

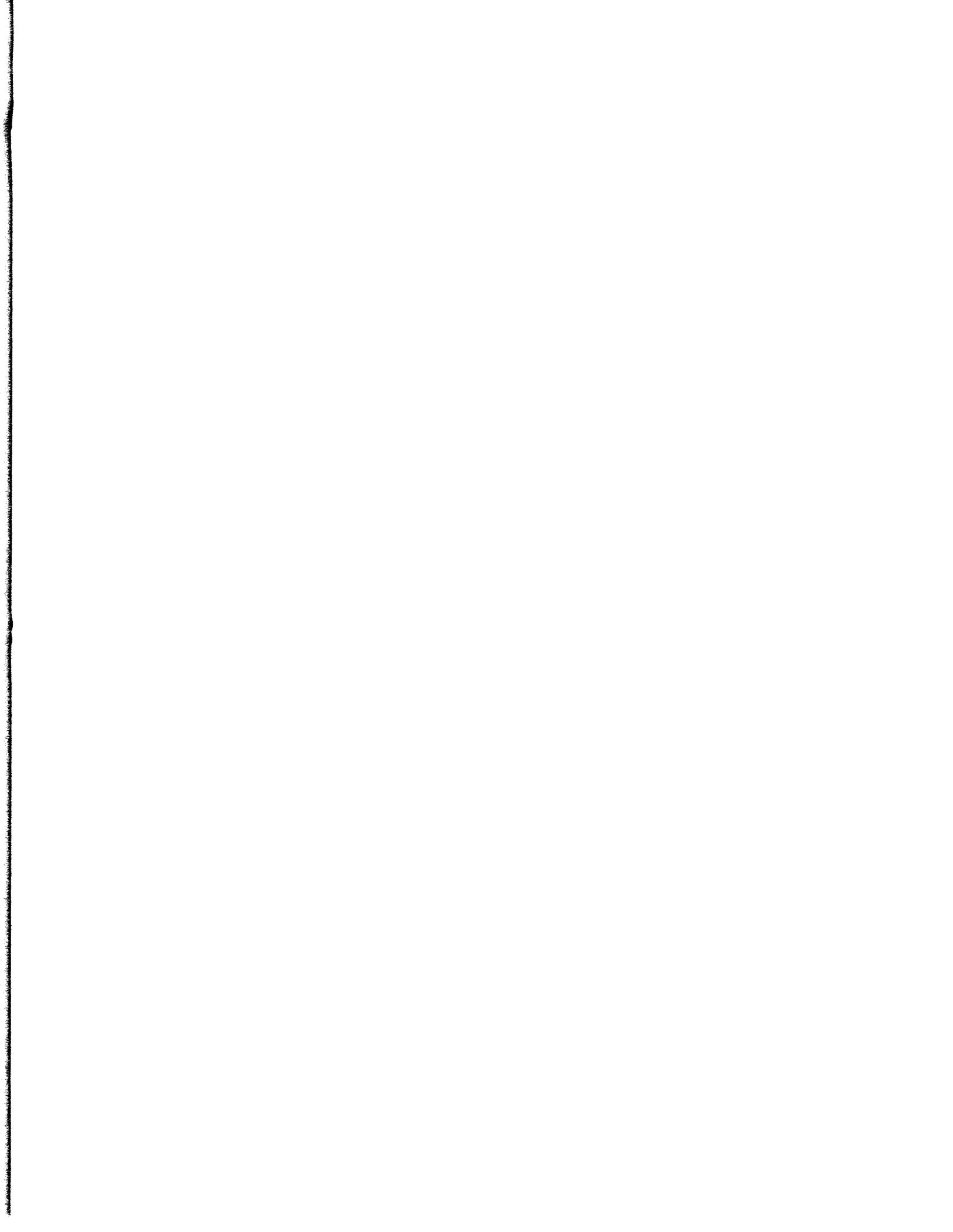
USDA United States
Department of
Agriculture

Natural
Resources
Conservation
Service

In cooperation with
United States
Department of the
Interior, Bureau of Land
Management, and
University of Nevada
Agricultural
Experiment Station

Soil Survey of Pershing County, Nevada, West Part

Part I



How To Use This Soil Survey

This survey is divided into three parts. Part I includes general information about the survey area; descriptions of the detailed soil map units and soil series in the area; and a description of how the soils formed. Part II describes the use and management of the soils and the major soil properties. Part III includes the maps.

The **detailed soil map units** follow the general information about the survey area. These map units 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 **Index to Map Units** in Part I of this survey, which lists the map units by symbol and name and shows the page where each map unit is described.

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

A **State Soil Geographic Database (STATSGO)** is available for this survey area. This database consists of a soils map at a scale of 1 to 250,000 and descriptions of groups of associated soils. It replaces the general soil map published in older soil surveys. The map and the database can be used for multicounty planning, and map output can be tailored for a specific use. More information about the State Soil Geographic Database for this survey area, or any portion of Nevada, is available at the local office of the Natural Resources Conservation Service.

Some standards or values may change as more information is collected and analyzed. Thus, as older published interpretive information becomes outdated, new interpretive data must be generated and tailored to local conditions. This information is added to the State Subset of the National Soil Information System (**NASIS**) database as needed. Map Unit Records are the soil survey specific data and interpretations in the state NASIS database.

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 has leadership for the Federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in September, 1985. Soil names and descriptions were approved in June, 1987. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in June, 1987. This survey was made cooperatively by the Natural Resources Conservation Service and the U.S. Department of Interior, Bureau of Land Management, and University of Nevada Agricultural Experiment Station. It is part of the technical assistance furnished to the Big Meadow Conservation District.

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

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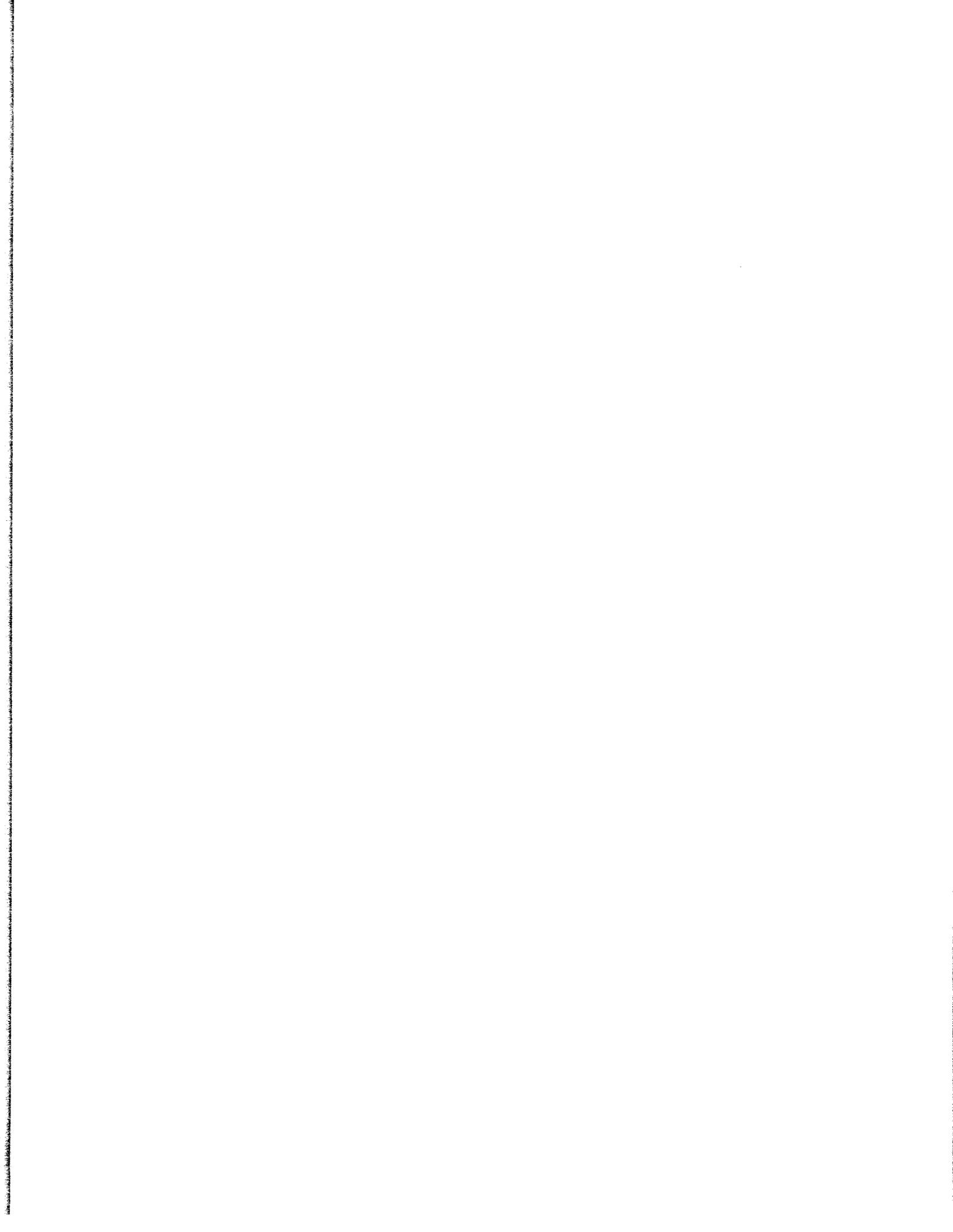
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Foreword

This soil survey contains information that can be used in land-planning programs in Pershing County, Nevada, West Part. It contains predictions of soil behavior for selected land uses. The survey also highlights limitations and hazards inherent in the soil, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

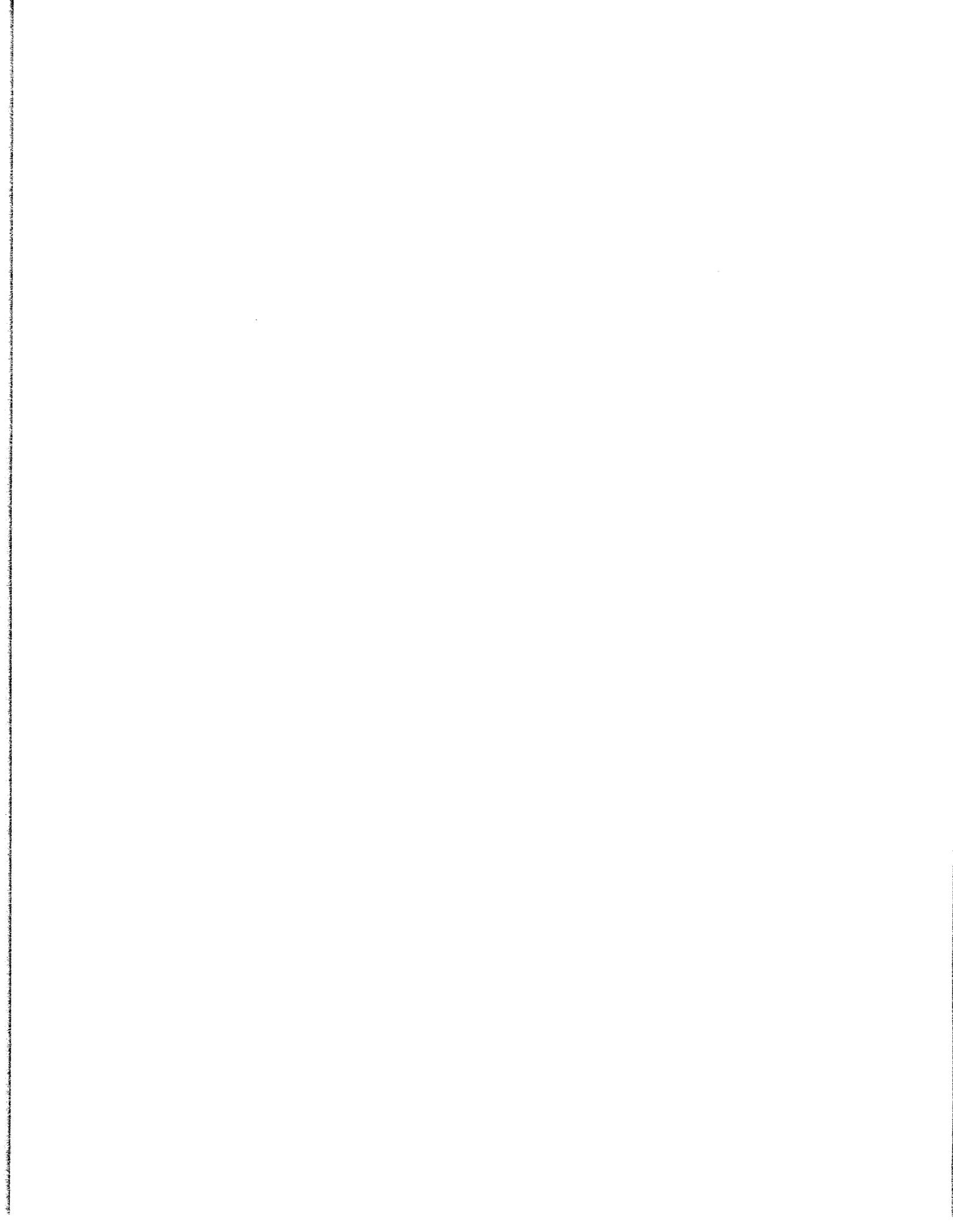
This soil survey is designed for many different users. Farmers, ranchers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use 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.

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. 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 Nevada Cooperative Extension.



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Soil Survey of Pershing County, Nevada, West Part

By Clarence Seagraves and Michael J. Zielinski, Bureau of Land Management

Fieldwork by Michael J. Zielinski, Terry E. Bowles, Donald L. Jossie, and Clarence Seagraves, Bureau of Land Management

United States Department of Agriculture, Natural Resources Conservation Service,
in cooperation with the Department of Interior, Bureau of Land Management,
and the University of Nevada Agricultural Experiment Station

How This Survey Was Made

This survey was made to provide information about the soils and miscellaneous areas in the survey area. The information includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

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

Individual soils on the landscape commonly merge into one another as their characteristics gradually change. To construct an accurate 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.

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. 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.

General Nature of the Survey Area

This section gives general information about the survey area. It briefly discusses history; industries, transportation, and recreation; physiography, drainage, and geology; and climate.

History

The earliest inhabitants of the area are estimated to have arrived about 10,000 to 12,000 years before the present time. During the relatively dry period between 4,500 to 7,000 years ago the population was sparse or the area was abandoned. General re-inhabitation began about 4,000 years ago (5).

The area was occupied by northern Paiute Indians when fur traders arrived in 1828. Following the Humboldt River west from its source, the first immigrants settled in 1841. Immigrant trains continued crossing along the Humboldt River until the 1870's. For a short time starting in 1879, immigrants branched off at Imlay to pass through the northern portion of the area, where they crossed the Black Rock Desert into northern California.

During the period of immigration, traders established themselves in Sulphur and other mining areas. Small settlements began in the area after the discovery of silver in the 1860's. Gold was discovered in the Seven Troughs Range in the early 1900's and the area boomed again in the 1930's. Mining has continued until the present time.

Industry, Transportation, and Recreation

The main industries in the survey area are ranching and mining.

The ranches are dominantly cow-calf operations and the current year's calf crop generally is sold in fall and exported. There are also a few herds of sheep in the area.

Western Pershing County has been an area of active mineral interest since the mid 1800's. This area includes some of the largest diatomite and gypsum mines located in the Trinity and Selenite Ranges respectively. In the past, significant amounts of gold, silver, copper, tungsten and tin have been produced from the Trinity Range, Seven Troughs Range, Kamma Mountains, Nightingale Mountains and Antelope Range.

Active exploration for precious metals is currently being conducted in the Trinity and Seven Troughs Ranges and the Kamma Mountains. Active exploration for Geothermal steam is being conducted in Granite Springs Valley.

The survey area is sparsely inhabited so there are few improved roads. Most of the area is accessible by dirt roads or jeep trails. The principal highway is

Interstate 80 which runs southwest to northeast along the southeastern edge of the area. State Highway 34 runs north to south from Fernley to Gerlach along the western edge of the survey area.

The area is served by Southern Pacific and Western Pacific Railroads which run southwest to northeast through the area.

Recreation is fairly dispersed in the area. Rockhounds and off-road vehicle enthusiasts make up the majority of recreational users. Sightseeing for scenery is often enjoyed by these groups and a number of other people enjoy historic sightseeing. The presence of old emigrant trails more than a century old and the old ghost towns acts as a lure to bring people to the area.

National attention was brought to the area in 1981 and 1982. The flat playa of the Black Rock Desert near Gerlach was used by individuals attempting to set a new land speed record, at which they succeeded in 1982. Other users of the Hat Playa of the Black Rock Desert are many and varied. They range from people trying to see how fast their vehicles can travel to windsailers. The area northeast of Winnemucca Lake was used for a motorcycle race in 1977 and future races are planned in the area.

Physiography, Drainage, and Geology

Important physiographic units in the survey area include the Majuba Mountains, Antelope Range, Kamma Mountains, Seven Troughs Range, Trinity Range, Shawave Mountains, Nightingale Mountains, and the Selenite Range; major valleys are the Granite Springs, Sage, Sage Hen, Poito, Kumiva, Humboldt Valley, and the Black Rock Desert. Elevations range from about 3,770 feet at Winnemucca Lake to 8,237 feet at Kumiva Peak in the Selenite Range.

Most valleys in the survey area are internally drained. In such valleys, or bolsons, surface drainage is restricted by the bounding mountains and by lower hills or alluvial divides. The valley floor in this type of drainage basin is ephemerally flooded. The creeks and washes draining the area are either intermittent or ephemeral. Bolsons in the survey area are the Black Rock Desert, Bluewing Flat, Granite Springs Valley, and Desert Valley. The extreme eastern part of the survey area is drained by the Humboldt River, which flows in a southerly

direction just outside the eastern boundary of the survey area.

Most of the irrigation water in western Pershing County comes from wells. Ground water in lower Lovelock Valley and the Black Rock Desert playa region is generally of poor quality because of a high content of dissolved salt. There are few wells in the survey area. Depth to water is generally deep except near playas and in the Humboldt River Valley. Livestock and wildlife water is primarily at the higher elevations where springs and ephemeral streams are common. Water quality of the springs is usually good. Drilled wells comprise the major source of water for domestic use.

The geology of the survey area has been described by Johnson (13). Local geology is diverse and ranges in age from Cambrian to Holocene. Rock types within the area include: intrusive and extrusive igneous rocks; metasedimentary rocks; sedimentary and calcareous sedimentary rocks; and metavolcanic rocks. Cenozoic volcanism and later large scale vertical faulting have obscured many of the older features and contributed to the present basin and range topography of the area. Basin alluvial deposits make up one of the most extensive features of the survey area.

The valleys are, in most cases, composed of several thousand feet of alluvial fill. The uppermost sequence of sediments, consisting of Quaternary alluvial deposits on the mountain flanks and lake deposits on the valley floors, is composed of a wide variety of materials occurring both as mixtures and as distinct, fairly homogeneous bodies. The lithology of the bounding mountains is a major factor determining the composition of the valley fill material and of the soils that subsequently formed in the basins.

Lake sediments on the valley floors are typically fine textured deposits of the Pleistocene age. The Black Rock Desert, the eastern edge of the survey area (Lovelock Valley), and the Winnemucca Lake Valley-Poito Valley were part of Lake Lahontan, the largest Pleistocene pluvial lake in the Great Basin in Nevada. Adobe Flat-Granite Springs Valley and Bluewing Flat-Kumiva Valley were Pleistocene pluvial lakes separated by topographic features from Lake Lahontan. Major mountain ranges in the survey area are the Antelope, Majuba, Kamma, Lava Beds, Nightingale, Selenite, Seven Troughs, Shawave, and Trinity.

The Antelope Range is made up primarily of a thick sequence of Triassic and Jurassic metasedimentary rocks, principally of slate or

argillite and phyllite with some limestone and quartzite lenses, intruded by small sills and dikes of andesite, dacite, latite and diorite of pre-Tertiary age. The Majuba Mountains are a subvolcanic complex of rhyolitic porphyries and breccias intruded during mid-tertiary time.

The Kamma Mountains consist of a thick sequence of rhyolitic flows and associated pyroclastic rocks that overlie the Triassic and Jurassic metasedimentary rocks of the region. Late Tertiary sedimentary rocks, principally conglomerates, form the outcropping materials on the west flank of the range.

The Lava Beds are composed chiefly of Cretaceous granodiorite bordered on the north and south by metasediments of Triassic age and by Pliocene sedimentary units.

The Nightingale Mountains are underlain by Triassic and Jurassic argillaceous and calcareous sedimentary rocks that have been intruded by Cretaceous granodiorite. Tertiary lavas and pyroclastic rocks and younger basalt flows cover parts of the northern, southern, and eastern parts of the Nightingale Mountains. High-angle normal faults with significant displacements have created the steep, abrupt mountain face and topographic relief of the Nightingale Mountains.

The Selenite Range is underlain by metamorphic volcanic rocks of Lake Permian age and sedimentary rocks of Triassic and Jurassic age that have been intruded by Cretaceous granodiorite. Locally the Paleozoic and Mesozoic rocks are capped by volcanic and sedimentary rocks of Triassic and Jurassic age that have been intruded by Cretaceous granodiorite. Locally the Paleozoic and Mesozoic rocks are capped by volcanic and sedimentary rocks have been metamorphosed to marble, coarsely crystalline dolomite, calc-silicate hornfels, and schist. High-angle faults with significant displacement have created impressive topographic relicts of the west and east central parts of the range.

The Seven Troughs Range consists of Oligocene and Miocene age rhyolite and andesite that are underlain by Cretaceous granodiorite. Triassic aged slate, phyllite, hornfels, and quartzite occur on the south and west flanks of the range.

The Shawave Mountains are made up of a large granodiorite body of Cretaceous age. Several small areas of Triassic and Jurassic metasedimentary rocks occupying less than a square mile to about two square miles, occur on both flanks of the southern end of the range. The metasedimentary rocks consist primarily of fine-grained argillaceous

clastic rocks with interbedded quartzite and limestone metamorphosed to schist, hornfels, calc-silicate hornfels, and tactite. Outcrops of Tertiary sedimentary rocks and Quaternary basalts occur on the southwest and northwest flanks of the range. Like many of the other mountain ranges high-angle normal faulting has created impressive topographic relief.

The Trinity Range is both long and broad, a somewhat loose collection of several mountain structures. The northern third of the range is dominated by Triassic metasedimentary rocks that have been cut by Cretaceous granodiorites. These two units are covered in part by Miocene and Pliocene tuff. Sedimentary rocks and Quaternary basalt are the principal rock types exposed on the lower two-thirds of the range, in addition to the above mentioned rock types, there are outcrops of Jurassic metavolcanic rocks. The Ragged Top Mountain area appears to represent a caldera complex. Other late Tertiary structural features of the range, in addition to the caldera, are some rather poorly exposed folds involving the Pliocene sedimentary rocks and numerous high-angle faults.

Climate

In this survey area, summers are hot, especially at lower elevations, and winters are cold. Precipitation is normally light at lower elevations during all months of the year and land is mainly used for livestock grazing. At higher elevations, precipitation is much greater and snow accumulates to considerable depths.

Table 1 gives data on temperature and precipitation for the survey area as recorded at Imlay in the period 1949 to 1991, Lovelock in the period 1929 to 1991, and Gerlach in the period 1952 to 1976. Table 2 shows probable dates of the first freeze in fall and the last freeze in the spring. Table 3 provides data on the length of the growing season.

In winter, the average temperatures at Imlay, Lovelock, and Gerlach are 34, 35, and 33 degrees F° respectively, and the average daily minimum temperature is 21, 22, and 23 degrees F°, respectively. The lowest temperature on record, which occurred at Lovelock during January, 1937 is -26 degrees F°. In summer, the average temperature is 72 degrees F° and the average daily maximum temperature is 89 degrees F°. The

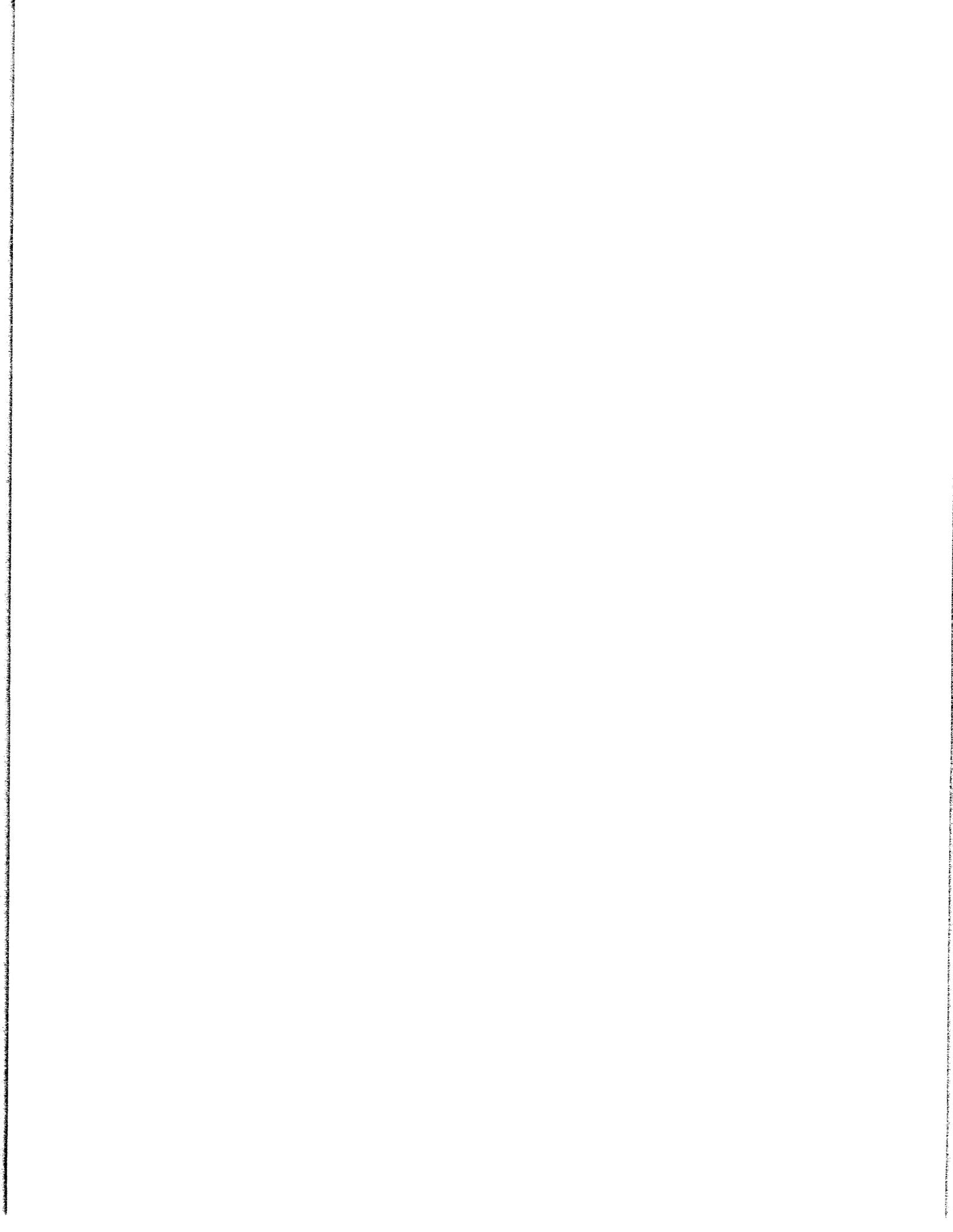
highest recorded temperature, which occurred at Lovelock during June, 1955 is 107 degrees F°.

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

The total annual precipitation is 7 inches at Imlay, 3 inches at Lovelock, and 4 inches at Gerlach. The greatest snow depth at any one time during the period of record was 22 inches. On the average

day, there is at least 1 inch of snow on the ground. The number of such days varies greatly from year to year. Every few years a blizzard strikes the area with high winds and drifting snow. Even at lower elevations, snow remains for many weeks and livestock suffers.

The average relative humidity in midafternoon is about 35 percent. Humidity is higher at night, and the average at dawn is about 65 percent. The sun shines 80 percent of the time in summer and 50 percent in winter. The prevailing wind is from the west. Average windspeed is highest, 9 miles per hour, in spring.



Detailed Soil Map Units

The map units on the detailed maps in Part III of this publication represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses. More information about each map unit is given under the headings "Use and Management of the Soils" and "Soil Properties."

A map unit delineation on the detailed soil maps represents an area dominated by one or more soils or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils or miscellaneous areas. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils and miscellaneous areas 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, are mapped without including areas of other taxonomic classes. Consequently, map units are made up of the soils or miscellaneous areas for which they are named and some "included" areas that belong to other taxonomic classes.

Most included soils have properties and behavioral characteristics similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, inclusions. They may or may not be mentioned in the map unit description. Other included soils and miscellaneous areas, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or

dissimilar, inclusions. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. The included areas of contrasting soils or miscellaneous areas are mentioned in the map unit descriptions. A few included areas 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 included areas 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 segments that have similar use and management requirements. The delineation of such landscape segments on the map provides sufficient information for the development of resource plans, but if intensive use of small areas is planned, 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. The principal hazards and limitations to be considered in planning for specific uses are identified in the tables and narrative in Part II.

Kinds of Map Units

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, wetness, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Some 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, Aboten very gravelly silt loam, 15 to 30 percent slopes is a phase of the Aboten series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes or associations. A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Ninemile-Rock outcrop complex 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. Ninemile-Shively-Rock outcrop association is an example.

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

Acreage and Extent

Table 4 gives the acreage and proportionate extent of each map unit. Other tables (see "Summary of 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.

Headings and Introductory Phases

In the map unit descriptions that follow, a semitabular format is used. In this format the major headings are centered in the column (for example, *Composition*). They identify the information grouped directly below them. Introducing each item of information under the centered heading is a term or phrase (for example, *Major Components*) that identifies or describes the information. Many of the centered headings and introductory terms are self-explanatory; however, some of them need further explanation and are defined in the Glossary. Explanations of the headings and introductory phrases are provided in the following paragraphs, generally in the order in which they are used in the map unit descriptions.

Composition is given for the components (soils or miscellaneous areas) identified in the name of the map unit as well as for the contrasting inclusions.

Contrasting Inclusions are areas of components that differ sufficiently in use and management from the soils or miscellaneous areas for which the map unit is named. As was explained earlier, inclusions can either be *similar* or *contrasting*. Note that in the *Composition* section a single percentage is provided for a named soil and its similar inclusions because their use and management are similar.

Map Unit Setting is given for the entire map unit. This section gives the position on the landscape. The landscape positions given for the entire map unit generally are broader than those given for each component. Below the map unit setting, the position of each component and inclusion is listed, and the physiographic location of each is identified.

Major Component Description lists the characteristics of the major components. These include elevation, texture of the surface layer, drainage class, parent material, and climatic data.

Dominant Present Vegetation lists the common plants growing on each soil at the

present time. The present vegetation may be similar to the potential native plant community, but in some areas it consists of other plants, either cultivated or wild, that dominate the soils in the map unit.

Ecological Site is the assigned rangeland or grazed forest land ecological site that identifies a unique potential native plant community. The plant species and production typical of each ecological site are listed by map unit in the section "Rangeland Plants and Woodland Understory." Additional information about these sites is provided under the heading "Rangeland and Grazeable Woodland Resource Management" in Part II of this publication. Further information also can be obtained from the local office of the Natural Resources Conservation Service.

Map Unit Descriptions

110--Aboten-Jerval-Bluewing association

Composition

Major Components

Aboten very gravelly silt loam, 2 to 8 percent slopes--35 percent

Jerval gravelly very fine sandy loam, 2 to 8 percent slopes--35 percent

Bluewing gravelly sandy loam, 2 to 8 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Bluewing very gravelly loamy sand, 0 to 2 percent slopes, frequently flooded--5 percent

Inclusion 2: Duric Camborthids, loamy-skeletal, mixed, mesic--4 percent

Inclusion 3: Durorthidic Torriorthents, coarse-loamy, mixed (calcareous), mesic--4 percent

Inclusion 4: Durorthidic Torriorthents, loamy-skeletal, mixed (calcareous), mesic--2 percent

Map Unit Setting

Landscape position: Fan piedmonts

Aboten--Landform: Fan remnants; geomorphic position: backslope; position on slope: upper; shape of slope: convex

Jerval--Landform: Fan remnants; geomorphic position: backslope; position on slope: lower; shape of slope: convex

Bluewing--Landform: Inset fans; shape of slope: concave

Inclusion 1--Landform: Drainageways; shape of slope: concave

Inclusion 2--Landform: Fan skirts

Inclusion 3--Landform: Fan remnants; geomorphic position: backslope; position on slope: upper

Inclusion 4--Landform: Stream terraces

Major Component Description

Aboten Series

Elevation: 4,200 to 5,000 feet

Precipitation: About 6 inches

Air temperature: About 51 degrees

Frost-free season: About 120 days

Surface layer texture: Very gravelly silt loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks, loess, and volcanic ash

Jerval Series

Elevation: 4,200 to 5,000 feet

Precipitation: About 6 inches

Air temperature: About 53 degrees

Frost-free season: About 120 days

Surface layer texture: Gravelly very fine sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks, loess, and volcanic ash

Bluewing Series

Elevation: 4,200 to 5,200 feet

Precipitation: About 6 inches

Air temperature: About 53 degrees

Frost-free season: About 120 days

Surface layer texture: Gravelly sandy loam

Drainage class: Excessively drained

Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Aboten: Bailey greasewood, Indian ricegrass, shadscale

Jerval: Bluegrass, bud sagebrush, shadscale

Bluewing: Bailey greasewood, Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale

Inclusion 1: Bailey greasewood, littleleaf horsebrush, tall gray rabbitbrush

Inclusion 2: Indian ricegrass, bud sagebrush, shadscale

Inclusion 3: Bailey greasewood, Indian ricegrass, shadscale

Inclusion 4: Indian ricegrass, winterfat

Ecological Site

Aboten: 027XY018NV
 Jerval: 027XY013NV
 Bluewing: 027XY018NV
 Inclusion 1: 027XY022NV
 Inclusion 2: 027XY013NV
 Inclusion 3: 027XY018NV
 Inclusion 4: 027XY014NV

111--Aboten-Dorper association

Composition

Major Components

Aboten very gravelly silt loam, 4 to 15 percent slopes--50 percent
 Dorper extremely gravelly very fine sandy loam, 2 to 8 percent slopes--35 percent

Contrasting Inclusions

Inclusion 1: Xeric Torrifluvents, loamy-skeletal, mixed (calcareous), mesic--6 percent
 Inclusion 2: Xerollic Durargids, clayey, montmorillonitic, mesic, shallow--4 percent
 Inclusion 3: Typic Torriorthents, clayey-skeletal, montmorillonitic (calcareous), mesic, shallow--4 percent
 Inclusion 4: Rock outcrop--1 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Aboten--Landform: Fan remnants; geomorphic position: backslope; position on slope: upper; shape of slope: convex
 Dorper--Landform: Fan remnants; geomorphic position: backslope; position on slope: lower; shape of slope: convex
 Inclusion 1--Landform: Drainageways; shape of slope: concave
 Inclusion 2--Landform: Fan remnants; position on slope: upper; shape of slope: convex
 Inclusion 3--Landform: Mountains; shape of slope: convex
 Inclusion 4--Landform: Fan remnants; position on slope: upper; shape of slope: convex

Major Component Description

Aboten Series

Elevation: 4,200 to 5,000 feet
Precipitation: About 7 inches
Air temperature: About 51 degrees
Frost-free season: About 120 days
Surface layer texture: Very gravelly silt loam

Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess, and volcanic ash

Dorper Series

Elevation: 4,400 to 5,100 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 120 days
Surface layer texture: Extremely gravelly very fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess, and volcanic ash

Dominant Present Vegetation

Aboten: Bailey greasewood, Indian ricegrass, shadscale
 Dorper: Bailey greasewood, shadscale
 Inclusion 1: Wyoming big sagebrush, basin big sagebrush, rabbitbrush, spiny hopsage
 Inclusion 2: Lahontan sagebrush
 Inclusion 3: Bailey greasewood, Indian ricegrass, shadscale
 Inclusion 4: None

Ecological Site

Aboten: 027XY018NV
 Dorper: 027XY018NV
 Inclusion 1: 027XY022NV
 Inclusion 2: 027XY020NV
 Inclusion 3: 027XY027NV
 Inclusion 4: None

112--Aboten-Dorper-Rednik association

Composition

Major Components

Aboten very gravelly silt loam, 4 to 15 percent slopes--40 percent
 Dorper very gravelly very fine sandy loam, 2 to 8 percent slopes--30 percent
 Rednik very gravelly sandy loam, 15 to 30 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Typic Torrifluvents, loamy-skeletal, mixed (calcareous), mesic--4 percent
 Inclusion 2: Xerollic Camborthids, loamy-skeletal, mixed, mesic--4 percent
 Inclusion 3: Xerollic Haplargids, fine, montmorillonitic, mesic--4 percent
 Inclusion 4: Badland--3 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Aboten--Landform: Fan remnants; geomorphic position: backslope
 Dorper--Landform: Fan remnants; position on slope: upper
 Rednik--Landform: Fan remnants; shape of slope: convex
 Inclusion 1--Landform: Drainageways; shape of slope: concave
 Inclusion 2--Landform: Inset fans; shape of slope: concave
 Inclusion 3--Landform: Fan remnants; geomorphic position: backslope; position on slope: upper
 Inclusion 4--Landform: Fan remnants; position on slope: upper

Major Component Description**Aboten Series**

Elevation: 4,600 to 5,000 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 120 days
Surface layer texture: Very gravelly silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess, and volcanic ash

Dorper Series

Elevation: 4,600 to 5,800 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 120 days
Surface layer texture: Very gravelly very fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess, and volcanic ash

Rednik Series

Elevation: 4,600 to 5,100 feet
Precipitation: About 6 inches
Air temperature: About 50 degrees
Frost-free season: About 115 days
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Aboten: Bailey greasewood, Indian ricegrass, bluegrass, shadscale

Dorper: Bluegrass, bud sagebrush, shadscale
 Rednik: Indian ricegrass, bud sagebrush, shadscale
 Inclusion 1: Bailey greasewood, littleleaf horsebrush, tall gray rabbitbrush
 Inclusion 2: Indian ricegrass, Wyoming big sagebrush, pine bluegrass
 Inclusion 3: Bluegrass, low sagebrush
 Inclusion 4: None

Ecological Site

Aboten: 027XY018NV
 Dorper: 027XY013NV
 Rednik: 027XY027NV
 Inclusion 1: 027XY022NV
 Inclusion 2: 027XY008NV
 Inclusion 3: 027XY070NV
 Inclusion 4: None

113--Aboten very gravelly silt loam, 15 to 30 percent slopes**Composition****Major Components**

Aboten very gravelly silt loam, 15 to 30 percent slopes--85 percent

Contrasting Inclusions

Inclusion 1: Xerollic Durargids, clayey, mixed, mesic, shallow--6 percent
 Inclusion 2: Bluewing extremely gravelly loamy sand, 0 to 4 percent slopes, frequently flooded--5 percent
 Inclusion 3: Typic Torriorthents, clayey-skeletal, montmorillonitic (calcareous), mesic, shallow--3 percent
 Inclusion 4: Aboten very cobbly loam, 2 to 8 percent slopes--1 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Aboten--Landform: Fan remnants; geomorphic position: backslope
 Inclusion 1--Landform: Fan remnants; geomorphic position: backslope; shape of slope: concave
 Inclusion 2--Landform: Drainageways; shape of slope: concave
 Inclusion 3--Landform: Fan remnants; geomorphic position: footslope
 Inclusion 4--Landform: Fan remnants; position on slope: upper

Major Component Description**Aboten Series**

Elevation: 4,200 to 5,000 feet

Precipitation: About 6 inches

Air temperature: About 51 degrees

Frost-free season: About 120 days

Surface layer texture: Very gravelly silt loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks, loess, and volcanic ash

Dominant Present Vegetation

Aboten: Bailey greasewood, Indian ricegrass, shadscale

Inclusion 1: Bluegrass

Inclusion 2: Bailey greasewood, littleleaf horsebrush, tall gray rabbitbrush

Inclusion 3: Bailey greasewood, Indian ricegrass, shadscale

Inclusion 4: Shadscale, Bailey greasewood, Indian ricegrass

Ecological Site

Aboten: 027XY018NV

Inclusion 1: 027XY079NV

Inclusion 2: 027XY022NV

Inclusion 3: 027XY027NV

Inclusion 4: 027XY018NV

114--Aboten-Bluewing association**Composition****Major Components**

Aboten very gravelly silt loam, 2 to 8 percent slopes--50 percent

Bluewing gravelly sandy loam, 2 to 4 percent slopes--35 percent

Contrasting Inclusions

Inclusion 1: Bluewing extremely gravelly loamy sand, 0 to 2 percent slopes, frequently flooded--9 percent

Inclusion 2: Singatse very gravelly loam, 2 to 8 percent slopes--3 percent

Inclusion 3: Rock outcrop--3 percent

Map Unit Setting

Landscape position: Fan piedmonts

Aboten--Landform: Fan remnants; shape of slope: convex

Bluewing--Landform: Inset fans; shape of slope: concave

Inclusion 1--Landform: Drainageways; shape of slope: concave

Inclusion 2--Landform: Fan remnants; geomorphic position: backslope; shape of slope: convex

Inclusion 3--Landform: Fan remnants; geomorphic position: backslope; position on slope: upper

Major Component Description**Aboten Series**

Elevation: 4,200 to 4,800 feet

Precipitation: About 6 inches

Air temperature: About 51 degrees

Frost-free season: About 120 days

Surface layer texture: Very gravelly silt loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Bluewing Series

Elevation: 4,200 to 4,800 feet

Precipitation: About 6 inches

Air temperature: About 53 degrees

Frost-free season: About 120 days

Surface layer texture: Gravelly sandy loam

Drainage class: Excessively drained

Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Aboten: Bailey greasewood, Indian ricegrass, bluegrass, shadscale

Bluewing: Bailey greasewood, bud sagebrush, shadscale

Inclusion 1: Bailey greasewood, littleleaf horsebrush, tall gray rabbitbrush

Inclusion 2: Bailey greasewood, Indian ricegrass, shadscale

Inclusion 3: None

Ecological Site

Aboten: 027XY018NV

Bluewing: 027XY018NV

Inclusion 1: 027XY022NV

Inclusion 2: 027XY027NV

Inclusion 3: None

120--Appian-Isolde-Genegra association**Composition****Major Components**

Appian loamy coarse sand, 0 to 2 percent slopes--45 percent

Isolde fine sand, 4 to 15 percent slopes--20 percent

Genegraf very gravelly very fine sandy loam, 2 to 8 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Bluewing very gravelly sandy loam, 0 to 2 percent slopes--5 percent

Inclusion 2: Bluewing very gravelly loamy sand, 0 to 2 percent slopes, frequently flooded--5 percent

Inclusion 3: Playas--5 percent

Map Unit Setting

Landscape position: Bolsons

Appian--Landform: Lake terraces

Isolde--Landform: Dunes

Genegraf--Landform: Fan remnants; geomorphic position: backslope; position on slope: lower; shape of slope: convex

Inclusion 1--Landform: Fan skirts

Inclusion 2--Landform: Inset fans

Inclusion 3--Landform: Playas

Major Component Description

Appian Series

Elevation: 3,900 to 4,200 feet

Precipitation: About 5 inches

Air temperature: About 53 degrees

Frost-free season: About 125 days

Surface layer texture: Loamy coarse sand

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Isolde Series

Elevation: 3,900 to 4,200 feet

Precipitation: About 5 inches

Air temperature: About 53 degrees

Frost-free season: About 125 days

Surface layer texture: Fine sand

Drainage class: Excessively drained

Dominant parent material: Eolian sand

Genegraf Series

Elevation: 3,900 to 4,200 feet

Precipitation: About 5 inches

Air temperature: About 53 degrees

Frost-free season: About 125 days

Surface layer texture: Very gravelly very fine sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Appian: Black greasewood, shadscale

Isolde: Indian ricegrass, fourwing saltbush, hairy horsebrush

Genegraf: Bailey greasewood, bottlebrush squirreltail, shadscale

Inclusion 1: Bailey greasewood, Indian ricegrass, shadscale

Inclusion 2: Bailey greasewood, littleleaf horsebrush, tall gray rabbitbrush

Inclusion 3: None

Ecological Site

Appian: 027XY024NV

Isolde: 027XY023NV

Genegraf: 027XY018NV

Inclusion 1: 027XY018NV

Inclusion 2: 027XY022NV

Inclusion 3: None

130--Boomstick-Majuba-Sojur association

Composition

Major Components

Boomstick very channery silt loam, 30 to 50 percent slopes--45 percent

Majuba very channery loam, 30 to 50 percent slopes--25 percent

Sojur, 30 to 50 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Phliss extremely channery loam, 30 to 50 percent slopes--5 percent

Inclusion 2: Phliss extremely channery loam, 15 to 50 percent slopes--5 percent

Inclusion 3: Xeric Torrifluvents, loamy-skeletal, mixed (calcareous), mesic--3 percent

Inclusion 4: Boomstick extremely flaggy loam, 4 to 15 percent slopes--2 percent

Map Unit Setting

Landscape position: Mountains

Boomstick--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: south

Majuba--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: north

Sojur--Landform: Mountains; geomorphic position: backslope; position on slope: lower; shape of slope: convex

Inclusion 1--Landform: Mountains; shape of slope: convex

Inclusion 2--Landform: Mountains; shape of slope: concave
 Inclusion 3--Landform: Drainageways; position on slope: lower
 Inclusion 4--Landform: Mountains; geomorphic position: summit

Major Component Description

Boomstick Series

Elevation: 5,000 to 6,600 feet
Precipitation: About 9 inches
Air temperature: About 49 degrees
Frost-free season: About 115 days
Surface layer texture: Very channery silt loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from metamorphic rocks

Majuba Series

Elevation: 5,700 to 6,600 feet
Precipitation: About 11 inches
Air temperature: About 44 degrees
Frost-free season: About 115 days
Surface layer texture: Very channery loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from metamorphic rocks

Sojur Series

Elevation: 4,800 to 5,600 feet
Precipitation: About 6 inches
Air temperature: About 52 degrees
Frost-free season: About 115 days
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from metamorphic rocks

Dominant Present Vegetation

Boomstick: Bluegrass, bottlebrush squirreltail
 Majuba: Thurber needlegrass, sagebrush
 Sojur: Bottlebrush squirreltail, bud sagebrush, shadscale
 Inclusion 1: Big sagebrush, juniper
 Inclusion 2: Thurber needlegrass, Wyoming big sagebrush, pine bluegrass
 Inclusion 3: Wyoming big sagebrush, basin big sagebrush, spiny hopsage
 Inclusion 4: Bluegrass

Ecological Site

Boomstick: 027XY079NV
 Majuba: 027XY079NV
 Sojur: 027XY027NV

Inclusion 1: 027XY075NV
 Inclusion 2: 027XY007NV
 Inclusion 3: 027XY029NV
 Inclusion 4: 027XY020NV

131--Boomstick-Majuba-Phliss association

Composition

Major Components

Boomstick very channery silt loam, 30 to 50 percent slopes--35 percent
 Majuba very channery loam, 30 to 50 percent slopes--25 percent
 Phliss extremely channery loam, 30 to 50 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Rock outcrop--5 percent
 Inclusion 2: Aridic Argixerolls, loamy-skeletal, mixed, mesic--5 percent
 Inclusion 3: Xeric Torrfluvents, loamy-skeletal, mixed (calcareous), mesic--3 percent
 Inclusion 4: Phliss extremely channery loam, 30 to 50 percent slopes--2 percent

Map Unit Setting

Landscape position: Mountains
 Boomstick--Landform: Mountains; shape of slope: convex; aspect: south
 Majuba--Landform: Mountains; geomorphic position: backslope; aspect: north
 Phliss--Landform: Mountains; geomorphic position: backslope; shape of slope: concave; aspect: south
 Inclusion 1--Landform: Mountains; shape of slope: convex
 Inclusion 2--Landform: Mountains; shape of slope: concave
 Inclusion 3--Landform: Drainageways
 Inclusion 4--Landform: Mountains; geomorphic position: backslope; shape of slope: concave

Major Component Description

Boomstick Series

Elevation: 5,000 to 7,000 feet
Precipitation: About 9 inches
Air temperature: About 49 degrees
Frost-free season: About 115 days
Surface layer texture: Very channery silt loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from metamorphic rocks

Majuba Series

Elevation: 5,700 to 7,000 feet
Precipitation: About 10 inches
Air temperature: About 44 degrees
Frost-free season: About 115 days
Surface layer texture: Very channery loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from metamorphic rocks

Phliss Series

Elevation: 5,000 to 7,000 feet
Precipitation: About 9 inches
Air temperature: About 50 degrees
Frost-free season: About 115 days
Surface layer texture: Extremely channery loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from metamorphic rocks

Dominant Present Vegetation

Boomstick: Thurber needlegrass, spiny hopsage
 Majuba: Thurber needlegrass, sagebrush
 Phliss: Wyoming big sagebrush, bluegrass, bottlebrush squirreltail
 Inclusion 1: None
 Inclusion 2: Big sagebrush, bluegrass
 Inclusion 3: Wyoming big sagebrush, basin big sagebrush, spiny hopsage
 Inclusion 4: Big sagebrush

Ecological Site

Boomstick: 027XY079NV
 Majuba: 027XY079NV
 Phliss: 027XY007NV
 Inclusion 1: None
 Inclusion 2: 027XY054NV
 Inclusion 3: 027XY029NV
 Inclusion 4: 027XY075NV

132--Boomstick-Majuba association***Composition*****Major Components**

Boomstick very channery silt loam, 15 to 50 percent slopes--45 percent
 Majuba very channery loam, 15 to 50 percent slopes--40 percent

Contrasting Inclusions

Inclusion 1: Aridic Argixerolls, loamy-skeletal, mixed, mesic--7 percent
 Inclusion 2: Xeric Torrifuvents, loamy-skeletal,

mixed (calcareous), mesic--4 percent
 Inclusion 3: Aridic Haploxerolls, loamy-skeletal, mixed, frigid--3 percent
 Inclusion 4: Xeric Torriorthents, loamy-skeletal, mixed (calcareous), mesic extremely channery loam, 15 to 50 percent slopes--1 percent

Map Unit Setting

Landscape position: Mountains
 Boomstick--Landform: Mountains; shape of slope: convex; aspect: south
 Majuba--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: north
 Inclusion 1--Landform: Mountains; geomorphic position: footslope
 Inclusion 2--Landform: Drainageways
 Inclusion 3--Landform: Mountains; shape of slope: concave; aspect: north
 Inclusion 4--Landform: Mountains; geomorphic position: backslope; position on slope: upper; aspect: north

Major Component Description**Boomstick Series**

Elevation: 5,200 to 6,100 feet
Precipitation: About 9 inches
Air temperature: About 49 degrees
Frost-free season: About 115 days
Surface layer texture: Very channery silt loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from metamorphic rocks

Majuba Series

Elevation: 5,700 to 6,100 feet
Precipitation: About 10 inches
Air temperature: About 45 degrees
Frost-free season: About 115 days
Surface layer texture: Very channery loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from metamorphic rocks

Dominant Present Vegetation

Boomstick: Thurber needlegrass, spiny hopsage
 Majuba: Thurber needlegrass, sagebrush
 Inclusion 1: Big sagebrush, bluegrass
 Inclusion 2: Wyoming big sagebrush, basin big sagebrush, spiny hopsage
 Inclusion 3: Idaho fescue, bluebunch

wheatgrass, threetip sagebrush
Inclusion 4: Utah juniper, Wyoming big
sagebrush

Ecological Site

Boomstick: 027XY079NV
Majuba: 027XY079NV
Inclusion 1: 027XY054NV
Inclusion 2: 027XY029NV
Inclusion 3: 027XY079NV
Inclusion 4: 027XY074NV

139--Arclay very gravelly coarse sandy loam, 4 to 15 percent slopes

Composition

Major Components

Arclay very gravelly coarse sandy loam, 4 to 15
percent slopes--85 percent

Contrasting Inclusions

Inclusion 1: Acrelane very gravelly coarse sandy
loam, 4 to 30 percent slopes--7 percent
Inclusion 2: Xerollic Haplargids, loamy, mixed
(calcareous), mesic, shallow--6 percent
Inclusion 3: Xeric Torriorthents, loamy-skeletal,
mixed, mesic, shallow--1 percent
Inclusion 4: Rock outcrop--1 percent

Map Unit Setting

Landscape position: Hills

Arclay--Landform: Hills; geomorphic position:
backslope; shape of slope: convex

Inclusion 1--Landform: Hills; geomorphic
position: backslope

Inclusion 2--Landform: Hills; geomorphic
position: backslope; position on slope: lower

Inclusion 3--Landform: Inset fans

Inclusion 4--Landform: Hills; geomorphic
position: backslope; shape of slope: convex

Major Component Description

Arclay Series

Elevation: 5,400 to 5,900 feet

Precipitation: About 8 inches

Air temperature: About 48 degrees

Frost-free season: About 110 days

Surface layer texture: Very gravelly coarse
sandy loam

Drainage class: Well drained

Dominant parent material: Residuum derived
from granitic rocks

Dominant Present Vegetation

Arclay: Bluegrass, needlegrass
Inclusion 1: Wyoming big sagebrush
Inclusion 2: Wyoming big sagebrush
Inclusion 3: Wyoming big sagebrush
Inclusion 4: None

Ecological Site

Arclay: 027XY079NV
Inclusion 1: 027XY072NV
Inclusion 2: 027XY007NV
Inclusion 3: 027XY029NV
Inclusion 4: None

141--Arclay-Acrelane-Soar association

Composition

Major Components

Arclay very gravelly coarse sandy loam, 15 to
50 percent slopes--45 percent
Acrelane very gravelly coarse sandy loam, 15 to
50 percent slopes--25 percent
Soar very gravelly coarse sandy loam, 30 to 50
percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Arclay gravelly coarse sandy loam, 4
to 15 percent slopes--5 percent
Inclusion 2: Xeric Torriorthents, loamy-skeletal,
mixed, nonacid, mesic--5 percent
Inclusion 3: Shawave gravelly coarse sandy
loam, 2 to 8 percent slopes--3 percent
Inclusion 4: Vium, 50 to 75 percent slopes--2
percent

Map Unit Setting

Landscape position: Mountains

Arclay--Landform: Mountains; geomorphic
position: backslope; shape of slope: convex;
aspect: north

Acrelane--Landform: Mountains; geomorphic
position: backslope; shape of slope: concave

Soar--Landform: Mountains; geomorphic
position: backslope; shape of slope: convex;
aspect: south

Inclusion 1--Landform: Mountains; geomorphic
position: summit

Inclusion 2--Landform: Drainageways; shape of
slope: concave

Inclusion 3--Landform: Mountains; geomorphic
position: toeslope

Inclusion 4--Landform: Mountains; shape of

slope: convex

Major Component Description

Arclay Series

Elevation: 4,600 to 6,500 feet

Precipitation: About 10 inches

Air temperature: About 51 degrees

Frost-free season: About 120 days

Surface layer texture: Very gravelly coarse sandy loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from granitic rocks

Acrelane Series

Elevation: 4,600 to 6,500 feet

Precipitation: About 10 inches

Air temperature: About 51 degrees

Frost-free season: About 120 days

Surface layer texture: Very gravelly coarse sandy loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from granitic rocks

Soar Series

Elevation: 4,600 to 6,500 feet

Precipitation: About 10 inches

Air temperature: About 51 degrees

Frost-free season: About 120 days

Surface layer texture: Very gravelly coarse sandy loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from granitic rocks

Dominant Present Vegetation

Arclay: Bluegrass, needlegrass

Acrelane: Wyoming big sagebrush, desert needlegrass

Soar: Indian ricegrass, desert needlegrass

Inclusion 1: Thurber needlegrass

Inclusion 2: Wyoming big sagebrush, basin big sagebrush, spiny hopsage

Inclusion 3: Wyoming big sagebrush, bluegrass

Inclusion 4: Shadscale, Indian ricegrass

Ecological Site

Arclay: 027XY079NV

Acrelane: 027XY072NV

Soar: 027XY068NV

Inclusion 1: 027XY079NV

Inclusion 2: 027XY029NV

Inclusion 3: 027XY008NV

Inclusion 4: 027XY027NV

142--Arclay-Vium-Slocave association

Composition

Major Components

Arclay very gravelly coarse sandy loam, 50 to 75 percent slopes--45 percent

Vium very gravelly coarse sandy loam, 50 to 75 percent slopes--20 percent

Slocave very gravelly coarse sandy loam, 50 to 75 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Acrelane very gravelly coarse sandy loam, 4 to 30 percent slopes--5 percent

Inclusion 2: Rock outcrop--4 percent

Inclusion 3: Soar very gravelly coarse sandy loam, 50 to 75 percent slopes--3 percent

Inclusion 4: Typic Camborthids, loamy-skeletal, mixed, mesic--3 percent

Map Unit Setting

Landscape position: Mountains

Arclay--Landform: Mountains; shape of slope: convex; aspect: north

Vium--Landform: Mountains; geomorphic position: backslope; position on slope: lower; shape of slope: convex

Slocave--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: south

Inclusion 1--Landform: Mountains; geomorphic position: backslope; shape of slope: concave; aspect: north

Inclusion 2--Landform: Mountains; geomorphic position: summit

Inclusion 3--Landform: Mountains; geomorphic position: backslope; position on slope: upper

Inclusion 4--Landform: Fan remnants; geomorphic position: toeslope

Major Component Description

Arclay Series

Elevation: 4,600 to 5,500 feet

Precipitation: About 8 inches

Air temperature: About 50 degrees

Frost-free season: About 120 days

Surface layer texture: Very gravelly coarse sandy loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from granitic rocks

Vium Series

Elevation: 4,500 to 5,500 feet
Precipitation: About 6 inches
Air temperature: About 50 degrees
Frost-free season: About 120 days
Surface layer texture: Very gravelly coarse sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from granitic rocks

Slocave Series

Elevation: 4,500 to 5,500 feet
Precipitation: About 8 inches
Air temperature: About 52 degrees
Frost-free season: About 120 days
Surface layer texture: Very gravelly coarse sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from granitic rocks

Dominant Present Vegetation

Arclay: Bluegrass, needlegrass
 Vium: Bud sagebrush, shadscale
 Slocave: Desert needlegrass, littleleaf horsebrush, shadscale
 Inclusion 1: Wyoming big sagebrush
 Inclusion 2: None
 Inclusion 3: Desert needlegrass
 Inclusion 4: Bailey greasewood, Indian ricegrass, shadscale

Ecological Site

Arclay: 027XY079NV
 Vium: 027XY027NV
 Slocave: 027XY017NV
 Inclusion 1: 027XY072NV
 Inclusion 2: None
 Inclusion 3: 027XY068NV
 Inclusion 4: 027XY018NV

143--Ninemile-Rock outcrop complex**Composition****Major Components**

Ninemile very gravelly coarse sandy loam, 30 to 50 percent slopes--65 percent
 Rock outcrop unweathered bedrock, 15 to 50 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Xerollic Haplargids, loamy-skeletal, mixed, mesic, shallow--7 percent

Inclusion 2: Acrelane very gravelly coarse sandy loam, 30 to 50 percent slopes--3 percent
 Inclusion 3: Typic Torrfluvents, loamy-skeletal, mixed, nonacid, mesic--3 percent
 Inclusion 4: Soar very stony coarse sandy loam, 30 to 50 percent slopes--2 percent

Map Unit Setting

Landscape position: Mountains
 Ninemile--Landform: Mountains; geomorphic position: backslope
 Rock outcrop--Landform: Mountains; geomorphic position: backslope; position on slope: upper
 Inclusion 1--Landform: Mountains; shape of slope: concave
 Inclusion 2--Landform: Mountains; geomorphic position: footslope; shape of slope: concave
 Inclusion 3--Landform: Drainageways; shape of slope: concave
 Inclusion 4--Landform: Mountains; aspect: south

Major Component Description**Ninemile Series**

Elevation: 6,000 to 7,500 feet
Precipitation: About 11 inches
Air temperature: About 45 degrees
Frost-free season: About 95 days
Surface layer texture: Very gravelly coarse sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from granitic rocks

Rock outcrop Miscellaneous Area

Elevation: 6,000 to 7,500 feet
Surface layer texture: Unweathered bedrock

Dominant Present Vegetation

Ninemile: Bluegrass, low sagebrush
 Rock outcrop: None
 Inclusion 1: Utah juniper
 Inclusion 2: Wyoming big sagebrush, bluegrass, needlegrass
 Inclusion 3: Wyoming big sagebrush, basin big sagebrush
 Inclusion 4: Desert needlegrass

Ecological Site

Ninemile: 023XY031NV
 Rock outcrop: None
 Inclusion 1: 027XY074NV
 Inclusion 2: 027XY072NV
 Inclusion 3: 027XY029NV
 Inclusion 4: 027XY068NV

145--Ninemile-Shively-Rock outcrop association**Composition****Major Components**

Ninemile very gravelly sandy loam, 30 to 50 percent slopes--35 percent
 Shively loam, 15 to 50 percent slopes--35 percent
 Rock outcrop unweathered bedrock, 15 to 50 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Typic Haploxerolls, loamy-skeletal, mixed, frigid--6 percent
 Inclusion 2: Selbit extremely bouldery loamy coarse sand, 15 to 30 percent slopes--6 percent
 Inclusion 3: Typic Haplaquolls, fine-loamy, mixed, frigid--3 percent

Map Unit Setting

Landscape position: Mountains
 Ninemile--Landform: Mountains; geomorphic position: backslope; shape of slope: convex
 Shively--Landform: Mountains; geomorphic position: backslope; shape of slope: concave
 Rock outcrop--Landform: Mountains; geomorphic position: summit
 Inclusion 1--Landform: Mountains; geomorphic position: summit
 Inclusion 2--Landform: Mountains; shape of slope: concave
 Inclusion 3--Landform: Mountains; shape of slope: concave

Major Component Description**Ninemile Series**

Elevation: 6,000 to 7,500 feet
Precipitation: About 12 inches
Air temperature: About 44 degrees
Frost-free season: About 95 days
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from granitic rocks

Shively Series

Elevation: 6,100 to 7,500 feet
Precipitation: About 12 inches
Air temperature: About 44 degrees
Frost-free season: About 95 days
Surface layer texture: Loam

Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from granitic rocks

Rock outcrop Miscellaneous Area

Elevation: 6,000 to 7,500 feet
Surface layer texture: Unweathered bedrock

Dominant Present Vegetation

Ninemile: Bluegrass, low sagebrush
 Shively: Thurber needlegrass, mountain big sagebrush, snowberry
 Rock outcrop: None
 Inclusion 1: Mountain big sagebrush, oceanspray, serviceberry
 Inclusion 2: Antelope bitterbrush
 Inclusion 3: Idaho fescue, mountain brome, quaking aspen

Ecological Site

Ninemile: 023XY031NV
 Shively: 023XY043NV
 Rock outcrop: None
 Inclusion 1: 024XY034NV
 Inclusion 2: 023XY042NV
 Inclusion 3: 023XY028NV

150--Boton-Playas association**Composition****Major Components**

Boton silt loam, 0 to 2 percent slopes--50 percent
 Playas silty clay loam, 0 to 1 percent slopes--35 percent

Contrasting Inclusions

Inclusion 1: Duric Camborthids, coarse-silty, mixed, mesic--5 percent
 Inclusion 2: Durorthidic Torriorthents, coarse-loamy, mixed (calcareous), mesic--5 percent
 Inclusion 3: Aquic Torriorthents, fine-silty, mixed (calcareous), mesic--5 percent

Map Unit Setting

Landscape position: Bolsons
 Boton--Landform: Lake terraces; shape of slope: convex
 Playas--Landform: Playas; shape of slope: concave
 Inclusion 1--Landform: Lake terraces; position on slope: upper; shape of slope: convex

Inclusion 2--Landform: Lake terraces; position on slope: upper; shape of slope: concave
 Inclusion 3--Landform: Lake terraces; position on slope: lower; shape of slope: convex

Major Component Description

Boton Series

Elevation: 4,000 to 4,200 feet
Precipitation: About 7 inches
Air temperature: About 53 degrees
Frost-free season: About 130 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Playas Miscellaneous Area

Elevation: 4,000 to 4,200 feet
Surface layer texture: Silty clay loam
Dominant parent material: Residuum derived from lacustrine sediments

Dominant Present Vegetation

Boton: Black greasewood, bottlebrush squirreltail, shadscale
 Playas: None
 Inclusion 1: Shadscale, spiny hopsage
 Inclusion 2: Black greasewood, shadscale
 Inclusion 3: Black greasewood

