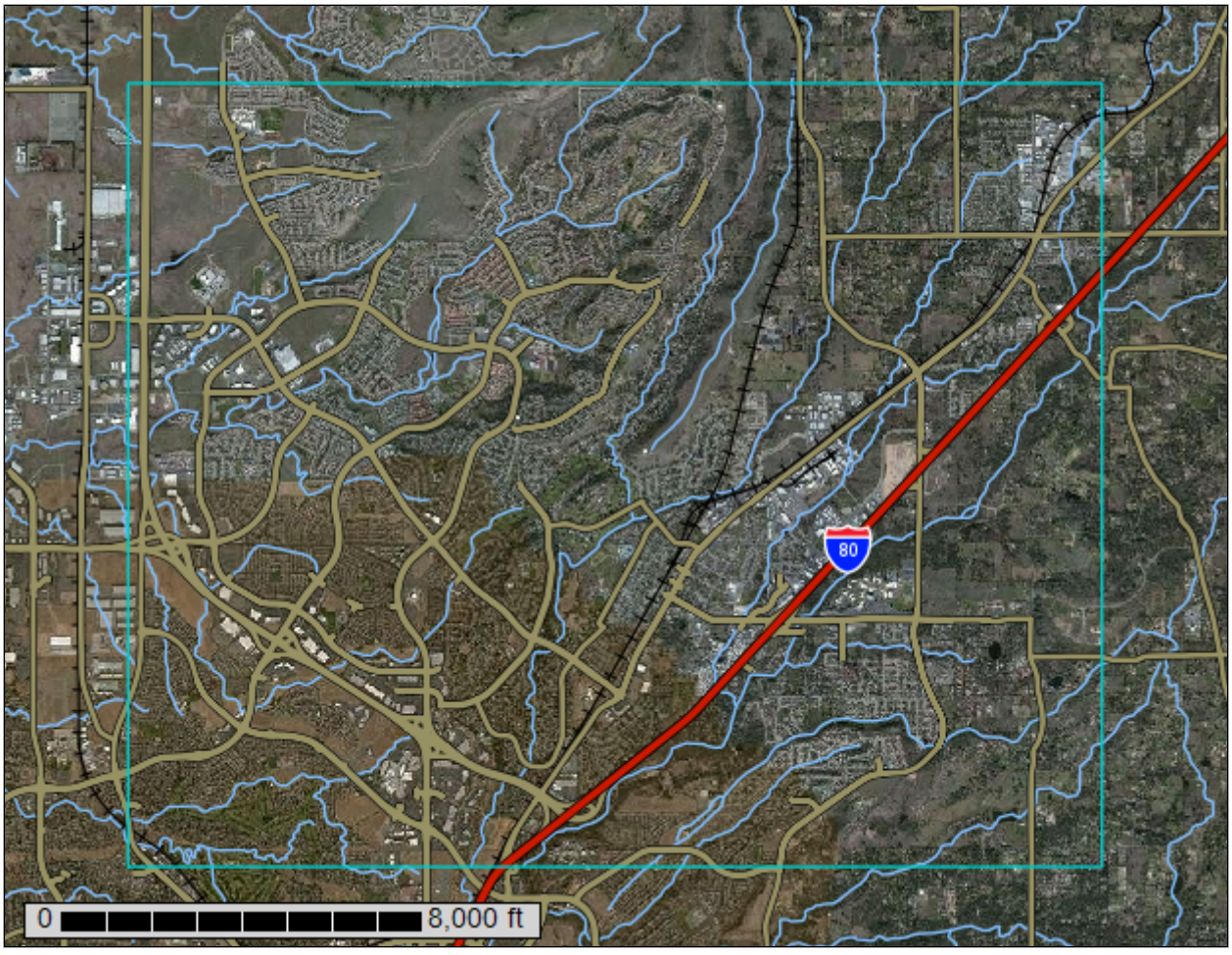
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product 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 participants

Custom Soil Resource Report for Placer County, California, Western Part



May 1, 2015

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

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

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. 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.

The National Cooperative Soil Survey is 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 (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various 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 observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

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

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

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

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

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.

