-b	0	0	60-80	25-60	15-55	10-45	20-30	5-10
	42-46	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
910:												
Playas----------	0-6	Silty clay loam	CH, CL, MH	A-7	0	0	100	100	100	90-100	45-75	20-40
	6-60	Silty clay loam, clay, silty clay	CH, CL, MH	A-7	0	0	100	100	100	90-100	45-75	20-40

Table 15.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				*Pct*	*Pct*					*Pct*	
911:												
Playas----------	0-6	Silty clay loam	CH, CL, MH	A-7	0	0	100	100	100	90-100	45-75	20-40
	6-60	Silty clay loam, clay, silty clay	CH, CL, MH	A-7	0	0	100	100	100	90-100	45-75	20-40
912:												
Water.												

Table 16.--Physical Properties of the Soils

[Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer. 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	Available water capacity	Linear extensibility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodibility group	Wind erodibility index
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*um/sec*	*In/in*	*Pct*	*Pct*					
100:														
Balcom---------------	0-23	35-45	33-43	18-27	1.40-1.50	4.00-14.00	0.13-0.17	0.0-2.9	0.5-1.0	.28	.32	3	4	86
	23-54	---	---	---	---	---	---	---	---	---	---			
101:														
Balcom---------------	0-23	35-45	33-43	18-27	1.40-1.50	4.00-14.00	0.13-0.17	0.0-2.9	0.5-1.0	.28	.32	3	4	86
	23-54	---	---	---	---	---	---	---	---	---	---			
Nacimiento-----------	0-10	30-38	30-38	27-35	1.40-1.50	1.40-4.00	0.17-0.19	3.0-5.9	2.0-5.0	.20	.24	3	4	86
	10-37	20-45	27-42	20-35	1.40-1.55	1.40-4.00	0.17-0.19	3.0-5.9	---	.32	.37			
	37-42	---	---	---	---	---	---	---	---	---	---			
102:														
Balcom---------------	0-23	35-45	33-43	18-27	1.40-1.50	4.00-14.00	0.13-0.17	0.0-2.9	0.5-1.0	.28	.32	3	4	86
	23-54	---	---	---	---	---	---	---	---	---	---			
Nacimiento-----------	0-10	30-38	30-38	27-35	1.40-1.50	1.40-4.00	0.17-0.19	3.0-5.9	2.0-5.0	.20	.24	3	4	86
	10-37	20-45	27-42	20-35	1.40-1.55	1.40-4.00	0.17-0.19	3.0-5.9	---	.32	.37			
	37-42	---	---	---	---	---	---	---	---	---	---			
103:														
Balcom---------------	0-23	35-45	33-43	18-27	1.40-1.50	4.00-14.00	0.13-0.17	0.0-2.9	0.5-1.0	.28	.32	3	4	86
	23-54	---	---	---	---	---	---	---	---	---	---			
Nacimiento-----------	0-10	30-38	30-38	27-35	1.40-1.50	1.40-4.00	0.17-0.19	3.0-5.9	2.0-5.0	.20	.24	3	4	86
	10-37	20-45	27-42	20-35	1.40-1.55	1.40-4.00	0.17-0.19	3.0-5.9	---	.32	.37			
	37-42	---	---	---	---	---	---	---	---	---	---			
109:														
Capay----------------	0-20	12-32	18-38	40-60	1.30-1.50	0.42-1.40	0.14-0.16	6.0-8.9	1.0-2.0	.20	.20	5	7	38
	20-64	12-32	18-42	40-60	1.35-1.50	0.42-1.40	0.14-0.16	6.0-8.9	0.2-1.0	.28	.28			
110:														
Capay----------------	0-20	12-32	18-38	40-60	1.30-1.50	0.42-1.40	0.14-0.16	6.0-8.9	1.0-2.0	.20	.20	5	7	38
	20-64	12-32	18-42	40-60	1.35-1.50	0.42-1.40	0.14-0.16	6.0-8.9	0.2-1.0	.28	.28			
112:														
Calleguas------------	0-2	35-45	33-43	20-27	1.45-1.55	4.00-14.00	0.15-0.18	3.0-5.9	0.5-2.0	.24	.28	2	4	86
	2-9	30-38	30-38	27-35	1.40-1.50	4.00-14.00	0.15-0.24	3.0-5.9	0.5-2.0	.20	.24			
	9-17	---	---	---	---	---	---	---	---	---	---			
Balcom---------------	0-23	35-45	33-43	18-27	1.40-1.50	4.00-14.00	0.13-0.17	0.0-2.9	0.5-1.0	.28	.32	3	4	86
	23-54	---	---	---	---	---	---	---	---	---	---			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	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*					
114:														
Calleguas	0-2	35-45	33-43	20-27	1.45-1.55	4.00-14.00	0.15-0.18	3.0-5.9	0.5-2.0	.24	.28	2	4	86
	2-9	30-38	30-38	27-35	1.40-1.50	4.00-14.00	0.15-0.24	3.0-5.9	0.5-2.0	.20	.24			
	9-17	---	---	---	---	---	---	---	---	---	---			
Nacimiento	0-10	30-38	30-38	27-35	1.40-1.50	1.40-4.00	0.17-0.19	3.0-5.9	2.0-5.0	.20	.24	3	4	86
	10-37	20-45	27-42	20-35	1.40-1.55	1.40-4.00	0.17-0.19	3.0-5.9	---	.32	.37			
	37-42	---	---	---	---	---	---	---	---	---	---			
120:														
Hillbrick	0-15	41-49	36-45	10-18	1.45-1.55	14.00-42.00	0.12-0.16	0.0-2.9	0.0-0.5	.28	.32	1	4	86
	15-24	---	---	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	--	8	0
121:														
Hillbrick	0-15	41-49	36-45	10-18	1.45-1.55	14.00-42.00	0.12-0.16	0.0-2.9	0.0-0.5	.28	.32	1	4	86
	15-24	---	---	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	--	8	0
123:														
Lithic Torriorthents	0-5	65-70	17-22	10-15	1.50-1.60	14.00-42.00	0.07-0.11	0.0-2.9	0.0-0.5	.15	.24	1	3	86
	5-9	---	---	---	---	---	---	---	---	---	---			
Semper	0-5	62-69	22-29	5-12	1.45-1.55	14.00-42.00	0.13-0.16	0.0-2.9	0.5-1.0	.49	.55	3	3	86
	5-22	62-69	22-29	5-12	1.45-1.55	14.00-42.00	0.13-0.16	0.0-2.9	0.0-0.0	.49	.55			
	22-26	---	---	---	---	---	---	---	---	---	---			
Rock outcrop	0-60	---	---	---	---	---	---	---	---	---	---	--	8	0
129:														
Kilmer	0-29	35-45	33-43	18-27	1.45-1.55	1.40-4.00	0.14-0.18	3.0-5.9	0.0-0.5	.32	.37	2	4	86
	29-34	---	---	---	---	---	---	---	---	---	---			
Hillbrick	0-15	41-49	36-45	10-18	1.45-1.55	14.00-42.00	0.12-0.16	0.0-2.9	0.0-0.5	.28	.32	1	4	86
	15-24	---	---	---	---	---	---	---	---	---	---			
130:														
Kilmer	0-29	35-45	33-43	18-27	1.45-1.55	1.40-4.00	0.14-0.18	3.0-5.9	0.0-0.5	.32	.37	2	4	86
	29-34	---	---	---	---	---	---	---	---	---	---			
Hillbrick	0-15	41-49	36-45	10-18	1.45-1.55	14.00-42.00	0.12-0.16	0.0-2.9	0.0-0.5	.28	.32	1	4	86
	15-24	---	---	---	---	---	---	---	---	---	---			
131:														
Kilmer	0-29	35-45	33-43	18-27	1.45-1.55	1.40-4.00	0.14-0.18	3.0-5.9	0.0-0.5	.32	.37	2	4	86
	29-34	---	---	---	---	---	---	---	---	---	---			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
131:														
Hillbrick------------	0-15	41-49	36-45	10-18	1.45-1.55	14.00-42.00	0.12-0.16	0.0-2.9	0.0-0.5	.28	.32	1	4	86
	15-24	---	---	---	---	---	---	---	---	---	---			
134:														
Kilmer---------------	0-29	35-45	33-43	18-27	1.45-1.55	1.40-4.00	0.14-0.18	3.0-5.9	0.0-0.5	.32	.37	2	4	86
	29-34	---	---	---	---	---	---	---	---	---	---			
Nacimiento-----------	0-10	30-38	30-38	27-35	1.40-1.50	1.40-4.00	0.17-0.19	3.0-5.9	2.0-5.0	.20	.24	3	4	86
	10-37	20-45	27-42	20-35	1.40-1.55	1.40-4.00	0.17-0.19	3.0-5.9	---	.32	.37			
	37-42	---	---	---	---	---	---	---	---	---	---			
Aido-----------------	0-8	14-29	21-36	40-55	1.35-1.45	0.42-1.40	0.13-0.16	6.0-8.9	0.0-0.5	.17	.17	3	7	38
	8-38	14-29	21-36	40-60	1.35-1.50	0.42-1.40	0.13-0.16	6.0-8.9	0.0-0.0	.24	.32			
	38-50	---	---	---	---	---	---	---	---	---	---			
140:														
Choice---------------	0-6	0-10	40-50	40-60	1.40-1.50	0.42-1.40	0.14-0.16	6.0-8.9	0.5-1.0	.28	.28	4	4	86
	6-47	0-15	35-50	40-60	1.40-1.50	0.42-1.40	0.14-0.16	6.0-8.9	0.0-0.0	.32	.32			
	47-57	---	---	---	---	---	---	---	---	---	---			
149:														
San Emigdio----------	0-9	62-72	15-25	8-18	1.50-1.60	14.00-42.00	0.13-0.16	0.0-2.9	0.5-1.0	.32	.32	5	3	86
	9-60	50-60	25-35	8-18	1.50-1.60	14.00-42.00	0.10-0.17	0.0-2.9	0.0-0.0	.28	.32			
150:														
San Emigdio----------	0-9	62-72	15-25	8-18	1.50-1.60	14.00-42.00	0.13-0.16	0.0-2.9	0.5-1.0	.32	.32	5	3	86
	9-60	50-60	25-35	8-18	1.50-1.60	14.00-42.00	0.10-0.17	0.0-2.9	0.0-0.0	.28	.32			
154:														
San Emigdio----------	0-9	42-52	34-50	8-18	1.45-1.55	14.00-42.00	0.14-0.18	0.0-2.9	0.5-1.0	.28	.28	5	4	86
	9-60	50-60	25-35	8-18	1.50-1.60	14.00-42.00	0.10-0.17	0.0-2.9	0.0-0.0	.28	.32			
155:														
San Emigdio----------	0-9	42-52	34-50	8-18	1.45-1.55	14.00-42.00	0.14-0.18	0.0-2.9	0.5-1.0	.28	.28	5	4	86
	9-60	50-60	25-35	8-18	1.50-1.60	14.00-42.00	0.10-0.17	0.0-2.9	0.0-0.0	.28	.32			
159:														
Sorrento-------------	0-19	36-48	31-43	15-27	1.45-1.55	4.00-14.00	0.14-0.18	0.0-2.9	2.0-4.0	.28	.28	5	6	48
	19-67	48-60	16-32	18-27	1.40-1.55	1.40-15.00	0.14-0.21	0.0-2.9	0.0-0.0	.32	.32			
160:														
Sorrento-------------	0-19	36-48	31-43	15-27	1.45-1.55	4.00-14.00	0.14-0.18	0.0-2.9	2.0-4.0	.28	.28	5	6	48
	19-67	48-60	16-32	18-27	1.40-1.55	1.40-15.00	0.14-0.21	0.0-2.9	0.0-0.0	.32	.32			
169:														
Polonio--------------	0-14	35-45	33-43	18-27	1.45-1.55	4.00-14.00	0.14-0.17	0.0-2.9	0.5-1.0	.24	.28	5	4	86
	14-69	20-45	27-42	20-35	1.40-1.55	1.40-4.00	0.14-0.19	3.0-5.9	0.0-0.0	.32	.37			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*um/sec*	*In/in*	*Pct*	*Pct*					
170:														
Polonio--------------	0-14	30-38	30-38	27-35	1.40-1.50	1.40-4.00	0.17-0.21	3.0-5.9	0.5-1.0	.24	.28	5	4	86
	14-69	20-45	27-42	20-35	1.40-1.55	1.40-4.00	0.14-0.19	3.0-5.9	0.0-0.0	.32	.37			
173:														
Polonio--------------	0-12	35-42	33-40	20-27	1.45-1.55	1.40-4.00	0.10-0.14	0.0-2.9	0.5-1.0	.20	.37	5	4	86
	12-60	35-42	33-40	20-27	1.45-1.55	1.40-4.00	0.10-0.14	0.0-2.9	0.0-0.0	.20	.37			
174:														
Polonio--------------	0-14	35-45	33-43	18-27	1.45-1.55	4.00-14.00	0.14-0.17	0.0-2.9	0.5-1.0	.24	.28	5	4	86
	14-69	20-45	27-42	20-35	1.40-1.55	1.40-4.00	0.14-0.19	3.0-5.9	0.0-0.0	.32	.37			
Thomhill-------------	0-13	35-42	33-40	20-27	1.45-1.55	4.00-14.00	0.16-0.18	0.0-2.9	1.0-3.0	.28	.28	5	6	48
	13-64	25-42	33-52	20-30	1.40-1.55	1.40-14.00	0.17-0.19	3.0-5.9	0.0-0.0	.32	.32			
175:														
Polonio--------------	0-14	35-45	33-43	18-27	1.45-1.55	4.00-14.00	0.14-0.17	0.0-2.9	0.5-1.0	.24	.28	5	4	86
	14-69	20-45	27-42	20-35	1.40-1.55	1.40-4.00	0.14-0.19	3.0-5.9	0.0-0.0	.32	.37			
Thomhill-------------	0-13	35-42	33-40	20-27	1.45-1.55	4.00-14.00	0.16-0.18	0.0-2.9	1.0-3.0	.28	.28	5	6	48
	13-64	25-42	33-52	20-30	1.40-1.55	1.40-14.00	0.17-0.19	3.0-5.9	0.0-0.0	.32	.32			
179:														
Padres---------------	0-16	60-70	10-30	12-18	1.50-1.60	14.00-42.00	0.09-0.15	0.0-2.9	0.5-1.0	.28	.32	5	3	86
	16-30	60-70	10-30	8-15	1.55-1.60	14.00-42.00	0.06-0.10	0.0-2.9	0.0-0.0	.20	.37			
	30-62	40-60	32-50	8-18	1.45-1.60	4.00-14.00	0.09-0.15	0.0-2.9	0.0-0.0	.28	.37			
180:														
Padres---------------	0-16	60-70	10-30	12-18	1.50-1.60	14.00-42.00	0.09-0.15	0.0-2.9	0.5-1.0	.28	.32	5	3	86
	16-30	60-70	10-30	8-15	1.55-1.60	14.00-42.00	0.06-0.10	0.0-2.9	0.0-0.0	.20	.37			
	30-62	40-60	32-50	8-18	1.45-1.60	4.00-14.00	0.09-0.15	0.0-2.9	0.0-0.0	.28	.37			
182:														
Oceano---------------	0-60	75-85	10-20	0-7	1.60-1.70	42.00-141.00	0.05-0.08	0.0-2.9	0.5-1.0	.20	.20	5	2	134
190:														
Reward---------------	0-24	37-44	33-40	18-25	1.45-1.55	4.00-14.00	0.09-0.12	0.0-2.9	1.0-3.0	.17	.28	4	5	56
	24-59	33-45	30-40	18-35	1.40-1.55	1.40-14.00	0.11-0.18	0.0-2.9	0.0-0.0	.17	.32			
	59-65	---	---	---	---	---	---	---	---	---	---			
191:														
Reward---------------	0-24	37-44	33-40	18-25	1.45-1.55	4.00-14.00	0.09-0.12	0.0-2.9	1.0-3.0	.17	.28	4	5	56
	24-59	33-45	30-40	18-35	1.40-1.55	1.40-14.00	0.11-0.18	0.0-2.9	0.0-0.0	.17	.32			
	59-65	---	---	---	---	---	---	---	---	---	---			
200:														
Aramburu-------------	0-23	30-38	30-38	27-35	1.45-1.55	4.00-14.00	0.09-0.12	0.0-2.9	1.0-3.0	.10	.24	2	7	38
	23-30	---	---	---	---	---	---	---	---	---	---			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors			Wind erodi-bility group	Wind erodi-bility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
201:														
Aramburu-------------	0-23	30-38	30-38	27-35	1.45-1.55	4.00-14.00	0.09-0.12	0.0-2.9	1.0-3.0	.10	.24	2	7	38
	23-30	---	---	---	---	---	---	---	---	---	---			
202:														
Aramburu-------------	0-23	30-38	30-38	27-35	1.45-1.55	4.00-14.00	0.09-0.12	0.0-2.9	1.0-3.0	.10	.24	2	7	38
	23-30	---	---	---	---	---	---	---	---	---	---			
204:														
Aramburu-------------	0-23	30-38	30-38	27-35	1.45-1.55	4.00-14.00	0.09-0.12	0.0-2.9	1.0-3.0	.10	.24	2	7	38
	23-30	---	---	---	---	---	---	---	---	---	---			
Temblor--------------	0-13	33-52	35-45	15-20	1.45-1.55	14.00-42.00	0.07-0.12	0.0-2.9	1.0-2.0	.10	.28	1	7	38
	13-20	---	---	---	---	---	---	---	---	---	---			
205:														
Aramburu-------------	0-23	30-38	30-38	27-35	1.45-1.55	4.00-14.00	0.09-0.12	0.0-2.9	1.0-3.0	.10	.24	2	7	38
	23-30	---	---	---	---	---	---	---	---	---	---			
Temblor--------------	0-13	33-52	35-45	15-20	1.45-1.55	14.00-42.00	0.07-0.12	0.0-2.9	1.0-2.0	.10	.28	1	7	38
	13-17	---	---	---	---	---	---	---	---	---	---			
218:														
Seaback--------------	0-9	34-48	30-45	12-27	1.50-1.60	4.00-14.00	0.13-0.17	3.0-5.9	0.5-1.0	.28	.32	2	4L	86
	9-19	34-48	30-45	12-27	1.50-1.60	4.00-14.00	0.13-0.17	3.0-5.9	0.0-0.5	.28	.32			
	19-23	---	---	---	---	---	---	---	---	---	---			
Calleguas------------	0-2	35-45	33-43	20-27	1.45-1.55	4.00-14.00	0.15-0.18	3.0-5.9	0.5-2.0	.24	.28	2	4	86
	2-9	30-38	30-38	27-35	1.40-1.50	4.00-14.00	0.15-0.24	3.0-5.9	0.5-2.0	.20	.24			
	9-17	---	---	---	---	---	---	---	---	---	---			
Panoza---------------	0-6	37-44	33-40	18-25	1.50-1.60	4.00-14.00	0.13-0.16	0.0-2.9	0.5-1.0	.28	.32	3	4	86
	6-24	37-44	33-40	18-25	1.50-1.60	4.00-14.00	0.13-0.16	0.0-2.9	0.0-0.0	.28	.32			
	24-30	---	---	---	---	---	---	---	---	---	---			
219:														
Xerorthents----------	0-12	38-48	35-45	15-20	1.45-1.55	4.00-14.00	0.06-0.14	0.0-2.9	0.5-1.0	.15	.32	2	6	48
	12-19	38-48	35-45	10-20	1.45-1.60	4.00-42.00	0.04-0.14	0.0-2.9	0.0-0.0	.15	.32			
	19-26	38-48	35-45	10-20	1.45-1.60	4.00-42.00	0.03-0.11	0.0-2.9	0.0-0.0	.10	.32			
	26-28	---	---	---	---	---	---	---	---	---	---			
Badlands-------------	0-60	---	---	---	---	---	---	---	---	---	---	--	8	0
220:														
Beam-----------------	0-15	60-70	16-24	12-20	1.50-1.60	14.00-42.00	0.11-0.14	0.0-2.9	0.5-1.0	.28	.32	2	3	86
	15-23	---	---	---	---	---	---	---	---	---	---			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*um/sec*	*In/in*	*Pct*	*Pct*					
220:														
Panoza---------------	0-6	37-44	33-40	18-25	1.50-1.60	4.00-14.00	0.13-0.16	0.0-2.9	0.5-1.0	.28	.32	3	4	86
	6-24	37-44	33-40	18-25	1.50-1.60	4.00-14.00	0.13-0.16	0.0-2.9	0.0-0.0	.28	.32			
	24-30	---	---	---	---	---	---	---	---	---	---			
Hillbrick------------	0-15	41-49	36-45	10-18	1.45-1.55	14.00-42.00	0.12-0.16	0.0-2.9	0.0-0.5	.28	.32	2	4	86
	15-24	---	---	---	---	---	---	---	---	---	---			
221:														
Beam-----------------	0-15	60-70	16-24	12-20	1.50-1.60	14.00-42.00	0.11-0.14	0.0-2.9	0.5-1.0	.28	.32	2	3	86
	15-23	---	---	---	---	---	---	---	---	---	---			
Panoza---------------	0-6	37-44	33-40	18-25	1.50-1.60	4.00-14.00	0.13-0.16	0.0-2.9	0.5-1.0	.28	.32	3	4	86
	6-24	37-44	33-40	18-25	1.50-1.60	4.00-14.00	0.13-0.16	0.0-2.9	0.0-0.0	.28	.32			
	24-30	---	---	---	---	---	---	---	---	---	---			
Hillbrick------------	0-15	41-49	36-45	10-18	1.45-1.55	14.00-42.00	0.12-0.16	0.0-2.9	0.0-0.5	.28	.32	2	4	86
	15-24	---	---	---	---	---	---	---	---	---	---			
222:														
Beam-----------------	0-15	60-70	16-24	12-20	1.50-1.60	14.00-42.00	0.11-0.14	0.0-2.9	0.5-1.0	.28	.32	2	3	86
	15-23	---	---	---	---	---	---	---	---	---	---			
Panoza---------------	0-6	37-44	33-40	18-25	1.50-1.60	4.00-14.00	0.13-0.16	0.0-2.9	0.5-1.0	.28	.32	3	4	86
	6-24	37-44	33-40	18-25	1.50-1.60	4.00-14.00	0.13-0.16	0.0-2.9	0.0-0.0	.28	.32			
	24-30	---	---	---	---	---	---	---	---	---	---			
Hillbrick------------	0-15	41-49	36-45	10-18	1.45-1.55	14.00-42.00	0.12-0.16	0.0-2.9	0.0-0.5	.28	.32	2	4	86
	15-24	---	---	---	---	---	---	---	---	---	---			
227:														
Beam-----------------	0-15	60-70	16-24	12-20	1.50-1.60	14.00-42.00	0.10-0.12	0.0-2.9	0.5-1.0	.24	.32	2	4	86
	15-23	---	---	---	---	---	---	---	---	---	---			
Panoza---------------	0-6	37-44	33-40	18-25	1.50-1.60	4.00-14.00	0.11-0.14	0.0-2.9	0.5-1.0	.24	.32	3	5	56
	6-24	37-44	33-40	18-25	1.50-1.60	4.00-14.00	0.11-0.14	0.0-2.9	0.0-0.0	.28	.32			
	24-30	---	---	---	---	---	---	---	---	---	---			
228:														
Beam-----------------	0-15	60-70	16-24	12-20	1.50-1.60	14.00-42.00	0.10-0.12	0.0-2.9	0.5-1.0	.24	.32	2	4	86
	15-23	---	---	---	---	---	---	---	---	---	---			
Panoza---------------	0-6	37-44	33-40	18-25	1.50-1.60	4.00-14.00	0.11-0.14	0.0-2.9	0.5-1.0	.24	.32	3	5	56
	6-24	37-44	33-40	18-25	1.50-1.60	4.00-14.00	0.11-0.14	0.0-2.9	0.0-0.0	.28	.32			
	24-30	---	---	---	---	---	---	---	---	---	---			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*um/sec*	*In/in*	*Pct*	*Pct*					
229:														
Seaback--------------	0-9	34-48	30-45	12-27	1.50-1.60	4.00-14.00	0.13-0.17	3.0-5.9	0.5-1.0	.28	.32	2	4L	86
	9-19	34-48	30-45	12-27	1.50-1.60	4.00-14.00	0.13-0.17	3.0-5.9	0.0-0.5	.28	.32			
	19-23	---	---	---	---	---	---	---	---	---	---			
San Timoteo----------	0-11	62-72	15-25	8-18	1.50-1.60	14.00-42.00	0.11-0.14	0.0-2.9	0.5-1.0	.28	.32	2	3	86
	11-25	62-72	15-25	8-18	1.50-1.60	14.00-42.00	0.11-0.15	0.0-2.9	0.0-0.5	.28	.32			
	25-30	---	---	---	---	---	---	---	---	---	---			
230:														
Padres---------------	0-16	60-70	10-30	12-18	1.50-1.60	14.00-42.00	0.09-0.15	0.0-2.9	0.5-1.0	.28	.32	5	3	86
	16-30	60-70	10-30	8-15	1.55-1.60	14.00-42.00	0.06-0.10	0.0-2.9	0.0-0.0	.20	.37			
Wasioja--------------	0-5	63-73	15-25	7-18	1.50-1.60	14.00-42.00	0.12-0.18	0.0-2.9	0.5-1.0	.32	.37	5	3	86
	5-33	35-45	30-40	20-35	1.40-1.55	1.40-4.00	0.12-0.21	3.0-5.9	0.0-0.0	.32	.37			
	33-70	70-80	10-20	5-20	1.45-1.70	4.00-141.00	0.03-0.16	0.0-2.9	0.0-0.0	.28	.37			
240:														
Panoza---------------	0-6	37-44	33-40	18-25	1.50-1.60	4.00-14.00	0.13-0.16	0.0-2.9	0.5-1.0	.28	.32	3	4	86
	6-24	37-44	33-40	18-25	1.50-1.60	4.00-14.00	0.13-0.16	0.0-2.9	0.0-0.0	.28	.32			
	24-30	---	---	---	---	---	---	---	---	---	---			
Beam-----------------	0-3	35-50	30-45	12-27	1.50-1.60	4.00-14.00	0.13-0.17	3.0-5.9	0.5-1.0	.28	.32	2	4L	86
	3-11	35-50	30-45	12-27	1.50-1.60	4.00-14.00	0.13-0.17	3.0-5.9	0.0-0.5	.28	.32			
	11-15	---	---	---	---	---	---	---	---	---	---			
241:														
Panoza---------------	0-6	37-44	33-40	18-25	1.50-1.60	4.00-14.00	0.13-0.16	0.0-2.9	0.5-1.0	.28	.32	3	4	86
	6-24	37-44	33-40	18-25	1.50-1.60	4.00-14.00	0.13-0.16	0.0-2.9	0.0-0.0	.28	.32			
	24-30	---	---	---	---	---	---	---	---	---	---			
Beam-----------------	0-3	35-50	30-45	12-27	1.50-1.60	4.00-14.00	0.13-0.17	3.0-5.9	0.5-1.0	.28	.32	2	4L	86
	3-11	35-50	30-45	12-27	1.50-1.60	4.00-14.00	0.13-0.17	3.0-5.9	0.0-0.5	.28	.32			
	11-15	---	---	---	---	---	---	---	---	---	---			
242:														
Panoza---------------	0-6	37-44	33-40	18-25	1.50-1.60	4.00-14.00	0.13-0.16	0.0-2.9	0.5-1.0	.28	.32	3	4	86
	6-24	37-44	33-40	18-25	1.50-1.60	4.00-14.00	0.13-0.16	0.0-2.9	0.0-0.0	.28	.32			
	24-30	---	---	---	---	---	---	---	---	---	---			
Beam-----------------	0-3	35-50	30-45	12-27	1.50-1.60	4.00-14.00	0.13-0.17	3.0-5.9	0.5-1.0	.28	.32	2	4L	86
	3-11	35-50	30-45	12-27	1.50-1.60	4.00-14.00	0.13-0.17	3.0-5.9	0.0-0.5	.28	.32			
	11-15	---	---	---	---	---	---	---	---	---	---			
248:														
Pyxo-----------------	0-11	35-50	33-43	18-27	1.45-1.55	4.00-14.00	0.14-0.16	0.0-2.9	0.0-1.0	.28	.32	3	4	56
	11-38	35-50	33-43	18-27	1.40-1.55	4.00-14.00	0.14-0.16	3.0-5.9	0.0-0.5	.28	.32			
	38-40	---	---	---	---	---	---	---	---	---	---			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
248:														
Cochora--------------	0-9	40-50	40-50	7-15	1.45-1.55	4.00-14.00	0.12-0.14	0.0-2.9	0.0-0.5	.28	.37	1	5	56
	9-15	60-75	15-25	5-15	1.45-1.55	14.00-42.00	0.09-0.11	0.0-2.9	0.0-0.5	.28	.37			
	---	---	---	---	---	---	---	---	---	---	---			
249:														
Xeric Torriorthents--	0-10	60-70	15-25	10-15	1.50-1.60	14.00-42.00	0.07-0.11	0.0-2.9	0.5-1.0	.15	.24	2	4	86
	10-24	35-55	30-50	10-20	1.45-1.60	4.00-42.00	0.04-0.12	0.0-2.9	0.0-0.0	.10	.24			
	24-43	45-70	15-35	10-20	1.45-1.60	4.00-42.00	0.03-0.07	0.0-2.9	0.0-0.0	.05	.24			
	43-53	---	---	---	---	---	---	---	---	---	---			
Badlands-------------	0-60	---	---	---	---	---	0.00-0.00	---	---	---	---	--	---	---
250:														
Pyxo-----------------	0-11	35-50	33-43	18-27	1.45-1.55	4.00-14.00	0.14-0.16	0.0-2.9	0.0-1.0	.28	.32	3	4	56
	11-38	35-50	33-43	18-27	1.40-1.55	4.00-14.00	0.14-0.16	3.0-5.9	0.0-0.5	.28	.32			
	28-32	---	---	---	---	---	---	---	---	---	---			
Cochora--------------	0-9	40-50	40-50	7-15	1.45-1.55	4.00-14.00	0.12-0.14	0.0-2.9	0.0-0.5	.28	.37	2	5	56
	---	---	---	---	---	---	---	---	---	---	---			
	9-15	60-75	15-25	5-15	1.45-1.55	14.00-42.00	0.09-0.11	0.0-2.9	0.0-0.5	.28	.37			
Badlands-------------	0-60	---	---	---	---	---	---	---	---	---	---	--	---	---
251:														
Nacimiento-----------	0-10	30-38	30-38	27-35	1.40-1.50	1.40-4.00	0.17-0.19	3.0-5.9	2.0-5.0	.20	.24	3	4	86
	10-37	20-45	27-42	20-35	1.40-1.55	1.40-4.00	0.17-0.19	3.0-5.9	---	.32	.37			
	37-41	---	---	---	---	---	---	---	---	---	---			
252:														
Nacimiento-----------	0-10	30-38	30-38	27-35	1.40-1.50	1.40-4.00	0.17-0.19	3.0-5.9	2.0-5.0	.20	.24	3	4	86
	10-37	20-45	27-42	20-35	1.40-1.55	1.40-4.00	0.17-0.19	3.0-5.9	---	.32	.37			
	37-41	---	---	---	---	---	---	---	---	---	---			
261:														
Aido-----------------	0-8	14-29	21-36	40-55	1.35-1.45	0.42-1.40	0.13-0.16	6.0-8.9	0.0-0.5	.17	.17	3	7	38
	8-38	14-29	21-36	40-60	1.35-1.50	0.42-1.40	0.13-0.16	6.0-8.9	0.0-0.0	.24	.32			
	38-50	---	---	---	---	---	---	---	---	---	---			
262:														
Aido-----------------	0-8	14-29	21-36	40-55	1.35-1.45	0.42-1.40	0.13-0.16	6.0-8.9	0.0-0.5	.17	.17	3	7	38
	8-38	14-29	21-36	40-60	1.35-1.50	0.42-1.40	0.13-0.16	6.0-8.9	0.0-0.0	.24	.32			
	38-50	---	---	---	---	---	---	---	---	---	---			
263:														
Aido-----------------	0-8	14-29	21-36	40-55	1.35-1.45	0.42-1.40	0.13-0.16	6.0-8.9	0.0-0.5	.17	.17	3	7	38
	8-38	14-29	21-36	40-60	1.35-1.50	0.42-1.40	0.13-0.16	6.0-8.9	0.0-0.0	.24	.32			
	38-50	---	---	---	---	---	---	---	---	---	---			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
270:														
Ayar-----------------	0-11	5-15	45-55	40-50	1.25-1.40	0.42-1.40	0.14-0.17	6.0-8.9	1.0-3.0	.28	.28	4	7	38
	11-44	15-35	25-45	35-50	1.20-1.35	0.42-1.40	0.14-0.17	6.0-8.9	0.5-1.0	.28	.28			
	44-48	---	---	---	---	---	---	---	---	---	---			
271:														
Ayar-----------------	0-19	20-30	25-35	40-50	1.25-1.40	0.42-1.40	0.14-0.17	6.0-8.9	1.0-3.0	.20	.20	4	7	38
	19-56	20-30	25-35	40-50	1.25-1.40	0.42-1.40	0.14-0.17	6.0-8.9	0.5-1.0	.28	.28			
	56-63	---	---	---	---	---	---	---	---	---	---			
274:														
Ayar-----------------	0-19	20-30	25-35	40-50	1.25-1.40	0.42-1.40	0.14-0.17	6.0-8.9	1.0-3.0	.20	.20	4	7	38
	19-56	20-30	25-35	40-50	1.25-1.40	0.42-1.40	0.14-0.17	6.0-8.9	0.5-1.0	.28	.28			
	56-63	---	---	---	---	---	---	---	---	---	---			
Hillbrick------------	0-15	41-49	36-45	10-18	1.45-1.55	14.00-42.00	0.12-0.16	0.0-2.9	0.0-0.5	.28	.32	1	4	86
	15-24	---	---	---	---	---	---	---	---	---	---			
Aido-----------------	0-8	14-29	21-36	40-55	1.35-1.45	0.42-1.40	0.13-0.16	6.0-8.9	0.0-0.5	.17	.17	3	7	38
	8-38	14-29	21-36	40-60	1.35-1.50	0.42-1.40	0.13-0.16	6.0-8.9	0.0-0.0	.24	.32			
	38-50	---	---	---	---	---	---	---	---	---	---			
275:														
Ayar-----------------	0-19	20-30	25-35	40-50	1.25-1.40	0.42-1.40	0.14-0.17	6.0-8.9	1.0-3.0	.20	.20	4	7	38
	19-56	20-30	25-35	40-50	1.25-1.40	0.42-1.40	0.14-0.17	6.0-8.9	0.5-1.0	.28	.28			
	56-63	---	---	---	---	---	---	---	---	---	---			
Hillbrick------------	0-15	41-49	36-45	10-18	1.45-1.55	14.00-42.00	0.12-0.16	0.0-2.9	0.0-0.5	.28	.32	1	4	86
	15-24	---	---	---	---	---	---	---	---	---	---			
Aido-----------------	0-8	14-29	21-36	40-55	1.35-1.45	0.42-1.40	0.13-0.16	6.0-8.9	0.0-0.5	.17	.17	3	7	38
	8-38	14-29	21-36	40-60	1.35-1.50	0.42-1.40	0.13-0.16	6.0-8.9	0.0-0.0	.24	.32			
	38-50	---	---	---	---	---	---	---	---	---	---			
280:														
Seaback--------------	0-9	34-48	30-45	12-27	1.50-1.60	4.00-14.00	0.13-0.17	3.0-5.9	0.5-1.0	.28	.32	2	4L	86
	3-19	34-48	30-45	12-27	1.50-1.60	4.00-14.00	0.13-0.17	3.0-5.9	0.0-0.5	.28	.32			
	19-23	---	---	---	---	---	---	---	---	---	---			
Panoza---------------	0-6	37-44	33-40	18-25	1.50-1.60	4.00-14.00	0.13-0.16	0.0-2.9	0.5-1.0	.28	.32	3	4	86
	6-24	37-44	33-40	18-25	1.50-1.60	4.00-14.00	0.13-0.16	0.0-2.9	0.0-0.0	.28	.32			
	24-30	---	---	---	---	---	---	---	---	---	---			
Jenks----------------	0-27	15-40	30-45	27-35	1.40-1.55	1.40-4.00	0.17-0.19	3.0-5.9	1.0-2.0	.20	.24	3	4	86
	27-35	---	---	---	---	---	---	---	---	---	---			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*um/sec*	*In/in*	*Pct*	*Pct*					
281:														
Seaback--------------	0-9	34-48	30-45	12-27	1.50-1.60	4.00-14.00	0.13-0.17	3.0-5.9	0.5-1.0	.28	.32	2	4L	86
	9-19	34-48	30-45	12-27	1.50-1.60	4.00-14.00	0.13-0.17	3.0-5.9	0.0-0.5	.28	.32			
	19-23	---	---	---	---	---	---	---	---	---	---			
Panoza---------------	0-6	37-44	33-40	18-25	1.50-1.60	4.00-14.00	0.13-0.16	0.0-2.9	0.5-1.0	.28	.32	3	4	86
	6-24	37-44	33-40	18-25	1.50-1.60	4.00-14.00	0.13-0.16	0.0-2.9	0.0-0.0	.28	.32			
	24-30	---	---	---	---	---	---	---	---	---	---			
Jenks----------------	0-27	15-40	30-45	27-35	1.40-1.55	1.40-4.00	0.17-0.19	3.0-5.9	1.0-2.0	.20	.24	3	4	86
	27-35	---	---	---	---	---	---	---	---	---	---			
282:														
Seaback--------------	0-9	34-48	30-45	12-27	1.50-1.60	4.00-14.00	0.13-0.17	3.0-5.9	0.5-1.0	.28	.32	2	4L	86
	9-19	34-48	30-45	12-27	1.50-1.60	4.00-14.00	0.13-0.17	3.0-5.9	0.0-0.5	.28	.32			
	19-23	---	---	---	---	---	---	---	---	---	---			
Panoza---------------	0-6	37-44	33-40	18-25	1.50-1.60	4.00-14.00	0.13-0.16	0.0-2.9	0.5-1.0	.28	.32	3	4	86
	6-24	37-44	33-40	18-25	1.50-1.60	4.00-14.00	0.13-0.16	0.0-2.9	0.0-0.0	.28	.32			
	24-30	---	---	---	---	---	---	---	---	---	---			
Jenks----------------	0-27	15-40	30-45	27-35	1.40-1.55	1.40-4.00	0.17-0.19	3.0-5.9	1.0-2.0	.20	.24	3	4	86
	27-35	---	---	---	---	---	---	---	---	---	---			
290:														
San Timoteo----------	0-11	62-72	15-25	8-18	1.50-1.60	14.00-42.00	0.11-0.14	0.0-2.9	0.5-1.0	.28	.32	2	3	86
	11-25	62-72	15-25	8-18	1.50-1.60	14.00-42.00	0.11-0.15	0.0-2.9	0.0-0.5	.28	.32			
	25-30	---	---	---	---	---	---	---	---	---	---			
San Andreas----------	0-3	60-70	15-25	8-18	1.50-1.60	14.00-42.00	0.11-0.14	0.0-2.9	1.0-4.0	.20	.24	3	3	86
	3-22	60-70	15-25	8-18	1.50-1.60	14.00-42.00	0.11-0.17	0.0-2.9	0.0-0.0	.49	.55			
	22-26	---	---	---	---	---	---	---	---	---	---			
Bellyspring----------	0-7	65-75	15-25	12-18	1.50-1.60	14.00-42.00	0.12-0.14	0.0-2.9	0.5-1.0	.32	.37	3	5	56