Ecological Site

Boton: 027XY024NV
 Playas: None
 Inclusion 1: 027XY013NV
 Inclusion 2: 027XY024NV
 Inclusion 3: 027XY025NV

152--Benin-Benin, occasionally flooded silty clay loams

Composition

Major Components

Benin silty clay loam, 0 to 2 percent slopes--50 percent
 Benin silty clay loam, 0 to 2 percent slopes--35 percent

Contrasting Inclusions

Inclusion 1: Slaw silty clay loam, 0 to 2 percent slopes, occasionally flooded--5 percent
 Inclusion 2: Aquic Torriorthents, fine, montmorillonitic (calcareous), mesic--4

percent

Inclusion 3: Benin loamy sand, 0 to 2 percent slopes--3 percent
 Inclusion 4: Playas--3 percent

Map Unit Setting

Landscape position: Bolsons
 Benin--Landform: Lake terraces; shape of slope: convex
 Benin--Landform: Lake terraces; shape of slope: convex
 Inclusion 1--Landform: Lake terraces; shape of slope: concave
 Inclusion 2--Landform: Lake terraces; shape of slope: concave
 Inclusion 3--Landform: Lake terraces
 Inclusion 4--Landform: Playas; shape of slope: concave

Major Component Description

Benin Series

Elevation: 3,800 to 4,200 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 105 days
Surface layer texture: Silty clay loam
Drainage class: Well drained

Benin Series

Elevation: 3,800 to 4,200 feet
Precipitation: About 7 inches
Air temperature: About 48 degrees
Frost-free season: About 105 days
Surface layer texture: Silty clay loam
Drainage class: Well drained

Dominant Present Vegetation

Benin: Basin wildrye, black greasewood
 Benin: Torrey quailbush, basin wildrye
 Inclusion 1: Torrey quailbush, basin wildrye
 Inclusion 2: Aquic Torriorthents, fine, montmorillonitic (calcareous), mesic
 Inclusion 3: Torrey quailbush, basin wildrye
 Inclusion 4: None

Ecological Site

Benin: 024XY011NV
 Benin: 024XY015NV
 Inclusion 1: 024XY015NV
 Inclusion 2: 024XY064NV
 Inclusion 3: 024XY015NV
 Inclusion 4: None

160--Badland**Composition****Major Components**

Badland variable, 8 to 50 percent slopes--100 percent

Map Unit Setting

Landscape position: Intermontane basins
Badland--Landform: Fan remnants

Major Component Description**Badland Miscellaneous Area**

Elevation: 3,900 to 4,500 feet
Surface layer texture: Variable
Dominant parent material: Residuum derived from lacustrine sediments

Dominant Present Vegetation

Badland: None

Ecological Site

Badland: None

161--Dune land-Playas complex**Composition****Major Components**

Dune land fine sand, 4 to 30 percent slopes--60 percent
Playas silty clay loam, 0 to 1 percent slopes--40 percent

Map Unit Setting

Landscape position: Intermontane basins
Dune land--Landform: Dunes; shape of slope: convex
Playas--Landform: Playas

Major Component Description**Dune land Miscellaneous Area**

Elevation: 3,800 to 4,200 feet
Surface layer texture: Fine sand
Drainage class: Excessively drained
Dominant parent material: Eolian sand

Playas Miscellaneous Area

Elevation: 4,000 to 4,200 feet
Surface layer texture: Silty clay loam

Dominant Present Vegetation

Dune land: None
Playas: None

Ecological Site

Playas: None
Dune land: None

163--Dune land**Composition****Major Components**

Dune land fine sand, 4 to 30 percent slopes--100 percent

Map Unit Setting

Landscape position: Intermontane basins
Dune land--Landform: Dunes; shape of slope: convex

Major Component Description**Dune land Miscellaneous Area**

Elevation: 3,800 to 4,200 feet
Surface layer texture: Fine sand
Drainage class: Excessively drained
Dominant parent material: Eolian sand

Dominant Present Vegetation

Dune land: None

Ecological Site

Dune land: None

171--Bluewing-Toulon-Rock outcrop association**Composition****Major Components**

Bluewing gravelly sandy loam, 2 to 8 percent slopes--50 percent
Toulon very gravelly loam, 2 to 8 percent slopes--25 percent
Rock outcrop unweathered bedrock, 4 to 8 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Bluewing very gravelly loamy sand, 0 to 2 percent slopes, frequently flooded--5 percent
Inclusion 2: Trocken very gravelly silt loam, moderately saline-sodic, 2 to 4 percent slopes--3 percent
Inclusion 3: Mazuma loamy fine sand, 0 to 2 percent slopes--2 percent

Map Unit Setting

Landscape position: Bolsons

Bluewing--Landform: Beach plains; position on slope: lower; shape of slope: convex
 Toulon--Landform: Spits; shape of slope: convex
 Rock outcrop--Landform: Beach plains
 Inclusion 1--Landform: Drainageways; shape of slope: concave
 Inclusion 2--Landform: Beach plains; position on slope: lower; shape of slope: concave
 Inclusion 3--Landform: Lagoons; shape of slope: concave

Major Component Description

Bluewing Series

Elevation: 3,800 to 4,300 feet
Precipitation: About 6 inches
Air temperature: About 54 degrees
Frost-free season: About 130 days
Surface layer texture: Gravelly sandy loam
Drainage class: Excessively drained
Dominant parent material: Alluvium derived from mixed rocks

Toulon Series

Elevation: 3,800 to 4,300 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 120 days
Surface layer texture: Very gravelly loam
Drainage class: Excessively drained
Dominant parent material: Alluvium derived from mixed rocks

Rock outcrop Miscellaneous Area

Elevation: 3,800 to 4,300 feet
Surface layer texture: Unweathered bedrock

Dominant Present Vegetation

Bluewing: Bailey greasewood, Indian ricegrass, shadscale
 Toulon: Bailey greasewood, shadscale
 Rock outcrop: None
 Inclusion 1: Bailey greasewood, littleleaf horsebrush, tall gray rabbitbrush
 Inclusion 2: Black greasewood, shadscale
 Inclusion 3: Bailey greasewood, shadscale

Ecological Site

Bluewing: 027XY018NV
 Toulon: 027XY018NV
 Rock outcrop: None
 Inclusion 1: 027XY013NV
 Inclusion 2: 027XY024NV
 Inclusion 3: 027XY018NV

172--Bluewing gravelly sandy loam, 2 to 8 percent slopes

Composition

Major Components

Bluewing gravelly sandy loam, 2 to 8 percent slopes--90 percent

Contrasting Inclusions

Inclusion 1: Mazuma very fine sandy loam, 2 to 8 percent slopes--5 percent
 Inclusion 2: Swingler silt loam, clayey substratum, 0 to 2 percent slopes--4 percent
 Inclusion 3: Bluewing very gravelly loamy sand, 0 to 2 percent slopes, frequently flooded--1 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Bluewing--Landform: Inset fans; shape of slope: concave
 Inclusion 1--Landform: Fan skirts; shape of slope: convex
 Inclusion 2--Landform: Stream terraces; shape of slope: plane
 Inclusion 3--Landform: Drainageways; shape of slope: concave

Major Component Description

Bluewing Series

Elevation: 4,000 to 4,400 feet
Precipitation: About 6 inches
Air temperature: About 54 degrees
Frost-free season: About 130 days
Surface layer texture: Gravelly sandy loam
Drainage class: Excessively drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Bluewing: Bailey greasewood, bottlebrush squirreltail, shadscale
 Inclusion 1: Bottlebrush squirreltail, bud sagebrush, shadscale
 Inclusion 2: Black greasewood, shadscale
 Inclusion 3: Bailey greasewood, littleleaf horsebrush, tall gray rabbitbrush

Ecological Site

Bluewing: 027XY018NV
 Inclusion 1: 027XY013NV
 Inclusion 2: 027XY025NV
 Inclusion 3: 027XY022NV

173--Bluewing very gravelly loamy sand, 0 to 2 percent slopes, frequently flooded**Composition****Major Components**

Bluewing very gravelly loamy sand, 0 to 2 percent slopes--90 percent

Contrasting Inclusions

Inclusion 1: Mazuma very gravelly sandy loam, moderately saline-sodic, 0 to 2 percent slopes--5 percent

Inclusion 2: Kumiva silt loam, 0 to 2 percent slopes--5 percent

Map Unit Setting

Landscape position: Semi-bolsons

Bluewing--Landform: Flood plains

Inclusion 1--Landform: Stream terraces; position on slope: upper

Inclusion 2--Landform: Stream terraces; position on slope: lower

Major Component Description**Bluewing Series**

Elevation: 3,900 to 4,200 feet

Precipitation: About 6 inches

Air temperature: About 54 degrees

Frost-free season: About 130 days

Surface layer texture: Very gravelly loamy sand

Drainage class: Excessively drained

Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Bluewing: Indian ricegrass, tall gray rabbitbrush

Inclusion 1: Black greasewood, shadscale

Inclusion 2: Winterfat

Ecological Site

Bluewing: 027XY022NV

Inclusion 1: 027XY024NV

Inclusion 2: 027XY014NV

180--Biga-Granshaw-Labkey association**Composition****Major Components**

Biga gravelly coarse sandy loam, 2 to 8 percent slopes--35 percent

Granshaw gravelly coarse sandy loam, 2 to 8 percent slopes--30 percent

Labkey gravelly sandy loam, 0 to 2 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Kumiva gravelly sandy loam, 0 to 2 percent slopes--5 percent

Inclusion 2: Labkey gravelly loamy sand, 0 to 2 percent slopes, occasionally flooded--5 percent

Inclusion 3: Hawsley sand, 2 to 8 percent slopes--3 percent

Inclusion 4: Shawave gravelly sandy loam, 2 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts

Biga--Landform: Fan remnants; shape of slope: convex

Granshaw--Landform: Fan aprons; shape of slope: convex

Labkey--Landform: Inset fans; shape of slope: concave

Inclusion 1--Landform: Stream terraces

Inclusion 2--Landform: Drainageways

Inclusion 3--Landform: Sand sheets; shape of slope: convex

Inclusion 4--Landform: Alluvial fans

Major Component Description**Biga Series**

Elevation: 4,300 to 4,800 feet

Precipitation: About 5 inches

Air temperature: About 53 degrees

Frost-free season: About 125 days

Surface layer texture: Gravelly coarse sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from granitic rocks

Granshaw Series

Elevation: 4,300 to 4,800 feet

Precipitation: About 6 inches

Air temperature: About 53 degrees

Frost-free season: About 125 days

Surface layer texture: Gravelly coarse sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from granitic rocks

Labkey Series

Elevation: 4,000 to 4,600 feet

Precipitation: About 5 inches

Air temperature: About 53 degrees

Frost-free season: About 125 days
Surface layer texture: Gravelly sandy loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from granitic rocks

Dominant Present Vegetation

Biga: Bailey greasewood, Indian ricegrass, shadscale
 Granshaw: Indian ricegrass, bud sagebrush, shadscale
 Labkey: Bailey greasewood, Indian ricegrass, shadscale
 Inclusion 1: Indian ricegrass, winterfat
 Inclusion 2: Bailey greasewood, littleleaf horsebrush, tall gray rabbitbrush
 Inclusion 3: Indian ricegrass, fourwing saltbush, winterfat
 Inclusion 4: Indian ricegrass, Wyoming big sagebrush

Ecological Site

Biga: 027XY018NV
 Granshaw: 027XY013NV
 Labkey: 027XY018NV
 Inclusion 1: 027XY014NV
 Inclusion 2: 027XY022NV
 Inclusion 3: 027XY009NV
 Inclusion 4: 027XY008NV

181--Biga gravelly coarse sandy loam, 2 to 8 percent slopes

Composition

Major Components

Biga gravelly coarse sandy loam, 2 to 8 percent slopes--85 percent

Contrasting Inclusions

Inclusion 1: Xerollic Camborthids, coarse-loamy, mixed, mesic--6 percent
 Inclusion 2: Durixerollic Natrargids, fine, montmorillonitic, mesic--6 percent
 Inclusion 3: Typic Torriorthents, sandy-skeletal, mixed, mesic--2 percent
 Inclusion 4: Kumiva silt loam, 0 to 2 percent slopes--1 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Biga--Landform: Fan remnants; shape of slope: convex
 Inclusion 1--Landform: Inset fans; shape of slope: concave

Inclusion 2--Landform: Fan remnants; position on slope: upper; shape of slope: convex
 Inclusion 3--Landform: Drainageways; shape of slope: concave
 Inclusion 4--Landform: Stream terraces; shape of slope: plane

Major Component Description

Biga Series

Elevation: 4,500 to 5,000 feet
Precipitation: About 5 inches
Air temperature: About 51 degrees
Frost-free season: About 120 days
Surface layer texture: Gravelly coarse sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from granitic rocks

Dominant Present Vegetation

Biga: Bailey greasewood, Indian ricegrass, shadscale
 Inclusion 1: Wyoming big sagebrush
 Inclusion 2: Lahontan sagebrush
 Inclusion 3: Tall gray rabbitbrush
 Inclusion 4: Winterfat

Ecological Site

Biga: 027XY018NV
 Inclusion 1: 027XY008NV
 Inclusion 2: 027XY068NV
 Inclusion 3: 027XY022NV
 Inclusion 4: 027XY014NV

182--Biga gravelly loam, 2 to 8 percent slopes

Composition

Major Components

Biga gravelly loam, 2 to 8 percent slopes--90 percent

Contrasting Inclusions

Inclusion 1: Granshaw gravelly very fine sandy loam, 2 to 8 percent slopes--4 percent
 Inclusion 2: Slipback gravelly sandy loam, 2 to 8 percent slopes--2 percent
 Inclusion 3: Deadyon loam, 0 to 4 percent slopes--2 percent
 Inclusion 4: Biga, 2 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts

Biga--Landform: Fan remnants; shape of slope: convex

Inclusion 1--Landform: Fan skirts; shape of slope: concave

Inclusion 2--Landform: Fan remnants; shape of slope: concave

Inclusion 3--Landform: Inset fans

Inclusion 4--Landform: Fan remnants

Major Component Description

Biga Series

Elevation: 4,500 to 5,000 feet

Precipitation: About 5 inches

Air temperature: About 51 degrees

Frost-free season: About 120 days

Surface layer texture: Gravelly loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from granitic rocks

Dominant Present Vegetation

Biga: Bluegrass, bud sagebrush, shadscale

Inclusion 1: Bluegrass, bud sagebrush, shadscale

Inclusion 2: Indian ricegrass, Wyoming big sagebrush, bluegrass

Inclusion 3: Indian ricegrass, Wyoming big sagebrush, bluegrass

Inclusion 4: Bluegrass, bud sagebrush, shadscale

Ecological Site

Biga: 027XY013NV

Inclusion 1: 027XY013NV

Inclusion 2: 027XY008NV

Inclusion 3: 027XY008NV

Inclusion 4: 027XY013NV

190--Cresal silt loam, 0 to 2 percent slopes

Composition

Major Components

Cresal silt loam, 0 to 2 percent slopes--90 percent

Contrasting Inclusions

Inclusion 1: Cresal silt loam, 0 to 2 percent slopes, rarely flooded--5 percent

Inclusion 2: Boton silt loam, 0 to 2 percent slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts

Cresal--Landform: Lake terraces; shape of slope: plane

Inclusion 1--Landform: Inset fans; shape of slope: concave

Inclusion 2--Landform: Lake plains

Major Component Description

Cresal Series

Elevation: 4,000 to 4,200 feet

Precipitation: About 6 inches

Air temperature: About 53 degrees

Frost-free season: About 130 days

Surface layer texture: Silt loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Cresal: Pepperweed, shadscale

Inclusion 1: Black greasewood, shadscale

Inclusion 2: Black greasewood

Ecological Site

Cresal: 024XY067NV

Inclusion 1: 027XY024NV

Inclusion 2: 027XY024NV

201--Dorper-Envol association

Composition

Major Components

Dorper extremely gravelly very fine sandy loam, 4 to 15 percent slopes--60 percent

Envol very gravelly loam, 15 to 30 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Typic Haplargids, fine-loamy, mixed, mesic--5 percent

Inclusion 2: Rock outcrop--5 percent

Inclusion 3: Bluewing extremely gravelly loamy sand, 0 to 2 percent slopes, frequently flooded--3 percent

Inclusion 4: Typic Camborthids, coarse-loamy, mixed, mesic--2 percent

Map Unit Setting

Landscape position: Hills and intermontane basins

Dorper--Landform: Fan remnants; geomorphic position: summit; shape of slope: convex

Envol--Landform: Hills; geomorphic position:

backslope; shape of slope: convex
 Inclusion 1--Landform: Fan remnants; position on slope: lower
 Inclusion 2--Landform: Hills; shape of slope: convex
 Inclusion 3--Landform: Inset fans; shape of slope: concave
 Inclusion 4--Landform: Fan remnants; geomorphic position: footslope

Major Component Description

Dorper Series

Elevation: 4,400 to 5,200 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 125 days
Surface layer texture: Extremely gravelly very fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Envol Series

Elevation: 4,500 to 5,200 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 125 days
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum derived from volcanic rocks

Dominant Present Vegetation

Dorper: Bailey greasewood, bud sagebrush, shadscale
 Envol: Bud sagebrush, littleleaf horsebrush, shadscale
 Inclusion 1: Bud sagebrush, cheatgrass, shadscale
 Inclusion 2: None
 Inclusion 3: Bailey greasewood, littleleaf horsebrush, tall gray rabbitbrush
 Inclusion 4: Bottlebrush squirreltail, winterfat

Ecological Site

Dorper: 027XY018NV
 Envol: 027XY027NV
 Inclusion 1: 027XY013NV
 Inclusion 2: None
 Inclusion 3: 027XY022NV
 Inclusion 4: 027XY014NV

203--Dorper extremely gravelly very fine sandy loam, 2 to 8 percent slopes

Composition

Major Components

Dorper extremely gravelly very fine sandy loam, 2 to 8 percent slopes--90 percent

Contrasting Inclusions

Inclusion 1: Bluewing very gravelly loamy sand, 0 to 2 percent slopes, frequently flooded--6 percent
 Inclusion 2: Aboten stony very fine sandy loam, 2 to 8 percent slopes--2 percent
 Inclusion 3: Xerollic Haplargids, loamy-skeletal, mixed, mesic--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Dorper--Landform: Fan remnants; shape of slope: convex
 Inclusion 1--Landform: Drainageways; shape of slope: concave
 Inclusion 2--Landform: Fan remnants; geomorphic position: summit; position on slope: upper
 Inclusion 3--Landform: Fan remnants; geomorphic position: backslope; position on slope: upper

Major Component Description

Dorper Series

Elevation: 4,200 to 5,300 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 125 days
Surface layer texture: Extremely gravelly very fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Dorper: Bailey greasewood, bud sagebrush, shadscale
 Inclusion 1: Bailey greasewood, littleleaf horsebrush, tall gray rabbitbrush
 Inclusion 2: Bailey greasewood, bud sagebrush, shadscale
 Inclusion 3: Lahontan sagebrush

Ecological Site

Dorper: 027XY018NV

Inclusion 1: 027XY022NV
 Inclusion 2: 027XY018NV
 Inclusion 3: 027XY020NV

204--Dorper, stony-Jerval-Dorper association

Composition

Major Components

Dorper stony very fine sandy loam, 2 to 8 percent slopes--45 percent
 Jerval gravelly very fine sandy loam, 2 to 8 percent slopes--25 percent
 Dorper extremely gravelly very fine sandy loam, 2 to 8 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Bluewing very gravelly loamy sand, 0 to 4 percent slopes, frequently flooded--3 percent
 Inclusion 2: Xeric Torriorthents, sandy-skeletal, mixed, mesic--3 percent
 Inclusion 3: Aboten cobbly very fine sandy loam, 2 to 8 percent slopes--2 percent
 Inclusion 4: Haploxerollic Durargids, fine, montmorillonitic, mesic--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Dorper--Landform: Fan remnants; position on slope: upper; shape of slope: convex
 Jerval--Landform: Fan aprons; shape of slope: convex
 Dorper--Landform: Fan remnants; position on slope: lower; shape of slope: convex
 Inclusion 1--Landform: Drainageways; shape of slope: concave
 Inclusion 2--Landform: Inset fans; shape of slope: concave
 Inclusion 3--Landform: Fan remnants; position on slope: upper; shape of slope: convex
 Inclusion 4--Landform: Fan remnants; position on slope: upper; shape of slope: concave

Major Component Description

Dorper Series

Elevation: 4,100 to 5,100 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 125 days
Surface layer texture: Stony very fine sandy loam
Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Jerval Series

Elevation: 4,100 to 4,800 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 125 days
Surface layer texture: Gravelly very fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dorper Series

Elevation: 4,300 to 5,300 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 125 days
Surface layer texture: Extremely gravelly very fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Dorper: Bluegrass, bud sagebrush, shadscale
 Jerval: Bottlebrush squirreltail, bud sagebrush, shadscale
 Dorper: Bailey greasewood, bud sagebrush, shadscale
 Inclusion 1: Bailey greasewood, littleleaf horsebrush, tall gray rabbitbrush
 Inclusion 2: Wyoming big sagebrush
 Inclusion 3: Bud sagebrush, shadscale
 Inclusion 4: Sagebrush, Thurber needlegrass

Ecological Site

Dorper: 027XY013NV
 Jerval: 027XY013NV
 Dorper: 027XY018NV
 Inclusion 1: 027XY018NV
 Inclusion 2: 027XY029NV
 Inclusion 3: 027XY013NV
 Inclusion 4: 027XY079NV

206--Dorper very gravelly sandy loam, 2 to 8 percent slopes

Composition

Major Components

Dorper very gravelly sandy loam, 2 to 8 percent

slopes--85 percent

Contrasting Inclusions

- Inclusion 1: Badland--5 percent
 Inclusion 2: Kumiva silt loam, 0 to 2 percent slopes--5 percent
 Inclusion 3: Hawsley sand, 2 to 8 percent slopes--4 percent
 Inclusion 4: Labkey very gravelly loamy sand, 0 to 2 percent slopes, frequently flooded--1 percent

Map Unit Setting

- Landscape position:* Fan piedmonts
 Dorper--Landform: Fan remnants; shape of slope: convex
 Inclusion 1--Landform: Fan remnants; geomorphic position: backslope
 Inclusion 2--Landform: Inset fans; shape of slope: concave
 Inclusion 3--Landform: Sand sheets
 Inclusion 4--Landform: Drainageways; shape of slope: concave

Major Component Description

Dorper Series

- Elevation:* 4,200 to 5,200 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 125 days
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

- Dorper: Bailey greasewood, bud sagebrush, shadscale
 Inclusion 1: None
 Inclusion 2: Winterfat
 Inclusion 3: Bailey greasewood, Indian ricegrass
 Inclusion 4: Bailey greasewood, tall gray rabbitbrush

Ecological Site

- Dorper: 027XY018NV
 Inclusion 1: None
 Inclusion 2: 027XY014NV
 Inclusion 3: 027XY009NV
 Inclusion 4: 027XY022NV

210--Dorper-Aboten-Kumiva association

Composition

Major Components

- Dorper stony very fine sandy loam, 2 to 8 percent slopes--40 percent
 Aboten very gravelly silt loam, 4 to 15 percent slopes--30 percent
 Kumiva silt loam, 0 to 4 percent slopes--20 percent

Contrasting Inclusions

- Inclusion 1: Xeric Torrfluvents, loamy-skeletal, mixed (calcareous), mesic--7 percent
 Inclusion 2: Envol very gravelly loam, 2 to 8 percent slopes--3 percent

Map Unit Setting

- Landscape position:* Fan piedmonts
 Dorper--Landform: Fan remnants; position on slope: lower; shape of slope: convex
 Aboten--Landform: Fan remnants; position on slope: upper; shape of slope: convex
 Kumiva--Landform: Inset fans; shape of slope: concave
 Inclusion 1--Landform: Drainageways; shape of slope: concave
 Inclusion 2--Landform: Fan remnants; geomorphic position: summit

Major Component Description

Dorper Series

- Elevation:* 4,300 to 4,800 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 125 days
Surface layer texture: Stony very fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess, and volcanic ash

Aboten Series

- Elevation:* 4,300 to 4,800 feet
Precipitation: About 6 inches
Air temperature: About 51 degrees
Frost-free season: About 120 days
Surface layer texture: Very gravelly silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess, and volcanic ash

Kumiva Series

Elevation: 4,300 to 4,800 feet
Precipitation: About 6 inches
Air temperature: About 51 degrees
Frost-free season: About 120 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess, and volcanic ash

Dominant Present Vegetation

Dorper: Bud sagebrush, shadscale
 Aboten: Indian ricegrass, winterfat
 Kumiva: Indian ricegrass, winterfat
 Inclusion 1: Wyoming big sagebrush, basin big sagebrush
 Inclusion 2: Bailey greasewood, Indian ricegrass, shadscale

Ecological Site

Dorper: 027XY013NV
 Aboten: 027XY018NV
 Kumiva: 027XY014NV
 Inclusion 1: 027XY029NV
 Inclusion 2: 027XY027NV

220--Cleavage-Phliss-Majuba association**Composition****Major Components**

Cleavage extremely gravelly loam, 50 to 75 percent slopes--35 percent
 Phliss very channery loam, 50 to 75 percent slopes--25 percent
 Majuba very channery loam, 30 to 50 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Rock outcrop--6 percent
 Inclusion 2: Aridic Haploxerolls, loamy-skeletal, mixed, frigid--5 percent
 Inclusion 3: Phliss extremely channery loam, 30 to 50 percent slopes--2 percent
 Inclusion 4: Cleavage extremely gravelly loam, 4 to 15 percent slopes--2 percent

Map Unit Setting

Landscape position: Mountains
 Cleavage--Landform: Mountains; position on slope: upper; shape of slope: convex
 Phliss--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: south

Majuba--Landform: Mountains; geomorphic position: backslope; position on slope: lower; shape of slope: convex
 Inclusion 1--Landform: Mountains
 Inclusion 2--Landform: Mountains; geomorphic position: backslope; position on slope: upper; shape of slope: concave
 Inclusion 3--Landform: Mountains; geomorphic position: backslope; position on slope: lower; shape of slope: concave
 Inclusion 4--Landform: Mountains; geomorphic position: summit; shape of slope: convex

Major Component Description**Cleavage Series**

Elevation: 5,500 to 7,200 feet
Precipitation: About 14 inches
Air temperature: About 44 degrees
Frost-free season: About 90 days
Surface layer texture: Extremely gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum derived from volcanic rocks

Phliss Series

Elevation: 5,500 to 7,200 feet
Precipitation: About 9 inches
Air temperature: About 50 degrees
Frost-free season: About 120 days
Surface layer texture: Very channery loam
Drainage class: Well drained
Dominant parent material: Residuum derived from metamorphic rocks

Majuba Series

Elevation: 6,200 to 7,700 feet
Precipitation: About 11 inches
Air temperature: About 44 degrees
Frost-free season: About 110 days
Surface layer texture: Very channery loam
Drainage class: Well drained
Dominant parent material: Residuum derived from metamorphic rocks

Dominant Present Vegetation

Cleavage: Idaho fescue, bluebunch wheatgrass, low sagebrush
 Phliss: Thurber needlegrass, bluebunch wheatgrass, bluegrass
 Majuba: Thurber needlegrass, sagebrush
 Inclusion 1: None
 Inclusion 2: Serviceberry, threetip sagebrush
 Inclusion 3: Utah juniper
 Inclusion 4: Idaho fescue, low sagebrush

Ecological Site

Cleavage: 024XY027NV
 Phliss: 024XY028NV
 Majuba: 027XY079NV
 Inclusion 1: None
 Inclusion 2: 024X046NV
 Inclusion 3: 027XY075NV
 Inclusion 4: 024X016NV

221--Cleavage-Burnborough association**Composition****Major Components**

Cleavage very gravelly loam, 30 to 50 percent slopes--45 percent
 Burnborough very gravelly loam, 15 to 50 percent slopes--40 percent

Contrasting Inclusions

Inclusion 1: Lithic Xerollic Haplargids, clayey-skeletal, montmorillonitic, mesic--5 percent
 Inclusion 2: Lithic Argixerolls, loamy-skeletal, mixed, mesic--4 percent
 Inclusion 3: Aridic Argixerolls, fine-loamy, mixed, mesic--4 percent
 Inclusion 4: Cumulic Haploxerolls, coarse-loamy, mixed, mesic stony sandy loam, 2 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Mountains

Cleavage--Landform: Mountains; geomorphic position: backslope; shape of slope: convex
 Burnborough--Landform: Mountains; geomorphic position: backslope; shape of slope: concave
 Inclusion 1--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: south
 Inclusion 2--Landform: Mountains; geomorphic position: footslope; shape of slope: convex
 Inclusion 3--Landform: Mountains; geomorphic position: backslope; position on slope: lower; shape of slope: concave
 Inclusion 4--Landform: Drainageways

Major Component Description**Cleavage Series**

Elevation: 5,500 to 7,200 feet
Precipitation: About 12 inches
Air temperature: About 43 degrees
Frost-free season: About 90 days
Surface layer texture: Very gravelly loam
Drainage class: Well drained

Dominant parent material: Residuum derived from volcanic rocks

Burnborough Series

Elevation: 5,500 to 7,200 feet
Precipitation: About 12 inches
Air temperature: About 43 degrees
Frost-free season: About 90 days
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum derived from volcanic rocks

Dominant Present Vegetation

Cleavage: Bluebunch wheatgrass, bluegrass
 Burnborough: Idaho fescue, bluebunch wheatgrass, tapertip hawksbeard
 Inclusion 1: Utah juniper
 Inclusion 2: Bluegrass
 Inclusion 3: Thurber needlegrass, mountain big sagebrush
 Inclusion 4: Sagebrush, Thurber needlegrass

Ecological Site

Cleavage: 024XY027NV
 Burnborough: 024XY021NV
 Inclusion 1: 027XY075NV
 Inclusion 2: 027XY046NV
 Inclusion 3: 027XY058NV
 Inclusion 4: 027XY046NV

230--Coldent-Isolde-Swangler association**Composition****Major Components**

Coldent gravelly fine sand, 0 to 2 percent slopes--45 percent
 Isolde fine sand, 4 to 15 percent slopes--20 percent
 Swangler silt loam, 0 to 2 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Durorthidic Torriorthents, fine, montmorillonitic (calcareous), mesic--5 percent
 Inclusion 2: Playas--4 percent
 Inclusion 3: Kumiva gravelly loamy sand, 0 to 2 percent slopes, occasionally flooded--3 percent
 Inclusion 4: Durorthidic Torriorthents, coarse-loamy, mixed (calcareous), mesic--3 percent

Map Unit Setting

Landscape position: Bolsons
Coldent--Landform: Alluvial flats
Isolde--Landform: Dunes; shape of slope: convex
Swingler--Landform: Lake terraces
Inclusion 1--Landform: Lake terraces; position on slope: lower
Inclusion 2--Landform: Playas
Inclusion 3--Landform: Drainageways
Inclusion 4--Landform: Alluvial flats; position on slope: upper

Major Component Description**Coldent Series**

Elevation: 3,900 to 4,300 feet
Precipitation: About 5 inches
Air temperature: About 53 degrees
Frost-free season: About 125 days
Surface layer texture: Gravelly fine sand
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Isolde Series

Elevation: 3,900 to 4,300 feet
Precipitation: About 5 inches
Air temperature: About 53 degrees
Frost-free season: About 125 days
Surface layer texture: Fine sand
Drainage class: Excessively drained
Dominant parent material: Eolian sand

Swingler Series

Elevation: 3,900 to 4,300 feet
Precipitation: About 5 inches
Air temperature: About 53 degrees
Frost-free season: About 125 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Residuum derived from lacustrine sediments

Dominant Present Vegetation

Coldent: Bailey greasewood, Indian ricegrass, shadscale, spiny hopsage
Isolde: Indian ricegrass, black greasewood, fourwing saltbush
Swingler: Bailey greasewood, black greasewood, shadscale
Inclusion 1: Black greasewood, shadscale
Inclusion 2: None
Inclusion 3: Bailey greasewood, tall gray rabbitbrush

Inclusion 4: Bailey greasewood, littleleaf horsebrush

Ecological Site

Coldent: 027XY018NV
Isolde: 027XY016NV
Swingler: 027XY024NV
Inclusion 1: 027XY025NV
Inclusion 2: None
Inclusion 3: 027XY022NV
Inclusion 4: 027XY018NV

231--Coldent-Hawsley-Mazuma association**Composition****Major Components**

Coldent gravelly fine sand, 2 to 8 percent slopes--50 percent
Hawsley fine sand, 4 to 15 percent slopes--20 percent
Mazuma silt loam, 0 to 4 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Typic Torrifluvents, loamy-skeletal, mixed (calcareous), mesic--8 percent
Inclusion 2: Badland--4 percent
Inclusion 3: Playas--3 percent

Map Unit Setting

Landscape position: Bolsons
Coldent--Landform: Spits; shape of slope: convex
Hawsley--Landform: Dunes; shape of slope: convex
Mazuma--Landform: Lagoons; shape of slope: concave
Inclusion 1--Landform: Drainageways; shape of slope: concave
Inclusion 2--Landform: Beach plains
Inclusion 3--Landform: Playas; shape of slope: concave

Major Component Description**Coldent Series**

Elevation: 3,900 to 4,300 feet
Precipitation: About 5 inches
Air temperature: About 53 degrees
Frost-free season: About 125 days
Surface layer texture: Gravelly fine sand
Drainage class: Well drained
Dominant parent material: Alluvium derived from

mixed rocks

Hawsley Series

Elevation: 3,900 to 4,300 feet
Precipitation: About 5 inches
Air temperature: About 53 degrees
Frost-free season: About 125 days
Surface layer texture: Fine sand
Drainage class: Somewhat excessively drained
Dominant parent material: Water re-worked eolian sand

Mazuma Series

Elevation: 3,900 to 4,300 feet
Precipitation: About 5 inches
Air temperature: About 53 degrees
Frost-free season: About 125 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Coldent: Bailey greasewood, Indian ricegrass, shadscale, spiny hopsage
 Hawsley: Indian ricegrass, fourwing saltbush
 Mazuma: Black greasewood, shadscale
 Inclusion 1: Bailey greasewood, tall gray rabbitbrush
 Inclusion 2: None
 Inclusion 3: None

Ecological Site

Coldent: 027XY018NV
 Hawsley: 027XY009N
 Mazuma: 027XY024NV
 Inclusion 1: 027XY022NV
 Inclusion 2: None
 Inclusion 3: None

245--Dedmount-Umberland-Umberland, ponded association

Composition

Major Components

Dedmount loam, 0 to 2 percent slopes--40 percent
 Umberland silty clay loam, 0 to 2 percent slopes--30 percent
 Umberland silty clay loam, 0 to 2 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Dedmount loamy sand, 0 to 4 percent slopes--7 percent
 Inclusion 2: Typic Torriorthents, coarse-loamy, mixed (calcareous), mesic--3 percent
 Inclusion 3: Umberland silty clay loam, 0 to 2 percent slopes, frequently flooded--3 percent
 Inclusion 4: Playas--2 percent

Map Unit Setting

Landscape position: Bolsons
 Dedmount--Landform: Lake terraces; position on slope: upper
 Umberland--Landform: Lake terraces; shape of slope: convex
 Umberland--Landform: Lake terraces; shape of slope: concave
 Inclusion 1--Landform: Flood plains
 Inclusion 2--Landform: Lake terraces
 Inclusion 3--Landform: Flood plains
 Inclusion 4--Landform: Basin floors

Major Component Description

Dedmount Series

Elevation: 3,900 to 4,300 feet
Precipitation: About 6 inches
Air temperature: About 51 degrees
Frost-free season: About 120 days
Surface layer texture: Loam
Drainage class: Moderately well drained
Dominant parent material: Residuum derived from lacustrine sediments

Umberland Series

Elevation: 3,900 to 4,300 feet
Precipitation: About 6 inches
Air temperature: About 49 degrees
Frost-free season: About 120 days
Surface layer texture: Silty clay loam
Drainage class: Somewhat poorly drained
Dominant parent material: Residuum derived from lacustrine sediments

Umberland Series

Elevation: 3,900 to 4,300 feet
Precipitation: About 6 inches
Air temperature: About 49 degrees
Frost-free season: About 105 days
Surface layer texture: Silty clay loam
Drainage class: Somewhat poorly drained
Dominant parent material: Residuum derived from lacustrine sediments

Dominant Present Vegetation

Dedmount: Basin wildrye, black greasewood, bottlebrush squirreltail
 Umberland: Torrey quailbush, basin wildrye
 Umberland: Alkali seepweed, black greasewood, inland saltgrass
 Inclusion 1: Basin big sagebrush, basin wildrye, black greasewood
 Inclusion 2: Basin big sagebrush, black greasewood
 Inclusion 3: Alkali sacaton, inland saltgrass
 Inclusion 4: None

Ecological Site

Dedmount: 024XY006NV
 Umberland: 024XY015NV
 Umberland: 026XY002NV
 Inclusion 1: 024XY006NV
 Inclusion 2: 024XY022NV
 Inclusion 3: 024XY007NV
 Inclusion 4: None

250--Devada-Rock outcrop complex***Composition*****Major Components**

Devada very cobbly loam, 15 to 50 percent slopes--70 percent
 Rock outcrop unweathered bedrock, 15 to 50 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Aridic Argixerolls, loamy-skeletal, mixed, mesic--8 percent
 Inclusion 2: Devada very cobbly loam, 2 to 8 percent slopes--4 percent
 Inclusion 3: Rubble land--2 percent
 Inclusion 4: Fluventic Haploxerolls, fine-loamy, mixed, mesic--1 percent

Map Unit Setting

Landscape position: Mountains
 Devada--Landform: Mountains; geomorphic position: backslope; shape of slope: convex
 Rock outcrop--Landform: Mountains; geomorphic position: summit; position on slope: upper
 Inclusion 1--Landform: Mountains; geomorphic position: backslope; shape of slope: concave; aspect: north
 Inclusion 2--Landform: Mountains; geomorphic position: summit; shape of slope: convex
 Inclusion 3--Landform: Mountains
 Inclusion 4--Landform: Drainageways; shape of slope: concave

Major Component Description**Devada Series**

Elevation: 5,600 to 6,300 feet
Precipitation: About 12 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Very cobbly loam
Drainage class: Well drained
Dominant parent material: Residuum derived from volcanic rocks

Rock outcrop Miscellaneous Area

Elevation: 5,600 to 6,300 feet
Surface layer texture: Unweathered bedrock

Dominant Present Vegetation

Devada: Bluebunch wheatgrass, bluegrass, low sagebrush
 Rock outcrop: None
 Inclusion 1: Mountain big sagebrush
 Inclusion 2: Low sagebrush
 Inclusion 3: None
 Inclusion 4: Mountain big sagebrush

Ecological Site

Devada: 023XY031NV
 Rock outcrop: None
 Inclusion 1: 027XY058NV
 Inclusion 2: 023XY008NV
 Inclusion 3: None
 Inclusion 4: 023XY009NV

300--Envol-Frines-Rock outcrop association***Composition*****Major Components**

Envol gravelly loam, 30 to 50 percent slopes--50 percent
 Frines gravelly loam, 4 to 15 percent slopes--20 percent
 Rock outcrop unweathered bedrock, 15 to 50 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Theon very gravelly loam, 30 to 50 percent slopes--5 percent
 Inclusion 2: Grumblen very gravelly loam, 30 to 50 percent slopes--5 percent
 Inclusion 3: Bluewing very gravelly loamy sand, 0 to 2 percent slopes, frequently flooded--5 percent

Map Unit Setting

Landscape position: Hills
 Envol--Landform: Hills; geomorphic position: backslope; shape of slope: convex
 Frines--Landform: Hills; shape of slope: convex
 Rock outcrop--Landform: Mountains; geomorphic position: summit; position on slope: upper
 Inclusion 1--Landform: Hills; geomorphic position: backslope; shape of slope: concave
 Inclusion 2--Landform: Hills; geomorphic position: backslope; shape of slope: convex; aspect: north
 Inclusion 3--Landform: Drainageways; shape of slope: concave

Major Component Description**Envol Series**

Elevation: 4,500 to 5,500 feet
Precipitation: About 6 inches
Air temperature: About 52 degrees
Frost-free season: About 120 days
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum derived from volcanic rocks

Frines Series

Elevation: 4,500 to 5,500 feet
Precipitation: About 6 inches
Air temperature: About 52 degrees
Frost-free season: About 120 days
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum derived from volcanic rocks

Rock outcrop Miscellaneous Area

Elevation: 4,500 to 5,500 feet
Surface layer texture: Unweathered bedrock

Dominant Present Vegetation

Envol: Bailey greasewood, Indian ricegrass, shadscale
 Frines: Bailey greasewood, Indian ricegrass, shadscale
 Rock outcrop: None
 Inclusion 1: Shadscale
 Inclusion 2: Lahontan sagebrush
 Inclusion 3: Littleleaf horsebrush, tall gray rabbitbrush

Ecological Site

Envol: 027XY027NV
 Frines: 027XY018NV

Rock outcrop: None
 Inclusion 1: 027XY019NV
 Inclusion 2: 027XY079NV
 Inclusion 3: 027XY022NV

302--Envol gravelly loam, 15 to 50 percent slopes**Composition****Major Components**

Envol gravelly loam, 15 to 50 percent slopes--85 percent

Contrasting Inclusions

Inclusion 1: Dorper extremely gravelly very fine sandy loam, 4 to 15 percent slopes--7 percent
 Inclusion 2: Rock outcrop--4 percent
 Inclusion 3: Xerollic Haplargids, loamy-skeletal, mixed, mesic--3 percent
 Inclusion 4: Xeric Torriorthents, sandy-skeletal, mixed, mesic--1 percent

Map Unit Setting

Landscape position: Hills
 Envol--Landform: Hills; geomorphic position: backslope; shape of slope: convex
 Inclusion 1--Landform: Hills; geomorphic position: footslope; shape of slope: convex
 Inclusion 2--Landform: Hills
 Inclusion 3--Landform: Hills; position on slope: lower; shape of slope: concave
 Inclusion 4--Landform: Inset fans; shape of slope: concave

Major Component Description**Envol Series**

Elevation: 4,500 to 5,500 feet
Precipitation: About 6 inches
Air temperature: About 52 degrees
Frost-free season: About 120 days
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum derived from volcanic rocks

Dominant Present Vegetation

Envol: Bailey greasewood, Indian ricegrass, shadscale
 Inclusion 1: Bailey greasewood, bluegrass, shadscale
 Inclusion 2: None
 Inclusion 3: Lahontan sagebrush

Inclusion 4: Wyoming big sagebrush, basin big sagebrush

Ecological Site

Envol: 027XY027NV

Inclusion 1: 027XY018NV

Inclusion 2: None

Inclusion 3: 027XY007NV

Inclusion 4: 027XY029NV

310--Eaglerock-Rock outcrop association

Composition

Major Components

Eaglerock gravelly coarse sandy loam, 30 to 50 percent slopes--65 percent

Rock outcrop unweathered bedrock, 30 to 50 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Lithic Xerollic Haplargids, loamy-skeletal, mixed, mesic--8 percent

Inclusion 2: Arclay very gravelly coarse sandy loam, 30 to 50 percent slopes--3 percent

Inclusion 3: Soar very gravelly coarse sandy loam, 30 to 50 percent slopes--3 percent

Inclusion 4: Xeric Torrifluvents, sandy-skeletal, mixed, mesic--1 percent

Map Unit Setting

Landscape position: Mountains

Eaglerock--Landform: Mountains; geomorphic position: backslope; shape of slope: concave

Rock outcrop--Landform: Mountains; geomorphic position: summit; position on slope: upper

Inclusion 1--Landform: Mountains; position on slope: upper; shape of slope: concave

Inclusion 2--Landform: Mountains; position on slope: lower; shape of slope: concave; aspect: north

Inclusion 3--Landform: Mountains; geomorphic position: backslope; position on slope: lower; shape of slope: convex; aspect: south

Inclusion 4--Landform: Drainageways; shape of slope: concave

Major Component Description

Eaglerock Series

Elevation: 5,400 to 7,500 feet

Precipitation: About 12 inches

Air temperature: About 47 degrees

Frost-free season: About 110 days

Surface layer texture: Gravelly coarse sandy loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from granitic rocks

Rock outcrop Miscellaneous Area

Elevation: 5,400 to 7,500 feet

Surface layer texture: Unweathered bedrock

Dominant Present Vegetation

Eaglerock: Thurber needlegrass, bluegrass, mountain big sagebrush

Rock outcrop: None

Inclusion 1: Utah juniper

Inclusion 2: Thurber needlegrass, pine bluegrass

Inclusion 3: Desert needlegrass

Inclusion 4: Wyoming big sagebrush, basin big sagebrush

Ecological Site

Eaglerock: 027XY073NV

Rock outcrop: None

Inclusion 1: 027XY075NV

Inclusion 2: 027XY079NV

Inclusion 3: 027XY068NV

Inclusion 4: 027XY029NV

401--Genegraff-Dorper-Bluewing association

Composition

Major Components

Genegraff very gravelly very fine sandy loam, 2 to 8 percent slopes--45 percent

Dorper very gravelly very fine sandy loam, 2 to 8 percent slopes--25 percent

Bluewing very gravelly sandy loam, 0 to 2 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Typic Torriorthents, loamy-skeletal, mixed (calcareous), mesic--5 percent

Inclusion 2: Bluewing extremely stony loam, 0 to 2 percent slopes--2 percent

Inclusion 3: Typic Torriorthents, coarse-loamy, mixed (calcareous), mesic--3 percent

Map Unit Setting

Landscape position: Fan piedmonts

Genegraff--Landform: Fan remnants; position on slope: lower

Dorper--Landform: Fan remnants; position on slope: upper; shape of slope: convex

Bluewing--Landform: Inset fans

Inclusion 1--Landform: Fan remnants

Inclusion 2--Landform: Fan skirts
Inclusion 3--Landform: Inset fans

Major Component Description

Genegra Series

Elevation: 4,200 to 5,000 feet
Precipitation: About 5 inches
Air temperature: About 52 degrees
Frost-free season: About 125 days
Surface layer texture: Very gravelly very fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dorper Series

Elevation: 4,200 to 5,000 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 125 days
Surface layer texture: Very gravelly very fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Bluewing Series

Elevation: 4,200 to 5,000 feet
Precipitation: About 6 inches
Air temperature: About 54 degrees
Frost-free season: About 125 days
Surface layer texture: Very gravelly sandy loam
Drainage class: Excessively drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Genegra: Bottlebrush squirreltail, pine bluegrass
Dorper: Bluegrass, bud sagebrush, shadscale
Bluewing: Bailey greasewood, bottlebrush squirreltail, shadscale
Inclusion 1: Bottlebrush squirreltail
Inclusion 2: Bailey greasewood
Inclusion 3: Black greasewood, shadscale

Ecological Site

Genegra: 027XY018NV
Dorper: 027XY013NV
Bluewing: 027XY018NV
Inclusion 1: 027XY018NV
Inclusion 2: 027XY022NV
Inclusion 3: 027XY024NV

402--Genegra-Bluewing-Dorper association

Composition

Major Components

Genegra very gravelly very fine sandy loam, 2 to 8 percent slopes--40 percent
Bluewing gravelly sandy loam, 2 to 8 percent slopes--25 percent
Dorper extremely gravelly very fine sandy loam, 2 to 8 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Durorthidic Torriorthents, loamy-skeletal, mixed (calcareous), mesic--5 percent
Inclusion 2: Bluewing very gravelly loamy sand, 0 to 2 percent slopes--5 percent
Inclusion 3: Hawsley sand, 2 to 8 percent slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts
Genegra--Landform: Fan remnants; position on slope: lower
Bluewing--Landform: Fan skirts
Dorper--Landform: Fan remnants; position on slope: upper
Inclusion 1--Landform: Fan skirts
Inclusion 2--Landform: Inset fans
Inclusion 3--Landform: Sand sheets

Major Component Description

Genegra Series

Elevation: 4,200 to 4,800 feet
Precipitation: About 5 inches
Air temperature: About 52 degrees
Frost-free season: About 125 days
Surface layer texture: Very gravelly very fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Bluewing Series

Elevation: 4,200 to 4,800 feet
Precipitation: About 6 inches
Air temperature: About 54 degrees
Frost-free season: About 125 days
Surface layer texture: Gravelly sandy loam
Drainage class: Excessively drained
Dominant parent material: Alluvium derived from mixed rocks

Dorper Series

Elevation: 4,200 to 4,800 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 125 days
Surface layer texture: Extremely gravelly very fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Genegraf: Bottlebrush squirreltail, pine bluegrass, shadscale
 Bluewing: Bailey greasewood, Indian ricegrass
 Dorper: Bailey greasewood, shadscale
 Inclusion 1: Indian ricegrass
 Inclusion 2: Bailey greasewood, littleleaf horsebrush, tall gray rabbitbrush
 Inclusion 3: Nevada dalea, fourwing saltbush

Ecological Site

Genegraf: 027XY018NV
 Bluewing: 027XY018NV
 Dorper: 027XY018NV
 Inclusion 1: 027XY013NV
 Inclusion 2: 027XY022NV
 Inclusion 3: 027XY009NV

404--Genegraf-Toulon association**Composition****Major Components**

Genegraf very gravelly very fine sandy loam, 2 to 8 percent slopes--50 percent
 Toulon very gravelly loam, 2 to 8 percent slopes--35 percent

Contrasting Inclusions

Inclusion 1: Typic Torrifluvents, loamy-skeletal, mixed (calcareous), mesic--5 percent
 Inclusion 2: Mazuma silt loam, 0 to 2 percent slopes--4 percent
 Inclusion 3: Isolde fine sand, 4 to 8 percent slopes--4 percent
 Inclusion 4: Badland--2 percent

Map Unit Setting

Landscape position: Intermontane basins
 Genegraf--Landform: Fan remnants; shape of slope: convex
 Toulon--Landform: Longshore bars (relict); shape of slope: convex

Inclusion 1--Landform: Drainageways; shape of slope: concave
 Inclusion 2--Landform: Fan skirts
 Inclusion 3--Landform: Dunes
 Inclusion 4--Landform: Hills

Major Component Description**Genegraf Series**

Elevation: 4,300 to 4,600 feet
Precipitation: About 5 inches
Air temperature: About 52 degrees
Frost-free season: About 125 days
Surface layer texture: Very gravelly very fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Toulon Series

Elevation: 4,000 to 4,300 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 120 days
Surface layer texture: Very gravelly loam
Drainage class: Excessively drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Genegraf: Bottlebrush squirreltail, shadscale
 Toulon: Bailey greasewood, shadscale
 Inclusion 1: Bailey greasewood, Indian ricegrass, tall gray rabbitbrush
 Inclusion 2: Indian ricegrass, black greasewood, shadscale
 Inclusion 3: Indian ricegrass, black greasewood, needleandthread
 Inclusion 4: None

Ecological Site

Genegraf: 027XY018NV
 Toulon: 027XY018NV
 Inclusion 1: 027XY022NV
 Inclusion 2: 027XY024NV
 Inclusion 3: 027XY012NV
 Inclusion 4: None

410--Granshaw-Labkey association**Composition****Major Components**

Granshaw gravelly coarse sandy loam, 0 to 4 percent slopes--65 percent

Labkey gravelly sandy loam, 0 to 2 percent slopes--25 percent
Contrasting Inclusions
 Inclusion 1: Kumiva sandy loam, 0 to 2 percent slopes--5 percent
 Inclusion 2: Labkey sandy loam, 0 to 2 percent slopes--3 percent
 Inclusion 3: Hawsley fine sand, 0 to 4 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Granshaw--Landform: Alluvial fans; shape of slope: convex
 Labkey--Landform: Fan skirts; shape of slope: convex
 Inclusion 1--Landform: Flood plains
 Inclusion 2--Landform: Flood plains
 Inclusion 3--Landform: Sand sheets

Major Component Description

Granshaw Series

Elevation: 4,300 to 4,600 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 125 days
Surface layer texture: Gravelly coarse sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from granitic rocks

Labkey Series

Elevation: 4,000 to 4,400 feet
Precipitation: About 5 inches
Air temperature: About 53 degrees
Frost-free season: About 125 days
Surface layer texture: Gravelly sandy loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from granitic rocks

Dominant Present Vegetation

Granshaw: Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale
 Labkey: Bailey greasewood, Indian ricegrass, shadscale
 Inclusion 1: Winterfat
 Inclusion 2: Littleleaf horsebrush, tall gray rabbitbrush
 Inclusion 3: Indian ricegrass, fourwing saltbush

Ecological Site

Granshaw: 027XY013NV

Labkey: 027XY018NV
 Inclusion 1: 027XY014NV
 Inclusion 2: 027XY022NV
 Inclusion 3: 027XY009NV

411--Granshaw-Biga-Envol association

Composition

Major Components

Granshaw gravelly coarse sandy loam, 2 to 8 percent slopes--40 percent
 Biga gravelly coarse sandy loam, 2 to 8 percent slopes--30 percent
 Envol gravelly loam, 15 to 30 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Xeric Torriorthents, coarse-loamy, mixed (calcareous), mesic--6 percent
 Inclusion 2: Kumiva silt loam, 2 to 8 percent slopes--4 percent
 Inclusion 3: Durixerollic Haplargids, clayey-skeletal, montmorillonitic, mesic--3 percent
 Inclusion 4: Dorper very gravelly very fine sandy loam, 2 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Hills and intermontane basins
 Granshaw--Landform: Fan remnants; geomorphic position: backslope; position on slope: lower; shape of slope: convex
 Biga--Landform: Fan remnants; geomorphic position: backslope; position on slope: upper; shape of slope: convex
 Envol--Landform: Hills; geomorphic position: backslope; shape of slope: convex
 Inclusion 1--Landform: Inset fans; shape of slope: concave
 Inclusion 2--Landform: Stream terraces; shape of slope: plane
 Inclusion 3--Landform: Fan remnants; geomorphic position: summit
 Inclusion 4--Landform: Fan remnants; geomorphic position: shoulder

Major Component Description

Granshaw Series

Elevation: 4,500 to 4,900 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 120 days
Surface layer texture: Gravelly coarse sandy loam

Drainage class: Well drained
Dominant parent material: Alluvium derived from granitic rocks

Biga Series

Elevation: 4,500 to 5,000 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 120 days
Surface layer texture: Gravelly coarse sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from granitic rocks

Envol Series

Elevation: 4,500 to 5,400 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 120 days
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum derived from volcanic rocks

Dominant Present Vegetation

Granshaw: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale
 Biga: Bailey greasewood, Indian ricegrass, shadscale
 Envol: Bailey greasewood, Indian ricegrass, shadscale
 Inclusion 1: Wyoming big sagebrush
 Inclusion 2: Winterfat
 Inclusion 3: Lahontan sagebrush
 Inclusion 4: Bud sagebrush

Ecological Site

Granshaw: 027XY013NV
 Biga: 027XY018NV
 Envol: 027XY027NV
 Inclusion 1: 027XY029NV
 Inclusion 2: 027XY014NV
 Inclusion 3: 027XY079NV
 Inclusion 4: 027XY013NV

412--Granshaw-Jerval-Dorper association

Composition

Major Components

Granshaw gravelly coarse sandy loam, 2 to 8 percent slopes--40 percent

Jerval gravelly very fine sandy loam, 2 to 8 percent slopes--25 percent
 Dorper stony very fine sandy loam, 2 to 8 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Durorthidic Torriorthents, coarse-loamy, mixed (calcareous), mesic--6 percent
 Inclusion 2: Xeric Torriorthents, loamy-skeletal, mixed (calcareous), mesic--4 percent
 Inclusion 3: Typic Torriorthents, loamy-skeletal, mixed (calcareous), mesic--3 percent
 Inclusion 4: Durixerollic Natrargids, fine, montmorillonitic, mesic--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Granshaw--Landform: Fan skirts; shape of slope: plane
 Jerval--Landform: Fan remnants; position on slope: lower; shape of slope: convex
 Dorper--Landform: Fan remnants; position on slope: upper; shape of slope: convex
 Inclusion 1--Landform: Flood plains
 Inclusion 2--Landform: Stream terraces
 Inclusion 3--Landform: Drainageways
 Inclusion 4--Landform: Fan remnants; position on slope: upper; shape of slope: convex

Major Component Description

Granshaw Series

Elevation: 4,300 to 4,900 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 125 days
Surface layer texture: Gravelly coarse sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from granitic rocks

Jerval Series

Elevation: 4,400 to 5,000 feet
Precipitation: About 5 inches
Air temperature: About 52 degrees
Frost-free season: About 120 days
Surface layer texture: Gravelly very fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess, and volcanic ash

Dorper Series

Elevation: 4,500 to 5,100 feet
Precipitation: About 6 inches

Air temperature: About 53 degrees
Frost-free season: About 120 days
Surface layer texture: Stony very fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Granshaw: Indian ricegrass, bud sagebrush, shadscale
 Jerval: Bud sagebrush, pine bluegrass, shadscale
 Dorper: Bailey greasewood, pine bluegrass, shadscale
 Inclusion 1: Indian ricegrass, winterfat
 Inclusion 2: Wyoming big sagebrush, basin big sagebrush
 Inclusion 3: Bailey greasewood, tall gray rabbitbrush
 Inclusion 4: Sagebrush, desert needlegrass

Ecological Site

Granshaw: 027XY013NV
 Jerval: 027XY013NV
 Dorper: 027XY013NV
 Inclusion 1: 027XY014NV
 Inclusion 2: 027XY029NV
 Inclusion 3: 027XY022NV
 Inclusion 4: 027XY068NV

413--Granshaw-Kumiva association

Composition

Major Components

Granshaw gravelly coarse sandy loam, 2 to 8 percent slopes--45 percent
 Kumiva gravelly sandy loam, 0 to 4 percent slopes--40 percent

Contrasting Inclusions

Inclusion 1: Duric Camborthids, coarse-loamy, mixed, mesic--5 percent
 Inclusion 2: Xeric Torrifluvents, loamy-skeletal, mixed (calcareous), mesic--5 percent
 Inclusion 3: Deadyon sandy loam, 2 to 8 percent slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Granshaw--Landform: Fan remnants; shape of slope: convex
 Kumiva--Landform: Inset fans; shape of slope: concave

Inclusion 1--Landform: Fan skirts; shape of slope: convex
 Inclusion 2--Landform: Drainageways; shape of slope: concave
 Inclusion 3--Landform: Inset fans; shape of slope: plane

Major Component Description

Granshaw Series

Elevation: 4,400 to 4,900 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 120 days
Surface layer texture: Gravelly coarse sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from granitic rocks

Kumiva Series

Elevation: 4,400 to 4,700 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 120 days
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess, and volcanic ash

Dominant Present Vegetation

Granshaw: Indian ricegrass, bottlebrush squirreltail, bud sagebrush, shadscale
 Kumiva: Indian ricegrass, winterfat
 Inclusion 1: Bud sagebrush
 Inclusion 2: Wyoming big sagebrush
 Inclusion 3: Wyoming big sagebrush

Ecological Site

Granshaw: 027XY013NV
 Kumiva: 027XY014NV
 Inclusion 1: 027XY013NV
 Inclusion 2: 027XY029NV
 Inclusion 3: 027XY008NV

414--Granshaw gravelly loam, 0 to 4 percent slopes

Composition

Major Components

Granshaw gravelly loam, 0 to 4 percent slopes--90 percent

Contrasting Inclusions

- Inclusion 1: Xeric Torrifluvents, loamy-skeletal, mixed, nonacid, mesic--5 percent
- Inclusion 2: Labkey gravelly sandy loam, 15 to 30 percent slopes--3 percent
- Inclusion 3: Deadyon loam, 0 to 2 percent slopes--2 percent

Map Unit Setting

- Landscape position:* Fan piedmonts
- Granshaw--Landform: Fan skirts; shape of slope: convex
- Inclusion 1--Landform: Drainageways; shape of slope: concave
- Inclusion 2--Landform: Inset fans; geomorphic position: backslope; shape of slope: convex
- Inclusion 3--Landform: Inset fans; shape of slope: concave

Major Component Description

Granshaw Series

- Elevation:* 4,200 to 5,200 feet
- Precipitation:* About 6 inches
- Air temperature:* About 53 degrees
- Frost-free season:* About 125 days
- Surface layer texture:* Gravelly loam
- Drainage class:* Well drained
- Dominant parent material:* Alluvium derived from granitic rocks

Dominant Present Vegetation

- Granshaw: Bud sagebrush, shadscale
- Inclusion 1: Wyoming big sagebrush
- Inclusion 2: Bailey greasewood
- Inclusion 3: Wyoming big sagebrush

Ecological Site

- Granshaw: 027XY013NV
- Inclusion 1: 027XY029NV
- Inclusion 2: 027XY018NV
- Inclusion 3: 027XY008NV

415--Granshaw-Biga-Puett association

Composition

Major Components

- Granshaw gravelly loam, 2 to 4 percent slopes--40 percent
- Biga gravelly coarse sandy loam, 2 to 8 percent slopes--30 percent
- Puett coarse sandy loam, 15 to 30 percent slopes--15 percent

Contrasting Inclusions

- Inclusion 1: Xeric Torrifluvents, loamy-skeletal, mixed (calcareous), mesic--4 percent
- Inclusion 2: Kumiva silt loam, 0 to 4 percent slopes--4 percent
- Inclusion 3: Badland--4 percent
- Inclusion 4: Hawsley fine sand, 4 to 15 percent slopes--3 percent

Map Unit Setting

- Landscape position:* Hills and intermontane basins
- Granshaw--Landform: Fan skirts; position on slope: lower; shape of slope: convex
- Biga--Landform: Fan remnants; position on slope: upper; shape of slope: convex
- Puett--Landform: Hills; geomorphic position: backslope; shape of slope: convex
- Inclusion 1--Landform: Drainageways; shape of slope: concave
- Inclusion 2--Landform: Inset fans; shape of slope: concave
- Inclusion 3--Landform: Hills
- Inclusion 4--Landform: Dunes; shape of slope: convex

Major Component Description

Granshaw Series

- Elevation:* 4,400 to 4,800 feet
- Precipitation:* About 6 inches
- Air temperature:* About 52 degrees
- Frost-free season:* About 120 days
- Surface layer texture:* Gravelly loam
- Drainage class:* Well drained
- Dominant parent material:* Alluvium derived from granitic rocks

Biga Series

- Elevation:* 4,500 to 4,900 feet
- Precipitation:* About 6 inches
- Air temperature:* About 52 degrees
- Frost-free season:* About 120 days
- Surface layer texture:* Gravelly coarse sandy loam
- Drainage class:* Well drained
- Dominant parent material:* Alluvium derived from granitic rocks

Puett Series

- Elevation:* 4,400 to 4,900 feet
- Precipitation:* About 8 inches
- Air temperature:* About 52 degrees
- Frost-free season:* About 120 days

Surface layer texture: Coarse sandy loam
Drainage class: Well drained
Dominant parent material: Residuum derived from tuffaceous rocks

Dominant Present Vegetation

Granshaw: Bud sagebrush, shadscale
 Biga: Bailey greasewood, Indian ricegrass, shadscale
 Puett: Black sagebrush, shadscale
 Inclusion 1: Wyoming big sagebrush
 Inclusion 2: Winterfat
 Inclusion 3: None
 Inclusion 4: Fourwing saltbush

Ecological Site

Granshaw: 027XY013NV
 Biga: 027XY018NV
 Puett: 024XY030NV
 Inclusion 1: 027XY029NV
 Inclusion 2: 027XY014NV
 Inclusion 3: None
 Inclusion 4: 027XY009NV

431--Grumblen-Pickup association

Composition

Major Components

Grumblen very gravelly loam, 15 to 50 percent slopes--50 percent
 Pickup very gravelly loam, 30 to 50 percent slopes--35 percent

Contrasting Inclusions

Inclusion 1: Old Camp extremely stony loam, 30 to 50 percent slopes--7 percent
 Inclusion 2: Rock outcrop--4 percent
 Inclusion 3: Xeric Torrifluvents, loamy-skeletal, mixed (calcareous), mesic--2 percent
 Inclusion 4: Pokergap very gravelly very fine sandy loam, 2 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Mountains
 Grumblen--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: south
 Pickup--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: north
 Inclusion 1--Landform: Mountains; geomorphic position: backslope; shape of slope: concave; aspect: north

Inclusion 2--Landform: Mountains; geomorphic position: summit; position on slope: upper
 Inclusion 3--Landform: Drainageways; shape of slope: concave
 Inclusion 4--Landform: Hills; geomorphic position: toeslope; shape of slope: convex

Major Component Description

Grumblen Series

Elevation: 5,100 to 6,000 feet
Precipitation: About 9 inches
Air temperature: About 51 degrees
Frost-free season: About 110 days
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum derived from volcanic rocks