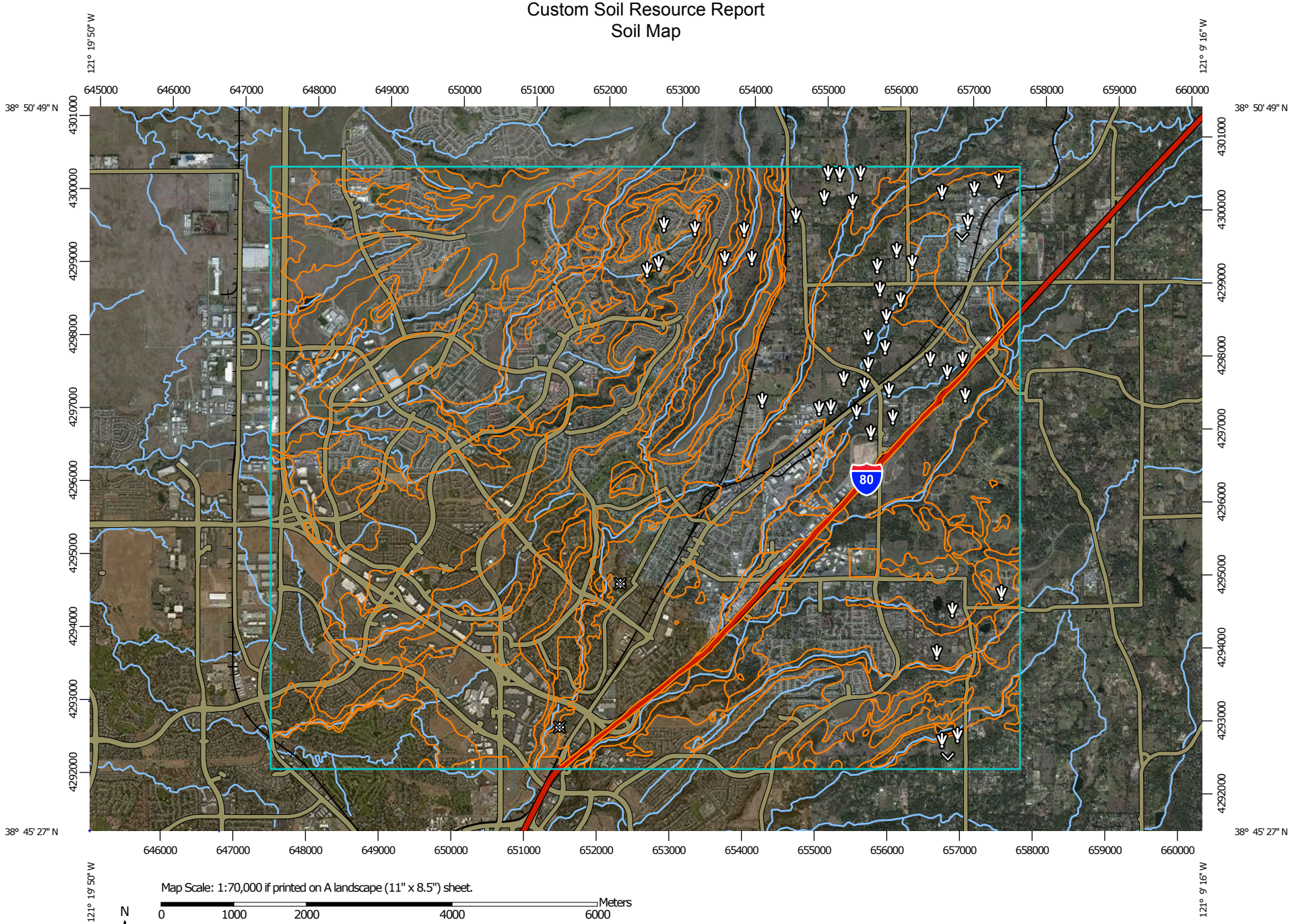
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree 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.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Placer County, California, Western Part
Survey Area Data: Version 7, Sep 17, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 15, 2011—Oct 24, 2013

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Placer County, California, Western Part (CA620)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
104	Alamo-Fiddyment complex, 0 to 5 percent slopes	48.1	0.2%
105	Alamo variant clay, 2 to 15 percent slopes	849.7	4.0%
106	Andregg coarse sandy loam, 2 to 9 percent slopes	5,505.7	26.1%
107	Andregg coarse sandy loam, 9 to 15 percent slopes	231.1	1.1%
109	Andregg coarse sandy loam, rocky, 2 to 15 percent slopes	273.0	1.3%
110	Andregg coarse sandy loam, rocky, 15 to 30 percent slopes	5.8	0.0%
111	Andregg coarse sandy loam, rocky, 30 to 50 percent slopes	4.8	0.0%
113	Andregg-Shenandoah complex, 2 to 15 percent slopes	13.1	0.1%
130	Caperton-Andregg coarse sandy loams, 2 to 15 percent slopes	125.4	0.6%
132	Caperton-Rock outcrop complex, 2 to 30 percent slopes	116.6	0.6%
133	Caperton-Rock outcrop complex, 30 to 50 percent slopes	77.2	0.4%
140	Cometa sandy loam, 1 to 5 percent slopes	220.6	1.0%
141	Cometa-Fiddyment complex, 1 to 5 percent slopes	666.9	3.2%
142	Cometa-Ramona sandy loams, 1 to 5 percent slopes	1,785.2	8.5%
144	Exchequer very stony loam, 2 to 15 percent slopes	1,892.7	9.0%
145	Exchequer-Rock outcrop complex, 2 to 30 percent slopes	2,738.3	13.0%
146	Fiddyment loam, 1 to 8 percent slopes	24.0	0.1%
147	Fiddyment-Kaseberg loams, 2 to 9 percent slopes	601.6	2.9%
152	Inks cobbly loam, 2 to 30 percent slopes	535.4	2.5%
153	Inks cobbly loam, 30 to 50 percent slopes	665.2	3.2%
154	Inks-Exchequer complex, 2 to 25 percent slopes	2,465.1	11.7%

Placer County, California, Western Part (CA620)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
162	Kilaga loam	0.3	0.0%
173	Pits and dumps	49.0	0.2%
180	Rubble land	37.4	0.2%
193	Xerofluvents, occasionally flooded	94.6	0.4%
194	Xerofluvents, frequently flooded	990.9	4.7%
196	Xerorthents, cut and fill areas	633.1	3.0%
197	Xerorthents, placer areas	411.5	2.0%
198	Water	36.2	0.2%
Totals for Area of Interest		**21,098.7**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

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

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. 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 important soil properties and qualities.