	7-27	40-60	10-30	25-35	1.40-1.55	1.40-4.00	0.13-0.16	3.0-5.9	0.0-0.0	.17	.28			
	27-36	60-80	15-25	5-18	1.55-1.70	14.00-42.00	0.06-0.10	0.0-2.9	0.0-0.0	.17	.37			
	36-40	---	---	---	---	---	---	---	---	---	---			
291:														
San Timoteo----------	0-11	62-72	15-25	8-18	1.50-1.60	14.00-42.00	0.11-0.14	0.0-2.9	0.5-1.0	.28	.32	2	3	86
	11-25	62-72	15-25	8-18	1.50-1.60	14.00-42.00	0.11-0.15	0.0-2.9	0.0-0.5	.28	.32			
	25-30	---	---	---	---	---	---	---	---	---	---			
San Andreas----------	0-3	60-70	15-25	8-18	1.50-1.60	14.00-42.00	0.11-0.14	0.0-2.9	1.0-4.0	.20	.24	3	3	86
	3-22	60-70	15-25	8-18	1.50-1.60	14.00-42.00	0.11-0.17	0.0-2.9	0.0-0.0	.49	.55			
	22-26	---	---	---	---	---	---	---	---	---	---			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*um/sec*	*In/in*	*Pct*	*Pct*					
291:														
Bellyspring----------	0-7	65-75	15-25	12-18	1.50-1.60	14.00-42.00	0.12-0.14	0.0-2.9	0.5-1.0	.32	.37	3	5	56
	7-27	40-60	10-30	25-35	1.40-1.55	1.40-4.00	0.13-0.16	3.0-5.9	0.0-0.0	.17	.28			
	27-36	60-80	15-25	5-18	1.55-1.70	14.00-42.00	0.06-0.10	0.0-2.9	0.0-0.0	.17	.37			
	36-40	---	---	---	---	---	---	---	---	---	---			
292:														
San Timoteo----------	0-11	62-72	15-25	8-18	1.50-1.60	14.00-42.00	0.11-0.14	0.0-2.9	0.5-1.0	.28	.32	2	3	86
	11-25	62-72	15-25	8-18	1.50-1.60	14.00-42.00	0.11-0.15	0.0-2.9	0.0-0.5	.28	.32			
	25-30	---	---	---	---	---	---	---	---	---	---			
San Andreas----------	0-3	60-70	15-25	8-18	1.50-1.60	14.00-42.00	0.11-0.14	0.0-2.9	1.0-4.0	.20	.24	3	3	86
	3-22	60-70	15-25	8-18	1.50-1.60	14.00-42.00	0.11-0.17	0.0-2.9	0.0-0.0	.49	.55			
	22-26	---	---	---	---	---	---	---	---	---	---			
Bellyspring----------	0-7	65-75	15-25	12-18	1.50-1.60	14.00-42.00	0.12-0.14	0.0-2.9	0.5-1.0	.32	.37	3	5	56
	7-27	40-60	10-30	25-35	1.40-1.55	1.40-4.00	0.13-0.16	3.0-5.9	0.0-0.0	.17	.28			
	27-36	60-80	15-25	5-18	1.55-1.70	14.00-42.00	0.06-0.10	0.0-2.9	0.0-0.0	.17	.37			
	36-40	---	---	---	---	---	---	---	---	---	---			
301:														
Arbuckle-------------	0-11	60-75	15-30	10-15	1.50-1.60	14.00-42.00	0.09-0.13	0.0-2.9	0.5-1.0	.32	.37	4	3	86
	11-34	55-70	10-25	18-20	1.50-1.60	14.00-42.00	0.09-0.12	0.0-2.9	0.0-0.5	.32	.37			
	34-55	40-70	15-30	20-30	1.45-1.55	1.40-4.00	0.15-0.19	3.0-5.9	0.0-0.5	.32	.37			
	55-65	55-75	10-30	10-15	1.55-1.60	14.00-42.00	0.07-0.12	0.0-2.9	0.0-0.5	.20	.32			
	65-73	75-85	5-20	5-10	1.60-1.70	42.00-141.00	0.04-0.07	0.0-2.9	0.0-0.5	.17	.28			
302:														
Arbuckle-------------	0-11	60-75	15-30	10-15	1.50-1.60	14.00-42.00	0.09-0.13	0.0-2.9	0.5-1.0	.32	.37	4	3	86
	11-34	55-70	10-25	18-20	1.50-1.60	14.00-42.00	0.09-0.12	0.0-2.9	0.0-0.5	.32	.37			
	34-55	40-70	15-30	20-30	1.45-1.55	1.40-4.00	0.15-0.19	3.0-5.9	0.0-0.5	.32	.37			
	55-65	55-75	10-30	10-15	1.55-1.60	14.00-42.00	0.07-0.12	0.0-2.9	0.0-0.5	.20	.32			
	65-73	75-85	5-20	5-10	1.60-1.70	42.00-141.00	0.04-0.07	0.0-2.9	0.0-0.5	.17	.28			
303:														
Arbuckle-------------	0-11	60-75	15-30	10-15	1.50-1.60	14.00-42.00	0.09-0.13	0.0-2.9	0.5-1.0	.32	.37	4	3	86
	11-34	55-70	10-25	18-20	1.50-1.60	14.00-42.00	0.09-0.12	0.0-2.9	0.0-0.5	.32	.37			
	34-55	40-70	15-30	20-30	1.45-1.55	1.40-4.00	0.15-0.19	3.0-5.9	0.0-0.5	.32	.37			
	55-65	55-75	10-30	10-15	1.55-1.60	14.00-42.00	0.07-0.12	0.0-2.9	0.0-0.5	.20	.32			
	65-73	75-85	5-20	5-10	1.60-1.70	42.00-141.00	0.04-0.07	0.0-2.9	0.0-0.5	.17	.28			
304:														
Arbuckle-------------	0-11	60-75	15-30	10-15	1.50-1.60	14.00-42.00	0.09-0.13	0.0-2.9	0.5-1.0	.32	.37	4	3	86
	11-34	55-70	10-25	18-20	1.50-1.60	14.00-42.00	0.09-0.12	0.0-2.9	0.0-0.5	.32	.37			
	34-55	40-70	15-30	20-30	1.45-1.55	1.40-4.00	0.15-0.19	3.0-5.9	0.0-0.5	.32	.37			
	55-65	55-75	10-30	10-15	1.55-1.60	14.00-42.00	0.07-0.12	0.0-2.9	0.0-0.5	.20	.32			
	65-73	75-85	5-20	5-10	1.60-1.70	42.00-141.00	0.04-0.07	0.0-2.9	0.0-0.5	.17	.28			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*um/sec*	*In/in*	*Pct*	*Pct*					
306:														
Arbuckle-------------	0-11	60-75	15-30	10-15	1.50-1.60	14.00-42.00	0.09-0.13	0.0-2.9	0.5-1.0	.32	.37	4	3	86
	11-34	55-70	10-25	18-20	1.50-1.60	14.00-42.00	0.09-0.12	0.0-2.9	0.0-0.5	.32	.37			
	34-55	40-70	15-30	20-30	1.45-1.55	1.40-4.00	0.15-0.19	3.0-5.9	0.0-0.5	.32	.37			
	55-65	55-75	10-30	10-15	1.55-1.60	14.00-42.00	0.07-0.12	0.0-2.9	0.0-0.5	.20	.32			
	65-73	75-85	5-20	5-10	1.60-1.70	42.00-141.00	0.04-0.07	0.0-2.9	0.0-0.5	.17	.28			
307:														
Arbuckle-------------	0-11	60-75	15-30	10-15	1.50-1.60	14.00-42.00	0.09-0.13	0.0-2.9	0.5-1.0	.32	.37	4	3	86
	11-34	55-70	10-25	18-20	1.50-1.60	14.00-42.00	0.09-0.12	0.0-2.9	0.0-0.5	.32	.37			
	34-55	40-70	15-30	20-30	1.45-1.55	1.40-4.00	0.15-0.19	3.0-5.9	0.0-0.5	.32	.37			
	55-65	55-75	10-30	10-15	1.55-1.60	14.00-42.00	0.07-0.12	0.0-2.9	0.0-0.5	.20	.32			
	65-73	75-85	5-20	5-10	1.60-1.70	42.00-141.00	0.04-0.07	0.0-2.9	0.0-0.5	.17	.28			
310:														
Yeguas---------------	0-19	30-50	30-45	20-27	1.40-1.50	4.00-14.00	0.15-0.17	0.0-2.9	1.0-2.0	.37	.37	5	6	48
	19-35	20-45	20-40	35-45	1.30-1.45	0.42-1.40	0.16-0.18	3.0-5.9	0.0-0.0	.24	.28			
	35-51	30-50	30-40	18-32	1.25-1.40	1.40-4.00	0.16-0.18	0.0-2.9	0.0-0.0	.32	.37			
	51-62	60-75	15-25	10-15	1.45-1.55	14.00-42.00	0.07-0.09	0.0-2.9	0.0-0.0	.24	.32			
Pinspring------------	0-14	35-45	35-45	18-27	1.45-1.55	4.00-14.00	0.12-0.17	0.0-2.9	1.0-2.0	.37	.37	5	5	56
	14-30	30-40	30-40	27-35	1.40-1.55	1.40-4.00	0.15-0.21	3.0-5.9	0.0-0.0	.43	.43			
	30-39	60-70	15-25	12-16	1.60-1.70	4.00-14.00	0.09-0.12	0.0-2.9	0.0-0.0	.37	.28			
	39-60	35-45	35-45	18-27	1.45-1.55	4.00-14.00	0.14-0.16	0.0-2.9	0.0-0.0	.37	.32			
311:														
Yeguas---------------	0-19	30-50	30-45	20-27	1.40-1.50	4.00-14.00	0.15-0.17	0.0-2.9	1.0-2.0	.37	.37	5	6	48
	19-35	20-45	20-40	35-45	1.30-1.45	0.42-1.40	0.16-0.18	3.0-5.9	0.0-0.0	.24	.28			
	35-51	30-50	30-40	18-32	1.25-1.40	1.40-4.00	0.16-0.18	0.0-2.9	0.0-0.0	.32	.37			
	51-62	60-75	15-25	10-15	1.45-1.55	14.00-42.00	0.07-0.09	0.0-2.9	0.0-0.0	.24	.32			
Pinspring------------	0-14	35-45	35-45	18-27	1.45-1.55	4.00-14.00	0.12-0.17	0.0-2.9	1.0-2.0	.37	.37	5	5	56
	14-30	30-40	30-40	27-35	1.40-1.55	1.40-4.00	0.15-0.21	3.0-5.9	0.0-0.0	.43	.43			
	30-39	60-70	15-25	12-16	1.60-1.70	4.00-14.00	0.09-0.12	0.0-2.9	0.0-0.0	.37	.28			
	39-60	35-45	35-45	18-27	1.45-1.55	4.00-14.00	0.14-0.16	0.0-2.9	0.0-0.0	.37	.32			
321:														
Thomhill-------------	0-13	35-42	33-40	20-27	1.45-1.55	4.00-14.00	0.16-0.18	0.0-2.9	1.0-3.0	.28	.28	5	6	48
	13-64	25-42	33-52	20-30	1.40-1.55	1.40-14.00	0.17-0.19	3.0-5.9	0.0-0.0	.32	.32			
330:														
Jenks----------------	0-27	15-40	30-45	27-35	1.40-1.55	1.40-4.00	0.17-0.19	3.0-5.9	1.0-2.0	.20	.24	3	4	86
	27-35	---	---	---	---	---	---	---	---	---	---			
339:														
Arnold---------------	0-6	75-85	10-20	0-10	1.60-1.70	42.00-141.00	0.07-0.09	0.0-2.9	0.5-1.0	.24	.28	4	2	134
	6-44	75-95	5-20	0-10	1.60-1.70	42.00-141.00	0.05-0.09	0.0-2.9	0.0-0.0	.24	.28			
	44-48	---	---	---	---	---	---	---	---	---	---			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*um/sec*	*In/in*	*Pct*	*Pct*					
339:														
San Andreas----------	0-3	60-70	15-25	8-18	1.50-1.60	14.00-42.00	0.11-0.14	0.0-2.9	1.0-4.0	.20	.24	3	3	86
	3-22	60-70	15-25	8-18	1.50-1.60	14.00-42.00	0.11-0.17	0.0-2.9	0.0-0.0	.49	.55			
	29-33	---	---	---	---	---	---	---	---	---	---			
340:														
Arnold---------------	0-6	75-85	10-20	0-10	1.60-1.70	42.00-141.00	0.07-0.09	0.0-2.9	0.5-1.0	.24	.28	4	2	134
	6-44	75-95	5-20	0-10	1.60-1.70	42.00-141.00	0.05-0.09	0.0-2.9	0.0-0.0	.24	.28			
	44-48	---	---	---	---	---	---	---	---	---	---			
San Andreas----------	0-3	60-70	15-25	8-18	1.50-1.60	14.00-42.00	0.11-0.14	0.0-2.9	1.0-4.0	.20	.24	3	3	86
	3-22	60-70	15-25	8-18	1.50-1.60	14.00-42.00	0.11-0.17	0.0-2.9	0.0-0.0	.49	.55			
	29-33	---	---	---	---	---	---	---	---	---	---			
350:														
Cieneba--------------	0-15	60-75	20-30	5-10	1.55-1.60	14.00-42.00	0.08-0.12	0.0-2.9	0.5-1.0	.24	.24	1	3	86
	15-20	---	---	---	---	---	---	---	---	---	---			
360:														
Chicote--------------	0-2	10-20	45-55	30-40	1.45-1.55	1.40-4.00	0.15-0.21	3.0-5.9	0.5-2.0	.43	.43	2	4	86
	2-12	15-35	15-35	40-60	1.30-1.45	0.01-0.42	0.01-0.14	9.0-11.9	0.0-0.0	.24	.24			
	12-61	15-35	15-35	40-60	1.30-1.45	0.01-0.42	0.01-0.14	9.0-11.9	0.0-0.0	.24	.24			
Chicote--------------	0-5	20-30	50-60	15-25	1.45-1.55	4.00-42.00	0.14-0.20	0.0-2.9	0.5-2.0	.32	.32	2	4	86
	5-14	15-35	15-35	40-60	1.30-1.45	0.01-0.42	0.01-0.14	9.0-11.9	0.0-0.0	.24	.24			
	14-24	10-20	45-55	30-40	1.45-1.55	1.40-4.00	0.02-0.19	3.0-5.9	0.0-0.0	.32	.32			
	24-60	20-30	50-60	15-25	1.45-1.55	4.00-42.00	0.09-0.18	0.0-2.9	0.0-0.0	.32	.32			
361:														
Chicote--------------	0-2	10-20	45-55	30-40	1.45-1.55	1.40-4.00	0.15-0.21	3.0-5.9	0.5-2.0	.43	.43	2	4	86
	2-12	15-35	15-35	40-60	1.30-1.45	0.01-0.42	0.01-0.14	9.0-11.9	0.0-0.0	.24	.24			
	12-61	15-35	15-35	40-60	1.30-1.45	0.01-0.42	0.01-0.14	9.0-11.9	0.0-0.0	.24	.24			
Chicote--------------	0-5	20-30	50-60	15-25	1.45-1.55	4.00-42.00	0.14-0.20	0.0-2.9	0.5-2.0	.32	.32	2	4	86
	5-14	15-35	15-35	40-60	1.30-1.45	0.01-0.42	0.01-0.14	9.0-11.9	0.0-0.0	.24	.24			
	14-24	10-20	45-55	30-40	1.45-1.55	1.40-4.00	0.02-0.19	3.0-5.9	0.0-0.0	.32	.32			
	24-60	20-30	50-60	15-25	1.45-1.55	4.00-42.00	0.09-0.18	0.0-2.9	0.0-0.0	.32	.32			
362:														
Chicote--------------	0-2	10-20	45-55	30-40	1.45-1.55	1.40-4.00	0.15-0.21	3.0-5.9	0.5-2.0	.43	.43	2	4	86
	2-12	15-35	15-35	40-60	1.30-1.45	0.01-0.42	0.01-0.14	9.0-11.9	0.0-0.0	.24	.24			
	12-61	15-35	15-35	40-60	1.30-1.45	0.01-0.42	0.01-0.14	9.0-11.9	0.0-0.0	.24	.24			
Chicote--------------	0-5	20-30	50-60	15-25	1.45-1.55	4.00-42.00	0.14-0.20	0.0-2.9	0.5-2.0	.32	.32	2	4	86
	5-14	15-35	15-35	40-60	1.30-1.45	0.01-0.42	0.01-0.14	9.0-11.9	0.0-0.0	.24	.24			
	14-24	10-20	45-55	30-40	1.45-1.55	1.40-4.00	0.02-0.19	3.0-5.9	0.0-0.0	.32	.32			
	24-60	20-30	50-60	15-25	1.45-1.55	4.00-42.00	0.09-0.18	0.0-2.9	0.0-0.0	.32	.32			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*um/sec*	*In/in*	*Pct*	*Pct*					
371:														
Semper---------------	0-5	62-69	22-29	5-12	1.45-1.55	14.00-42.00	0.13-0.16	0.0-2.9	0.5-1.0	.49	.55	3	3	86
	5-22	62-69	22-29	5-12	1.45-1.55	14.00-42.00	0.13-0.16	0.0-2.9	0.0-0.0	.49	.55			
	22-26	---	---	---	---	---	---	---	---	---	---			
372:														
Semper---------------	0-5	62-69	22-29	5-12	1.45-1.55	14.00-42.00	0.13-0.16	0.0-2.9	0.5-1.0	.49	.55	3	3	86
	5-22	62-69	22-29	5-12	1.45-1.55	14.00-42.00	0.13-0.16	0.0-2.9	0.0-0.0	.49	.55			
	22-26	---	---	---	---	---	---	---	---	---	---			
375:														
Semper---------------	0-5	62-69	22-29	5-12	1.45-1.55	14.00-42.00	0.13-0.16	0.0-2.9	0.5-1.0	.49	.55	3	3	86
	5-22	62-69	22-29	5-12	1.45-1.55	14.00-42.00	0.13-0.16	0.0-2.9	0.0-0.0	.49	.55			
	22-26	---	---	---	---	---	---	---	---	---	---			
Badlands-------------	0-60	---	---	---	---	---	0.00-0.00	---	---	---	---	---	8	0
380:														
Muranch--------------	0-15	35-50	30-40	20-27	1.45-1.55	4.00-14.00	0.15-0.17	0.0-2.9	1.0-3.0	.24	.28	2	5	56
	15-36	35-50	30-40	20-27	1.45-1.55	4.00-14.00	0.04-0.12	0.0-2.9	0.0-0.0	.10	.32			
	36-40	---	---	---	---	---	---	---	---	---	---			
Xerorthents----------	0-12	38-48	35-45	15-20	1.45-1.55	4.00-14.00	0.06-0.14	0.0-2.9	0.5-1.0	.15	.32	2	6	48
	12-19	38-48	35-45	10-20	1.45-1.60	4.00-42.00	0.04-0.14	0.0-2.9	0.0-0.0	.15	.32			
	19-26	38-48	35-45	10-20	1.45-1.60	4.00-42.00	0.03-0.11	0.0-2.9	0.0-0.0	.10	.32			
	26-28	---	---	---	---	---	---	---	---	---	---			
Rock outcrop---------	0-60	---	---	---	---	---	---	---	---	---	---	--	8	0
388:														
Rock outcrop---------	0-60	---	---	---	---	---	---	---	---	---	---	--	8	0
Gaviota--------------	0-8	60-70	15-25	10-18	1.50-1.60	14.00-42.00	0.11-0.13	0.0-2.9	0.5-1.0	.28	.32	1	3	86
	8-11	---	---	---	---	---	---	---	---	---	---			
391:														
Rock outcrop---------	0-60	---	---	---	---	---	---	---	---	---	---	--	8	0
Lithic Torriorthents-	0-4	60-70	15-25	10-15	1.50-1.60	14.00-42.00	0.09-0.13	0.0-2.9	0.0-0.5	.17	.24	1	5	56
	4-9	---	---	---	---	---	---	---	---	---	---			
401:														
Godde----------------	0-14	60-70	15-25	8-18	1.40-1.50	14.00-42.00	0.10-0.13	0.0-2.9	1.0-6.0	.24	.32	1	3	86
	14-18	---	---	---	---	---	---	---	---	---	---			
Xerorthents----------	0-7	65-70	17-22	10-15	1.50-1.60	14.00-42.00	0.09-0.13	0.0-2.9	0.5-1.0	.24	.32	1	5	56
	7-11	---	---	---	---	---	---	---	---	---	---			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
401:														
Rock outcrop---------	0-60	---	---	---	---	---	---	---	---	---	---	--	8	0
408:														
Gaviota--------------	0-8	60-70	15-25	10-18	1.50-1.60	14.00-42.00	0.11-0.13	0.0-2.9	0.5-1.0	.28	.32	1	3	86
	15-19	---	---	---	---	---	---	---	---	---	---			
San Andreas----------	0-3	60-70	15-25	8-18	1.50-1.60	14.00-42.00	0.11-0.14	0.0-2.9	1.0-4.0	.20	.24	3	3	86
	3-22	50-70	15-35	8-18	1.50-1.60	14.00-42.00	0.11-0.17	0.0-2.9	0.0-0.0	.49	.55			
	29-33	---	---	---	---	---	---	---	---	---	---			
409:														
Gaviota--------------	0-8	60-70	15-25	10-18	1.50-1.60	14.00-42.00	0.11-0.13	0.0-2.9	0.5-1.0	.28	.32	1	3	86
	8-11	---	---	---	---	---	---	---	---	---	---			
Saltos---------------	0-.5	---	---	---	---	---	---	---	---	---	---	1	5	56
	.5-4	35-45	35-45	20-25	1.45-1.55	1.40-4.00	0.12-0.16	0.0-2.9	0.5-1.0	.28	.37			
	4-10	35-55	25-45	20-27	1.45-1.55	1.40-4.00	0.12-0.16	0.0-2.9	0.0-0.0	.28	.37			
	10-15	---	---	---	---	---	---	---	---	---	---			
Rock outcrop---------	0-60	---	---	---	---	---	---	---	---	---	---	--	8	0
410:														
Gaviota--------------	0-8	60-70	15-25	10-18	1.50-1.60	14.00-42.00	0.11-0.13	0.0-2.9	0.5-1.0	.28	.32	1	3	86
	8-11	---	---	---	---	---	---	---	---	---	---			
Rock outcrop---------	0-60	---	---	---	---	---	---	---	---	---	---	--	8	0
411:														
Tajea----------------	0-10	35-45	30-40	18-27	1.45-1.55	4.00-14.00	0.14-0.18	0.0-2.9	1.0-2.0	.28	.28	2	5	56
	10-20	30-45	25-40	28-35	1.40-1.50	1.40-4.00	0.15-0.21	3.0-5.9	0.0-0.0	.24	.28			
	20-27	30-45	25-40	28-35	1.40-1.50	1.40-4.00	0.11-0.18	3.0-5.9	0.0-0.0	.15	.28			
	27-30	---	---	---	---	---	---	---	---	---	---			
Saltos---------------	0-.5	---	---	---	---	---	---	---	---	---	---	1	5	56
	.5-4	50-65	15-25	20-25	1.45-1.55	1.40-4.00	0.12-0.16	0.0-2.9	0.5-1.0	.15	.20			
	4-10	30-50	20-40	25-35	1.40-1.55	1.40-4.00	0.10-0.18	0.0-2.9	0.0-0.0	.15	.28			
	10-15	---	---	---	---	---	---	---	---	---	---			
412:														
Tajea----------------	0-10	35-45	30-40	18-27	1.45-1.55	4.00-14.00	0.14-0.18	0.0-2.9	1.0-2.0	.28	.28	2	5	56
	10-20	30-45	25-40	28-35	1.40-1.50	1.40-4.00	0.15-0.21	3.0-5.9	0.0-0.0	.24	.28			
	20-27	30-45	25-40	28-35	1.40-1.50	1.40-4.00	0.11-0.18	3.0-5.9	0.0-0.0	.15	.28			
	27-30	---	---	---	---	---	---	---	---	---	---			
Saltos---------------	0-.5	---	---	---	---	---	---	---	---	---	---	1	5	56
	.5-4	35-45	35-45	20-25	1.45-1.55	1.40-4.00	0.12-0.16	0.0-2.9	0.5-1.0	.28	.37			
	4-10	35-55	25-45	20-27	1.45-1.55	1.40-4.00	0.12-0.16	0.0-2.9	0.0-0.0	.28	.37			
	10-15	---	---	---	---	---	---	---	---	---	---			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
420:														
Bellyspring----------	0-12	30-45	35-45	20-25	---	4.00-14.00	0.14-0.16	0.0-2.9	0.5-1.0	.32	.37	4	5	56
	12-55	30-40	30-40	27-35	---	1.40-4.00	0.15-0.18	3.0-5.9	---	.28	.43			
	55-59	---	---	---	---	---	---	---	---	---	---			
Saltos---------------	0-.5	---	---	---	---	---	---	---	---	---	---	1	5	56
	.5-4	35-45	35-45	20-25	1.45-1.55	1.40-4.00	0.12-0.16	0.0-2.9	0.5-1.0	.28	.37			
	4-10	35-55	25-45	20-27	1.45-1.55	1.40-4.00	0.12-0.16	0.0-2.9	0.0-0.0	.28	.37			
	10-15	---	---	---	---	---	---	---	---	---	---			
Rock outcrop---------	0-60	---	---	---	---	---	---	---	---	---	---	--	8	0
430:														
Saucito--------------	0-3	55-70	15-25	10-18	1.50-1.60	14.00-42.00	0.11-0.13	0.0-2.9	0.5-1.0	.10	.37	1	3	86
	3-18	30-40	30-40	27-35	1.40-1.50	1.40-4.00	0.08-0.10	0.0-2.9	0.0-0.0	.10	.28			
	18-28	---	---	---	---	---	---	---	---	---	---			
Akad-----------------	0-5	35-50	35-45	17-20	1.45-1.55	4.00-14.00	0.15-0.17	0.0-2.9	1.0-2.0	.24	.28	2	5	56
	5-23	30-55	20-40	25-35	1.40-1.55	1.40-4.00	0.10-0.13	3.0-5.9	0.0-0.0	.10	.24			
	23-25	---	---	---	---	---	---	---	---	---	---			
Rock outcrop---------	0-60	---	---	---	---	---	---	---	---	---	---	--	8	0
440:														
Bellyspring----------	0-7	65-75	15-25	12-18	1.50-1.60	14.00-42.00	0.12-0.14	0.0-2.9	0.5-1.0	.32	.37	3	5	56
	7-27	40-60	10-30	25-35	1.40-1.55	1.40-4.00	0.13-0.16	3.0-5.9	0.0-0.0	.17	.28			
	27-36	60-80	15-25	5-18	1.55-1.70	14.00-42.00	0.06-0.10	0.0-2.9	0.0-0.0	.17	.37			
	36-40	---	---	---	---	---	---	---	---	---	---			
Panoza---------------	0-6	37-44	33-40	18-25	1.50-1.60	4.00-14.00	0.13-0.16	0.0-2.9	0.5-1.0	.28	.32	3	4	86
	6-24	37-44	33-40	18-25	1.50-1.60	4.00-14.00	0.13-0.16	0.0-2.9	0.0-0.0	.28	.32			
	24-30	---	---	---	---	---	---	---	---	---	---			
441:														
Bellyspring----------	0-7	65-75	15-25	12-18	1.50-1.60	14.00-42.00	0.12-0.14	0.0-2.9	0.5-1.0	.32	.37	3	5	56
	7-27	40-60	10-30	25-35	1.40-1.55	1.40-4.00	0.13-0.16	3.0-5.9	0.0-0.0	.17	.28			
	27-36	60-80	15-25	5-18	1.55-1.70	14.00-42.00	0.06-0.10	0.0-2.9	0.0-0.0	.17	.37			
	36-40	---	---	---	---	---	---	---	---	---	---			
Panoza---------------	0-6	37-44	33-40	18-25	1.50-1.60	4.00-14.00	0.13-0.16	0.0-2.9	0.5-1.0	.28	.32	3	4	86
	6-24	37-44	33-40	18-25	1.50-1.60	4.00-14.00	0.13-0.16	0.0-2.9	0.0-0.0	.28	.32			
	24-30	---	---	---	---	---	---	---	---	---	---			
442:														
Bellyspring----------	0-7	55-70	15-35	12-18	1.50-1.60	14.00-42.00	0.12-0.14	0.0-2.9	0.5-1.0	.32	.37	3	3	86
	7-27	40-60	10-30	25-35	1.40-1.55	1.40-4.00	0.13-0.16	3.0-5.9	0.0-0.0	.17	.28			
	27-36	60-75	15-25	5-18	1.55-1.70	14.00-42.00	0.06-0.10	0.0-2.9	0.0-0.0	.17	.37			
	38-48	---	---	---	---	---	---	---	---	---	---			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*um/sec*	*In/in*	*Pct*	*Pct*					
442:														
Panoza---------------	0-6	37-44	33-40	18-25	1.50-1.60	4.00-14.00	0.13-0.16	0.0-2.9	0.5-1.0	.28	.32	3	4	86
	6-24	37-44	33-40	18-25	1.50-1.60	4.00-14.00	0.13-0.16	0.0-2.9	0.0-0.0	.28	.32			
	24-30	---	---	---	---	---	---	---	---	---	---			
443:														
Bellyspring----------	0-7	55-70	15-35	12-18	1.50-1.60	14.00-42.00	0.12-0.14	0.0-2.9	0.5-1.0	.32	.37	2	3	86
	7-27	40-60	10-30	25-35	1.40-1.55	1.40-4.00	0.13-0.16	3.0-5.9	0.0-0.0	.17	.28			
	27-36	60-75	15-25	5-18	1.55-1.70	14.00-42.00	0.06-0.10	0.0-2.9	0.0-0.0	.17	.37			
	38-48	---	---	---	---	---	---	---	---	---	---			
Beam-----------------	0-15	60-70	16-24	12-20	1.50-1.60	14.00-42.00	0.11-0.14	0.0-2.9	0.5-1.0	.28	.32	2	3	86
	15-23	---	---	---	---	---	---	---	---	---	---			
Panoza---------------	0-6	37-44	33-40	18-25	1.50-1.60	4.00-14.00	0.13-0.16	0.0-2.9	0.5-1.0	.28	.32	3	4	86
	6-24	37-44	33-40	18-25	1.50-1.60	4.00-14.00	0.13-0.16	0.0-2.9	0.0-0.0	.28	.32			
	24-30	---	---	---	---	---	---	---	---	---	---			
445:														
Bellyspring----------	0-7	65-75	15-25	12-18	1.50-1.60	14.00-42.00	0.12-0.14	0.0-2.9	0.5-1.0	.32	.37	3	5	56
	7-27	40-60	10-30	25-35	1.40-1.55	1.40-4.00	0.13-0.16	3.0-5.9	0.0-0.0	.17	.28			
	27-36	60-80	15-25	5-18	1.55-1.70	14.00-42.00	0.06-0.10	0.0-2.9	0.0-0.0	.17	.37			
	36-40	---	---	---	---	---	---	---	---	---	---			
Xerorthents----------	0-12	38-48	35-45	15-20	1.45-1.55	4.00-14.00	0.06-0.14	0.0-2.9	0.5-1.0	.15	.32	2	6	48
	12-19	38-48	35-45	10-20	1.45-1.60	4.00-42.00	0.04-0.14	0.0-2.9	0.0-0.0	.15	.32			
	19-26	38-48	35-45	10-20	1.45-1.60	4.00-42.00	0.03-0.11	0.0-2.9	0.0-0.0	.10	.32			
	26-28	---	---	---	---	---	---	---	---	---	---			
Panoza---------------	0-6	37-44	33-40	18-25	1.50-1.60	4.00-14.00	0.13-0.16	0.0-2.9	0.5-1.0	.28	.32	3	4	86
	6-24	37-44	33-40	18-25	1.50-1.60	4.00-14.00	0.13-0.16	0.0-2.9	0.0-0.0	.28	.32			
	24-30	---	---	---	---	---	---	---	---	---	---			
450:														
Botella--------------	0-14	35-45	30-45	18-27	1.45-1.55	4.00-14.00	0.11-0.18	3.0-5.9	1.0-3.0	.24	.28	5	5	56
	14-39	15-55	10-50	27-35	1.40-1.55	1.40-4.00	0.11-0.21	3.0-5.9	1.0-3.0	.32	.37			
	39-60	60-70	15-25	10-20	1.50-1.60	14.00-42.00	0.08-0.13	3.0-5.9	0.0-1.0	.24	.28			
460:														
Camatta--------------	0-8	35-50	35-45	12-20	1.40-1.50	4.00-14.00	0.13-0.15	0.0-2.9	0.5-1.0	.32	.32	1	4	86
	8-13	---	---	0-0	1.90-2.00	---	---	---	---	---	---			
	13-60	60-75	20-35	0-15	1.50-1.70	0.42-1.40	0.03-0.06	0.0-2.9	0.0-0.0	.15	.32			
470:														
Botella--------------	0-14	60-70	15-25	10-20	1.50-1.60	14.00-42.00	0.08-0.13	3.0-5.9	1.0-3.0	.24	.28	5	3	86
	14-39	15-55	10-50	27-35	1.40-1.55	1.40-4.00	0.11-0.21	3.0-5.9	1.0-3.0	.32	.37			
	39-60	60-70	15-25	10-20	1.50-1.60	14.00-42.00	0.08-0.13	3.0-5.9	0.0-1.0	.24	.28			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*um/sec*	*In/in*	*Pct*	*Pct*					
474:														
Elder----------------	0-21	60-70	15-25	8-18	1.50-1.60	14.00-42.00	0.11-0.14	0.0-2.9	1.0-4.0	.20	.24	5	3	86
	21-67	60-70	15-25	8-18	1.50-1.60	14.00-42.00	0.11-0.14	0.0-2.9	---	.28	.32			
475:														
Elder----------------	0-21	60-70	15-25	8-18	1.50-1.60	14.00-42.00	0.11-0.14	0.0-2.9	1.0-4.0	.20	.24	5	3	86
	21-67	60-70	15-25	8-18	1.50-1.60	14.00-42.00	0.11-0.14	0.0-2.9	---	.28	.32			
480:														
Metz-----------------	0-10	75-85	10-20	0-10	1.55-1.65	4.00-14.00	0.06-0.10	0.0-2.9	0.5-1.0	.28	.32	5	2	134
	10-63	70-95	5-25	0-15	1.50-1.80	14.00-42.00	0.07-0.11	0.0-2.9	0.5-1.0	.49	.55			
490:														
Wasioja--------------	0-9	40-50	35-45	10-18	1.45-1.55	4.00-14.00	0.14-0.18	0.0-2.9	0.5-1.0	.32	.37	5	5	56
	9-40	30-55	20-40	20-35	1.40-1.55	1.40-4.00	0.14-0.21	3.0-5.9	0.0-0.0	.32	.37			
	40-60	40-50	35-45	10-20	1.45-1.55	4.00-14.00	0.13-0.18	0.0-2.9	0.0-0.0	.28	.37			
491:														
Wasioja--------------	0-5	63-73	15-25	7-18	1.50-1.60	14.00-42.00	0.12-0.18	0.0-2.9	0.5-1.0	.32	.37	5	3	86
	10-60	35-55	30-40	20-35	1.40-1.55	1.40-4.00	0.14-0.21	3.0-5.9	0.0-0.0	.32	.37			
495:														
Wasioja--------------	0-9	40-50	35-45	10-18	1.45-1.55	4.00-14.00	0.14-0.18	0.0-2.9	0.5-1.0	.32	.37	5	5	56
	10-60	35-55	30-40	20-35	1.40-1.55	1.40-4.00	0.14-0.21	3.0-5.9	0.0-0.0	.32	.37			
Polonio--------------	0-14	35-50	30-45	18-27	1.45-1.55	4.00-14.00	0.14-0.17	0.0-2.9	0.5-1.0	.24	.28	5	4	86
	14-69	15-45	30-55	20-35	1.40-1.55	1.40-4.00	0.14-0.19	3.0-5.9	0.0-0.0	.32	.37			
497:														
Wasioja--------------	0-9	40-50	35-45	10-18	1.45-1.55	4.00-14.00	0.14-0.18	0.0-2.9	0.5-1.0	.32	.37	5	5	56
	9-40	30-55	20-40	20-35	1.40-1.55	1.40-4.00	0.14-0.21	3.0-5.9	0.0-0.0	.32	.37			
	40-60	40-50	35-45	10-20	1.45-1.55	4.00-14.00	0.13-0.18	0.0-2.9	0.0-0.0	.28	.37			
Pinspring------------	0-14	35-45	35-45	18-27	1.45-1.55	4.00-14.00	0.12-0.17	0.0-2.9	1.0-2.0	.37	.37	--	5	56
	14-30	30-40	30-40	27-35	1.40-1.55	1.40-4.00	0.15-0.21	3.0-5.9	0.0-0.0	.43	.43			
	30-39	60-70	15-25	12-16	1.60-1.70	4.00-14.00	0.09-0.12	0.0-2.9	0.0-0.0	.37	.28			
	39-60	35-45	35-45	18-27	1.45-1.55	4.00-14.00	0.14-0.16	0.0-2.9	0.0-0.0	.37	.32			
Yeguas---------------	0-19	30-50	30-45	20-27	1.40-1.50	4.00-14.00	0.15-0.17	0.0-2.9	1.0-2.0	.37	.37	5	6	48
	19-35	20-45	20-40	35-45	1.30-1.45	0.42-1.40	0.16-0.18	3.0-5.9	0.0-0.0	.24	.28			
	35-51	30-50	30-40	18-32	1.25-1.40	1.40-4.00	0.16-0.18	0.0-2.9	0.0-0.0	.32	.37			
	51-62	60-75	15-25	10-15	1.45-1.55	14.00-42.00	0.07-0.09	0.0-2.9	0.0-0.0	.24	.32			
512:														
Shimmon--------------	0-12	55-70	15-25	15-20	1.50-1.60	14.00-42.00	0.13-0.15	0.0-2.9	1.0-2.0	.28	.28	3	3	86
	12-21	45-65	10-25	20-35	1.45-1.55	1.40-4.00	0.14-0.18	3.0-5.9	0.0-0.0	.20	.20			
	21-32	---	---	---	---	---	---	---	---	---	---			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
520:														
Santa Lucia----------	0-4	25-40	25-40	27-35	1.40-1.50	4.00-14.00	0.10-0.14	0.0-2.9	2.0-10	.05	.10	2	7	38
	4-21	25-40	25-40	35-40	1.30-1.40	4.00-14.00	0.09-0.12	0.0-2.9	1.0-2.0	.10	.24			
	21-25	---	---	---	---	---	---	---	---	---	---			
521:														
Santa Lucia----------	0-4	25-40	25-40	27-35	1.40-1.50	4.00-14.00	0.10-0.14	0.0-2.9	2.0-10	.05	.10	2	6	48
	4-21	25-40	25-40	35-40	1.30-1.40	4.00-14.00	0.09-0.12	0.0-2.9	1.0-2.0	.10	.24			
	21-25	---	---	---	---	---	---	---	---	---	---			
522:														
Santa Lucia----------	0-4	25-40	25-40	27-35	1.40-1.50	4.00-14.00	0.10-0.14	0.0-2.9	2.0-10	.05	.10	2	6	48
	4-21	25-40	25-40	35-40	1.30-1.40	4.00-14.00	0.09-0.12	0.0-2.9	1.0-2.0	.10	.24			
	21-25	---	---	---	---	---	---	---	---	---	---			
531:														
Saltos---------------	0-.5	---	---	---	---	---	---	---	---	---	---	1	5	56
	.5-4	35-45	35-45	20-25	1.45-1.55	1.40-4.00	0.12-0.16	0.0-2.9	0.5-1.0	.28	.37			
	4-10	35-55	25-45	20-27	1.45-1.55	1.40-4.00	0.12-0.16	0.0-2.9	0.0-0.0	.28	.37			
	10-15	---	---	---	---	---	---	---	---	---	---			
Millsholm------------	0-2	35-45	30-40	20-27	1.45-1.55	4.00-14.00	0.14-0.18	3.0-5.9	0.5-3.0	.28	.28	1	5	56
	2-12	35-45	30-40	20-27	1.45-1.55	4.00-14.00	0.14-0.18	3.0-5.9	0.0-0.0	.32	.32			
	12-15	---	---	---	---	---	---	---	---	---	---			
561:														
Chanac---------------	0-12	35-45	30-45	18-27	1.35-1.45	4.00-14.00	0.14-0.16	3.0-5.9	0.5-1.0	.28	.28	5	6	48
	12-21	35-55	20-40	20-35	1.30-1.45	1.40-4.00	0.14-0.18	3.0-5.9	0.0-0.5	.37	.37			
	21-60	55-65	15-35	15-20	1.45-1.55	1.40-4.00	0.12-0.16	0.0-2.9	0.0-0.0	.37	.37			
562:														
Chanac---------------	0-12	35-45	30-45	18-27	1.35-1.45	4.00-14.00	0.14-0.16	3.0-5.9	0.5-1.0	.28	.28	5	6	48
	12-21	35-55	20-40	20-35	1.30-1.45	1.40-4.00	0.14-0.18	3.0-5.9	0.0-0.5	.37	.37			
	21-60	55-65	15-35	15-20	1.45-1.55	1.40-4.00	0.12-0.16	0.0-2.9	0.0-0.0	.37	.37			
900:														
Pits-----------------	0-60	---	---	---	---	---	---	---	---	---	---	--	---	---
905:														
Xerofluvents---------	0-10	95-100	0-5	0-5	---	42.00-141.00	0.05-0.08	0.0-2.9	0.5-1.0	.17	.20	5	1	220
	10-30	45-100	0-40	5-20	---	14.00-141.00	0.08-0.15	0.0-2.9	---	.17	.32			
	30-60	45-100	0-40	5-20	---	14.00-141.00	0.06-0.13	0.0-2.9	---	.17	.20			