Pickup Series

Elevation: 5,000 to 6,000 feet
Precipitation: About 10 inches
Air temperature: About 49 degrees
Frost-free season: About 100 days
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum derived from volcanic rocks

Dominant Present Vegetation

Grumblen: Indian ricegrass, bluegrass
 Pickup: Thurber needlegrass, pine bluegrass
 Inclusion 1: Wyoming big sagebrush
 Inclusion 2: None
 Inclusion 3: Wyoming big sagebrush, basin big sagebrush
 Inclusion 4: Wyoming big sagebrush

Ecological Site

Grumblen: 027XY070NV
 Pickup: 027XY079NV
 Inclusion 1: 027XY007NV
 Inclusion 2: None
 Inclusion 3: 027XY029NV
 Inclusion 4: 027XY008NV

432--Grumblen-Pickup-Old Camp association

Composition

Major Components

Grumblen very gravelly loam, 30 to 50 percent slopes--35 percent

Pickup very gravelly loam, 30 to 50 percent slopes--30 percent
 Old Camp very gravelly loam, 15 to 50 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Rock outcrop--5 percent
 Inclusion 2: Theon very stony loam, 15 to 50 percent slopes--5 percent
 Inclusion 3: Grumblen very stony loam, 4 to 15 percent slopes--4 percent
 Inclusion 4: Xeric Torrifluvents, loamy-skeletal, mixed (calcareous), mesic--1 percent

Map Unit Setting

Landscape position: Mountains
 Grumblen--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: south
 Pickup--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: north
 Old Camp--Landform: Hills; geomorphic position: backslope; position on slope: lower; shape of slope: convex; aspect: north
 Inclusion 1--Landform: Hills; geomorphic position: summit; position on slope: upper
 Inclusion 2--Landform: Hills; position on slope: lower; shape of slope: convex; aspect: south
 Inclusion 3--Landform: Mountains; geomorphic position: summit; shape of slope: convex
 Inclusion 4--Landform: Drainageways; shape of slope: concave

Major Component Description

Grumblen Series

Elevation: 4,800 to 6,400 feet
Precipitation: About 9 inches
Air temperature: About 51 degrees
Frost-free season: About 110 days
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum derived from volcanic rocks

Pickup Series

Elevation: 4,800 to 6,400 feet
Precipitation: About 10 inches
Air temperature: About 49 degrees
Frost-free season: About 100 days
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum derived

from volcanic rocks

Old Camp Series

Elevation: 4,700 to 6,000 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum derived from volcanic rocks

Dominant Present Vegetation

Grumblen: Indian ricegrass, bluegrass
 Pickup: Thurber needlegrass, pine bluegrass
 Old Camp: Thurber needlegrass, Wyoming big sagebrush, pine bluegrass
 Inclusion 1: None
 Inclusion 2: Desert needlegrass, galleta, shadscale
 Inclusion 3: Bluegrass
 Inclusion 4: Wyoming big sagebrush, basin big sagebrush

Ecological Site

Grumblen: 027XY070NV
 Pickup: 027XY079NV
 Old Camp: 027XY007NV
 Inclusion 1: None
 Inclusion 2: 027XY019NV
 Inclusion 3: 027XY070NV
 Inclusion 4: 027XY029NV

451--Hawsley fine sand, 0 to 4 percent slopes

Composition

Major Components

Hawsley fine sand, 0 to 4 percent slopes--90 percent

Contrasting Inclusions

Inclusion 1: Granshaw sandy loam, 0 to 2 percent slopes--5 percent
 Inclusion 2: Genigraf very gravelly sandy loam, 0 to 2 percent slopes--5 percent

Map Unit Setting

Landscape position: Intermontane basins
 Hawsley--Landform: Sand sheets; shape of slope: plane
 Inclusion 1--Landform: Fan skirts

Inclusion 2--Landform: Fan remnants

Major Component Description

Hawsley Series

Elevation: 3,900 to 4,600 feet

Precipitation: About 6 inches

Air temperature: About 48 degrees

Frost-free season: About 110 days

Surface layer texture: Fine sand

Drainage class: Somewhat excessively drained

Dominant parent material: Eolian sand

Dominant Present Vegetation

Hawsley: Indian ricegrass, fourwing saltbush, needleandthread

Inclusion 1: Indian ricegrass, shadscale

Inclusion 2: Bailey greasewood, shadscale

Ecological Site

Hawsley: 027XY009NV

Inclusion 1: 027XY013NV

Inclusion 2: 027XY018NV

452--Hawsley-Labkey-Genegraf association

Composition

Major Components

Hawsley sand, 2 to 8 percent slopes--50 percent

Labkey gravelly sandy loam, 2 to 8 percent slopes--20 percent

Genegraf gravelly sandy loam, 2 to 8 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Bluewing gravelly sandy loam, 2 to 8 percent slopes--8 percent

Inclusion 2: Durorthidic Torriorthents, coarse-loamy, mixed (calcareous), mesic--6 percent

Inclusion 3: Bluewing very gravelly loamy sand, 0 to 2 percent slopes--1 percent

Map Unit Setting

Landscape position: Fan piedmonts

Hawsley--Landform: Sand sheets

Labkey--Landform: Fan skirts; shape of slope: convex

Genegraf--Landform: Fan remnants

Inclusion 1--Landform: Inset fans

Inclusion 2--Landform: Fan skirts

Inclusion 3--Landform: Drainageways

Major Component Description

Hawsley Series

Elevation: 4,000 to 4,800 feet

Precipitation: About 6 inches

Air temperature: About 50 degrees

Frost-free season: About 110 days

Surface layer texture: Sand

Drainage class: Somewhat excessively drained

Dominant parent material: Eolian sand

Labkey Series

Elevation: 4,000 to 4,600 feet

Precipitation: About 5 inches

Air temperature: About 53 degrees

Frost-free season: About 125 days

Surface layer texture: Gravelly sandy loam

Drainage class: Somewhat excessively drained

Dominant parent material: Alluvium derived from mixed rocks

Genegraf Series

Elevation: 4,400 to 5,100 feet

Precipitation: About 5 inches

Air temperature: About 52 degrees

Frost-free season: About 125 days

Surface layer texture: Gravelly sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Hawsley: Indian ricegrass, fourwing saltbush, needleandthread

Labkey: Bailey greasewood, Indian ricegrass, shadscale

Genegraf: Bottlebrush squirreltail, pine bluegrass, shadscale

Inclusion 1: Bailey greasewood, Indian ricegrass, shadscale

Inclusion 2: Indian ricegrass, bud sagebrush, shadscale

Inclusion 3: Bailey greasewood, littleleaf horsebrush, tall gray rabbitbrush

Ecological Site

Hawsley: 027XY009NV

Labkey: 027XY018NV

Genegraf: 027XY018NV

Inclusion 1: 027XY018NV

Inclusion 2: 027XY013NV

Inclusion 3: 027XY022NV

453--Hawsley-Bluewing association**Composition****Major Components**

Hawsley sand, 2 to 8 percent slopes--50 percent
 Bluewing very stony loamy sand, 4 to 15
 percent slopes--35 percent

Contrasting Inclusions

Inclusion 1: Typic Torripsamments, mixed,
 mesic, shallow--6 percent
 Inclusion 2: Toulon very gravelly loam, 2 to 8
 percent slopes--6 percent
 Inclusion 3: Trocken very gravelly very fine
 sandy loam, 2 to 8 percent slopes--2 percent
 Inclusion 4: Rock outcrop--1 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Hawsley--Landform: Sand sheets
 Bluewing--Landform: Inset fans
 Inclusion 1--Landform: Beach terraces
 Inclusion 2--Landform: Beach terraces
 Inclusion 3--Landform: Alluvial fans; position on
 slope: lower
 Inclusion 4--Landform: Sand sheets

Major Component Description**Hawsley Series**

Elevation: 3,800 to 4,100 feet
Precipitation: About 6 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface layer texture: Sand
Drainage class: Somewhat excessively drained
Dominant parent material: Eolian sand

Bluewing Series

Elevation: 3,800 to 4,100 feet
Precipitation: About 6 inches
Air temperature: About 51 degrees
Frost-free season: About 125 days
Surface layer texture: Very stony loamy sand
Drainage class: Excessively drained
Dominant parent material: Alluvium derived from
 mixed rocks

Dominant Present Vegetation

Hawsley: Indian ricegrass, fourwing saltbush,
 needleandthread
 Bluewing: Bailey greasewood, Indian ricegrass,
 shadscale
 Inclusion 1: Indian ricegrass, fourwing saltbush,
 winterfat
 Inclusion 2: Bailey greasewood, shadscale

Inclusion 3: Bluegrass, bud sagebrush, shadscale
 Inclusion 4: None

Ecological Site

Hawsley: 027XY009NV
 Bluewing: 027XY018NV
 Inclusion 1: 027XY009NV
 Inclusion 2: 027XY018NV
 Inclusion 3: 027XY013NV
 Inclusion 4: None

456--Hawsley-Badland association**Composition****Major Components**

Hawsley sand, 15 to 30 percent slopes--70
 percent
 Badland variable, 4 to 30 percent slopes--15
 percent

Contrasting Inclusions

Inclusion 1: Durorthidic Torriorthents, coarse-
 loamy, mixed (calcareous), mesic--6 percent
 Inclusion 2: Hawsley sand, 2 to 8 percent
 slopes--5 percent
 Inclusion 3: Isolde sand, 15 to 50 percent
 slopes--2 percent
 Inclusion 4: Typic Torriorthents, sandy, mixed,
 mesic sand, 2 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Hawsley--Landform: Dunes
 Badland--Landform: Fan remnants; geomorphic
 position: backslope
 Inclusion 1--Landform: Inset fans
 Inclusion 2--Landform: Dunes; geomorphic
 position: summit
 Inclusion 3--Landform: Dunes; geomorphic
 position: backslope
 Inclusion 4--Landform: Drainageways

Major Component Description**Hawsley Series**

Elevation: 3,900 to 4,500 feet
Precipitation: About 6 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface layer texture: Sand
Drainage class: Somewhat excessively drained
Dominant parent material: Eolian sand

Badland Miscellaneous Area

Elevation: 3,900 to 4,500 feet

Surface layer texture: Variable
Drainage class: Well drained
Dominant parent material: Residuum derived from lacustrine sediments

Dominant Present Vegetation

Hawsley: Indian ricegrass, fourwing saltbush, needleandthread
 Badland: None
 Inclusion 1: Bailey greasewood, Indian ricegrass, shadscale
 Inclusion 2: Indian ricegrass, fourwing saltbush, winterfat
 Inclusion 3: Indian ricegrass, black greasewood
 Inclusion 4: Tall gray rabbitbrush, Bailey greasewood

Ecological Site

Hawsley: 027XY009NV
 Badland: None
 Inclusion 1: 027XY018NV
 Inclusion 2: 027XY009NV
 Inclusion 3: 027XY016NV
 Inclusion 4: 027XY022NV

462--Hawsley-Mazuma association

Composition

Major Components

Hawsley fine sand, 4 to 15 percent slopes--60 percent
 Mazuma silt loam, 0 to 2 percent slopes--30 percent

Contrasting Inclusions

Inclusion 1: Playas--5 percent
 Inclusion 2: Typic Torrifluvents, loamy-skeletal, mixed (calcareous), mesic--3 percent
 Inclusion 3: Badland--2 percent

Map Unit Setting

Landscape position: Bolsons
 Hawsley--Landform: Dunes
 Mazuma--Landform: Lake terraces; shape of slope: concave
 Inclusion 1--Landform: Playas
 Inclusion 2--Landform: Drainageways
 Inclusion 3--Landform: Lake terraces; geomorphic position: backslope

Major Component Description

Hawsley Series

Elevation: 3,900 to 4,300 feet

Precipitation: About 6 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface layer texture: Fine sand
Drainage class: Somewhat excessively drained
Dominant parent material: Eolian sand

Mazuma Series

Elevation: 3,900 to 4,300 feet
Precipitation: About 6 inches
Air temperature: About 50 degrees
Frost-free season: About 125 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Residuum derived from lacustrine sediments

Dominant Present Vegetation

Hawsley: Indian ricegrass, fourwing saltbush, needleandthread
 Mazuma: Black greasewood, bottlebrush squirreltail, shadscale
 Inclusion 1: None
 Inclusion 2: Littleleaf horsebrush, tall gray rabbitbrush
 Inclusion 3: None

Ecological Site

Hawsley: 027XY009NV
 Mazuma: 027XY024NV
 Inclusion 1: None
 Inclusion 2: 027XY022NV
 Inclusion 3: None

470--Deadyon loam, 0 to 2 percent slopes

Composition

Major Components

Deadyon loam, 0 to 2 percent slopes--90 percent

Contrasting Inclusions

Inclusion 1: Wedekind sandy loam, 2 to 8 percent slopes--5 percent
 Inclusion 2: Xeric Torriorthents, loamy-skeletal, mixed (calcareous), mesic--5 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Deadyon--Landform: Fan skirts
 Inclusion 1--Landform: Fan skirts
 Inclusion 2--Landform: Inset fans

Major Component Description**Deadyon Series**

Elevation: 4,500 to 5,400 feet
Precipitation: About 9 inches
Air temperature: About 50 degrees
Frost-free season: About 120 days
Surface layer texture: Loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from granitic rocks

Dominant Present Vegetation

Deadyon: Wyoming big sagebrush, pine bluegrass, spiny hopsage
 Inclusion 1: Wyoming big sagebrush, bluegrass, needlegrass
 Inclusion 2: Wyoming big sagebrush, basin big sagebrush

Ecological Site

Deadyon: 027XY008NV
 Inclusion 1: 027XY072NV
 Inclusion 2: 027XY029NV

471--Deadyon-Granshaw association**Composition****Major Components**

Deadyon loamy sand, 0 to 4 percent slopes--65 percent
 Granshaw gravelly coarse sandy loam, 2 to 8 percent slopes--30 percent

Contrasting Inclusions

Inclusion 1: Xeric Torrifluvents, loamy-skeletal, mixed (calcareous), mesic--3 percent
 Inclusion 2: Hawsley fine sand, 2 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Deadyon--Landform: Fan skirts
 Granshaw--Landform: Fan remnants; shape of slope: convex
 Inclusion 1--Landform: Drainageways; shape of slope: concave
 Inclusion 2--Landform: Dunes

Major Component Description**Deadyon Series**

Elevation: 4,500 to 4,800 feet
Precipitation: About 9 inches

Air temperature: About 49 degrees
Frost-free season: About 120 days
Surface layer texture: Loamy sand
Drainage class: Well drained
Dominant parent material: Alluvium derived from granitic rocks

Granshaw Series

Elevation: 4,600 to 5,000 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 125 days
Surface layer texture: Gravelly coarse sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from granitic rocks

Dominant Present Vegetation

Deadyon: Indian ricegrass, Wyoming big sagebrush, western wheatgrass
 Granshaw: Indian ricegrass, shadscale
 Inclusion 1: Wyoming big sagebrush, basin big sagebrush
 Inclusion 2: Indian ricegrass, fourwing saltbush, winterfat

Ecological Site

Deadyon: 027XY045NV
 Granshaw: 027XY013NV
 Inclusion 1: 027XY029NV
 Inclusion 2: 027XY009NV

472--Deadyon sandy loam, 2 to 8 percent slopes**Composition****Major Components**

Deadyon sandy loam, 2 to 8 percent slopes--90 percent

Contrasting Inclusions

Inclusion 1: Xeric Torriorthents, sandy, mixed (calcareous), mesic--9 percent
 Inclusion 2: Lithic Xeric Torriorthents, loamy-skeletal, mixed (calcareous), mesic--1 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Deadyon--Landform: Fan remnants; shape of slope: convex
 Inclusion 1--Landform: Inset fans
 Inclusion 2--Landform: Hills

Major Component Description**Deadyon Series**

Elevation: 4,000 to 4,200 feet
Precipitation: About 9 inches
Air temperature: About 49 degrees
Frost-free season: About 120 days
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from granitic rocks

Dominant Present Vegetation

Deadyon: Basin wildrye, big sagebrush
 Inclusion 1: Wyoming big sagebrush, basin wildrye
 Inclusion 2: Wyoming big sagebrush, bluegrass

Ecological Site

Deadyon: 023XY040NV
 Inclusion 1: 023X040NV
 Inclusion 2: 027XY008NV

480--Humboldt silty clay loam, slightly saline-sodic**Composition****Major Components**

Humboldt silty clay loam, 0 to 2 percent slopes--90 percent

Contrasting Inclusions

Inclusion 1: Aeric Fluvaquents, fine-silty, mixed (calcareous), mesic--5 percent
 Inclusion 2: Fluvaquentic Haploxerolls, coarse-loamy, mixed, mesic--4 percent
 Inclusion 3: Humboldt silty clay loam, strongly saline-sodic, 0 to 2 percent slopes--1 percent

Map Unit Setting

Landscape position: Semi-bolsons
 Humboldt--Landform: Flood plains
 Inclusion 1--Landform: Drainageways;
 geomorphic position: backslope
 Inclusion 2--Landform: Drainageways;
 geomorphic position: shoulder
 Inclusion 3--Landform: Flood plains

Major Component Description**Humboldt Series**

Elevation: 3,900 to 4,300 feet
Precipitation: About 7 inches
Air temperature: About 50 degrees
Frost-free season: About 120 days
Surface layer texture: Silty clay loam

Drainage class: Poorly drained

Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Humboldt: Basin wildrye, creeping wildrye, willow
 Inclusion 1: Basin big sagebrush, black greasewood
 Inclusion 2: Basin wildrye, creeping wildrye
 Inclusion 3: Alkali sacaton, inland saltgrass

Ecological Site

Humboldt: 025XY001NV
 Inclusion 1: 024XY006NV
 Inclusion 2: 025XY001NV
 Inclusion 3: 024XY007NV

500--Isolde-Typic Torriorthents-Dune land complex**Composition****Major Components**

Isolde fine sand, 0 to 15 percent slopes--55 percent
 Typic Torriorthents extremely gravelly sandy loam, 1 to 4 percent slopes--20 percent
 Dune land fine sand, 4 to 30 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Labkey gravelly sandy loam, 2 to 8 percent slopes--3 percent
 Inclusion 2: Typic Psammaquents, mixed, mesic--3 percent
 Inclusion 3: Playas--3 percent
 Inclusion 4: Bluewing very gravelly sandy loam, 0 to 2 percent slopes--1 percent

Map Unit Setting

Landscape position: Bolsons
 Isolde--Landform: Dunes
 Typic Torriorthents--Landform: Beach plains
 Dune land--Landform: Dunes
 Inclusion 1--Landform: Basin-floor remnants
 Inclusion 2--Landform: Beach plains; position on slope: lower
 Inclusion 3--Landform: Playas
 Inclusion 4--Landform: Inset fans

Major Component Description**Isolde Series**

Elevation: 3,800 to 4,100 feet
Precipitation: About 6 inches

Air temperature: About 52 degrees
Frost-free season: About 120 days
Surface layer texture: Fine sand
Drainage class: Excessively drained
Dominant parent material: Eolian sand

Typic Torriorthents Soils

Elevation: 3,900 to 4,200 feet
Precipitation: About 6 inches
Air temperature: About 52 degrees
Frost-free season: About 120 days
Surface layer texture: Extremely gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Residuum derived from lacustrine sediments

Dune land Miscellaneous Area

Elevation: 3,800 to 4,200 feet
Surface layer texture: Fine sand
Drainage class: Excessively drained
Dominant parent material: Eolian sand

Dominant Present Vegetation

Isolde: Indian ricegrass, black greasewood, hairy horsebrush
 Typic Torriorthents: None, seepweed
 Dune land: None
 Inclusion 1: Bailey greasewood, shadscale
 Inclusion 2: Inland saltgrass
 Inclusion 3: None
 Inclusion 4: Bailey greasewood, littleleaf horsebrush, tall gray rabbitbrush

Ecological Site

Isolde: 027XY016NV
 Typic Torriorthents: None
 Dune land: None
 Inclusion 1: 027XY018NV
 Inclusion 2: 026X002NV
 Inclusion 3: None
 Inclusion 4: 027XY022NV

502--Isolde-Ragtown association

Composition

Major Components

Isolde fine sand, 4 to 15 percent slopes--70 percent
 Ragtown silt loam, 0 to 2 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Aeric Halaquepts, fine,

montmorillonitic (calcareous), mesic--5 percent
 Inclusion 2: Playas--5 percent

Map Unit Setting

Landscape position: Bolsons
 Isolde--Landform: Dunes
 Ragtown--Landform: Lake plains
 Inclusion 1--Landform: Lake plains
 Inclusion 2--Landform: Playas

Major Component Description

Isolde Series

Elevation: 3,900 to 4,400 feet
Precipitation: About 6 inches
Air temperature: About 52 degrees
Frost-free season: About 120 days
Surface layer texture: Fine sand
Drainage class: Excessively drained
Dominant parent material: Eolian sand

Ragtown Series

Elevation: 3,900 to 4,400 feet
Precipitation: About 6 inches
Air temperature: About 52 degrees
Frost-free season: About 120 days
Surface layer texture: Silt loam
Drainage class: Moderately well drained
Dominant parent material: Residuum derived from lacustrine sediments

Dominant Present Vegetation

Isolde: Indian ricegrass, black greasewood, hairy horsebrush
 Ragtown: Black greasewood, shadscale
 Inclusion 1: Black greasewood, seepweed, shadscale
 Inclusion 2: None

Ecological Site

Isolde: 027XY016NV
 Ragtown: 027XY025NV
 Inclusion 1: 027XY025NV
 Inclusion 2: None

503--Isolde fine sand, 4 to 15 percent slopes

Composition

Major Components

Isolde fine sand, 4 to 15 percent slopes--90 percent

Contrasting Inclusions

- Inclusion 1: Isolde fine sand, 2 to 8 percent slopes--4 percent
 Inclusion 2: Hawsley fine sand, 4 to 15 percent slopes--3 percent
 Inclusion 3: Bluewing gravelly sandy loam, 2 to 8 percent slopes--3 percent

Map Unit Setting

- Landscape position:* Fan piedmonts
 Isolde--Landform: Dunes
 Inclusion 1--Landform: Dunes
 Inclusion 2--Landform: Dunes
 Inclusion 3--Landform: Fan remnants

Major Component Description**Isolde Series**

- Elevation:* 3,900 to 4,300 feet
Precipitation: About 6 inches
Air temperature: About 52 degrees
Frost-free season: About 120 days
Surface layer texture: Fine sand
Drainage class: Excessively drained
Dominant parent material: Eolian sand

Dominant Present Vegetation

- Isolde: Indian ricegrass, hairy horsebrush, needleandthread
 Inclusion 1: Black greasewood
 Inclusion 2: Bailey greasewood, Indian ricegrass
 Inclusion 3: Shadscale

Ecological Site

- Isolde: 027XY023NV
 Inclusion 1: 027XY016NV
 Inclusion 2: 027XY009NV
 Inclusion 3: 027XY018NV

510--Juva loam, 0 to 2 percent slopes**Composition****Major Components**

- Juva loam, 0 to 2 percent slopes--85 percent

Contrasting Inclusions

- Inclusion 1: Typic Torrifluvents, loamy-skeletal, mixed (calcareous), mesic--6 percent
 Inclusion 2: Slaw silt loam, 0 to 2 percent slopes--5 percent
 Inclusion 3: Typic Torrifluvents, sandy-skeletal, mixed, mesic--4 percent

Map Unit Setting

- Landscape position:* Fan piedmonts

- Juva--Landform: Alluvial fans
 Inclusion 1--Landform: Alluvial fans
 Inclusion 2--Landform: Alluvial fans
 Inclusion 3--Landform: Alluvial fans

Major Component Description**Juva Series**

- Elevation:* 3,900 to 4,300 feet
Precipitation: About 6 inches
Air temperature: About 51 degrees
Frost-free season: About 120 days
Surface layer texture: Loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

- Juva: Bailey greasewood, shadscale
 Inclusion 1: Bailey greasewood, Indian ricegrass, shadscale
 Inclusion 2: Torrey quailbush, basin wildrye, black greasewood
 Inclusion 3: Bailey greasewood, Indian ricegrass, shadscale

Ecological Site

- Juva: 027XY018NV
 Inclusion 1: 027XY018NV
 Inclusion 2: 027XY041NV
 Inclusion 3: 027XY018NV

550--Kumiva-Labkey-Chumall association**Composition****Major Components**

- Kumiva sandy loam, 0 to 2 percent slopes--45 percent
 Labkey gravelly sandy loam, 0 to 2 percent slopes--30 percent
 Chumall silt loam, 0 to 2 percent slopes--15 percent

Contrasting Inclusions

- Inclusion 1: Mazuma sandy loam, moderately saline-sodic, 0 to 2 percent slopes--6 percent
 Inclusion 2: Typic Torrifluvents, sandy, mixed, mesic--2 percent
 Inclusion 3: Playas--2 percent

Map Unit Setting

- Landscape position:* Semi-bolsons
 Kumiva--Landform: Flood plains; shape of slope: plane
 Labkey--Landform: Flood plains

Chumall--Landform: Lake terraces; shape of slope: plane
 Inclusion 1--Landform: Flood plains
 Inclusion 2--Landform: Drainageways; shape of slope: concave
 Inclusion 3--Landform: Playas; shape of slope: concave

Major Component Description

Kumiva Series

Elevation: 4,000 to 4,300 feet
Precipitation: About 6 inches
Air temperature: About 51 degrees
Frost-free season: About 120 days
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess, and volcanic ash

Labkey Series

Elevation: 4,000 to 4,300 feet
Precipitation: About 5 inches
Air temperature: About 53 degrees
Frost-free season: About 125 days
Surface layer texture: Gravelly sandy loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from granitic rocks

Chumall Series

Elevation: 3,900 to 4,300 feet
Precipitation: About 5 inches
Air temperature: About 52 degrees
Frost-free season: About 120 days
Surface layer texture: Silt loam
Drainage class: Moderately well drained
Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Dominant Present Vegetation

Kumiva: Littleleaf horsebrush, tall gray rabbitbrush
 Labkey: Bailey greasewood, Indian ricegrass, shadscale
 Chumall: Black greasewood, seepweed, shadscale
 Inclusion 1: Black greasewood, shadscale
 Inclusion 2: Littleleaf horsebrush, tall gray rabbitbrush
 Inclusion 3: None

Ecological Site

Kumiva: 027XY022NV
 Labkey: 027XY018NV

Chumall: 027XY025NV
 Inclusion 1: 027XY024NV
 Inclusion 2: 027XY022NV
 Inclusion 3: None

551--Kumiva-Kumiva, occasionally flooded association

Composition

Major Components

Kumiva silt loam, 0 to 2 percent slopes--65 percent
 Kumiva sandy loam, 0 to 2 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Typic Camborthids, coarse-loamy, mixed, mesic--7 percent
 Inclusion 2: Duric Camborthids, coarse-loamy, mixed, mesic--3 percent

Map Unit Setting

Landscape position: Semi-bolsons
 Kumiva--Landform: Stream terraces
 Kumiva--Landform: Channels; shape of slope: concave
 Inclusion 1--Landform: Drainageways; geomorphic position: backslope
 Inclusion 2--Landform: Fan skirts; shape of slope: convex

Major Component Description

Kumiva Series

Elevation: 4,300 to 5,100 feet
Precipitation: About 6 inches
Air temperature: About 51 degrees
Frost-free season: About 120 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess, and volcanic ash

Kumiva Series

Elevation: 4,300 to 5,100 feet
Precipitation: About 6 inches
Air temperature: About 51 degrees
Frost-free season: About 120 days
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess, and volcanic ash

Dominant Present Vegetation

Kumiva: Indian ricegrass, winterfat

Kumiva: Littleleaf horsebrush, tall gray rabbitbrush
 Inclusion 1: Indian ricegrass, bud sagebrush, shadscale
 Inclusion 2: Bluegrass, bud sagebrush, shadscale

Ecological Site

Kumiva: 027XY014NV
 Kumiva: 027XY022NV
 Inclusion 1: 027XY013NV
 Inclusion 2: 027XY013NV

553--Kumiva sandy loam, 0 to 2 percent slopes, occasionally flooded

Composition

Major Components

Kumiva sandy loam, 0 to 2 percent slopes--85 percent

Contrasting Inclusions

Inclusion 1: Duric Camborthids, coarse-loamy, mixed, mesic--7 percent
 Inclusion 2: Kumiva silt loam, 0 to 2 percent slopes--3 percent
 Inclusion 3: Labkey gravelly sandy loam, 0 to 2 percent slopes--3 percent
 Inclusion 4: Bluewing very stony sandy loam, 0 to 2 percent slopes--2 percent

Map Unit Setting

Landscape position: Semi-bolsons
 Kumiva--Landform: Channels
 Inclusion 1--Landform: Fan skirts; shape of slope: plane
 Inclusion 2--Landform: Stream terraces; shape of slope: concave
 Inclusion 3--Landform: Fan skirts; shape of slope: plane
 Inclusion 4--Landform: Inset fans; shape of slope: concave

Major Component Description

Kumiva Series

Elevation: 4,100 to 4,700 feet
Precipitation: About 6 inches
Air temperature: About 51 degrees
Frost-free season: About 120 days
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from

mixed rocks, loess, and volcanic ash

Dominant Present Vegetation

Kumiva: Littleleaf horsebrush, tall gray rabbitbrush
 Inclusion 1: Littleleaf horsebrush, tall gray rabbitbrush
 Inclusion 2: Indian ricegrass, winterfat
 Inclusion 3: Bailey greasewood, Indian ricegrass, shadscale
 Inclusion 4: Bailey greasewood, Indian ricegrass, shadscale

Ecological Site

Kumiva: 027XY022NV
 Inclusion 1: 027XY022NV
 Inclusion 2: 027XY013NV
 Inclusion 3: 027XY018NV
 Inclusion 4: 027XY018NV

559--Phliss-Phliss, eroded-Majuba association

Composition

Major Components

Phliss very channery loam, 30 to 50 percent slopes--35 percent
 Phliss extremely channery loam, 30 to 50 percent slopes--30 percent
 Majuba very channery loam, 30 to 50 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Rock outcrop--7 percent
 Inclusion 2: Xeric Torrifuvents, loamy-skeletal, mixed (calcareous), mesic--3 percent

Map Unit Setting

Landscape position: Mountains
 Phliss--Landform: Mountains; geomorphic position: backslope; position on slope: lower; shape of slope: convex
 Phliss--Landform: Mountains; geomorphic position: backslope; shape of slope: convex
 Majuba--Landform: Mountains; geomorphic position: backslope; position on slope: upper; shape of slope: convex
 Inclusion 1--Landform: Mountains; geomorphic position: summit; position on slope: upper
 Inclusion 2--Landform: Drainageways

Major Component Description**Phliss Series**

Elevation: 5,500 to 6,800 feet
Precipitation: About 9 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface layer texture: Very channery loam
Drainage class: Well drained
Dominant parent material: Residuuum derived from metamorphic rocks

Phliss Series

Elevation: 5,500 to 6,800 feet
Precipitation: About 9 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface layer texture: Extremely channery loam
Drainage class: Well drained
Dominant parent material: Residuuum derived from metamorphic rocks

Majuba Series

Elevation: 6,000 to 7,100 feet
Precipitation: About 11 inches
Air temperature: About 44 degrees
Frost-free season: About 110 days
Surface layer texture: Very channery loam
Drainage class: Well drained
Dominant parent material: Residuuum derived from metamorphic rocks

Dominant Present Vegetation

Phliss: Thurber needlegrass, bluebunch wheatgrass, bluegrass
 Phliss: Thurber needlegrass, Utah juniper, Wyoming big sagebrush, pine bluegrass
 Majuba: Thurber needlegrass, sagebrush
 Inclusion 1: None
 Inclusion 2: Wyoming big sagebrush, basin big sagebrush

Ecological Site

Phliss: 024XY028NV
 Phliss: 027XY075NV
 Majuba: 027XY079NV
 Inclusion 1: None
 Inclusion 2: 027XY029NV

560--Phliss extremely channery loam, 15 to 50 percent slopes**Composition****Major Components**

Phliss extremely channery loam, 15 to 50 percent slopes--85 percent

Contrasting Inclusions

Inclusion 1: Rock outcrop--5 percent
 Inclusion 2: Wesfil very channery loam, 30 to 50 percent slopes--5 percent
 Inclusion 3: Sojur, 15 to 50 percent slopes--3 percent
 Inclusion 4: Xeric Torrifluvents, loamy-skeletal, mixed (calcareous), mesic--2 percent

Map Unit Setting

Landscape position: Mountains
 Phliss--Landform: Mountains; geomorphic position: backslope
 Inclusion 1--Landform: Mountains; geomorphic position: summit; position on slope: upper
 Inclusion 2--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: north
 Inclusion 3--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: south
 Inclusion 4--Landform: Drainageways; shape of slope: concave

Major Component Description**Phliss Series**

Elevation: 4,700 to 6,800 feet
Precipitation: About 9 inches
Air temperature: About 50 degrees
Frost-free season: About 115 days
Surface layer texture: Extremely channery loam
Drainage class: Well drained
Dominant parent material: Residuuum and colluvium derived from metamorphic rocks

Dominant Present Vegetation

Phliss: Wyoming big sagebrush, bluegrass, bottlebrush squirreltail
 Inclusion 1: None
 Inclusion 2: Bluegrass

Inclusion 3: Bud sagebrush, shadscale
 Inclusion 4: Big sagebrush, spiny hopsage

Ecological Site

Phliss: 027XY007NV
 Inclusion 1: None
 Inclusion 2: 027XY070NV
 Inclusion 3: 027XY027NV
 Inclusion 4: 027XY029NV

562--Sondoa silt loam, strongly saline-sodic

Composition

Major Components

Sondoa silt loam, 0 to 2 percent slopes--85 percent

Contrasting Inclusions

Inclusion 1: Typic Torriorthents, coarse-loamy, mixed (calcareous), mesic--7 percent
 Inclusion 2: Aeric Halaquepts, fine-loamy, mixed (calcareous), mesic--5 percent
 Inclusion 3: Typic Torrifluvents, fine, montmorillonitic (calcareous), mesic--3 percent

Map Unit Setting

Landscape position: Semi-bolsons
 Sondoa--Landform: Flood plains; shape of slope: plane
 Inclusion 1--Landform: Flood plains; shape of slope: concave
 Inclusion 2--Landform: Flood plains; shape of slope: convex
 Inclusion 3--Landform: Drainageways

Major Component Description

Sondoa Series

Elevation: 3,800 to 4,200 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 130 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Sondoa: Black greasewood, seepweed
 Inclusion 1: Inland saltgrass
 Inclusion 2: Torrey quailbush
 Inclusion 3: Basin big sagebrush

Ecological Site

Sondoa: 027XY025NV
 Inclusion 1: 024XY008NV
 Inclusion 2: 024XY015NV
 Inclusion 3: 024XY006NV

563--Sondoa-Swangler-Isolde association

Composition

Major Components

Sondoa silt loam, 0 to 2 percent slopes--45 percent
 Swangler silt loam, 0 to 2 percent slopes--20 percent
 Isolde fine sand, 4 to 15 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Lovelock silt loam, 0 to 2 percent slopes--5 percent
 Inclusion 2: Playas--5 percent
 Inclusion 3: Hawsley sand, slightly saline-sodic, 0 to 4 percent slopes--3 percent
 Inclusion 4: Typic Torriorthents, fine, montmorillonitic (calcareous), mesic--2 percent

Map Unit Setting

Landscape position: Bolsons
 Sondoa--Landform: Lake terraces; position on slope: lower; shape of slope: plane
 Swangler--Landform: Lake terraces; position on slope: upper; shape of slope: plane
 Isolde--Landform: Dunes; shape of slope: convex
 Inclusion 1--Landform: Flood-plain splays; shape of slope: plane
 Inclusion 2--Landform: Playas; shape of slope: plane
 Inclusion 3--Landform: Dunes
 Inclusion 4--Landform: Lake terraces

Major Component Description

Sondoa Series

Elevation: 3,900 to 4,100 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 130 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Swangler Series

Elevation: 3,900 to 4,100 feet

Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 130 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Isolde Series

Elevation: 3,900 to 4,100 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 130 days
Surface layer texture: Fine sand
Drainage class: Excessively drained
Dominant parent material: Eolian sand

Dominant Present Vegetation

Sonoda: Basin wildrye, black greasewood, seepweed
 Swingler: Bailey greasewood, black greasewood, seepweed
 Isolde: Indian ricegrass, black greasewood, hairy horsebrush
 Inclusion 1: Inland saltgrass, saltcedar
 Inclusion 2: None
 Inclusion 3: Indian ricegrass, black greasewood, needleandthread
 Inclusion 4: Black greasewood, shadscale

Ecological Site

Sonoda: 027XY025NV
 Swingler: 027XY025NV
 Isolde: 027XY016NV
 Inclusion 1: 027XY005NV
 Inclusion 2: None
 Inclusion 3: 027XY012NV
 Inclusion 4: 027XY024NV

650--Labkey gravelly sandy loam, 2 to 8 percent slopes

Composition

Major Components

Labkey gravelly sandy loam, 2 to 8 percent slopes--90 percent

Contrasting Inclusions

Inclusion 1: Labkey very bouldery sandy loam, 2 to 8 percent slopes--4 percent
 Inclusion 2: Hawsley fine sand, 2 to 8 percent slopes--4 percent
 Inclusion 3: Bluewing gravelly sandy loam, 2 to 8 percent slopes--1 percent

Inclusion 4: Labkey very gravelly loamy sand, 0 to 4 percent slopes, frequently flooded--1 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Labkey--Landform: Fan skirts; shape of slope: plane
 Inclusion 1--Landform: Inset fans
 Inclusion 2--Landform: Sand sheets; shape of slope: plane
 Inclusion 3--Landform: Inset fans; shape of slope: concave
 Inclusion 4--Landform: Drainageways; shape of slope: concave

Major Component Description

Labkey Series

Elevation: 4,000 to 4,600 feet
Precipitation: About 5 inches
Air temperature: About 53 degrees
Frost-free season: About 125 days
Surface layer texture: Gravelly sandy loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from granitic rocks

Dominant Present Vegetation

Labkey: Bailey greasewood, Indian ricegrass, shadscale
 Inclusion 1: Bailey greasewood, Indian ricegrass, shadscale
 Inclusion 2: Indian ricegrass, fourwing saltbush, winterfat
 Inclusion 3: Bailey greasewood, Indian ricegrass, shadscale
 Inclusion 4: Tall gray rabbitbrush

Ecological Site

Labkey: 027XY018NV
 Inclusion 1: 027XY018NV
 Inclusion 2: 027XY009NV
 Inclusion 3: 027XY018NV
 Inclusion 4: 027XY022NV

652--Labkey-Hawsley-Granshaw association

Composition

Major Components

Labkey gravelly sandy loam, 0 to 4 percent slopes--40 percent
 Hawsley sand, 2 to 8 percent slopes--25 percent

Granshaw gravelly coarse sandy loam, 0 to 4 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Mazuma very fine sandy loam, 0 to 2 percent slopes--8 percent

Inclusion 2: Typic Torriorthents, loamy-skeletal, mixed, nonacid, mesic--4 percent

Inclusion 3: Kumiva silt loam, 0 to 2 percent slopes--3 percent

Map Unit Setting

Landscape position: Fan piedmonts

Labkey--Landform: Fan skirts; shape of slope: plane

Hawsley--Landform: Dunes; shape of slope: convex

Granshaw--Landform: Fan remnants; position on slope: lower; shape of slope: convex

Inclusion 1--Landform: Fan skirts; position on slope: lower; shape of slope: concave

Inclusion 2--Landform: Drainageways; shape of slope: concave

Inclusion 3--Landform: Stream terraces

Major Component Description

Labkey Series

Elevation: 4,400 to 4,700 feet

Precipitation: About 6 inches

Air temperature: About 52 degrees

Frost-free season: About 120 days

Surface layer texture: Gravelly sandy loam

Drainage class: Somewhat excessively drained

Dominant parent material: Alluvium derived from granitic rocks

Hawsley Series

Elevation: 4,400 to 4,700 feet

Precipitation: About 6 inches

Air temperature: About 52 degrees

Frost-free season: About 120 days

Surface layer texture: Sand

Drainage class: Somewhat excessively drained

Dominant parent material: Eolian sand

Granshaw Series

Elevation: 4,400 to 4,700 feet

Precipitation: About 6 inches

Air temperature: About 52 degrees

Frost-free season: About 120 days

Surface layer texture: Gravelly coarse sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from granitic rocks

Dominant Present Vegetation

Labkey: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

Hawsley: Bailey greasewood, Indian ricegrass, fourwing saltbush, spiny hopsage

Granshaw: Indian ricegrass, bud sagebrush, shadscale

Inclusion 1: Bluegrass, bud sagebrush, shadscale

Inclusion 2: Tall gray rabbitbrush

Inclusion 3: Winterfat

Ecological Site

Labkey: 027XY018NV

Hawsley: 027XY009NV

Granshaw: 027XY013NV

Inclusion 1: 027XY013NV

Inclusion 2: 027XY022NV

Inclusion 3: 027XY014NV

653--Labkey-Mazuma association

Composition

Major Components

Labkey gravelly sandy loam, 2 to 8 percent slopes--55 percent

Mazuma fine sandy loam, 0 to 4 percent slopes--30 percent

Contrasting Inclusions

Inclusion 1: Typic Torriorthents, coarse-loamy, mixed (calcareous), mesic--5 percent

Inclusion 2: Ragtown very fine sandy loam, strongly saline-sodic, 0 to 2 percent slopes--5 percent

Inclusion 3: Hawsley sand, 2 to 8 percent slopes--3 percent

Inclusion 4: Typic Torriorthents, coarse-silty, mixed (calcareous), mesic--2 percent

Map Unit Setting

Landscape position: Bolsons

Labkey--Landform: Longshore bars (relict); shape of slope: convex

Mazuma--Landform: Lagoons; shape of slope: plane

Inclusion 1--Landform: Dunes; shape of slope: concave

Inclusion 2--Landform: Lake plains; shape of slope: plane

Inclusion 3--Landform: Dunes; shape of slope: convex

Inclusion 4--Landform: Lake terraces; shape of slope: plane

Major Component Description**Labkey Series**

Elevation: 3,800 to 4,200 feet

Precipitation: About 6 inches

Air temperature: About 52 degrees

Frost-free season: About 120 days

Surface layer texture: Gravelly sandy loam

Drainage class: Somewhat excessively drained

Dominant parent material: Alluvium derived from granitic rocks

Mazuma Series

Elevation: 3,800 to 4,200 feet

Precipitation: About 6 inches

Air temperature: About 52 degrees

Frost-free season: About 120 days

Surface layer texture: Fine sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from lacustrine sediments

Dominant Present Vegetation

Labkey: Bailey greasewood, Indian ricegrass, shadscale

Mazuma: Bud sagebrush, shadscale

Inclusion 1: Black greasewood

Inclusion 2: Black greasewood

Inclusion 3: Indian ricegrass, fourwing saltbush, winterfat

Inclusion 4: Winterfat

Ecological Site

Labkey: 027XY018NV

Mazuma: 027XY013NV

Inclusion 1: 027XY016NV

Inclusion 2: 027XY025NV

Inclusion 3: 027XY009NV

Inclusion 4: 027XY014NV

700--Mazuma-Trocken association**Composition****Major Components**

Mazuma very fine sandy loam, 2 to 4 percent slopes--70 percent

Trocken gravelly very fine sandy loam, 2 to 8 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Bluewing very gravelly loamy sand, 0 to 2 percent slopes, frequently flooded--6 percent

Inclusion 2: Dorper, 2 to 8 percent slopes--5 percent

Inclusion 3: Kumiva silt loam, 0 to 2 percent slopes--4 percent

Map Unit Setting

Landscape position: Intermontane basins

Mazuma--Landform: Fan skirts; shape of slope: plane

Trocken--Landform: Longshore bars (relict); shape of slope: convex

Inclusion 1--Landform: Drainageways; shape of slope: concave

Inclusion 2--Landform: Fan remnants

Inclusion 3--Landform: Lagoons; shape of slope: concave

Major Component Description**Mazuma Series**

Elevation: 4,100 to 4,500 feet

Precipitation: About 6 inches

Air temperature: About 50 degrees

Frost-free season: About 120 days

Surface layer texture: Very fine sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Trocken Series

Elevation: 4,100 to 4,300 feet

Precipitation: About 6 inches

Air temperature: About 50 degrees

Frost-free season: About 120 days

Surface layer texture: Gravelly very fine sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Mazuma: Bud sagebrush, shadscale

Trocken: Bud sagebrush, shadscale

Inclusion 1: Tall gray rabbitbrush

Inclusion 2: Bailey greasewood

Inclusion 3: Winterfat

Ecological Site

Mazuma: 027XY013NV

Trocken: 027XY013NV

Inclusion 1: 027XY022NV

Inclusion 2: 027XY018NV

Inclusion 3: 027XY014NV

701--Mazuma very fine sandy loam, 2 to 8 percent slopes

Composition

Major Components

Mazuma very fine sandy loam, 2 to 8 percent slopes--85 percent

Contrasting Inclusions

Inclusion 1: Durorthidic Torriorthents, coarse-loamy, mixed (calcareous), mesic--8 percent

Inclusion 2: Hawsley sand, 4 to 15 percent slopes--3 percent

Inclusion 3: Typic Torriorthents, coarse-loamy, mixed (calcareous), mesic--3 percent

Inclusion 4: Typic Torriorthents, loamy-skeletal, mixed (calcareous), mesic--1 percent

Map Unit Setting

Landscape position: Fan piedmonts

Mazuma--Landform: Fan skirts; shape of slope: convex

Inclusion 1--Landform: Fan skirts; position on slope: lower

Inclusion 2--Landform: Dunes; shape of slope: convex

Inclusion 3--Landform: Fan skirts; shape of slope: convex

Inclusion 4--Landform: Drainageways; shape of slope: concave

Major Component Description

Mazuma Series

Elevation: 4,200 to 4,400 feet

Precipitation: About 6 inches

Air temperature: About 50 degrees

Frost-free season: About 120 days

Surface layer texture: Very fine sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Mazuma: Bud sagebrush, shadscale

Inclusion 1: Black greasewood

Inclusion 2: Nevada dalea

Inclusion 3: Bailey greasewood

Inclusion 4: Tall gray rabbitbrush

Ecological Site

Mazuma: 027XY013NV

Inclusion 1: 027XY025NV

Inclusion 2: 027XY012NV

Inclusion 3: 027XY018NV

Inclusion 4: 027XY022NV

702--Mazuma-Swingle-Toulon association

Composition

Major Components

Mazuma silt loam, 0 to 2 percent slopes--50 percent

Swingle silt loam, 0 to 2 percent slopes--20 percent

Toulon very gravelly loam, 2 to 8 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Bluewing extremely gravelly loamy sand, 0 to 2 percent slopes, frequently flooded--8 percent

Inclusion 2: Playas--2 percent

Map Unit Setting

Landscape position: Bolsons

Mazuma--Landform: Lake terraces; position on slope: upper; shape of slope: plane

Swingle--Landform: Lake terraces; position on slope: lower; shape of slope: plane

Toulon--Landform: Spits; shape of slope: convex

Inclusion 1--Landform: Drainageways; shape of slope: concave

Inclusion 2--Landform: Playas

Major Component Description

Mazuma Series

Elevation: 4,200 to 4,400 feet

Precipitation: About 5 inches

Air temperature: About 51 degrees

Frost-free season: About 130 days

Surface layer texture: Silt loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Swingle Series

Elevation: 4,200 to 4,400 feet

Precipitation: About 5 inches

Air temperature: About 51 degrees

Frost-free season: About 125 days

Surface layer texture: Silt loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Toulon Series

Elevation: 4,200 to 4,400 feet

Precipitation: About 5 inches
Air temperature: About 51 degrees
Frost-free season: About 125 days
Surface layer texture: Very gravelly loam
Drainage class: Excessively drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Mazuma: Bailey greasewood, black greasewood, seepweed, shadscale
 Swingler: Bailey greasewood, black greasewood, seepweed
 Toulon: Bailey greasewood, bud sagebrush, shadscale
 Inclusion 1: Tall gray rabbitbrush
 Inclusion 2: None

Ecological Site

Mazuma: 027XY024NV
 Swingler: 027XY024NV
 Toulon: 027XY018NV
 Inclusion 1: 027XY022NV
 Inclusion 2: None

703--Mazuma-Hardhat-Hawsley association

Composition

Major Components

Mazuma loamy fine sand, 0 to 2 percent slopes--50 percent
 Hardhat sand, 0 to 2 percent slopes--20 percent
 Hawsley sand, 0 to 2 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Durorthidic Torriorthents, fine-silty, mixed (calcareous), mesic--5 percent
 Inclusion 2: Kumiva sandy loam, 0 to 2 percent slopes, occasionally flooded--5 percent
 Inclusion 3: Playas--5 percent

Map Unit Setting

Landscape position: Intermontane basins
 Mazuma--Landform: Fan skirts; shape of slope: plane
 Hardhat--Landform: Fan skirts; shape of slope: plane
 Hawsley--Landform: Sand sheets; shape of slope: plane
 Inclusion 1--Landform: Lake terraces; shape of slope: plane

Inclusion 2--Landform: Inset fans; shape of slope: concave
 Inclusion 3--Landform: Playas; shape of slope: concave

Major Component Description

Mazuma Series

Elevation: 3,900 to 4,000 feet
Precipitation: About 5 inches
Air temperature: About 51 degrees
Frost-free season: About 125 days
Surface layer texture: Loamy fine sand
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Hardhat Series

Elevation: 3,900 to 4,000 feet
Precipitation: About 5 inches
Air temperature: About 51 degrees
Frost-free season: About 125 days
Surface layer texture: Sand
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Hawsley Series

Elevation: 3,900 to 4,000 feet
Precipitation: About 5 inches
Air temperature: About 51 degrees
Frost-free season: About 125 days
Surface layer texture: Sand
Drainage class: Somewhat excessively drained
Dominant parent material: Eolian sand

Dominant Present Vegetation

Mazuma: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale
 Hardhat: Indian ricegrass, bud sagebrush, littleleaf horsebrush, shadscale
 Hawsley: Bailey greasewood, Indian ricegrass
 Inclusion 1: Black greasewood
 Inclusion 2: Tall gray rabbitbrush
 Inclusion 3: None

Ecological Site

Mazuma: 027XY018NV
 Hardhat: 027XY018NV
 Hawsley: 027XY009NV
 Inclusion 1: 027XY025NV
 Inclusion 2: 027XY022NV
 Inclusion 3: None

704--Mazuma fine sandy loam, strongly saline-sodic, 0 to 2 percent slopes

Composition

Major Components

Mazuma fine sandy loam, 0 to 2 percent slopes--90 percent

Contrasting Inclusions

Inclusion 1: Bluewing very gravelly loamy sand, 0 to 2 percent slopes, frequently flooded--5 percent

Inclusion 2: Swingler silt loam, 0 to 2 percent slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts

Mazuma--Landform: Fan skirts; shape of slope: plane

Inclusion 1--Landform: Inset fans; shape of slope: concave

Inclusion 2--Landform: Beach terraces

Major Component Description

Mazuma Series

Elevation: 4,000 to 4,100 feet

Precipitation: About 5 inches

Air temperature: About 50 degrees

Frost-free season: About 125 days

Surface layer texture: Fine sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Mazuma: Black greasewood, seepweed, shadscale

Inclusion 1: Tall gray rabbitbrush

Inclusion 2: Black greasewood, shadscale

Ecological Site

Mazuma: 027XY025NV

Inclusion 1: 027XY022NV

Inclusion 2: 027XY024NV

705--Mazuma-Mazuma, strongly saline-sodic association

Composition

Major Components

Mazuma loamy fine sand, 0 to 2 percent slopes--50 percent

Mazuma fine sandy loam, 0 to 2 percent slopes--35 percent

Contrasting Inclusions

Inclusion 1: Typic Camborthids, coarse-loamy, mixed, mesic--8 percent

Inclusion 2: Typic Natrargids, fine-loamy, mixed, mesic--3 percent

Inclusion 3: Playas--3 percent

Inclusion 4: Typic Torriorthents, sandy, mixed, mesic--1 percent

Map Unit Setting

Landscape position: Bolsons

Mazuma--Landform: Lake terraces; position on slope: lower; shape of slope: plane

Mazuma--Landform: Lake terraces; position on slope: upper; shape of slope: plane

Inclusion 1--Landform: Fan skirts

Inclusion 2--Landform: Lake terraces; position on slope: upper

Inclusion 3--Landform: Playas; shape of slope: concave

Inclusion 4--Landform: Inset fans; shape of slope: concave

Major Component Description

Mazuma Series

Elevation: 4,000 to 4,500 feet

Precipitation: About 5 inches

Air temperature: About 52 degrees

Frost-free season: About 125 days

Surface layer texture: Loamy fine sand

Drainage class: Well drained

Dominant parent material: Alluvium derived from lacustrine sediments

Mazuma Series

Elevation: 3,900 to 4,400 feet

Precipitation: About 5 inches

Air temperature: About 52 degrees

Frost-free season: About 125 days

Surface layer texture: Fine sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from lacustrine sediments

Dominant Present Vegetation

Mazuma: Bailey greasewood, shadscale

Mazuma: Bailey greasewood, black greasewood, seepweed, shadscale

Inclusion 1: Indian ricegrass, bud sagebrush, shadscale

Inclusion 2: Bailey greasewood, Indian ricegrass, shadscale

Inclusion 3: None

Inclusion 4: Wyoming big sagebrush, basin big sagebrush

Ecological Site

Mazuma: 027XY018NV
 Mazuma: 027XY024NV
 Inclusion 1: 027XY013NV
 Inclusion 2: 027XY018NV
 Inclusion 3: None
 Inclusion 4: 027XY029NV

706--Mazuma silt loam, moderately saline-sodic, 0 to 2 percent slopes

Composition

Major Components

Mazuma silt loam, 0 to 2 percent slopes--85 percent

Contrasting Inclusions

Inclusion 1: Durorthidic Xeric Torriorthents, coarse-loamy, mixed (calcareous), mesic--6 percent
 Inclusion 2: Kumiva silt loam, 0 to 2 percent slopes--4 percent
 Inclusion 3: Bluewing very gravelly loamy sand, 0 to 2 percent slopes, frequently flooded--3 percent
 Inclusion 4: Jerval very fine sandy loam, 0 to 2 percent slopes--2 percent

Map Unit Setting

Landscape position: Semi-bolsons
 Mazuma--Landform: Stream terraces
 Inclusion 1--Landform: Stream terraces;
 geomorphic position: backslope; position on slope: lower
 Inclusion 2--Landform: Stream terraces; shape of slope: concave
 Inclusion 3--Landform: Flood plains
 Inclusion 4--Landform: Fan remnants; position on slope: upper

Major Component Description

Mazuma Series

Elevation: 3,900 to 4,800 feet
Precipitation: About 6 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Mazuma: Black greasewood, shadscale
 Inclusion 1: Basin big sagebrush, basin wildrye, black greasewood
 Inclusion 2: Indian ricegrass, winterfat
 Inclusion 3: Bailey greasewood, littleleaf horsebrush, tall gray rabbitbrush
 Inclusion 4: Bluegrass, bud sagebrush, shadscale

Ecological Site

Mazuma: 027XY024NV
 Inclusion 1: 024X022NV
 Inclusion 2: 027XY014NV
 Inclusion 3: 027XY022NV
 Inclusion 4: 027XY013NV

707--Mazuma-Coldent association

Composition

Major Components

Mazuma fine sandy loam, 0 to 4 percent slopes--60 percent
 Coldent gravelly fine sand, 2 to 8 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Hawsley fine sand, 2 to 8 percent slopes--5 percent
 Inclusion 2: Typic Torriorthents, coarse-loamy, mixed (calcareous), mesic--5 percent
 Inclusion 3: Xeric Torriorthents, sandy, mixed, mesic--3 percent
 Inclusion 4: Mazuma silt loam, moderately saline-sodic, 0 to 2 percent slopes--2 percent

Map Unit Setting

Landscape position: Bolsons
 Mazuma--Landform: Lake terraces; shape of slope: plane
 Coldent--Landform: Longshore bars (relict); shape of slope: convex
 Inclusion 1--Landform: Dunes; shape of slope: convex
 Inclusion 2--Landform: Lagoons
 Inclusion 3--Landform: Drainageways
 Inclusion 4--Landform: Lagoons

Major Component Description

Mazuma Series

Elevation: 4,300 to 4,400 feet
Precipitation: About 6 inches
Air temperature: About 47 degrees
Frost-free season: About 120 days
Surface layer texture: Fine sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Coldent Series

Elevation: 3,800 to 4,400 feet

Precipitation: About 5 inches

Air temperature: About 53 degrees

Frost-free season: About 125 days

Surface layer texture: Gravelly fine sand

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Dominant Present Vegetation

Mazuma: Bailey greasewood, Indian ricegrass, shadscale

Coldent: Bailey greasewood, Indian ricegrass, bud sagebrush, shadscale

Inclusion 1: Indian ricegrass, fourwing saltbush, winterfat

Inclusion 2: Shadscale

Inclusion 3: Wyoming big sagebrush, basin big sagebrush

Inclusion 4: Black greasewood, shadscale

Ecological Site

Mazuma: 027XY018NV

Coldent: 027XY018NV

Inclusion 1: 027XY009NV

Inclusion 2: 027XY071NV

Inclusion 3: 027XY029NV

Inclusion 4: 027XY024NV

708--Mazuma-Ragtown association

Composition

Major Components

Mazuma silt loam, 0 to 4 percent slopes--55 percent

Ragtown silty clay loam, 0 to 2 percent slopes--30 percent

Contrasting Inclusions

Inclusion 1: Mazuma silt loam, moderately saline-sodic, 4 to 8 percent slopes--7 percent

Inclusion 2: Isolde fine sand, 4 to 15 percent slopes--5 percent

Inclusion 3: Playas--3 percent

Map Unit Setting

Landscape position: Bolsons

Mazuma--Landform: Lake terraces; position on slope: upper

Ragtown--Landform: Lake terraces

Inclusion 1--Landform: Lake terraces

Inclusion 2--Landform: Dunes

Inclusion 3--Landform: Playas

Major Component Description

Mazuma Series

Elevation: 3,900 to 4,300 feet

Precipitation: About 6 inches

Air temperature: About 50 degrees

Frost-free season: About 120 days

Surface layer texture: Silt loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks over lacustrine sediments

Ragtown Series

Elevation: 3,900 to 4,400 feet

Precipitation: About 5 inches

Air temperature: About 53 degrees

Frost-free season: About 125 days

Surface layer texture: Silty clay loam

Drainage class: Moderately well drained

Dominant parent material: Residuum derived from lacustrine sediments

Dominant Present Vegetation

Mazuma: Black greasewood, shadscale

Ragtown: Black greasewood, seepweed, shadscale

Inclusion 1: Black greasewood, shadscale

Inclusion 2: Indian ricegrass, black greasewood

Inclusion 3: None

Ecological Site

Mazuma: 027XY024NV

Ragtown: 027XY025NV

Inclusion 1: 027XY024NV

Inclusion 2: 027XY016NV

Inclusion 3: None

750--Pickup-Rock outcrop association, moderately sloping

Composition

Major Components

Pickup very gravelly loam, 4 to 15 percent slopes--70 percent

Rock outcrop unweathered bedrock, 8 to 30 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Old Camp very gravelly loam, 30 to 50 percent slopes--9 percent

Inclusion 2: Grumblen very stony loam, 4 to 15 percent slopes--1 percent

Map Unit Setting

Landscape position: Mountains

Pickup--Landform: Mountains; geomorphic position: summit

Rock outcrop--Landform: Mountains; geomorphic position: summit

Inclusion 1--Landform: Mountains; geomorphic position: shoulder; shape of slope: convex

Inclusion 2--Landform: Mountains; geomorphic position: shoulder; aspect: south

Major Component Description

Pickup Series

Elevation: 6,000 to 7,400 feet

Precipitation: About 10 inches

Air temperature: About 49 degrees

Frost-free season: About 100 days

Surface layer texture: Very gravelly loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from volcanic rocks

Rock outcrop Miscellaneous Area

Elevation: 6,000 to 7,400 feet

Surface layer texture: Unweathered bedrock

Dominant Present Vegetation

Pickup: Bluegrass, bottlebrush squirreltail, shadscale

Rock outcrop: None

Inclusion 1: Wyoming big sagebrush

Inclusion 2: Indian ricegrass, bluegrass

Ecological Site

Pickup: 027XY079NV

Rock outcrop: None

Inclusion 1: 027XY007NV

Inclusion 2: 027XY070NV

751--Pickup-Grumblen-Rock outcrop association

Composition

Major Components

Pickup very gravelly loam, 50 to 75 percent slopes--45 percent

Grumblen very gravelly loam, 50 to 75 percent slopes--25 percent

Rock outcrop unweathered bedrock, 50 to 75 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Aridic Argixerolls, loamy-skeletal, mixed, frigid--6 percent

Inclusion 2: Old Camp stony loam, 15 to 50 percent slopes--5 percent

Inclusion 3: Sumya extremely gravelly loam, 50 to 75 percent slopes--2 percent

Inclusion 4: Xeric Torriorthents, loamy-skeletal, mixed (calcareous), mesic--2 percent

Map Unit Setting

Landscape position: Mountains

Pickup--Landform: Mountains; geomorphic position: backslope; shape of slope: convex

Grumblen--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: south

Rock outcrop--Landform: Mountains; geomorphic position: summit; position on slope: upper

Inclusion 1--Landform: Mountains; aspect: north

Inclusion 2--Landform: Mountains; geomorphic position: footslope; shape of slope: concave

Inclusion 3--Landform: Mountains

Inclusion 4--Landform: Drainageways

Major Component Description

Pickup Series

Elevation: 5,400 to 6,800 feet

Precipitation: About 10 inches

Air temperature: About 49 degrees

Frost-free season: About 100 days

Surface layer texture: Very gravelly loam

Drainage class: Well drained

Dominant parent material: Residuum derived from volcanic rocks

Grumblen Series

Elevation: 5,400 to 6,800 feet

Precipitation: About 9 inches

Air temperature: About 51 degrees

Frost-free season: About 110 days

Surface layer texture: Very gravelly loam

Drainage class: Well drained

Dominant parent material: Residuum derived from volcanic rocks

Rock outcrop Miscellaneous Area

Elevation: 5,400 to 6,800 feet

Surface layer texture: Unweathered bedrock

Dominant Present Vegetation

Pickup: Thurber needlegrass, pine bluegrass

Grumblen: Indian ricegrass, bluegrass

Rock outcrop: None

Inclusion 1: Idaho fescue, bluegrass
 Inclusion 2: Thurber needlegrass, Wyoming big sagebrush, pine bluegrass
 Inclusion 3: Big sagebrush, juniper
 Inclusion 4: Wyoming big sagebrush, basin big sagebrush

Ecological Site

Pickup: 027XY079NV
 Grumbler: 027XY070NV
 Rock outcrop: None
 Inclusion 1: 027XY079NV
 Inclusion 2: 027XY007NV
 Inclusion 3: 027XY075NV
 Inclusion 4: 027XY029NV

752--Pickup-Old Camp-Theon association

Composition

Major Components

Pickup very gravelly loam, 15 to 50 percent slopes--40 percent
 Old Camp very gravelly loam, 15 to 50 percent slopes--25 percent
 Theon very stony loam, 15 to 50 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Pokergap stony very fine sandy loam, 2 to 8 percent slopes--5 percent
 Inclusion 2: Dorper stony very fine sandy loam, 2 to 8 percent slopes--4 percent
 Inclusion 3: Rock outcrop--4 percent
 Inclusion 4: Pickup very stony loam, 4 to 15 percent slopes--2 percent

Map Unit Setting

Landscape position: Mountains
 Pickup--Landform: Mountains; geomorphic position: backslope; shape of slope: convex
 Old Camp--Landform: Mountains; geomorphic position: backslope; shape of slope: concave
 Theon--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: south
 Inclusion 1--Landform: Mountains; geomorphic position: footslope
 Inclusion 2--Landform: Mountains; geomorphic position: footslope; aspect: south
 Inclusion 3--Landform: Mountains; geomorphic position: summit; position on slope: upper

Inclusion 4--Landform: Mountains; geomorphic position: summit

Major Component Description

Pickup Series

Elevation: 5,200 to 5,800 feet
Precipitation: About 8 inches
Air temperature: About 51 degrees
Frost-free season: About 120 days
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Old Camp Series

Elevation: 5,200 to 5,800 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum derived from volcanic rocks