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, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha 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. Alpha-Beta complex, 0 to 6 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. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Placer County, California, Western Part

104—Alamo-Fiddyment complex, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: hfyc
Elevation: 50 to 500 feet
Mean annual precipitation: 10 to 22 inches
Mean annual air temperature: 61 degrees F
Frost-free period: 230 to 300 days
Farmland classification: Not prime farmland

Map Unit Composition

Alamo and similar soils: 50 percent
Fiddyment and similar soils: 30 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Alamo

Setting

Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

H1 - 0 to 9 inches: clay
H2 - 9 to 37 inches: clay
H3 - 37 to 41 inches: indurated

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 37 to 41 inches to duripan
Natural drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): 4w
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: D

Description of Fiddyment

Setting

Landform: Ridges
Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sedimentary rock

Typical profile

H1 - 0 to 12 inches: loam
H2 - 12 to 28 inches: clay loam
H3 - 28 to 35 inches: indurated
H4 - 35 to 39 inches: weathered bedrock

Properties and qualities

Slope: 1 to 5 percent
Depth to restrictive feature: 20 to 35 inches to duripan; 35 to 39 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C

Minor Components

San joaquin, sandy loam

Percent of map unit: 10 percent

Cometa, sandy loam

Percent of map unit: 5 percent

Kaselburg, loam

Percent of map unit: 5 percent

105—Alamo variant clay, 2 to 15 percent slopes

Map Unit Setting

National map unit symbol: hfyd
Elevation: 100 to 200 feet
Mean annual precipitation: 20 to 25 inches
Mean annual air temperature: 61 degrees F
Frost-free period: 250 to 275 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Alamo variant and similar soils: 85 percent

Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Alamo Variant

Setting
Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile
H1 - 0 to 25 inches: clay
H2 - 25 to 36 inches: sandy clay
H3 - 36 to 40 inches: weathered bedrock

Properties and qualities
Slope: 2 to 15 percent
Depth to restrictive feature: 36 to 40 inches to paralithic bedrock
Natural drainage class: Somewhat poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 5.4 inches)

Interpretive groups
Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: D
Ecological site: Clayey (R017XD001CA)

Minor Components

Unnamed, shallow
Percent of map unit: 10 percent
Landform: Depressions

Unnamed, cobbly
Percent of map unit: 5 percent
Landform: Depressions

106—Andregg coarse sandy loam, 2 to 9 percent slopes

Map Unit Setting
National map unit symbol: hfyf

Elevation: 200 to 1,500 feet
Mean annual precipitation: 12 to 35 inches
Mean annual air temperature: 61 degrees F
Frost-free period: 200 to 270 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Andregg and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Andregg

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Residuum weathered from granite

Typical profile

H1 - 0 to 15 inches: coarse sandy loam
H2 - 15 to 29 inches: coarse sandy loam
H3 - 29 to 33 inches: weathered bedrock

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: 29 to 33 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.5 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: Granitic (R018XD080CA)

Minor Components

Sierra

Percent of map unit: 5 percent

Caperton

Percent of map unit: 5 percent

Unnamed, mod deep

Percent of map unit: 4 percent

Unnamed

Percent of map unit: 1 percent
Landform: Drainageways

107—Andregg coarse sandy loam, 9 to 15 percent slopes

Map Unit Setting

National map unit symbol: hfyg
Elevation: 200 to 1,500 feet
Mean annual precipitation: 12 to 35 inches
Mean annual air temperature: 61 degrees F
Frost-free period: 200 to 270 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Andregg and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Andregg

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Residuum weathered from granite

Typical profile

H1 - 0 to 15 inches: coarse sandy loam
H2 - 15 to 29 inches: coarse sandy loam
H3 - 29 to 33 inches: weathered bedrock

Properties and qualities

Slope: 9 to 15 percent
Depth to restrictive feature: 29 to 33 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.5 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: Granitic (R018XD080CA)

Minor Components

Caperton, coarse sandy loam
Percent of map unit: 5 percent

Andregg
Percent of map unit: 5 percent

Sierra, sandy loam
Percent of map unit: 3 percent

Unnamed
Percent of map unit: 2 percent

109—Andregg coarse sandy loam, rocky, 2 to 15 percent slopes

Map Unit Setting
National map unit symbol: hfyj
Elevation: 200 to 1,500 feet
Mean annual precipitation: 12 to 35 inches
Mean annual air temperature: 61 degrees F
Frost-free period: 200 to 270 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Andregg and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Andregg