Table 16.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*um/sec*	*In/in*	*Pct*	*Pct*					
905:														
Riverwash------------	0-6	95-100	0-5	0-1	---	42.00-141.00	0.03-0.04	0.0-2.9	0.0-0.1	---	---	--	1	180
	6-60	70-100	0-30	0-5	---	42.00-141.00	0.04-0.06	0.0-2.9	---	---	---			
906:														
Xerofluvents---------	0-15	60-85	10-30	0-10	1.35-1.65	1.40-141.00	0.06-0.21	3.0-5.9	---	---	---	5	---	---
	15-37	30-85	10-60	0-10	1.35-1.65	1.40-141.00	0.06-0.21	3.0-5.9	---	---	---			
	37-55	10-40	30-50	20-50	1.35-1.55	1.40-14.00	0.11-0.21	3.0-5.9	---	---	---			
908:														
Xerorthents----------	0-2	65-70	17-22	10-15	1.55-1.60	14.00-42.00	0.05-0.09	0.0-2.9	0.5-1.0	.15	.32	1	5	56
	2-42	60-70	15-25	10-20	1.45-1.60	4.00-42.00	0.04-0.11	0.0-2.9	0.0-0.0	.15	.32			
	42-46	---	---	---	---	---	---	---	---	---	---			
910:														
Playas---------------	0-6	5-20	40-60	35-40	1.30-1.60	0.01-0.42	0.02-0.04	6.0-8.9	0.0-0.1	.37	.37	5	5	56
	6-60	0-25	30-60	35-60	1.30-1.60	0.01-0.42	0.02-0.04	6.0-8.9	---	.37	.37			
911:														
Playas---------------	0-6	5-20	40-60	35-40	1.30-1.60	0.01-0.42	0.02-0.04	6.0-8.9	0.0-0.1	.37	.37	5	5	56
	6-60	0-25	30-60	35-60	1.30-1.60	0.01-0.42	0.02-0.04	6.0-8.9	---	.37	.37			
912:														
Water.														