Theon Series

Elevation: 5,200 to 5,800 feet
Precipitation: About 5 inches
Air temperature: About 48 degrees
Frost-free season: About 120 days
Surface layer texture: Very stony loam
Drainage class: Well drained
Dominant parent material: Residuum derived from volcanic rocks

Dominant Present Vegetation

Pickup: Bluegrass, bottlebrush squirreltail
 Old Camp: pine bluegrass
 Theon: Bailey greasewood, bud sagebrush, shadscale
 Inclusion 1: Wyoming big sagebrush, pine bluegrass
 Inclusion 2: Bluegrass, bud sagebrush, shadscale
 Inclusion 3: None
 Inclusion 4: Thurber needlegrass, low sagebrush

Ecological Site

Pickup: 027XY079NV
 Old Camp: 027XY007NV
 Theon: 027XY019NV
 Inclusion 1: 027XY008NV
 Inclusion 2: 027XY013NV
 Inclusion 3: None
 Inclusion 4: 027XY020NV

753--Pickup-Rock outcrop association, very steep**Composition****Major Components**

Pickup very gravelly loam, 50 to 75 percent slopes--65 percent

Rock outcrop unweathered bedrock, 50 to 75 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Old Camp stony loam, 50 to 75 percent slopes--8 percent

Inclusion 2: Xeric Torrifluvents, loamy-skeletal, mixed (calcareous), mesic--3 percent

Inclusion 3: Grumblen very gravelly loam, 4 to 15 percent slopes--2 percent

Inclusion 4: Aridic Argixerolls, loamy-skeletal, mixed, frigid--2 percent

Map Unit Setting

Landscape position: Mountains

Pickup--Landform: Mountains; geomorphic

position: backslope; shape of slope: convex

Rock outcrop--Landform: Mountains; geomorphic

position: summit; position on slope: upper

Inclusion 1--Landform: Mountains; geomorphic position: shoulder; shape of slope: convex

Inclusion 2--Landform: Drainageways; shape of slope: concave

Inclusion 3--Landform: Mountains; geomorphic position: summit

Inclusion 4--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: north

Major Component Description**Pickup Series**

Elevation: 6,100 to 6,600 feet

Precipitation: About 8 inches

Air temperature: About 51 degrees

Frost-free season: About 120 days

Surface layer texture: Very gravelly loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from volcanic rocks

Rock outcrop Miscellaneous Area

Elevation: 6,100 to 6,600 feet

Surface layer texture: Unweathered bedrock

Dominant Present Vegetation

Pickup: Bottlebrush squirreltail, pine bluegrass

Rock outcrop: None

Inclusion 1: Wyoming big sagebrush

Inclusion 2: Wyoming big sagebrush, basin big sagebrush

Inclusion 3: Bluegrass

Inclusion 4: Bluegrass

Ecological Site

Pickup: 027XY079NV

Rock outcrop: None

Inclusion 1: 027XY007NV

Inclusion 2: 027XY029NV

Inclusion 3: 027XY070NV

Inclusion 4: 027XY079NV

800--Old Camp-Dorper-Pokergap association**Composition****Major Components**

Old Camp very gravelly loam, 30 to 50 percent slopes--35 percent

Dorper stony very fine sandy loam, 15 to 30 percent slopes--30 percent

Pokergap stony very fine sandy loam, 15 to 30 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Lithic Haplargids, loamy-skeletal, mixed, mesic--6 percent

Inclusion 2: Lithic Torriorthents, loamy-skeletal, mixed (calcareous), mesic--4 percent

Inclusion 3: Puett very stony loam, 15 to 50 percent slopes--3 percent

Inclusion 4: Xeric Torrifluvents, loamy-skeletal, mixed (calcareous), mesic--2 percent

Map Unit Setting

Landscape position: Hills and intermontane basins

Old Camp--Landform: Hills; geomorphic position: backslope; shape of slope: convex

Dorper--Landform: Hills; geomorphic position: footslope; shape of slope: convex

Pokergap--Landform: Hills; geomorphic position: footslope; shape of slope: concave

Inclusion 1--Landform: Hills; geomorphic position: summit

Inclusion 2--Landform: Hills; geomorphic position: backslope; aspect: south

Inclusion 3--Landform: Hills; geomorphic position: backslope; shape of slope: convex

Inclusion 4--Landform: Drainageways; shape of slope: concave

Major Component Description**Old Camp Series**

Elevation: 5,100 to 5,800 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum derived from volcanic rocks

Dorper Series

Elevation: 4,900 to 5,400 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 125 days
Surface layer texture: Stony very fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Pokergap Series

Elevation: 4,900 to 5,400 feet
Precipitation: About 9 inches
Air temperature: About 50 degrees
Frost-free season: About 120 days
Surface layer texture: Stony very fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess and volcanic ash

Dominant Present Vegetation

Old Camp: Pine bluegrass, spiny hopsage
 Dorper: Bailey greasewood, shadscale
 Pokergap: Wyoming big sagebrush, pine bluegrass, spiny hopsage
 Inclusion 1: Bluegrass, bud sagebrush, shadscale
 Inclusion 2: Desert needlegrass, littleleaf horsebrush, shadscale
 Inclusion 3: Indian ricegrass, black sagebrush, shadscale
 Inclusion 4: Wyoming big sagebrush, basin big sagebrush

Ecological Site

Old Camp: 027XY007NV
 Dorper: 027XY013NV
 Pokergap: 027XY008NV
 Inclusion 1: 027XY019NV
 Inclusion 2: 027XY017NV
 Inclusion 3: 027XY061NV
 Inclusion 4: 027XY029NV

801--Old Camp-Sumya-Pickup association**Composition****Major Components**

Old Camp very gravelly loam, 30 to 50 percent slopes--35 percent
 Sumya very stony clay loam, 50 to 75 percent slopes--30 percent
 Pickup very gravelly loam, 30 to 50 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Rock outcrop--7 percent
 Inclusion 2: Aridic Argixerolls, loamy-skeletal, mixed, frigid--6 percent
 Inclusion 3: Xeric Torriorthents, loamy-skeletal, mixed (calcareous), mesic--2 percent

Map Unit Setting

Landscape position: Mountains
 Old Camp--Landform: Mountains; geomorphic position: backslope; position on slope: lower; shape of slope: concave
 Sumya--Landform: Mountains; geomorphic position: backslope
 Pickup--Landform: Mountains; geomorphic position: backslope; shape of slope: convex
 Inclusion 1--Landform: Mountains; geomorphic position: summit; position on slope: upper
 Inclusion 2--Landform: Mountains; geomorphic position: backslope; position on slope: upper; shape of slope: concave
 Inclusion 3--Landform: Drainageways; shape of slope: concave

Major Component Description**Old Camp Series**

Elevation: 5,600 to 7,000 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum derived from volcanic rocks

Sumya Series

Elevation: 6,500 to 7,500 feet
Precipitation: About 11 inches
Air temperature: About 43 degrees
Frost-free season: About 90 days
Surface layer texture: Very stony clay loam
Drainage class: Well drained

Dominant parent material: Residuum derived from volcanic rocks

Pickup Series

Elevation: 5,600 to 7,000 feet

Precipitation: About 10 inches

Air temperature: About 49 degrees

Frost-free season: About 120 days

Surface layer texture: Very gravelly loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from volcanic rocks

Dominant Present Vegetation

Old Camp: Nevada Mormon tea, pine bluegrass, spiny hopsage

Sumya: Bottlebrush squirreltail, mountain big sagebrush, pine bluegrass

Pickup: Bottlebrush squirreltail, pine bluegrass

Inclusion 1: None

Inclusion 2: Thurber needlegrass, Wyoming big sagebrush, bluegrass

Inclusion 3: Wyoming big sagebrush, basin big sagebrush, spiny hopsage

Ecological Site

Old Camp: 027XY007NV

Sumya: 027XY075NV

Pickup: 027XY079NV

Inclusion 1: None

Inclusion 2: 027XY054NV

Inclusion 3: 027XY029NV

**810--Perwaso, occasionally flooded--
Perwaso silt loams**

Composition

Major Components

Perwaso silt loam, 0 to 2 percent slopes--50 percent

Perwaso silt loam, 0 to 2 percent slopes--35 percent

Contrasting Inclusions

Inclusion 1: Juva loam, 0 to 2 percent slopes--6 percent

Inclusion 2: Slaw silty clay loam, 0 to 2 percent slopes, occasionally flooded--6 percent

Inclusion 3: Typic Torrifluvents, loamy-skeletal, mixed (calcareous), mesic, 0 to 2 percent slopes--3 percent

Map Unit Setting

Landscape position: Bolsons

Perwaso--Landform: Alluvial flats; shape of slope: concave

Perwaso--Landform: Alluvial flats; shape of slope: convex

Inclusion 1--Landform: Alluvial flats; shape of slope: convex

Inclusion 2--Landform: Alluvial flats; shape of slope: concave

Inclusion 3--Drainageways

Major Component Description

Perwaso Series

Elevation: 3,700 to 4,200 feet

Precipitation: About 6 inches

Air temperature: About 51 degrees

Frost-free season: About 125 days

Surface layer texture: Silt loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Perwaso Series

Elevation: 3,700 to 4,200 feet

Precipitation: About 6 inches

Air temperature: About 51 degrees

Frost-free season: About 125 days

Surface layer texture: Silt loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Perwaso: Torrey quailbush, basin wildrye

Perwaso: Bailey greasewood, Indian ricegrass, shadscale

Inclusion 1: Bailey greasewood, Indian ricegrass, shadscale

Inclusion 2: Torrey quailbush, basin wildrye

Inclusion 3: Torrey quailbush, basin wildrye

Ecological Site

Perwaso: 024XY015NV

Perwaso: 027XY025NV

Inclusion 1: 027XY018NV

Inclusion 2: 024X015NV

Inclusion 3: 024X015NV

850--Playas

Composition

Major Components

Playas silty clay loam, 0 to 1 percent slopes--100 percent

Map Unit Setting

Landscape position: Intermontane basins
 Playas--Landform: Playas; position on slope:
 lower

Major Component Description**Playas Miscellaneous Area**

Elevation: 4,000 to 4,200 feet
Surface layer texture: Silty clay loam

Dominant Present Vegetation

Playas: None

Ecological Site

Playas: None

851--Pits, mine**Composition****Major Components**

Pits,mine unweathered bedrock, 4 to 50 percent
 slopes--100 percent

Map Unit Setting

Landscape position: Hills and intermontane
 basins
 Pits,mine--Landform: Mountains; geomorphic
 position: backslope

Major Component Description**Pits, mine Miscellaneous Area**

Elevation: 3,900 to 7,000 feet
Surface layer texture: Unweathered bedrock

Dominant Present Vegetation

Pits,mine: None

Ecological Site

Pits,mine: None

852--Puett-Dorper association**Composition****Major Components**

Puett coarse sandy loam, 15 to 50 percent
 slopes--45 percent
 Dorper extremely gravelly very fine sandy loam,
 2 to 8 percent slopes--40 percent

Contrasting Inclusions

Inclusion 1: Puett--4 percent
 Inclusion 2: Badland loam, 2 to 8 percent slopes-
 -4 percent

Inclusion 3: Kumiva--4 percent
 Inclusion 4: Aboten silt loam, 0 to 4 percent
 slopes--3 percent

Map Unit Setting

Landscape position: Hills and intermontane
 basins
 Puett--Landform: Hills; geomorphic position:
 backslope
 Dorper--Landform: Fan remnants
 Inclusion 1--Landform: Drainageways; shape of
 slope: concave
 Inclusion 2--Landform: Hills; geomorphic
 position: shoulder
 Inclusion 3--Landform: Hills; geomorphic
 position: backslope
 Inclusion 4--Landform: Hills; geomorphic
 position: toeslope; shape of slope: concave

Major Component Description**Puett Series**

Elevation: 4,000 to 4,400 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Coarse sandy loam
Drainage class: Well drained
Dominant parent material: Residuum derived
 from tuffaceous rocks

Dorper Series

Elevation: 3,800 to 4,200 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 125 days
Surface layer texture: Extremely gravelly very
 fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from
 mixed rocks, loess, and volcanic ash

Dominant Present Vegetation

Puett: Indian ricegrass, black sagebrush,
 bottlebrush squirreltail
 Dorper: Bud sagebrush, pine bluegrass,
 shadscale
 Inclusion 1: Littleleaf horsebrush, tall gray
 rabbitbrush
 Inclusion 2: Indian ricegrass, black sagebrush,
 shadscale
 Inclusion 3: None
 Inclusion 4: Indian ricegrass, winterfat

Ecological Site

Puett: 027XY061NV
 Dorper: 027XY018NV
 Inclusion 1: 027XY022NV
 Inclusion 2: 027XY061NV
 Inclusion 3: None
 Inclusion 4: 027XY014NV

960--Rednik-Jungo-Aboten association**Composition****Major Components**

Rednik very gravelly sandy loam, 50 to 75 percent slopes--45 percent
 Jungo very gravelly loam, 15 to 50 percent slopes--20 percent
 Aboten gravelly silt loam, 4 to 15 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Haplic Durargids, sandy-skeletal, mixed, mesic very gravelly silt loam, 4 to 15 percent slopes--6 percent
 Inclusion 2: Xeric Torriorthents, sandy-skeletal, mixed, mesic--6 percent
 Inclusion 3: Acrelane--3 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Rednik--Landform: Fan remnants; geomorphic position: backslope; aspect: south
 Jungo--Landform: Fan remnants; geomorphic position: backslope; shape of slope: concave; aspect: north
 Aboten--Landform: Fan remnants; geomorphic position: summit; shape of slope: convex
 Inclusion 1--Landform: Fan remnants; geomorphic position: shoulder; shape of slope: convex
 Inclusion 2--Landform: Fan remnants; position on slope: upper; aspect: south
 Inclusion 3--Landform: Drainageways; shape of slope: concave

Major Component Description**Rednik Series**

Elevation: 4,400 to 5,400 feet
Precipitation: About 6 inches
Air temperature: About 50 degrees
Frost-free season: About 100 days
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Jungo Series

Elevation: 4,400 to 5,400 feet
Precipitation: About 8 inches
Air temperature: About 52 degrees
Frost-free season: About 120 days
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess, and volcanic ash

Aboten Series

Elevation: 5,000 to 6,200 feet
Precipitation: About 6 inches
Air temperature: About 51 degrees
Frost-free season: About 120 days
Surface layer texture: Gravelly silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess, and volcanic ash

Dominant Present Vegetation

Rednik: Indian ricegrass, bud sagebrush, shadscale
 Jungo: Indian ricegrass, sagebrush
 Aboten: Bud sagebrush, pine bluegrass, shadscale
 Inclusion 1: Bailey greasewood, bluegrass, shadscale
 Inclusion 2: Desert needlegrass, littleleaf horsebrush, shadscale
 Inclusion 3: Wyoming big sagebrush, basin big sagebrush

Ecological Site

Rednik: 027XY027NV
 Jungo: 027XY070NV
 Aboten: 027XY013NV
 Inclusion 1: 027XY018NV
 Inclusion 2: 027XY029NV
 Inclusion 3: 027XY017NV

970--Say-Eaglerock-Ninemile association**Composition****Major Components**

Say very stony loam, 30 to 50 percent slopes--40 percent
 Eaglerock stony coarse sandy loam, 15 to 50 percent slopes--30 percent
 Ninemile very gravelly sandy loam, 15 to 50 percent slopes--15 percent

Contrasting Inclusions

- Inclusion 1: Lithic Xerollic Haplargids, loamy-skeletal, mixed, frigid very stony sandy loam, 15 to 50 percent slopes--5 percent
 Inclusion 2: Lithic Xerollic Haplargids, loamy-skeletal, mixed, frigid--4 percent
 Inclusion 3: Aridic Argixerolls, fine-loamy, mixed, frigid--4 percent
 Inclusion 4: Acrelane--2 percent

Map Unit Setting

- Landscape position:** Mountains
 Say--Landform: Mountains; geomorphic position: backslope; shape of slope: plane
 Eaglerock--Landform: Mountains; geomorphic position: backslope; shape of slope: concave
 Ninemile--Landform: Mountains; geomorphic position: backslope; position on slope: lower; shape of slope: convex
 Inclusion 1--Landform: Mountains; position on slope: lower; aspect: south
 Inclusion 2--Landform: Mountains; aspect: south
 Inclusion 3--Landform: Mountains; geomorphic position: summit
 Inclusion 4--Landform: Mountains; position on slope: lower; aspect: north

Major Component Description**Say Series**

- Elevation:** 6,000 to 7,800 feet
Precipitation: About 11 inches
Air temperature: About 44 degrees
Frost-free season: About 90 days
Surface layer texture: Very stony loam
Drainage class: Well drained
Dominant parent material: Residuum derived from granitic rocks

Eaglerock Series

- Elevation:** 6,000 to 7,800 feet
Precipitation: About 12 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Stony coarse sandy loam
Drainage class: Well drained
Dominant parent material: Residuum derived from granitic rocks

Ninemile Series

- Elevation:** 5,500 to 7,500 feet
Precipitation: About 14 inches
Air temperature: About 45 degrees
Frost-free season: About 95 days
Surface layer texture: Very gravelly sandy loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from granitic rocks

Dominant Present Vegetation

- Say: Thurber needlegrass, mountain big sagebrush
 Eaglerock: Thurber needlegrass, bluegrass, mountain big sagebrush
 Ninemile: Idaho fescue, low sagebrush
 Inclusion 1: Thurber needlegrass, bottlebrush squirreltail
 Inclusion 2: Juniper
 Inclusion 3: Idaho fescue, black sagebrush, low sagebrush
 Inclusion 4: Idaho fescue, bluebunch wheatgrass

Ecological Site

- Say: 027XY058NV
 Eaglerock: 027XY073NV
 Ninemile: 027XY046NV
 Inclusion 1: 027XY072NV
 Inclusion 2: 027XY074NV
 Inclusion 3: 024XY016NV
 Inclusion 4: 024XY021NV

980--Selbit-Rock outcrop complex**Composition****Major Components**

- Selbit very gravelly coarse sand, 15 to 50 percent slopes--65 percent
 Rock outcrop unweathered bedrock, 15 to 50 percent slopes--20 percent

Contrasting Inclusions

- Inclusion 1: Xerollic Haplargids, loamy-skeletal, mixed, mesic, shallow extremely bouldery loamy coarse sand, 15 to 50 percent slopes--8 percent
 Inclusion 2: Fluventic Haploxerolls, loamy-skeletal, mixed, mesic--5 percent
 Inclusion 3: Xerollic Haplargids, loamy-skeletal, mixed, mesic, shallow--2 percent

Map Unit Setting

- Landscape position:** Mountains
 Selbit--Landform: Mountains; geomorphic position: backslope
 Rock outcrop--Landform: Mountains
 Inclusion 1--Landform: Mountains; geomorphic position: backslope
 Inclusion 2--Landform: Mountains; position on slope: upper

Inclusion 3--Landform: Drainageways

Major Component Description

Selbit Series

Elevation: 5,400 to 6,800 feet

Precipitation: About 13 inches

Air temperature: About 47 degrees

Frost-free season: About 90 days

Surface layer texture: Very gravelly coarse sand

Drainage class: Somewhat excessively drained

Dominant parent material: Residuum and colluvium derived from granitic rocks

Rock outcrop Miscellaneous Area

Elevation: 5,400 to 6,800 feet

Surface layer texture: Unweathered bedrock

Dominant Present Vegetation

Selbit: Bluebunch wheatgrass, mountain big sagebrush

Rock outcrop: None

Inclusion 1: Wyoming big sagebrush

Inclusion 2: Utah juniper

Inclusion 3: Basin big sagebrush, basin wildrye

Ecological Site

Selbit: 023XY042NV

Rock outcrop: None

Inclusion 1: 023XY020NV

Inclusion 2: 023XY045NV

Inclusion 3: 023XY009NV

981--Selbit-Rock outcrop-Upsel association

Composition

Major Components

Selbit very gravelly coarse sand, 50 to 75 percent slopes--45 percent

Rock outcrop unweathered bedrock, 50 to 75 percent slopes--25 percent

Upsel gravelly loamy coarse sand, 50 to 75 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Acrelane--8 percent

Inclusion 2: Aridic Argixerolls, loamy, mixed, mesic, shallow very bouldery coarse sandy loam, 15 to 50 percent slopes--3 percent

Inclusion 3: Fluventic Haploxerolls, loamy-skeletal, mixed, mesic--3 percent

Inclusion 4: Kumiva--1 percent

Map Unit Setting

Landscape position: Mountains

Selbit--Landform: Mountains; geomorphic position: backslope; shape of slope: plane

Rock outcrop--Landform: Mountains; geomorphic position: summit; position on slope: upper

Upsel--Landform: Mountains; geomorphic position: backslope; shape of slope: convex

Inclusion 1--Landform: Mountains

Inclusion 2--Landform: Mountains; geomorphic position: footslope

Inclusion 3--Landform: Mountains; aspect: south

Inclusion 4--Landform: Drainageways; shape of slope: concave

Major Component Description

Selbit Series

Elevation: 6,500 to 8,100 feet

Precipitation: About 13 inches

Air temperature: About 47 degrees

Frost-free season: About 90 days

Surface layer texture: Very gravelly coarse sand

Drainage class: Somewhat excessively drained

Dominant parent material: Residuum and colluvium derived from granitic rocks

Rock outcrop Miscellaneous Area

Elevation: 6,500 to 8,100 feet

Surface layer texture: Unweathered bedrock

Upsel Series

Elevation: 6,000 to 7,800 feet

Precipitation: About 14 inches

Air temperature: About 44 degrees

Frost-free season: About 90 days

Surface layer texture: Gravelly loamy coarse sand

Drainage class: Somewhat excessively drained

Dominant parent material: Residuum derived from granitic rocks

Dominant Present Vegetation

Selbit: Bluebunch wheatgrass, mountain big sagebrush

Rock outcrop: None

Upsel: Idaho fescue, mountain big sagebrush

Inclusion 1: Utah juniper

Inclusion 2: Thurber needlegrass, bluebunch wheatgrass

Inclusion 3: Thurber needlegrass, bluebunch wheatgrass

Inclusion 4: Basin big sagebrush

Ecological Site

Selbit: 023XY042NV
 Upsel: 023XY043NV
 Rock outcrop: None
 Inclusion 1: 023XY045NV
 Inclusion 2: 023XY020NV
 Inclusion 3: 023XY039NV
 Inclusion 4: 023XY009NV

990--Shawave-Granshaw-Labkey association**Composition****Major Components**

Shawave gravelly sandy loam, 2 to 8 percent slopes--40 percent
 Granshaw gravelly coarse sandy loam, 2 to 8 percent slopes--25 percent
 Labkey gravelly sandy loam, 0 to 2 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Labkey gravelly sandy loam, 0 to 2 percent slopes, occasionally flooded--6 percent
 Inclusion 2: Hawsley very stony loam, 0 to 2 percent slopes--6 percent
 Inclusion 3: Playas loamy sand, 0 to 2 percent slopes--2 percent
 Inclusion 4: Xeric Torrifluvents, loamy-skeletal, mixed, nonacid, mesic--1 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Shawave--Landform: Fan remnants; position on slope: upper; shape of slope: convex
 Granshaw--Landform: Fan remnants; position on slope: lower; shape of slope: convex
 Labkey--Landform: Fan skirts
 Inclusion 1--Landform: Drainageways; shape of slope: concave
 Inclusion 2--Landform: Inset fans
 Inclusion 3--Landform: Sand sheets; shape of slope: convex
 Inclusion 4--Landform: Playas; shape of slope: concave

Major Component Description**Shawave Series**

Elevation: 4,200 to 4,500 feet
Precipitation: About 9 inches
Air temperature: About 50 degrees

Frost-free season: About 120 days
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from granitic rocks, loess, and volcanic ash

Granshaw Series

Elevation: 4,200 to 4,400 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 125 days
Surface layer texture: Gravelly coarse sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from granitic rocks

Labkey Series

Elevation: 4,200 to 4,400 feet
Precipitation: About 5 inches
Air temperature: About 53 degrees
Frost-free season: About 125 days
Surface layer texture: Gravelly sandy loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from granitic rocks

Dominant Present Vegetation

Shawave: Indian ricegrass, Wyoming big sagebrush, pine bluegrass
 Granshaw: Indian ricegrass, bud sagebrush, shadscale
 Labkey: Bailey greasewood, Indian ricegrass, shadscale
 Inclusion 1: Bailey greasewood, littleleaf horsebrush, tall gray rabbitbrush
 Inclusion 2: Bailey greasewood, Indian ricegrass, shadscale
 Inclusion 3: Indian ricegrass, fourwing saltbush, winterfat
 Inclusion 4: None

Ecological Site

Shawave: 027XY008NV
 Granshaw: 027XY013NV
 Labkey: 027XY018NV
 Inclusion 1: 027XY022NV
 Inclusion 2: 027XY018NV
 Inclusion 3: 027XY009NV
 Inclusion 4: None

991--Shawave-Slipback-Granshaw association**Composition****Major Components**

Shawave gravelly sandy loam, 2 to 8 percent slopes--35 percent

Slipback sandy loam, 2 to 8 percent slopes--25 percent

Granshaw gravelly coarse sandy loam, 2 to 8 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Xerollic Camborthids, coarse-loamy, mixed, mesic--4 percent

Inclusion 2: Typic Torrifluvents, coarse-loamy, mixed, nonacid, mesic--4 percent

Inclusion 3: Biga--4 percent

Inclusion 4: Haploxerollic Durargids, fine, montmorillonitic, mesic gravelly coarse sandy loam, 2 to 8 percent slopes--3 percent

Map Unit Setting

Landscape position: Fan piedmonts

Shawave--Landform: Fan aprons; shape of slope: convex

Slipback--Landform: Fan remnants; shape of slope: convex

Granshaw--Landform: Fan remnants; position on slope: lower; shape of slope: convex

Inclusion 1--Landform: Drainageways; shape of slope: concave

Inclusion 2--Landform: Drainageways

Inclusion 3--Landform: Fan skirts

Inclusion 4--Landform: Fan remnants; position on slope: lower; shape of slope: convex

Major Component Description**Shawave Series**

Elevation: 4,800 to 5,600 feet

Precipitation: About 9 inches

Air temperature: About 50 degrees

Frost-free season: About 120 days

Surface layer texture: Gravelly sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from granitic rocks, loess, and volcanic ash

Slipback Series

Elevation: 4,200 to 5,400 feet

Precipitation: About 9 inches

Air temperature: About 50 degrees

Frost-free season: About 120 days

Surface layer texture: Sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from granitic rocks

Granshaw Series

Elevation: 4,200 to 5,400 feet

Precipitation: About 6 inches

Air temperature: About 53 degrees

Frost-free season: About 125 days

Surface layer texture: Gravelly coarse sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from granitic rocks

Dominant Present Vegetation

Shawave: Indian ricegrass, Wyoming big sagebrush, pine bluegrass

Slipback: Indian ricegrass, Wyoming big sagebrush, pine bluegrass

Granshaw: Indian ricegrass, bud sagebrush, shadscale

Inclusion 1: Wyoming big sagebrush, basin big sagebrush

Inclusion 2: Indian ricegrass, Wyoming big sagebrush, pine bluegrass

Inclusion 3: Indian ricegrass, winterfat

Inclusion 4: Bailey greasewood, shadscale

Ecological Site

Shawave: 027XY008NV

Slipback: 027XY008NV

Granshaw: 027XY013NV

Inclusion 1: 027XY029NV

Inclusion 2: 027XY008NV

Inclusion 3: 027XY014NV

Inclusion 4: 027XY018NV

992--Shawave-Deadyon-Slipback association**Composition****Major Components**

Shawave gravelly sandy loam, 2 to 8 percent slopes--45 percent

Deadyon loam, 2 to 8 percent slopes--20 percent

Slipback sandy loam, 2 to 8 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Xeric Torriorthents, coarse-loamy, mixed (calcareous), mesic--6 percent

Inclusion 2: Deadyon--4 percent

Inclusion 3: Xerollic Camborthids, sandy, mixed, mesic sand, 2 to 8 percent slopes--3 percent
 Inclusion 4: Xeric Torrifluvents, loamy-skeletal, mixed, nonacid, mesic--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Shawave--Landform: Fan remnants; position on slope: upper; shape of slope: convex
 Deadyon--Landform: Fan skirts; shape of slope: convex
 Slipback--Landform: Fan remnants; shape of slope: convex
 Inclusion 1--Landform: Fan remnants; position on slope: upper; shape of slope: convex
 Inclusion 2--Landform: Inset fans; shape of slope: concave
 Inclusion 3--Landform: Fan skirts
 Inclusion 4--Landform: Fan remnants; geomorphic position: backslope; shape of slope: concave

Major Component Description

Shawave Series

Elevation: 4,800 to 5,800 feet
Precipitation: About 9 inches
Air temperature: About 50 degrees
Frost-free season: About 120 days
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from granitic rocks, loess, and volcanic ash

Deadyon Series

Elevation: 4,200 to 5,000 feet
Precipitation: About 9 inches
Air temperature: About 49 degrees
Frost-free season: About 120 days
Surface layer texture: Loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from granitic rocks

Slipback Series

Elevation: 4,800 to 5,800 feet
Precipitation: About 9 inches
Air temperature: About 50 degrees
Frost-free season: About 120 days
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from granitic rocks

Dominant Present Vegetation

Shawave: Indian ricegrass, Wyoming big sagebrush, pine bluegrass
 Deadyon: Indian ricegrass, Wyoming big sagebrush, pine bluegrass
 Slipback: Indian ricegrass, Wyoming big sagebrush, pine bluegrass
 Inclusion 1: Thurber needlegrass, pine bluegrass
 Inclusion 2: Wyoming big sagebrush, basin big sagebrush, spiny hopsage
 Inclusion 3: Indian ricegrass, Wyoming big sagebrush, western wheatgrass
 Inclusion 4: Thurber needlegrass, Wyoming big sagebrush, pine bluegrass

Ecological Site

Shawave: 027XY008NV
 Deadyon: 027XY008NV
 Slipback: 027XY008NV
 Inclusion 1: 027XY079NV
 Inclusion 2: 027XY029NV
 Inclusion 3: 027XY045NV
 Inclusion 4: 027XY007NV

993--Shawave-Biga-Deadyon association

Composition

Major Components

Shawave gravelly sandy loam, 2 to 8 percent slopes--50 percent
 Biga gravelly loam, 2 to 8 percent slopes--20 percent
 Deadyon loam, 0 to 4 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Xerollic Camborthids, coarse-loamy, mixed, mesic--5 percent
 Inclusion 2: Kumiva--5 percent
 Inclusion 3: Slipback silt loam, 0 to 4 percent slopes--3 percent
 Inclusion 4: Xeric Torrifluvents, loamy-skeletal, mixed (calcareous), mesic sandy loam, 4 to 15 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Shawave--Landform: Fan remnants; position on slope: upper; shape of slope: convex
 Biga--Landform: Fan remnants; position on slope: mid; shape of slope: convex
 Deadyon--Landform: Inset fans; shape of slope: concave

- Inclusion 1--Landform: Drainageways; shape of slope: concave
 Inclusion 2--Landform: Inset fans; geomorphic position: backslope; shape of slope: concave
 Inclusion 3--Landform: Inset fans; position on slope: lower
 Inclusion 4--Landform: Fan remnants; position on slope: upper; shape of slope: convex

Major Component Description

Shawave Series

Elevation: 4,400 to 5,500 feet
Precipitation: About 9 inches
Air temperature: About 50 degrees
Frost-free season: About 120 days
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from granitic rocks, loess, and volcanic ash

Biga Series

Elevation: 4,300 to 5,300 feet
Precipitation: About 5 inches
Air temperature: About 53 degrees
Frost-free season: About 125 days
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from granitic rocks

Deadyon Series

Elevation: 4,000 to 5,000 feet
Precipitation: About 9 inches
Air temperature: About 49 degrees
Frost-free season: About 120 days
Surface layer texture: Loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from granitic rocks

Dominant Present Vegetation

- Shawave: Indian ricegrass, Wyoming big sagebrush, pine bluegrass
 Biga: Bud sagebrush, shadscale
 Deadyon: Indian ricegrass, Wyoming big sagebrush, pine bluegrass
 Inclusion 1: Wyoming big sagebrush, basin big sagebrush
 Inclusion 2: Wyoming big sagebrush, pine bluegrass
 Inclusion 3: Indian ricegrass, winterfat
 Inclusion 4: Wyoming big sagebrush, pine bluegrass

Ecological Site

Shawave: 027XY008NV
 Biga: 027XY013NV
 Deadyon: 027XY008NV
 Inclusion 1: 027XY029NV
 Inclusion 2: 027XY008NV
 Inclusion 3: 027XY014NV
 Inclusion 4: 027XY008NV

994--Shawave-Biga-Puett association

Composition

Major Components

Shawave gravelly sandy loam, 4 to 15 percent slopes--45 percent
 Biga gravelly loam, 2 to 8 percent slopes--20 percent
 Puett coarse sandy loam, 15 to 30 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Deadyon--6 percent
 Inclusion 2: Badland loam, 0 to 4 percent slopes--5 percent
 Inclusion 3: Rock outcrop--2 percent
 Inclusion 4: Juva--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Shawave--Landform: Fan remnants; geomorphic position: backslope; shape of slope: concave
 Biga--Landform: Fan remnants; geomorphic position: summit; shape of slope: convex
 Puett--Landform: Fan remnants; geomorphic position: backslope
 Inclusion 1--Landform: Drainageways; shape of slope: concave
 Inclusion 2--Landform: Inset fans; shape of slope: concave
 Inclusion 3--Landform: Fan remnants
 Inclusion 4--Landform: Pediments; geomorphic position: backslope

Major Component Description

Shawave Series

Elevation: 4,400 to 5,100 feet
Precipitation: About 9 inches
Air temperature: About 50 degrees
Frost-free season: About 120 days
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from granitic rocks, loess, and volcanic ash

Biga Series

Elevation: 4,600 to 5,300 feet
Precipitation: About 5 inches
Air temperature: About 53 degrees
Frost-free season: About 125 days
Surface layer texture: Gravelly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from granitic rocks, loess, and volcanic ash

Puett Series

Elevation: 4,600 to 5,300 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface layer texture: Coarse sandy loam
Drainage class: Well drained
Dominant parent material: Residuum derived from tuffaceous rocks

Dominant Present Vegetation

Shawave: Indian ricegrass, Wyoming big sagebrush, pine bluegrass
 Biga: Bluegrass, bud sagebrush, shadscale
 Puett: Indian ricegrass, black sagebrush, shadscale
 Inclusion 1: Wyoming big sagebrush, basin big sagebrush
 Inclusion 2: Indian ricegrass, Wyoming big sagebrush, pine bluegrass
 Inclusion 3: None
 Inclusion 4: None

Ecological Site

Shawave: 027XY008NV
 Biga: 027XY013NV
 Puett: 027XY061NV
 Inclusion 1: 027XY029NV
 Inclusion 2: 027XY008NV
 Inclusion 3: None
 Inclusion 4: None

996--Slaw-Slaw, occasionally flooded silt loams***Composition*****Major Components**

Slaw silt loam, 0 to 2 percent slopes--55 percent
 Slaw silt loam, 0 to 2 percent slopes--35 percent

Contrasting Inclusions

Inclusion 1: Juva loam, 0 to 2 percent slopes--5 percent

Inclusion 2: Typic Torrfluvents, fine-silty, mixed (calcareous), mesic loam, 0 to 2 percent slopes--5 percent

Map Unit Setting

Landscape position: Bolsons
 Slaw--Landform: Alluvial flats; shape of slope: convex
 Slaw--Landform: Alluvial flats; shape of slope: convex
 Inclusion 1--Landform: Alluvial flats
 Inclusion 2--Landform: Alluvial flats

Major Component Description**Slaw Series**

Elevation: 3,700 to 4,200 feet
Precipitation: About 5 inches
Air temperature: About 54 degrees
Frost-free season: About 140 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Slaw Series

Elevation: 3,700 to 4,200 feet
Precipitation: About 5 inches
Air temperature: About 54 degrees
Frost-free season: About 140 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Slaw: Black greasewood, seepweed, shadscale
 Slaw: Torrey quailbush, basin wildrye
 Inclusion 1: Bailey greasewood, shadscale
 Inclusion 2: Torrey quailbush, basin wildrye

Ecological Site

Slaw: 027XY025NV
 Slaw: 024XY015NV
 Inclusion 1: 027XY018NV
 Inclusion 2: 024XY015NV

1020--Soar, moderately steep-Arclay-Soar association***Composition*****Major Components**

Soar very gravelly coarse sandy loam, 15 to 30 percent slopes--45 percent

Arclay very gravelly coarse sandy loam, 15 to 30 percent slopes--25 percent

Soar very gravelly coarse sandy loam, 4 to 15 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Acrelane very gravelly coarse sandy loam, 4 to 15 percent slopes--6 percent

Inclusion 2: Xerollic Haplargids, loamy-skeletal, mixed, mesic--4 percent

Inclusion 3: Slocave very gravelly coarse sandy loam, 15 to 30 percent slopes--3 percent

Inclusion 4: Typic Torrifuvents, sandy-skeletal, mixed, mesic--2 percent

Map Unit Setting

Landscape position: Mountains

Soar--Landform: Hills; geomorphic position: summit; shape of slope: convex

Arclay--Landform: Hills; geomorphic position: backslope; shape of slope: convex; aspect: north

Soar--Landform: Hills; geomorphic position: summit; shape of slope: convex

Inclusion 1--Landform: Hills; geomorphic position: backslope; shape of slope: concave; aspect: north

Inclusion 2--Landform: Hills; geomorphic position: backslope; position on slope: lower; shape of slope: concave

Inclusion 3--Landform: Hills; shape of slope: convex; aspect: south

Inclusion 4--Landform: Drainageways; shape of slope: concave

Major Component Description

Soar Series

Elevation: 5,000 to 6,200 feet

Precipitation: About 9 inches

Air temperature: About 50 degrees

Frost-free season: About 125 days

Surface layer texture: Very gravelly coarse sandy loam

Drainage class: Well drained

Dominant parent material: Residuum derived from granitic rocks

Arclay Series

Elevation: 4,600 to 6,000 feet

Precipitation: About 9 inches

Air temperature: About 50 degrees

Frost-free season: About 120 days

Surface layer texture: Very gravelly coarse sandy loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from granitic rocks

Soar Series

Elevation: 5,000 to 6,200 feet

Precipitation: About 9 inches

Air temperature: About 50 degrees

Frost-free season: About 125 days

Surface layer texture: Very gravelly coarse sandy loam

Drainage class: Well drained

Dominant parent material: Residuum derived from granitic rocks

Dominant Present Vegetation

Soar: Indian ricegrass, desert needlegrass

Arclay: Thurber needlegrass, pine bluegrass

Soar: Indian ricegrass, desert needlegrass

Inclusion 1: Wyoming big sagebrush, needlegrass

Inclusion 2: Thurber needlegrass, Wyoming big sagebrush, pine bluegrass

Inclusion 3: Desert needlegrass, littleleaf horsebrush, shadscale

Inclusion 4: Wyoming big sagebrush, basin big sagebrush, spiny hopsage

Ecological Site

Soar: 027XY068NV

Arclay: 027XY079NV

Soar: 027XY068NV

Inclusion 1: 027XY072NV

Inclusion 2: 027XY007NV

Inclusion 3: 027XY017NV

Inclusion 4: 027XY029NV

1021--Soar-Arclay association

Composition

Major Components

Soar very gravelly coarse sandy loam, 30 to 50 percent slopes--45 percent

Arclay very gravelly coarse sandy loam, 30 to 50 percent slopes--45 percent

Contrasting Inclusions

Inclusion 1: Acrelane very gravelly coarse sandy loam, 30 to 50 percent slopes--5 percent

Inclusion 2: Slocave very gravelly coarse sandy loam, 30 to 50 percent slopes--3 percent

Inclusion 3: Typic Torrifuvents, sandy-skeletal, mixed, nonacid, mesic--1 percent

Inclusion 4: Rock outcrop--1 percent

Map Unit Setting

Landscape position: Mountains
 Soar--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: south
 Arclay--Landform: Mountains; shape of slope: convex; aspect: north
 Inclusion 1--Landform: Mountains; shape of slope: concave; aspect: north
 Inclusion 2--Landform: Mountains; position on slope: lower; aspect: south
 Inclusion 3--Landform: Drainageways
 Inclusion 4--Landform: Mountains; geomorphic position: summit

Major Component Description**Soar Series**

Elevation: 4,100 to 6,600 feet
Precipitation: About 9 inches
Air temperature: About 50 degrees
Frost-free season: About 125 days
Surface layer texture: Very gravelly coarse sandy loam
Drainage class: Well drained
Dominant parent material: Residuum derived from granitic rocks

Arclay Series

Elevation: 4,100 to 6,600 feet
Precipitation: About 9 inches
Air temperature: About 50 degrees
Frost-free season: About 120 days
Surface layer texture: Very gravelly coarse sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from granitic rocks

Dominant Present Vegetation

Soar: Indian ricegrass, desert needlegrass
 Arclay: Thurber needlegrass, pine bluegrass
 Inclusion 1: Wyoming big sagebrush
 Inclusion 2: Littleleaf horsebrush
 Inclusion 3: Bailey greasewood, littleleaf horsebrush, tall gray rabbitbrush
 Inclusion 4: None

Ecological Site

Soar: 027XY068NV
 Arclay: 027XY079NV
 Inclusion 1: 027XY072NV
 Inclusion 2: 027XY017NV
 Inclusion 3: 027XY022NV
 Inclusion 4: None

1022--Soar-Arclay-Rock outcrop association**Composition****Major Components**

Soar very gravelly coarse sandy loam, 15 to 50 percent slopes--50 percent
 Arclay very gravelly coarse sandy loam, 30 to 50 percent slopes--25 percent
 Rock outcrop unweathered bedrock, 15 to 50 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Acrelane very bouldery coarse sandy loam, 30 to 50 percent slopes--5 percent
 Inclusion 2: Slocave very stony coarse sandy loam, 30 to 50 percent slopes--4 percent
 Inclusion 3: Xeric Torriorthents, loamy-skeletal, mixed (calcareous), mesic--1 percent

Map Unit Setting

Landscape position: Mountains
 Soar--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: south
 Arclay--Landform: Mountains; shape of slope: convex; aspect: north
 Rock outcrop--Landform: Mountains; geomorphic position: summit; position on slope: upper
 Inclusion 1--Landform: Mountains; position on slope: lower; shape of slope: convex; aspect: south
 Inclusion 2--Landform: Mountains; shape of slope: concave; aspect: north
 Inclusion 3--Landform: Drainageways

Major Component Description**Soar Series**

Elevation: 4,300 to 6,600 feet
Precipitation: About 9 inches
Air temperature: About 50 degrees
Frost-free season: About 125 days
Surface layer texture: Very gravelly coarse sandy loam
Drainage class: Well drained
Dominant parent material: Residuum derived from granitic rocks

Arclay Series

Elevation: 4,300 to 6,600 feet
Precipitation: About 9 inches
Air temperature: About 50 degrees
Frost-free season: About 120 days
Surface layer texture: Very gravelly coarse sandy loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from granitic rocks

Rock outcrop Miscellaneous Area

Elevation: 4,300 to 6,600 feet

Surface layer texture: Unweathered bedrock

Dominant Present Vegetation

Soar: Indian ricegrass, desert needlegrass

Arclay: Thurber needlegrass, pine bluegrass

Rock outcrop: None

Inclusion 1: Wyoming big sagebrush, bluegrass, needlegrass

Inclusion 2: Desert needlegrass, littleleaf horsebrush, shadscale

Inclusion 3: Indian ricegrass, basin big sagebrush

Ecological Site

Soar: 027XY068NV

Arclay: 027XY079NV

Rock outcrop: None

Inclusion 1: 027XY072NV

Inclusion 2: 027XY017NV

Inclusion 3: 027XY029NV

1030--Pokergap very gravelly very fine sandy loam, 2 to 8 percent slopes

Composition

Major Components

Pokergap very gravelly very fine sandy loam, 2 to 8 percent slopes--85 percent

Contrasting Inclusions

Inclusion 1: Dorper stony loam, 2 to 8 percent slopes--7 percent

Inclusion 2: Xerollic Haplargids, fine, montmorillonitic, mesic--6 percent

Inclusion 3: Xeric Torriorthents, loamy-skeletal, mixed (calcareous), mesic--2 percent

Map Unit Setting

Landscape position: Fan piedmonts

Pokergap--Landform: Fan remnants; shape of slope: convex

Inclusion 1--Landform: Fan remnants; position on slope: lower; shape of slope: convex

Inclusion 2--Landform: Fan remnants; shape of slope: convex

Inclusion 3--Landform: Drainageways; shape of slope: concave

Major Component Description

Pokergap Series

Elevation: 4,800 to 5,800 feet

Precipitation: About 9 inches

Air temperature: About 50 degrees

Frost-free season: About 120 days

Surface layer texture: Very gravelly very fine sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks, loess, and volcanic ash

Dominant Present Vegetation

Pokergap: Wyoming big sagebrush, pine bluegrass, spiny hopsage

Inclusion 1: Bailey greasewood, shadscale

Inclusion 2: Lahontan sagebrush

Inclusion 3: Rabbitbrush

Ecological Site

Pokergap: 027XY008NV

Inclusion 1: 027XY018NV

Inclusion 2: 027XY079NV

Inclusion 3: 027XY029NV

1031--Pokergap-Dorper association, very gravelly

Composition

Major Components

Pokergap very gravelly very fine sandy loam, 2 to 8 percent slopes--45 percent

Dorper very gravelly very fine sandy loam, 2 to 8 percent slopes--40 percent

Contrasting Inclusions

Inclusion 1: Xeric Torrifluvents, loamy-skeletal, mixed (calcareous), mesic--6 percent

Inclusion 2: Xerollic Camborthids, coarse-loamy, mixed, mesic--5 percent

Inclusion 3: Xerollic Nadurargids, fine, montmorillonitic, mesic--3 percent

Inclusion 4: Haploxerollic Durargids, fine, montmorillonitic, mesic--1 percent

Map Unit Setting

Landscape position: Fan piedmonts

Pokergap--Landform: Fan remnants; geomorphic position: backslope; position on slope: lower; shape of slope: convex

Dorper--Landform: Fan remnants; geomorphic position: summit; shape of slope: convex

Inclusion 1--Landform: Drainageways; shape of slope: concave

Inclusion 2--Landform: Fan skirts; shape of slope: plane

Inclusion 3--Landform: Fan remnants; position on slope: upper; shape of slope: convex

Inclusion 4--Landform: Fan remnants; position on slope: upper; shape of slope: convex

Major Component Description

Pokergap Series

Elevation: 4,500 to 5,400 feet

Precipitation: About 9 inches

Air temperature: About 50 degrees

Frost-free season: About 120 days

Surface layer texture: Very gravelly very fine sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks, loess, and volcanic ash

Dorper Series

Elevation: 4,500 to 5,400 feet

Precipitation: About 6 inches

Air temperature: About 53 degrees

Frost-free season: About 125 days

Surface layer texture: Very gravelly very fine sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks, loess, and volcanic ash

Dominant Present Vegetation

Pokergap: Wyoming big sagebrush, pine bluegrass, spiny hopsage

Dorper: Indian ricegrass, shadscale

Inclusion 1: Rabbitbrush

Inclusion 2: Wyoming big sagebrush, pine bluegrass

Inclusion 3: Wyoming big sagebrush, pine bluegrass

Inclusion 4: Thurber needlegrass, pine bluegrass

Ecological Site

Pokergap: 027XY008NV

Dorper: 027XY013NV

Inclusion 1: 027XY029NV

Inclusion 2: 027XY008NV

Inclusion 3: 027XY008NV

Inclusion 4: 027XY079NV

1032--Pokergap-Dorper association, stony

Composition

Major Components

Pokergap stony very fine sandy loam, 4 to 15 percent slopes--55 percent

Dorper very stony very fine sandy loam, 4 to 15 percent slopes--35 percent

Contrasting Inclusions

Inclusion 1: Xeric Torrifluvents, loamy-skeletal, mixed (calcareous), mesic--3 percent

Inclusion 2: Rock outcrop--3 percent

Inclusion 3: Typic Torriorthents, loamy, mixed (calcareous), mesic, shallow--3 percent

Inclusion 4: Durixerollic Haplargids, fine, montmorillonitic, mesic--1 percent

Map Unit Setting

Landscape position: Fan piedmonts

Pokergap--Landform: Fan remnants; shape of slope: concave

Dorper--Landform: Fan remnants; geomorphic position: summit; shape of slope: convex

Inclusion 1--Landform: Drainageways; shape of slope: concave

Inclusion 2--Landform: Fan remnants; geomorphic position: backslope

Inclusion 3--Landform: Fan remnants; geomorphic position: summit

Inclusion 4--Landform: Fan remnants; position on slope: upper

Major Component Description

Pokergap Series

Elevation: 4,700 to 5,400 feet

Precipitation: About 9 inches

Air temperature: About 50 degrees

Frost-free season: About 120 days

Surface layer texture: Stony very fine sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks, loess, and volcanic ash

Dorper Series

Elevation: 4,700 to 5,400 feet

Precipitation: About 6 inches

Air temperature: About 53 degrees

Frost-free season: About 125 days

Surface layer texture: Very stony very fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess, and volcanic ash

Dominant Present Vegetation

Pokergap: Wyoming big sagebrush, pine bluegrass, spiny hopsage
 Dorper: Bud sagebrush, shadscale
 Inclusion 1: Wyoming big sagebrush, basin big sagebrush
 Inclusion 2: Lahontan sagebrush
 Inclusion 3: Bailey greasewood, Indian ricegrass, shadscale
 Inclusion 4: Thurber needlegrass, pine bluegrass

Ecological Site

Pokergap: 027XY008NV
 Dorper: 027XY013NV
 Inclusion 1: 027XY029NV
 Inclusion 2: None
 Inclusion 3: 027XY027NV
 Inclusion 4: 027XY079NV

1033--Pokergap-Jerval-Dorper association

Composition

Major Components

Pokergap silt loam, 2 to 8 percent slopes--45 percent
 Jerval gravelly very fine sandy loam, 2 to 8 percent slopes--25 percent
 Dorper stony very fine sandy loam, 2 to 8 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Durixerollic Camborthids, loamy-skeletal, mixed, mesic--10 percent
 Inclusion 2: Haploxerollic Durargids, fine, montmorillonitic, mesic--2 percent
 Inclusion 3: Durorthidic Torriorthents, coarse-loamy, mixed (calcareous), mesic--2 percent
 Inclusion 4: Duric Camborthids, coarse-loamy, mixed, mesic--1 percent

Map Unit Setting

Landscape position: Intermontane basins
 Pokergap--Landform: Fan remnants; position on slope: upper; shape of slope: convex
 Jerval--Landform: Fan remnants; position on slope: lower; shape of slope: convex

Dorper--Landform: Fan remnants; shape of slope: convex
 Inclusion 1--Landform: Inset fans; position on slope: upper; shape of slope: concave
 Inclusion 2--Landform: Fan remnants; position on slope: upper; shape of slope: convex
 Inclusion 3--Landform: Stream terraces
 Inclusion 4--Landform: Inset fans; position on slope: lower; shape of slope: concave

Major Component Description

Pokergap Series

Elevation: 5,100 to 5,600 feet
Precipitation: About 9 inches
Air temperature: About 50 degrees
Frost-free season: About 120 days
Surface layer texture: Silt loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess, and volcanic ash

Jerval Series

Elevation: 4,700 to 5,300 feet
Precipitation: About 5 inches
Air temperature: About 53 degrees
Frost-free season: About 120 days
Surface layer texture: Gravelly very fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess, and volcanic ash

Dorper Series

Elevation: 4,900 to 5,400 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 125 days
Surface layer texture: Stony very fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess, and volcanic ash

Dominant Present Vegetation

Pokergap: Wyoming big sagebrush, pine bluegrass, spiny hopsage
 Jerval: Bud sagebrush, pine bluegrass, shadscale
 Dorper: Bud sagebrush, pine bluegrass, shadscale
 Inclusion 1: Indian ricegrass, Wyoming big sagebrush
 Inclusion 2: Thurber needlegrass, pine bluegrass
 Inclusion 3: Basin wildrye, black greasewood, shadscale

Inclusion 4: Bud sagebrush, shadscale

Ecological Site

Pokergap: 027XY008NV
 Jerval: 027XY013NV
 Dorper: 027XY013NV
 Inclusion 1: 027XY079NV
 Inclusion 2: 027XY079NV
 Inclusion 3: 024XY006NV
 Inclusion 4: 027XY013NV

1034--Pokergap stony very fine sandy loam, 4 to 15 percent slopes

Composition

Major Components

Pokergap stony very fine sandy loam, 4 to 15 percent slopes--85 percent

Contrasting Inclusions

Inclusion 1: Xerollic Haplargids, loamy-skeletal, mixed, mesic--8 percent
 Inclusion 2: Xeric Torriorthents, loamy-skeletal, mixed (calcareous), mesic--3 percent
 Inclusion 3: Jerval very gravelly very fine sandy loam, 2 to 8 percent slopes--2 percent
 Inclusion 4: Xerollic Nadurargids, loamy, mixed, mesic, shallow--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Pokergap--Landform: Fan remnants; shape of slope: convex
 Inclusion 1--Landform: Fan remnants; geomorphic position: backslope
 Inclusion 2--Landform: Inset fans; shape of slope: concave
 Inclusion 3--Landform: Fan remnants; position on slope: upper; shape of slope: convex
 Inclusion 4--Landform: Fan remnants; position on slope: lower; shape of slope: convex

Major Component Description

Pokergap Series

Elevation: 4,600 to 5,800 feet
Precipitation: About 9 inches
Air temperature: About 50 degrees
Frost-free season: About 120 days
Surface layer texture: Stony very fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess, and volcanic ash

Dominant Present Vegetation

Pokergap: Wyoming big sagebrush, pine bluegrass, spiny hopsage
 Inclusion 1: Thurber needlegrass, Wyoming big sagebrush, pine bluegrass
 Inclusion 2: Wyoming big sagebrush, basin big sagebrush
 Inclusion 3: Bluegrass, bud sagebrush, shadscale
 Inclusion 4: Wyoming big sagebrush, pine bluegrass

Ecological Site

Pokergap: 027XY008NV
 Inclusion 1: 027XY007NV
 Inclusion 2: 027XY029NV
 Inclusion 3: 027XY013NV
 Inclusion 4: 027XY008NV

1035--Pokergap-Jerval association

Composition

Major Components

Pokergap silt loam, 2 to 8 percent slopes--45 percent
 Jerval gravelly very fine sandy loam, 2 to 8 percent slopes--40 percent

Contrasting Inclusions

Inclusion 1: Xerollic Camborthids, coarse-loamy, montmorillonitic, mesic--6 percent
 Inclusion 2: Duric Natrargids, fine, montmorillonitic, mesic--6 percent
 Inclusion 3: Haploxerollic Durargids, fine, mixed, mesic--2 percent
 Inclusion 4: Xeric Torrifluvents, coarse-loamy, mixed (calcareous), mesic--1 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Pokergap--Landform: Fan remnants
 Jerval--Landform: Fan remnants
 Inclusion 1--Landform: Inset fans
 Inclusion 2--Landform: Fan remnants
 Inclusion 3--Landform: Fan remnants
 Inclusion 4--Landform: Drainageways

Major Component Description

Pokergap Series

Elevation: 4,600 to 5,800 feet
Precipitation: About 9 inches
Air temperature: About 50 degrees
Frost-free season: About 120 days
Surface layer texture: Silt loam

Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess, and volcanic ash

Jerval Series

Elevation: 4,600 to 5,800 feet
Precipitation: About 5 inches
Air temperature: About 53 degrees
Frost-free season: About 120 days
Surface layer texture: Gravelly very fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks, loess, and volcanic ash

Dominant Present Vegetation

Pokergap: Wyoming big sagebrush, pine bluegrass, spiny hopsage
 Jerval: Bud sagebrush, pine bluegrass, shadscale
 Inclusion 1: Thurber needlegrass, Wyoming big sagebrush, pine bluegrass
 Inclusion 2: Bud sagebrush, shadscale
 Inclusion 3: Thurber needlegrass, pine bluegrass
 Inclusion 4: Basin wildrye, big sagebrush, black greasewood

Ecological Site

Pokergap: 027XY008NV
 Jerval: 027XY013NV
 Inclusion 1: 024XY020NV
 Inclusion 2: 024XY002NV
 Inclusion 3: 027XY079NV
 Inclusion 4: 024XY006NV

1040--Sojur extremely channery silt loam, 15 to 50 percent slopes

Composition

Major Components

Sojur, 15 to 50 percent slopes--85 percent

Contrasting Inclusions

Inclusion 1: Rock outcrop--5 percent
 Inclusion 2: Xeric Torrifluvents, loamy-skeletal, mixed (calcareous), mesic extremely gravelly sandy loam, 2 to 4 percent slopes--4 percent
 Inclusion 3: Phliss extremely channery loam, 15 to 50 percent slopes--4 percent
 Inclusion 4: Wesfil very channery loam, 15 to 50 percent slopes--2 percent

Map Unit Setting

Landscape position: Mountains

Sojur--Landform: Mountains; geomorphic position: summit; shape of slope: convex
 Inclusion 1--Landform: Mountains; geomorphic position: summit
 Inclusion 2--Landform: Drainageways
 Inclusion 3--Landform: Mountains; position on slope: upper; shape of slope: concave
 Inclusion 4--Landform: Mountains

Major Component Description

Sojur Series

Elevation: 4,100 to 5,700 feet
Precipitation: About 7 inches
Air temperature: About 50 degrees
Frost-free season: About 120 days
Drainage class: Well drained
Dominant parent material: Residuum derived from metamorphic rocks

Dominant Present Vegetation

Sojur: Bailey greasewood, bud sagebrush, shadscale
 Inclusion 1: None
 Inclusion 2: Wyoming big sagebrush, basin big sagebrush
 Inclusion 3: Wyoming big sagebrush, pine bluegrass
 Inclusion 4: Lahontan sagebrush, bluegrass

Ecological Site

Sojur: 027XY027NV
 Inclusion 1: None
 Inclusion 2: 027XY029NV
 Inclusion 3: 027XY007NV
 Inclusion 4: 027XY070NV

1041--Sojur-Boomstick-Rubble land association

Composition

Major Components

Sojur, 30 to 50 percent slopes--40 percent
 Boomstick very channery silt loam, 50 to 75 percent slopes--30 percent
 Rubble land fragmental material, 50 to 75 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Rock outcrop--4 percent
 Inclusion 2: Duric Haplargids, loamy-skeletal, mixed, mesic--4 percent
 Inclusion 3: Typic Torriorthents, sandy-skeletal, mixed, mesic--4 percent

Inclusion 4: Phliss extremely stony loam, 30 to 50 percent slopes--3 percent

Map Unit Setting

Landscape position: Mountains
 Sojur--Landform: Mountains; geomorphic position: backslope; shape of slope: plane
 Boomstick--Landform: Mountains; shape of slope: plane; aspect: north
 Rubble land--Landform: Mountains; geomorphic position: backslope
 Inclusion 1--Landform: Mountains; geomorphic position: summit
 Inclusion 2--Landform: Mountains; geomorphic position: footslope; shape of slope: convex
 Inclusion 3--Landform: Drainageways; shape of slope: concave
 Inclusion 4--Landform: Mountains; shape of slope: concave

Major Component Description

Sojur Series

Elevation: 4,000 to 6,300 feet
Precipitation: About 7 inches
Air temperature: About 50 degrees
Frost-free season: About 120 days
Drainage class: Well drained
Dominant parent material: Residuum derived from metamorphic rocks

Boomstick Series

Elevation: 4,100 to 5,700 feet
Precipitation: About 9 inches
Air temperature: About 50 degrees
Frost-free season: About 120 days
Surface layer texture: Very channery silt loam
Drainage class: Well drained
Dominant parent material: Residuum derived from metamorphic rocks

Rubble land Miscellaneous Area

Elevation: 4,000 to 6,300 feet
Surface layer texture: Fragmental material
Drainage class: Excessively drained

Dominant Present Vegetation

Sojur: Bud sagebrush, desert needlegrass
 Boomstick: Bailey greasewood, pine bluegrass, sagebrush
 Rubble land: None
 Inclusion 1: None
 Inclusion 2: Bailey greasewood, shadscale
 Inclusion 3: Littleleaf horsebrush, tall gray rabbitbrush

Inclusion 4: Wyoming big sagebrush

Ecological Site

Sojur: 027XY027NV
 Boomstick: 027XY079NV
 Rubble land: None
 Inclusion 1: None
 Inclusion 2: 027XY018NV
 Inclusion 3: 027XY022NV
 Inclusion 4: 027XY007NV

1042--Sojur-Phliss association

Composition

Major Components

Sojur, 15 to 50 percent slopes--60 percent
 Phliss extremely channery loam, 15 to 50 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Aboten very gravelly silt loam, 4 to 15 percent slopes--7 percent
 Inclusion 2: Pokergap very gravelly loam, 4 to 15 percent slopes--6 percent
 Inclusion 3: Xeric Torrifuvents, sandy-skeletal, mixed, mesic--1 percent
 Inclusion 4: Rock outcrop--1 percent

Map Unit Setting

Landscape position: Hills
 Sojur--Landform: Hills; geomorphic position: backslope; shape of slope: convex; aspect: south
 Phliss--Landform: Hills; geomorphic position: backslope; shape of slope: convex; aspect: north
 Inclusion 1--Landform: Fan remnants; shape of slope: convex
 Inclusion 2--Landform: Fan remnants; shape of slope: convex
 Inclusion 3--Landform: Drainageways; shape of slope: concave
 Inclusion 4--Landform: Hills; geomorphic position: summit

Major Component Description

Sojur Series

Elevation: 4,700 to 5,500 feet
Precipitation: About 7 inches
Air temperature: About 50 degrees
Frost-free season: About 120 days
Drainage class: Well drained
Dominant parent material: Residuum derived from metamorphic rocks

Phliss Series

Elevation: 4,700 to 5,500 feet
Precipitation: About 9 inches
Air temperature: About 50 degrees
Frost-free season: About 120 days
Surface layer texture: Extremely channery loam
Drainage class: Well drained
Dominant parent material: Residuum derived from metamorphic rocks

Dominant Present Vegetation

Sojur: Bailey greasewood, desert needlegrass, shadscale
 Phliss: Thurber needlegrass, Wyoming big sagebrush, pine bluegrass
 Inclusion 1: Bluegrass, bud sagebrush, shadscale
 Inclusion 2: Wyoming big sagebrush, pine bluegrass
 Inclusion 3: Wyoming big sagebrush, basin big sagebrush
 Inclusion 4: None

Ecological Site

Sojur: 027XY027NV
 Phliss: 027XY007NV
 Inclusion 1: 027XY013NV
 Inclusion 2: 027XY008NV
 Inclusion 3: 027XY029NV
 Inclusion 4: None

1050--Theon-Singatse association, cobbly**Composition**

Major Components
 Theon very cobbly loam, 30 to 50 percent slopes--45 percent
 Singatse extremely cobbly loam, 30 to 50 percent slopes--40 percent
Contrasting Inclusions
 Inclusion 1: Bluewing very cobbly loam, 2 to 8 percent slopes, frequently flooded--5 percent
 Inclusion 2: Rock outcrop--5 percent
 Inclusion 3: Theon very cobbly loam, 4 to 15 percent slopes--3 percent
 Inclusion 4: Wesfil very cobbly loam, 30 to 50 percent slopes--2 percent

Map Unit Setting

Landscape position: Mountains
 Theon--Landform: Mountains; geomorphic

position: backslope; shape of slope: convex; aspect: north
 Singatse--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: south
 Inclusion 1--Landform: Drainageways; shape of slope: concave
 Inclusion 2--Landform: Hills; geomorphic position: summit
 Inclusion 3--Landform: Mountains; geomorphic position: summit; shape of slope: convex
 Inclusion 4--Landform: Mountains; shape of slope: concave; aspect: north

Major Component Description**Theon Series**

Elevation: 4,000 to 5,100 feet
Precipitation: About 5 inches
Air temperature: About 50 degrees
Frost-free season: About 120 days
Surface layer texture: Very cobbly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Singatse Series

Elevation: 4,000 to 5,100 feet
Precipitation: About 5 inches
Air temperature: About 50 degrees
Frost-free season: About 120 days
Surface layer texture: Extremely cobbly loam
Drainage class: Somewhat excessively drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Dominant Present Vegetation

Theon: Bailey greasewood, bud sagebrush, shadscale
 Singatse: Bottlebrush squirreltail, bud sagebrush, shadscale
 Inclusion 1: Tall gray rabbitbrush
 Inclusion 2: None
 Inclusion 3: Bailey greasewood
 Inclusion 4: Lahontan sagebrush