Setting
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Residuum weathered from granite

Typical profile
H1 - 0 to 15 inches: coarse sandy loam
H2 - 15 to 29 inches: coarse sandy loam
H3 - 29 to 33 inches: weathered bedrock

Properties and qualities
Slope: 2 to 15 percent
Depth to restrictive feature: 29 to 33 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.5 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: Granitic (R018XD080CA)

Minor Components

Caperton

Percent of map unit: 5 percent

Sierra

Percent of map unit: 5 percent

Unnamed

Percent of map unit: 2 percent

Xerofluvents

Percent of map unit: 2 percent
Landform: Drainageways

Unnamed

Percent of map unit: 1 percent
Landform: Drainageways

110—Andregg coarse sandy loam, rocky, 15 to 30 percent slopes

Map Unit Setting

National map unit symbol: hfyk
Elevation: 200 to 1,500 feet
Mean annual precipitation: 12 to 35 inches
Mean annual air temperature: 61 degrees F
Frost-free period: 200 to 270 days
Farmland classification: Not prime farmland

Map Unit Composition

Andregg and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Andregg

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave

Across-slope shape: Convex
Parent material: Residuum weathered from granite

Typical profile
H1 - 0 to 15 inches: coarse sandy loam
H2 - 15 to 29 inches: coarse sandy loam
H3 - 29 to 33 inches: weathered bedrock

Properties and qualities
Slope: 15 to 30 percent
Depth to restrictive feature: 29 to 33 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.5 inches)

Interpretive groups
Land capability classification (irrigated): 6s
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: Granitic (R018XD080CA)

Minor Components

Caperton, coarse sandy loam
Percent of map unit: 10 percent

Unnamed, mod deep
Percent of map unit: 5 percent

Unnamed
Percent of map unit: 5 percent

Sierra, sandy loam
Percent of map unit: 5 percent

111—Andregg coarse sandy loam, rocky, 30 to 50 percent slopes

Map Unit Setting
National map unit symbol: hfyl
Elevation: 200 to 1,500 feet
Mean annual precipitation: 12 to 35 inches
Mean annual air temperature: 61 degrees F
Frost-free period: 200 to 270 days
Farmland classification: Not prime farmland

Map Unit Composition
Andregg and similar soils: 85 percent

Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Andregg

Setting
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Residuum weathered from granite

Typical profile
H1 - 0 to 15 inches: coarse sandy loam
H2 - 15 to 29 inches: coarse sandy loam
H3 - 29 to 33 inches: weathered bedrock

Properties and qualities
Slope: 30 to 50 percent
Depth to restrictive feature: 29 to 33 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.5 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: Granitic (R018XD080CA)

Minor Components

Caperton, coarse sandy loam
Percent of map unit: 10 percent

Unnamed
Percent of map unit: 3 percent

Sierra, sandy loam
Percent of map unit: 2 percent

113—Andregg-Shenandoah complex, 2 to 15 percent slopes

Map Unit Setting
National map unit symbol: hfyn
Elevation: 200 to 1,800 feet

Mean annual precipitation: 12 to 40 inches
Mean annual air temperature: 61 degrees F
Frost-free period: 200 to 270 days
Farmland classification: Not prime farmland

Map Unit Composition

Andregg and similar soils: 55 percent
Shenandoah and similar soils: 30 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Andregg

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Residuum weathered from granite

Typical profile

H1 - 0 to 15 inches: coarse sandy loam
H2 - 15 to 29 inches: coarse sandy loam
H3 - 29 to 33 inches: weathered bedrock

Properties and qualities

Slope: 2 to 15 percent
Depth to restrictive feature: 29 to 33 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.5 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B

Description of Shenandoah

Setting

Landform: Hills
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Residuum weathered from granite

Typical profile

H1 - 0 to 16 inches: sandy loam
H2 - 16 to 34 inches: clay
H3 - 34 to 38 inches: weathered bedrock

Properties and qualities

Slope: 2 to 15 percent
Depth to restrictive feature: 34 to 38 inches to paralithic bedrock
Natural drainage class: Somewhat poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.4 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: D

Minor Components

Sierra

Percent of map unit: 5 percent

Caperton

Percent of map unit: 5 percent

Xerofluvents

Percent of map unit: 4 percent
Landform: Drainageways

Unnamed

Percent of map unit: 1 percent
Landform: Drainageways

130—Caperton-Andregg coarse sandy loams, 2 to 15 percent slopes

Map Unit Setting

National map unit symbol: hfz6
Elevation: 200 to 1,500 feet
Mean annual precipitation: 12 to 35 inches
Mean annual air temperature: 61 degrees F
Frost-free period: 200 to 270 days
Farmland classification: Not prime farmland

Map Unit Composition

Caperton and similar soils: 50 percent
Andregg and similar soils: 30 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Caperton

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Residuum weathered from granite