Table 17.--Chemical Properties of the Soils

[Absence of an entry indicates that data were not estimated]

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon-ate	Gypsum	Salinity	Sodium adsorp-tion ratio
	In	*meq/100 g*	*meq/100 g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
100:								
Balcom---------------	0-23	10-15	---	7.9-8.4	1-5	0	0.0-2.0	0
	23-54	---	---	---	---	---	---	0
101:								
Balcom---------------	0-23	10-15	---	7.9-8.4	1-5	0	0.0-2.0	0
	23-54	---	---	---	---	---	---	---
Nacimiento-----------	0-10	15-20	---	7.9-8.4	0-1	0	0.0-2.0	0
	10-37	10-15	---	7.9-8.4	1-5	0	0.0-2.0	0
	37-42	---	---	---	---	---	---	---
102:								
Balcom---------------	0-23	10-15	---	7.9-8.4	1-5	0	0.0-2.0	0
	23-54	---	---	---	---	---	---	---
Nacimiento-----------	0-10	15-20	---	7.9-8.4	0-1	0	0.0-2.0	0
	10-37	10-15	---	7.9-8.4	1-5	0	0.0-2.0	0
	37-42	---	---	---	---	---	---	---
103:								
Balcom---------------	0-23	10-15	---	7.9-8.4	1-5	0	0.0-2.0	0
	23-54	---	---	---	---	---	---	---
Nacimiento-----------	0-10	15-20	---	7.9-8.4	0-1	0	0.0-2.0	0
	10-37	10-15	---	7.9-8.4	1-5	0	0.0-2.0	0
	37-42	---	---	---	---	---	---	---
109:								
Capay----------------	0-20	30-45	---	5.6-8.4	0-2	---	0.0-2.0	1-5
	20-64	30-45	---	6.6-8.4	1-5	---	0.0-2.0	2-10
110:								
Capay----------------	0-20	30-45	---	5.6-8.4	0-2	---	0.0-2.0	1-5
	20-64	30-45	---	6.6-8.4	1-5	---	0.0-2.0	2-10
112:								
Calleguas------------	0-2	10-15	---	7.9-8.4	1-5	0	0.0-2.0	0
	2-9	15-20	---	7.9-8.4	1-5	0	0.0-2.0	0
	9-17	---	---	---	---	---	---	---
Balcom---------------	0-23	10-15	---	7.9-8.4	1-5	0	0.0-2.0	0
	23-54	---	---	---	---	---	---	---
114:								
Calleguas------------	0-2	10-15	---	7.9-8.4	1-5	0	0.0-2.0	0
	2-9	15-20	---	7.9-8.4	1-5	0	0.0-2.0	0
	9-17	---	---	---	---	---	---	---
Nacimiento-----------	0-10	15-20	---	7.9-8.4	0-1	0	0.0-2.0	0
	10-37	10-15	---	7.9-8.4	1-5	0	0.0-2.0	0
	37-42	---	---	---	---	---	---	---
120:								
Hillbrick------------	0-15	5.0-10	---	7.9-8.4	0	0	0.0-2.0	0
	15-24	---	---	---	---	---	---	---
Rock outcrop---------	0-60	---	---	---	---	---	---	---
121:								
Hillbrick------------	0-15	5.0-10	---	7.9-8.4	0	0	0.0-2.0	0
	15-24	---	---	---	---	---	---	---