Ecological Site

Theon: 027XY019NV
 Singatse: 027XY027NV
 Inclusion 1: 027XY022NV
 Inclusion 2: None
 Inclusion 3: 027XY019NV
 Inclusion 4: 027XY070NV

1051--Theon-Singatse association, gravelly

Composition

Major Components

Theon very gravelly loam, 15 to 50 percent slopes--55 percent
Singatse very gravelly loam, 15 to 50 percent slopes--35 percent

Contrasting Inclusions

Inclusion 1: Grumblen very gravelly loam, 30 to 50 percent slopes--5 percent
Inclusion 2: Rock outcrop--4 percent
Inclusion 3: Bluewing very gravelly loamy sand, 0 to 4 percent slopes, frequently flooded--1 percent

Map Unit Setting

Landscape position: Mountains

Theon--Landform: Mountains; geomorphic position: backslope; shape of slope: convex
Singatse--Landform: Mountains; geomorphic position: backslope; shape of slope: concave
Inclusion 1--Landform: Mountains; geomorphic position: backslope; shape of slope: concave; aspect: north
Inclusion 2--Landform: Mountains; geomorphic position: shoulder
Inclusion 3--Landform: Drainageways; shape of slope: concave

Major Component Description

Theon Series

Elevation: 4,100 to 5,600 feet
Precipitation: About 5 inches
Air temperature: About 50 degrees
Frost-free season: About 120 days
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from metamorphic rocks

Singatse Series

Elevation: 4,100 to 5,600 feet
Precipitation: About 5 inches
Air temperature: About 50 degrees
Frost-free season: About 120 days
Surface layer texture: Very gravelly loam
Drainage class: Somewhat excessively drained
Dominant parent material: Residuum and colluvium derived from metamorphic rocks

Dominant Present Vegetation

Theon: Bailey greasewood, bud sagebrush, shadscale
Singatse: Bailey greasewood, bud sagebrush, shadscale
Inclusion 1: Lahontan sagebrush
Inclusion 2: None
Inclusion 3: Tall gray rabbitbrush

Ecological Site

Theon: 027XY019NV
Singatse: 027XY027NV
Inclusion 1: 027XY070NV
Inclusion 2: None
Inclusion 3: 027XY022NV

1052--Theon-Grumblen-Rubble land association

Composition

Major Components

Theon very cobbly loam, 15 to 50 percent slopes--40 percent
Grumblen very gravelly loam, 15 to 50 percent slopes--30 percent
Rubble land fragmental material, 30 to 50 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Xeric Torrifluvents, loamy-skeletal, mixed (calcareous), mesic--5 percent
Inclusion 2: Pickup very stony loam, 30 to 50 percent slopes--4 percent
Inclusion 3: Typic Torriorthents, clayey-skeletal, montmorillonitic (calcareous), mesic, shallow--4 percent
Inclusion 4: Rock outcrop--2 percent

Map Unit Setting

Landscape position: Mountains

Theon--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: south
Grumblen--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: north
Rubble land--Landform: Mountains; geomorphic position: backslope
Inclusion 1--Landform: Drainageways; shape of slope: concave
Inclusion 2--Landform: Mountains; shape of slope: concave; aspect: north

Inclusion 3--Landform: Mountains; geomorphic position: backslope

Inclusion 4--Landform: Mountains; geomorphic position: shoulder

Major Component Description

Theon Series

Elevation: 4,000 to 6,000 feet

Precipitation: About 5 inches

Air temperature: About 48 degrees

Frost-free season: About 120 days

Surface layer texture: Very cobbly loam

Drainage class: Well drained

Dominant parent material: Residuum derived from volcanic rocks

Grumblen Series

Elevation: 4,000 to 6,000 feet

Precipitation: About 9 inches

Air temperature: About 51 degrees

Frost-free season: About 110 days

Surface layer texture: Very gravelly loam

Drainage class: Well drained

Dominant parent material: Residuum derived from volcanic rocks

Rubble land Miscellaneous Area

Elevation: 4,000 to 6,000 feet

Surface layer texture: Fragmental material

Drainage class: Excessively drained

Dominant Present Vegetation

Theon: Desert needlegrass, galleta, shadscale

Grumblen: Indian ricegrass, bluegrass

Rubble land: None

Inclusion 1: Wyoming big sagebrush, basin big sagebrush

Inclusion 2: Thurber needlegrass

Inclusion 3: Desert needlegrass, littleleaf horsebrush, shadscale

Inclusion 4: None

Ecological Site

Theon: 027XY019NV

Grumblen: 027XY070NV

Rubble land: None

Inclusion 1: 027XY029NV

Inclusion 2: 027XY079NV

Inclusion 3: 027XY017NV

Inclusion 4: None

1053--Theon-Rock outcrop association

Composition

Major Components

Theon very cobbly loam, 50 to 75 percent slopes--75 percent

Rock outcrop unweathered bedrock, 30 to 75 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Singatse very gravelly loam, 30 to 50 percent slopes--5 percent

Inclusion 2: Grumblen very gravelly loam, 50 to 75 percent slopes--5 percent

Map Unit Setting

Landscape position: Mountains

Theon--Landform: Mountains; geomorphic position: backslope; shape of slope: convex

Rock outcrop--Landform: Mountains; geomorphic position: summit

Inclusion 1--Landform: Mountains; shape of slope: convex; aspect: south

Inclusion 2--Landform: Mountains; shape of slope: convex; aspect: north

Major Component Description

Theon Series

Elevation: 4,000 to 6,000 feet

Precipitation: About 5 inches

Air temperature: About 50 degrees

Frost-free season: About 120 days

Surface layer texture: Very cobbly loam

Drainage class: Well drained

Dominant parent material: Residuum derived from volcanic rocks

Rock outcrop Miscellaneous Area

Elevation: 4,000 to 6,000 feet

Surface layer texture: Unweathered bedrock

Dominant Present Vegetation

Theon: Bailey greasewood, bud sagebrush, shadscale

Rock outcrop: None

Inclusion 1: Bailey greasewood, Indian ricegrass, shadscale

Inclusion 2: Bluegrass

Ecological Site

Theon: 027XY019NV

Rock outcrop: None

Inclusion 1: 027XY027NV
Inclusion 2: 027XY070NV

1054--Theon-Old Camp association, gravelly

Composition

Major Components

Theon very gravelly loam, 30 to 50 percent
slopes--50 percent
Old Camp very gravelly loam, 30 to 50 percent
slopes--35 percent

Contrasting Inclusions

Inclusion 1: Lithic Torriorthents, loamy-skeletal,
mixed (calcareous), mesic--7 percent
Inclusion 2: Typic Haplargids, loamy-skeletal,
mixed, mesic--4 percent
Inclusion 3: Xeric Torriorthents, loamy-skeletal,
mixed (calcareous), mesic--3 percent
Inclusion 4: Rock outcrop--1 percent

Map Unit Setting

Landscape position: Mountains
Theon--Landform: Mountains; geomorphic
position: backslope; shape of slope: convex
Old Camp--Landform: Mountains; geomorphic
position: backslope; shape of slope: concave
Inclusion 1--Landform: Mountains; aspect: south
Inclusion 2--Landform: Mountains
Inclusion 3--Landform: Drainageways; shape of
slope: concave
Inclusion 4--Landform: Mountains; geomorphic
position: summit

Major Component Description

Theon Series

Elevation: 4,400 to 5,800 feet
Precipitation: About 5 inches
Air temperature: About 48 degrees
Frost-free season: About 120 days
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum derived
from volcanic rocks

Old Camp Series

Elevation: 4,400 to 4,900 feet
Precipitation: About 9 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface layer texture: Very gravelly loam
Drainage class: Well drained

Dominant parent material: Residuum and
colluvium derived from volcanic rocks

Dominant Present Vegetation

Theon: Indian ricegrass, desert needlegrass,
shadscale
Old Camp: Wyoming big sagebrush, pine
bluegrass, spiny hopsage
Inclusion 1: Desert needlegrass, littleleaf
horsebrush, shadscale
Inclusion 2: Bailey greasewood, Indian ricegrass,
shadscale
Inclusion 3: Basin big sagebrush
Inclusion 4: None

Ecological Site

Theon: 027XY019NV
Old Camp: 027XY007NV
Inclusion 1: 027XY017NV
Inclusion 2: 027XY018NV
Inclusion 3: 027XY029NV
Inclusion 4: None

1055--Theon-Old Camp association, cobble

Composition

Major Components

Theon very cobble loam, 15 to 30 percent
slopes--70 percent
Old Camp very gravelly loam, 15 to 30 percent
slopes--20 percent

Contrasting Inclusions

Inclusion 1: Xeric Torrifluvents, loamy-skeletal,
mixed (calcareous), mesic--4 percent
Inclusion 2: Rock outcrop--3 percent
Inclusion 3: Pickup very stony loam, 15 to 30
percent slopes--3 percent

Map Unit Setting

Landscape position: Hills
Theon--Landform: Hills; geomorphic position:
summit; shape of slope: convex; aspect:
south
Old Camp--Landform: Hills; geomorphic position:
backslope; shape of slope: convex; aspect:
north
Inclusion 1--Landform: Drainageways; shape of
slope: concave
Inclusion 2--Landform: Hills; geomorphic
position: summit
Inclusion 3--Landform: Hills; position on slope:
upper; shape of slope: convex; aspect: north

Major Component Description**Theon Series**

Elevation: 4,400 to 5,800 feet
Precipitation: About 8 inches
Air temperature: About 49 degrees
Frost-free season: About 110 days
Surface layer texture: Very cobbly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Old Camp Series

Elevation: 4,400 to 5,800 feet
Precipitation: About 8 inches
Air temperature: About 49 degrees
Frost-free season: About 110 days
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Dominant Present Vegetation

Theon: Bailey greasewood, bud sagebrush, shadscale
 Old Camp: Wyoming big sagebrush, spiny hopsage
 Inclusion 1: Basin wildrye, big sagebrush
 Inclusion 2: None
 Inclusion 3: Lahontan sagebrush

Ecological Site

Theon: 027XY019NV
 Old Camp: 027XY007NV
 Inclusion 1: 027XY029NV
 Inclusion 2: None
 Inclusion 3: 027XY079NV

1056--Theon-Pickup association**Composition****Major Components**

Theon very cobbly loam, 15 to 50 percent slopes--60 percent
 Pickup very gravelly loam, 15 to 50 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Rock outcrop--6 percent
 Inclusion 2: Old Camp very gravelly loam, 15 to 50 percent slopes--5 percent
 Inclusion 3: Lithic Torriorthents, loamy-skeletal, mixed (calcareous), mesic--2 percent
 Inclusion 4: Dorper very gravelly very fine sandy loam, 2 to 8 percent slopes--2 percent

Map Unit Setting**Landscape position:** Hills

Theon--Landform: Hills; geomorphic position: backslope; shape of slope: convex; aspect: south
 Pickup--Landform: Hills; geomorphic position: backslope; shape of slope: convex; aspect: north
 Inclusion 1--Landform: Hills; geomorphic position: summit
 Inclusion 2--Landform: Hills; geomorphic position: footslope; shape of slope: convex
 Inclusion 3--Landform: Hills; geomorphic position: summit; position on slope: upper; shape of slope: convex
 Inclusion 4--Landform: Hills; geomorphic position: footslope; shape of slope: convex

Major Component Description**Theon Series**

Elevation: 4,700 to 5,700 feet
Precipitation: About 5 inches
Air temperature: About 48 degrees
Frost-free season: About 120 days
Surface layer texture: Very cobbly loam
Drainage class: Well drained
Dominant parent material: Residuum derived from volcanic rocks

Pickup Series

Elevation: 4,700 to 5,700 feet
Precipitation: About 10 inches
Air temperature: About 49 degrees
Frost-free season: About 100 days
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum derived from volcanic rocks

Dominant Present Vegetation

Theon: Bailey greasewood, bud sagebrush, shadscale
 Pickup: Thurber needlegrass, pine bluegrass
 Inclusion 1: None
 Inclusion 2: Wyoming big sagebrush
 Inclusion 3: Bailey greasewood
 Inclusion 4: Bluegrass, bud sagebrush, shadscale

Ecological Site

Theon: 027XY019NV
 Pickup: 027XY079NV
 Inclusion 1: None
 Inclusion 2: 027XY007NV
 Inclusion 3: 027XY027NV

Inclusion 4: 027XY013NV

1080--Toulon-Appian-Bluewing association

Composition

Major Components

Toulon very gravelly fine sandy loam, 2 to 8 percent slopes--35 percent
 Appian loamy coarse sand, 0 to 2 percent slopes--35 percent
 Bluewing very gravelly loamy sand, 0 to 2 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Xerollic Natrargids, fine-loamy over sandy or sandy skeletal, mixed, mesic--5 percent
 Inclusion 2: Badland--5 percent
 Inclusion 3: Isolde fine sand, 4 to 15 percent slopes--3 percent
 Inclusion 4: Rock outcrop--2 percent

Map Unit Setting

Landscape position: Intermontane basins
 Toulon--Landform: Spits; shape of slope: concave
 Appian--Landform: Lake terraces; shape of slope: concave
 Bluewing--Landform: Drainageways; shape of slope: concave
 Inclusion 1--Landform: Lake terraces; position on slope: upper; shape of slope: concave
 Inclusion 2--Landform: Fan remnants; geomorphic position: summit
 Inclusion 3--Landform: Dunes; shape of slope: convex
 Inclusion 4--Landform: Beach plains

Major Component Description

Toulon Series

Elevation: 3,900 to 4,400 feet
Precipitation: About 5 inches
Air temperature: About 52 degrees
Frost-free season: About 130 days
Surface layer texture: Very gravelly fine sandy loam
Drainage class: Excessively drained
Dominant parent material: Alluvium derived from mixed rocks

Appian Series

Elevation: 3,900 to 4,400 feet

Precipitation: About 6 inches
Air temperature: About 52 degrees
Frost-free season: About 130 days
Surface layer texture: Loamy coarse sand
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Bluewing Series

Elevation: 3,900 to 4,400 feet
Precipitation: About 6 inches
Air temperature: About 52 degrees
Frost-free season: About 130 days
Surface layer texture: Very gravelly loamy sand
Drainage class: Excessively drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Toulon: Bailey greasewood, shadscale
 Appian: Horsebrush, tall gray rabbitbrush
 Bluewing: Indian ricegrass, littleleaf horsebrush
 Inclusion 1: Basin big sagebrush
 Inclusion 2: None
 Inclusion 3: Indian ricegrass
 Inclusion 4: None

Ecological Site

Toulon: 027XY018NV
 Appian: 027XY024NV
 Bluewing: 027XY022NV
 Inclusion 1: 024XY022NV
 Inclusion 2: None
 Inclusion 3: 027XY012NV
 Inclusion 4: None

1100--Unionville-Rock outcrop complex

Composition

Major Components

Unionville coarse sandy loam, 2 to 8 percent slopes--70 percent
 Rock outcrop unweathered bedrock, 4 to 15 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Mazuma fine sandy loam, 0 to 2 percent slopes--6 percent
 Inclusion 2: Bluewing very gravelly loamy sand, 2 to 4 percent slopes, frequently flooded--6 percent
 Inclusion 3: Swinger silt loam, 0 to 2 percent slopes--3 percent

Map Unit Setting

Landscape position: Hills
 Unionville--Landform: Hills; geomorphic position: backslope; shape of slope: convex
 Rock outcrop--Landform: Hills; geomorphic position: backslope
 Inclusion 1--Landform: Lagoons; shape of slope: concave
 Inclusion 2--Landform: Drainageways; shape of slope: concave
 Inclusion 3--Landform: Lake terraces; shape of slope: convex

Major Component Description**Unionville Series**

Elevation: 3,900 to 4,100 feet
Precipitation: About 6 inches
Air temperature: About 52 degrees
Frost-free season: About 110 days
Surface layer texture: Coarse sandy loam
Drainage class: Well drained
Dominant parent material: Residuum derived from granitic rocks

Rock outcrop Miscellaneous Area

Elevation: 3,900 to 4,100 feet
Surface layer texture: Unweathered bedrock

Dominant Present Vegetation

Unionville: Bailey greasewood, shadscale
 Rock outcrop: None
 Inclusion 1: Bailey greasewood, shadscale
 Inclusion 2: Tall gray rabbitbrush
 Inclusion 3: Black greasewood

Ecological Site

Unionville: 027XY018NV
 Rock outcrop: None
 Inclusion 1: 027XY018NV
 Inclusion 2: 027XY022NV
 Inclusion 3: 027XY025NV

1150--Slocave-Arclay-Rock outcrop association**Composition****Major Components**

Slocave very gravelly coarse sandy loam, 50 to 75 percent slopes--45 percent
 Arclay very gravelly coarse sandy loam, 50 to 75 percent slopes--20 percent
 Rock outcrop unweathered bedrock, 50 to 75 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Acrelane very gravelly coarse sandy loam, 30 to 50 percent slopes--7 percent
 Inclusion 2: Vium extremely gravelly coarse sandy loam, 50 to 75 percent slopes--5 percent
 Inclusion 3: Duric Haplargids, loamy-skeletal, mixed, mesic--2 percent
 Inclusion 4: Typic Torriorthents, loamy-skeletal, mixed (calcareous), mesic--1 percent

Map Unit Setting

Landscape position: Mountains
 Slocave--Landform: Mountains; geomorphic position: backslope; shape of slope: convex; aspect: south
 Arclay--Landform: Mountains; shape of slope: convex; aspect: north
 Rock outcrop--Landform: Mountains; geomorphic position: summit
 Inclusion 1--Landform: Hills; shape of slope: concave
 Inclusion 2--Landform: Hills; shape of slope: convex
 Inclusion 3--Landform: Hills; geomorphic position: footslope; shape of slope: convex
 Inclusion 4--Landform: Drainageways; shape of slope: concave

Major Component Description**Slocave Series**

Elevation: 4,000 to 5,700 feet
Precipitation: About 6 inches
Air temperature: About 52 degrees
Frost-free season: About 120 days
Surface layer texture: Very gravelly coarse sandy loam
Drainage class: Well drained
Dominant parent material: Residuum derived from granitic rocks

Arclay Series

Elevation: 4,000 to 5,700 feet
Precipitation: About 9 inches
Air temperature: About 50 degrees
Frost-free season: About 120 days
Surface layer texture: Very gravelly coarse sandy loam
Drainage class: Well drained
Dominant parent material: Residuum derived from granitic rocks

Rock outcrop Miscellaneous Area

Elevation: 4,000 to 5,700 feet

Surface layer texture: Unweathered bedrock

Dominant Present Vegetation

Slocave: Desert needlegrass, shadscale
 Arclay: Thurber needlegrass, pine bluegrass
 Rock outcrop: None
 Inclusion 1: Wyoming big sagebrush
 Inclusion 2: Bailey greasewood, Indian ricegrass, shadscale
 Inclusion 3: Bailey greasewood, Indian ricegrass
 Inclusion 4: Littleleaf horsebrush, tall gray rabbitbrush

Ecological Site

Slocave: 027XY017NV
 Arclay: 027XY079NV
 Rock outcrop: None
 Inclusion 1: 027XY072NV
 Inclusion 2: 027XY027NV
 Inclusion 3: 027XY018NV
 Inclusion 4: 027XY022NV

1151--Slocave-Vium association

Composition

Major Components

Slocave very gravelly coarse sandy loam, 30 to 50 percent slopes--70 percent
 Vium gravelly coarse sandy loam, 2 to 8 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Theon very cobbly loam, 30 to 50 percent slopes--12 percent
 Inclusion 2: Bluewing extremely gravelly loamy sand, 0 to 2 percent slopes--3 percent

Map Unit Setting

Landscape position: Hills
 Slocave--Landform: Hills; geomorphic position: backslope; shape of slope: convex
 Vium--Landform: Hills; geomorphic position: backslope; shape of slope: convex
 Inclusion 1--Landform: Hills; shape of slope: convex
 Inclusion 2--Landform: Inset fans; shape of slope: plane

Major Component Description

Slocave Series

Elevation: 4,100 to 5,300 feet
Precipitation: About 6 inches
Air temperature: About 51 degrees
Frost-free season: About 120 days

Surface layer texture: Very gravelly coarse sandy loam

Drainage class: Well drained

Dominant parent material: Residuum derived from granitic rocks

Vium Series

Elevation: 3,900 to 4,100 feet

Precipitation: About 6 inches

Air temperature: About 51 degrees

Frost-free season: About 120 days

Surface layer texture: Gravelly coarse sandy loam

Drainage class: Well drained

Dominant parent material: Residuum derived from granitic rocks

Dominant Present Vegetation

Slocave: Bailey greasewood, Nevada Mormon tea, shadscale

Vium: Bailey greasewood, Nevada Mormon tea, bud sagebrush, shadscale

Inclusion 1: Bailey greasewood, shadscale

Inclusion 2: Tall gray rabbitbrush

Ecological Site

Slocave: 027XY017NV

Vium: 027XY027NV

Inclusion 1: 027XY019NV

Inclusion 2: 027XY022NV

1190--Woolsey-Bluewing association

Composition

Major Components

Woolsey fine sandy loam, 2 to 4 percent slopes--65 percent

Bluewing gravelly sandy loam, 2 to 4 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Typic Torrfluvents, fine, montmorillonitic (calcareous), mesic--5 percent

Inclusion 2: Typic Camborthids, coarse-loamy, mixed, mesic--5 percent

Inclusion 3: Hawsley sand, 2 to 8 percent slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts

Woolsey--Landform: Fan skirts

Bluewing--Landform: Fan skirts

- Inclusion 1--Landform: Fan skirts; shape of slope: convex
 Inclusion 2--Landform: Fan skirts; shape of slope: concave
 Inclusion 3--Landform: Fan skirts; shape of slope: convex

Major Component Description

Woolsey Series

- Elevation:* 3,900 to 4,200 feet
Precipitation: About 5 inches
Air temperature: About 51 degrees
Frost-free season: About 120 days
Surface layer texture: Fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks and lake sediments

Bluewing Series

- Elevation:* 3,900 to 4,200 feet
Precipitation: About 5 inches
Air temperature: About 52 degrees
Frost-free season: About 120 days
Surface layer texture: Gravelly sandy loam
Drainage class: Excessively drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

- Woolsey: Bailey greasewood, Indian ricegrass, shadscale
 Bluewing: Bailey greasewood, Indian ricegrass, shadscale
 Inclusion 1: Black greasewood, seepweed, shadscale
 Inclusion 2: Bailey greasewood, Indian ricegrass, shadscale
 Inclusion 3: Indian ricegrass, fourwing saltbush, winterfat

Ecological Site

- Woolsey: 027XY018NV
 Bluewing: 027XY018NV
 Inclusion 1: 027XY025NV
 Inclusion 2: 027XY018NV
 Inclusion 3: 027XY009NV

1200--Acrelane-Soar-Arclay association

Composition

Major Components

- Acrelane very gravelly coarse sandy loam, 30 to 50 percent slopes--35 percent
 Soar very gravelly coarse sandy loam, 15 to 50 percent slopes--35 percent
 Arclay very gravelly coarse sandy loam, 30 to 50 percent slopes--15 percent

Contrasting Inclusions

- Inclusion 1: Slocave very gravelly coarse sandy loam, 15 to 50 percent slopes--8 percent
 Inclusion 2: Rock outcrop--6 percent
 Inclusion 3: Xeric Torrifluvents, loamy-skeletal, mixed nonacid, mesic--1 percent

Map Unit Setting

- Landscape position:* Mountains
 Acrelane--Landform: Mountains; shape of slope: concave; aspect: north
 Soar--Landform: Mountains; geomorphic position: backslope; position on slope: lower; shape of slope: convex; aspect: south
 Arclay--Landform: Mountains; shape of slope: convex; aspect: north
 Inclusion 1--Landform: Mountains; shape of slope: convex; aspect: south
 Inclusion 2--Landform: Mountains; geomorphic position: summit
 Inclusion 3--Landform: Inset fans; shape of slope: concave

Major Component Description

Acrelane Series

- Elevation:* 4,500 to 6,300 feet
Precipitation: About 10 inches
Air temperature: About 49 degrees
Frost-free season: About 120 days
Surface layer texture: Very gravelly coarse sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from granitic rocks

Soar Series

- Elevation:* 4,300 to 5,500 feet
Precipitation: About 9 inches

Air temperature: About 50 degrees
Frost-free season: About 125 days
Surface layer texture: Very gravelly coarse sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from granitic rocks

Arclay Series

Elevation: 4,500 to 6,300 feet
Precipitation: About 9 inches
Air temperature: About 50 degrees
Frost-free season: About 120 days
Surface layer texture: Very gravelly coarse sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from granitic rocks

Dominant Present Vegetation

Acrelane: Big sagebrush, pine bluegrass
 Soar: Indian ricegrass, desert needlegrass
 Arclay: Thurber needlegrass, pine bluegrass
 Inclusion 1: Desert needlegrass, littleleaf horsebrush, shadscale
 Inclusion 2: None
 Inclusion 3: Wyoming big sagebrush, basin big sagebrush

Ecological Site

Acrelane: 027XY072NV
 Soar: 027XY068NV
 Arclay: 027XY079NV
 Inclusion 1: 027XY017NV
 Inclusion 2: None
 Inclusion 3: 027XY029NV

1201--Acrelane-Wedekind-Arclay association

Composition

Major Components

Acrelane very gravelly coarse sandy loam, 4 to 15 percent slopes--40 percent
 Wedekind gravelly sandy loam, 2 to 8 percent slopes--25 percent
 Arclay very gravelly coarse sandy loam, 4 to 15 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Deadyon loam, 0 to 2 percent slopes--5 percent
 Inclusion 2: Arclay very gravelly coarse sandy

loam, 30 to 50 percent slopes--5 percent
 Inclusion 3: Soar very gravelly coarse sandy loam, 30 to 50 percent slopes--3 percent
 Inclusion 4: Rock outcrop--2 percent

Map Unit Setting

Landscape position: Mountains
 Acrelane--Landform: Mountains; shape of slope: convex
 Wedekind--Landform: Mountains; geomorphic position: footslope; shape of slope: convex
 Arclay--Landform: Mountains; shape of slope: convex; aspect: north
 Inclusion 1--Landform: Inset fans; shape of slope: concave
 Inclusion 2--Landform: Mountains; shape of slope: convex; aspect: north
 Inclusion 3--Landform: Mountains; shape of slope: convex; aspect: south
 Inclusion 4--Landform: Mountains

Major Component Description

Acrelane Series

Elevation: 5,000 to 6,000 feet
Precipitation: About 10 inches
Air temperature: About 49 degrees
Frost-free season: About 120 days
Surface layer texture: Very gravelly coarse sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from granitic rocks

Wedekind Series

Elevation: 4,800 to 5,600 feet
Precipitation: About 10 inches
Air temperature: About 50 degrees
Frost-free season: About 105 days
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Residuum derived from granitic rocks

Arclay Series

Elevation: 5,000 to 6,000 feet
Precipitation: About 9 inches
Air temperature: About 50 degrees
Frost-free season: About 120 days
Surface layer texture: Very gravelly coarse sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from granitic rocks

Dominant Present Vegetation

Acrelane: Wyoming big sagebrush, needlegrass
Wedekind: Thurber needlegrass, Wyoming big sagebrush

Arclay: Thurber needlegrass, pine bluegrass

Inclusion 1: Wyoming big sagebrush, pine bluegrass

Inclusion 2: Thurber needlegrass, pine bluegrass

Inclusion 3: Desert needlegrass

Inclusion 4: None

Ecological Site

Acrelane: 027XY072NV

Wedekind: 027XY072NV

Arclay: 027XY079NV

Inclusion 1: 027XY008NV

Inclusion 2: 027XY079NV

Inclusion 3: 027XY068NV

Inclusion 4: None

1202--Acrelane-Rock outcrop complex***Composition*****Major Components**

Acrelane very bouldery coarse sandy loam, 15 to 50 percent slopes--55 percent

Rock outcrop unweathered bedrock, 30 to 50 percent slopes--35 percent

Contrasting Inclusions

Inclusion 1: Arclay very stony loam, 30 to 50 percent slopes--8 percent

Inclusion 2: Soar very gravelly coarse sandy loam, 15 to 50 percent slopes--2 percent

Map Unit Setting

Landscape position: Mountains

Acrelane--Landform: Mountains; shape of slope: convex

Rock outcrop--Landform: Mountains; geomorphic position: summit

Inclusion 1--Landform: Mountains; shape of slope: convex; aspect: north

Inclusion 2--Landform: Mountains; position on slope: lower; shape of slope: convex; aspect: south

Major Component Description**Acrelane Series**

Elevation: 4,700 to 6,600 feet

Precipitation: About 10 inches

Air temperature: About 49 degrees

Frost-free season: About 100 days

Surface layer texture: Very bouldery coarse sandy loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from granitic rocks

Rock outcrop Miscellaneous Area

Elevation: 4,700 to 6,600 feet

Surface layer texture: Unweathered bedrock

Dominant Present Vegetation

Acrelane: Wyoming big sagebrush, needlegrass

Rock outcrop: None

Inclusion 1: Lahontan sagebrush

Inclusion 2: Lahontan sagebrush

Ecological Site

Acrelane: 027XY072NV

Rock outcrop: None

Inclusion 1: 027XY079NV

Inclusion 2: 027XY068NV

1203--Acrelane-Shawave-Granshaw association***Composition*****Major Components**

Acrelane very gravelly coarse sandy loam, 4 to 15 percent slopes--40 percent

Shawave gravelly sandy loam, 2 to 8 percent slopes--25 percent

Granshaw gravelly coarse sandy loam, 2 to 8 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Jerval, 2 to 8 percent slopes--5 percent

Inclusion 2: Rock outcrop--5 percent

Inclusion 3: Xeric Torriorthents, sandy-skeletal, mixed, mesic--4 percent

Inclusion 4: Shawave gravelly sandy loam, 15 to 30 percent slopes--1 percent

Map Unit Setting

Landscape position: Hills and intermontane basins

Acrelane--Landform: Hills; geomorphic position: backslope; shape of slope: convex

Shawave--Landform: Fan remnants; position on slope: lower; shape of slope: convex

Granshaw--Landform: Fan remnants; position on slope: lower; shape of slope: convex

Inclusion 1--Landform: Fan remnants; shape of

slope: convex
 Inclusion 2--Landform: Hills; geomorphic position: backslope
 Inclusion 3--Landform: Drainageways; shape of slope: concave
 Inclusion 4--Landform: Fan remnants; geomorphic position: backslope; shape of slope: convex

Major Component Description

Acrelane Series

Elevation: 4,800 to 6,100 feet
Precipitation: About 10 inches
Air temperature: About 49 degrees
Frost-free season: About 120 days
Surface layer texture: Very gravelly coarse sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from granitic rocks

Shawave Series

Elevation: 4,600 to 5,600 feet
Precipitation: About 9 inches
Air temperature: About 50 degrees
Frost-free season: About 120 days
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from granitic rocks, loess, and volcanic ash

Granshaw Series

Elevation: 4,800 to 5,800 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 125 days
Surface layer texture: Gravelly coarse sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from granitic rocks

Dominant Present Vegetation

Acrelane: Wyoming big sagebrush, needlegrass
 Shawave: Indian ricegrass, Wyoming big sagebrush, pine bluegrass
 Granshaw: Indian ricegrass, bud sagebrush, shadscale
 Inclusion 1: Bluegrass, bud sagebrush, shadscale
 Inclusion 2: None
 Inclusion 3: Basin big sagebrush
 Inclusion 4: Indian ricegrass, Wyoming big sagebrush, pine bluegrass

Ecological Site

Acrelane: 027XY072NV
 Shawave: 027XY008NV
 Granshaw: 027XY013NV
 Inclusion 1: 027XY013NV
 Inclusion 2: None
 Inclusion 3: 027XY029NV
 Inclusion 4: 027XY008NV

1204--Acrelane-Arclay-Eaglerock association

Composition

Major Components

Acrelane very gravelly coarse sandy loam, 15 to 50 percent slopes--40 percent
 Arclay very gravelly coarse sandy loam, 15 to 50 percent slopes--25 percent
 Eaglerock gravelly coarse sandy loam, 30 to 50 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Rock outcrop--8 percent
 Inclusion 2: Slocave very gravelly coarse sandy loam, 15 to 30 percent slopes--4 percent
 Inclusion 3: Xeric Torriorthents, loamy-skeletal, mixed nonacid, mesic--3 percent

Map Unit Setting

Landscape position: Mountains
 Acrelane--Landform: Mountains; geomorphic position: backslope; shape of slope: concave
 Arclay--Landform: Mountains; shape of slope: convex
 Eaglerock--Landform: Mountains; geomorphic position: shoulder; position on slope: upper
 Inclusion 1--Landform: Mountains; geomorphic position: summit
 Inclusion 2--Landform: Mountains; geomorphic position: footslope; shape of slope: convex; aspect: south
 Inclusion 3--Landform: Drainageways; shape of slope: concave

Major Component Description

Acrelane Series

Elevation: 5,200 to 6,800 feet
Precipitation: About 10 inches
Air temperature: About 51 degrees
Frost-free season: About 120 days
Surface layer texture: Very gravelly coarse sandy loam
Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from granitic rocks

Arclay Series

Elevation: 5,200 to 6,800 feet

Precipitation: About 10 inches

Air temperature: About 51 degrees

Frost-free season: About 120 days

Surface layer texture: Very gravelly coarse sandy loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from granitic rocks

Eaglerock Series

Elevation: 6,400 to 7,200 feet

Precipitation: About 12 inches

Air temperature: About 47 degrees

Frost-free season: About 110 days

Surface layer texture: Gravelly coarse sandy loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from granitic rocks

Dominant Present Vegetation

Acrelane: Wyoming big sagebrush, needlegrass

Arclay: Thurber needlegrass, pine bluegrass

Eaglerock: Thurber needlegrass, bluegrass, mountain big sagebrush

Inclusion 1: None

Inclusion 2: Desert needlegrass, littleleaf horsebrush, shadscale

Inclusion 3: Wyoming big sagebrush, basin big sagebrush

Ecological Site

Acrelane: 027XY072NV

Arclay: 027XY079NV

Eaglerock: 027XY073NV

Inclusion 1: None

Inclusion 2: 027XY017NV

Inclusion 3: 027XY029NV

1205--Acrelane-Acrelane, moderately sloping association

Composition

Major Components

Acrelane very gravelly coarse sandy loam, 15 to 50 percent slopes--60 percent

Acrelane very gravelly coarse sandy loam, 4 to 8 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Rock outcrop--6 percent

Inclusion 2: Xeric Torrifuvents, loamy-skeletal, mixed nonacid, mesic--3 percent

Inclusion 3: Slocave very gravelly coarse sandy loam, 15 to 50 percent slopes--3 percent

Inclusion 4: Arclay very gravelly coarse sandy loam, 4 to 15 percent slopes--3 percent

Map Unit Setting

Landscape position: Hills

Acrelane--Landform: Hills; geomorphic position: footslope; shape of slope: convex

Acrelane--Landform: Hills; geomorphic position: footslope; shape of slope: concave

Inclusion 1--Landform: Hills

Inclusion 2--Landform: Drainageways; shape of slope: concave

Inclusion 3--Landform: Hills; geomorphic position: footslope; shape of slope: convex; aspect: south

Inclusion 4--Landform: Hills; geomorphic position: backslope; shape of slope: concave

Major Component Description

Acrelane Series

Elevation: 4,600 to 6,200 feet

Precipitation: About 10 inches

Air temperature: About 51 degrees

Frost-free season: About 120 days

Surface layer texture: Very gravelly coarse sandy loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from granitic rocks

Acrelane Series

Elevation: 4,400 to 6,000 feet

Precipitation: About 10 inches

Air temperature: About 51 degrees

Frost-free season: About 120 days

Surface layer texture: Very gravelly coarse sandy loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from granitic rocks

Dominant Present Vegetation

Acrelane: Wyoming big sagebrush, needlegrass

Acrelane: Wyoming big sagebrush, needlegrass

Inclusion 1: None

Inclusion 2: Wyoming big sagebrush, basin big sagebrush, spiny hopsage

Inclusion 3: Desert needlegrass, littleleaf horsebrush, shadscale
Inclusion 4: Thurber needlegrass

Ecological Site

Acrelane: 027XY072NV
Acrelane: 027XY072NV
Inclusion 1: None
Inclusion 2: 027XY029NV
Inclusion 3: 027XY017NV
Inclusion 4: 027XY079NV

1210--Wesfil-Sojur association

Composition

Major Components

Wesfil very channery loam, 15 to 50 percent slopes--50 percent
Sojur, 15 to 50 percent slopes--35 percent

Contrasting Inclusions

Inclusion 1: Lithic Xerollic Haplargids, clayey-skeletal, montmorillonitic, mesic--5 percent
Inclusion 2: Xerollic Haplargids, loamy-skeletal, mixed, mesic--5 percent
Inclusion 3: Rock outcrop--4 percent
Inclusion 4: Xeric Torrifluvents, loamy-skeletal, mixed (calcareous), mesic--1 percent

Map Unit Setting

Landscape position: Mountains

Wesfil--Landform: Hills; geomorphic position: backslope; shape of slope: convex; aspect: north

Sojur--Landform: Hills; geomorphic position: backslope; shape of slope: convex; aspect: south

Inclusion 1--Landform: Hills; geomorphic position: footslope; shape of slope: convex

Inclusion 2--Landform: Hills; geomorphic position: backslope; position on slope: lower; shape of slope: concave

Inclusion 3--Landform: Mountains

Inclusion 4--Landform: Drainageways; shape of slope: concave

Major Component Description

Wesfil Series

Elevation: 4,300 to 5,900 feet
Precipitation: About 8 inches
Air temperature: About 50 degrees
Frost-free season: About 120 days
Surface layer texture: Very channery loam

Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from metamorphic rocks

Sojur Series

Elevation: 4,300 to 5,900 feet
Precipitation: About 8 inches
Air temperature: About 50 degrees
Frost-free season: About 120 days
Drainage class: Well drained
Dominant parent material: Alluvium derived from metamorphic rocks

Dominant Present Vegetation

Wesfil: Bluegrass, bottlebrush squirreltail
Sojur: Bottlebrush squirreltail, bud sagebrush, shadscale
Inclusion 1: Lahontan sagebrush
Inclusion 2: Wyoming big sagebrush
Inclusion 3: None
Inclusion 4: Wyoming big sagebrush

Ecological Site

Wesfil: 027XY070NV
Sojur: 027XY027NV
Inclusion 1: 027XY079NV
Inclusion 2: 027XY007NV
Inclusion 3: None
Inclusion 4: 027XY029NV

1300--Yipor silt loam

Composition

Major Components

Yipor silt loam, 0 to 2 percent slopes--90 percent

Contrasting Inclusions

Inclusion 1: Typic Torrifluvents, coarse-loamy, mixed (calcareous), mesic--5 percent
Inclusion 2: Typic Torriorthents, coarse-loamy, mixed (calcareous), mesic--3 percent
Inclusion 3: Hawsley fine sand, 4 to 15 percent slopes--2 percent

Map Unit Setting

Landscape position: Bolsons

Yipor--Landform: Lake terraces; shape of slope: plane

Inclusion 1--Landform: Inset fans; shape of slope: concave

Inclusion 2--Landform: Fan skirts; shape of slope: convex

Inclusion 3--Landform: Sand sheets

Major Component Description

Yipor Series

Elevation: 3,900 to 4,500 feet

Precipitation: About 6 inches

Air temperature: About 48 degrees

Frost-free season: About 120 days

Surface layer texture: Silt loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Yipor: Indian ricegrass, saltbush

Inclusion 1: Tall gray rabbitbrush

Inclusion 2: Bud sagebrush, shadscale

Inclusion 3: Indian ricegrass, fourwing saltbush

Ecological Site

Yipor: 024XY012NV

Inclusion 1: 027XY022NV

Inclusion 2: 027XY013NV

Inclusion 3: 027XY009NV

1400--Jerval-Dorper association

Composition

Major Components

Jerval gravelly very fine sandy loam, 2 to 8 percent slopes--50 percent

Dorper stony very fine sandy loam, 2 to 8 percent slopes--35 percent

Contrasting Inclusions

Inclusion 1: Xeric Torriorthents, loamy-skeletal, mixed (calcareous), mesic--8 percent

Inclusion 2: Kumiva gravelly fine sandy loam, 0 to 2 percent slopes--4 percent

Inclusion 3: Pokergap stony very fine sandy loam, 2 to 8 percent slopes--2 percent

Inclusion 4: Haploxerollic Durargids, fine, montmorillonitic, mesic--1 percent

Map Unit Setting

Landscape position: Fan piedmonts

Jerval--Landform: Fan remnants; position on slope: lower; shape of slope: convex

Dorper--Landform: Fan remnants; position on slope: mid; shape of slope: convex

Inclusion 1--Landform: Drainageways; shape of slope: concave

Inclusion 2--Landform: Inset fans; shape of slope: concave

Inclusion 3--Landform: Fan remnants; position on slope: upper; shape of slope: convex

Inclusion 4--Landform: Fan remnants; geomorphic position: toeslope; position on slope: upper; shape of slope: convex

Major Component Description

Jerval Series

Elevation: 4,200 to 5,000 feet

Precipitation: About 6 inches

Air temperature: About 53 degrees

Frost-free season: About 120 days

Surface layer texture: Gravelly very fine sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks, loess, and volcanic ash

Dorper Series

Elevation: 4,200 to 5,200 feet

Precipitation: About 6 inches

Air temperature: About 53 degrees

Frost-free season: About 125 days

Surface layer texture: Stony very fine sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Jerval: Bottlebrush squirreltail, bud sagebrush, shadscale

Dorper: Bottlebrush squirreltail, bud sagebrush, shadscale

Inclusion 1: Wyoming big sagebrush

Inclusion 2: Winterfat

Inclusion 3: Wyoming big sagebrush

Inclusion 4: Sagebrush, Indian ricegrass

Ecological Site

Jerval: 027XY013NV

Dorper: 027XY013NV

Inclusion 1: 027XY008NV

Inclusion 2: 027XY014NV

Inclusion 3: 027XY008NV

Inclusion 4: 027XY070NV

1401--Jerval-Aboten-Dorper association

Composition

Major Components

Jerval gravelly very fine sandy loam, 2 to 8 percent slopes--45 percent

Aboten gravelly silt loam, 2 to 8 percent slopes--25 percent

Dorper extremely gravelly very fine sandy loam, 2 to 8 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Duric Camborthids, coarse-loamy, mixed, mesic--6 percent

Inclusion 2: Bluewing gravelly sandy loam, 0 to 2 percent slopes--5 percent

Inclusion 3: Xeric Torriorthents, loamy-skeletal, mixed (calcareous), mesic--3 percent

Inclusion 4: Duric Camborthids, coarse-loamy, mixed, mesic--1 percent

Map Unit Setting

Landscape position: Fan piedmonts

Jerval--Landform: Fan remnants; position on slope: lower; shape of slope: convex

Aboten--Landform: Fan remnants; position on slope: mid; shape of slope: convex

Dorper--Landform: Fan remnants; shape of slope: convex

Inclusion 1--Landform: Fan skirts; shape of slope: convex

Inclusion 2--Landform: Inset fans

Inclusion 3--Landform: Drainageways; shape of slope: concave

Inclusion 4--Landform: Inset fans; shape of slope: concave

Major Component Description

Jerval Series

Elevation: 4,100 to 4,800 feet

Precipitation: About 5 inches

Air temperature: About 53 degrees

Frost-free season: About 120 days

Surface layer texture: Gravelly very fine sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks, loess, and volcanic ash

Aboten Series

Elevation: 4,100 to 4,800 feet

Precipitation: About 6 inches

Air temperature: About 51 degrees

Frost-free season: About 120 days

Surface layer texture: Gravelly silt loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks, loess, and volcanic ash

Dorper Series

Elevation: 4,400 to 5,300 feet

Precipitation: About 6 inches

Air temperature: About 53 degrees

Frost-free season: About 125 days

Surface layer texture: Extremely gravelly very fine sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks, loess, and volcanic ash

Dominant Present Vegetation

Jerval: Bud sagebrush, pine bluegrass, shadscale

Aboten: Bottlebrush squirreltail, pine bluegrass, shadscale

Dorper: Bailey greasewood, bud sagebrush, shadscale

Inclusion 1: Indian ricegrass, bud sagebrush, shadscale

Inclusion 2: Bailey greasewood, Indian ricegrass, shadscale

Inclusion 3: Wyoming big sagebrush, basin big sagebrush

Inclusion 4: Indian ricegrass, winterfat

Ecological Site

Jerval: 027XY013NV

Aboten: 027XY013NV

Dorper: 027XY018NV

Inclusion 1: 027XY013NV

Inclusion 2: 027XY018NV

Inclusion 3: 027XY029NV

Inclusion 4: 027XY014NV

1410--Slipback-Shawave-Nodur association

Composition

Major Components

Slipback sandy loam, 2 to 8 percent slopes--35 percent

Shawave gravelly sandy loam, 2 to 8 percent slopes--30 percent

Nodur sandy loam, 2 to 8 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Deadyon loam, 0 to 2 percent slopes--5 percent

Inclusion 2: Wedekind sandy loam, 2 to 8 percent slopes--5 percent

Inclusion 3: Arclay sandy loam, 2 to 8 percent slopes--4 percent

Inclusion 4: Shawave coarse sandy loam, 15 to 30 percent slopes--1 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Slipback--Landform: Fan remnants; position on slope: lower; shape of slope: convex
 Shawave--Landform: Fan skirts; shape of slope: convex
 Nodur--Landform: Fan remnants; position on slope: upper; shape of slope: convex
 Inclusion 1--Landform: Inset fans
 Inclusion 2--Landform: Hills; shape of slope: concave
 Inclusion 3--Landform: Hills; shape of slope: convex
 Inclusion 4--Landform: Fan remnants; geomorphic position: backslope

Major Component Description**Slipback Series**

Elevation: 5,400 to 6,100 feet
Precipitation: About 9 inches
Air temperature: About 50 degrees
Frost-free season: About 120 days
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from granitic rocks

Shawave Series

Elevation: 5,200 to 5,600 feet
Precipitation: About 9 inches
Air temperature: About 50 degrees
Frost-free season: About 120 days
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from granitic rocks, loess, and volcanic ash

Nodur Series

Elevation: 5,600 to 6,300 feet
Precipitation: About 9 inches
Air temperature: About 52 degrees
Frost-free season: About 120 days
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from granitic rocks, loess, and volcanic ash

Dominant Present Vegetation

Slipback: Indian ricegrass, Wyoming big sagebrush, pine bluegrass
 Shawave: Indian ricegrass, Wyoming big sagebrush, pine bluegrass
 Nodur: Thurber needlegrass, pine bluegrass

Inclusion 1: Indian ricegrass, Wyoming big sagebrush, pine bluegrass
 Inclusion 2: Wyoming big sagebrush, bluegrass, needlegrass
 Inclusion 3: Thurber needlegrass, pine bluegrass
 Inclusion 4: Indian ricegrass, Wyoming big sagebrush, pine bluegrass

Ecological Site

Slipback: 027XY008NV
 Shawave: 027XY008NV
 Nodur: 027XY079NV
 Inclusion 1: 027XY008NV
 Inclusion 2: 027XY072NV
 Inclusion 3: 027XY008NV
 Inclusion 4: 027XY079NV

1610--Lovelock silt loam, 0 to 2 percent slopes**Composition****Major Components**

Lovelock silt loam, 0 to 2 percent slopes--90 percent

Contrasting Inclusions

Inclusion 1: Fluventic Haploxerolls, coarse-loamy, mixed, mesic--5 percent
 Inclusion 2: Playas--5 percent

Map Unit Setting

Landscape position: Bolsons
 Lovelock--Landform: Lake plains; shape of slope: concave
 Inclusion 1--Landform: Lake terraces
 Inclusion 2--Landform: Playas; shape of slope: concave

Major Component Description**Lovelock Series**

Elevation: 3,900 to 4,000 feet
Precipitation: About 6 inches
Air temperature: About 52 degrees
Frost-free season: About 115 days
Surface layer texture: Silt loam
Drainage class: Poorly drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Lovelock: Alkali sacaton, inland saltgrass
 Inclusion 1: Black greasewood
 Inclusion 2: None

Ecological Site

Lovelock: 027XY005NV
Inclusion 1: 027XY006NV
Inclusion 2: None

Water--Landform: Depressions

Major Component Description

Water Miscellaneous Area

Elevation: 3,800 to 7,500 feet

W--Water

Composition

Major Components

Water--100 percent

Dominant Present Vegetation

Inclusion 1: None

Ecological Site

Water: None

Map Unit Setting

Landscape position: Hills and intermontane basins

Prime Farmland

Prime Farmland and Other Important Farmland

In this section, prime farmland and other important farmland are defined. The map units in the survey area that are considered prime farmland are listed under "Prime Farmland Map Units" at the end of this section.

Prime Farmland

Prime farmland is of major importance in meeting the Nation's short- and long-range needs for food and fiber. The acreage of high-quality farmland is limited, and the U.S. Department of Agriculture recognizes that government at local, State, and Federal levels, as well as individuals, must encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland soils, as defined by the U.S. Department of Agriculture, are soils that are best suited to food, seed, forage, fiber, and oilseed crops. Such soils have properties that favor the economic production of sustained high yields of crops. The soils need only to be treated and managed by acceptable farming methods. An adequate moisture supply and a sufficiently long growing season are required. Prime farmland soils produce the highest yields with minimal expenditure of energy and economic resources, and farming these soils results in the least damage to the environment.

Prime farmland soils may presently be used as cropland, pasture, woodland, or for other purposes. They are used for food and fiber or are available for these uses. Urban or built-up land and water areas cannot be considered prime farmland. Urban or built-up land is any contiguous unit of 10 acres or more in size that is used for such purposes as housing, industrial, and commercial sites, sites for institutions or public buildings, small parks, golf

courses, cemeteries, railroad yards, airports, sanitary landfills, sewage treatment plants, and water-control structures.

Prime farmland soils commonly receive an adequate and dependable supply of moisture from precipitation or irrigation. The temperature and growing season are favorable, and the level of acidity or alkalinity and the content of salts and sodium are acceptable. The soils have few, if any, rocks and are permeable to water and air. They are not excessively erodible or saturated with water for long periods, and they are not frequently flooded during the growing season or are protected from flooding. Slopes range mainly from 0 to 6 percent.

Soils that have a high water table, are subject to flooding, or are droughty may qualify as prime farmland where these limitations are overcome by drainage measures, flood control, or irrigation. Onsite evaluation is necessary to determine the effectiveness of corrective measures. More information about the criteria for prime farmland can be obtained at the local office of the Natural Resources Conservation Service.

A recent trend in land use has been the conversion of prime farmland to urban and industrial uses. The loss of prime farmland to other uses puts pressure on lands that are less productive than prime farmland.

About 13,392 acres, or nearly 7 percent of the survey area, would meet the requirements for prime farmland if an adequate and dependable supply of irrigation water were available.

The map units in the survey area that meet the requirements for prime farmland are listed under "Prime Farmland Map Units." On some soils included in the list, measures that overcome limitations are needed. The location of each map unit is shown on the detailed soil maps at the back of this publication. This list does not constitute a recommendation for a particular land use.

Unique Farmland

Unique farmland is land other than prime farmland that is used for the production of specific high-value food and fiber crops. It has the special combination of soil qualities, location, growing season, and moisture supply needed for the economic production of sustained high yields of a specific high-quality crop when treated and managed by acceptable farming methods. Examples of such crops are citrus, tree nuts, olives, cranberries, and vegetables.

Unique farmland is used for a specific high-value food or fiber crop; has an adequate supply of available moisture for the specific crop because of stored moisture, precipitation, or irrigation; and has a combination of soil qualities, growing season, temperature, humidity, air drainage, elevation, aspect, and other factors, such as nearness to markets, that favor the production of a specific food or fiber crop.

Lists of unique farmland are developed as needed in cooperation with conservation districts and other entities. There are presently no soils recognized as unique farmland in Nevada.

Additional Farmland of Statewide Importance

Some areas other than areas of prime and unique farmland are of statewide importance in the production of food, feed, fiber, forage, and oilseed crops. The criteria used in defining and

delineating these areas are determined by the appropriate State agency or agencies. Generally, additional farmland of statewide importance includes areas that nearly meet the criteria for prime farmland and that economically produce high yields of crops when treated and managed by acceptable farming methods. Some areas can produce as high a yield as areas of prime farmland if conditions are favorable. In some states additional farmland of statewide importance may include tracts of land that have been designated for agriculture by State law.

Nevada has designated any farmland that is irrigated to be of statewide importance.

Prime Farmland Map Units

The following map units are prime farmland where irrigated with an adequate and dependable water supply:

- 470 Deadyon loam, 0 to 2 percent slopes
- 472 Deadyon sandy loam, 2 to 8 percent slopes
- 551 Kumiva-Kumiva, occasionally flooded association
- 553 Kumiva sandy loam, 0 to 2 percent slopes, occasionally flooded

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories. 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, "Classification of the Soils," in Part II of this Publication shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Eleven 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 Mollisol.

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 Xeroll (*Xer, meaning xeric, plus oll, from Mollisol*).

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; 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 Argixeroll. (*Argi, meaning presence of argillic horizon, plus xeroll, the suborder of the Mollisols that have a xeric moisture regime*).

SUBGROUP. Each great group has a typical subgroup. Other subgroups are intergrades or extragrades. The typical 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 known kind of soil. Each subgroup is

identified by one or more adjectives preceding the name of the great group. The adjective *Aridic* identifies the subgroup that is an intergrade to soils of dry regions. An example is Aridic Argixerolls.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineral content, temperature regime, thickness of the root zone, consistence, moisture equivalent, slope, and permanent cracks. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is loamy-skeletal, mixed, frigid, Aridic Argixerolls.

SERIES. The series consists of soils that have similar horizons in their profile. The horizons are similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. The texture of the surface layer or of the substratum can differ within a series.

Taxonomic Units and Their Morphology

In this section, each taxonomic unit recognized in the survey area is described. The descriptions are arranged in alphabetic order.

Characteristics of the soil and the material in which it formed are identified for each unit. A pedon, a small three-dimensional area of soil, that is typical of the unit in the survey area is described. The detailed description of each soil horizon follow standards in the "Soil Survey Manual"(24). Many of the technical terms used in the descriptions are defined in "Soil Taxonomy"(25). Unless otherwise stated, colors in the descriptions are for dry soil. Following the

pedon description is the range of important characteristics of the soils in the unit.

The map units of each taxonomic unit are described in the section "Detailed Soil Map Units".

Aboten Series

The Aboten series consists of shallow over a duripan, well drained soils that formed in mixed alluvium with a component of loess and volcanic ash. The Aboten soils are on fan piedmont remnants. Slopes are 2 to 30 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 51 degrees F.

Taxonomic class: Loamy, mixed, mesic, shallow Haplic Naduragids.

Typical pedon: Aboten very gravelly silt loam, 2 to 8 percent slopes, is located in Sage Valley in an area of the Aboten-Jerval-Bluewing association, in map unit 110. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with 35 percent pebbles, 02 percent cobbles, and 01 percent stones.

A1--0 to 3 inches; pale brown (10YR 6/3) very gravelly silt loam, brown (10YR 5/3) moist; moderate thick platy structure; slightly hard, very friable, non-sticky and slightly plastic; few very fine roots; many fine and few medium vesicular pores; 30 percent pebbles, 5 percent cobbles; moderately alkaline (pH 8.2); clear smooth boundary.

A2--3 to 7 inches; pale brown (10YR 6/3) silt loam, brown (10YR 5/3) moist; weak coarse prismatic structure parting to strong thin platy; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and few fine roots; many fine and few medium tubular and vesicular pores; 5 percent pebbles; strongly alkaline (pH 8.6); abrupt smooth boundary.

2Btk--7 to 15 inches; light yellowish brown (10YR 6/4) clay loam, yellowish brown (10YR 5/4) moist; weak fine and medium prismatic structure parting to weak fine subangular blocky; hard, friable, sticky and plastic; common very fine and few fine roots; many fine tubular pores; common thin clay films on faces of peds and lining pores; thin lime coatings on undersides of rock fragments; 10 percent pebbles, 2 percent cobbles; strongly

effervescent; strongly alkaline (pH 9.0); abrupt smooth boundary.

2Bqkm--15 to 27 inches; very pale brown (10YR 8/3) strongly cemented duripan with a thin discontinuous silica laminar cap, very pale brown (10YR 7/3) moist; massive; very hard, very firm; common very fine roots in some widely spaced fractures; 50 percent pebbles, 2 percent cobbles; violently effervescent; strongly alkaline (pH 8.6); clear wavy boundary.

3Bk--27 to 60 inches; very pale brown (10YR 7/3) extremely gravelly sandy loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine roots; common fine interstitial pores; lime disseminated throughout horizon; 55 percent pebbles, 10 percent cobbles; violently effervescent; strongly alkaline (pH 8.6).

Type location: Pershing County, Nevada; approximately 30 miles northwest of Lovelock, in Sage Valley, 200 feet north and 400 feet east of the southwest corner of section 23, T. 29 N., R. 29 E., 40 degrees, 21 minutes, 47 seconds north latitude, 118 degrees, 41 minutes, 04 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry, moist late fall through early spring, dry from May through early November.

Soil temperature: 53 to 57 degrees F.

Depth to the strongly cemented duripan: 14 to 20 inches.

Depth to secondary carbonates: 5 to 10 inches.

A horizons:

Hue--10YR or 2.5Y.

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 or 3.

Reaction--Moderately alkaline or strongly alkaline.

2Btk horizon:

Hue--10YR or 7.5YR.

Value--5 or 6 dry, 4 or 5 moist.

Chroma--3 or 4.

Texture--Loam, clay loam.

Clay content--Averages 25 to 35 percent.

Rock fragments--5 to 15 percent, mainly pebbles.

Structure--Prismatic, subangular blocky or massive.

Consistence--Slightly hard or hard dry; friable or firm moist.

Reaction--Moderately alkaline or strongly alkaline.

Exchangeable sodium--15 to 25 percent.

2Bqkm horizon:

Hue--10YR or 7.5YR.

Value--7 or 8 dry; 5, 6, or 7 moist.

Chroma--2, 3, or 4.

Rock fragments--50 to 70 percent, mainly pebbles imbedded in the matrix.

Structure--Platy or massive.

Consistence--Hard or very hard dry.

Reaction--Strongly alkaline or very strongly alkaline.

3Bk and 3Bqk horizons:

Value--7 or 8 dry, 5 through 7 moist.

Chroma--2 through 4.

Texture--Extremely gravelly sandy loam or very gravelly loamy sand.

Clay content--3 to 8 percent.

Rock fragments--50 to 70 percent, mainly pebbles.

Structure--Massive or single grained.

Consistence--Slightly hard, soft, or loose dry.

Reaction--Moderately alkaline or strongly alkaline.

Silica cementation--When present below the duripan, it is either weak and discontinuous cemented or consists of up to 25 percent durinodes in a friable matrix.

Acrelane Series

The Acrelane series consists of shallow, well drained soils that formed in residuum and colluvium weathered from granodiorite. The Acrelane soils are on hill and mountain crests, sideslopes, and footslopes. Slopes are 4 to 50 percent. The mean annual precipitation is about 10 inches and the mean annual temperature is about 49 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic, shallow Aridic Argixerolls.

Typical pedon: Acrelane very gravelly coarse sandy loam, 4 to 15 percent slopes, is located in the Shawave Mountains in an area of the Acrelane-Wedekind-Arclay association, map unit 1201. (Colors are for dry soil unless otherwise noted.)

The soil surface is partially covered with 35 percent pebbles and 5 percent cobbles.

A1--0 to 1 inch; grayish brown (10YR 5/2) very gravelly coarse sandy loam, very dark grayish brown (10YR 3/2) moist; moderate thin platy structure; slightly hard, very friable, nonsticky and nonplastic; few very fine roots; common very fine and fine vesicular pores; 35 percent pebbles; neutral (pH 7.3); abrupt smooth boundary.

A2--1 to 6 inches; brown (10YR 5/3) gravelly coarse sandy loam, dark brown (7.5YR 3/3) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and few fine roots; common very fine tubular pores; 25 percent pebbles; neutral (pH 7.3); abrupt smooth boundary.

Bt1--6 to 11 inches; yellowish brown (10YR 5/4) very gravelly sandy clay loam, dark yellowish brown (10YR 3/4) moist; moderate medium subangular blocky structure; slightly hard, firm, sticky and plastic; few very fine and fine roots; common very fine tubular pores; few thin clay films on faces of peds and lining pores; 30 percent pebbles, 5 percent cobbles; mildly alkaline (pH 7.8); clear smooth boundary.

Bt2--11 to 15 inches; yellowish brown (10YR 5/4) very gravelly coarse sandy loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; few very fine and coarse roots; common very fine tubular pores; few thin clay films on faces of peds and lining pores; 50 percent pebbles, 2 percent cobbles; mildly alkaline (pH 7.8); gradual wavy boundary.

Cr--15 to 60 inches; soft weathered granite; few very fine roots along rock structure planes.

Type location: Pershing County, Nevada; approximately 14 miles east of Winnemucca Lake in the Shawave Mountains, about 1,200 feet west and 3,000 feet north of the southeast corner of section 13, T. 26 N., R. 25E; 40 degrees, 07 minutes, 27 seconds north latitude, 119 degrees, 07 minutes, 13 seconds west longitude.

Range in Characteristics:

Soil moisture: These soils are usually dry but are moist in the winter and spring.

Soil temperature: 50 to 53 degrees F.
Mollic epipedon thickness: 6 to 12 inches.
Depth to paralithic contact: 10 to 20 inches.

A horizons:

Hue--10YR or 7.5 YR
 Value--4 through 6 dry, 2 or 3 moist.
 Chroma--2 or 3.
 Reaction--Medium acid through neutral.

Bt horizons:

Hue--5YR, 7.5YR or 10YR.
 Value--4 or 5 dry, 3 or 4 moist.
 Chroma--4 or 6.
 Texture--Very gravelly sandy clay loam, very gravelly coarse sandy loam, very gravelly sandy loam.
 Clay content--18 to 30 percent.
 Rock fragments--35 to 60 percent, mainly pebbles.
 Reaction--Neutral or mildly alkaline.

Appian Series

The Appian series consists of very deep, well drained soils that formed in alluvium over lacustrine sands. The Appian soils are on lake plains. Slopes are 0 to 2 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 53 degrees F.

Taxonomic class: Fine-loamy over sandy or sandy-skeletal, mixed, mesic Typic Natrargids.

Typical pedon: Appian loamy coarse sand, 0 to 2 percent slopes, is located in Granite Springs Valley in an area of the Appian-Isolde-Genegraf association map unit 120. (Colors are for dry soil unless otherwise noted.). The soil surface is partially covered with 15 percent pebbles.

A1--0 to 3 inches; light gray (10YR 7/2) loamy coarse sand, dark grayish brown (10YR 4/2) moist; single grained; loose, nonsticky and nonplastic; many fine interstitial pores; 5 percent pebbles; moderately alkaline (pH 8.0); abrupt smooth boundary.

A2--3 to 5 inches; light brownish gray (10YR 6/2) sandy loam, dark grayish brown (10YR 4/2) moist; moderate thin platy structure; soft, very friable, nonsticky and nonplastic; few very fine roots; few very fine tubular pores; 10 percent

pebbles; slightly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.
 Btnk--5 to 15 inches; light yellowish brown (10YR 6/4) clay loam, dark yellowish brown (10YR 4/4) moist; moderate fine prismatic structure; slightly hard, friable, slightly sticky and plastic; few very fine roots; common very fine tubular pores; common thin clay films on faces of peds and lining pores; few fine violently effervescent lime filaments; 10 percent pebbles; noneffervescent matrix; strongly alkaline (pH 8.8); abrupt smooth boundary.
 2C1--15 to 28 inches; light gray (10YR 7/2) sand, grayish brown (10YR 5/2) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; many fine interstitial pores; 10 percent pebbles; strongly alkaline (pH 8.5); clear smooth boundary.
 2C2--28 to 53 inches; light brownish gray (10YR 6/2) coarse sand, brown (10YR 4/3) moist; few fine faint light brown (7.5YR 6/4) relict mottles; single grained; loose, nonsticky and nonplastic; few very fine roots; many fine interstitial pores; 10 percent pebbles; strongly alkaline (pH 8.5); clear smooth boundary.
 3C3--53 to 60 inches; light gray (2.5Y 7/2) silt loam, grayish brown (10YR 5/2) moist; few fine distinct light brown (7.5YR 6/4) relict mottles; massive; hard, firm, sticky and plastic; common very fine tubular pores; strongly alkaline (pH 8.6).