Typical profile

H1 - 0 to 18 inches: coarse sandy loam
H2 - 18 to 22 inches: weathered bedrock

Properties and qualities

Slope: 2 to 15 percent
Depth to restrictive feature: 18 to 22 inches to paralithic bedrock
Natural drainage class: Somewhat excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.0 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: D
Ecological site: Shallow granitic (R018XD098CA)

Description of Andregg

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Residuum weathered from granite

Typical profile

H1 - 0 to 15 inches: coarse sandy loam
H2 - 15 to 29 inches: coarse sandy loam
H3 - 29 to 33 inches: weathered bedrock

Properties and qualities

Slope: 2 to 15 percent
Depth to restrictive feature: 29 to 33 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Available water storage in profile: Low (about 3.5 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: Granitic (R018XD080CA)

Minor Components

Unnamed

Percent of map unit: 10 percent

Unnamed, mod deep

Percent of map unit: 4 percent

Sierra

Percent of map unit: 3 percent

Rock outcrop

Percent of map unit: 2 percent

Unnamed

Percent of map unit: 1 percent
Landform: Drainageways

132—Caperton-Rock outcrop complex, 2 to 30 percent slopes

Map Unit Setting

National map unit symbol: hfz8
Elevation: 200 to 4,000 feet
Mean annual precipitation: 8 to 35 inches
Mean annual air temperature: 45 to 61 degrees F
Frost-free period: 110 to 270 days
Farmland classification: Not prime farmland

Map Unit Composition

Caperton and similar soils: 65 percent
Rock outcrop: 15 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Caperton

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Residuum weathered from granite

Typical profile

H1 - 0 to 18 inches: gravelly coarse sandy loam
H2 - 18 to 22 inches: weathered bedrock

Properties and qualities

Slope: 2 to 30 percent
Depth to restrictive feature: 18 to 22 inches to paralithic bedrock
Natural drainage class: Somewhat excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): 7e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Shallow granitic (R018XD098CA)

Description of Rock Outcrop

Typical profile

H1 - 0 to 4 inches: unweathered bedrock

Minor Components

Andregg

Percent of map unit: 10 percent

Unnamed, mod deep

Percent of map unit: 5 percent

Unnamed

Percent of map unit: 5 percent
Landform: Drainageways

133—Caperton-Rock outcrop complex, 30 to 50 percent slopes

Map Unit Setting

National map unit symbol: hfz9
Elevation: 200 to 4,000 feet
Mean annual precipitation: 8 to 35 inches
Mean annual air temperature: 45 to 61 degrees F
Frost-free period: 110 to 270 days
Farmland classification: Not prime farmland

Map Unit Composition

Caperton and similar soils: 70 percent
Rock outcrop: 15 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Caperton

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Residuum weathered from granite

Typical profile

H1 - 0 to 18 inches: gravelly coarse sandy loam
H2 - 18 to 22 inches: weathered bedrock

Properties and qualities

Slope: 30 to 50 percent
Depth to restrictive feature: 18 to 22 inches to paralithic bedrock
Natural drainage class: Somewhat excessively drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Shallow granitic (R018XD098CA)

Description of Rock Outcrop

Typical profile

H1 - 0 to 4 inches: unweathered bedrock

Minor Components

Andregg, coarse sandy loam

Percent of map unit: 10 percent

Unnamed, mod deep

Percent of map unit: 3 percent

Unnamed

Percent of map unit: 2 percent

140—Cometa sandy loam, 1 to 5 percent slopes

Map Unit Setting

National map unit symbol: hfzj
Elevation: 20 to 400 feet
Mean annual precipitation: 10 to 23 inches
Mean annual air temperature: 63 degrees F
Frost-free period: 260 to 300 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Cometa and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cometa

Setting

Landform: Terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 18 inches: sandy loam
H2 - 18 to 29 inches: clay
H3 - 29 to 60 inches: sandy loam

Properties and qualities

Slope: 1 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 5.2 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: D

Minor Components

Kaseberg
Percent of map unit: 5 percent

Fiddyment
Percent of map unit: 5 percent

San joaquin
Percent of map unit: 4 percent

Alamo
Percent of map unit: 1 percent
Landform: Depressions

141—Cometa-Fiddyment complex, 1 to 5 percent slopes

Map Unit Setting
National map unit symbol: hfzk
Elevation: 20 to 400 feet
Mean annual precipitation: 10 to 23 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 230 to 300 days
Farmland classification: Not prime farmland

Map Unit Composition
Fiddyment and similar soils: 35 percent
Cometa and similar soils: 35 percent
Minor components: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cometa

Setting
Landform: Terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile
H1 - 0 to 18 inches: sandy loam
H2 - 18 to 29 inches: clay
H3 - 29 to 60 inches: sandy loam

Properties and qualities
Slope: 1 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 5.5 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: D
Ecological site: Claypan (R017XD093CA)