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorp- tion ratio
	In	*meq/100 g*	*meq/100 g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
121:								
Rock outcrop---------	0-60	---	---	---	---	---	---	---
123:								
Lithic Torriorthents-	0-5	5.0-10	---	7.9-8.4	1-5	0	0	0
	5-9	---	---	---	---	---	---	---
Semper---------------	0-5	0.0-5.0	---	7.9-8.4	0	0-5	0.0-3.0	0
	5-22	0.0-5.0	---	7.9-8.4	0	15-20	2.0-4.0	0
	22-26	---	---	---	---	---	---	---
Rock outcrop---------	0-60	---	---	---	---	---	---	---
129:								
Kilmer---------------	0-29	10-15	---	7.9-8.4	1-5	0	0.0-2.0	0
	29-34	---	---	---	---	---	---	---
Hillbrick------------	0-15	5.0-10	---	7.9-8.4	0	0	0.0-2.0	0
	15-24	---	---	---	---	---	---	---
130:								
Kilmer---------------	0-29	10-15	---	7.9-8.4	1-5	0	0.0-2.0	0
	29-34	---	---	---	---	---	---	---
Hillbrick------------	0-15	5.0-10	---	7.9-8.4	0	0	0.0-2.0	0
	15-24	---	---	---	---	---	---	---
131:								
Kilmer---------------	0-29	10-15	---	7.9-8.4	1-5	0	0.0-2.0	0
	29-34	---	---	---	---	---	---	---
Hillbrick------------	0-15	5.0-10	---	7.9-8.4	0	0	0.0-2.0	0
	15-24	---	---	---	---	---	---	---
134:								
Kilmer---------------	0-29	10-15	---	7.9-8.4	1-5	0	0.0-2.0	0
	29-34	---	---	---	---	---	---	---
Nacimiento-----------	0-10	15-20	---	7.9-8.4	0-1	0	0.0-2.0	0
	10-37	10-15	---	7.9-8.4	1-5	0	0.0-2.0	0
	37-42	---	---	---	---	---	---	---
Aido-----------------	0-8	30-40	---	7.4-8.4	0	0	0.0-2.0	0
	8-38	30-40	---	7.4-8.4	0	0	0.0-2.0	0
	38-50	---	---	---	---	---	---	---
140:								
Choice---------------	0-6	20-30	---	7.9-8.4	1-5	0	0.0-2.0	0
	6-47	20-30	---	7.9-8.4	1-5	0	0.0-2.0	0
	47-57	---	---	---	---	---	---	---
149:								
San Emigdio----------	0-9	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	9-60	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
150:								
San Emigdio----------	0-9	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	9-60	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
154:								
San Emigdio----------	0-9	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	9-60	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorp- tion ratio
	In	*meq/100 g*	*meq/100 g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
155:								
San Emigdio----------	0-9	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	9-60	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
159:								
Sorrento-------------	0-19	10-15	---	7.4-8.4	0	0	0.0-2.0	0
	19-67	10-15	---	7.4-8.4	1-5	0	0.0-2.0	0
160:								
Sorrento-------------	0-19	10-15	---	7.4-8.4	0	0	0.0-2.0	0
	19-67	10-15	---	7.4-8.4	1-5	0	0.0-2.0	0
169:								
Polonio--------------	0-14	10-15	---	7.9-8.4	0-1	0	0.0-2.0	0
	14-69	10-15	---	7.9-8.4	1-5	0	0.0-2.0	0
170:								
Polonio--------------	0-14	10-15	---	7.9-8.4	0-1	0	0.0-2.0	0
	14-69	10-15	---	7.9-8.4	1-5	0	0.0-2.0	0
173:								
Polonio--------------	0-12	10-15	---	7.9-8.4	0-1	0	0.0-2.0	0
	12-60	10-15	---	7.9-8.4	1-5	0	0.0-2.0	0
174:								
Polonio--------------	0-14	10-15	---	7.9-8.4	0-1	0	0.0-2.0	0
	14-69	10-15	---	7.9-8.4	1-5	0	0.0-2.0	0
Thomhill-------------	0-13	10-15	---	7.9-8.4	0	0	0.0-2.0	0
	13-64	10-15	---	7.9-8.4	1-5	0	0.0-2.0	0
175:								
Polonio--------------	0-14	10-15	---	7.9-8.4	0-1	0	0.0-2.0	0
	14-69	10-15	---	7.9-8.4	1-5	0	0.0-2.0	0
Thomhill-------------	0-13	10-15	---	7.9-8.4	0	0	0.0-2.0	0
	13-64	10-15	---	7.9-8.4	1-5	0	0.0-2.0	0
179:								
Padres---------------	0-16	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	16-30	5.0-10	---	7.9-8.4	1-5	0	2.0-4.0	0
	30-62	5.0-10	---	7.9-8.4	1-5	0	2.0-4.0	0
180:								
Padres---------------	0-16	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	16-30	5.0-10	---	7.9-8.4	1-5	0	2.0-4.0	0
	30-62	5.0-10	---	7.9-8.4	1-5	0	2.0-4.0	0
182:								
Oceano---------------	0-60	0.0-5.0	---	6.1-6.5	0	0	0.0-2.0	0
190:								
Reward---------------	0-24	10-15	---	7.9-8.4	1-5	0	0.0-2.0	0
	24-59	10-15	---	7.9-8.4	1-5	0	0.0-2.0	0
	59-65	---	---	---	---	---	---	---
191:								
Reward---------------	0-24	10-15	---	7.9-8.4	1-5	0	0.0-2.0	0
	24-59	10-15	---	7.9-8.4	1-5	0	0.0-2.0	0
	59-65	---	---	---	---	---	---	---
200:								
Aramburu-------------	0-23	15-20	---	6.6-8.4	0	0	0.0-2.0	0
	23-30	---	---	---	---	---	---	---

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorp- tion ratio
	In	*meq/100 g*	*meq/100 g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
201:								
Aramburu-------------	0-23	15-20	---	6.6-8.4	0	0	0.0-2.0	0
	23-30	---	---	---	---	---	---	---
202:								
Aramburu-------------	0-23	15-20	---	6.6-8.4	0	0	0.0-2.0	0
	23-30	---	---	---	---	---	---	---
204:								
Aramburu-------------	0-23	15-20	---	6.6-8.4	0	0	0.0-2.0	0
	23-30	---	---	---	---	---	---	---
Temblor--------------	0-13	5.0-15	---	7.9-8.4	0	0	0.0-2.0	0
	13-20	---	---	---	---	---	---	---
205:								
Aramburu-------------	0-23	15-20	---	6.6-8.4	0	0	0.0-2.0	0
	23-30	---	---	---	---	---	---	---
Temblor--------------	0-13	5.0-15	---	7.9-8.4	0	0	0.0-2.0	0
	13-17	---	---	---	---	---	---	---
218:								
Seaback--------------	0-9	10-15	---	7.9-8.4	1-5	0	0.0-4.0	0
	9-19	10-15	---	7.9-8.4	1-10	0	0.0-4.0	0
	19-23	---	---	---	---	---	---	---
Calleguas------------	0-2	10-15	---	7.9-8.4	1-5	0	0.0-2.0	0
	2-9	15-20	---	7.9-8.4	1-5	0	0.0-2.0	0
	9-17	---	---	---	---	---	---	---
Panoza---------------	0-6	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	6-24	5.0-10	---	7.9-8.4	1-5	0	2.0-4.0	0
	24-30	---	---	---	---	---	---	---
219:								
Xerorthents----------	0-12	5.0-10	---	7.9-8.4	0	0	0	0
	12-19	5.0-10	---	7.9-8.4	0	0	0	0
	19-26	5.0-10	---	7.9-8.4	0	0	0	0
	26-28	---	---	---	---	---	---	---
Badlands-------------	0-60	---	---	---	---	---	---	---
220:								
Beam-----------------	0-15	5.0-10	---	7.9-8.4	1-5	0	0.0-4.0	0
	15-23	---	---	---	---	---	---	---
Panoza---------------	0-6	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	6-24	5.0-10	---	7.9-8.4	1-5	0	2.0-4.0	0
	24-30	---	---	---	---	---	---	---
Hillbrick------------	0-15	5.0-10	---	7.9-8.4	0	0	0.0-2.0	0
	15-24	---	---	---	---	---	---	---
221:								
Beam-----------------	0-15	5.0-10	---	7.9-8.4	1-5	0	0.0-4.0	0
	15-23	---	---	---	---	---	---	---
Panoza---------------	0-6	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	6-24	5.0-10	---	7.9-8.4	1-5	0	2.0-4.0	0
	24-30	---	---	---	---	---	---	---
Hillbrick------------	0-15	5.0-10	---	7.9-8.4	0	0	0.0-2.0	0
	15-24	---	---	---	---	---	---	---

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorp- tion ratio
	In	*meq/100 g*	*meq/100 g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
222:								
Beam-----------------	0-15	5.0-10	---	7.9-8.4	1-5	0	0.0-4.0	0
	15-23	---	---	---	---	---	---	---
Panoza---------------	0-6	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	6-24	5.0-10	---	7.9-8.4	1-5	0	2.0-4.0	0
	24-30	---	---	---	---	---	---	---
Hillbrick------------	0-15	5.0-10	---	7.9-8.4	0	0	0.0-2.0	0
	15-24	---	---	---	---	---	---	---
227:								
Beam-----------------	0-15	5.0-10	---	7.9-8.4	1-5	0	0.0-4.0	0
	15-23	---	---	---	---	---	---	---
Panoza---------------	0-6	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	6-24	5.0-10	---	7.9-8.4	1-5	0	2.0-4.0	0
	24-30	---	---	---	---	---	---	---
228:								
Beam-----------------	0-15	5.0-10	---	7.9-8.4	1-5	0	0.0-4.0	0
	15-23	---	---	---	---	---	---	---
Panoza---------------	0-6	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	6-24	5.0-10	---	7.9-8.4	1-5	0	2.0-4.0	0
	24-30	---	---	---	---	---	---	---
229:								
Seaback--------------	0-9	10-15	---	7.9-8.4	1-5	0	0.0-4.0	0
	9-19	10-15	---	7.9-8.4	1-10	0	0.0-4.0	0
	19-23	---	---	---	---	---	---	---
San Timoteo----------	0-11	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	11-25	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	25-30	---	---	---	---	---	---	---
230:								
Padres---------------	0-16	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	16-30	5.0-10	---	7.9-8.4	1-5	0	2.0-4.0	0
Wasioja--------------	0-5	5.0-10	---	6.6-7.3	0	0	0	0
	5-33	10-15	---	7.4-8.4	0	0	0.0-2.0	0
	33-70	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
240:								
Panoza---------------	0-6	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	6-24	5.0-10	---	7.9-8.4	1-5	0	2.0-4.0	0
	24-30	---	---	---	---	---	---	---
Beam-----------------	0-3	10-15	---	7.9-8.4	1-5	0	0.0-4.0	0
	3-11	10-15	---	7.9-8.4	1-10	0	0.0-4.0	0
	11-15	---	---	---	---	---	---	---
241:								
Panoza---------------	0-6	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	6-24	5.0-10	---	7.9-8.4	1-5	0	2.0-4.0	0
	24-30	---	---	---	---	---	---	---
Beam-----------------	0-3	10-15	---	7.9-8.4	1-5	0	0.0-4.0	0
	3-11	10-15	---	7.9-8.4	1-10	0	0.0-4.0	0
	11-15	---	---	---	---	---	---	---

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorp- tion ratio
	In	meq/100 g	meq/100 g	pH	Pct	Pct	mmhos/cm	
242:								
Panoza---------------	0-6	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	6-24	5.0-10	---	7.9-8.4	1-5	0	2.0-4.0	0
	24-30	---	---	---	---	---	---	---
Beam-----------------	0-3	10-15	---	7.9-8.4	1-5	0	0.0-4.0	0
	3-11	10-15	---	7.9-8.4	1-10	0	0.0-4.0	0
	11-15	---	---	---	---	---	---	---
248:								
Pyxo-----------------	0-11	10-25	---	7.9-8.4	1-2	0	0.0-2.0	2-8
	11-38	25-35	---	7.9-8.4	2-5	0-1	0.0-2.0	2-8
	38-40	---	---	---	---	---	---	---
Cochora--------------	0-9	5.0-10	---	7.4-8.4	0-5	0-1	0.0-2.0	0-5
	9-15	5.0-10	---	7.4-8.4	0-5	0-1	0.0-2.0	0-5
	---	---	---	---	---	---	---	---
249:								
Xeric Torriorthents--	0-10	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	10-24	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	24-43	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	43-53	---	---	---	---	---	---	---
Badlands-------------	0-60	---	---	---	---	---	---	---
250:								
Pyxo-----------------	0-11	10-25	---	7.9-8.4	1-2	0	0.0-2.0	2-8
	11-38	25-35	---	7.9-8.4	2-5	0-1	0.0-2.0	2-8
	28-32	---	---	---	---	---	---	---
Cochora--------------	0-9	5.0-10	---	7.4-8.4	0-5	0-1	0.0-2.0	0-5
	---	---	---	---	---	---	---	---
	9-15	5.0-10	---	7.4-8.4	0-5	0-1	0.0-2.0	0-5
Badlands-------------	0-60	---	---	---	---	---	---	---
251:								
Nacimiento-----------	0-10	15-20	---	7.9-8.4	0-1	0	0.0-2.0	0
	10-37	10-15	---	7.9-8.4	1-5	0	0.0-2.0	0
	37-41	---	---	---	---	---	---	---
252:								
Nacimiento-----------	0-10	15-20	---	7.9-8.4	0-1	0	0.0-2.0	0
	10-37	10-15	---	7.9-8.4	1-5	0	0.0-2.0	0
	37-41	---	---	---	---	---	---	---
261:								
Aido-----------------	0-8	30-40	---	7.4-8.4	0	0	0.0-2.0	0
	8-38	30-40	---	7.4-8.4	0	0	0.0-2.0	0
	38-50	---	---	---	---	---	---	---
262:								
Aido-----------------	0-8	30-40	---	7.4-8.4	0	0	0.0-2.0	0
	8-38	30-40	---	7.4-8.4	0	0	0.0-2.0	0
	38-50	---	---	---	---	---	---	---
263:								
Aido-----------------	0-8	30-40	---	7.4-8.4	0	0	0.0-2.0	0
	8-38	30-40	---	7.4-8.4	0	0	0.0-2.0	0
	38-50	---	---	---	---	---	---	---

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorp- tion ratio
	In	meq/100 g	meq/100 g	pH	Pct	Pct	mmhos/cm	
270:								
Ayar-----------------	0-11	30-45	---	7.4-8.4	2-15	0	0.0-2.0	0
	11-44	25-35	---	7.4-8.4	2-15	0	0.0-2.0	0
	44-48	---	---	---	---	---	---	---
271:								
Ayar-----------------	0-19	30-45	---	7.4-8.4	2-15	0	0.0-2.0	0
	19-56	30-45	---	7.4-8.4	2-15	0	0.0-2.0	0
	56-63	---	---	---	---	---	---	---
274:								
Ayar-----------------	0-19	30-45	---	7.4-8.4	2-15	0	0.0-2.0	0
	19-56	30-45	---	7.4-8.4	2-15	0	0.0-2.0	0
	56-63	---	---	---	---	---	---	---
Hillbrick------------	0-15	5.0-10	---	7.9-8.4	0	0	0.0-2.0	0
	15-24	---	---	---	---	---	---	---
Aido-----------------	0-8	30-40	---	7.4-8.4	0	0	0.0-2.0	0
	8-38	30-40	---	7.4-8.4	0	0	0.0-2.0	0
	38-50	---	---	---	---	---	---	---
275:								
Ayar-----------------	0-19	30-45	---	7.4-8.4	2-15	0	0.0-2.0	0
	19-56	30-45	---	7.4-8.4	2-15	0	0.0-2.0	0
	56-63	---	---	---	---	---	---	---
Hillbrick------------	0-15	5.0-10	---	7.9-8.4	0	0	0.0-2.0	0
	15-24	---	---	---	---	---	---	---
Aido-----------------	0-8	30-40	---	7.4-8.4	0	0	0.0-2.0	0
	8-38	30-40	---	7.4-8.4	0	0	0.0-2.0	0
	38-50	---	---	---	---	---	---	---
280:								
Seaback--------------	0-9	10-15	---	7.9-8.4	1-5	0	0.0-4.0	0
	9-19	10-15	---	7.9-8.4	1-10	0	0.0-4.0	0
	19-23	---	---	---	---	---	---	---
Panoza---------------	0-6	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	6-24	5.0-10	---	7.9-8.4	1-5	0	2.0-4.0	0
	24-30	---	---	---	---	---	---	---
Jenks----------------	0-27	10-20	---	7.9-8.4	1-5	0	0.0-2.0	0
	27-35	---	---	---	---	---	---	---
281:								
Seaback--------------	0-9	10-15	---	7.9-8.4	1-5	0	0.0-4.0	0
	9-19	10-15	---	7.9-8.4	1-10	0	0.0-4.0	0
	19-23	---	---	---	---	---	---	---
Panoza---------------	0-6	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	6-24	5.0-10	---	7.9-8.4	1-5	0	2.0-4.0	0
	24-30	---	---	---	---	---	---	---
Jenks----------------	0-27	10-20	---	7.9-8.4	1-5	0	0.0-2.0	0
	27-35	---	---	---	---	---	---	---
282:								
Seaback--------------	0-9	10-15	---	7.9-8.4	1-5	0	0.0-4.0	0
	9-19	10-15	---	7.9-8.4	1-10	0	0.0-4.0	0
	19-23	---	---	---	---	---	---	---

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon-ate	Gypsum	Salinity	Sodium adsorp-tion ratio
	In	meq/100 g	meq/100 g	pH	Pct	Pct	mmhos/cm	
282:								
Panoza---------------	0-6	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	6-24	5.0-10	---	7.9-8.4	1-5	0	2.0-4.0	0
	24-30	---	---	---	---	---	---	---
Jenks----------------	0-27	10-20	---	7.9-8.4	1-5	0	0.0-2.0	0
	27-35	---	---	---	---	---	---	---
290:								
San Timoteo----------	0-11	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	11-25	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	25-30	---	---	---	---	---	---	---
San Andreas----------	0-3	5.0-10	---	6.1-6.5	0	0	0	0
	3-22	5.0-10	---	6.1-6.5	0	0	0	0
	22-26	---	---	---	---	---	---	---
Bellyspring----------	0-7	5.0-10	---	7.4-7.8	0	0	0.0-2.0	0
	7-27	10-20	---	7.9-8.4	0	0	0.0-2.0	0
	27-36	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	36-40	---	---	---	---	---	---	---
291:								
San Timoteo----------	0-11	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	11-25	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	25-30	---	---	---	---	---	---	---
San Andreas----------	0-3	5.0-10	---	6.1-6.5	0	0	0	0
	3-22	5.0-10	---	6.1-6.5	0	0	0	0
	22-26	---	---	---	---	---	---	---
Bellyspring----------	0-7	5.0-10	---	7.4-7.8	0	0	0.0-2.0	0
	7-27	10-20	---	7.9-8.4	0	0	0.0-2.0	0
	27-36	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	36-40	---	---	---	---	---	---	---
292:								
San Timoteo----------	0-11	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	11-25	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	25-30	---	---	---	---	---	---	---
San Andreas----------	0-3	5.0-10	---	6.1-6.5	0	0	0	0
	3-22	5.0-10	---	6.1-6.5	0	0	0	0
	22-26	---	---	---	---	---	---	---
Bellyspring----------	0-7	5.0-10	---	7.4-7.8	0	0	0.0-2.0	0
	7-27	10-20	---	7.9-8.4	0	0	0.0-2.0	0
	27-36	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	36-40	---	---	---	---	---	---	---
301:								
Arbuckle-------------	0-11	5.0-10	---	6.6-7.3	0	0	0	0
	11-34	5.0-15	---	7.4-7.8	0	0	0	0
	34-55	5.0-15	---	7.4-7.8	0	0	0	0
	55-65	5.0-10	---	7.4-7.8	0	0	0	0
	65-73	0.0-5.0	---	7.4-7.8	0	0	0	0
302:								
Arbuckle-------------	0-11	5.0-10	---	6.6-7.3	0	0	0	0
	11-34	5.0-15	---	7.4-7.8	0	0	0	0
	34-55	5.0-15	---	7.4-7.8	0	0	0	0
	55-65	5.0-10	---	7.4-7.8	0	0	0	0
	65-73	0.0-5.0	---	7.4-7.8	0	0	0	0