Type location: Pershing County, Nevada; approximately 25 miles west of Lovelock in Granite Springs Valley; about 2,300 feet south and 300 feet east of the northwest corner of section 12, T. 27 N., R. 27 E.; 40 degrees, 13 minutes, 33 seconds north latitude, 118 degrees, 54 minutes, 27 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry; moist for short periods in winter and early spring, dry May through October.

Soil temperature: 53 to 57 degrees F.

Combined thickness of A and Btn horizons: 7 to 18 inches.

Depth to sandy 2C horizon: 7 to 18 inches.

A horizons:

Value--6 or 7 dry, 3 or 4 moist.
 Chroma--1 or 2.

Reaction--Moderately alkaline or strongly alkaline.

Btk horizon:

Hue--10YR or 7.5YR.
 Value--4 through 6 dry, 4 or 5 moist.
 Chroma--2 through 4.
 Texture--Dominantly clay loam with sandy clay loam common in some pedons.
 Clay content--27 to 35 percent.
 Exchangeable sodium--20 to 50 percent.
 Structure--Moderate or strong, fine or coarse, columnar or prismatic.
 Reaction--Strongly alkaline or very strongly alkaline.
 Other features--Few or common, fine or medium white lime or gypsum segregations and filaments.

2C horizons:

Hue--2.5Y, 10YR, or 7.5YR.
 Value--6 or 7 dry, 3 through 5 moist.
 Chroma--2 or 3.
 Texture--Predominantly sand stratified with coarse sand, fine sand, loamy sand, loamy fine sand, fine sandy loam, or sandy loam.
 Rock fragments--Up to 75 percent pebbles in some pedons.
 Relict iron mottles--Few to many, fine to coarse, faint to prominent high chroma with hue of 10YR, 7.5YR or 5YR.
 Reaction--Mildly alkaline through strongly alkaline.
 Other features--Some pedons have a 3C horizon at a depth of 40 to 60 inches with textures of clay, silty clay, silty clay loam, or silt loam.

Arclay Series

The Arclay series consists of shallow, well drained soils that formed in residuum and colluvium weathered from granite. The Arclay soils are on side slopes of mountains and foothills. Slopes are 4 to 75 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 50 degrees F.

Taxonomic class: Loamy, mixed, mesic, shallow Aridic Argixerolls.

Typical pedon: Arclay very gravelly coarse sandy loam, 30 to 50 percent slopes, extremely stony, is located in the Trinity Range in an area of the Soar-Arclay-Rock outcrop association map unit 1022. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with 18 percent cobbles and stones, and 30 percent pebbles.

- A1--0 to 2 inches; grayish brown (2.5Y 5/2) very gravelly coarse sandy loam, very dark grayish brown (2.5Y 3/2) moist; weak thin platy structure parting to weak fine granular; soft, very friable, slightly sticky and slightly plastic; many very fine roots; many fine and few medium vesicular pores; 30 percent pebbles, 2 percent cobbles, 5 percent stones; neutral (pH 7.2); clear smooth boundary.
- A2--2 to 5 inches; brown (10YR 5/3) stony sandy loam, dark brown (10YR 3/3) moist; weak thin platy structure; soft, very friable, slightly sticky and plastic; many very fine roots; many fine tubular pores; 10 percent pebbles, 2 percent cobbles, 5 percent stones; neutral (pH 7.2); clear smooth boundary.
- Bt1--5 to 11 inches; brown (10YR 5/3) gravelly clay loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; slightly hard, friable, sticky and plastic; common very fine and few fine roots; common fine tubular pores; many thin clay films on faces of peds and lining pores; 15 percent pebbles; mildly alkaline (pH 7.6); clear smooth boundary.
- Bt2--11 to 16 inches; light yellowish brown (10YR 6/4) gravelly sandy clay loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; hard, friable, sticky and plastic; common very fine and few fine roots; common fine tubular pores; many thin clay films on faces of peds and lining pores; 25 percent pebbles; mildly alkaline (pH 7.6); abrupt wavy boundary.
- Cr--16 to 42 inches; soft granite with very few very fine roots; gradual wavy boundary.
- R--42 inches; hard granite.

Type location: Pershing County, Nevada; approximately 12 miles northwest of Lovelock in the Trinity Range near Trinity Canyon, about 2,000 feet south and 2,800 feet east of the northwest corner of section 33, T. 29 N., R. 31 E.; 40 degrees, 20 minutes, 09 seconds north latitude, 118 degrees, 30 minutes, 04 seconds west longitude.

Range in Characteristics:

Soil moisture: Moist in winter and spring, dry from June through October.

Soil temperature: 47 to 52 degrees F.

Mollic epipedon thickness: 7 to 12 inches, typically includes the upper part of the Bt horizon.

Depth to paralithic contact: 14 to 20 inches.

Depth to lithic contact: 40 to 60 inches.

A horizons:

Hue--10YR or 2.5Y.

Value--4 through 6 dry, averages less than 5.5 dry after mixing the upper 7 inches.

Chroma--2 or 3.

Reaction--Neutral or mildly alkaline.

Bt horizons:

Value--5 or 6 dry, 3 or 4 moist.

Chroma--3 or 4.

Texture--Gravelly clay loam or gravelly sandy clay loam, gravelly loam common in some subhorizons above the paralithic contact.

Clay content--27 to 35 percent.

Rock fragments--15 to 30 percent, mainly fine pebbles.

Structure--Subangular blocky or massive.

Consistence--Slightly hard or hard dry, friable or firm moist.

Reaction--Neutral or mildly alkaline.

Benin Series

The Benin series consists of very deep, well drained soils that formed in alluvium and loess high in volcanic ash over lacustrine sediments. The Benin soils are on lake plain terraces. Slopes are 0 to 2 percent. The mean annual precipitation is about 7 inches and the mean annual temperature is about 48 degrees F.

Taxonomic class: Fine, montmorillonitic (calcareous), mesic Typic Torriorthents.

Typical pedon: Benin silty clay loam, 0 to 2 percent slopes, is located in Hualapai Flat in an area of the Benin-Benin, occasionally flooded silty clay loams, map unit 152. (Colors are for dry soil unless otherwise noted.)

A--0 to 1 inch; light gray (2.5Y 7/2) silty clay loam, grayish brown (2.5Y 5/2) moist; moderate

medium platy structure; slightly hard, friable, sticky and plastic; few fine roots; common very fine and fine vesicular pores; strongly effervescent; very strongly alkaline (pH 9.2); abrupt smooth boundary.

2Ck1--1 to 8 inches; pale yellow (5Y 7/3) silty clay, olive (5Y 5/3) moist; massive; slightly hard, friable, sticky and plastic; common very fine and fine roots, few fine tubular and common very fine interstitial pores; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

2Ck2--8 to 30 inches; pale yellow (5Y 7/3) silty clay, olive (5Y 5/3) moist; weak medium prismatic structure parting to weak medium angular blocky; hard, firm, very sticky and plastic; few very fine roots; few fine tubular and common very fine interstitial pores; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

2C1--30 to 45 inches; light gray (5Y 7/2) silty clay, olive gray (5Y 5/2) moist; strong medium prismatic structure parting to strong medium angular blocky; very hard, very firm, very sticky and very plastic; few very fine roots; few very fine tubular and interstitial pores; slightly effervescent; strongly alkaline (pH 8.5); clear smooth boundary.

2C2--45 to 60 inches; light gray (5Y 7/2) silty clay, olive gray (5Y 5/2) moist; strong medium prismatic structure parting to strong medium angular blocky; very hard, very firm, very sticky and very plastic; few very fine roots; few very fine tubular and interstitial pores; strongly effervescent; strongly alkaline (pH 8.7).

Type location: Pershing County, Nevada; approximately 16 miles north of Gerlach in Hualapai Flat, 800 feet north and 1,200 feet west of the southeast corner of section 32, T. 35 N, R. 24 E; 40 degrees, 52 minutes, 15 seconds north latitude, 119 degrees, 16 minutes, 30 seconds west longitude.

Range in Characteristics:

Soil moisture: Intermittently moist in winter and spring and dry in summer and fall.

Soil temperature: 47 to 52 degrees F.

Depth to lacustrine materials: 1 to 10 inches.

Other features: Electroconductivity is 4 to 32 mmhos and exchangeable sodium percent is 15 to 60 at some depth between 1 and 36 inches.

A horizon:

Value--6 or 7 dry.

Chroma--1 or 2.

Reaction--Moderately alkaline through very strongly alkaline.

Effervescence--Noneffervescent through strongly effervescent.

C horizons:

Hue--10YR or 2.5Y.

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 or 3.

Texture--Silt loam or loam.

Reaction--Moderately alkaline or strongly alkaline.

Effervescence--Noneffervescent to violently effervescent.

Gypsum--Common in some pedons.

2C horizons:

Hue--10YR, 2.5Y or 5Y.

Value--7 or 8 dry, 4 through 6 moist.

Chroma--2 or 3.

Texture--Silty clay or clay.

Structure--Weak through strong, medium or coarse prismatic that commonly parts to medium or coarse angular blocky, or massive.

Other features--Some pedons have few to many silica coats on faces of peds. Gypsum is present in some subhorizon of some pedons. Some pedons have up to 10 percent durinodes.

Biga Series

The Biga series consists of very deep, well drained soils that formed in mixed alluvium with a component of volcanic ash overlying alluvium derived mainly from granitic rock. The Biga soils are on fan piedmonts and mountain-valley fans. Slopes are 2 to 8 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 53 degrees F.

Taxonomic class: Fine, montmorillonitic, mesic Duric Natrargids.

Typical pedon: Biga gravelly coarse sandy loam, 2 to 8 percent slopes, is located in Granite Springs Valley in an area of the Biga-Granshaw-Labkey association, map unit 180. (Colors are

for dry soil unless otherwise noted.) The soil surface is partially covered with 25 percent pebbles.

- A1--0 to 2 inches; pale brown (10YR 6/3) gravelly coarse sandy loam, brown (10YR 4/3) moist; weak thin platy structure; soft, very friable, nonsticky and nonplastic; few very fine roots; many fine vesicular and tubular pores; 20 percent pebbles; moderately alkaline (pH 8.2); clear smooth boundary.
- A2--2 to 4 inches; pale brown (10YR 6/3) coarse sandy loam, brown (10YR 4/3) moist; weak thin platy structure; slightly hard, very friable, nonsticky and slightly plastic; common very fine and few fine roots; many fine tubular pores; 5 percent pebbles; moderately alkaline (pH 8.2); abrupt smooth boundary.
- 2E--4 to 6 inches; very pale brown (10YR 7/3) loam with bleached sand grains, brown (10YR 4/3) moist; few fine faint yellowish brown (10YR 5/6) mottles and few fine black (10YR 2/1) stains; moderate thin platy structure; hard, very friable, slightly sticky and slightly plastic; few very fine and fine roots; many fine and medium vesicular pores; 5 percent pebbles; strongly alkaline (pH 8.8); abrupt smooth boundary.
- 3B_{tnk1}--6 to 10 inches; light brown (7.5YR 6/4) clay, brown (7.5YR 4/4) moist; strong fine columnar structure; hard, firm, very sticky and very plastic; many very fine and common fine exped roots; common fine tubular pores; continuous pressure faces on peds; few fine lime filaments; 2 percent pebbles; strongly effervescent; strongly alkaline (pH 9.0) clear smooth boundary.
- 3B_{tnk2}--10 to 12 inches; light brown (7.5YR 6/4) clay, brown (7.5YR 4/4) moist; moderate fine prismatic structure; hard, firm, very sticky and very plastic; many very fine and common fine exped roots; common fine tubular pores; continuous pressure faces on peds; common fine soft masses of lime and few fine lime filaments; 5 percent pebbles; strongly effervescent; strongly alkaline (pH 9.0); clear wavy boundary.
- 3B_{qk1}--12 to 20 inches; very pale brown (10YR 7/3) continuously weakly silica cemented gravelly coarse sandy loam, yellowish brown (10YR 5/4) moist; massive; extremely hard, firm, slightly sticky and slightly plastic; root mat capping horizon and few very fine roots in matrix; few very fine tubular pores; common

fine lime seams; 15 percent pebbles; strongly effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

3Bqk2--20 to 26 inches; very pale brown (10YR 7/3) discontinuously weakly silica cemented sandy loam, brown (10YR 5/3) moist; weak thin platy structure; hard, friable, slightly sticky and slightly plastic; common very fine roots; many very fine tubular pores; 30 percent hard, firm discontinuous weak silica cementation; few fine lime seams; 5 percent pebbles; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

3Bk--26 to 41 inches; very pale brown (10YR 7/3) gravelly coarse sandy loam, brown (10YR 5/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; common very fine and few fine roots; many fine interstitial pores; common fine lime seams and filaments; strongly effervescent; 25 percent pebbles; strongly alkaline (pH 8.6); clear wavy boundary.

4Bqk--41 to 60 inches; very pale brown (10YR 7/3) discontinuously weakly silica cemented gravelly loamy coarse sand, brown (10YR 5/3) moist; moderate thin platy structure; slightly hard, friable, nonsticky and nonplastic; common very fine roots; many fine interstitial pores; 50 percent hard, firm discontinuous weak silica cementation; common fine and medium lime seams on surfaces of plates; 20 percent pebbles; noneffervescent matrix; moderately alkaline (pH 8.4).

Type location: Pershing County, Nevada; approximately 15 miles northwest of Toulon in Granite Springs Valley, about 600 feet east and 2,400 feet north of the southwest corner of section 19, T. 26 N., R. 27 E.; 40 degrees, 06 minutes, 28 seconds north latitude, 119 degrees, 00 minutes, 02 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry; moist for short periods in late fall through early spring, dry late May through November.

Soil temperature: 53 to 56 degrees F.

Depth to Bq or Bqk horizon with continuous brittle matrix and base of the argillic horizon: 12 to 20 inches

Depth to lime: 4 to 11 inches.

A horizons:

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 or 3.

Reaction--Mildly alkaline or moderately alkaline.

Btk horizons:

Hue--7.5YR or 10YR.

Value--5 or 6 dry, 4 or 5 moist.

Chroma--3 through 6.

Texture--Clay, clay loam, sandy clay.

Clay content--35 to 45 percent.

Silt content--5 to 15 percent.

Sand--Mainly medium sand, coarse sand, and very coarse sand.

Rock fragments--Less than 15 percent fine pebbles.

Structure--Prismatic or columnar.

Reaction--Strongly alkaline or very strongly alkaline.

SAR--13 to 46.

Bq, Bk, and Bqk horizons:

Value--6 or 7 dry, 4 or 5 moist.

Chroma--3 or 4.

Texture--Stratified sandy loam through gravelly loamy coarse sand.

Clay content--2 to 10 percent.

Rock fragments--5 to 25 percent, mainly fine pebbles.

Structure--Platy or massive.

Reaction--Moderately alkaline through very strongly alkaline.

Silica cementation--Some subhorizon within 40 inches of the surface is discontinuously weakly cemented.

Bluewing Series

The Bluewing series consists of very deep, excessively drained soils that formed in very gravelly, sandy alluvium derived from mixed rock sources. The Bluewing soils are on fan piedmonts, beach plains, and inset fans. Slopes are 0 to 15 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 53 degrees F.

Taxonomic class: Sandy-skeletal, mixed, mesic Typic Torriorthents.

Typical pedon: Bluewing gravelly sandy loam, 2 to 8 percent slopes, is located about 0.75 mile

northwest of Toy in an area of the Bluewing-Toulon-Rock outcrop association, map unit 171. (Colors are for dry soils unless otherwise noted.) The soil surface is partially covered with 30 percent pebbles.

A--0 to 2 inches; pale brown (10YR 6/3) gravelly sandy loam, dark brown (10YR 4/3) moist; moderate thin platy structure; slightly hard, very friable, nonsticky and nonplastic; few very fine roots; many fine vesicular and interstitial pores; 30 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Bk1--2 to 13 inches; light yellowish brown (10YR 6/4) extremely gravelly loamy coarse sand, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine roots; many fine tubular and interstitial pores; thin lime coatings on undersides of rock fragments; 70 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

Bk2--13 to 20 inches; pale brown (10YR 6/3) extremely gravelly loamy coarse sand, dark brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; few very fine roots; many fine interstitial pores; thin lime coatings on undersides of rock fragments; 75 percent pebbles, 2 percent cobbles; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Bk3--20 to 35 inches; pale brown (10YR 6/3) weakly stratified extremely gravelly loamy coarse sand, dark brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; few very fine and fine roots; many fine tubular pores; thin lime coatings on undersides of rock fragments; 70 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Bk4--35 to 44 inches; pale brown (10YR 6/3) extremely gravelly loamy coarse sand, dark brown (10YR 4/3) moist; massive; loose, nonsticky and nonplastic; few very fine roots; many fine tubular pores; thin lime coatings on undersides of rock fragments; 70 percent pebbles, 2 percent cobbles; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

Bk5--44 to 60 inches; pale brown (10YR 6/3) extremely gravelly loamy coarse sand, dark brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; few very fine roots;

many fine interstitial pores; thin lime coatings on undersides of rock fragments; 65 percent pebbles, 2 percent cobbles; violently effervescent; strongly alkaline (pH 8.6).

Type location: Pershing County, Nevada; approximately 0.75 mile west of Toy; about 500 feet east and 2,400 feet south of the northwest corner of section 24, T. 25 N., R. 29 E.; 40 degrees, 01 minute, 19 seconds north latitude, 118 degrees, 40 minutes, 49 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry, intermittently moist in winter and early spring, dry from early May through October.

Soil temperature: 53 to 59 degrees F.

Reaction: Mildly alkaline through strongly alkaline.

A horizon:

Hue--10YR or 2.5Y

Value--5 through 7 dry, 3 through 5 moist.

Chroma--2 through 4.

Effervescence--Noneffervescent through violently effervescent.

Bk horizons:

Hue--10YR or 2.5Y.

Value--5 through 8 dry; 3 through 5 moist.

Chroma--2 through 4.

Texture--Stratified, dominantly loamy coarse sand or coarse sand but may include strata ranging from loamy sand to loam.

Clay content--Averages 4 to 8 percent.

Rock fragments--50 to 80 percent, mainly pebbles with up to 25 percent cobbles and stones; the pebbles are dominantly 3/4 to 1 1/4 inch in diameter.

Structure--Massive or single grain.

Boomstick Series

The Boomstick series consists of shallow, well drained soils that formed in residuum and colluvium from phyllite and slate. The Boomstick soils are on mountain sideslopes. Slopes are 15 to 75 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 50 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic Lithic Xerollic Haplargids.

Typical pedon: Boomstick very channery silt loam, 15 to 50 percent slopes, is located in the Trinity Range in an area of the Boomstick-Majuba association, map unit 132. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 50 percent channers, 5 percent flagstones, and 2 percent stones.

A1--0 to 2 inches; light brownish gray (2.5Y 6/2) very channery silt loam, very dark grayish brown (2.5Y 3/2) moist; moderate thin platy structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; many very fine and fine vesicular pores; 30 percent channers, 5 percent flagstones, 1 percent stones; moderately alkaline (pH 8.2); clear smooth boundary.

A2--2 to 5 inches; grayish brown (10YR 5/2) channery silt loam, dark brown (10YR 3/3) moist; weak thin platy structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine tubular pores; 10 percent channers, 5 percent flagstones, 1 percent stones; moderately alkaline (pH 8.2); clear wavy boundary.

Bt1--5 to 11 inches; brown (10YR 5/3) extremely channery loam, dark brown (10YR 4/3) moist; moderate fine subangular blocky structure; hard, firm, sticky and slightly plastic; common very fine, few fine and medium roots; common very fine tubular pores; few thin clay films on faces of peds; 50 percent channers, 10 percent flagstones; moderately alkaline (pH 8.2); clear wavy boundary.

Bt2--11 to 16 inches; dark brown (7.5YR 4/4) extremely channery clay loam, dark brown (7.5YR 3/4) moist; moderate fine angular blocky structure; hard, firm, sticky and plastic; few very fine roots, common matted roots along fractures; common very fine tubular pores; few thin clay films on faces of peds and lining pores; few thin lime coats on undersides of rock fragments; 60 percent channers, 20 percent flagstones; moderately alkaline (pH 8.2); clear wavy boundary.

R--16 inches; fractured phyllite.

Type location: Pershing County, Nevada; approximately 15 miles northwest of Lovelock in the Trinity Range; about 800 feet south and 400 feet west of the northeast corner of

section 13, T. 29 N., R. 30 E; 40 degrees, 23 minutes, 22 seconds north latitude, 118 degrees, 33 minutes, 06 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry, moist in winter and spring, dry in June through October.

Soil temperature: 47 to 52 degrees F.

Depth to bedrock: 14 to 20 inches.

Soil reaction: Mildly alkaline or moderately alkaline.

A horizons:

Hue--10YR or 2.5Y.

Value--5 or 6 dry, 3 or 4 moist.

Chroma--2 or 3.

Other features--Rock fragments are mainly channers or flagstones.

Bt horizons:

Hue--7.5YR, 10YR or 2.5Y.

Value--4 through 6 dry, 3 or 4 moist.

Chroma--2 through 4.

Texture--Extremely channery loam, extremely channery clay loam or very channery clay loam.

Clay content--Averages 23 to 35 percent.

Rock fragments--Averages 50 to 70 percent, mainly channers, some flagstone.

Structure--Subangular blocky or angular blocky.

Consistence--Slightly hard or hard dry, friable or firm moist.

Carbonates--Thin lime coats on undersides of rock fragments are common in any part; the upper part is noneffervescent in the matrix; some pedons may have a slightly effervescent matrix in the lower part directly above bedrock.

Boton Series

The Boton series consists of very deep, well drained soils that formed in a thin layer of loess and alluvium influenced by volcanic ash over lacustrine sediments. The Boton soils are on lake plain terraces. Slopes are 0 to 2 percent. The mean annual precipitation is about 7 inches and the mean annual temperature is about 53 degrees F.

Taxonomic class: Fine-silty, mixed (calcareous), mesic Durorthic Torriorthents.

Typical pedon: Boton silt loam, 0 to 2 percent slopes, is located about 5 miles south of Jungo in an area of the Boton-Playas association, map unit 150. (Colors are for dry soil unless otherwise noted.)

- A1--0 to 3 inches, light gray (10YR 7/2) silt loam, grayish brown (10YR 5/2) moist; weak thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; common very fine and fine vesicular pores; violently effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary.
- A2--3 to 10 inches; light gray (10YR 7/2) silt loam, grayish brown (10YR 5/2) moist; strong thin platy structure; hard, very friable, slightly sticky and slightly plastic; common very fine roots; many fine and medium vesicular pores; violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary.
- Bq--10 to 12 inches; light gray (10YR 7/2) silt loam, pale brown (10YR 6/3) moist; strong thin platy structure; hard, friable, slightly sticky and plastic; common very fine roots; common fine and medium tubular pores; 20 percent durinodes; violently effervescent; strongly alkaline (pH 9.0); clear smooth boundary.
- 2Bqk1--12 to 18 inches; light gray (2.5Y 7/2) silt loam stratified with thin lenses of silty clay loam and very fine sandy loam, light brownish gray (2.5Y 6/2) moist; common fine black (10YR 2/1) stains on faces of peds common fine distinct dark yellowish brown (10YR 4/4) relict mottles; prominent thin platelike bedding planes; slightly hard, very friable, sticky and plastic; many very fine and common fine roots; many fine tubular pores; 20 percent durinodes; few fine lime filaments; violently effervescent; very strongly alkaline (pH 9.2); abrupt smooth boundary.
- 2Bqk2--18 to 27 inches; light gray (2.5Y 7/2) silt loam stratified with thin lenses of silty clay loam and very fine sandy loam, light brownish gray (2.5Y 6/2) moist; few fine black (10YR 2/1) stains, many coarse distinct dark brown (7.5YR 4/4) relict mottles; massive; hard, friable, sticky and plastic; few very fine roots; few fine tubular pores; 50 percent durinodes; few fine lime filaments; violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary.
- 2Bk1--27 to 32 inches; light gray (2.5Y 7/2) silt loam stratified with thin lenses of silty clay loam and very fine sandy loam, light brownish gray (2.5YR 6/2) moist; few fine black (10YR 2/1)

stains on faces of peds, many coarse distinct dark brown (7.5YR 4/4) relict mottles; weak thin platelike bedding planes; slightly hard, very friable, sticky and plastic; few very fine roots; many fine tubular pores; few fine lime filaments; violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

- 2Bk2--32 to 60 inches; light brownish gray (2.5Y 6/2) silt loam stratified with thin lenses of silty clay loam and very fine sandy loam, light brownish gray (2.5Y 6/2) moist; few fine black (10YR 2/1) stains on faces of peds, common fine distinct dark yellowish brown (10YR 4/4) relict mottles; weak thin platelike bedding planes; slightly hard, very friable, sticky and plastic; few very fine roots; common fine tubular pores; few fine and medium lime filaments; few fine soft masses of gypsum; violently effervescent; strongly alkaline (pH 8.8).

Type location: Pershing County, Nevada; approximately 5 miles south of Jungo, in an unsurveyed area about 13,000 feet east and 5,000 feet north of the southeast corner of section 1, T. 34 N., R. 31 E.; 40 degrees, 50 minutes, 52 seconds north latitude, 118 degrees, 22 minutes, 48 seconds west longitude.

Range in Characteristics:

Soil moisture: Moist for short periods in winter and spring and dry May through early November.

Soil temperature: 53 to 57 degrees F.

Depth to lacustrine materials: 10 to 20 inches.

Profile reaction: Strongly alkaline or very strongly alkaline.

Depth to Bq or Bqk horizons: 8 to 20 inches.

Relict iron mottles: Common or many, faint or distinct, fine through coarse in the lacustrine sediments.

Control section:

Clay content--18 to 27 percent.

Texture--Averages silt loam with very thin strata of silty clay loam and very fine sandy loam.

Other features--Subhorizons with thin or very thin varves or lenses are common in the lacustrine sediments.

A horizons:

Hue--10YR or 2.5Y.

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 or 3.

Bq and 2Bqk horizons:

Hue--10YR or 2.5Y.
 Value--6 or 7 dry, 5 or 6 moist.
 Chroma--2 or 3.
 Structure--Platelike bedding planes or massive.
 Cementation--20 to 60 percent weakly or strongly cemented durinodes in a friable matrix.
 Calcium carbonate equivalent--Average 5 to 20 percent.
 Salinity--Moderate or strong.
 Exchangeable sodium--45 to 70 percent.

2Bk horizons:

Hue--10YR or 2.5Y
 Value--6 or 7 dry, 5 or 6 moist.
 Chroma--2 or 3.
 Structure--Platelike bedding planes or massive.
 Calcium carbonate equivalent--Averages 5 to 20 percent.
 Exchangeable sodium--55 to 70 percent.
 Gypsum filaments--Are lacking in parts of some pedons.

Burnborough Series

The Burnborough series consists of very deep, well drained soils that formed in residuum and colluvium weathered from andesite and rhyolite. Burnborough soils are on mountain sideslopes. Slopes are 15 to 50 percent. The mean annual precipitation is about 14 inches and the mean annual temperature is about 44 degrees F.

Taxonomic class: Loamy-skeletal, mixed, frigid
 Aridic Argixerolls.

Typical pedon: Burnborough very gravelly loam, 15 to 50 percent slopes, is located in the Seven Troughs Range in an area of the Cleavage-Burnborough association, map unit 221. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with 50 percent pebbles and 1 percent cobbles.

A1--0 to 3 inches; dark grayish brown (10YR 4/2) very gravelly loam; very dark brown (10YR 2/2) moist; moderate very fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine and few fine roots; many very fine interstitial pores; 35 percent

pebbles; neutral (pH 6.6); abrupt smooth boundary.

A2--3 to 8 inches; dark brown (10YR 4/3) very gravelly loam, very dark brown (10YR 2/2) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, common fine and few medium roots; common very fine tubular pores; 55 percent pebbles; neutral (pH 6.6); clear smooth boundary.

Bt1--8 to 18 inches; brown (10YR 5/3) very gravelly loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; hard, firm, sticky and plastic; common very fine and fine, few medium and coarse roots; common very fine and few fine tubular pores; 50 percent pebbles; many thin clay films on faces of peds and lining pores; neutral (pH 6.8); clear smooth boundary.

Bt2--18 to 27 inches; yellowish brown (10YR 5/4) very gravelly loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, sticky and plastic; common very fine, few fine and medium roots; common very fine and few fine tubular pores; common thin clay films on faces of peds and lining pores; 50 percent pebbles, 10 percent cobbles; neutral (pH 7.0) clear smooth boundary.

Bt3--27 to 38 inches; pale brown (10YR 6/3) very gravelly loam, brown (10YR 4/3) moist; moderate fine subangular blocky structure; slightly hard, friable, sticky and plastic; common very fine, few fine, medium and coarse roots; common very fine and few fine tubular pores; few thin clay films on faces of peds and lining pores; 45 percent pebbles, 10 percent cobbles; neutral (pH 7.0); clear smooth boundary.

Bt4--38 to 60 inches; light yellowish brown (10YR 6/4) very gravelly loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, slightly sticky and plastic; common very fine, few fine and medium roots; common very fine tubular pores; few thin clay films bridging sand grains and lining pores; 40 percent pebbles, 5 percent cobbles; neutral (pH 7.2)

Type location: Pershing County, Nevada; approximately 20 miles south of Sulphur in the Seven Troughs Range; about 200 feet east and 200 feet south of the northwest corner of section 18, T. 31 N., R. 29 E.; 40 degrees, 33 minutes, 33 seconds north latitude, 118

degrees, 46 minutes, 34 seconds west longitude.

Range in Characteristics:

Soil moisture: Moist in winter and spring, dry in summer and fall. Depth of wetting exceeds 30 inches in most years.

Soil temperature: 42 to 46 degrees F.

Reaction: Slightly acid or neutral throughout.

Mollic epipedon: 10 to 20 inches thick and includes the Bt1 horizon.

A horizons:

Value--4 or 5 dry, 2 or 3 moist.

Chroma--2 or 3.

Bt1 horizon:

Value--4 or 5 dry.

Chroma--2 or 3.

Texture--Very gravelly sandy loam or very gravelly loam.

Clay content--18 to 25 percent clay.

Rock fragments--35 to 50 percent.

Bt2, Bt3, and Bt4 horizons:

Value--5 or 6 dry, 3, 4, or 5 moist.

Chroma--3 or 4 dry.

Texture--Very gravelly loam or very gravelly clay loam.

Clay content--18 to 35 percent.

Rock fragments--35 to 60 percent, mainly pebbles.

Chumall Series

The Chumall series consists of very deep, moderately well-drained soils that formed in lacustrine materials overlain by mixed alluvium. The Chumall soils are on lake plain terraces. Slopes are 0 to 2 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 52 degrees F.

Taxonomic class: Fine-silty, mixed (calcareous), mesic Typic Torriorthents.

Typical pedon: Chumall silt loam, 0 to 2 percent slopes, is located in Granite Springs Valley in an area of the Kumiva-Labkey-Chumall association, in map unit 550. (Colors are for dry soil unless otherwise noted.)

Al--0 to 2 inches; pale brown (10YR 6/3) silt loam, brown (10YR 5/3) moist; moderate thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; many fine and common medium vesicular pores; strongly effervescent; strongly alkaline (pH 8.8); abrupt smooth boundary.

A2--2 to 5 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; moderate fine granular structure; soft, very friable, sticky and plastic; few very fine roots; many fine interstitial pores; strongly effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

Bw--5 to 9 inches; light yellowish brown (10YR 6/4) silt loam, dark yellowish brown (10YR 4/4) moist; weak thin platy structure; hard, friable, sticky and plastic; common very fine and fine roots; many fine and few medium tubular pores; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

Bk--9 to 19 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; moderate thin platy structure; hard, friable, sticky and plastic; few fine roots; few fine tubular pores; few fine soft masses of lime; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

2Cl--19 to 36 inches; pale olive (5Y 6/3) silty clay loam, olive (5Y 5/3) moist; common fine distinct brown (7.5YR 4/4) relict mottles; common fine black (10YR 2/1) stains; moderate fine prismatic structure parting to moderate thin platy; hard, friable, sticky and plastic; few fine roots; many fine and medium tubular pores; violently effervescent; strongly alkaline (pH 8.6); clear wavy boundary.

2C2--36 to 44 inches; pale yellow (5Y 7/3) silt loam, olive (5Y 5/3) moist; moderate thin platy bedding planes; hard, very friable, sticky and plastic; few fine roots; many fine tubular pores; violently effervescent; strongly alkaline (pH 8.6); clear wavy boundary.

3C3--44 to 60 inches; pale olive (5Y 6/3) fine sand, olive (5Y 5/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; many very fine interstitial pores; violently effervescent; strongly alkaline (pH 8.8).

Type location: Pershing County, Nevada; approximately 1 mile south of Bluewing Flat in Granite Springs Valley, about 700 feet north and 900 feet east of the southwest corner of section 28, T. 27 N., R. 27 E.; 40 degrees, 10 minutes, 32 seconds north latitude, 118

degrees, 57 minutes, 42 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry, moist for short periods in the winter and spring.

Soil temperature: 53 to 57 degrees F.

Depth to lacustrine deposits: 10 to 20 inches.

Control section:

Clay content--18 to 27 percent.

Other features--Mottles or black stains are relict.

Exchangeable sodium--Greater than 50 percent in the Bw and C horizons.

A horizons:

Hue--10YR or 2.5Y.

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 or 3.

Reaction--Moderately or strongly alkaline.

Bw horizon:

Hue--10YR or 2.5Y.

Value--5 through 7 dry, 3 through 5 moist.

Chroma--3 or 4.

Consistence--Very hard or hard dry, friable or firm moist, but is not both hard and firm.

Reaction--Strongly or very strongly alkaline.

2C horizons:

Hue--10YR, 2.5Y or 5Y.

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 or 3.

Texture--Stratified silt loam or silty clay loam.

Structure--Platy bedding planes or massive.

Reaction--Strongly or very strongly alkaline.

Segregated lime--Few relict soft masses of lime are common in any part.

Other features--Silty clay is common below a depth of 40 inches in some pedons.

Cleavage Series

The Cleavage series consists of shallow, well drained soils that formed in residuum and colluvium from rhyolite and other igneous rocks. Cleavage soils are on mountain sideslopes. Slopes are 30 to 75 percent. The mean annual precipitation is about 14 inches and the mean annual temperature is about 44 degrees F.

Taxonomic class: Loamy-skeletal, mixed, frigid

Lithic Argixerolls.

Typical pedon: Cleavage extremely gravelly loam, 50 to 75 percent slopes, is located in the Majuba Mountains, in an area of the Cleavage-Phliss-Majuba association, in map unit 220. (Colors are for dry soil unless otherwise noted). The soil surface is partially covered with 60 percent pebbles, 10 percent cobbles, and 1 percent stones.

A1--0 to 2 inches; grayish brown (10YR 5/2) extremely gravelly loam, very dark grayish brown (10YR 3/2) moist; weak thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; many fine vesicular pores; 60 percent pebbles; mildly alkaline (pH 7.6); clear smooth boundary.

A2--2 to 7 inches; brown (10YR 5/3) very gravelly loam, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky and plastic; common very fine roots; many fine tubular pores; 50 percent pebbles; mildly alkaline (pH 7.8); gradual smooth boundary.

Bt--7 to 15 inches; yellowish brown (10YR 5/4) very gravelly loam, dark brown (10YR 4/3) moist; weak medium subangular blocky structure; hard, friable, slightly sticky and plastic; common very fine roots; many fine tubular pores; common thin clay films on faces of peds and lining pores; 50 percent pebbles; mildly alkaline (pH 7.8); abrupt wavy boundary.

R--15 inches; hard, fractured bedrock.

Type location: Pershing County, Nevada; approximately 17 miles west of Imlay in the Majuba Range; about 2,500 feet east and 1,800 feet south of the northwest corner of section 8, T. 32 N., R. 31 E.; 40 degrees, 39 minutes, 22 seconds north latitude, 118 degrees, 31 minutes, 18 seconds west longitude.

Range in Characteristics:

Soil moisture: Moist in winter and spring, dry from July through October for 70 to 120 consecutive days.

Soil temperature: 44 to 47 degrees F.

Mollic epipedon thickness: 7 to 10 inches, does not include Bt horizon.

Reaction: Neutral or mildly alkaline.

Depth to bedrock: 14 to 20 inches.

Control section:

Clay content--20 to 35 percent.
 Rock fragments--50 to 80 percent, mostly pebbles or cobbles.

A horizons:

Value--4 or 5 dry, 2 or 3 moist.
 Chroma--2 or 3.

Bt horizon:

Hue--7.5YR or 10YR.
 Value--5 or 6 dry, 3 or 4 moist.
 Chroma--3 or 4.
 Texture--Very cobbly, extremely cobbly, very gravelly or extremely gravelly clay loam, very gravelly sandy clay loam, some pedons have very cobbly or very gravelly loam.
 Structure--Subangular blocky, angular blocky or massive.
 Consistence--Friable or firm, moist.

Coldent Series

The Coldent series consists of very deep, well drained soils that formed in mixed alluvium and lacustrine sediments with a component of volcanic ash. The Coldent soils are on relict alluvial flats, beach plains, and offshore bars. Slopes are 0 to 8 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 51 degrees F.

Taxonomic class: Coarse-loamy, mixed (calcareous), mesic Durorthidic Torriorthents.

Typical pedon: Coldent gravelly fine sand, 0 to 2 percent slopes, is located in Granite Springs Valley in an area of the Coldent-Isolde-Swangler association, in map unit 230. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with 15 percent pebbles.

A--0 to 9 inches; pale brown (10YR 6/3) gravelly fine sand, dark brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; common very fine and few fine roots; many very fine interstitial pores; 15 percent pebbles; moderately alkaline (pH 8.4); clear smooth boundary.

2Bqk1--9 to 13 inches; very pale brown (10YR 7/3) continuous weakly silica cemented fine sandy loam, brown (10YR 5/3) moist; moderate

thin platy structure; hard, firm, slightly sticky and slightly plastic; common very fine horizontally oriented exped roots; many very fine tubular pores; many thin silica coatings on faces of peds; 5 percent pebbles; slightly effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

2Bqk2--13 to 15 inches; very pale brown (10YR 7/3) continuous weakly silica cemented fine sandy loam, brown (10YR 5/3) moist; strong medium platy structure; hard, firm, slightly sticky and nonplastic; common very fine and few fine horizontally oriented exped roots; many very fine tubular pores; many thin silica coatings on faces of peds; common very thin laminar silica coatings on plates; thin and moderately thick strongly effervescent lime coatings on plates; 5 percent pebbles; slightly effervescent matrix; strongly alkaline (pH 9.0); clear smooth boundary.

2Bqky--15 to 19 inches; very pale brown (10YR 7/3) continuous weakly silica cemented gravelly fine sandy loam, brown (10YR 5/3) moist; strong thin platy structure; hard, firm, slightly sticky and nonplastic; common very fine horizontally oriented exped roots; many very fine tubular pores; many thin silica coatings faces of peds; many thin lime coatings on plates; many fine and medium segregated gypsum filaments; strongly effervescent; 15 percent pebbles; strongly alkaline (pH 8.8); clear smooth boundary.

3By1--19 to 27 inches; very pale brown (10YR 7/3) gravelly fine sandy loam, brown (10YR 5/3) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; few very fine tubular pores; 5 percent 5 to 15 millimeter durinodes; few fine segregated gypsum filaments; 15 percent pebbles; strongly effervescent; strongly alkaline (pH 8.8); gradual smooth boundary.

3By2--27 to 31 inches; very pale brown (10YR 7/3) fine sandy loam, brown (10YR 5/3) moist; massive; slightly hard, very friable; slightly sticky and slightly plastic; few very fine roots; few very fine tubular pores; 15 percent 5 to 15 millimeter durinodes; few fine segregated gypsum filaments; 5 percent pebbles; strongly effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

4Cy--31 to 40 inches; very pale brown (10YR 7/3) very gravelly loamy sand, brown (10YR 5/3) moist; few medium distinct light brown (7.5YR 6/4) relict mottles; massive; soft, very friable,

nonsticky and nonplastic; few very fine roots; common very fine tubular pores; common fine segregated gypsum filaments; 45 percent pebbles; slightly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

4C--40 to 60 inches; very pale brown (10YR 7/3) very gravelly coarse sand, dark grayish brown (10YR 4/2) moist; single grain; loose, nonsticky and nonplastic; few very fine roots; many fine interstitial pores; few thin strongly effervescent lime coatings and filaments on pebbles; 55 percent pebbles; noneffervescent matrix; moderately alkaline (pH 8.4).

Type location: Pershing County, Nevada; approximately 3 miles northeast of Adobe Flat and south of the Seven Troughs Range, about 300 feet west and 600 feet south of the northeast corner of section 12, T. 28 N., R. 27 E.; 40 degrees, 19 minutes, 04 seconds north latitude, 118 degrees, 53 minutes, 25 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry, moist for short periods in winter and spring, dry late May through November.

Soil temperature: 53 to 57 degrees F.

Profile reaction: Moderately alkaline or strongly alkaline.

Depth to weak silica cementation: 5 to 10 inches.

Control section:

Clay content--Averages 4 to 10 percent.

Rock fragments--Averages 15 to 35 percent, mainly pebbles.

Other features--Exchangeable sodium percentage of the subsurface horizons ranges from 25 to 50.

A horizon:

Chroma--2 or 3 dry.

Bqk horizons:

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 or 3.

Texture--Stratified fine sandy loam to loamy sand.

Clay content--6 to 12 percent.

Rock fragments--5 to 15 percent, mainly pebbles.

Consistence--Hard or very hard dry.

Gypsum--None to many, occurring mainly as filaments in the lower part.

Effervescence--Slightly effervescent through violently effervescent.

Secondary carbonates--None to moderately thick. Some pedons have only thin lime coatings that cover the undersides of the plates.

By horizons:

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 or 3.

Texture--Stratified gravelly fine sandy loam to gravelly loamy sand.

Clay content--2 to 10 percent.

Rock fragments--Averages 15 to 35 percent pebbles.

Consistence--Soft or slightly hard dry, very friable or friable moist.

Gypsum--Few to common filaments.

C horizon:

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 through 4.

Texture--Stratified very gravelly loamy sand to very gravelly coarse sand.

Rock fragments--35 to 60 percent pebbles.

Gypsum--None to common filaments.

Cresal Series

The Cresal series consists of very deep, well drained soils that formed in loess high in volcanic ash over lacustrine sediments. The Cresal soils are on lake-plain terraces. Slopes are 0 to 2 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 51 degrees F.

Taxonomic class: Coarse-silty, mixed (calcareous), mesic Durorthidic Torriorthents.

Typical pedon: Cresal silt loam, 0 to 2 percent slopes, is located about 8 miles southwest of Jungo, in map unit 190. (Colors are for dry soil unless otherwise noted.)

A1--0 to 2 inches; light brownish gray (10YR 6/2) silt loam, grayish brown (10YR 5/2) moist; moderate thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; many fine and common medium vesicular pores; strongly effervescent;

moderately alkaline (pH 8.2); clear smooth boundary.

A2--2 to 7 inches; light brownish gray (10YR 6/2) silt loam, grayish brown (10YR 5/2) moist; strong thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; many fine vesicular pores; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Bqk--7 to 13 inches; light gray (10YR 7/2) silt loam, brown (10YR 5/3) moist; few fine distinct strong brown (7.5YR 5/6) relict mottles; moderate thin platy structure; hard, very friable, slightly sticky and slightly plastic; common very fine and few fine exped roots; many fine and common medium vesicular pores; silica coatings on faces of peds and bridging mineral grains; common fine horizontal lime seams on plate surfaces; violently effervescent; very weak brittle matrix; strongly alkaline (pH 8.8); clear smooth boundary.

Bk--13 to 17 inches; pale brown (10YR 6/3) silt loam, brown (10YR 5/3) moist; weak thin platy structure; hard, very friable, slightly sticky and slightly plastic; few very fine roots; many very fine tubular pores; common thin horizontal lime seams on plate surfaces; violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

2Bqk--17 to 27 inches; pale brown (10YR 6/3) silt loam, brown (10YR 5/3) moist; common fine distinct light brown (7.5YR 6/4) relict mottles; weak thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; many very fine tubular pores; 35 percent weakly cemented durinodes; common thin horizontal lime seams on plate surfaces; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

2C1--27 to 38 inches; pale brown (10YR 6/3) silt loam, brown (10YR 5/3) moist; weak thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; many very fine tubular pores; few thin lenses of volcanic ash; 2 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

2C2--38 to 60 inches; pale brown (10YR 6/3) silt loam, brown (10YR 5/3) moist; common fine distinct light brown (7.5YR 6/4) relict mottles; massive; soft, very friable, slightly sticky and slightly plastic; few very fine roots; many very fine tubular pores; few thin lenses of volcanic ash; few fine segregated lime filaments;

violently effervescent; strongly alkaline (pH 8.6).

Type location: Pershing County, Nevada; approximately 8 miles southwest of Jungo in a unsurveyed area about 7,700 feet east and 100 feet south of the northeast corner of section 12, T. 34 N., R. 31 E.; 40 degrees, 50 minutes, 02 seconds north latitude, 118 degrees, 23 minutes, 56 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry, moist for short periods in the winter and spring, dry May through early November.

Soil temperature: 53 to 57 degrees F.

Profile reaction: Moderately alkaline or strongly alkaline.

Depth to the Bqk horizon: 4 to 9 inches.

Depth to lacustrine sediments: 10 to 20 inches.

Control section:

Clay content--8 to 15 percent.

A horizons:

Hue--10YR or 2.5Y.

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 or 3.

Bqk and Bk horizons:

Hue--10YR or 2.5Y.

Value--6 through 8 dry, 4 or 5 moist.

Chroma--2 or 3.

Texture--Stratified silt loam and very fine sandy loam.

Clay content--8 to 15 percent.

Structure--Prismatic or platy.

Consistence--Slightly hard to hard or very hard dry, very friable or friable moist.

Relict mottles--None to common.

Cementation--The upper part is very weakly cemented with silica coats and bridges on ped surfaces and commonly contains durinodes. Some part within 20 inches has 20 to 40 percent weak or moderately strong durinodes.

Sodicity--Slightly to strongly affected.

2C horizons:

Hue--10YR or 2.5Y dry or moist, moist hue of 5Y is common in some pedons.

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 through 4.

Texture--Stratified silt loam and very fine sandy loam. Thin lenses of loamy very fine sand and volcanic ash are common some pedons.

Clay content--8 to 18 percent.

Structure--Platy or massive.

Consistence--Soft to hard dry, very friable or friable moist.

Sodicity--Slightly to strongly affected.

Other features--Some pedons have strata of silty clay loam below a depth of 40 inches.

These soils are a taxadjunct to the Cresal series because they have up to 3 percent more clay in the control section than is defined for the series. This difference, however, does not significantly affect their use and management.

Deadyon Series

The Deadyon series consists of very deep, well drained soils that formed in alluvium derived mainly from granite. The Deadyon soils are on fan skirts, inset fans, and fan piedmonts. Slopes are 0 to 8 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 49 degrees F.

Taxonomic class: Coarse-loamy, mixed, mesic Xerollic Haplargids.

Typical pedon: Deadyon loam, 0 to 2 percent slopes, is located in Sage Hen Valley, in map unit 470. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with 5 percent pebbles.

A1--0 to 2 inches; pale brown (10YR 6/3) loam, dark brown (10YR 3/3) moist; weak thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; many fine vesicular pores; 5 percent pebbles; mildly alkaline (pH 7.8); clear smooth boundary.

A2--2 to 5 inches; pale brown (10YR 6/3) loam, dark brown (10YR 3/3) moist; weak thin platy structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; common very fine tubular pores; 5 percent pebbles; mildly alkaline (pH 7.8); clear smooth boundary.

Bt1--5 to 15 inches; pale brown (10YR 6/3) loam, dark yellowish brown (10YR 4/4) moist; weak medium subangular blocky structure; soft, very

friable, slightly sticky and slightly plastic; common very fine and fine roots; many fine and common medium tubular pores; few thin clay films lining pores and bridging mineral grains; 5 percent pebbles; moderately alkaline (pH 8.2); clear smooth boundary.

Bt2--15 to 24 inches; pale brown (10YR 6/3) loam, dark brown (10YR 4/3) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common fine and few medium tubular pores; few thin clay films lining pores and bridging mineral grains; 5 percent pebbles; moderately alkaline (pH 8.2); clear wavy boundary.

C--24 to 35 inches; light yellowish brown (10YR 6/4) sandy loam, dark brown (10YR 4/3) moist, stratified with few thin lenses of stratified gravelly coarse sand in parts of the horizon; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine and fine roots; few fine tubular pores; 5 percent pebbles; moderately alkaline (pH 8.2); clear smooth boundary.

2Ck1--35 to 43 inches; light yellowish brown (10YR 6/4) gravelly coarse sand, dark yellowish brown (10YR 4/4) moist; single grain; loose, nonsticky and nonplastic; few very fine roots; many fine interstitial pores; 30 percent pebbles; slightly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

2Ck2--43 to 60 inches; light yellowish brown (10YR 6/4) sandy loam, dark yellowish brown (10YR 4/4) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; few very fine tubular pores; few fine strongly effervescent segregated soft lime masses in a noneffervescent matrix; 8 percent pebbles; moderately alkaline (pH 8.4).

Type location: Pershing County, Nevada; approximately 5 miles east of Winnemucca Lake and north of Sage Hen Spring about 1,400 feet west and 1,700 feet south of the northeast corner of section 9, T. 26 N., R. 25 E.; 40 degrees, 08 minutes, 25 seconds north latitude, 119 degrees, 10 minutes, 39 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry, moist in winter and early spring, dry from June through October.

Soil temperature: 47 to 52 degrees F.

Depth to 2Ck horizon: 20 to 40 inches.

Depth to the base of the argillic horizon: 15 to 30 inches.

A horizons:

Hue--10YR or 2.5Y.

Value--5 or 6 dry, 3 or 4 moist, when the upper 7 inches is mixed, the value is lighter than 5.5 dry.

Chroma--2 or 3.

Reaction--Mildly alkaline or moderately alkaline.

Bt horizons:

Value--4 through 6 dry, 3 or 4 moist.

Chroma--2 through 4.

Texture--Loam, sandy loam, coarse sandy loam.

Clay content--12 to 18 percent.

Rock fragments--5 to 15 percent, mainly fine pebbles.

Structure--Weak or moderate subangular blocky or is massive.

Consistence--Soft or slightly hard dry, very friable or friable moist.

Reaction--Mildly alkaline or moderately alkaline.

Clay films--Few or common on faces of peds, bridging mineral grains or lining pores.

C horizon:

Chroma--3 or 4.

Texture--Loam, sandy loam, coarse sandy loam.

Clay content--3 to 8 percent.

Rock fragments--5 to 15 percent, mainly fine pebbles.

Structure--Platy.

Consistence--Soft or slightly hard dry, very friable or friable moist, slightly sticky or nonsticky wet.

Reaction--Mildly alkaline or moderately alkaline.

Ck horizons:

Hue--10YR or 2.5Y.

Value--5 through 7 dry, 3 through 5 moist.

Chroma--3 or 4.

Texture--Stratified sandy loam through gravelly coarse sand.

Clay content--Averages 3 to 7 percent.

Rock fragments--Averages 15 to 35 percent, mainly fine pebbles; some parts contain from 5 to 60 percent.

Structure--Platy, massive or single grain.

Consistence--Loose, soft or slightly hard dry, loose or very friable moist; nonsticky or slightly sticky wet.

Reaction--Moderately alkaline or strongly alkaline.

Carbonates--Noneffervescent through strongly effervescent.

Segregated lime--Few or common fine lime filaments in the lower part.

Dedmount Series

The Dedmount series consists of very deep, moderately well drained soils that formed in mixed alluvium and lacustrine sediments. Dedmount soils are on lake plain terraces. Slopes are 0 to 2 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 52 degrees F.

Taxonomic class: Fine, montmorillonitic (calcareous), mesic Aquic Torriorthents.

Typical pedon: Dedmount loam, 0 to 2 percent slopes, is located in the Black Rock Desert in an area of the Dedmount-Umberland, Umberland, ponded association, in map unit 245. (Colors are for dry soil unless otherwise noted.)

A--0 to 2 inches; light brownish gray (10YR 6/2) loam, dark grayish brown (10YR 4/2) moist; moderate medium platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; common very fine and fine vesicular pores; slightly effervescent; strongly alkaline (pH 8.9); abrupt smooth boundary.

C1--2 to 8 inches; light brownish gray (2.5Y 6/2) silty clay, dark grayish brown (2.5Y 4/2) moist; massive; very hard, firm, very sticky and very plastic; few very fine and fine roots; common very fine tubular pores; slightly effervescent; very strongly alkaline (pH 9.2); clear smooth boundary.

C2--8 to 20 inches; light brownish gray (2.5Y 6/2) silty clay loam, grayish brown (2.5Y 5/2) moist; moderate fine angular blocky structure; slightly hard, very friable, very sticky and very plastic; few very fine and fine roots; common very fine tubular pores; strongly effervescent; very strongly alkaline (pH 9.3); clear smooth boundary.

C3--20 to 44 inches; light brownish gray (2.5Y 6/2) silty clay loam, grayish brown (2.5Y 5/2) moist; common very fine distinct strong brown (7.5YR 5/6) mottles; moderate fine angular

blocky structure; slightly hard, very friable, very sticky and very plastic; few very fine roots; common very fine tubular pores; violently effervescent; strongly alkaline (pH 8.7); clear smooth boundary.

C4--44 to 60 inches; light brownish gray (2.5Y 6/2) silty clay loam, grayish brown (2.5YR 5/2) moist; common very fine distinct strong brown (7.5YR 5/6) mottles; moderate fine angular blocky structure; slightly hard, very friable, very sticky and very plastic; slightly effervescent; strongly alkaline (pH 8.8)

Type location: Washoe County, Nevada; approximately 9 miles north of Gerlach in Hualapai Flat, 150 feet south and 800 feet west of the north east corner of section 1, T. 33 N., R. 23 E.; 40 degrees, 46 minutes, 52 seconds north latitude, 119 degrees, 18 minutes, 52 seconds west longitude. This type location is outside the survey area due to the small acreage involved in joining the Washoe County, Nevada, Central Part Soil Survey Area.

Range in Characteristics:

Soil moisture: Usually dry, moist for short periods during winter and early spring otherwise dry in the summer and autumn. The soil is saturated between 4 and 5 feet for short periods in the late winter.

Soil temperature: 54 to 59 degrees F.

Carbonates: Slightly through violently effervescent.

Control section:

SAR--25 to 50, usually decreasing with depth.

Clay content--35 to 45 percent.

A horizon:

Value--6 dry, 4 or 5 moist.

Chroma--2, 3, or 4 dry, moist.

C horizons:

Hue--10YR or 2.5Y.

Value--6 dry, 4 or 5 moist.

Chroma--2 through 4.

Texture--Silty clay loam or silty clay with less than 15 percent fine sand or coarser.

Reaction--Strongly alkaline or very strongly alkaline.

Mottles--Present in the lower part.

Structure--Massive or angular blocky.

Devada Series

The Devada series consists of shallow, well drained soils that formed in residuum weathered dominantly from rhyolite. Devada soils are on convex mountain sideslopes. Slopes are 15 to 50 percent. The mean annual precipitation is about 12 inches and the mean annual temperature is about 47 degrees F.

Taxonomic class: Clayey, montmorillonitic, mesic Lithic Argixerolls.

Typical pedon: Devada very cobbly loam, 15 to 50 percent slopes, is located in the Selenite Range in an area of the Devada-Rock outcrop complex, in map unit 250. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with 30 percent gravel, 15 percent cobbles, and 2 percent stones.

A1--0 to 2 inches; grayish brown (10YR 5/2) very cobbly loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine roots; many very fine tubular pores; 25 percent pebbles, 15 percent cobbles, 2 percent stones; neutral (pH 6.6); clear smooth boundary.

A2--2 to 6 inches; grayish brown (10YR 5/2) very cobbly loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine and common fine roots; many very fine and common fine tubular pores; 15 percent pebbles, 20 percent cobbles, 1 percent stones; neutral (pH 6.6); abrupt smooth boundary.

Bt--6 to 16 inches; brown (10YR 5/3) gravelly clay, dark brown (10YR 3/3) moist; weak medium angular blocky structure; hard, firm, very sticky and very plastic; common very fine and few fine roots; common very fine and few fine tubular pores; many thin clay films on faces of peds and lining pores; 20 percent pebbles, 2 percent cobbles, 5 percent stones; neutral (pH 7.0); abrupt wavy boundary.

R--16 inches; rhyolite.

Type location: Pershing County, Nevada;

approximately 4 miles east of Empire in an unsurveyed area; about 19,340 feet east and 7,000 feet south of the Southeast corner of section 13, T. 31 N., R. 23 E.; 40 degrees, 32 minutes, 32 seconds north latitude, 119 degrees, 14 minutes, 28 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry, moist in winter and spring, dry in summer through late fall.

Soil temperature: 48 to 53 degrees.

Mollic epipedon: 7 to 20 inches thick, includes all or part of the argillic horizon.

Combined thickness of A and Bt horizons: 12 to 20 inches.

Depth to bedrock: 12 to 20 inches.

Profile reaction: Slightly acid or neutral.

Control section:

Clay content--40 to 60 percent.

Rock fragments--0 to 30 percent, mainly pebbles.

A horizons:

Value--4 or 5 dry, 2 or 3 moist. Some pedons have a thin surface layer with value of 6 dry, but when the upper 7 inches are mixed, value is less than 5.5 dry.

Chroma--2 or 3.

Bt horizon:

Hue--7.5YR or 10YR.

Value--4 through 6 dry, 3 or 4 moist.

Chroma--2 through 4.

Texture--Dominantly clay or gravelly clay, commonly with thin layers of clay loam.

Dorper Series

The Dorper series consists of very deep, well drained soils that formed in alluvium from mixed rock sources with a component of loess and volcanic ash. The Dorper soils are on fan piedmont remnants. Slopes are 2 to 15 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 53 degrees F.

Taxonomic class: Fine, montmorillonitic, mesic Duric Natrargids.

Typical pedon: Dorper extremely gravelly very fine sandy loam, 2 to 8 percent slopes, is located about 16 miles west of Imlay in an area of the Dorper, stony-Jerval-Dorper association, in map unit 204. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with 70 percent pebbles, 5 percent cobbles, and 1 percent stones.

A1--0 to 2 inches; pale brown (10YR 6/3) extremely gravelly very fine sandy loam, brown (10YR 4/3) moist; weak thin platy structure; soft, very friable, nonsticky and slightly plastic; few very fine roots; common fine vesicular pores; 65 percent pebbles; slightly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

A2--2 to 5 inches; pale brown (10YR 6/3) gravelly very fine sandy loam, brown (10YR 4/3) moist; weak thin platy structure; soft, very friable, nonsticky and slightly plastic; few very fine roots; many fine tubular pores; 15 percent pebbles; slightly effervescent; moderately alkaline (pH 8.4); clear wavy boundary.

E--5 to 7 inches; light gray (10YR 7/2) silt loam with a high content of volcanic ash, pale brown (10YR 6/3) moist; strong thin platy structure; slightly hard, very friable, slightly sticky and plastic; common very fine and fine roots; many very fine and few fine tubular pores; 5 percent pebbles; violently effervescent; strongly alkaline (pH 9.0); abrupt smooth boundary.

2B_{tnk1}--7 to 10 inches; pale brown (10YR 6/3) clay; dark brown (7.5YR 4/4) moist; moderate fine prismatic structure; hard, friable, very sticky and very plastic; many very fine and common fine roots; many very fine and common fine tubular pores; many thin clay films on faces of peds and lining pores; few fine lime filaments and soft masses and thin lime coats on undersides of pebbles; 5 percent pebbles; slightly effervescent; strongly alkaline (pH 8.8); gradual smooth boundary.

2B_{tnk2}--10 to 17 inches; pinkish gray (7.5YR 6/2) gravelly clay loam, brown (7.5YR 5/4) moist; moderate fine prismatic structure; hard, firm, very sticky and very plastic; many very fine and common fine roots; many very fine tubular pores; many thin clay films on faces of peds and lining pores; many fine lime seams and thin lime coats on undersides of pebbles; 15 percent pebbles; strongly effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

3Bqk--17 to 26 inches; very pale brown (10YR 7/3) very gravelly coarse sandy loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, slightly sticky and slightly plastic; common very fine and few fine roots; few very fine tubular pores; 30 percent moderately cemented durinodes and 30 percent weak discontinuous silica cementation; thin lime coats on entirety of rock surfaces; 35 percent pebbles, 5 percent cobbles; violently effervescent; moderately alkaline (pH 8.4); clear wavy boundary.

4Bk--26 to 60 inches; light gray (10YR 7/2) extremely gravelly sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, slightly sticky and slightly plastic; few very fine roots; few very fine tubular pores; 65 percent pebbles, 5 percent cobbles; thin lime coats on undersides of rock fragments; violently effervescent; moderately alkaline (pH 8.0)

Type location: Pershing County, Nevada; approximately 16 miles west of Imlay, in an unsurveyed area, about 3,500 feet east and 1,600 feet north of the southeast corner of section 25, T. 33 N., R. 31 E.; 40 degrees, 41 minutes, 39 seconds north latitude, 118 degrees, 24 minutes, 52 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry, moist for short periods in winter and early spring, dry late May through November.

Soil temperature: 53 to 57 degrees F.

Depth to the base of the natric horizon: 10 to 20 inches.

Depth to the Bqk horizon: 10 to 20 inches.

Depth to segregated lime: 4 to 18 inches.

Profile reaction: Moderately alkaline or strongly alkaline.

A and E horizons:

Value--6 or 7 dry, 4 through 6 moist.

Chroma--2 through 4.

Effervescence--Varies from noneffervescent to violently effervescent due to eolian surface recharge of lime.

Btk horizons:

Hue--7.5YR or 10YR.

Value--5 or 6 dry, 4 or 5 moist.

Chroma--2 through 6.

Texture--Clay or gravelly clay loam.

Clay content--35 to 45 percent.

Rock fragments--5 to 25 percent, mainly pebbles.

Structure--Prismatic, although some pedons are massive when moist.

Consistence--Friable or firm moist.

SAR--13 to 40.

Carbonates--The matrix in the upper part is noneffervescent to slightly effervescent, with none to few lime filaments or soft masses of lime. The lower matrix in the lower part is slightly effervescent or strongly effervescent and has common or many filaments or soft masses of lime.

Gypsum--Some pedons have few fine filaments in the lower part.

Bqk and Bk horizons:

Value--5 through 7 dry, 3 through 5 moist.

Chroma--2 through 4.

Texture--Extremely gravelly sandy loam, very gravelly sandy loam or very gravelly coarse sandy loam.

Clay content--8 to 15 percent.

Rock fragments--40 to 75 percent, mainly pebbles.

Cementation (Bqk horizon)--20 to 40 percent weakly through strongly cemented durinodes in a friable matrix or has weak through strong discontinuous silica cementation with common thin discontinuous silica laminae; continuous weakly silica cemented strata are common below a depth of 40 inches in some pedons.

Other features--In some pedons, loamy coarse sand is common at some depth below 40 inches.

Eaglerock Series

The Eaglerock series consists of moderately deep, well drained soils that formed in residuum and colluvium derived from granite. The Eaglerock soils are on concave mountain sideslopes. Slopes are 15 to 50 percent. The mean annual precipitation is about 12 inches and the mean annual temperature is about 47 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic Aridic Argixerolls.

Typical pedon: Eaglerock gravelly coarse sandy loam, 30 to 50 percent slopes, extremely bouldery, is located in the Lava Beds in an area of the Acrelane-Arclay-Eaglerock association, in map unit 1204. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with 25 percent pebbles, 15 percent cobbles, and 15 percent boulders.

- A1--0 to 2 inches; grayish brown (10YR 5/2) gravelly coarse sandy loam, very dark grayish brown (10YR 3/2) moist; moderate thin platy structure; slightly hard, very friable, nonsticky and slightly plastic; common very fine roots; many very fine vesicular and common very fine tubular pores; 20 percent pebbles; neutral (pH 7.0); clear smooth boundary.
- A2--2 to 5 inches; grayish brown (10YR 5/2) sandy loam, very dark grayish brown (10YR 3/2) moist; weak, very thin platy structure; soft, very friable, slightly sticky and slightly plastic; many very fine, few fine, and medium roots; many very fine tubular pores; 12 percent pebbles; neutral (pH 7.0); clear smooth boundary.
- Bt1--5 to 12 inches; grayish brown (10YR 5/2) very gravelly loam, dark brown (10YR 3/3) moist; weak fine and medium subangular blocky structure; slightly hard, very friable, sticky and plastic; many very fine, few fine, and medium roots; many very fine tubular pores; few thin clay films lining pores and bridging sand grains; 35 percent pebbles, 3 percent cobbles; neutral (pH 7.0); gradual smooth boundary.
- Bt2--12 to 19 inches; grayish brown (10YR 5/2) very gravelly sandy clay loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; slightly hard, very friable, sticky and plastic; common very fine, few fine, and medium roots; common very fine tubular pores; few thin clay films lining pores and bridging sand grains; 40 percent pebbles, 5 percent cobbles; neutral (pH 6.8); abrupt smooth boundary.
- Bt3--19 to 31 inches; yellowish brown (10YR 5/4) very gravelly sandy clay loam, brown (10YR 4/3) moist; moderate fine subangular blocky structure; slightly hard, very friable, sticky and plastic; common very fine, few fine, and medium roots; common very fine tubular pores; few thin clay films lining pores and bridging sand grains; 40 percent pebbles, 3 percent cobbles; neutral (pH 6.8); abrupt wavy boundary.