Description of Fiddyment

Setting

Landform: Ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from siltstone

Typical profile

H1 - 0 to 12 inches: loam
H2 - 12 to 28 inches: clay loam
H3 - 28 to 35 inches: indurated
H4 - 35 to 39 inches: weathered bedrock

Properties and qualities

Slope: 1 to 5 percent
Depth to restrictive feature: 20 to 35 inches to duripan; 35 to 39 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.7 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: D
Ecological site: Claypan (R017XD093CA)

Minor Components

Kaseberg

Percent of map unit: 10 percent

San joaquin

Percent of map unit: 10 percent

Ramona

Percent of map unit: 5 percent

Alamo

Percent of map unit: 5 percent
Landform: Depressions

142—Cometa-Ramona sandy loams, 1 to 5 percent slopes

Map Unit Setting

National map unit symbol: hfzl
Elevation: 20 to 3,500 feet
Mean annual precipitation: 10 to 23 inches
Mean annual air temperature: 63 degrees F
Frost-free period: 230 to 320 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Cometa and similar soils: 50 percent
Ramona and similar soils: 30 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cometa

Setting

Landform: Terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 18 inches: sandy loam
H2 - 18 to 29 inches: clay
H3 - 29 to 60 inches: sandy loam

Properties and qualities

Slope: 1 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 5.5 inches)

Interpretive groups

Land capability classification (irrigated): 3e

Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: D

Description of Ramona

Setting

Landform: Terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 6 inches: sandy loam
H2 - 6 to 14 inches: loam
H3 - 14 to 55 inches: sandy clay loam
H4 - 55 to 73 inches: gravelly sandy loam

Properties and qualities

Slope: 1 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 8.2 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C

Minor Components

San joaquin

Percent of map unit: 5 percent

Fiddyment

Percent of map unit: 5 percent

Alamo

Percent of map unit: 5 percent
Landform: Depressions

Xerofluvent

Percent of map unit: 5 percent
Landform: Drainageways

144—Exchequer very stony loam, 2 to 15 percent slopes

Map Unit Setting

National map unit symbol: hfzn
Elevation: 400 to 2,000 feet
Mean annual precipitation: 15 to 35 inches
Mean annual air temperature: 61 to 64 degrees F
Frost-free period: 220 to 270 days
Farmland classification: Not prime farmland

Map Unit Composition

Exchequer and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Exchequer

Setting

Landform: Ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Residuum weathered from volcanic breccia

Typical profile

H1 - 0 to 11 inches: very stony loam
H2 - 11 to 15 inches: unweathered bedrock

Properties and qualities

Slope: 2 to 15 percent
Percent of area covered with surface fragments: 1.0 percent
Depth to restrictive feature: 11 to 15 inches to lithic bedrock
Natural drainage class: Somewhat excessively drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to high (0.01 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 1.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Very shallow loamy (R018XD085CA)

Minor Components

Inks
Percent of map unit: 10 percent

Unnamed
Percent of map unit: 3 percent
Landform: Depressions

Unnamed
Percent of map unit: 2 percent
Landform: Drainageways

145—Exchequer-Rock outcrop complex, 2 to 30 percent slopes

Map Unit Setting
National map unit symbol: hfzp
Elevation: 400 to 4,000 feet
Mean annual precipitation: 8 to 35 inches
Mean annual air temperature: 45 to 64 degrees F
Frost-free period: 110 to 270 days
Farmland classification: Not prime farmland

Map Unit Composition
Exchequer and similar soils: 60 percent
Rock outcrop: 15 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Exchequer

Setting
Landform: Ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Residuum weathered from volcanic breccia

Typical profile
H1 - 0 to 11 inches: very stony loam
H2 - 11 to 15 inches: unweathered bedrock

Properties and qualities
Slope: 2 to 30 percent
Depth to restrictive feature: 11 to 15 inches to lithic bedrock
Natural drainage class: Somewhat excessively drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to high (0.01 to 1.98 in/hr)
Depth to water table: More than 80 inches

Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 1.2 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Very shallow loamy (R018XD085CA)

Description of Rock Outcrop

Typical profile
H1 - 0 to 4 inches: unweathered bedrock

Minor Components

Inks
Percent of map unit: 10 percent

Unnamed
Percent of map unit: 10 percent
Landform: Depressions

Unnamed
Percent of map unit: 3 percent

Unnamed
Percent of map unit: 2 percent
Landform: Drainageways

146—Fiddyment loam, 1 to 8 percent slopes

Map Unit Setting
National map unit symbol: hfzq
Elevation: 50 to 280 feet
Mean annual precipitation: 19 inches
Mean annual air temperature: 61 degrees F
Frost-free period: 230 to 300 days
Farmland classification: Not prime farmland

Map Unit Composition
Fiddyment and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Fiddyment

Setting
Landform: Terraces
Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from siltstone

Typical profile

H1 - 0 to 12 inches: loam
H2 - 12 to 28 inches: clay loam
H3 - 28 to 35 inches: indurated
H4 - 35 to 39 inches: weathered bedrock

Properties and qualities

Slope: 1 to 8 percent
Depth to restrictive feature: 20 to 35 inches to duripan; 35 to 39 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.7 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: D