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon-ate	Gypsum	Salinity	Sodium adsorp-tion ratio
	In	*meq/100 g*	*meq/100 g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
303:								
Arbuckle-------------	0-11	5.0-10	---	6.6-7.3	0	0	0	0
	11-34	5.0-15	---	7.4-7.8	0	0	0	0
	34-55	5.0-15	---	7.4-7.8	0	0	0	0
	55-65	5.0-10	---	7.4-7.8	0	0	0	0
	65-73	0.0-5.0	---	7.4-7.8	0	0	0	0
304:								
Arbuckle-------------	0-11	5.0-10	---	6.6-7.3	0	0	0	0
	11-34	5.0-15	---	7.4-7.8	0	0	0	0
	34-55	5.0-15	---	7.4-7.8	0	0	0	0
	55-65	5.0-10	---	7.4-7.8	0	0	0	0
	65-73	0.0-5.0	---	7.4-7.8	0	0	0	0
306:								
Arbuckle-------------	0-11	5.0-10	---	6.6-7.3	0	0	0	0
	11-34	5.0-15	---	7.4-7.8	0	0	0	0
	34-55	5.0-15	---	7.4-7.8	0	0	0	0
	55-65	5.0-10	---	7.4-7.8	0	0	0	0
	65-73	0.0-5.0	---	7.4-7.8	0	0	0	0
307:								
Arbuckle-------------	0-11	5.0-10	---	6.6-7.3	0	0	0	0
	11-34	5.0-15	---	7.4-7.8	0	0	0	0
	34-55	5.0-15	---	7.4-7.8	0	0	0	0
	55-65	5.0-10	---	7.4-7.8	0	0	0	0
	65-73	0.0-5.0	---	7.4-7.8	0	0	0	0
310:								
Yeguas---------------	0-19	10-15	---	6.6-8.4	0	0	0.0-2.0	0
	19-35	15-25	---	7.4-8.4	0	0	0.0-2.0	0
	35-51	15-20	---	7.4-8.4	0	0	0.0-2.0	0
	51-62	5.0-15	---	7.4-8.4	0	0	0.0-2.0	0
Pinspring------------	0-14	10-15	---	6.6-7.8	0	0	0.0-2.0	0
	14-30	10-20	---	7.4-8.4	0	0	0.0-2.0	0
	30-39	5.0-10	---	7.4-8.4	0-5	0	0.0-2.0	0
	39-60	10-15	---	7.4-8.4	0-5	0	0.0-2.0	0
311:								
Yeguas---------------	0-19	10-15	---	6.6-8.4	0	0	0.0-2.0	0
	19-35	15-25	---	7.4-8.4	0	0	0.0-2.0	0
	35-51	15-20	---	7.4-8.4	0	0	0.0-2.0	0
	51-62	5.0-15	---	7.4-8.4	0	0	0.0-2.0	0
Pinspring------------	0-14	10-15	---	6.6-7.8	0	0	0.0-2.0	0
	14-30	10-20	---	7.4-8.4	0	0	0.0-2.0	0
	30-39	5.0-10	---	7.4-8.4	0-5	0	0.0-2.0	0
	39-60	10-15	---	7.4-8.4	0-5	0	0.0-2.0	0
321:								
Thomhill-------------	0-13	10-15	---	7.9-8.4	0	0	0.0-2.0	0
	13-64	10-15	---	7.9-8.4	1-5	0	0.0-2.0	0
330:								
Jenks----------------	0-27	10-20	---	7.9-8.4	1-5	0	0.0-2.0	0
	27-35	---	---	---	---	---	---	---
339:								
Arnold---------------	0-6	0.0-5.0	---	5.1-7.3	0	0	0	0
	6-44	0.0-5.0	---	5.1-7.3	0	0	0	0
	44-48	---	---	---	---	---	---	---

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon-ate	Gypsum	Salinity	Sodium adsorp-tion ratio
	In	meq/100 g	meq/100 g	pH	Pct	Pct	mmhos/cm	
339:								
San Andreas----------	0-3	5.0-10	---	6.1-6.5	0	0	0	0
	3-22	5.0-10	---	6.1-6.5	0	0	0	0
	29-33	---	---	---	---	---	---	---
340:								
Arnold---------------	0-6	0.0-5.0	---	5.1-7.3	0	0	0	0
	6-44	0.0-5.0	---	5.1-7.3	0	0	0	0
	44-48	---	---	---	---	---	---	---
San Andreas----------	0-3	5.0-10	---	6.1-6.5	0	0	0	0
	3-22	5.0-10	---	6.1-6.5	0	0	0	0
	29-33	---	---	---	---	---	---	---
350:								
Cieneba--------------	0-15	0.0-5.0	---	5.9-7.3	0	0	0.0-2.0	0
	15-20	---	---	---	---	---	---	---
360:								
Chicote--------------	0-2	25-30	---	7.9-8.4	0	0-5	0.0-4.0	10-20
	2-12	30-40	---	7.9-9.0	0	0-5	4.0-32.0	30-40
	12-61	30-40	---	7.9-8.4	0	10-25	4.0-32.0	30-40
Chicote--------------	0-5	10-20	---	7.9-8.4	0	0-5	0.0-4.0	10-20
	5-14	30-40	---	8.5-9.0	0	0-5	4.0-32.0	30-40
	14-24	20-30	---	7.9-8.4	0	10-25	4.0-32.0	40-60
	24-60	10-15	---	7.9-8.4	0	10-25	4.0-16.0	40-60
361:								
Chicote--------------	0-2	25-30	---	7.9-8.4	0	0-5	0.0-4.0	10-20
	2-12	30-40	---	7.9-9.0	0	0-5	4.0-32.0	30-40
	12-61	30-40	---	7.9-8.4	0	10-25	4.0-32.0	30-40
Chicote--------------	0-5	10-20	---	7.9-8.4	0	0-5	0.0-4.0	10-20
	5-14	30-40	---	8.5-9.0	0	0-5	4.0-32.0	30-40
	14-24	20-30	---	7.9-8.4	0	10-25	4.0-32.0	40-60
	24-60	10-15	---	7.9-8.4	0	10-25	4.0-16.0	40-60
362:								
Chicote--------------	0-2	25-30	---	7.9-8.4	0	0-5	0.0-4.0	10-20
	2-12	30-40	---	7.9-9.0	0	0-5	4.0-32.0	30-40
	12-61	30-40	---	7.9-8.4	0	10-25	4.0-32.0	30-40
Chicote--------------	0-5	10-20	---	7.9-8.4	0	0-5	0.0-4.0	10-20
	5-14	30-40	---	8.5-9.0	0	0-5	4.0-32.0	30-40
	14-24	20-30	---	7.9-8.4	0	10-25	4.0-32.0	40-60
	24-60	10-15	---	7.9-8.4	0	10-25	4.0-16.0	40-60
371:								
Semper---------------	0-5	0.0-5.0	---	7.9-8.4	0	0-5	0.0-3.0	0
	5-22	0.0-5.0	---	7.9-8.4	0	15-20	2.0-4.0	0
	22-26	---	---	---	---	---	---	---
372:								
Semper---------------	0-5	0.0-5.0	---	7.9-8.4	0	0-5	0.0-3.0	0
	5-22	0.0-5.0	---	7.9-8.4	0	15-20	2.0-4.0	0
	22-26	---	---	---	---	---	---	---
375:								
Semper---------------	0-5	0.0-5.0	---	7.9-8.4	0	0-5	0.0-3.0	0
	5-22	0.0-5.0	---	7.9-8.4	0	15-20	2.0-4.0	0
	22-26	---	---	---	---	---	---	---
Badlands-------------	0-60	---	---	---	---	---	---	---

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorp- tion ratio
	In	*meq/100 g*	*meq/100 g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
380:								
Muranch--------------	0-15	10-15	---	7.4-8.4	0	0	0.0-2.0	0
	15-36	10-15	---	7.4-8.4	0	0	0.0-2.0	0
	36-40	---	---	---	---	---	---	---
Xerorthents----------	0-12	5.0-10	---	7.9-8.4	0	0	0	0
	12-19	5.0-10	---	7.9-8.4	0	0	0	0
	19-26	5.0-10	---	7.9-8.4	0	0	0	0
	26-28	---	---	---	---	---	---	---
Rock outcrop---------	0-60	---	---	---	---	---	---	---
388:								
Rock outcrop---------	0-60	---	---	---	---	---	---	---
Gaviota--------------	0-8	5.0-10	5.0-10	6.1-7.3	0	0	0	0
	8-11	---	---	---	---	---	---	---
391:								
Rock outcrop---------	0-60	---	---	---	---	---	---	---
Lithic Torriorthents-	0-4	5.0-10	---	7.9-8.4	1-5	0	0	0
	4-9	---	---	---	---	---	---	---
401:								
Godde----------------	0-14	10-15	---	5.6-7.3	0	0	0	0
	14-18	---	---	---	---	---	---	---
Xerorthents----------	0-7	5.0-10	---	7.9-8.4	0	0	0	0
	7-11	---	---	---	---	---	---	---
Rock outcrop---------	0-60	---	---	---	---	---	---	---
408:								
Gaviota--------------	0-8	5.0-10	5.0-10	6.1-7.3	0	0	0	0
	15-19	---	---	---	---	---	---	---
San Andreas----------	0-3	5.0-10	---	6.1-6.5	0	0	0	0
	3-22	5.0-10	---	6.1-6.5	0	0	0	0
	29-33	---	---	---	---	---	---	---
409:								
Gaviota--------------	0-8	5.0-10	5.0-10	6.1-7.3	0	0	0	0
	8-11	---	---	---	---	---	---	---
Saltos---------------	0-.5	---	---	---	---	---	---	---
	.5-4	10-15	---	7.9-8.4	0	0	0	0
	4-10	10-15	---	7.9-8.4	1-5	0	0.0-2.0	0
	10-15	---	---	---	---	---	---	---
Rock outcrop---------	0-60	---	---	---	---	---	---	---
410:								
Gaviota--------------	0-8	5.0-10	5.0-10	6.1-7.3	0	0	0	0
	8-11	---	---	---	---	---	---	---
Rock outcrop---------	0-60	---	---	---	---	---	---	---
411:								
Tajea----------------	0-10	10-15	---	6.6-7.8	0	0	0	0
	10-20	10-20	---	6.6-7.8	0	0	0.0-2.0	0
	20-27	10-20	---	6.6-7.8	0	0	0.0-2.0	0
	27-30	---	---	---	---	---	---	---

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorp- tion ratio
	In	*meq/100 g*	*meq/100 g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
411:								
Saltos----------------	0-.5	---	---	---	---	---	---	---
	.5-4	10-15	---	7.9-8.4	0	0	0	0
	4-10	10-20	---	7.9-8.4	1-5	0	0.0-2.0	0
	10-15	---	---	---	---	---	---	---
412:								
Tajea-----------------	0-10	10-15	---	6.6-7.8	0	0	0	0
	10-20	10-20	---	6.6-7.8	0	0	0.0-2.0	0
	20-27	10-20	---	6.6-7.8	0	0	0.0-2.0	0
	27-30	---	---	---	---	---	---	---
Saltos----------------	0-.5	---	---	---	---	---	---	---
	.5-4	10-15	---	7.9-8.4	0	0	0	0
	4-10	10-15	---	7.9-8.4	1-5	0	0.0-2.0	0
	10-15	---	---	---	---	---	---	---
420:								
Bellyspring-----------	0-12	10-20	---	6.6-7.8	0	0	0	0
	12-55	10-20	---	7.4-8.4	0	0	0.0-2.0	0
	55-59	---	---	---	---	---	---	---
Saltos----------------	0-.5	---	---	---	---	---	---	---
	.5-4	10-15	---	7.9-8.4	0	0	0	0
	4-10	10-15	---	7.9-8.4	1-5	0	0.0-2.0	0
	10-15	---	---	---	---	---	---	---
Rock outcrop----------	0-60	---	---	---	---	---	---	---
430:								
Saucito---------------	0-3	5.0-10	---	7.9-8.4	0	0	0.0-2.0	0
	3-18	10-25	---	7.9-8.4	1-5	0	0.0-2.0	0
	18-28	---	---	---	---	---	---	---
Akad------------------	0-5	5.0-15	---	6.6-8.4	0	0	0.0-2.0	0
	5-23	10-20	---	6.6-8.4	0	0	0.0-2.0	0
	23-25	---	---	---	---	---	---	---
Rock outcrop----------	0-60	---	---	---	---	---	---	---
440:								
Bellyspring-----------	0-7	5.0-10	---	7.4-7.8	0	0	0.0-2.0	0
	7-27	10-20	---	7.9-8.4	0	0	0.0-2.0	0
	27-36	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	36-40	---	---	---	---	---	---	---
Panoza----------------	0-6	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	6-24	5.0-10	---	7.9-8.4	1-5	0	2.0-4.0	0
	24-30	---	---	---	---	---	---	---
441:								
Bellyspring-----------	0-7	5.0-10	---	7.4-7.8	0	0	0.0-2.0	0
	7-27	10-20	---	7.9-8.4	0	0	0.0-2.0	0
	27-36	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	36-40	---	---	---	---	---	---	---
Panoza----------------	0-6	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	6-24	5.0-10	---	7.9-8.4	1-5	0	2.0-4.0	0
	24-30	---	---	---	---	---	---	---
442:								
Bellyspring-----------	0-7	5.0-10	---	7.4-7.8	0	0	0.0-2.0	0
	7-27	10-20	---	7.9-8.4	0	0	0.0-2.0	0
	27-36	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	38-48	---	---	---	---	---	---	---

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon-ate	Gypsum	Salinity	Sodium adsorp-tion ratio
	In	meq/100 g	meq/100 g	pH	Pct	Pct	mmhos/cm	
442:								
Panoza---------------	0-6	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	6-24	5.0-10	---	7.9-8.4	1-5	0	2.0-4.0	0
	24-30	---	---	---	---	---	---	---
443:								
Bellyspring----------	0-7	5.0-10	---	7.4-7.8	0	0	0.0-2.0	0
	7-27	10-20	---	7.9-8.4	0	0	0.0-2.0	0
	27-36	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	38-48	---	---	---	---	---	---	---
Beam-----------------	0-15	5.0-10	---	7.9-8.4	1-5	0	0.0-4.0	0
	15-23	---	---	---	---	---	---	---
Panoza---------------	0-6	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	6-24	5.0-10	---	7.9-8.4	1-5	0	2.0-4.0	0
	24-30	---	---	---	---	---	---	---
445:								
Bellyspring----------	0-7	5.0-10	---	7.4-7.8	0	0	0.0-2.0	0
	7-27	10-20	---	7.9-8.4	0	0	0.0-2.0	0
	27-36	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	36-40	---	---	---	---	---	---	---
Xerorthents----------	0-12	5.0-10	---	7.9-8.4	0	0	0	0
	12-19	5.0-10	---	7.9-8.4	0	0	0	0
	19-26	5.0-10	---	7.9-8.4	0	0	0	0
	26-28	---	---	---	---	---	---	---
Panoza---------------	0-6	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
	6-24	5.0-10	---	7.9-8.4	1-5	0	2.0-4.0	0
	24-30	---	---	---	---	---	---	---
450:								
Botella--------------	0-14	10-15	---	5.6-7.8	0	0	0.0-2.0	0
	14-39	15-20	---	5.6-7.8	0	0	0.0-2.0	0
	39-60	5.0-10	---	5.6-7.8	0	0	0.0-2.0	0
460:								
Camatta--------------	0-8	5.0-10	---	7.9-8.4	5-15	0	0.0-2.0	0
	8-13	---	---	---	15-35	---	---	---
	13-60	0.0-5.0	---	7.9-8.4	15-35	0	0.0-4.0	0
470:								
Botella--------------	0-14	5.0-10	---	5.6-7.8	0	0	0.0-2.0	0
	14-39	15-20	---	5.6-7.8	0	0	0.0-2.0	0
	39-60	5.0-10	---	5.6-7.8	0	0	0.0-2.0	0
474:								
Elder----------------	0-21	5.0-10	---	5.6-8.2	0	0	0	0
	21-67	5.0-10	---	6.6-7.8	0	0	0	0
475:								
Elder----------------	0-21	5.0-10	---	5.6-8.2	0	0	0	0
	21-67	5.0-10	---	6.6-7.8	0	0	0	0
480:								
Metz-----------------	0-10	0.0-5.0	---	6.6-7.8	0	0	0.0-2.0	0
	10-63	0.0-5.0	---	6.6-7.8	0	0	0.0-2.0	0
490:								
Wasioja--------------	0-9	5.0-10	---	6.6-7.3	0	0	0	0
	9-40	10-15	---	7.4-8.4	0	0	0.0-2.0	0
	40-60	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate	Gypsum	Salinity	Sodium adsorp- tion ratio
	In	meq/100 g	meq/100 g	pH	Pct	Pct	mmhos/cm	
491:								
Wasioja--------------	0-5	5.0-10	---	6.6-7.3	0	0	0	0
	10-60	10-15	---	7.4-8.4	0-5	0	0.0-2.0	0
495:								
Wasioja--------------	0-9	5.0-10	---	6.6-7.3	0	0	0	0
	10-60	10-15	---	7.4-8.4	0-5	0	0.0-2.0	0
Polonio--------------	0-14	10-15	---	7.9-8.4	0-1	0	0.0-2.0	0
	14-69	10-15	---	7.9-8.4	1-5	0	0.0-2.0	0
497:								
Wasioja--------------	0-9	5.0-10	---	6.6-7.3	0	0	0	0
	9-40	10-15	---	7.4-8.4	0	0	0.0-2.0	0
	40-60	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
Pinspring------------	0-14	10-15	---	6.6-7.8	0	0	0.0-2.0	0
	14-30	10-20	---	7.4-8.4	0	0	0.0-2.0	0
	30-39	5.0-10	---	7.4-8.4	0-5	0	0.0-2.0	0
	39-60	10-15	---	7.4-8.4	0-5	0	0.0-2.0	0
Yeguas---------------	0-19	10-15	---	6.6-8.4	0	0	0.0-2.0	0
	19-35	15-25	---	7.4-8.4	0	0	0.0-2.0	0
	35-51	15-20	---	7.4-8.4	0	0	0.0-2.0	0
	51-62	5.0-15	---	7.4-8.4	0	0	0.0-2.0	0
512:								
Shimmon--------------	0-12	5.0-15	---	6.6-7.8	0	0	0	0
	12-21	20-35	---	5.6-7.8	0	0	0	0
	21-32	---	---	---	---	---	---	---
520:								
Santa Lucia----------	0-4	25-30	---	5.1-6.5	0	0	0.0-2.0	0
	4-21	20-30	---	5.1-6.5	0	0	0.0-2.0	0
	21-25	---	---	---	---	---	---	---
521:								
Santa Lucia----------	0-4	25-30	---	5.1-6.5	0	0	0.0-2.0	0
	4-21	20-30	---	5.1-6.5	0	0	0.0-2.0	0
	21-25	---	---	---	---	---	---	---
522:								
Santa Lucia----------	0-4	25-30	---	5.1-6.5	0	0	0.0-2.0	0
	4-21	20-30	---	5.1-6.5	0	0	0.0-2.0	0
	21-25	---	---	---	---	---	---	---
531:								
Saltos---------------	0-.5	---	---	---	---	---	---	---
	.5-4	10-15	---	7.9-8.4	0	0	0	0
	4-10	10-15	---	7.9-8.4	1-5	0	0.0-2.0	0
	10-15	---	---	---	---	---	---	---
Millsholm------------	0-2	10-15	---	7.4-7.8	0	0	0	0
	2-12	10-15	---	7.4-7.8	0	0	0	0
	12-15	---	---	---	---	---	---	---
561:								
Chanac---------------	0-12	10-15	---	7.9-8.4	1-5	0	0.0-2.0	0
	12-21	10-15	---	7.9-8.4	5-10	0	0.0-2.0	0
	21-60	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0
562:								
Chanac---------------	0-12	10-15	---	7.9-8.4	1-5	0	0.0-2.0	0
	12-21	10-15	---	7.9-8.4	5-10	0	0.0-2.0	0
	21-60	5.0-10	---	7.9-8.4	1-5	0	0.0-2.0	0

Table 17.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon-ate	Gypsum	Salinity	Sodium adsorp-tion ratio
	In	*meq/100 g*	*meq/100 g*	*pH*	*Pct*	*Pct*	*mmhos/cm*	
900:								
Pits	0-60	---	---	---	---	---	0	---
905:								
Xerofluvents	0-10	0.0-5.0	---	6.6-8.4	0	0	0.0-2.0	0
	10-30	5.0-10	---	6.6-8.4	0	0	0.0-2.0	0
	30-60	5.0-10	---	6.6-8.4	0	0	0.0-2.0	0
Riverwash	0-6	0.0-5.0	---	---	---	---	0	---
	6-60	0.0-5.0	---	---	---	---	0	---
906:								
Xerofluvents	0-15	0.0-30	---	7.9-8.4	0	0	0	0
	15-37	0.0-30	---	7.9-8.4	0	0	0	0
	37-55	10-30	---	7.9-8.4	1-5	0	0	0
908:								
Xerorthents	0-2	5.0-10	---	7.9-8.4	0	0	0	0
	2-42	5.0-10	---	7.9-8.4	0	0	0	0
	42-46	---	---	---	---	---	---	---
910:								
Playas	0-6	30-45	---	8.5-9.0	---	---	16.0-32.0	30-40
	6-60	30-45	---	8.5-9.0	---	---	16.0-32.0	40-60
911:								
Playas	0-6	30-45	---	8.5-9.0	---	---	16.0-32.0	30-40
	6-60	30-45	---	8.5-9.0	---	---	16.0-32.0	40-60
912:								
Water.								