Cr--31 to 60 inches; soft, weathered granitic grus with few very fine roots along weak fractures.

Type location: Pershing County, Nevada, approximately 40 miles northwest of Lovelock near the Lava Beds in an unsurveyed area about 13,300 feet north and 1,400 feet east of the northwest corner of section 5, T. 30 N., R. 27 E., 40 degrees, 32 minutes, 16 seconds north latitude, 118 degrees, 58 minutes, 49 seconds west longitude.

Range in Characteristics:

Soil moisture: Moist in winter and spring, dry from June through October.

Soil temperature: 47 to 50 degrees F.

Mollic epipedon thickness: 12 to 20 inches and includes the upper part of the argillic horizon.

Depth to the paralithic contact: 20 to 40 inches.

Profile reaction: Slightly acid or neutral.

A horizons:

Value--4 or 5 dry.

Chroma--2 or 3.

Bt horizons:

Hue--10YR or 7.5YR.

Value--5 or 6 dry, 3 or 4 moist.

Chroma--2 through 4.

Texture--Very gravelly loam, very gravelly sandy loam, very gravelly sandy clay loam.

Clay content--18 to 27 percent.

Rock fragments--35 to 50 percent, mainly fine pebbles.

Consistence--Slightly hard or hard dry, very friable or friable moist.

Envol Series

The Envol series consists of very shallow and shallow, well drained soils that formed in residuum from welded tuff. The Envol soils are on sideslopes of foothills and mountains. Slopes are 15 to 50 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 52 degrees F.

Taxonomic class: Loamy, mixed, mesic Lithic Haplargids.

Typical pedon: Envol gravelly loam, 30 to 50 percent slopes, is located in the Trinity Range in an area of the Envol-Frines-Rock outcrop association, in map unit 300. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with 25 percent pebbles and 5 percent cobbles.

A--0 to 3 inches; pale brown (10YR 6/3) gravelly loam, brown (10YR 5/3) moist; moderate thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; many fine and few medium vesicular pores; 15 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.

Btk1--3 to 7 inches; yellowish brown (10YR 5/6) clay, yellowish brown (10YR 5/4) moist; weak very fine subangular blocky structure; slightly hard, very friable, sticky and very plastic; many very fine and few fine roots; many very fine tubular pores; few thin clay films on faces of peds; few thin lime coats on undersides of rock fragments; 10 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

Btk2--7 to 10 inches; pale yellow (2.5Y 7/4) gravelly clay loam, light olive brown (2.5Y 5/4) moist; moderate fine subangular blocky structure; slightly hard, very friable, sticky, and plastic; many very fine and few fine roots; many very fine tubular pores; few thin clay films on faces of peds; common thin lime coats on undersides of rock fragments; 30 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.

R--10 inches; welded tuff with the upper 1 to 2 inches consisting of weathered tuff.

Type location: Pershing County, Nevada; approximately 4.7 miles southwest of Toulon, about 1,900 feet east and 300 feet north of the southwest corner of section 9, T. 25 N., R. 29 E.; 40 degrees, 02 minutes, 39 seconds north latitude, 118 degrees, 43 minutes, 52 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry, moist for short periods in winter and spring, dry late May through November.

Soil temperature: 53 to 59 degrees F.

Depth to lithic contact: 5 to 14 inches.

Control section:

Clay content--Averages 27 to 35 percent.

Rock fragments--Averages 10 to 35 percent, mostly pebbles.

Effervescence--Slightly effervescent to violently effervescent.

Other features--A high degree of geologic banding is present resulting in a wide range of hue reflecting lithochromic colors.

A horizon:

Hue--5YR, 7.5YR, 10YR, 2.5Y or 5Y.

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 through 4.

Btk horizons:

Hue--7.5YR, 10YR or 2.5Y.

Value--5 through 7 dry, 4 or 5 moist.

Chroma--2 through 6 dry, 2 through 4 moist.

Texture--Clay, gravelly clay or gravelly clay loam.

Clay content--30 to 50 percent.

Rock fragments--10 to 35 percent, mainly pebbles.

Reaction--Moderately alkaline or strongly alkaline.

Frines Series

The Frines series consists of moderately deep, well drained soils that formed in residuum from welded tuff. The Frines soils are on crests of low foothills. Slopes are 4 to 15 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 52 degrees F.

Taxonomic class: Fine, montmorillonitic, mesic Typic Haplargids.

Typical pedon: Frines gravelly loam, 4 to 15 percent slopes, is located in the Trinity Range in an area of Envol-Frines-Rock outcrop association, in map unit 300. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with 30 percent pebbles.

A--0 to 3 inches; very pale brown (10YR 7/3) gravelly loam, dark brown (10YR 4/3) moist; strong thick platy structure parting to strong thin platy; slightly hard, friable, sticky and plastic; few very fine roots; many very fine, common fine and medium vesicular and common fine tubular pores; 15 percent pebbles;

moderately alkaline (pH 8.4); clear smooth boundary.

Btk1--3 to 7 inches; light yellowish brown (10YR 6/4) clay, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, friable, sticky and very plastic; common very fine and few fine roots; common fine tubular pores; common thin clay films on faces of peds and lining pores; effervescent in isolated spots; moderately alkaline (pH 8.4); clear smooth boundary.

Btk2--7 to 13 inches; light yellowish brown (10YR 6/4) gravelly clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, friable, sticky and very plastic; common very fine, few fine, and medium roots; common very fine, few fine, and medium tubular pores; common thin clay films on faces of peds and lining pores; many moderately thick strongly effervescent lime coatings on undersides of rock fragments; 15 percent pebbles; slightly effervescent matrix; moderately alkaline (pH 8.4); clear wavy boundary.

Bk--13 to 24 inches; very pale brown (10YR 7/3) very gravelly sandy loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; common very fine and few fine roots; few very fine tubular pores; thin lime coatings on all sides of rock fragments; 50 percent pebbles; violently effervescent; strongly alkaline (pH 8.8); clear wavy boundary.

Cr--24 to 47 inches; weathered tuff with many thin lime coatings on faces of fractures and common very fine roots in the upper fractures; clear wavy boundary.

R--47 inches; welded tuff.

Type location: Pershing County, Nevada; approximately 4 miles west of Toy in the Trinity Range; about 2,600 feet west and 2,400 feet south of the northeast corner of section 20, T. 25 N., R. 29 E.; 40 degrees, 01 minute, 18 seconds north latitude, 118 degrees, 44 minutes, 52 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry, moist for short periods in the winter and spring, dry late May through November.

Soil temperature: 53 to 57 degrees F.

Depth to paralithic contact: 20 to 30 inches.

Depth to lithic contact: 40 to 60 inches.

Depth to the base of the argillic horizon: 10 to 17 inches.

Profile reaction: Moderately alkaline or strongly alkaline.

Btk horizons:

Chroma--3 or 4 dry or moist.

Texture--Clay, clay loam, or gravelly clay loam.

Clay content--35 to 45 percent.

Rock fragments--0 to 25 percent, mainly pebbles.

Structure--Subangular blocky, prismatic or massive.

Consistence--Very plastic or plastic wet.

Carbonates--The upper part is non-effervescent or slightly effervescent in the matrix. The lower part is slightly effervescent or strongly effervescent in the matrix. Parts of some pedons lack secondary carbonates.

Bk horizon:

Value--6 or 7 dry; 4 or 5 moist.

Chroma--3 or 4 dry or moist.

Texture--Gravelly sandy loam or very gravelly sandy loam.

Clay content--3 to 10 percent.

Rock fragments--20 to 50 percent, mainly pebbles.

Genegraf Series

The Genegraf series consists of very deep, well drained soils formed in alluvium derived from mixed volcanic rocks. The Genegraf soils are on fan piedmont remnants. Slopes are 2 to 8 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 52 degrees F.

Taxonomic class: Fine-loamy, mixed, mesic Duric Natrargids

Typical pedon: Genegraf very gravelly very fine sandy loam, 2 to 8 percent slopes, is located in Granite Springs Valley in an area of the Genegraf-Bluewing-Dorper association, in map unit 402. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with approximately 45 percent pebbles.

A1--0 to 2 inches; light brownish gray (10YR 6/2) very gravelly very fine sandy loam, dark grayish brown (10YR 4/2) moist; moderate thin and medium platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; many very fine and fine, common medium vesicular pores; 45 percent pebbles; slightly effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.

A2--2 to 5 inches; pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; weak fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and few fine roots; many very fine interstitial pores; few coarse rounded soft masses of lime; 10 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Btk1--5 to 7 inches; light yellowish brown (10YR 6/4) clay loam, dark yellowish brown (10YR 4/4) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, sticky and plastic; common very fine roots; common very fine interstitial and few very fine tubular pores; common moderately thick clay films on faces of peds and lining pores; many fine irregularly shaped soft masses of lime; 10 percent pebbles; strongly effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

Btk2--7 to 12 inches; pale brown (10YR 6/3) gravelly clay loam, dark yellowish brown (10YR 4/4) moist; moderate fine and medium prismatic structure; slightly hard, friable, sticky and plastic; common very fine roots; common very fine and few fine tubular pores; common moderately thick clay films on faces of peds and lining pores; common fine irregularly shaped soft masses of lime; 20 percent pebbles; strongly effervescent; strongly alkaline (pH 8.8); clear wavy boundary.

2Bqk1--12 to 21 inches; light yellowish brown (10YR 6/4) very gravelly sandy loam, yellowish brown (10YR 5/4) moist; massive; hard, firm, nonsticky and nonplastic; few very fine roots; common very fine and fine interstitial pores; lime coatings on rock fragments, disseminated lime in matrix; 45 percent pebbles, 5 percent cobbles; strongly effervescent; continuous brittle matrix; moderately alkaline (pH 8.2); gradual smooth boundary.

2Bqk2--21 to 60 inches; light yellowish brown (10YR 6/4) very gravelly loamy sand, yellowish brown (10YR 5/4) moist; massive; slightly hard,

very friable, nonsticky and nonplastic; few very fine roots; common very fine and fine interstitial pores; about 10 percent discontinuous weakly silica cemented lenses; common lime coatings on rock fragments, disseminated lime in matrix; few fine filaments of gypsum; 45 percent pebbles, 10 percent cobbles; strongly effervescent; moderately alkaline (pH 8.2).

Type location: Pershing County, Nevada; approximately 10 miles west of Toulon in Granite Springs Valley; about 650 feet west and 750 feet south of the northeast corner of section 9, T. 25 N., R. 28 E.; 40 degrees, 03 minutes, 20 seconds north latitude, 118 degrees, 50 minutes, 05 seconds west longitude.

Range in Characteristics:

Soil moisture: Moist November to May, dry June to October.

Soil temperature: 53 to 59 degrees F.

Depth to base of natric horizon: 11 to 24 inches.

Depth to continuous weak silica cementation--11 to 24 inches.

A horizons:

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 or 3.

Effervescence--None to strongly effervescent in the upper part, slightly effervescent to violently effervescent in the lower part.

Reaction--Moderately alkaline through very strongly alkaline.

Btk horizons:

Hue--10YR or 7.5YR.

Value--5 or 6 dry, 4 or 5 moist.

Chroma--3 or 4.

Texture (less than 2 millimeter fraction)--Loam, clay loam, sandy clay loam.

Clay content--25 to 35 percent.

Rock fragments--10 to 25 percent pebbles when mixed, usually increasing with depth.

Effervescence--Strongly effervescent or violently effervescent throughout.

Reaction--Strongly alkaline or very strongly alkaline.

Exchangeable sodium--35 to 80 percent.

Bqk and Bk horizons:

Value--6, 7, or 8 dry, 5 or 6 moist.

Chroma--2 through 4.

Texture (less than 2 millimeter fraction)--Sandy loam, fine sandy loam, loamy sand, loam, thin Bqk horizons underlying the natric horizons of some pedons are gravelly clay loam.

Rock fragments--25 to 50 percent, mainly pebbles, increasing with depth, with up to 60 percent in the lower part.

Cementation--Weak continuous brittle matrix in the upper part of the Bqk horizon and weak continuous or discontinuous cementation, or 0 to 30 percent weakly to strongly cemented durinodes in the lower part.

Reaction--Moderately alkaline through very strongly alkaline.

Granshaw Series

The Granshaw series consists of very deep, well drained soils that formed in alluvium from granitic sources. The Granshaw soils are on fan aprons, fan piedmonts, mountain valley fans, and fan skirts. Slopes are 0 to 8 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 53 degrees F.

Taxonomic class: Coarse-loamy, mixed, mesic Typic Haplargids

Typical pedon: Granshaw gravelly coarse sandy loam, 2 to 8 percent slopes, is located in Granite Springs Valley in an area of the Biga-Granshaw-Labkey association, in map unit 180. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with about 20 percent pebbles.

A1--0 to 2 inches; pale brown (10YR 6/3) gravelly coarse sandy loam, brown (10YR 4/3) moist; weak thin platy structure; soft, very friable, nonsticky and nonplastic; common very fine roots; common very fine and fine vesicular and common fine interstitial pores; 15 percent pebbles; moderately alkaline (pH 8.2); abrupt smooth boundary.

A2--2 to 8 inches; pale brown (10YR 6/3) coarse sandy loam, brown (10YR 4/3) moist; weak thin platy structure; soft, very friable, nonsticky and nonplastic; few very fine, fine, and medium roots; many very fine and few fine tubular pores; 10 percent pebbles; strongly alkaline (pH 8.6) clear smooth boundary.

E--8 to 13 inches; very pale brown (10YR 7/3) coarse sandy loam, brown (10YR 4/3) moist; weak thin platy structure; slightly hard, very friable, nonsticky and nonplastic; few very fine roots; common very fine and few fine tubular pores; 10 percent pebbles; strongly alkaline (pH 8.8); clear smooth boundary.

Bt--13 to 17 inches; light yellowish brown (10YR 6/4) coarse sandy loam, dark yellowish brown (10YR 4/4) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine and few fine tubular pores; common thin clay films on faces of peds and bridging sand grains; 10 percent pebbles; strongly alkaline (pH 8.8); clear smooth boundary.

Btk--17 to 23 inches; light yellowish brown (10YR 6/4) coarse sandy loam, dark yellowish brown (10YR 4/4) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky, and slightly plastic; few very fine and fine roots; common very fine and few fine tubular pores; few thin clay films on pebbles and bridging sand grains; thin clay films on pebbles; thin lime coats on undersides of pebbles; few fine strongly effervescent; lime filaments; noneffervescent matrix; 10 percent pebbles; strongly alkaline (pH 8.8); clear smooth boundary.

Bk--23 to 48 inches; very pale brown (10YR 7/3) gravelly loamy coarse sand, brown (10YR 5/3) moist; massive, hard, very friable, nonsticky and nonplastic; common very fine and few fine roots; many very fine tubular pores; few fine lime filaments and thin lime coats on undersides of pebbles; 15 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); gradual smooth boundary.

C--48 to 60 inches; very pale brown (10YR 7/3) gravelly coarse sand, brown (10YR 5/3) moist; single grain; loose, nonsticky and nonplastic; few very fine roots; many fine interstitial pores; 30 percent pebbles; moderately alkaline (pH 8.2)

Type location: Pershing County, Nevada; approximately 22 miles west of Toulon, about 300 feet east and 1,400 feet north of the southwest corner of section 35 T. 27 N., R. 26 E.; 40 degrees, 09 minutes, 47 seconds north latitude, 119 degrees, 02 minutes, 23 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry, moist for short periods in winter and early spring, dry late May through November.

Soil temperature: 53 to 57 degrees F.

Depth to base of argillic horizon: 11 to 25 inches.

Other features: In some pedons, a buried Bt horizon is present below a depth of 40 inches.

A and E horizons:

Value--5 through 7 dry, 4 or 5 moist.

Chroma--2 or 3.

Reaction--Moderately alkaline or strongly alkaline.

Other features--The surface is noneffervescent or slightly effervescent. Effervescence is the result of eolian lime recharge.

Bt and Btk horizons:

Hue--10YR or 7.5YR.

Value--5 or 6 dry, 4 or 5 moist.

Chroma--3 or 4.

Texture--Sandy loam or coarse sandy loam. Some pedons have thin layers of loam or sandy clay loam.

Clay content--10 to 17 percent.

Rock fragments--Averages 0 to 15 percent, dominantly fine pebbles.

Structure--Subangular blocky or is massive when moist.

Reaction--Moderately alkaline or strongly alkaline.

Carbonates--Noneffervescent in the upper part and noneffervescent to strongly effervescent with small areas of segregated lime as filaments common in the lower part.

Bk and C horizons:

Value--6 or 7 dry, 4 through 6 moist.

Chroma--3 or 4.

Texture--Stratified coarse sandy loam through very gravelly coarse sand.

Clay content--2 to 8 percent.

Rock fragments--Averages 5 to 35 percent, ranges from 5 to 50 percent, mainly fine pebbles.

Consistence--Slightly hard or hard dry, very friable or friable moist.

Reaction--Moderately alkaline through very strongly alkaline.

Effervescence--The Bk horizon is noneffervescent to strongly effervescent. The C horizon is mainly noneffervescent.

Segregated lime (Bk)--As coats on undersides of pebbles and as few or common fine filaments and pockets. These soils are a taxajunct to the Granshaw series because they have up to 2 percent less clay in the argillic horizon than is defined for the series. This difference, however, does not significantly affect their use and management.

Grumblen Series

The Grumblen series consists of shallow, well drained soils that formed in residuum and colluvium derived from rhyolite, rhyolitic tuff, andesite, and basalt. The Grumblen soils are on hills and lower mountain sideslopes. Slopes are 15 to 75 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 51 degrees F.

Taxonomic class: Clayey-skeletal, montmorillonitic, mesic Lithic Xerollic Haplargids.

Typical pedon: Grumblen very gravelly loam, 15 to 50 percent slopes, is located in the Kamma Mountains in an area of the Grumblen-Pickup association, in map unit 431. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with 50 percent pebbles, 05 percent cobbles, and 02 percent with stones.

A1--0 to 2 inches; pale brown (10YR 6/3) very gravelly loam, brown (10YR 4/3) moist; moderate medium platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; common very fine vesicular and tubular pores; 40 percent pebbles, 5 percent cobbles; moderately alkaline (pH 8.2); abrupt smooth boundary.

A2--2 to 4 inches; pale brown (10YR 6/3) gravelly loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; slightly hard, friable, sticky and slightly plastic; common very fine roots; common very fine tubular pores; 20 percent pebbles; moderately alkaline (pH 8.2); clear smooth boundary.

Bt--4 to 8 inches; brown (7.5YR 4/4) very gravelly clay, dark brown (7.5YR 3/4) moist; strong fine prismatic structure; hard, firm, sticky and very plastic; common very fine and few fine roots; few very fine tubular pores; continuous thin clay

films on faces of peds and lining pores; 30 percent pebbles, 5 percent cobbles; moderately alkaline (pH 8.4); clear smooth boundary.

Btk1--8 to 12 inches; brown (7.5YR 4/4) very gravelly clay, dark brown (7.5YR 3/4) moist; strong fine subangular blocky structure; hard, firm, sticky and very plastic; common very fine and few fine mainly exped roots; few very fine tubular pores; continuous thin clay films on faces of peds and lining pores; few fine lime filaments and thin lime coatings on undersides of rock fragments; 35 percent pebbles, 5 percent cobbles; slightly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Btk2--12 to 18 inches; brown (7.5YR 5/4) very gravelly clay, brown (7.5YR 4/4) moist; weak medium subangular blocky structure; hard, firm, sticky and very plastic; few very fine and fine roots; few very fine tubular pores; many thin clay films on faces of peds and lining pores; many fine and medium lime filaments and thin lime coatings on undersides of rock fragments; 45 percent pebbles, 5 percent cobbles; strongly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

R--18 inches; rhyolite with thin lime coats on the rock surface.

Type location: Pershing County, Nevada, approximately 6 miles southeast of Sulphur in an unsurveyed area about 23,800 feet north and 2,400 feet west of the northeast corner of section 6, T. 33 N., R. 30 E.; 40 degrees, 49 minutes, 43 seconds north latitude, 118 degrees, 38 minutes, 42 seconds west longitude.

Range in Characteristics:

Soil moisture: Moist winter and spring, dry June through early November.

Soil temperature: 53 to 55 degrees F.

Depth to bedrock: 14 to 20 inches.

Depth to carbonates: 6 to 17 inches.

A horizons:

Hue--7.5YR, 10YR or 2.5Y.

Value--4 through 6 dry, 3 through 5 moist; the surface 7 inches averages more than 5.5 dry, 3.5 moist after mixing.

Chroma--2 or 3.

Reaction--Mildly alkaline or moderately alkaline.

Bt horizon:

Hue--7.5YR or 10YR.

Value--4 through 6 dry, 3 through 5 moist.

Chroma--3 or 4.

Texture--Very gravelly clay, very gravelly clay loam.

Clay content--35 to 50 percent.

Rock fragments--35 to 60 percent, mainly pebbles.

Structure--Subangular blocky or prismatic.

Consistence--Slightly hard or hard dry, friable, firm or very firm moist.

Reaction--Mildly alkaline or moderately alkaline.

Btk horizons:

Hue--7.5YR or 10YR.

Value--4 through 7 dry, 3 through 5 moist.

Chroma--3 or 4.

Texture--Very gravelly clay loam, very gravelly clay.

Clay content--35 to 50 percent.

Rock fragments--35 to 60 percent, mainly pebbles.

Structure--Subangular blocky or the lower part of some pedons is massive.

Consistence--Slightly hard or hard dry, friable, firm or very firm moist.

Carbonates--Effervescence of the matrix ranges from noneffervescent through strongly effervescent. Secondary carbonates are present as few or common filaments or as thin lime coatings on coarse fragments.

Hardhat Series

The Hardhat series consists of very deep, well drained soils that formed in mixed alluvium over lacustrine sediments. Hardhat soils are on fan skirts. Slopes are 0 to 2 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 49 degrees F.

Taxonomic class: Coarse-loamy, mixed (calcareous), mesic Durorthidic Torriorthents.

Typical pedon: Hardhat sand, 0 to 2 percent slopes, is located in Granite Springs Valley in an area of the Mazuma-Hardhat-Hawsley association, in map unit 703. (Colors are for dry soil unless otherwise noted.)

- A1--0 to 3 inches; pale brown (10YR 6/3) sand, brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; common very fine roots; many fine interstitial pores; 2 percent pebbles; moderately alkaline (pH 8.4); abrupt smooth boundary.
- 2A2--3 to 8 inches; very pale brown (10YR 7/3) silt loam, brown (10YR 4/3) moist; weak medium platy structure; hard, firm, very sticky and plastic; few very fine roots; many very fine, common fine and few medium tubular pores and common coarse vesicular pores; strongly effervescent; strongly alkaline (pH 8.8); abrupt smooth boundary.
- 2Bqk1--8 to 12 inches; very pale brown (10YR 7/3) weakly silica cemented silt loam, brown (10YR 4/3) moist; strong thin platy structure; hard, firm, slightly sticky and slightly plastic; common very fine, few fine and medium roots; common very fine tubular pores; many thin lime coats on undersides of plates; strongly effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.
- 2Bqk2--12 to 15 inches; very pale brown (10YR 7/3) silt loam, brown (10YR 4/3) moist; massive; soft, very friable, slightly sticky and slightly plastic; common very fine and few fine roots; few very fine tubular pores; 20 percent durinodes; 3 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.
- 2Bqk3--15 to 20 inches; very pale brown (10YR 7/3) silt loam, brown (10YR 4/3) moist; moderate thin platy structure; soft, very friable, slightly sticky and slightly plastic; many very fine and few fine roots; common very fine tubular pores; 20 percent durinodes; 3 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.
- 2Bqk4--20 to 24 inches; very pale brown (10YR 7/3) discontinuously weakly silica cemented silt loam, brown (10YR 4/3) moist; moderate thin platy structure; hard, firm, sticky and slightly plastic; common very fine roots; common very fine tubular pores; few fine lime filaments and few thin lime coats on undersides of plates; 1 percent pebbles; dominantly noneffervescent; moderately alkaline (pH 8.0); gradual smooth boundary.
- 3Bqky1--24 to 41 inches; very pale brown (10YR 7/3) discontinuously weakly silica cemented silt loam, brown (10YR 4/3) moist; few medium distinct light brown (7.5YR 6/4) relict mottles; moderate thin platy structure; hard, firm, sticky

and slightly plastic; few very fine roots; common very fine tubular pores; few fine lime filaments; few fine and medium gypsum seams; 1 percent pebbles; strongly effervescent; moderately alkaline (pH 8.0); clear smooth boundary.

4Bqky2--41 to 47 inches; very pale brown (10YR 7/3) weakly silica cemented fine sandy loam, brown (10YR 4/3) moist; common fine and medium distinct light brown (7.5YR 6/4) relict mottles and few medium black (10YR 2/1) stains; moderate thin platy structure; hard, firm, slightly sticky and slightly plastic; few very fine roots; common very fine tubular pores; few fine filaments of lime; common fine and medium gypsum seams and filaments; 3 percent pebbles; strongly effervescent; moderately alkaline (pH 7.9); clear smooth boundary.

5By--47 to 60 inches; very pale brown (10YR 7/3) loamy sand, brown (10YR 4/3) moist; few medium distinct light yellowish brown (10YR 6/4) relict mottles; massive; slightly hard, friable; slightly sticky and nonplastic; few very fine roots; common very fine and few fine tubular pores; few medium gypsum seams; 5 percent pebbles; mildly alkaline (pH 7.8).

Type location: Pershing County, Nevada; approximately 9 miles southwest of Vernon; about 600 feet south and 2,700 feet east of the northwest corner of section 1, T. 28 N., R. 27 E.; 40 degrees, 19 minutes, 56 seconds north latitude and 118 degrees, 53 minutes, 54 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry, moist for short periods in the winter and spring, dry late May through early November.

Soil temperature: 53 to 57 degrees F.

Depth to lacustrine material: 15 to 25 inches.

Depth to continuous weak: Silica and lime cementation: 8 to 20 inches.

Profile reaction: Alkaline or strongly alkaline with some pedons are mildly alkaline below 45 inches.

Calcium carbonate equivalent: Averages 10 to 20 percent.

Depth to segregated lime and silica bridging mineral grains: 4 to 10 inches.

Depth to gypsum: 12 to 25 inches.

Control section:

Clay content--8 to 18 percent.

Rock fragments--5 to 20 percent, mainly pebbles.

A horizons:

Hue--10YR or 2.5Y.
Value--6 or 7 dry, 4 or 5 moist.
Chroma--2 or 3.

Bqk horizons:

Hue--10YR or 2.5Y.
Value--6 or 7 dry, 4 or 5 moist.
Chroma--3 or 4.
Texture--Silt loam or very fine sandy loam, with stratified very fine sandy loam to gravelly sand in the lower part of some pedons.
Structure--Weak prismatic, weak to strong platy or massive.
Cementation--The upper part has few to many silica bridges or coats, but the matrix is friable or very friable. Some part within 10 to 20 inches is continuously weakly cemented.

Bqky horizons:

Hue--10YR, 2.5Y or 5Y.
Value--7 or 8 dry, 4 through 7 moist.
Chroma--2 through 4.
Texture--Stratified silt loam, very fine sandy loam, very gravelly sandy loam and loamy sand.
Rock fragments--Pebbles are lacking in some pedons.
Structure--Platy or massive.
Gypsum crystals--Few or common.
Relict mottles or black coats--Common in any part.

Hawsley Series

The Hawsley series consists of very deep, somewhat excessively drained soils that formed in alluvium and water reworked eolian deposits from mixed rocks. Hawsley soils are on sand sheets and sand dunes. Slopes are 0 to 30 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is 52 degrees F.

Taxonomic class: Mixed, mesic Typic Torripsamments.

Typical pedon: Hawsley sand, 2 to 8 percent slopes, is located in Granite Springs Valley in an area of the Hawsley-Labkey-Genegraf

association, in map unit 452. (Colors are for dry soil unless otherwise noted.)

- A1--0 to 2 inches; pale brown (10YR 6/3) sand, brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; many very fine, common fine interstitial and few very fine tubular pores; mildly alkaline (pH 7.6); clear smooth boundary.
- A2--2 to 5 inches; pale brown (10YR 6/3) sand, brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; common very fine roots; common very fine interstitial and few very fine tubular pores; mildly alkaline (pH 7.8); clear wavy boundary.
- C--5 to 24 inches; pale brown (10YR 6/3) sand, brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; common very fine roots; few very fine tubular and interstitial pores; mildly alkaline (pH 7.8); clear wavy boundary.
- Ck1--24 to 50 inches; very pale brown (10YR 7/3) coarse sand, brown (10YR 5/3) moist; single grain; loose, nonsticky and nonplastic; few very fine roots; common very fine interstitial pores; strongly effervescent; moderately alkaline (pH 8.0); clear wavy boundary.
- Ck2--50 to 60 inches; very pale brown (10YR 7/3) coarse sand, brown (10YR 5/3) moist; single grain; loose, nonsticky and nonplastic; few very fine roots; common very fine interstitial pores; strongly effervescent; moderately alkaline (pH 8.0).

Type location: Pershing County, Nevada; approximately 5 miles northwest of Ragged Top Mountain in Granite Springs Valley; about 2,250 feet north and 500 feet west of the southeast corner of section 19, T. 26 N., R. 28 E.; 40 degrees, 06 minutes, 25 seconds north latitude, 118 degrees, 52 minutes, 20 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry; moist for short periods during winter and spring.
Soil temperature: 53 to 57 degrees F.
Control section:
Rock fragments--0 to 15 percent pebbles.

A horizons:

Hue--10YR or 2.5Y.
Value--5, 6, or 7 dry, 3, 4, or 5 moist.

Chroma--2 or 3.
Reaction--Neutral through moderately alkaline.

C horizons:

Hue--10YR or 2.5Y.
Value--6 or 7 dry, 4 or 5 moist.
Chroma--2 or 3.
Texture--Stratified fine sand through coarse sand. Mixed texture is commonly sand but is fine sand in some pedons. Some pedons contain thin strata of loamy fine sand.
Structure--Single grain or massive.
Consistence--Loose or soft and very friable.
Reaction--Moderately alkaline or strongly alkaline, but ranges to mildly alkaline in the upper part in some pedons.
Carbonates--Some parts are slightly effervescent to violently effervescent.
Other features--Some pedons have strata with relict stains with hue of 7.5YR.

Humboldt Series

The Humboldt series consists of very deep, poorly drained soils that formed in silty alluvium from mixed rock sources with a component of volcanic ash. Humboldt soils are on flood plains. Slopes are 0 to 2 percent. The mean annual precipitation is about 7 inches and the mean annual temperature is about 50 degrees F.

Taxonomic class: Fine, montmorillonitic (calcareous), mesic Fluvaquentic Haplaquolls.

Typical pedon: Humboldt silty clay loam, slightly saline-sodic, 0 to 2 percent slopes, in map unit 480, is located about two miles west of Woolsey. (Colors are for dry soil unless otherwise noted.)

A1--0 to 2 inches; gray (10YR 5/1) silty clay loam, black (10YR 2/1) moist; moderate fine granular structure; slightly hard, firm, very sticky and very plastic; many very fine, fine, and medium roots; many very fine interstitial pores; strongly effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

A2--2 to 12 inches; gray (10YR 5/1) silty clay loam, black (10YR 2/1) moist; weak fine granular structure; slightly hard, firm, very sticky and very plastic; many very fine, fine, and medium roots; common very fine interstitial

pores; strongly effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

Ck--12 to 25 inches; light gray (2.5Y 7/2) silty clay loam, dark grayish brown (2.5Y 4/2) moist; common fine distinct dark brown (7.5YR 3/4) mottles; moderate fine subangular blocky structure; hard, firm, very sticky and very plastic; common very fine and fine roots; common very fine tubular pores; common fine lime concretions; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Cg--25 to 36 inches; greenish gray (5GY 6/1) clay, dark greenish gray (5GY 4/1) moist; moderate fine subangular blocky structure; very hard, very firm, very sticky and very plastic; common very fine and fine roots; common very fine tubular pores; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

C1--36 to 40 inches; light gray (10YR 7/2) silty clay loam, gray (10YR 5/1) moist; moderate fine subangular blocky structure; hard, firm, very sticky and very plastic; common fine roots; common very fine tubular pores; strongly effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

C2--40 to 55 inches; light gray (2.5Y 7/2) silty clay, grayish brown (2.5Y 5/2) moist; moderate fine subangular blocky structure; very hard, very firm, very sticky and very plastic; common fine roots; common very fine tubular pores; strongly effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

C3--55 to 60 inches; white (2.5Y 8/2) silt loam, light brownish gray (2.5Y 6/2) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; few fine roots; many very fine tubular pores; strongly effervescent; moderately alkaline (pH 8.4)

Type location: Pershing County, Nevada; approximately 2 miles west of Woolsey along the Humboldt River; about 300 feet east and 800 feet north of the southwest corner of section 16, T. 28 N., R. 32 E.; 40 degrees, 17 minutes, 12 seconds north latitude, 118 degrees, 23 minutes, 46 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually saturated for one month or more during most years unless drained.

Soil temperature: 50 to 54 degrees F.

Mollic epipedon thickness: 10 to 24 inches.

Reaction: Mildly alkaline to very strongly alkaline, the higher values being only in sodium affected areas.

Effervescence: Slightly effervescent to strongly effervescent throughout; some strata below 20 inches in some pedons are noneffervescent.

Carbonates: The calcium carbonate equivalent is less than 15 percent.

Mottles: Distinct or prominent mottles with hue of 7.5YR are in the lower part of the mollic epipedon or immediately below; or matrix chroma is 1 or less.

Control section:

Clay content--35 to 45 percent.

Texture--Stratified silty clay loam to clay with minor strata of silt loam in some pedons.

A horizons:

Hue--10YR or 2.5Y.

Value--4 or 5 dry, 6 on surface of some pedons due to deposition, 2 or 3 moist.

Chroma--1 or 2.

Organic matter content--2 to 4 percent.

Other features--Buried A horizons are common.

C horizons:

Hue--10YR, 2.5Y, 5Y, 5GY or N.

Value--6 or 7 dry, 3 through 5 moist. Volcanic ash layers are 8 dry, 6 moist.

Chroma--0 to 3.

Structure--Moderate or strong prismatic or blocky in the upper part; weak subangular blocky structure or massive in the lower part.

Carbonates--Few to many very fine to medium lime concretions or soft segregations in some part.

Other features--Some pedons have stratified very fine sandy loam to fine sand below 30 inches.

Isolde Series

The Isolde series consists of very deep excessively drained soils that formed in eolian sand from mixed rock sources. Isolde soils are on stabilized dunes over lake beds, playas, beach terraces and alluvial fans. Slopes are 0 to 15 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 52 degrees F.

Taxonomic class: Mixed, mesic Typic Torripsamments.

Typical pedon: Isolde fine sand, 4 to 15 percent slopes, is located in Granite Springs Valley in an area of the Appian-Isolde-Genigraf association, in map unit 120. (Colors are for dry soil unless otherwise noted.)

A--0 to 4 inches; pale brown (10YR 6/3) fine sand, dark grayish brown (10YR 4/2) moist; single grain; loose, nonsticky and nonplastic; common very fine and few fine roots; many very fine interstitial pores; moderately alkaline (pH 8.0); gradual smooth boundary.

C1--4 to 12 inches; pale brown (10YR 6/3) sand, dark grayish brown (10YR 4/2) moist; single grain; loose, nonsticky and nonplastic; common very fine and few fine roots; many very fine interstitial pores; moderately alkaline (pH 8.2); clear smooth boundary.

C2--12 to 42 inches; pale brown (10YR 6/3) sand, dark grayish brown (10YR 4/2) moist; single grain; loose, nonsticky and nonplastic; many very fine and few fine roots; many very fine interstitial pores; moderately alkaline (pH 8.4); gradual smooth boundary.

C3--42 to 60 inches; pale brown (10YR 6/3) sand, dark grayish brown (10YR 4/2) moist; single grain; loose, nonsticky and nonplastic; common very fine and few fine roots; many very fine interstitial pores; moderately alkaline (pH 8.4).

Type location: Pershing County, Nevada; approximately 24 miles west of Lovelock in Granite Springs Valley; about 2,500 feet north and 600 feet west of the southeast corner of section 1, T. 27 N., R. 27 E.; 40 degrees, 14 minutes, 19 seconds north latitude, 118 degrees, 53 minutes, 29 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry from April to mid November, moist for short periods from mid November through March.

Soil temperature: 53 to 57 degrees F.

Reaction: Neutral through moderately alkaline.

Control section:

Texture--Fine sand or sand.

A horizon:

Hue--10YR or 2.5Y.

Value--5 through 7 dry, 4 or 5 moist.

Chroma--2 or 3.

C horizons:

Hue--10YR or 2.5Y.

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 or 3.

Other features--Some pedons have a 2C horizon of silt loam or silty clay loam below 40 inches. In some pedons the lower part of the C horizon ranges to strongly alkaline and noneffervescent to strongly effervescent.

effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Bt_{nk1}--8 to 13 inches; brown (10YR 5/3) gravelly silty clay loam, dark brown (10YR 4/3) moist; weak medium subangular blocky structure; slightly hard, friable, sticky and slightly plastic; common very fine and fine roots; many very fine tubular pores; few thin clay films on faces of peds; few fine lime filaments and thin lime coatings on undersides of rock fragments; 15 percent pebbles; slightly effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

Bt_{nk2}--13 to 20 inches; yellowish brown (10YR 5/4) gravelly clay loam, dark yellowish brown (10YR 4/4) moist; moderate fine prismatic structure; hard, firm, sticky and plastic; common very fine and fine roots; many very fine tubular pores; few thin clay films on faces of peds; many fine irregularly shaped lime filaments; 15 percent pebbles; strongly effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

2B_{qk}--20 to 36 inches; very pale brown (10YR 7/3) very gravelly fine sandy loam, pale brown (10YR 6/3) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine tubular pores; 30 percent 15 to 20 millimeter weakly cemented durinodes; common medium rounded soft masses of lime many thin lime coatings on undersides of rock fragments; 35 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

2B_k--36 to 60 inches; very pale brown (10YR 7/3) very gravelly fine sandy loam, pale brown (10YR 6/3) moist; massive; soft, very friable; slightly sticky and slightly plastic; few very fine roots; few very fine tubular pores; few fine rounded soft masses of lime many thin lime coatings on undersides of rock fragments; 35 percent pebbles, 5 percent cobbles; violently effervescent; strongly alkaline (pH 8.6).

Type location: Pershing County, Nevada; approximately 28 miles west of Mill City; about 600 feet east and 300 feet south of the northwest corner of section 4, T. 34 N., R. 30 E.; 40 degrees, 51 minutes, 18 seconds north latitude, 118 degrees, 36 minutes, 57 seconds west longitude.

Jerval Series

The Jerval series consists of very deep, well drained soils that formed in loess over loamy and gravelly alluvium from mixed rock sources. The Jerval soils are on fan piedmonts and mountain valley fans. Slopes are 2 to 8 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 53 degrees F.

Taxonomic class: Fine-loamy, mixed, mesic Duric Natrargids

Typical pedon: Jerval gravelly very fine sandy loam, 2 to 8 percent slopes, is located about 28 miles west of Mill City in an area of the Pokergap-Jerval association, in map unit 1035. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with 20 percent pebbles, and 1 percent cobbles.

A₁--0 to 3 inches; light brownish gray (2.5Y 6/2) gravelly very fine sandy loam, dark grayish brown (2.5Y 4/2) moist; moderate thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine roots; many very fine and fine vesicular pores; 15 percent pebbles; slightly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

A₂--3 to 8 inches; light brownish gray (2.5Y 6/2) silt loam, dark grayish brown (2.5Y 4/2) moist; moderate thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine and fine vesicular pores; slightly

Range in Characteristics:

Soil moisture: Moist in winter and spring and dry in summer and fall.

Soil temperature: 53 to 59 degrees F.

Depth to Bqk horizon: 20 to 30 inches.

A horizons:

Hue--10YR or 2.5Y.

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 or 3.

Btnk horizons:

Value--5 or 6 dry, 3 or 4 moist.

Chroma--3 or 4.

Texture--Gravelly clay loam or gravelly silty clay loam.

Clay content--27 to 35 percent.

Rock fragments--15 to 25 percent, mainly pebbles.

Exchangeable sodium--Less than 15 percent in the upper part and 15 to 35 percent in the lower part.

Reaction--Moderately alkaline or strongly alkaline.

Other features--Segregated secondary carbonates are present, with segregated gypsum common in the lower part.

2Bqk and 2Bk horizons:

Value--7 or 8 dry, 4 through 6 moist.

Chroma--2 through 4.

Texture--Very gravelly sandy loam or very gravelly fine sandy loam.

Clay content--5 to 12 percent.

Rock fragments--35 to 55 percent, mainly pebbles with 0 to 5 percent cobbles.

Reaction--Moderately alkaline or strongly alkaline.

Cementation (Bqk)--20 to 30 percent weakly and moderately cemented durinodes in a friable matrix or has weak or strong discontinuous silica cementation with thin discontinuous laminae.

Jungo Series

The Jungo series consists of very deep, well drained soils that formed in mixed alluvium with admixtures of loess and volcanic ash. The Jungo soils are on fan piedmont remnants. Slopes are 15 to 50 percent. The mean annual precipitation is

about 8 inches and the mean annual temperature is about 52 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic Xerollic Haplargids

Typical pedon: Jungo very gravelly loam, 15 to 50 percent slopes, is located about 5 miles south of Sulphur in an area of the Rednik-Jungo-Aboten association, in map unit 960. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with 50 percent pebbles and 5 percent cobbles.

A1--0 to 3 inches; pale brown (10YR 6/3) very gravelly loam, brown (10YR 4/3) moist; moderate very thin platy structure; soft, very friable, slightly sticky and slightly plastic; common very fine roots; common fine vesicular and tubular pores; 35 percent pebbles; moderately alkaline (pH 8.0); clear smooth boundary.

A2--3 to 6 inches; pale brown (10YR 6/3) gravelly loam, brown (10YR 4/3) moist; weak very thin platy structure; soft, very friable, sticky and plastic; many very fine and few fine roots; many very fine and fine tubular pores; 25 percent pebbles; moderately alkaline (pH 8.0); clear wavy boundary.

Btk1--6 to 9 inches; light yellowish brown (10YR 6/4) gravelly clay loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; slightly hard, friable, sticky and plastic; many very fine and few fine and medium roots; many very fine tubular pores; few thin clay films on faces of peds and lining pores; thin lime coats on undersides of pebbles; 25 percent pebbles; moderately alkaline (pH 8.2); clear wavy boundary.

Btk2--9 to 14 inches; light yellowish brown (10YR 6/4) very gravelly clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; hard, firm, sticky and plastic; common very fine and fine and few medium roots; common very fine tubular pores; common moderately thick clay films on faces of peds and lining pores; thin lime coats on undersides of pebbles; 55 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Btk3--14 to 20 inches; light yellowish brown (10YR 6/4) very gravelly clay loam, dark yellowish brown (10YR 4/4) moist; massive; hard, firm, sticky and plastic; common very fine and fine

and few medium and coarse roots; common very fine tubular pores; many moderately thick clay films bridging sand grains; few fine lime filaments; thin lime coats on undersides of pebbles; few fine soft masses of gypsum; 55 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Btk4--20 to 29 inches; light yellowish brown (10YR 6/4) extremely gravelly clay loam, dark yellowish brown (10YR 4/4) moist; massive; hard, firm, sticky and plastic; few very fine, fine, medium and coarse roots; common very fine and fine tubular pores; many moderately thick clay films bridging sand grains; common fine and medium lime filaments; thin lime coats on undersides of coarse fragments; few fine soft masses of gypsum; 65 percent pebbles, 2 percent cobbles; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Btk5--29 to 46 inches; light yellowish brown (10YR 6/4) extremely gravelly sandy clay loam, dark yellowish brown (10YR 4/4) moist; massive; hard, friable, slightly sticky and slightly plastic; few very fine, fine and medium roots; many very fine and common fine tubular pores; common moderately thick clay films bridging sand grains; common fine and medium lime filaments; thin lime coats on undersides of rock fragments; few fine soft masses of gypsum; 70 percent pebbles, 10 percent cobbles, 10 percent stones; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

Btk6--46 to 60 inches; light yellowish brown (10YR 6/4) extremely gravelly sandy clay loam, dark yellowish brown (10YR 4/4) moist; massive; hard, friable, slightly sticky and slightly plastic; few fine roots; few very fine and common fine tubular pores; common moderately thick clay films bridging sand grains; common fine and medium lime filaments; thin lime coats on undersides of rock fragments; 70 percent pebbles, 5 percent cobbles, 2 percent stones; strongly effervescent; strongly alkaline (pH 8.8).

Type location: Pershing County, Nevada; approximately 5 miles south of Sulphur near Rosebud Peak in an unsurveyed area about 22,000 feet north and 17,000 feet west of the northwest corner of section 6, T. 33 N., R. 30 E., 40 degrees, 49 minutes, 17 seconds north latitude, 118 degrees, 42 minutes, 57 seconds west longitude.

Range in Characteristics:

Soil moisture: Moist in winter and early spring; dry from May through October.

Soil temperature: 53 to 55 degrees F.

Depth to carbonates: 4 to 8 inches.

Control section:

Clay content--27 to 35 percent.

Rock fragments--Averages 35 to 60 percent, mainly pebbles.

A horizons:

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 or 3.

Reaction--Mildly alkaline or moderately alkaline.

Btk horizons:

Hue--10YR or 7.5YR.

Value--5 or 6 dry.

Chroma--3 or 4.

Texture--Gravelly clay loam, very gravelly clay loam or very gravelly sandy clay loam in the upper part and extremely gravelly clay loam or extremely gravelly sandy clay loam in the lower part.

Clay content--27 to 35 percent.

Rock fragments--Averages 35 to 75 percent, mainly pebbles; typically increasing with depth and including stones and cobbles in the lower part.

Structure--Subangular blocky or massive.

Consistence--Slightly hard or hard dry, friable or firm moist.

Reaction--Moderately alkaline or strongly alkaline.

Juva Series

The Juva series consists of very deep, well drained soils that formed in stratified alluvium from mixed rock sources. The Juva soils are on alluvial fans. Slopes are 0 to 2 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 52 degrees F.

Taxonomic class: Coarse-loamy, mixed (calcareous), mesic Typic Torrifuvents.

Typical pedon: Juva loam, 0 to 2 percent slopes, in map unit 510, is located on Hualapai Flat. (Colors are for dry soil unless otherwise noted.)

- Ap1--0 to 4 inches; pale brown (10YR 6/3) loam, dark brown (10YR 4/3) moist; weak medium granular structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and fine roots; common very fine interstitial pores; strongly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.
- Ap2--4 to 8 inches; pale brown (10YR 6/3) loam, dark brown (10YR 3/3) moist; weak coarse subangular blocky structure; hard, very friable, slightly sticky and slightly plastic; common very fine and coarse roots; common very fine interstitial pores; strongly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.
- C1--8 to 13 inches; pale brown (10YR 6/3) silt loam, dark yellowish brown (10YR 4/4) moist; massive; hard, friable, slightly sticky and slightly plastic; common very fine roots; common very fine tubular pores; strongly effervescent; strongly alkaline (pH 8.6); abrupt wavy boundary.
- C2--13 to 20 inches; pale brown (10YR 6/3) sandy loam, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; common very fine roots; common very fine and fine tubular pores; strongly effervescent; strongly alkaline (pH 8.6); abrupt wavy boundary.
- C3--20 to 32 inches; brown (10YR 5/3) loamy sand, dark brown (10YR 3/3) moist; massive; soft, very friable, nonsticky and nonplastic; common fine and coarse roots; many very fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.
- C4--32 to 60 inches; pale brown (10YR 6/3) very fine sandy loam, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; common medium and coarse roots; common very fine tubular pores; slightly to strongly effervescent; moderately alkaline (pH 8.4).

Type location: Washoe County, Nevada; approximately 9 miles north of Gerlach in Hualapai Flat, 2,400 feet east and 2,600 feet south of the northwest corner of section 12, T. 35 N., R. 23 E.; 40 degrees, 56 minutes, 02 seconds north latitude, 119 degrees, 19 minutes, 10 seconds west longitude. This type location is outside the survey area due to the small acreage involved in joining the Washoe County, Nevada, Central Part Soil Survey Area.

Range in Characteristics:

Soil moisture: Usually dry from May to November.

Soil temperature: 53 to 57 degrees F.

A horizons:

Hue--10YR or 2.5Y.

Value--5 through 7 dry, 3 through 5 moist.

Chroma--2 or 3.

C horizons:

Hue--10YR or 2.5Y.

Value--5 or 6 dry, 3 or 4 moist.

Chroma--3 or 4.

Texture--Stratified silt loam, loamy sand, sandy loam, and very fine sandy loam.

Carbonates--Slightly to strongly effervescent.

Reaction--Moderately alkaline or strongly alkaline.

Kumiva Series

The Kumiva series consists of very deep, well drained soils that formed in mixed alluvium with a small component of loess and volcanic ash. The Kumiva soils are on inset fans and axial-stream flood plains. Slopes are 0 to 4 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 51 degrees F.

Taxonomic class: Coarse-loamy, mixed (calcareous), mesic Typic Torriorthents.

Typical pedon: Kumiva silt loam, 0 to 4 percent slopes, is located about 11 miles east of Empire in an area of map unit 210. (Colors are for dry soil unless otherwise noted.)

A1--0 to 2 inches; light gray (10YR 7/2) silt loam, brown (10YR 5/3) moist; strong thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine roots; many very fine and fine and few medium vesicular pores; violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

A2--2 to 5 inches; light brownish gray (10YR 6/2) silt loam, brown (10YR 4/3) moist; weak thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine roots; many very fine tubular pores; violently effervescent; moderately alkaline (pH

8.4); clear smooth boundary.

Ck1--5 to 14 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, sticky and plastic; many very fine, common fine and few medium, mainly horizontally, oriented roots; many very fine and common fine tubular pores; few fine soft masses of lime; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

Ck2--14 to 27 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, common fine, and few medium roots; many very fine tubular pores; few fine lime filaments; 3 percent pebbles; violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

2Ck3--27 to 45 inches; pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, nonsticky and slightly plastic; many very fine, common fine and few medium roots; many very fine and common fine tubular pores; few fine lime filaments and soft masses; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

2Ck4--45 to 56 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, nonsticky and slightly plastic; few very fine roots; many very fine and common fine tubular pores; few fine soft masses of lime; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

3Ck5--56 to 60 inches; pale brown (10YR 6/3) loamy sand, brown (10YR 4/3) moist; weak thin platy structure; soft, very friable, nonsticky and nonplastic; few very fine roots; many very fine and few fine tubular pores; few fine soft masses of lime; 5 percent pebbles; violently effervescent; moderately alkaline (pH 8.2).

Type location: Pershing County, Nevada; approximately 11 miles east of Empire, in an unsurveyed area about 2,300 feet north and 200 feet west of the northwest corner of section 6, T. 30 N., R. 26 E.; 40 degrees, 30 minutes, 28 seconds north latitude, 119 degrees, 07 minutes, 02 seconds west longitude.

Range in Characteristics:

Soil temperature: 53 to 55 degrees F.

Profile reaction: Mildly alkaline through strongly alkaline.

Salinity: Less than 2 millimhos/centimeter.

SAR: Less than 13.

Depth to secondary carbonates: 4 to 8 inches.

Control section:

Clay content--Averages 6 to 12 percent.

Texture--Stratified silt loam, loam and sandy loam.

Rock fragments--Averages less than 10 percent pebbles.

A horizons:

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 or 3.

Ck horizons:

Value--6 or 7 dry, 4 or 5 moist.

Chroma--3 or 4.

Rock fragments--Average less than 10 percent, with up to 35 percent common in some parts.

Structure--Typically massive but is weak platy or subangular blocky in some parts.

Consistence--Soft, slightly hard or hard dry; very friable or friable moist; nonsticky through sticky and nonplastic through plastic wet.

Other features--Below a depth of 30 inches, up to 10 percent weak durinodes are common in some pedons. Loamy sand is common in any subhorizon below 40 inches. These soils are a taxadjunct to the Kumiva series because they have slightly less clay in the control section than is defined for the series. This difference, however, does not significantly affect their use and management.

Labkey Series

The Labkey series consists of very deep, somewhat excessively drained soils that formed in alluvium dominantly from granitic rocks. The Labkey soils are on fan skirts, inset fans and barrier bars. Slopes are 0 to 8 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 53 degrees F.

Taxonomic class: Sandy-skeletal, mixed, mesic Typic Camborthids.

Typical pedon: Labkey gravelly sandy loam, 0 to 2 percent slopes, is located in Granite Springs Valley in an area of the Biga-Granshaw-Labkey association, in map unit 180. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with 20 percent fine pebbles.

A--0 to 4 inches; pale brown (10YR 6/3) gravelly sandy loam, dark grayish brown (10YR 4/2) moist; weak thin platy structure; soft, very friable, nonsticky and nonplastic; few very fine roots; many fine and medium vesicular pores; 20 percent pebbles; moderately alkaline (pH 8.0); abrupt wavy boundary.

Bw--4 to 12 inches; pale brown (10YR 6/3) gravelly coarse sandy loam, dark grayish brown (10YR 4/2) moist; weak fine and medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; common very fine and few fine roots; many very fine tubular and vesicular pores; 25 percent pebbles; moderately alkaline (pH 8.0); clear smooth boundary.

2Bk1--12 to 19 inches; pale brown (10YR 6/3) very gravelly coarse sand, brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; common very fine roots; many very fine and fine interstitial pores; strongly effervescent thin lime coats on undersides of pebbles; 45 percent pebbles; noneffervescent matrix; moderately alkaline (pH 8.2); abrupt smooth boundary.

3Bk2--19 to 34 inches; very pale brown (10YR 7/3) extremely gravelly loamy coarse sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; common very fine tubular and interstitial pores; strongly effervescent thin lime coats on undersides of pebbles; 60 percent pebbles; noneffervescent matrix; moderately alkaline (pH 8.0); abrupt smooth boundary.

3Bk3--34 to 43 inches; very pale brown (10YR 7/3) extremely gravelly loamy coarse sand, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine roots; few very fine tubular and interstitial pores; many strongly effervescent medium lime filaments and soft masses and thin lime coats on undersides of pebbles; 70 percent pebbles; noneffervescent matrix; moderately alkaline (pH 8.0); abrupt smooth boundary.

4Bk4--43 to 60 inches; light yellowish brown (10YR 6/4) gravelly loamy coarse sand, dark yellowish brown (10YR 4/4) moist; massive;

soft, very friable, nonsticky and nonplastic; few very fine roots; few very fine tubular and interstitial pores; common strongly effervescent fine lime filaments and thin lime coats on undersides of pebbles; 25 percent pebbles; noneffervescent matrix; moderately alkaline (pH 8.0).

Type location: Pershing County, Nevada; approximately 28 miles northwest of Lovelock in Granite Springs Valley, about 2,100 feet west and 1,900 feet north of the southeast corner of section 30, T. 28 N., R. 27 E.; 40 degrees, 15 minutes, 59 seconds north latitude, 118 degrees, 59 minutes, 31 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry, moist for short periods in winter and early spring, dry late May through November.

Soil temperature: 53 to 57 degrees F.

Depth to the base of the cambic horizon: 10 to 17 inches.

Depth to segregated lime: 10 to 17 inches.

Control section:

Clay content--Averages 3 to 9 percent.

Texture--Averages very gravelly coarse sand, very gravelly loamy coarse sand or very gravelly loamy sand.

Rock fragments--Averages 35 to 60 percent, mainly fine pebbles.

A horizon:

Chroma--2 or 3.

Other features--Dominantly noneffervescent, but some pedons are slightly effervescent through strongly effervescent due to eolian lime recharge.

Bw horizon:

Chroma--3 or 4 dry, 2 through 4 moist.

Texture--Gravelly coarse sandy loam or gravelly sandy loam.

Clay content--5 to 12 percent.

Rock fragments--20 to 35 percent, mainly fine pebbles.

Structure--Platy, subangular blocky or horizon is massive.

Consistence--Friable or very friable moist, nonsticky or slightly sticky and nonplastic or slightly plastic wet.

Reaction--Moderately alkaline or strongly alkaline.

Bk horizons:

Value--6 or 7 dry, 4 or 5 moist.

Chroma--3 or 4.

Texture--Stratified gravelly sandy loam to extremely gravelly coarse sand.

Clay content--2 to 8 percent.

Rock fragments--Average 40 to 60 percent, with some parts containing 15 to 70 percent, mainly fine pebbles.

Structure--Massive or single grain.

Consistence--Loose through hard dry, loose through friable moist, nonsticky or slightly sticky and nonplastic or slightly plastic wet.

Reaction--Moderately alkaline or strongly alkaline.

Segregated lime--Common or many, fine or medium, filaments, soft masses, seams or thin coats on undersides of pebbles.

Other features--Loamy substrata are present below 40 inches in some pedons. Some pedons have underlying layers that lack segregated lime.

Lovelock Series

The Lovelock series consists of very deep, poorly drained soils that formed in alluvium strongly influenced by diatomaceous earth and volcanic ash. The Lovelock soils are on lake plains and stream terraces. Slopes are 0 to 2 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 52 degrees F.

Taxonomic class: Fine, mixed (calcareous), mesic Fluvaquentic Haplaquolls.

Typical pedon: Lovelock silt loam, 0 to 2 percent slopes, in map unit 1610, is located about 2.5 miles southwest of Derby Field near Lovelock. (Colors are for dry soil unless otherwise noted.)

A1--0 to 3 inches, grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; moderate fine granular structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and common fine roots; many very fine interstitial pores; strongly

effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

A2--3 to 9 inches; grayish brown (2.5Y 5/2) silt loam, very dark grayish brown (2.5Y 3/2) moist; weak very fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and common fine roots; many very fine interstitial pores; strongly effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

A3--9 to 15 inches; gray (10YR 5/1) silt loam, black (10YR 2/1) moist; moderate fine granular structure; slightly hard, friable, sticky, and plastic; many very fine and common fine roots; many very fine interstitial pores; strongly effervescent; strongly alkaline (pH 8.8); abrupt wavy boundary.

Cg1--15 to 25 inches; grayish brown (2.5Y 5/2) silty clay loam, dark grayish brown (2.5Y 4/2) moist; massive; slightly hard, friable, very sticky and very plastic; many very fine and common fine roots; many very fine and common fine tubular pores; strongly effervescent; strongly alkaline (pH 9.0); clear smooth boundary.

Cg2--25 to 34 inches; light brownish gray (2.5Y 6/2) silty clay loam, dark grayish brown (2.5Y 4/2) moist; massive; hard, firm, very sticky and very plastic; few very fine and fine roots; many fine and common very fine tubular pores; common fine rounded lime seams; strongly effervescent; strongly alkaline (pH 9.0); clear smooth boundary.

Cg3--34 to 36 inches; light brownish gray (2.5Y 6/2) silt loam, grayish brown (2.5Y 5/2) moist; massive; hard, friable, very sticky and very plastic; few fine and very fine roots; many fine and common medium tubular pores; strongly effervescent; strongly alkaline (pH 9.0); abrupt smooth boundary.

2Ab--36 to 46 inches; gray (10YR 5/1) silty clay loam, black (10YR 2/1) moist; weak fine granular structure; very hard, firm, very sticky and very plastic; few very fine roots; common fine and medium tubular pores; common fine mollusk shells; strongly effervescent; strongly alkaline (pH 9.0); abrupt smooth boundary.

2Cgb--46 to 60 inches; light brownish gray (2.5Y 6/2) silty clay, dark grayish brown (2.5Y 4/2) moist; massive; very hard, firm, very sticky and very plastic; few very fine roots; common medium tubular pores; common fine rounded lime seams; strongly effervescent; strongly alkaline (pH 9.0).

Type location: Pershing County, Nevada; approximately 2.5 miles southwest of Derby Field near Lovelock, about 1,700 feet west and 1,600 feet north of the southeast corner of section 9, T. 25 N., R. 30 E.; 40 degrees, 02 minutes, 50 seconds north latitude, 118 degrees, 36 minutes, 50 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually saturated for one month or more during most years unless drained.

Soil temperature: 53 to 57 degrees F.

Mollic epipedon thickness: 10 to 23 inches.

Carbonates: The calcium carbonate equivalent ranges from 3 to 30 percent in any one horizon and averages less than 20 percent. Fresh water mollusk shells and shell fragments can range from none to many.

Other features: Buried thin, dark layers are common.

Control section:

Clay content--Averages 35 to 60 percent dominated by diatomaceous earth and volcanic ash.

Texture--Stratified loam, silt loam, silty clay loam, silty clay, apparent field textures.

Rock fragments--Less than 5 percent pebbles.

Salinity--Slightly saline to very strongly saline.

Sodicity--SAR ranges from 13 to 90 in upper part.

A horizons:

Hue--10YR, 2.5Y or N.

Value--4 or 5 dry, 2 or 3 moist.

Chroma--0, 1, or 2.

C and Ab horizons:

Hue--10YR, 2.5Y, 5Y.

Value--4 through 7 dry, 2 through 5 moist.

Chroma--1, 2, or 3.

Structure--Subangular blocky, prismatic, granular or massive.

Reaction--Moderately alkaline or strongly alkaline.

Majuba Series

The Majuba series consists of moderately deep, well drained soils that formed in residuum and colluvium from phyllite, slate and schist. The

Majuba soils are on mountain sideslopes. Slopes are 15 to 50 percent. The mean annual precipitation is about 11 inches and the mean annual temperature is about 44 degrees F.

Taxonomic class: Loamy-skeletal, mixed, frigid Aridic Calcic Argixerolls.

Typical pedon: Majuba very channery loam, 15 to 50 percent slopes, is located in the Trinity Range in an area of the Boomstick-Majuba association, in map unit 132. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with 40 percent channers and 15 percent flagstones.

A1--0 to 2 inches; grayish brown (2.5Y 5/2) very channery loam, very dark grayish brown (2.5Y 3/2) moist; moderate thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine and fine roots; many very fine vesicular pores; 40 percent channers, 1 percent flagstones; moderately alkaline (pH 8.0); clear smooth boundary.

A2--2 to 6 inches; brown (10YR 5/3) loam, very dark grayish brown (10YR 3/2) moist; weak thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine tubular pores; 10 percent channers, 2 percent flagstones; moderately alkaline (pH 8.0); clear smooth boundary.

Bt--6 to 11 inches; brown (10YR 5/3) channery clay loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; slightly hard, friable, sticky and plastic; common very fine and few fine roots; common very fine tubular pores; common thin clay films on faces of peds and lining pores; 20 percent channers, 1 percent flagstones; moderately alkaline (pH 8.0); clear smooth boundary.

Btk1--11 to 18 inches; light olive brown (2.5Y 5/4) very channery loam, olive brown (2.5Y 4/4) moist; moderate medium subangular blocky structure; slightly hard, friable, sticky and plastic; common very fine and few fine roots; common very fine tubular pores; few thin clay films on faces of peds; thin strongly effervescent lime coats on undersides of rock fragments; 50 percent channers, 2 percent flagstones; moderately alkaline (pH 8.2); clear smooth boundary.

Btk2--18 to 23 inches; light yellowish brown (2.5Y 6/4) very channery loam, olive brown (2.5Y 4/4)

moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and few fine roots; common very fine tubular pores; few thin clay films on faces of peds; thin strongly effervescent lime coats on undersides of rock fragments, 50 percent channers; moderately alkaline (pH 8.4); abrupt smooth boundary.

Bk--23 to 35 inches; light gray (10YR 7/2) extremely channery loam, pale brown (10YR 6/3) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine tubular pores; few fine and medium strongly effervescent lime coats on rock fragments; 60 percent channers, 5 percent flagstones; slightly effervescent; strongly alkaline (pH 8.8); abrupt smooth boundary.