Minor Components

Cometa

Percent of map unit: 5 percent

Kaseberg

Percent of map unit: 5 percent

San joaquin

Percent of map unit: 3 percent

Alamo

Percent of map unit: 2 percent
Landform: Depressions

147—Fiddyment-Kaseberg loams, 2 to 9 percent slopes

Map Unit Setting

National map unit symbol: hfzr
Elevation: 50 to 280 feet
Mean annual precipitation: 16 to 22 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 230 to 300 days

Farmland classification: Not prime farmland

Map Unit Composition

Fiddyment and similar soils: 50 percent
Kaseberg and similar soils: 30 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Fiddyment

Setting

Landform: Terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from siltstone

Typical profile

H1 - 0 to 12 inches: loam
H2 - 12 to 28 inches: clay loam
H3 - 28 to 35 inches: indurated
H4 - 35 to 39 inches: weathered bedrock

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: 20 to 35 inches to duripan; 35 to 39 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.7 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: Claypan (R018XD082CA)

Description of Kaseberg

Setting

Landform: Terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from siltstone

Typical profile

H1 - 0 to 16 inches: loam
H2 - 16 to 17 inches: indurated
H3 - 17 to 21 inches: weathered bedrock

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: 16 to 17 inches to duripan; 17 to 21 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.6 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: D
Ecological site: Claypan (R018XD082CA)

Minor Components

Unnamed, gravelly

Percent of map unit: 10 percent

Alamo

Percent of map unit: 10 percent
Landform: Depressions

152—Inks cobbly loam, 2 to 30 percent slopes

Map Unit Setting

National map unit symbol: hfzx
Elevation: 200 to 2,000 feet
Mean annual precipitation: 30 inches
Mean annual air temperature: 61 degrees F
Frost-free period: 175 to 270 days
Farmland classification: Not prime farmland

Map Unit Composition

Inks and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Inks

Setting

Landform: Ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope

Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from conglomerate

Typical profile
H1 - 0 to 5 inches: cobbly loam
H2 - 5 to 18 inches: very cobbly loam
H3 - 18 to 22 inches: unweathered bedrock

Properties and qualities
Slope: 2 to 30 percent
Depth to restrictive feature: 18 to 22 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 1.8 inches)

Interpretive groups
Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: D
Ecological site: Shallow loamy (R018XD076CA)

Minor Components

Inks variant, cobbly loam
Percent of map unit: 10 percent

Exchequer, very stony loam
Percent of map unit: 10 percent

153—Inks cobbly loam, 30 to 50 percent slopes

Map Unit Setting
National map unit symbol: hfzy
Elevation: 200 to 2,000 feet
Mean annual precipitation: 30 inches
Mean annual air temperature: 61 degrees F
Frost-free period: 175 to 270 days
Farmland classification: Not prime farmland

Map Unit Composition
Inks and similar soils: 70 percent
Minor components: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Inks

Setting

Landform: Ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Residuum weathered from conglomerate

Typical profile

H1 - 0 to 5 inches: cobbly loam
H2 - 5 to 18 inches: very cobbly loam
H3 - 18 to 22 inches: unweathered bedrock

Properties and qualities

Slope: 30 to 50 percent
Depth to restrictive feature: 18 to 22 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: D

Minor Components

Inks variant, cobbly loam

Percent of map unit: 13 percent

Unnamed

Percent of map unit: 12 percent

Exchequer, very stony loam

Percent of map unit: 5 percent

154—Inks-Exchequer complex, 2 to 25 percent slopes

Map Unit Setting

National map unit symbol: hfzz
Elevation: 200 to 2,000 feet
Mean annual precipitation: 15 to 35 inches
Mean annual air temperature: 61 to 64 degrees F
Frost-free period: 175 to 270 days

Farmland classification: Not prime farmland

Map Unit Composition

Inks and similar soils: 40 percent
Exchequer and similar soils: 30 percent
Minor components: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Inks

Setting

Landform: Ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Residuum weathered from conglomerate

Typical profile

H1 - 0 to 5 inches: cobbly loam
H2 - 5 to 18 inches: very cobbly loam
H3 - 18 to 22 inches: unweathered bedrock

Properties and qualities

Slope: 2 to 25 percent
Depth to restrictive feature: 18 to 22 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): 6s
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Ecological site: Shallow loamy (R018XD076CA)

Description of Exchequer

Setting

Landform: Ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Residuum weathered from volcanic breccia

Typical profile

H1 - 0 to 11 inches: very stony loam
H2 - 11 to 15 inches: unweathered bedrock

Properties and qualities

Slope: 2 to 25 percent
Depth to restrictive feature: 11 to 15 inches to lithic bedrock

Natural drainage class: Somewhat excessively drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to high (0.01 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 1.2 inches)

Interpretive groups
Land capability classification (irrigated): 6s
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Ecological site: Very shallow loamy (R018XD085CA)