Table 18.--Soil Features

[See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated]

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
100:									
Balcom	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
101:									
Balcom	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
Nacimiento	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
102:									
Balcom	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
Nacimiento	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
103:									
Balcom	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
Nacimiento	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
109:									
Capay	---	---	---	---	0	0	None	High	Moderate
110:									
Capay	---	---	---	---	0	0	None	High	Moderate
112:									
Calleguas	Bedrock (paralithic)	8-20	---	---	0	0	None	High	Low
Balcom	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
114:									
Calleguas	Bedrock (paralithic)	8-20	---	---	0	0	None	High	Low
Nacimiento	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low

Table 18.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	In		In	In			
120:									
Hillbrick	Bedrock (lithic)	10-20	---	---	0	0	None	High	Low
Rock outcrop	---	---	---	---	0	0	None	---	---
121:									
Hillbrick	Bedrock (lithic)	10-20	---	---	0	0	None	High	Low
Rock outcrop	---	---	---	---	0	0	None	---	---
123:									
Lithic Torriorthents	Bedrock (lithic)	8-20	---	---	0	0	None	High	Low
Semper	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
Rock outcrop	---	---	---	---	0	0	None	---	---
129:									
Kilmer	Bedrock (lithic)	20-40	---	---	0	0	None	High	Low
Hillbrick	Bedrock (lithic)	10-20	---	---	0	0	None	High	Low
130:									
Kilmer	Bedrock (lithic)	20-40	---	---	0	0	None	High	Low
Hillbrick	Bedrock (lithic)	10-20	---	---	0	0	None	High	Low
131:									
Kilmer	Bedrock (lithic)	20-40	---	---	0	0	None	High	Low
Hillbrick	Bedrock (lithic)	10-20	---	---	0	0	None	High	Low
134:									
Kilmer	Bedrock (lithic)	20-40	---	---	0	0	None	High	Low
Nacimiento	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
Aido	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
140:									
Choice	Bedrock (paralithic)	40-60	---	---	0	0	None	High	Low
149:									
San Emigdio	---	---	---	---	0	0	None	High	Low

Table 18.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	In		In	In			
150:									
San Emigdio	---	---	---	---	0	0	None	High	Low
154:									
San Emigdio	---	---	---	---	0	0	None	High	Low
155:									
San Emigdio	---	---	---	---	0	0	None	High	Low
159:									
Sorrento	---	---	---	---	0	0	None	High	Low
160:									
Sorrento	---	---	---	---	0	0	None	High	Low
169:									
Polonio	---	---	---	---	0	0	None	High	Low
170:									
Polonio	---	---	---	---	0	0	None	High	Low
173:									
Polonio	---	---	---	---	0	0	None	High	Low
174:									
Polonio	---	---	---	---	0	0	None	High	Low
Thomhill	---	---	---	---	0	0	None	High	Low
175:									
Polonio	---	---	---	---	0	0	None	High	Low
Thomhill	---	---	---	---	0	0	None	High	Low
179:									
Padres	---	---	---	---	0	0	None	High	Low
180:									
Padres	---	---	---	---	0	0	None	High	Low
182:									
Oceano	---	---	---	---	0	0	---	Moderate	Moderate
190:									
Reward	Bedrock (paralithic)	40-60	---	---	0	0	None	High	Low
191:									
Reward	Bedrock (paralithic)	40-60	---	---	0	0	None	High	Low

Table 18.--Soil Features--Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Restrictive layer: Thickness	Restrictive layer: Hardness	Subsidence: Initial	Subsidence: Total	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In	In		In	In			
200:									
Aramburu	Bedrock (lithic)	20-40	---	---	0	0	None	High	Low
201:									
Aramburu	Bedrock (lithic)	20-40	---	---	0	0	None	High	Low
202:									
Aramburu	Bedrock (lithic)	20-40	---	---	0	0	None	High	Low
204:									
Aramburu	Bedrock (lithic)	20-40	---	---	0	0	None	High	Low
Temblor	Bedrock (lithic)	10-20	---	---	0	0	None	High	Low
205:									
Aramburu	Bedrock (lithic)	20-40	---	---	0	0	None	High	Low
Temblor	Bedrock (lithic)	10-20	---	---	0	0	None	High	Low
218:									
Seaback	Bedrock (paralithic)	10-20	---	---	0	0	None	High	Low
Calleguas	Bedrock (paralithic)	8-20	---	---	0	0	None	High	Low
Panoza	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
219:									
Xerorthents	Bedrock (lithic)	20-40	---	---	0	0	None	High	Low
Badlands	---	---	---	---	0	0	None	---	---
220:									
Beam	Bedrock (paralithic)	14-20	---	---	0	0	None	High	Low
Panoza	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
Hillbrick	Bedrock (lithic)	10-20	---	---	0	0	None	High	Low
221:									
Beam	Bedrock (paralithic)	14-20	---	---	0	0	None	High	Low
Panoza	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low

Table 18.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
221:									
Hillbrick	Bedrock (lithic)	10-20	---	---	0	0	None	High	Low
222:									
Beam	Bedrock (paralithic)	14-20	---	---	0	0	None	High	Low
Panoza	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
Hillbrick	Bedrock (lithic)	10-20	---	---	0	0	None	High	Low
227:									
Beam	Bedrock (paralithic)	14-20	---	---	0	0	None	High	Low
Panoza	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
228:									
Beam	Bedrock (paralithic)	14-20	---	---	0	0	None	High	Low
Panoza	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
229:									
Seaback	Bedrock (paralithic)	10-20	---	---	0	0	None	High	Low
San Timoteo	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
230:									
Padres	---	---	---	---	0	0	None	High	Low
Wasioja	---	---	---	---	0	0	None	High	Low
240:									
Panoza	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
Beam	Bedrock (paralithic)	10-20	---	---	0	0	None	High	Low
241:									
Panoza	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low

Table 18.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
241:									
Beam-------------------	Bedrock (paralithic)	10-20	---	---	0	0	None	High	Low
242:									
Panoza-----------------	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
Beam-------------------	Bedrock (paralithic)	10-20	---	---	0	0	None	High	Low
248:									
Pyxo-------------------	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
Cochora----------------	Bedrock (paralithic)	14-20	---	Weakly cemented	0	0	None	High	Low
249:									
Xeric Torriorthents----	Bedrock (lithic)	20-60	---	---	0	0	None	High	Low
Badlands---------------	---	---	---	---	0	0	None	---	---
250:									
Pyxo-------------------	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
Cochora----------------	Bedrock (paralithic)	14-20	---	Weakly cemented	0	0	None	High	Low
Badlands---------------	---	---	---	---	0	0	---	---	---
251:									
Nacimiento-------------	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
252:									
Nacimiento-------------	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
261:									
Aido-------------------	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
262:									
Aido-------------------	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low

Table 18.--Soil Features--Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Restrictive layer: Thickness	Restrictive layer: Hardness	Subsidence: Initial	Subsidence: Total	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In	*In*		*In*	*In*			
263:									
Aido-------------------	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
270:									
Ayar-------------------	Bedrock (paralithic)	40-70	---	---	0	0	---	High	Low
271:									
Ayar-------------------	Bedrock (paralithic)	40-70	---	---	0	0	None	High	Low
274:									
Ayar-------------------	Bedrock (paralithic)	40-70	---	---	0	0	None	High	Low
Hillbrick--------------	Bedrock (lithic)	10-20	---	---	0	0	None	High	Low
Aido-------------------	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
275:									
Ayar-------------------	Bedrock (paralithic)	40-70	---	---	0	0	None	High	Low
Hillbrick--------------	Bedrock (lithic)	10-20	---	---	0	0	None	High	Low
Aido-------------------	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
280:									
Seaback----------------	Bedrock (paralithic)	10-20	---	---	0	0	None	High	Low
Panoza-----------------	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
Jenks------------------	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
281:									
Seaback----------------	Bedrock (paralithic)	10-20	---	---	0	0	None	High	Low
Panoza-----------------	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
Jenks------------------	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low

Table 18.--Soil Features--Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Restrictive layer: Thickness	Restrictive layer: Hardness	Subsidence: Initial	Subsidence: Total	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In	*In*		*In*	*In*			
282:									
Seaback	Bedrock (paralithic)	10-20	---	---	0	0	None	High	Low
Panoza	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
Jenks	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
290:									
San Timoteo	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
San Andreas	Bedrock (paralithic)	20-40	---	---	0	0	None	Moderate	Moderate
Bellyspring	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
291:									
San Timoteo	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
San Andreas	Bedrock (paralithic)	20-40	---	---	0	0	None	Moderate	Moderate
Bellyspring	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
292:									
San Timoteo	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
San Andreas	Bedrock (paralithic)	20-40	---	---	0	0	None	Moderate	Moderate
Bellyspring	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
301:									
Arbuckle	---	---	---	---	0	0	None	Moderate	Moderate
302:									
Arbuckle	---	---	---	---	0	0	None	Moderate	Moderate
303:									
Arbuckle	---	---	---	---	0	0	None	Moderate	Moderate

Table 18.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	In		In	In			
304:									
Arbuckle	---	---	---	---	0	0	None	Moderate	Moderate
306:									
Arbuckle	---	---	---	---	0	0	None	Moderate	Moderate
307:									
Arbuckle	---	---	---	---	0	0	None	Moderate	Moderate
310:									
Yeguas	---	---	---	---	0	0	None	High	Low
Pinspring	---	---	---	---	0	0	None	High	Low
311:									
Yeguas	---	---	---	---	0	0	None	High	Low
Pinspring	---	---	---	---	0	0	None	High	Low
321:									
Thomhill	---	---	---	---	0	0	None	High	Low
330:									
Jenks	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
339:									
Arnold	Bedrock (paralithic)	40-60	---	---	0	0	None	Moderate	Moderate
San Andreas	Bedrock (paralithic)	20-40	---	---	0	0	None	Moderate	Moderate
340:									
Arnold	Bedrock (paralithic)	40-60	---	---	0	0	None	Moderate	Moderate
San Andreas	Bedrock (paralithic)	20-40	---	---	0	0	None	Moderate	Moderate
350:									
Cieneba	Bedrock (paralithic)	6-20	---	---	0	0	None	Low	Low
360:									
Chicote	---	---	---	---	0	0	None	High	High
Chicote	---	---	---	---	0	0	None	High	High

Table 18.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
361:									
Chicote----------------	---	---	---	---	0	0	None	High	High
Chicote----------------	---	---	---	---	0	0	None	High	High
362:									
Chicote----------------	---	---	---	---	0	0	None	High	High
Chicote----------------	---	---	---	---	0	0	None	High	High
371:									
Semper-----------------	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
372:									
Semper-----------------	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
375:									
Semper-----------------	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
Badlands---------------	---	---	---	---	0	0	None	---	---
380:									
Muranch----------------	Bedrock (lithic)	20-40	---	---	0	0	None	High	Low
Xerorthents------------	Bedrock (lithic)	20-40	---	---	0	0	None	High	Low
Rock outcrop-----------	---	---	---	---	0	0	None	---	---
388:									
Rock outcrop-----------	---	---	---	---	0	0	None	---	---
Gaviota----------------	Bedrock (lithic)	6-20	---	---	0	0	None	Moderate	Moderate
391:									
Rock outcrop-----------	---	---	---	---	0	0	None	---	---
Lithic Torriorthents---	Bedrock (lithic)	8-20	---	---	0	0	None	High	Low
401:									
Godde------------------	Bedrock (lithic)	10-20	---	---	0	0	None	Moderate	Moderate
Xerorthents------------	Bedrock (lithic)	5-20	---	---	0	0	None	Low	Low
Rock outcrop-----------	---	---	---	---	0	0	None	---	---
408:									
Gaviota----------------	Bedrock (lithic)	12-20	---	---	0	0	---	Low	Low

Table 18.--Soil Features--Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Restrictive layer: Thickness	Restrictive layer: Hardness	Subsidence: Initial	Subsidence: Total	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In	*In*		*In*	*In*			
408:									
San Andreas	Bedrock (paralithic)	20-40	---	---	0	0	---	Moderate	Moderate
409:									
Gaviota	Bedrock (lithic)	6-20	---	---	0	0	None	Moderate	Moderate
Saltos	Bedrock (lithic)	8-14	---	---	0	0	None	High	Low
Rock outcrop	---	---	---	---	0	0	None	---	---
410:									
Gaviota	Bedrock (lithic)	6-20	---	---	0	0	None	Moderate	Moderate
Rock outcrop	---	---	---	---	0	0	None	---	---
411:									
Tajea	Bedrock (lithic)	20-40	---	---	0	0	None	High	Low
Saltos	Bedrock (lithic)	8-14	---	---	0	0	None	High	Low
412:									
Tajea	Bedrock (lithic)	20-40	---	---	0	0	None	High	Low
Saltos	Bedrock (lithic)	8-14	---	---	0	0	None	High	Low
420:									
Bellyspring	Bedrock (lithic)	40-60	---	---	0	0	None	High	Low
Saltos	Bedrock (lithic)	8-14	---	---	0	0	None	High	Low
Rock outcrop	---	---	---	---	0	0	None	---	---
430:									
Saucito	Bedrock (lithic)	10-20	---	---	0	0	None	High	Low
Akad	Bedrock (lithic)	20-30	---	---	0	0	None	High	Low
Rock outcrop	---	---	---	---	0	0	None	---	---
440:									
Bellyspring	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
Panoza	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
441:									
Bellyspring	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low

Table 18.--Soil Features--Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Restrictive layer: Thickness	Restrictive layer: Hardness	Subsidence: Initial	Subsidence: Total	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In	*In*		*In*	*In*			
441:									
Panoza	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
442:									
Bellyspring	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
Panoza	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
443:									
Bellyspring	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
Beam	Bedrock (paralithic)	14-20	---	---	0	0	None	High	Low
Panoza	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
445:									
Bellyspring	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
Xerorthents	Bedrock (lithic)	20-40	---	---	0	0	None	High	Low
Panoza	Bedrock (paralithic)	20-40	---	---	0	0	None	High	Low
450:									
Botella	---	---	---	---	0	0	None	Moderate	Moderate
460:									
Camatta	Petrocalcic	8-19	4-17	Indurated	0	0	None	High	Low
470:									
Botella	---	---	---	---	0	0	None	Moderate	Moderate
474:									
Elder	---	---	---	---	0	0	None	Moderate	Moderate
475:									
Elder	---	---	---	---	0	0	None	Moderate	Moderate
480:									
Metz	---	---	---	---	0	0	None	High	Low
490:									
Wasioja	---	---	---	---	0	0	None	High	Low

Table 18.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
491:									
Wasioja----------------	---	---	---	---	0	0	None	High	Low
495:									
Wasioja----------------	---	---	---	---	0	0	None	High	Low
Polonio----------------	---	---	---	---	0	0	None	High	Low
497:									
Wasioja----------------	---	---	---	---	0	0	None	High	Low
Pinspring--------------	---	---	---	---	0	0	None	High	Low
Yeguas-----------------	---	---	---	---	0	0	None	High	Low
512:									
Shimmon----------------	Bedrock (paralithic)	20-40	---	---	0	0	None	Moderate	Moderate
520:									
Santa Lucia------------	Bedrock (lithic)	20-40	---	---	0	0	---	High	Moderate
521:									
Santa Lucia------------	Bedrock (lithic)	20-40	---	---	0	0	None	High	High
522:									
Santa Lucia------------	Bedrock (lithic)	20-40	---	---	0	0	None	High	High
531:									
Saltos-----------------	Bedrock (lithic)	8-14	---	---	0	0	None	High	Low
Millsholm--------------	Bedrock (lithic)	10-20	---	---	0	0	None	Moderate	Moderate
561:									
Chanac-----------------	---	---	---	---	0	0	None	High	Low
562:									
Chanac-----------------	---	---	---	---	0	0	None	High	Low
900:									
Pits-------------------	---	---	---	---	0	0	None	---	---
905:									
Xerofluvents-----------	---	---	---	---	0	0	None	High	Low
Riverwash--------------	---	---	---	---	0	0	None	High	Low
906:									
Xerofluvents-----------	---	---	---	---	0	0	None	High	Low

Table 18.--Soil Features--Continued

Map symbol and soil name	Restrictive layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		In	*In*		*In*	*In*			
908:									
Xerorthents------------	Bedrock (lithic)	40-60	---	---	0	0	None	High	Low
910:									
Playas-----------------	---	---	---	---	0	0	None	High	High
911:									
Playas-----------------	---	---	---	---	0	0	None	High	High
912:									
Water.									

Table 19.--Water Features

[Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated]

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	*Ft*	*Ft*				
100:									
Balcom	B	Jan-Dec	---	---	---	---	None	---	None
101:									
Balcom	B	Jan-Dec	---	---	---	---	None	---	None
Nacimiento	C	Jan-Dec	---	---	---	---	None	---	None
102:									
Balcom	B	Jan-Dec	---	---	---	---	None	---	None
Nacimiento	C	Jan-Dec	---	---	---	---	None	---	None
103:									
Balcom	B	Jan-Dec	---	---	---	---	None	---	None
Nacimiento	C	Jan-Dec	---	---	---	---	None	---	None
109:									
Capay	D	Jan-Dec	---	---	---	---	None	---	None
110:									
Capay	D	Jan-Dec	---	---	---	---	None	---	None
112:									
Calleguas	D	Jan-Dec	---	---	---	---	None	---	None
Balcom	B	Jan-Dec	---	---	---	---	None	---	None
114:									
Calleguas	D	Jan-Dec	---	---	---	---	None	---	None
Nacimiento	C	Jan-Dec	---	---	---	---	None	---	None
20:									
Hillbrick	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
121:									
Hillbrick	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
123:									
Lithic Torriorthents	D	Jan-Dec	---	---	---	---	None	---	None
Semper	C	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
129:									
Kilmer	C	Jan-Dec	---	---	---	---	None	---	None
Hillbrick	D	Jan-Dec	---	---	---	---	None	---	None
130:									
Kilmer	C	Jan-Dec	---	---	---	---	None	---	None
Hillbrick	D	Jan-Dec	---	---	---	---	None	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
131:									
Kilmer	C	Jan-Dec	---	---	---	---	None	---	None
Hillbrick	D	Jan-Dec	---	---	---	---	None	---	None
134:									
Kilmer	C	Jan-Dec	---	---	---	---	None	---	None
Nacimiento	C	Jan-Dec	---	---	---	---	None	---	None
Aido	D	Jan-Dec	---	---	---	---	None	---	None
140:									
Choice	D	Jan-Dec	---	---	---	---	None	---	None
149:									
San Emigdio	B	Jan-Dec	---	---	---	---	None	---	None
150:									
San Emigdio	B	Jan-Dec	---	---	---	---	None	---	None
154:									
San Emigdio	B	Jan-Dec	---	---	---	---	None	---	None
155:									
San Emigdio	B	Jan-Dec	---	---	---	---	None	---	None
159:									
Sorrento	B	Jan-Dec	---	---	---	---	None	---	None
160:									
Sorrento	B	Jan-Dec	---	---	---	---	None	---	None
169:									
Polonio	B	Jan-Dec	---	---	---	---	None	---	None
170:									
Polonio	B	Jan-Dec	---	---	---	---	None	---	None
173:									
Polonio	B	Jan-Dec	---	---	---	---	None	---	None
174:									
Polonio	B	Jan-Dec	---	---	---	---	None	---	None
Thomhill	B	Jan-Dec	---	---	---	---	None	---	None
175:									
Polonio	B	Jan-Dec	---	---	---	---	None	---	None
Thomhill	B	Jan-Dec	---	---	---	---	None	---	None
179:									
Padres	B	Jan-Dec	---	---	---	---	None	---	None
180:									
Padres	B	Jan-Dec	---	---	---	---	None	---	None
182:									
Oceano	A	Jan-Dec	---	---	---	---	None	---	None
190:									
Reward	B	Jan-Dec	---	---	---	---	None	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
191:									
Reward	B	Jan-Dec	---	---	---	---	None	---	None
200:									
Aramburu	C	Jan-Dec	---	---	---	---	None	---	None
201:									
Aramburu	C	Jan-Dec	---	---	---	---	None	---	None
202:									
Aramburu	C	Jan-Dec	---	---	---	---	None	---	None
204:									
Aramburu	C	Jan-Dec	---	---	---	---	None	---	None
Temblor	D	Jan-Dec	---	---	---	---	None	---	None
205:									
Aramburu	C	Jan-Dec	---	---	---	---	None	---	None
Temblor	D	Jan-Dec	---	---	---	---	None	---	None
218:									
Seaback	D	Jan-Dec	---	---	---	---	None	---	None
Calleguas	D	Jan-Dec	---	---	---	---	None	---	None
Panoza	B	Jan-Dec	---	---	---	---	None	---	None
219:									
Xerorthents	D								
		Jan-Dec	---	---	---	---	None	---	None
Badlands	D	Jan-Dec	---	---	---	---	None	---	None
220:									
Beam	D	Jan-Dec	---	---	---	---	None	---	None
Panoza	B	Jan-Dec	---	---	---	---	None	---	None
Hillbrick	D	Jan-Dec	---	---	---	---	None	---	None
221:									
Beam	D	Jan-Dec	---	---	---	---	None	---	None
Panoza	B	Jan-Dec	---	---	---	---	None	---	None
Hillbrick	D	Jan-Dec	---	---	---	---	None	---	None
222:									
Beam	D	Jan-Dec	---	---	---	---	None	---	None
Panoza	B	Jan-Dec	---	---	---	---	None	---	None
Hillbrick	D	Jan-Dec	---	---	---	---	None	---	None
227:									
Beam	D	Jan-Dec	---	---	---	---	None	---	None
Panoza	B	Jan-Dec	---	---	---	---	None	---	None
228:									
Beam	D	Jan-Dec	---	---	---	---	None	---	None
Panoza	B	Jan-Dec	---	---	---	---	None	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
229:									
Seaback-------------------	D	Jan-Dec	---	---	---	---	None	---	None
San Timoteo---------------	B	Jan-Dec	---	---	---	---	None	---	None
230:									
Padres--------------------	B	Jan-Dec	---	---	---	---	None	---	None
Wasioja-------------------	B	Jan-Dec	---	---	---	---	None	---	None
240:									
Panoza--------------------	B	Jan-Dec	---	---	---	---	None	---	None
Beam----------------------	D	Jan-Dec	---	---	---	---	None	---	None
241:									
Panoza--------------------	B	Jan-Dec	---	---	---	---	None	---	None
Beam----------------------	D	Jan-Dec	---	---	---	---	None	---	None
242:									
Panoza--------------------	B	Jan-Dec	---	---	---	---	None	---	None
Beam----------------------	D	Jan-Dec	---	---	---	---	None	---	None
248:									
Pyxo----------------------	B	Jan-Dec	---	---	---	---	None	---	None
Cochora-------------------	C	Jan-Dec	---	---	---	---	None	---	None
249:									
Xeric Torriorthents-------	D	Jan-Dec	---	---	---	---	None	---	None
250:									
Pyxo----------------------	B	Jan-Dec	---	---	---	---	None	---	None
Cochora-------------------	C	Jan-Dec	---	---	---	---	None	---	None
Badlands------------------	---	Jan-Dec	---	---	---	---	None	---	None
251:									
Nacimiento----------------	C	Jan-Dec	---	---	---	---	None	---	None
252:									
Nacimiento----------------	C	Jan-Dec	---	---	---	---	None	---	None
261:									
Aido----------------------	D	Jan-Dec	---	---	---	---	None	---	None
262:									
Aido----------------------	D	Jan-Dec	---	---	---	---	None	---	None
263:									
Aido----------------------	D	Jan-Dec	---	---	---	---	None	---	None
270:									
Ayar----------------------	D	Jan-Dec	---	---	---	---	None	---	None
271:									
Ayar----------------------	D	Jan-Dec	---	---	---	---	None	---	None
274:									
Ayar----------------------	D	Jan-Dec	---	---	---	---	None	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
274:									
Hillbrick	D	Jan-Dec	---	---	---	---	None	---	None
Aido	D	Jan-Dec	---	---	---	---	None	---	None
275:									
Ayar	D	Jan-Dec	---	---	---	---	None	---	None
Hillbrick	D	Jan-Dec	---	---	---	---	None	---	None
Aido	D	Jan-Dec	---	---	---	---	None	---	None
		Jan-Dec	---	---	---	---	None	---	None
280:									
Seaback	D	Jan-Dec	---	---	---	---	None	---	None
Panoza	B	Jan-Dec	---	---	---	---	None	---	None
Jenks	B	Jan-Dec	---	---	---	---	None	---	None
281:									
Seaback	D	Jan-Dec	---	---	---	---	None	---	None
Panoza	B	Jan-Dec	---	---	---	---	None	---	None
Jenks	B	Jan-Dec	---	---	---	---	None	---	None
282:									
Seaback	D	Jan-Dec	---	---	---	---	None	---	None
Panoza	B	Jan-Dec	---	---	---	---	None	---	None
Jenks	B	Jan-Dec	---	---	---	---	None	---	None
290:									
San Timoteo	B	Jan-Dec	---	---	---	---	None	---	None
San Andreas	B	Jan-Dec	---	---	---	---	None	---	None
Bellyspring	C	Jan-Dec	---	---	---	---	None	---	None
291:									
San Timoteo	B	Jan-Dec	---	---	---	---	None	---	None
San Andreas	B	Jan-Dec	---	---	---	---	None	---	None
Bellyspring	C	Jan-Dec	---	---	---	---	None	---	None
292:									
San Timoteo	B	Jan-Dec	---	---	---	---	None	---	None
San Andreas	B	Jan-Dec	---	---	---	---	None	---	None
Bellyspring	C	Jan-Dec	---	---	---	---	None	---	None
301:									
Arbuckle	B	Jan-Dec	---	---	---	---	None	---	None
302:									
Arbuckle	B	Jan-Dec	---	---	---	---	None	---	None
303:									
Arbuckle	B	Jan-Dec	---	---	---	---	None	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
304:									
Arbuckle	B	Jan-Dec	---	---	---	---	None	---	None
306:									
Arbuckle	B	Jan-Dec	---	---	---	---	None	---	None
307:									
Arbuckle	B	Jan-Dec	---	---	---	---	None	---	None
310:									
Yeguas	C	Jan-Dec	---	---	---	---	None	---	None
Pinspring	C	Jan-Dec	---	---	---	---	None	---	None
311:									
Yeguas	C	Jan-Dec	---	---	---	---	None	---	None
Pinspring	C	Jan-Dec	---	---	---	---	None	---	None
321:									
Thomhill	B	Jan-Dec	---	---	---	---	None	---	None
330:									
Jenks	B	Jan-Dec	---	---	---	---	None	---	None
339:									
Arnold	A	Jan-Dec	---	---	---	---	None	---	None
San Andreas	B	Jan-Dec	---	---	---	---	None	---	None
340:									
Arnold	A	Jan-Dec	---	---	---	---	None	---	None
San Andreas	B	Jan-Dec	---	---	---	---	None	---	None
350:									
Cieneba	C	Jan-Dec	---	---	---	---	None	---	None
360:									
Chicote	D	January	---	---	---	Brief	Frequent	---	Rare
		February	---	---	---	Brief	Frequent	---	Rare
		March	---	---	---	Brief	Frequent	---	Rare
		April	---	---	---	Brief	Frequent	---	Rare
		May	---	---	---	Brief	Rare	---	Rare
		June	---	---	---	Brief	Rare	---	Rare
		July	---	---	---	---	None	---	Rare
		August	---	---	---	---	None	---	Rare
		September	---	---	---	---	None	---	Rare
		October	---	---	---	Brief	Rare	---	Rare
		November	---	---	---	Brief	Rare	---	Rare
		December	---	---	---	Brief	Frequent	---	Rare
Chicote	D	January	---	---	---	Brief	Frequent	---	Rare
		February	---	---	---	Brief	Frequent	---	Rare
		March	---	---	---	Brief	Frequent	---	Rare
		April	---	---	---	Brief	Frequent	---	Rare
		May	---	---	---	Brief	Rare	---	Rare
		June	---	---	---	Brief	Rare	---	Rare
		July	---	---	---	---	None	---	Rare
		August	---	---	---	---	None	---	Rare
		September	---	---	---	---	None	---	Rare
		October	---	---	---	Brief	Rare	---	Rare
		November	---	---	---	Brief	Rare	---	Rare
		December	---	---	---	Brief	Frequent	---	Rare

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
361:									
Chicote	D	January	---	---	---	Brief	Frequent	---	Rare
		February	---	---	---	Brief	Frequent	---	Rare
		March	---	---	---	Brief	Frequent	---	Rare
		April	---	---	---	Brief	Frequent	---	Rare
		May	---	---	---	Brief	Rare	---	Rare
		June	---	---	---	Brief	Rare	---	Rare
		July	---	---	---	---	None	---	Rare
		August	---	---	---	---	None	---	Rare
		September	---	---	---	---	None	---	Rare
		October	---	---	---	Brief	Rare	---	Rare
		November	---	---	---	Brief	Rare	---	Rare
		December	---	---	---	Brief	Frequent	---	Rare
Chicote	D	January	---	---	---	Brief	Frequent	---	Rare
		February	---	---	---	Brief	Frequent	---	Rare
		March	---	---	---	Brief	Frequent	---	Rare
		April	---	---	---	Brief	Frequent	---	Rare
		May	---	---	---	Brief	Rare	---	Rare
		June	---	---	---	Brief	Rare	---	Rare
		July	---	---	---	---	None	---	Rare
		August	---	---	---	---	None	---	Rare
		September	---	---	---	---	None	---	Rare
		October	---	---	---	Brief	Rare	---	Rare
		November	---	---	---	Brief	Rare	---	Rare
		December	---	---	---	Brief	Frequent	---	Rare
362:									
Chicote	D	January	---	---	---	Brief	Frequent	---	Rare
		February	---	---	---	Brief	Frequent	---	Rare
		March	---	---	---	Brief	Frequent	---	Rare
		April	---	---	---	Brief	Frequent	---	Rare
		May	---	---	---	Brief	Rare	---	Rare
		June	---	---	---	Brief	Rare	---	Rare
		July	---	---	---	---	None	---	Rare
		August	---	---	---	---	None	---	Rare
		September	---	---	---	---	None	---	Rare
		October	---	---	---	Brief	Rare	---	Rare
		November	---	---	---	Brief	Rare	---	Rare
		December	---	---	---	Brief	Frequent	---	Rare
Chicote	D	January	---	---	---	Brief	Frequent	---	Rare
		February	---	---	---	Brief	Frequent	---	Rare
		March	---	---	---	Brief	Frequent	---	Rare
		April	---	---	---	Brief	Frequent	---	Rare
		May	---	---	---	Brief	Rare	---	Rare
		June	---	---	---	Brief	Rare	---	Rare
		July	---	---	---	---	None	---	Rare
		August	---	---	---	---	None	---	Rare
		September	---	---	---	---	None	---	Rare
		October	---	---	---	Brief	Rare	---	Rare
		November	---	---	---	Brief	Rare	---	Rare
		December	---	---	---	Brief	Frequent	---	Rare
371:									
Semper	C	Jan-Dec	---	---	---	---	None	---	None
372:									
Semper	C	Jan-Dec	---	---	---	---	None	---	None
375:									
Semper	C	Jan-Dec	---	---	---	---	None	---	None
Badlands	D	Jan-Dec	---	---	---	---	None	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	*Ft*	*Ft*				
380:									
Muranch	C	Jan-Dec	---	---	---	---	None	---	None
Xerorthents	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
388:									
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
Gaviota	D	Jan-Dec	---	---	---	---	None	---	None
391:									
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
Lithic Torriorthents	D	Jan-Dec	---	---	---	---	None	---	None
401:									
Godde	D	Jan-Dec	---	---	---	---	None	---	None
Xerorthents	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
408:									
Gaviota	D	Jan-Dec	---	---	---	---	None	---	None
San Andreas	B	Jan-Dec	---	---	---	---	None	---	None
409:									
Gaviota	D	Jan-Dec	---	---	---	---	None	---	None
Saltos	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
410:									
Gaviota	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
411:									
Tajea	B	Jan-Dec	---	---	---	---	None	---	None
Saltos	D	Jan-Dec	---	---	---	---	None	---	None
412:									
Tajea	---	Jan-Dec	---	---	---	---	None	---	None
Saltos	D	Jan-Dec	---	---	---	---	None	---	None
420:									
Bellyspring	D	Jan-Dec	---	---	---	---	None	---	None
Saltos	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
430:									
Saucito	D	Jan-Dec	---	---	---	---	None	---	None
Akad	C	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	*Ft*	*Ft*				
440:									
Bellyspring	C	Jan-Dec	---	---	---	---	None	---	None
Panoza	B	Jan-Dec	---	---	---	---	None	---	None
441:									
Bellyspring	C	Jan-Dec	---	---	---	---	None	---	None
Panoza	B	Jan-Dec	---	---	---	---	None	---	None
442:									
Bellyspring	C	Jan-Dec	---	---	---	---	None	---	None
Panoza	B	Jan-Dec	---	---	---	---	None	---	None
443:									
Bellyspring	---	Jan-Dec	---	---	---	---	None	---	None
Beam	---	Jan-Dec	---	---	---	---	None	---	None
Panoza	B	Jan-Dec	---	---	---	---	None	---	None
445:									
Bellyspring	C	Jan-Dec	---	---	---	---	None	---	None
Xerorthents	D	Jan-Dec	---	---	---	---	None	---	None
Panoza	B	Jan-Dec	---	---	---	---	None	---	None
450:									
Botella	---	Jan-Dec	---	---	---	---	None	---	None
460:									
Camatta	D	Jan-Dec	---	---	---	---	None	---	None
470:									
Botella	---	Jan-Dec	---	---	---	---	None	---	None
474:									
Elder	B	Jan-Dec	---	---	---	---	None	---	None
475:									
Elder	B	Jan-Dec	---	---	---	---	None	---	None
480:									
Metz	B	January	---	---	---	---	None	---	Rare
		February	---	---	---	---	None	---	Rare
		March	---	---	---	---	None	---	Rare
		April	---	---	---	---	None	---	Rare
		May	---	---	---	---	None	---	Rare
		June	---	---	---	---	None	---	Rare
		July	---	---	---	---	None	---	Rare
		August	---	---	---	---	None	---	Rare
		September	---	---	---	---	None	---	Rare
		October	---	---	---	---	None	---	Rare
		November	---	---	---	---	None	---	Rare
		December	---	---	---	---	None	---	Rare
490:									
Wasioja	B	Jan-Dec	---	---	---	---	None	---	None
491:									
Wasioja	B	Jan-Dec	---	---	---	---	None	---	None

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
495:									
Wasioja	B	Jan-Dec	---	---	---	---	None	---	None
Polonio	B	Jan-Dec	---	---	---	---	None	---	None
497:									
Wasioja	B	Jan-Dec	---	---	---	---	None	---	None
Pinspring	C	Jan-Dec	---	---	---	---	None	---	None
Yeguas	C	Jan-Dec	---	---	---	---	None	---	None
512:									
Shimmon	C	Jan-Dec	---	---	---	---	None	---	None
520:									
Santa Lucia	C	Jan-Dec	---	---	---	---	None	---	None
521:									
Santa Lucia	C	Jan-Dec	---	---	---	---	None	---	None
522:									
Santa Lucia	C	Jan-Dec	---	---	---	---	None	---	None
531:									
Saltos	D	Jan-Dec	---	---	---	---	None	---	None
Millsholm	---	Jan-Dec	---	---	---	---	None	---	None
561:									
Chanac	B	Jan-Dec	---	---	---	---	None	---	None
562:									
Chanac	B	Jan-Dec	---	---	---	---	None	---	None
900:									
Pits	---	January	---	---	---	Brief	Occasional	Brief	Occasional
		February	---	---	---	Brief	Occasional	Brief	Occasional
		March	---	---	---	Brief	Occasional	Brief	Occasional
		December	---	---	---	Brief	Occasional	Brief	Occasional
905:									
Xerofluvents	B	January	2.5-5.0	>6.0	---	---	None	Brief	Frequent
		February	2.5-5.0	>6.0	---	---	None	Brief	Frequent
		March	2.5-5.0	>6.0	---	---	None	Brief	Frequent
		April	2.5-5.0	>6.0	---	---	None	---	None
		November	---	---	---	---	None	Brief	Frequent
		December	2.5-5.0	>6.0	---	---	None	Brief	Frequent
Riverwash	D	January	0.0-2.0	>6.0	---	---	None	Very long	Frequent
		February	0.0-2.0	>6.0	---	---	None	Very long	Frequent
		March	0.0-2.0	>6.0	---	---	None	Very long	Frequent
		April	0.0-2.0	>6.0	---	---	None	Very long	Frequent
		May	0.0-2.0	>6.0	---	---	None	Very long	Frequent
		June	0.0-2.0	>6.0	---	---	None	Very long	Frequent
		July	0.0-2.0	>6.0	---	---	None	Very long	Frequent
		August	0.0-2.0	>6.0	---	---	None	---	None
		September	0.0-2.0	>6.0	---	---	None	---	None
		October	0.0-2.0	>6.0	---	---	None	Very long	Frequent
		November	0.0-2.0	>6.0	---	---	None	Very long	Frequent
		December	0.0-2.0	>6.0	---	---	None	Very long	Frequent

Table 19.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	*Ft*	*Ft*				
906:									
Xerofluvents	C	January	2.5-5.0	>6.0	---	Brief	Occasional	Brief	Occasional
		February	2.5-5.0	>6.0	---	Brief	Occasional	Brief	Occasional
		March	2.5-5.0	>6.0	---	Brief	Occasional	Brief	Occasional
		April	2.5-5.0	>6.0	---	---	None	---	None
		December	2.5-5.0	>6.0	---	Brief	Occasional	Brief	Occasional
908:									
Xerorthents	D	Jan-Dec	---	---	---	---	None	---	None
910:									
Playas	D	January	0.0	>6.0	0.0-1.0	Long	Frequent	---	Rare
		February	0.0	>6.0	0.0-1.0	Long	Frequent	---	Rare
		March	0.0	>6.0	0.0-1.0	Long	Frequent	---	Rare
		April	0.0	>6.0	0.0-1.0	Long	Frequent	---	Rare
		May	0.0	>6.0	0.0-1.0	Long	Frequent	---	Rare
		June	0.0	>6.0	0.0-1.0	Long	Frequent	---	Rare
		July	0.0	>6.0	0.0-1.0	Long	Frequent	---	Rare
		August	0.0	>6.0	0.0-1.0	Brief	Occasional	---	Rare
		September	0.0	>6.0	0.0-1.0	Brief	Occasional	---	Rare
		October	0.0	>6.0	0.0-1.0	Brief	Occasional	---	Rare
		November	0.0	>6.0	0.0-1.0	Brief	Occasional	---	Rare
		December	0.0	>6.0	0.0-1.0	Long	Frequent	---	Rare
911:									
Playas	D	January	0.0	>6.0	0.0-1.0	Brief	Occasional	---	Rare
		February	0.0	>6.0	0.0-1.0	Brief	Occasional	---	Rare
		March	0.0	>6.0	0.0-1.0	Brief	Occasional	---	Rare
		April	0.0	>6.0	0.0-1.0	Brief	Occasional	---	Rare
		May	0.0	>6.0	0.0-1.0	Brief	Occasional	---	Rare
		June	0.0	>6.0	0.0-1.0	Brief	Occasional	---	Rare
		July	0.0	>6.0	0.0-1.0	Brief	Occasional	---	Rare
		August	0.0	>6.0	---	---	None	---	Rare
		September	0.0	>6.0	---	---	None	---	Rare
		October	0.0	>6.0	---	---	None	---	Rare
		November	0.0	>6.0	---	---	None	---	Rare
		December	0.0	>6.0	0.0-1.0	Brief	Occasional	---	Rare

Table 20.--Classification of the Soils

[An asterisk in the first column indicates that the soil is a taxadjunct to the series. See text for a description of those characteristics that are outside the range of the series]

Soil name	Family or higher taxonomic class
Aido	Fine, smectitic, thermic Aridic Haploxererts
Akad	Loamy-skeletal, mixed, superactive, thermic Mollic Haploxeralfs
Aramburu	Loamy-skeletal, mixed, superactive, thermic Pachic Haploxerolls
Arbuckle	Fine-loamy, mixed, superactive, thermic Typic Haploxeralfs
Arnold	Mixed, thermic Typic Xeropsamments
*Ayar	Fine, smectitic, thermic Typic Haploxererts
Balcom	Fine-loamy, mixed, superactive, thermic Typic Calcixerepts
Beam	Loamy, mixed, superactive, calcareous, thermic, shallow Xeric Haplocambids
Bellyspring	Fine-loamy, mixed, superactive, thermic Mollic Haploxeralfs
Botella	Fine-loamy, mixed, superactive, thermic Pachic Argixerolls
Calleguas	Loamy, mixed, superactive, calcareous, thermic, shallow Typic Xerorthents
Camatta	Loamy, mixed, superactive, thermic, shallow Xeric Petrocalcids
Capay	Fine, smectitic, thermic typic Haploxererts
Chanac	Fine-loamy, mixed, superactive, thermic Calcic Haploxerepts
Chicote	Fine, smectitic, thermic Typic Natrixeralfs
Choice	Fine, mixed, superactive, calcareous, thermic Typic Xerorthents
Cieneba	Loamy, mixed, superactive, nonacid, thermic, shallow Typic Xerorthents
Cochora	Loamy, mixed, superactive, calcareous, thermic, shallow Typic Torriorthents
Elder	Coarse-loamy, mixed, superactive, thermic Cumulic Haploxerolls
Gaviota	Loamy, mixed, superactive, nonacid, thermic Lithic Xerorthents
Godde	Loamy, mixed, superactive, mesic Lithic Haploxerolls
Hillbrick	Loamy, mixed, superactive, calcareous, thermic Lithic Xerorthents
Jenks	Fine-loamy, mixed, superactive, thermic Aridic Haploxerolls
Kilmer	Fine-loamy, mixed, superactive, calcareous, thermic Typic Xerorthents
Lithic Torriorthents	Lithic Torriorthents
Metz	Sandy, mixed, thermic Typic Xerofluvents
Millsholm	Loamy, Mixed, superactive, thermic Lithic Xerochrepts
Muranch	Loamy-skeletal, mixed, superactive, thermic Aridic Haploxerolls
Nacimiento	Fine-loamy, mixed, superactive, thermic Calcic Haploxerolls
Oceano	Mixed, thermic Lamellic Xeropsamments
Padres	Coarse-loamy, mixed, superactive, thermic Typic Calcixerepts
Panoza	Fine-loamy, mixed, superactive, thermic Calcic Haploxerepts
Pinspring	Fine-loamy, mixed, superactive, thermic Typic Haploxeralfs
Polonio	Fine-loamy, mixed, superactive, thermic Calcic Haploxerepts
Pyxo	Coarse-loamy, mixed, superactive, thermic Typic Haplocambids
Reward	Fine-loamy, mixed, superactive, thermic Calcic Pachic Haploxerolls
Saltos	Loamy, mixed, superactive, thermic Lithic Mollic Haploxeralfs
San Andreas	Coarse-loamy, mixed, superactive, thermic Typic Haploxerolls
San Emigdio	Coarse-loamy, mixed, superactive, calcareous, thermic Typic Xerofluvents
San Timoteo	Coarse-loamy, mixed, superactive, calcareous, thermic Typic Xerorthents
Santa Lucia	Clayey-skeletal, mixed, superactive, thermic Pachic Ultic Haploxerolls
Saucito	Loamy-skeletal, mixed, superactive, thermic Lithic Haploxeralfs
Seaback	Loamy, mixed, superactive, thermic, shallow Calcic Haploxerepts
Semper	Coarse-loamy, mixed, superactive, thermic Gypsic Haploxerepts
Shimmon	Fine-loamy, mixed, superactive, thermic Typic Argixerolls
Sorrento	Fine-loamy, mixed, superactive, thermic Calcic Haploxerolls
Tajea	Fine-loamy, mixed, superactive, thermic Typic Argixerolls
Temblor	Loamy-skeletal, mixed, superactive, thermic Lithic Haploxerolls
Thomhill	Fine-loamy, mixed, superactive, thermic Calcic Haploxerolls
Wasioja	Fine-loamy, mixed, superactive, thermic typic Haploxeralfs
Xeric Torriorthents	Xeric Torriorthents
Xerofluvents	Xerofluvents
Xerorthents	Xerorthents
Yeguas	Fine, mixed, superactive, thermic Typic Haploxeralfs