Minor Components

Unnamed
Percent of map unit: 10 percent

Unnamed, shallow
Percent of map unit: 10 percent

Unnamed
Percent of map unit: 5 percent

Alamo variant
Percent of map unit: 5 percent
Landform: Depressions

162—Kilaga loam

Map Unit Setting
National map unit symbol: hg07
Elevation: 50 to 200 feet
Mean annual precipitation: 15 to 25 inches
Mean annual air temperature: 63 degrees F
Frost-free period: 250 to 300 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition
Kilaga and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kilaga

Setting
Landform: Terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread

Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile
H1 - 0 to 19 inches: loam
H2 - 19 to 30 inches: clay loam
H3 - 30 to 56 inches: clay
H4 - 56 to 80 inches: sandy clay loam

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 9.2 inches)

Interpretive groups
Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: C

Minor Components

San joaquin
Percent of map unit: 5 percent

Cometa
Percent of map unit: 5 percent

Ramona
Percent of map unit: 5 percent

Xerofluvents
Percent of map unit: 4 percent

Unnamed
Percent of map unit: 1 percent
Landform: Drainageways

173—Pits and dumps

Map Unit Composition
Pits and dumps: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pits And Dumps

Typical profile
H1 - 0 to 60 inches: variable

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s

Minor Components

Unnamed
Percent of map unit: 5 percent
Landform: Drainageways

180—Rubble land

Map Unit Setting
National map unit symbol: hg0t
Elevation: 650 to 4,000 feet
Mean annual precipitation: 8 to 50 inches
Mean annual air temperature: 45 to 54 degrees F
Frost-free period: 75 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition
Rubble land: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rubble Land

Setting
Parent material: Residuum

Typical profile
H1 - 0 to 60 inches: fragmental material

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s

193—Xerofluvents, occasionally flooded

Map Unit Setting
National map unit symbol: hg17
Elevation: 20 to 500 feet
Mean annual precipitation: 14 to 20 inches
Mean annual air temperature: 59 to 64 degrees F

Frost-free period: 250 to 270 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Xerofluvents, occasionally flooded, and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Xerofluvents, Occasionally Flooded

Setting

Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from mixed rocks

Typical profile

H1 - 0 to 30 inches: stratified loamy sand to fine sandy loam
H2 - 30 to 48 inches: stratified loamy sand to fine sandy loam to silt loam
H3 - 48 to 55 inches: stratified loam to silty clay loam to clay

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: About 30 to 60 inches
Frequency of flooding: Occasional
Frequency of ponding: Occasional
Calcium carbonate, maximum in profile: 5 percent
Available water storage in profile: Moderate (about 7.9 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: A

Minor Components

Unnamed

Percent of map unit: 10 percent
Landform: Drainageways

194—Xerofluvents, frequently flooded

Map Unit Setting

National map unit symbol: hg18

Elevation: 0 to 1,500 feet
Mean annual precipitation: 14 to 20 inches
Mean annual air temperature: 61 to 64 degrees F
Frost-free period: 250 to 270 days
Farmland classification: Not prime farmland

Map Unit Composition

Xerofluvents, frequently flooded, and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Xerofluvents, Frequently Flooded

Setting

Landform: Drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

H1 - 0 to 15 inches: stratified loamy sand to fine sandy loam
H2 - 15 to 37 inches: stratified loamy sand to fine sandy loam to silt loam
H3 - 37 to 55 inches: stratified loam to silty clay loam to clay

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: About 30 to 57 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Available water storage in profile: Moderate (about 8.1 inches)

Interpretive groups

Land capability classification (irrigated): 4w
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: B

Minor Components

Unnamed

Percent of map unit: 10 percent
Landform: Drainageways

196—Xerorthents, cut and fill areas

Map Unit Setting

National map unit symbol: hg1b
Elevation: 400 to 3,500 feet
Mean annual precipitation: 8 to 18 inches
Mean annual air temperature: 61 to 64 degrees F
Frost-free period: 200 to 300 days
Farmland classification: Not prime farmland

Map Unit Composition

Xerorthents and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Xerorthents

Setting

Parent material: Mine spoil or earthy fill

Typical profile

H1 - 0 to 60 inches: variable

Properties and qualities

Slope: 2 to 50 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 0.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8e

Minor Components

Unnamed

Percent of map unit: 10 percent

197—Xerorthents, placer areas

Map Unit Setting

National map unit symbol: hg1c

Elevation: 50 to 3,200 feet
Mean annual precipitation: 8 to 18 inches
Mean annual air temperature: 61 to 64 degrees F
Frost-free period: 150 to 280 days
Farmland classification: Not prime farmland

Map Unit Composition
Xerorthents and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Xerorthents

Setting
Parent material: Mine spoil or earthy fill

Typical profile
H1 - 0 to 60 inches: variable

Properties and qualities
Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Depth to water table: More than 80 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Available water storage in profile: Very low (about 0.0 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Ecological site: Placer diggings (R018XD084CA)

Minor Components

Unnamed
Percent of map unit: 10 percent
Landform: Drainageways

198—Water

Map Unit Composition
Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

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