R--35 inches; hard, fractured phyllite with thin lime coatings on fracture surfaces.

Type location: Pershing County, Nevada; approximately 15 miles north of Lovelock in the Trinity Range, about 1,600 feet east and 1,400 feet north of the southwest corner of section 7, T. 29 N., R. 31 E.; 40 degrees, 23 minutes, 23 seconds north latitude, 118 degrees, 32 minutes, 37 seconds west longitude.

Range in Characteristics:

Soil moisture: Moist in winter and spring, dry from early July through October.

Soil temperature: 45 to 47 degrees F.

Mollic epipedon thickness: 7 to 12 inches, typically includes the upper part of the argillic horizon.

Depth to bedrock: 25 to 40 inches.

Other features: The rock fragments are comprised mainly of channers and flagstones.

A horizon:

Hue--2.5Y or 10YR.

Chroma--2 or 3.

Reaction--Mildly alkaline or moderately alkaline.

Bt and Btk horizons:

Hue--10YR or 2.5Y.

Value--4, 5, or 6 dry, 3 or 4 moist.

Chroma--2, 3, or 4.

Texture--Channery clay loam, very channery loam or very channery clay loam.

Clay content--Averages 20 to 30 percent.

Rock fragments--Averages 40 to 55 percent; mainly channers but ranges from 20 to 60 percent in any part.

Structure--Subangular blocky or granular.

Consistence--Slightly hard or hard dry; friable or firm moist; slightly sticky or sticky wet.

Reaction--Moderately alkaline or strongly alkaline.

Effervescence--The matrix is typically non-effervescent in the upper part and non-effervescent or slightly effervescent in the lower part.

Secondary carbonates--Typically present in the lower part as thin lime coatings on rock fragments, with or without few fine filaments or soft masses.

Bk horizons:

Value--6 or 7 dry, 5 or 6 moist.

Chroma--2 or 3.

Texture--Very channery loam or extremely channery loam.

Clay content--12 to 18 percent.

Rock fragments--50 to 70 percent, mainly channers.

Reaction--Moderately alkaline or strongly alkaline.

Mazuma Series

The Mazuma series consists of very deep, well drained soils that formed in alluvium and lacustrine materials from mixed rock sources. Mazuma soils are on fan skirts, lagoons, lake plain terraces, and stream terraces. Slopes are 0 to 8 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 50 degrees F.

Taxonomic class: Coarse-loamy, mixed

(calcareous), mesic Typic Torriorthents.

Typical pedon: Mazuma very fine sandy loam, 2 to 8 percent slopes, in map unit 701, is located about 5 miles west of Oreana. (Colors are for dry soil unless otherwise noted.)

A1--0 to 2 inches; pale brown (10YR 6/3) very fine sandy loam, brown (10YR 4/3) moist; moderate thin platy structure; slightly hard, very friable, nonsticky and slightly plastic; few very fine

roots; many fine and medium vesicular pores; slightly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

A2--2 to 6 inches; light gray (10YR 7/2) very fine sandy loam, brown (10YR 5/3) moist; moderate thin platy structure; slightly hard, very friable, nonsticky and slightly plastic; common very fine roots; many fine and medium vesicular pores; strongly effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

2Bk--6 to 12 inches; pale brown (10YR 6/3) gravelly sandy loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; common very fine and few fine roots; many fine interstitial pores; few thin lime coats on undersides of pebbles; 15 percent pebbles; slightly effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

3C1--12 to 22 inches; pale brown (10YR 6/3) very fine sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; many very fine tubular pores; slightly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

4C2--22 to 29 inches; pale brown (10YR 6/3) loamy sand, brown (10YR 4/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine and fine roots; many fine interstitial pores; 10 percent pebbles; slightly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

5C3--29 to 37 inches; pale brown (10YR 6/3) very fine sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; many very fine tubular pores; slightly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

6C4--37 to 60 inches; pale brown (10YR 6/3) very fine sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; many very fine interstitial pores; slightly effervescent; moderately alkaline (pH 8.2)

Type location: Pershing County, Nevada; approximately 5 miles west of Oreana, about 1,900 feet east and 50 feet north of the southwest corner of section 5, T. 28 N., R. 32 E.; 40 degrees, 18 minutes, 47 seconds north latitude, 118 degrees, 24 minutes, 38 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry, moist for intermittent periods in winter and spring, dry from May to November.

Soil temperature: 53 to 57 degrees F.

Electrical conductivity: Greater than 2 millimhos/centimeter.

Exchangeable sodium percent: 15 to 35 percent.

Reaction: Moderately alkaline to very strongly alkaline.

Control section:

Clay content--5 to 15 percent.

Texture--Stratified sandy loam, fine sandy loam, very fine sandy loam and silt loam with some pedons containing thin strata of clay loam and strata up to 10 inches thick of coarse sand, very coarse sand, or loamy sand.

Rock fragments--A few strata have up to 25 percent pebbles.

A horizons:

Hue--10YR or 2.5Y.

Value--5 through 7 dry; 4 through 6 moist.

Chroma--2 through 4.

Bk horizon:

Hue--10YR or 2.5Y.

Value--5 through 7 dry; 4 through 6 moist.

Chroma--2 through 4.

Other features--Less than 3 percent calcium carbonate equivalent.

C horizons:

Hue--10YR or 2.5Y

Value--5, 6, or 7 dry; 4, 5, or 6 moist.

Chroma--2, 3, or 4.

Segregated lime: Few fine or medium calcium carbonate concretions may be present in any part.

Unconformable material: Lacustrine silts and clays are present below 40 inches in some pedons.

Other features: Salt crystals and relict mottles are present in the lower part of some pedons.

Ninemile Series

The Ninemile series consists of shallow well drained soils that formed in residuum and colluvium

from granite. The Ninemile soils are on convex mountain sideslopes. Slopes are 15 to 50 percent. The mean annual precipitation is about 14 inches and the mean annual temperature is about 45 degrees F.

Taxonomic class: Clayey, montmorillonitic, frigid Lithic Argixerolls.

Typical pedon: Ninemile very gravelly sandy loam, 30 to 50 percent slopes, is located in the Selenite Range in an area of the Ninemile-Shively-Rock Outcrop association, in map unit 145. (Colors are for dry soil unless otherwise noted.) The soil surface is partly covered with 50 percent pebbles and 5 percent cobbles.

A1--0 to 2 inches; very dark grayish brown (10YR 3/2) very gravelly sandy loam, black (10YR 2/1) moist; moderate fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and few fine roots; many fine interstitial pores; 35 percent pebbles; moderately alkaline (pH 8.0); clear smooth boundary.

A2--2 to 5 inches; very dark grayish brown (10YR 3/2) loam, very dark brown (10YR 2/2) moist; weak fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and few fine and medium roots; many very fine tubular pores; 10 percent pebbles; moderately alkaline (pH 8.0); abrupt smooth boundary.

Bt--5 to 16 inches; very dark grayish brown (10YR 3/2) clay, very dark brown (10YR 2/2) moist; moderate medium subangular blocky structure; hard, firm, very sticky and very plastic; common very fine and fine exped roots; few very fine tubular pores; continuous pressure cutans; 10 percent pebbles; moderately alkaline (pH 8.0); abrupt smooth boundary.

R--16 inches; fractured granite that is weathered in the upper 4 inches.

Type location: Pershing County, Nevada; approximately 0.5 mile southeast of Kumiva Peak in the Selenite Range; in an unsurveyed area about 12,500 feet south and 3,600 feet west of the southwest corner of section 23, T. 30 N., R. 24 E.; 40 degrees, 24 minutes, 20 seconds north latitude, 119 degrees, 15 minutes, 20 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry, moist during the winter and spring, dry mainly during late June through early October.

Soil temperature: 44 to 47 degrees F.

Mollic epipedon: 6 to 15 inches; commonly includes part or all of the argillic horizon.

Depth to bedrock: 10 to 20 inches.

Control section:

Clay content--Averages 40 to 60 percent.

A horizons:

Value--3 through 5 dry, 2 or 3 moist.

Chroma--1 through 3.

Reaction--Slightly acid through moderately alkaline.

Other features--Surface 1 or 2 inches of some pedons have color value of 6 and are massive.

Bt horizon:

Hue--5YR, 7.5YR or 10YR.

Value--3 through 6 dry, 2 through 4 moist.

Chroma--2 through 4.

Clay content--40 to 60 percent.

Texture--Clay or gravelly clay.

Rock fragments--0 to 30 percent pebbles or cobbles.

Structure--Moderate or strong subangular blocky, angular blocky or prismatic.

R horizon:

Other features--In some pedons, where the bedrock is less than 15 inches deep, the upper 1 to 4 inches of bedrock is weathered.

Nodur Series

The Nodur series consists of very deep, well drained soils that formed in alluvium derived mainly from granite with a component of loess and volcanic ash. The Nodur soils are on fan piedmont remnants. Slopes are 2 to 8 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 52 degrees F.

Taxonomic class: Fine, montmorillonitic, mesic Durixerollic Natrargids.

Typical pedon: Nodur sandy loam, 2 to 8 percent

slopes, is located in Sage Hen Valley in an area of the Slipback-Shawave-Nodur association, in map unit 1410. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with 10 percent pebbles and 2 percent cobbles.

- A1--0 to 2 inches; brown (10YR 5/3) sandy loam, dark brown (10YR 3/3) moist; weak thin platy structure; slightly hard, very friable, nonsticky and slightly plastic; common very fine roots; many fine vesicular pores; 10 percent pebbles; neutral (pH 7.2); clear smooth boundary.
- A2--2 to 4 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; moderate thin platy structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and few medium roots; many fine vesicular pores; 5 percent pebbles; neutral (pH 7.2); abrupt smooth boundary.
- Btn--4 to 16 inches; yellowish brown (10YR 5/4) clay, dark yellowish brown (10YR 4/4) moist; light brownish gray (10YR 6/2) bleached caps on columns and dark grayish brown (10YR 4/2) organic stains on ped surfaces; strong fine and medium columnar structure; extremely hard, firm, sticky and very plastic; common very fine and few fine exped roots; continuous moderately thick clay films on faces of peds; 5 percent pebbles; moderately alkaline (pH 8.2); clear smooth boundary.
- Bqk1--16 to 27 inches; light yellowish brown (10YR 6/4) continuous weakly silica cemented sandy loam with a thin, discontinuous silica laminae cap, dark yellowish brown (10YR 4/4) moist; massive; extremely hard, firm, nonsticky and slightly plastic; few very fine roots; common very fine tubular and interstitial pores; few fine and medium lime filaments and seams; noneffervescent matrix; 10 percent pebbles; moderately alkaline (pH 8.2); abrupt smooth boundary.
- Bqk2--27 to 33 inches; light yellowish brown (10YR 6/4) continuous weakly silica cemented gravelly coarse sandy loam, dark yellowish brown (10YR 4/4) moist; strong thick platy structure; extremely hard, firm, nonsticky and nonplastic; few very fine roots between plates; few very fine interstitial pores; common large lime seams; strongly effervescent; 20 percent pebbles; strongly alkaline (pH 8.6); clear smooth boundary.
- Bqk3--33 to 46 inches; light yellowish brown (10YR 6/4) continuous weakly silica cemented

gravelly coarse sandy loam, dark yellowish brown (10YR 4/4) moist; massive; extremely hard, firm, nonsticky and slightly plastic; few very fine roots; few fine interstitial pores; few fine lime filaments and horizontal seams; noneffervescent matrix; 20 percent pebbles; strongly alkaline (pH 8.6); clear smooth boundary.

- Bqk4--46 to 60 inches; light yellowish brown (10YR 6/4) continuous weakly silica cemented gravelly coarse sandy loam, yellowish brown (10YR 5/6) moist; massive; extremely hard, firm, nonsticky and slightly plastic; few very fine tubular pores; common large soft masses of lime; 20 percent pebbles; noneffervescent matrix; strongly alkaline (pH 8.6).

Type location: Pershing County, Nevada; approximately 5 miles east of Winnemucca Lake, about 500 feet west and 1,200 feet south of the northeast corner of section 28, T. 27 N., R. 25 E.; 40 degrees, 11 minutes, 07 seconds north latitude, 119 degrees, 10 minutes, 26 seconds west longitude.

Range in Characteristics:

- Soil moisture:* Usually dry; moist in winter and spring, dry from late May through November.
- Soil temperature:* 53 to 56 degrees F.
- Depth to the continuous weak silica cementation:* 12 to 20 inches.
- Depth to carbonates:* 10 to 20 inches.

A horizons:

- Value--5 or 6 dry, 3 or 4 moist.
- Chroma--3 or 4.
- Reaction--Neutral or mildly alkaline.

Btn horizon:

- Hue--10YR or 7.5YR.
- Value--4 through 6 dry, 4 or 5 moist.
- Chroma--3 or 4.
- Texture--Clay, sandy clay or clay loam.
- Clay content--35 to 50 percent.
- Rock fragments--0 to 10 percent, mainly fine pebbles.
- Structure--Columnar or prismatic.
- Consistence--Very hard or extremely hard, dry.
- Reaction--Moderately alkaline or strongly alkaline.
- Carbonates--Typically noneffervescent but in some pedons the lower part is slightly

effervescent or contains a few lime filaments.

SAR--13 to 46 percent.

Bqk horizons:

Value--5 through 7 dry, 4 through 6 moist.

Chroma--3 through 6.

Texture--Sandy loam, coarse sandy loam, gravelly sandy loam, or gravelly coarse sandy loam.

Clay content--5 to 10 percent.

Rock fragments--10 to 25 percent, mainly fine pebbles.

Structure--Platy or massive.

Consistence--Very hard or extremely hard dry, firm or very firm moist.

Reaction--Moderately alkaline or strongly alkaline.

Other features--In some pedons noncemented Bk horizons are present below 40 inches.

Old Camp Series

The Old Camp series consists of shallow, well drained soils that formed in residuum and colluvium from tuffs, rhyolite and andesite. Old Camp soils are on mountain and hill side slopes. Slopes are 15 to 50 percent. The mean annual precipitation is about 10 inches and the mean annual temperature is about 47 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic Lithic Xerollic Haplargids

Typical pedon: Old Camp very gravelly loam, 15 to 50 percent slopes, is located about 17 miles northwest of Rye Patch Dam in an area of the Grumblen-Pickup-Old Camp association, in map unit 432. (Colors are for dry soil unless otherwise noted.) The soil surface is partly covered with 50 percent pebbles, 5 percent cobbles, and 2 percent stones.

A1--0 to 2 inches; light brownish gray (10YR 6/2) very gravelly loam, very dark grayish brown (10YR 3/2) moist; moderate thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; many very fine, few fine, and medium vesicular pores; 35 percent pebbles; mildly alkaline (pH 7.6); clear smooth boundary.

A2--2 to 6 inches; pale brown (10YR 6/3) gravelly loam, dark brown (10YR 3/3) moist; moderate thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine roots; few very fine tubular pores; 20 percent pebbles, 5 percent stones; mildly alkaline (pH 7.6); clear smooth boundary.

Bt--6 to 10 inches; brown (10YR 5/3) very cobbly clay loam, dark brown (10YR 4/3) moist; weak fine subangular blocky structure; hard, firm, sticky and plastic; common very fine, few fine, and medium roots; common very fine tubular pores; few thin clay films on faces on peds; 20 percent pebbles, 25 percent cobbles, 5 percent stones; mildly alkaline (pH 7.6); clear smooth boundary.

Btk--10 to 18 inches; brown (7.5YR 5/4) very cobbly clay loam, dark brown (7.5YR 3/4) moist; moderate fine subangular blocky structure; very hard, very firm, very sticky, and very plastic; common very fine roots; common very fine tubular pores; few thin clay films on faces of peds and lining pores; lime coatings on undersides of rock fragments; 25 percent pebbles, 25 percent cobbles, 5 percent stones; mildly alkaline (pH 7.6); gradual wavy boundary.

R--18 inches; fractured rhyolite.

Type location: Pershing County, Nevada; approximately 17 miles northwest of Rye Patch Dam; about 10 feet east and 1,500 feet south of the northwest corner of section 1, T. 31 N., R. 30 E.; 40 degrees, 35 minutes, 03 seconds north latitude, 118 degrees, 34 minutes, 06 seconds west longitude

Range in Characteristics:

Soil moisture: Usually dry, moist November through May.

Soil temperature: 47 to 52 degrees F.

Depth to bedrock: 10 to 20 inches.

Control section:

Rock fragments--50 to 75 percent, dominantly cobbles and stones. The upper part has 35 to 50 percent rock fragments in some pedons.

A horizons:

Value--5 through 7 dry, 3 or 4 moist.

Chroma--2 or 3.

Reaction--Neutral or mildly alkaline.

Bt horizon:

Hue--10YR or 7.5YR.
 Value--4 through 7 dry, 3 through 5 moist.
 Chroma--2 through 4.
 Texture--Clay loam or sandy clay loam, with loam in some pedons, modified by average of 50 to 75 percent rock fragments, mainly cobbles or stones.
 Clay content--27 to 35 percent.
 Structure--Weak or moderate, coarse to fine angular or subangular blocky.
 Reaction--Neutral or mildly alkaline in the upper part and ranges to moderately alkaline or strongly alkaline in the lower part.
 Other features--Few to continuous lime coats on rock fragments or bedrock.

few very fine and fine roots; common very fine tubular pores; violently effervescent; strongly alkaline (pH 8.9); clear smooth boundary.
 C3--25 to 36 inches; pale brown (10YR 6/3) sandy clay loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, sticky and plastic; few very fine and fine roots; common very fine tubular pores; strongly effervescent; strongly alkaline (pH 8.9); abrupt smooth boundary.
 2C--36 to 60 inches; pale brown (10YR 6/3) gravelly loamy coarse sand, brown (10YR 4/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine roots; many very fine interstitial pores; 15 percent pebbles; strongly effervescent; strongly alkaline (pH 8.6).

Perwaso Series

The Perwaso series consists of very deep, well drained soils that formed in alluvium from mixed rock sources. The Perwaso soils are on alluvial flats. Slopes are 0 to 2 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 51 degrees F.

Taxonomic class: Fine-loamy over sandy or sandy-skeletal, mixed (calcareous), mesic Typic Torrifluvents.

Typical pedon: Perwaso silt loam, 0 to 2 percent slopes, is located in the Haulapai Flat in an area of the Perwaso, occasionally flooded-Perwaso silt loams, in map unit 810. (Colors are for dry soil unless otherwise noted.)

A--0 to 3 inches; light brownish gray (10YR 6/2) silt loam, dark grayish brown (10YR 4/2) moist; strong medium platy structure parting to strong very fine angular blocky; hard, very friable, slightly sticky and slightly plastic; many very fine roots; violently effervescent; strongly alkaline (pH 9.0); abrupt smooth boundary.
 C1--3 to 12 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, sticky and slightly plastic; few very fine and fine roots; common very fine tubular pores; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary.
 C2--12 to 25 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, sticky and slightly plastic;

Type location: Pershing County, Nevada; approximately 9 miles north of Gerlach, about 2,400 feet south of the northeast corner of section 36, T. 35 N., R. 23 E.; 40 degrees, 52 minutes, 35 seconds north latitude, 119 degrees, 18 minutes, 29 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry, moist in some part for short periods during the winter and early spring and dry from May through November.

Soil temperature: 53 to 57 degrees F.

Depth to discontinuity: 30 to 39 inches.

Control section:

Clay content--18 to 27 percent in the upper part and 3 to 7 percent in the lower part.

A horizon:

Value--6 or 7 dry, 4 or 5 moist.
 Chroma--2 or 3 dry or moist.
 Reaction--Strongly alkaline or very strongly alkaline.
 SAR--30 to 50.

C horizons:

Hue--10YR or 2.5Y.
 Value--6 or 7 dry, 4 or 5 moist.
 Chroma--2 or 3 dry or moist.
 Texture--Stratified silt loam, loam, clay loam and sandy clay loam.
 Reaction--Moderately alkaline or strongly alkaline.
 SAR--30 to 175.

2C horizon:

Value--6 or 7 dry, 4 or 5 moist.
 Chroma--2 or 3 dry or moist.
 Texture--Stratified gravelly loamy coarse sand or gravelly coarse sand.
 Rock fragments--15 to 20 percent, mainly pebbles.
 Reaction--Moderately alkaline or strongly alkaline.
 SAR--30 to 50.

Phliss Series

The Phliss series consists of shallow, well drained soils that formed in residuum and colluvium from phyllite, slate, and schist with minor amounts of quartzite. The Phliss soils are on crests and sideslopes of mountains and foothills. Slopes are 15 to 75 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 50 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic Lithic Xerollic Haplargids.

Typical pedon: Phliss extremely channery loam, 30 to 50 percent slopes, is located on Antelope Summit in an area of the Boomstick-Majuba-Phliss association, in map unit 131. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with 50 percent channers and 10 percent flagstones.

A1--0 to 1 inch; light brownish gray (2.5Y 6/2) extremely channery loam, very dark grayish brown (2.5Y 3/2) moist; moderate thin platy structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; many very fine, fine, and medium vesicular pores; 50 percent channers, 10 percent flagstones; moderately alkaline (pH 8.2); clear smooth boundary.

A2--1 to 3 inches; light brownish gray (2.5Y 6/2) channery loam, dark brown (10YR 3/3) moist; weak thin platy structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; common very fine tubular pores; strongly effervescent thin lime coats on undersides of rock fragments; 30 percent channers; noneffervescent matrix; moderately alkaline (pH 8.4); clear smooth boundary.

Btk1--3 to 7 inches; pale brown (10YR 6/3) extremely channery clay loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; slightly hard, firm, sticky and plastic; common very fine and few fine roots; common very fine tubular pores; few thin clay films on faces of peds; strongly effervescent thin lime coats on undersides of rock fragments; 65 percent channers, 5 percent flagstones; slightly effervescent matrix; moderately alkaline (pH 8.2); clear smooth boundary.

Btk2--7 to 13 inches; pale brown (10YR 6/3) extremely channery clay loam, dark brown (10YR 4/3) moist; weak fine subangular blocky structure; slightly hard, firm, sticky and plastic; few very fine and fine roots; few very fine tubular pores; few thin clay films on faces of peds; moderately thick lime coats on undersides of rock fragments; 70 percent channers, 10 percent flagstones; strongly effervescent matrix; moderately alkaline (pH 8.2); clear smooth boundary.

R--13 inches; fractured phyllite with lime coatings in fracture planes.

Type location: Pershing County, Nevada; approximately 700 feet northeast of Antelope Summit about 250 feet east and 100 feet south of the northwest corner of section 30, T. 33 N., R. 31 E.; 40 degrees, 42 minutes 14 seconds north latitude, 118 degrees, 32 minutes, 30 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry, moist in winter and spring, dry mid June through October.

Soil temperature: 47 to 53 degrees F.

Depth to bedrock: 10 to 20 inches.

Other features: Effervescence increases with depth.

Control section:

Percent clay--Averages 18 to 27 percent.

Texture (less than 2 millimeter fraction)--Averages loam or clay loam.

Rock fragments--Ranges from 15 to 80 percent in any one horizon, but averages 50 to 70 percent, mainly channers.

A horizons:

Hue--2.5Y or 10YR.

Value--5 or 6 dry, 3 or 4.

Chroma--2 through 4.

Btk horizons:

Hue--2.5Y or 10YR.
 Value--4 through 6 dry, 3 through 5 moist.
 Chroma--2 through 4.
 Texture--Very channery loam, extremely channery loam, or extremely channery clay loam.
 Clay content--20 to 30 percent.
 Rock fragments--Averages 50 to 70 percent, mainly channers.
 Structure--Subangular blocky or is massive in some pedons when moist.
 Consistence--Slightly hard or hard dry, friable or firm moist, slightly sticky or sticky and slightly plastic or plastic wet.
 Other features--Some pedons have lime pendants on undersides of rock fragments directly above the bedrock.

Pickup Series

The Pickup series consists of moderately deep, well drained soils that formed in residuum and colluvium from rhyolite, rhyolitic tuff, and basalt. Pickup soils are on mountain crests and side slopes. Slopes are 4 to 75 percent. The mean annual precipitation is about 10 inches and the mean annual temperature is about 49 degrees F.

Taxonomic class: Clayey-skeletal, montmorillonitic, mesic Aridic Argixerolls.

Typical pedon: Pickup very gravelly loam, 30 to 50 percent slopes, extremely stony is located in the Trinity Range in an area of the Grumblen-Pickup association, in map unit 431. (Colors are for dry soil unless otherwise noted.) The soil surface is partly covered by with 35 percent pebbles, 15 percent cobbles, and 8 percent stones.

A1--0 to 2 inches; grayish brown (10YR 5/2) very gravelly loam, very dark grayish brown (10YR 3/2) moist; moderate thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; common very fine vesicular and few very fine tubular pores; 35 percent pebbles, 10 percent cobbles; common thin clay films on faces of peds and lining pores; moderately alkaline (pH 8.2); clear smooth boundary.

A2--2 to 5 inches; brown (10YR 5/3) gravelly loam, very dark grayish brown (10YR 3/2)

moist; weak thin platy structure; slightly hard, very friable, sticky and plastic; common very fine roots; common fine vesicular and few fine tubular pores; 15 percent pebbles, 1 percent stones; moderately alkaline (pH 8.2); clear smooth boundary.

Bt1--5 to 11 inches; brown (10YR 5/3) very gravelly clay loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; hard, firm, sticky and plastic; common very fine and few fine roots; common very fine tubular pores; common thin clay films on faces of peds and lining pores; 30 percent pebbles, 10 percent cobbles; moderately alkaline (pH 8.4); clear smooth boundary.

Bt2--11 to 17 inches; yellowish brown (10YR 5/4) very gravelly clay, dark yellowish brown (10YR 3/4) moist; moderate medium subangular blocky structure; hard, firm, very sticky and very plastic; common very fine, few fine and medium roots; common very fine tubular pores; common pressure faces on peds and common thin clay films lining pores; 40 percent pebbles, 10 percent cobbles, 1 percent stones; moderately alkaline (pH 8.4); clear wavy boundary.

Bt3--17 to 22 inches; brown (7.5YR 5/4) very gravelly clay, strong brown (7.5YR 5/6) moist; moderate medium subangular blocky structure; very hard, very firm, very sticky and very plastic; few very fine, fine, and medium roots; common very fine tubular pores; common pressure faces on peds and common thin clay films lining pores; thin lime coats on undersides of rock fragments; 30 percent pebbles, 15 percent cobbles, 1 percent stones; moderately alkaline (pH 8.4); clear wavy boundary.

R--22 inches; hard, fractured rhyolite with thin lime coats on fracture planes.

Type location: Pershing County, Nevada; approximately 12 miles west of Lovelock in the Trinity Range, about 250 feet west and 900 feet north of the southeast corner of section 10, T. 27 N., R. 29 E.; 40 degrees, 13 minutes, 14 seconds north latitude, 118 degrees, 42 minutes, 13 seconds west longitude.

Range in Characteristics:

Soil moisture: Moist in winter and spring, dry late June through October.

Soil temperature: 47 to 52 degrees F.

Mollic epipedon thickness: 7 to 15 inches, typically includes the upper part of argillic horizon.

Depth to bedrock: 20 to 40 inches.

Control section:

Clay content--Averages 40 to 55 percent.

Rock fragments--35 to 60 percent, mainly pebbles.

Reaction--Neutral through moderately alkaline.

A horizons:

Hue--10YR or 7.5YR.

Value--4 or 5 dry, 2 or 3 moist.

Chroma--2 or 3.

Bt1 horizon:

Hue--10YR or 7.5YR.

Value--4 or 5 dry

Chroma--2 or 3.

Texture--Very gravelly clay loam or very gravelly clay.

Clay content--35 to 45 percent.

Reaction--Neutral through moderately alkaline.

Bt2 horizon:

Hue--10YR or 7.5YR.

Value--5 or 6 dry, 3 through 5 moist.

Chroma--3 or 4.

Clay content--50 to 60 percent.

Bt3 horizon:

Texture--Very gravelly clay or very gravelly clay loam.

Secondary carbonates--Coats rock fragments.

Few fine lime filaments are common in some pedons.

Effervescence--The matrix is typically noneffervescent, but in some pedons is slightly effervescent.

Pokergap Series

The Pokergap series consists of very deep, well drained soils that formed in mixed alluvium with a minor component of loess and volcanic ash. The Pokergap soils are on erosional fan piedmont remnants and mountain-valley fans. Slopes are 2 to 30 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 50 degrees F.

Taxonomic class: Fine-loamy, mixed, mesic Durixerollic Natrargids.

Typical pedon: Pokergap silt loam, 2 to 8 percent slopes, is located about 20 miles west of Imlay in an area of map unit 1035. (Colors are for dry soil unless otherwise noted.)

A1--0 to 2 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; moderate medium platy structure; slightly hard, very friable, sticky and slightly plastic; few very fine roots; many very fine, common fine and medium vesicular and few very fine tubular pores; 10 percent pebbles; moderately alkaline (pH 8.2); abrupt wavy boundary.

A2--2 to 6 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; weak thin platy structure; soft, very friable, sticky and slightly plastic; many very fine and few fine roots; many very fine and few fine tubular pores; 2 percent pebbles; moderately alkaline (pH 8.2); clear smooth boundary.

2Bt--6 to 9 inches; light yellowish brown (10YR 6/4) clay loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure, hard, friable, sticky and plastic; many very fine, few fine, and medium roots; common very fine tubular pores; common thin clay films on faces of peds and lining pores; 10 percent pebbles; moderately alkaline (pH 8.2); clear smooth boundary.

2Bt_n--9 to 14 inches; light yellowish brown (10YR 6/4) gravelly clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium prismatic structure; hard, firm, sticky and plastic; many very fine and few fine roots; common very fine tubular pores; many thin clay films on faces of peds and lining pores; 15 percent pebbles; matrix dominantly noneffervescent with a few slightly effervescent spots; strongly alkaline (pH 8.6); clear wavy boundary.

2Bqk1--14 to 21 inches; very pale brown (10YR 7/3) gravelly loam, yellowish brown (10YR 5/4) moist; massive; hard, friable, slightly sticky and plastic; few very fine and fine roots; few very fine tubular pores; 20 percent weakly silica cemented 2 to 5 millimeters durinodes; few fine lime filaments; thin lime coats on undersides of pebbles; 20 percent pebbles; violently effervescent; strongly alkaline (pH 8.8); abrupt smooth boundary.

2Bqk2--21 to 32 inches; very pale brown (10YR 7/3) very gravelly sandy loam, brown (10YR 5/3) moist; massive; hard, firm and brittle, slightly sticky and nonplastic; common very fine and few fine roots; few very fine tubular pores;

continuous weak silica cementation with a thin discontinuous opal laminae at the upper boundary; 35 percent pebbles; thin lime coats on undersides of pebbles; violently effervescent; strongly alkaline (pH 8.8); abrupt wavy boundary.

3Bqk3--32 to 43 inches; white (10YR 8/2) extremely gravelly coarse sandy loam, light yellowish brown (10YR 6/4) moist; moderate medium platy structure; hard, firm and brittle, nonsticky and nonplastic; common very fine and few fine roots mainly between plates; few very fine tubular pores; continuous weak silica cementation; lime coats on all sides of rock fragments and pendants on undersides; 60 percent pebbles, 10 percent cobbles, 5 percent stones; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

3Bqk4--43 to 50 inches; pale brown (10YR 6/3) very gravelly coarse sandy loam, brown (10YR 5/3) moist; massive; hard, firm, nonsticky and nonplastic; few very fine roots; common very fine tubular pores; discontinuous weak silica cementation; common fine lime filaments and medium soft masses; thin lime coats on undersides of pebbles; violently effervescent; 55 percent pebbles, 2 percent cobbles, 1 percent stones; strongly alkaline (pH 8.6); gradual smooth boundary.

3Bk--50 to 60 inches; pale brown (10YR 6/3) weakly stratified extremely gravelly loamy coarse sand, brown (10YR 4/3) moist; massive; hard, friable, nonsticky and nonplastic; common very fine, few fine and medium roots; common very fine tubular pores; 65 percent pebbles, 5 percent cobbles; violently effervescent; common fine lime filaments; thin lime and silica coats on all sides of rock fragments; strongly alkaline (pH 8.6).

Type location: Pershing County, Nevada; approximately 20 miles west of Imlay in a valley between the Kamma Mountains and the Antelope Range; about 3,800 feet south and 500 feet east of the northwest corner of section 1, T. 33 N., R. 30 E., 40 degrees, 45 minutes, 06 seconds north latitude, 118 degrees, 33 minutes, 32 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry; moist in winter and early spring, dry from June through October.

Soil temperature: 53 to 56 degrees F.

Depth to the Bqk horizon: 12 to 20 inches.

Depth to secondary carbonates: 6 to 20 inches.

A horizons:

Value--5 or 6 dry, 3 or 4 moist.

Chroma--2 through 4.

Bt and Btn horizons:

Value--5 or 6 dry, 4 or 5 moist.

Chroma--3 or 4.

Texture--Loam, clay loam, gravelly loam, or gravelly clay loam.

Clay content--Averages 20 to 30 percent.

Rock fragments--10 to 25 percent, mainly pebbles.

Structure--Prismatic in some part, usually the lower part.

Consistence--Slightly hard or hard dry, friable or firm moist.

Reaction--Moderately alkaline or strongly alkaline.

Effervescence--The matrix is typically noneffervescent, some pedons are slightly effervescent in the lower part and have few or common fine lime filaments.

SAR--13 to 23.

Bqk horizons:

Hue--10YR or 2.5Y.

Value--6 through 8 dry, 5 through 7 moist.

Chroma--2 through 4.

Texture--Stratified gravelly loam to extremely gravelly coarse sandy loam.

Clay content--7 to 15 percent.

Rock fragments--Averages 35 to 60 percent, mainly pebbles.

Structure--Platy or massive.

Reaction--Moderately alkaline or strongly alkaline.

SAR--24 to 46.

Effervescence--Strongly effervescent or violently effervescent.

Calcium carbonate equivalent--Less than 3 percent.

Silica cementation--Continuous weakly silica cemented in some part within a depth of 40 inches.

Bk horizon:

Hue--10YR or 2.5Y.

Value--6 through 8 dry, 4 through 7 moist.

Chroma--2 through 4.

Texture--Stratified very gravelly coarse sandy loam to extremely gravelly loamy coarse sand.

Clay content--4 to 10 percent.

Rock fragments--50 to 75 percent, mainly pebbles.

Consistence--Slightly hard or hard dry, friable or very friable moist.

Reaction--Moderately alkaline or strongly alkaline.

Calcium carbonate equivalent--Less than 3 percent.

Puett Series

The Puett series consists of shallow, well drained soils formed in residuum and colluvium of weathered tuff and tuffaceous sandstone. Puett soils are on low hills. Slopes are 15 to 50 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 47 degrees F.

Taxonomic class: Loamy, mixed (calcareous), mesic, shallow Xeric Torriorthents.

Typical pedon: Puett coarse sandy loam, 15 to 30 percent slopes, is located about 21 miles east of Gerlach in an area of the Shawave-Biga-Puett association, in map unit 994. (Colors are for dry soil unless otherwise noted.)

A--0 to 3 inches; light brownish gray (10YR 6/2) coarse sandy loam, yellowish brown (10YR 5/4) moist; weak thin platy structure; soft, very friable, nonsticky and nonplastic; few very fine roots; many very fine vesicular pores; 10 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.

C--3 to 12 inches; light brownish gray (10YR 6/2) sandy loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; common very fine tubular pores; 10 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Cr--12 inches; pale brown (10YR 6/3) highly weathered tuff, brown (10YR 4/3) moist; few very fine roots along fractures; violently effervescent; strongly alkaline (pH 8.6).

Type location: Pershing County, Nevada; approximately 21 miles east of Gerlach between Dry Mountain and The Lava Beds; in an unsurveyed area about 26,800 feet east and 3,400 feet south of the southeast corner of section 36, T. 33 N., R. 25 E.; 40 degrees, 40 minutes, 04 seconds north latitude, 119 degrees, 01 minute, 05 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry; moist in winter and spring, dry June through October.

Soil temperature: 47 to 52 degrees F.

Depth to bedrock: 10 to 20 inches.

Profile reaction: Moderately alkaline or strongly alkaline.

Carbonates: Strongly or violently effervescent throughout. Lime coats on pebbles in lower part of some pedons.

Control section:

Clay content--5 to 10 percent.

Rock fragments--Up to 35 percent pebbles.

A horizon:

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 through 4.

C horizon:

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 through 4.

Texture--Loamy fine sand to loam but is dominantly coarse sandy loam to loam.

Gravelly loam or gravelly sandy loam is common in some pedons.

Structure--Subangular blocky or massive.

Consistence--Nonsticky or slightly sticky and nonplastic or slightly pasty, wet.

Ragtown Series

The Ragtown series consists of very deep, moderately well drained soils that formed in moderately fine and fine textured lacustrine materials from mixed rock sources. The Ragtown soils are on lake plain terraces. Slopes are 0 to 2 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 53 degrees F.

Taxonomic class: Fine, montmorillonitic (calcareous), mesic Typic Torriorthents.

Typical pedon: Ragtown silt loam, strongly saline-sodic, 0 to 2 percent slopes, is located about 5 miles south of Toulon in an area of the Isolde-Ragtown association, in map unit 502. (Colors are for dry soil unless otherwise noted.)

A1--0 to 2 inches; pale yellow (5Y 7/3) silt loam, olive (5Y 5/3) moist; weak thin platy structure; slightly hard, very friable, sticky and plastic; few very fine roots; many fine and common medium vesicular pores; violently effervescent; very strongly alkaline (pH 9.6); clear smooth boundary.

A2--2 to 7 inches; pale olive (5Y 6/3) silt loam, olive (5Y 4/3) moist; weak thin platy structure; slightly hard, very friable, sticky and plastic; common very fine and few fine roots; many very fine tubular pores; violently effervescent; very strongly alkaline (pH 9.6); clear smooth boundary.

C1--7 to 16 inches; pale olive (5Y 6/3) silty clay loam, olive (5Y 4/3) moist; few fine prominent brown (7.5YR 5/4) relict mottles; strong fine prismatic structure; hard, friable, very sticky and very plastic; common very fine and few fine roots; many very fine and common fine tubular pores; few fine ostracod shells; violently effervescent; very strongly alkaline (pH 9.6); abrupt smooth boundary.

2C2--16 to 29 inches; light gray (5Y 7/2) clay, light olive gray (5Y 6/2) moist; common fine faint light yellowish brown (2.5Y 6/4) relict mottles and common black (10YR 2/1) stains; weak coarse prismatic structure; hard, friable, very sticky and very plastic; few very fine roots; many fine and medium tubular pores; common thin silt coatings on faces of peds and lining pores; few fine ostracod shells; common fine salt seams on sides and tops of prisms; violently effervescent; very strongly alkaline (pH 9.6); clear smooth boundary.

2C3--29 to 60 inches; light gray (5Y 7/2) clay, light olive gray (5Y 6/2) moist; many coarse faint light yellowish brown (2.5Y 6/4) relict mottles and common black (10YR 2/1) stains; weak coarse prismatic structure parting to moderate thick plates; hard, friable, very sticky and very plastic; many fine and common medium tubular pores; common thin silt coatings on faces of peds and lining pores; common fine salt seams on sides and tops of prisms; violently effervescent; very strongly alkaline (pH 9.6); clear smooth boundary.

Type location: Pershing County, Nevada; approximately 5 miles south of Toulon, about 1,900 feet east and 4,800 feet south of the northwest corner of section 25, T. 25 N., R. 29 E.; 40 degrees, 00 minutes, 03 seconds north latitude, 118 degrees, 40 minutes, 31 seconds west longitude.

Range in Characteristics:

Soil moisture: Moist in winter and spring, dry May through November.

Soil temperature: 53 to 57 degrees F.

Depth to fine textured materials: 16 to 30 inches.

Profile reaction: Moderately alkaline through very strongly alkaline.

Control section:

Clay content--35 to 45 percent.

A horizons:

Hue--10YR, 2.5Y or 5Y.

Value--5 through 7 dry, 3 through 5 moist.

Chroma--3 or 4.

C horizons:

Hue--10YR, 2.5Y, 5Y.

Value--6 or 7 dry, 4 through 6 moist.

Chroma--2 or 3.

Texture--Stratified with silty clay loam, clay loam, or sandy clay loam in the upper part and clay, silty clay, or silty clay loam in the lower part.

Clay content--More than 25 percent in the upper part and more than 35 percent in the lower part.

Structure--Platy, subangular blocky prismatic or massive.

Rednik Series

The Rednik series consists of very deep, well drained soils that formed in mixed alluvium. The Rednik soils are on side slopes of deeply dissected fan piedmont remnants. Slopes are 15 to 75 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 50 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic Typic Haplargids.

Typical pedon: Rednik very gravelly sandy loam, 50 to 75 percent slopes, is located about 3 miles southeast of Sulphur in an area of the Rednik-Jungo-Aboten association, in map unit 960. (Colors are for dry soil unless otherwise noted.) The soil surface is partly covered with 50 percent pebbles and 5 percent cobbles.

A--0 to 2 inches; very pale brown (10YR 7/3) very gravelly sandy loam, brown (10YR 5/3) moist; moderate thin platy structure; slightly hard, friable, slightly sticky and plastic; common very fine roots; many very fine vesicular, common very fine and few fine tubular pores; 35 percent pebbles; strongly effervescent; moderately alkaline (pH 8.0); clear smooth boundary.

Bt--2 to 4 inches; pale brown (10YR 6/3) very gravelly loam, brown (10YR 4/3) moist; strong fine subangular blocky structure; slightly hard, friable, slightly sticky and plastic; common very fine and few fine roots; common very fine tubular and interstitial pores; common thin clay films on faces of peds and lining pores; 55 percent pebbles; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

Btk--4 to 8 inches; pale brown (10YR 6/3) extremely gravelly loam, brown (10YR 4/3) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and plastic; many very fine, few fine, and medium roots; common very fine tubular pores; common thin clay films on faces of peds and pebbles and lining pores; thin lime coats on undersides of pebbles; 75 percent pebbles; strongly effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

Btnk--8 to 30 inches; light yellowish brown (10YR 6/4) extremely gravelly loam, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, friable, sticky and plastic; few very fine, fine, and medium roots; common very fine tubular pores; common thin clay films on faces of peds and coarse fragments lining pores; common fine lime filaments, thin lime coats on undersides of coarse fragments; 75 percent pebbles, 2 percent cobbles; strongly effervescent; strongly alkaline (pH 9.0); clear smooth boundary.

2Bk1--30 to 41 inches; pale brown (10YR 6/3) extremely gravelly sandy loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and few fine roots; common very fine tubular pores; thin lime coats on undersides of coarse fragments; 75 percent pebbles, 2

percent cobbles; strongly effervescent; very strongly alkaline (pH 9.2); clear smooth boundary.

3Bk2--41 to 60 inches; pale brown (10YR 6/3) extremely gravelly loamy coarse sand, brown (10YR 4/3) moist; single grain; loose; nonsticky and nonplastic; common very fine roots; many very fine interstitial pores; thin lime coats on undersides of pebbles; 75 percent pebbles; strongly effervescent; strongly alkaline (pH 8.6).

Type location: Pershing County, Nevada; approximately 3 miles southeast of Sulphur, in an unsurveyed area about 47,000 feet west and 1,900 feet south of the northwest corner of section 7, T. 34 N., R. 31 E.; 40 degrees, 49 minutes, 38 seconds north latitude, 118 degrees, 42 minutes, 31 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry; moist for short periods from November through early May, dry late May through October.

Soil temperature: 50 to 54 degrees F.

Depth to base of Btn horizon: 15 to 30 inches.

Control section:

Clay content--18 to 27 percent, when mixed.

Rock fragments--35 to 75 percent, mainly pebbles.

A horizon:

Hue--2.5Y or 10YR.

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 through or 4.

Reaction--Mildly alkaline or strongly alkaline.

Bt, Btk, and Btnk horizons:

Value--5 or 6 dry, 4 or 5 moist.

Chroma--3 or 4, dry or moist.

Texture (less than 2 millimeter fraction)--Sandy clay loam, sandy loam, or loam.

Rock fragments--35 to 75 percent.

Structure--Moderate or strong, medium or fine, angular or subangular blocky or massive.

Reaction--Moderately alkaline or strongly alkaline.

SAR--15 to 30 percent in some part.

Effervescence--Strongly effervescent to violently effervescent.

Bk horizons:

Hue--10YR or 7.5YR.

Value--6 through 8 dry, and 4 through 6 moist.
Chroma--2 through 4.

Texture (less than 2 millimeter fraction)--Fine sandy loam, sandy loam, loamy sand, loamy coarse sand or sand.

Rock fragments--35 to 75 percent, mainly pebbles.

Reaction--Strongly alkaline or very strongly alkaline.

Effervescence--Strongly effervescent to violently effervescent.

Say Series

The Say series consists of moderately deep, well drained soils that formed in residuum from granite. The Say soils are on mountain sideslopes. Slopes are 30 to 50 percent. The mean annual precipitation is about 11 inches and the mean annual temperature is about 44 degrees F.

Taxonomic class: Fine-loamy, mixed, frigid Aridic Argixerolls.

Typical pedon: Say very stony loam, 30 to 50 percent slopes, is located in the Seven Troughs Range in an area of the Say-Eaglerock-Ninemile association, in map unit 970. (Colors are for dry soil unless otherwise noted.) The soil surface is partly covered with 10 percent pebbles, 5 percent cobbles, and 3 percent stones.

A1--0 to 4 inches; brown (10YR 5/3) very stony loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine and few fine roots; common very fine interstitial pores; 10 percent pebbles, 10 percent stones; mildly alkaline (pH 7.4); clear smooth boundary.

A2--4 to 8 inches; brown (10YR 5/3) stony loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; common very fine and few fine roots; common very fine interstitial and few very fine tubular pores; 10 percent pebbles, 10 percent stones; mildly alkaline (pH 7.4); clear smooth boundary.

Bt1--8 to 15 inches; light yellowish brown (10YR 6/4) gravelly loam, brown (10YR 4/3) moist; weak fine and medium subangular blocky structure; slightly hard, friable, sticky and

plastic; common very fine, few fine, and medium roots; common very fine and few fine tubular pores; common thin clay films on faces of peds and lining pores; 20 percent pebbles, 5 percent stones; mildly alkaline (pH 7.4); clear smooth boundary.

Bt2--15 to 23 inches; light yellowish brown (10YR 6/4) gravelly sandy clay loam, brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; hard, firm, sticky and plastic; common very fine, few fine medium and coarse roots; common very fine and fine tubular pores; common thin clay films on faces of peds and lining pores; 30 percent pebbles, 2 percent stones; mildly alkaline (pH 7.6); clear smooth boundary.

C--23 to 28 inches; light yellowish brown (10YR 6/4) gravelly sandy loam, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, friable, slightly sticky and plastic; common very fine, few fine medium and coarse roots; common very fine and fine tubular pores; common thin clay films on faces of peds and lining pores; 30 percent pebbles, 2 percent stones; mildly alkaline (pH 7.6); clear wavy boundary.

Cr--28 to 32 inches; soft weathered granite.

Type location: Pershing County, Nevada; approximately 10 miles northwest of Vernon in the Seven Troughs Range, in an unsurveyed area about 5,000 feet west and 900 feet south of the northwest corner of section 7, T. 31N., R. 29 E.; 40 degrees, 34 minutes, 18 seconds north latitude, 118 degrees, 47 minutes, 42 seconds west longitude.

Range in Characteristics:

Soil moisture: Moist in winter and spring, dry from July through October.

Soil temperature: 43 to 47 degrees F.

Mollic epipedon thickness: 7 to 12 inches.

Solum thickness: 19 to 32 inches.

Depth to paralithic contact: 20 to 40 inches.

Profile reaction: Neutral or mildly alkaline.

Other features: The profile is noncalcareous throughout. Most pedons have a thin BA horizon.

Control section:

Clay content--18 to 25 percent.

Rock fragments--15 to 35 percent.

A horizons:

Value--4 or 5 dry.

Chroma--2 or 3.

Bt horizons:

Value--5 or 6 dry, 3 or 4 moist.

Texture--Gravelly loam, gravelly sandy clay loam, cobbly loam, or cobbly sandy clay loam.

Structure--Subangular blocky or horizon is massive.

Consistence--Slightly hard or hard dry.

C horizon:

Value--5 or 6 dry, 3 or 4 moist.

Texture--Gravelly sandy loam, gravelly loamy sand, very gravelly sandy loam, very gravelly loamy sand.

Clay content--4 to 15 percent.

Rock fragments--20 to 50, dominantly pebbles.

Consistence--Slightly hard or loose.

Other features--This horizon is discontinuous in some pedons.

Selbit Series

The Selbit series consists of shallow, well drained soils that formed in residuum and colluvium from granite. The Selbit soils are on mountain sideslopes. Slopes are 15 to 75 percent. The mean annual precipitation is about 13 inches and the mean annual temperature is about 47 degrees F.

Taxonomic class: Sandy-skeletal, mixed, mesic, shallow Torriorthentic Haploxerolls.

Typical pedon: Selbit very gravelly coarse sand, 50 to 75 percent slopes, extremely bouldery, is located in the Selenite Range in an area of map unit 981. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with 15 percent boulders, 5 percent cobbles, and 40 percent pebbles.

A1--0 to 4 inches; brown (10YR 4/3) very gravelly coarse sand, dark brown (10YR 3/3) moist; very weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine, common fine and few medium roots; many fine interstitial pores; 40 percent pebbles; mildly alkaline (pH 7.4); clear smooth boundary.

A2--4 to 11 inches; brown (10YR 4/3) very stony loamy coarse sand, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky

structure; soft, very friable, nonsticky and nonplastic; many very fine, common fine and medium, 20 percent pebbles, 35 percent stones; mildly alkaline (pH 7.4); clear smooth boundary.

A3--11 to 17 inches; brown (10YR 4/3) very stony loamy coarse sand, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine, common fine and medium, few coarse roots; many fine tubular pores; 20 percent pebbles, 5 percent cobbles, 15 percent stones; mildly alkaline (pH 7.4); abrupt wavy boundary.

Cr--17 to 60 inches; soft granitic grus with many very fine and few fine and medium roots along weak fractures.

Type location: Pershing County, Nevada; approximately 1 mile south of Kumiva Peak, in an unsurveyed area about 2,700 feet west and 10,500 feet north of the northwest corner of section 2, T. 28 N., R. 24 E.; 40 degrees, 21 minutes, 37 seconds north latitude, 119 degrees, 16 minutes, 34 seconds west longitude.

Range in Characteristics:

Soil moisture: Moist in winter and spring, dry from July through October.

Soil temperature: 47 to 50 degrees F.

Mollic epipedon thickness: 14 to 20 inches.

Depth to paralithic contact: 14 to 20 inches.

Other features: Soil is noneffervescent throughout.

Control section:

Clay content--3 to 8 percent.

Texture--Very stony loamy coarse sand, very stony sand, very stony loamy sand.

Rock fragments--35 to 60 percent, mainly stones and pebbles.

A horizons:

Value--4 or 5 dry.

Chroma--2 or 3.

Reaction--Neutral or mildly alkaline.

Shawave Series

The Shawave series consists of very deep, well drained soils that formed in alluvium derived mainly from granitic rocks with a component of loess and

volcanic ash. The Shawave soils are on fan piedmonts, fan skirts, and mountain valley fans. Slopes are 2 to 15 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 50 degrees F.

Taxonomic class: Fine-loamy, mixed, mesic Xerollic Haplargids.

Typical pedon: Shawave gravelly sandy loam, 2 to 8 percent slopes, is located in Kumiva Valley, in an area of the Shawave-Slipback-Granshaw association, in map unit 991. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with 15 percent pebbles.

A1--0 to 4 inches; pale brown (10YR 6/3) gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak thin platy structure; soft, very friable, nonsticky and nonplastic; many very fine and few fine roots; common very fine tubular and interstitial pores; 15 percent pebbles; moderately alkaline (pH 8.0); abrupt smooth boundary.

A2--4 to 8 inches; light brownish gray (10YR 6/2) sandy loam, brown (10YR 4/3) moist; weak coarse prismatic structure parting to weak thin platy; soft, very friable, slightly sticky and slightly plastic; common very fine, few fine and medium roots; common very fine tubular pores; 5 percent pebbles; moderately alkaline (pH 8.2); clear smooth boundary.

Bt1--8 to 10 inches; light brownish gray (10YR 6/2) sandy loam, brown (10YR 4/3) moist with light gray (10YR 7/2) bleached sand grains on faces of peds; weak medium prismatic structure; hard, very friable, slightly sticky and slightly plastic; common very fine roots; many very fine tubular pores; few thin clay films on faces of peds and lining pores; 2 percent pebbles; moderately alkaline (pH 8.2); clear smooth boundary.

Bt2--10 to 16 inches; brown (10YR 5/3) sandy clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium and coarse prismatic structure; very hard, firm, sticky and plastic; common very fine exped roots; common very fine and few fine tubular pores; many moderately thick clay films on faces of peds and lining pores; 1 percent pebbles; moderately alkaline (pH 8.2); abrupt wavy boundary.

Btk--16 to 21 inches; yellowish brown (10YR 5/4) sandy loam, dark yellowish brown (10YR 4/4)

moist; massive; hard, firm, slightly sticky and plastic; common very fine and few fine roots; common very fine tubular pores; many thin clay films bridging sand grains; few fine and medium lime filaments; noneffervescent matrix; moderately alkaline (pH 8.2); clear wavy boundary.

Bk--21 to 37 inches; brownish yellow (10YR 6/6) coarse sandy loam, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine roots; common very fine tubular pores; 40 percent hard, very friable 5 to 15 millimeter nodules; few fine lime filaments; noneffervescent matrix; moderately alkaline (pH 8.2); clear wavy boundary.

2C--37 to 47 inches; brownish yellow (10YR 6/6) loamy coarse sand, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine roots; few very fine tubular pores; moderately alkaline (pH 8.2); clear smooth boundary.

2Ck--47 to 60 inches; brownish yellow (10YR 6/6) coarse sand, dark yellowish brown (10YR 4/4) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and few fine roots; few fine lime filaments; noneffervescent matrix; moderately alkaline (pH 8.2).

Type location: Pershing County, Nevada; approximately 10 miles east of Mt. Limbo, about 2,200 feet west and 1,950 feet north of the southeast corner of section 30, T. 28 N., R. 26 E.; 40 degrees, 16 minutes, 00 seconds north latitude, 119 degrees, 06 minutes, 18 seconds west longitude.

Range in Characteristics:

Soil moisture: Moist in winter and early spring; dry from June through November.

Soil temperature: 53 to 56 degrees F.

Depth to secondary carbonates: 15 to 25 inches.

Depth to the base of the argillic horizon: 15 to 30 inches.

Profile reaction: Mildly alkaline or moderately alkaline.

A horizons:

Value--5 or 6 dry, 3 or 4 moist; when mixed, the upper 7 inches averages greater than 5.5 dry or 3.5 moist.

Chroma--2 through 4.

Bt and Btk horizons:

Hue--10YR or 7.5YR.

Value--5 or 6 dry, 4 or 5 moist, most pedons have bleached areas with value of 7 dry in the upper part.

Chroma--2 through 4.

Texture--Sandy loam, sandy clay loam, loam.

Clay content--18 to 25 percent.

Rock fragments--0 to 15 percent, mainly fine pebbles.

Structure--Subangular blocky or prismatic in the upper part; massive in the lower part.

Consistence--Slightly hard, hard or very hard dry, very friable, friable or firm moist.

Effervescence--The matrix is typically noneffervescent but may contain a few fine lime filaments.

SAR--Less than 13.

Bk horizon:

Value--5 through 7 dry, 4 or 5 moist.

Chroma--3 through 6.

Texture--Sandy loam or coarse sandy loam.

Clay content--4 to 10 percent.

Rock fragments--0 to 15 percent, mainly fine pebbles.

Consistence--Slightly hard or hard dry, very friable or friable moist.

Other features--May contain up to 50 percent very weakly silica cemented nodules that are hard dry, very friable moist.

2C horizons:

Value--6 or 7 dry, 4 through 6 moist.

Chroma--3 through 6.

Texture--Loamy coarse sand, coarse sand or sand.

Clay content--2 to 6 percent.

Rock fragments--0 to 15 percent, mainly fine pebbles.

Structure--Massive or single grain.

Consistence--Loose, soft or slightly hard dry, loose or very friable moist.

Reaction--Mildly alkaline or moderately alkaline.

Other features--In some pedons these horizons are not present within a depth of 60 inches.

mountain sideslopes. Slopes are 15 to 50 percent. The mean annual precipitation is about 14 inches and the mean annual temperature is about 45 degrees F.

Taxonomic class: Coarse-loamy, mixed, frigid Pachic Haploxerolls.

Typical pedon: Shively loam, 15 to 50 percent slopes, is located in the Selenite Range in an area of the Ninemile-Shively-Rock outcrop association, in map unit 145. (Colors are for dry soil unless otherwise noted.) The surface is covered with partially decomposed shrub leaves and twigs and with 5 percent pebbles.

A1--0 to 2 inches; black (10YR 2/1) loam, black (10YR 2/1) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common very fine, fine and medium roots; many very fine interstitial pores; 2 percent pebbles; neutral (pH 6.6); clear smooth boundary.

A2--2 to 6 inches; very dark grayish brown (10YR 3/2) sandy loam, very dark brown (10YR 2/2) moist; moderate fine granular structure; slightly hard, very friable, nonsticky and nonplastic; many very fine, fine, and few medium roots; many very fine interstitial pores; 5 percent pebbles; neutral (pH 6.8); clear smooth boundary.

A3--6 to 16 inches; dark grayish brown (10YR 4/2) sandy loam, very dark brown (10YR 2/2) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; many fine, very fine and few medium roots; many very fine tubular pores; 10 percent pebbles; neutral (pH 7.0); gradual smooth boundary.

A4--16 to 35 inches; dark grayish brown (10YR 4/2) sandy loam, very dark brown (10YR 2/2) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; many very fine and common fine roots; common very fine tubular pores; 10 percent pebbles; neutral (pH 6.8); clear smooth boundary.

C--35 to 60 inches; brown (10YR 5/3) sandy loam, dark brown (10YR 4/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; common very fine and few fine roots; many very fine tubular pores; 5 percent pebbles; mildly alkaline (pH 7.4).

Type location: Pershing County, Nevada; approximately 0.5 mile southeast of Kumiva

Shively Series

The Shively series consists of very deep, well drained soils that formed in residuum and colluvium primarily from granite. Shively soils are on concave

Peak in the Selenite Range, in an unsurveyed area about 3,300 feet south and 17,200 feet west of the apparent northeast corner of section 1, T. 29 N., R. 24 E.; 40 degrees, 24 minutes, 07 seconds north latitude; 119 degrees, 15 minutes, 24 seconds west longitude .

Range in Characteristics:

Soil moisture: Moist winter and spring, dry late July through early October.

Soil temperature: 44 to 47 degrees F.

Mollic epipedon thickness: 20 to 35 inches.

Depth to paralithic contact: 60 to 80 inches.

Control section:

Textures--Loam, sandy loam or fine sandy loam, ranging to sandy clay loam in the lower part.

Clay content--10 to 18 percent.

Rock fragments--Range from 0 to 30 percent, mainly pebbles in any one part, but averages 0 to 15 percent.

A horizons:

Value--2 through 5 dry, 2 or 3 moist, with value of 2 dry common only in the upper part of the layer of some pedons.

Chroma--1 through 3.

C horizon:

Value--5 or 6 dry, 4 or 5 moist.

Chroma--1 through 3.

Structure--Subangular blocky or is massive.

Singatse Series

The Singatse series consists of very shallow, somewhat excessively drained soils that formed in residuum and colluvium from rhyolite, andesite, dacite, and granite. Singatse soils are on hill and mountain sideslopes. Slopes are 15 to 50 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 51 degrees F.

Taxonomic class: Loamy-skeletal, mixed (calcareous), mesic Lithic Torriorthents.

Typical pedon: Singatse very gravelly loam, 15 to 50 percent slopes is located in the Seven Troughs Range in an area of the Theon-Singatse association, gravelly, in map unit 1051. (Colors

are for dry soil unless otherwise noted.) The soil surface is partly covered with 40 percent pebbles and 5 percent cobbles.

A1--1 to 2 inches; pale brown (10YR 6/3) very gravelly loam, brown (10YR 4/3) moist; weak thin platy structure; soft, very friable, slightly sticky and slightly plastic; few fine roots; many fine and common medium vesicular pores; 45 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

A2--2 to 4 inches; pale brown (10YR 6/3) very gravelly loam, brown (10YR 4/3) moist; weak thin platy structure; soft, very friable, slightly sticky and slightly plastic; common fine, many very fine roots; many very fine vesicular pores; 45 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

C--4 to 8 inches; light gray (10YR 7/2) very gravelly loam, brown (10YR 5/3) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; many very fine roots; many very fine tubular pores; 55 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.

R--8 inches; hard rhyolite, fractured in upper 2 inches; lime coats in fractures.

Type location: Pershing County, Nevada; approximately 4 miles southwest of Vernon in the Seven Troughs Range; in an unsurveyed area about 1,950 feet east and 550 feet south of the northwest corner of section 22, T. 29 N., R. 28 E.; 40 degrees, 22 minutes, 33 seconds north latitude, 118 degrees, 49 minutes, 40 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry; moist for short periods in winter and spring. Dry in early May through October.

Soil temperature: 49 to 54 degrees F.

Profile reaction: Moderately alkaline or strongly alkaline.

Depth to lithic contact: 4 to 10 inches.

Control section:

Clay content--5 to 15 percent.

Rock fragments--35 to 60 percent, mainly pebbles.

Texture--Very gravelly loam or very gravelly sandy loam.

A horizons:

Hue--10YR or 2.5Y.

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 or 3.

C horizon:

Hue--10YR or 2.5Y.

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 or 3.

Slaw Series

The Slaw series consists of very deep, well drained soils that formed in alluvium from mixed rock sources. Slaw soils are on alluvial flats. Slopes are 0 to 2 percent. Mean annual precipitation is about 5 inches and the mean annual temperature is about 54 degrees F.

Taxonomic class: Fine-silty, mixed (calcareous), mesic Typic Torrifluvents.

Typical pedon: Slaw silt loam, 0 to 2 percent slopes, is located in Hualapai Flat in an area of the Slaw-Slaw, occasionally flooded silt loams, in map unit 996. (Colors are for dry soil unless otherwise noted.)

A1--0 to 1 inch; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; strong medium platy structure; very hard, friable, sticky and slightly plastic; few very fine roots; common fine vesicular pores; slightly effervescent; very strongly alkaline (pH 9.4); abrupt smooth boundary.

A2--1 to 3 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; weak fine granular structure; soft, very friable, sticky and slightly plastic; few very fine roots; common very fine interstitial pores; slightly effervescent; very strongly alkaline (pH 9.4); clear smooth boundary.

Cl--3 to 10 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; very hard, friable, sticky and plastic; few very fine roots; common very fine tubular pores; violently effervescent; very strongly alkaline (pH 9.2); clear smooth boundary.

C2--10 to 40 inches; light brownish gray (10YR 6/2) weakly stratified silty clay loam, dark grayish brown (10YR 4/2) moist; massive; hard,

friable, sticky and plastic; few very fine roots; few very fine tubular pores; violently effervescent; very strongly alkaline (pH 9.3); clear smooth boundary.

C3--40 to 60 inches; light brownish gray (10YR 6/2) silty clay loam, grayish brown (10YR 5/2) moist; many fine distinct dark yellowish brown (10YR 4/4) relict mottles; massive; hard, friable, sticky and plastic; few very fine roots; few very fine tubular pores; violently effervescent; strongly alkaline (pH 8.9).

Type location: Washoe County, Nevada; approximately 9 miles north of Gerlach in Hualapai Flat, 400 feet south and 1,800 feet east of the northwest corner of section 36, T. 35 N., R. 23 E.; 40 degrees, 52 minutes, 56 seconds north latitude, 119 degrees, 19 minutes, 16 seconds west longitude. This type location is outside the survey area due to the small acreage involved in joining the Washoe County, Nevada, Central Part Soil Survey Area.

Range in Characteristics:

Soil moisture: Usually dry, moist in some part for short periods during winter and early spring months and for 10 to 20 days cumulative between July and October due to convection storms.

Soil temperature: 53 to 57 degrees F.

Calcium carbonate equivalent: 1 to 4 percent.

Organic matter: Decreases irregularly with depth.

Control section:

Clay content--18 to 35 percent.

Texture--Stratified, averages silty clay loam or silt loam.

A horizons:

Value--6 or 7 dry, 4, 5, or 6 moist.

Chroma--2 through 4.

Reaction--Strongly alkaline or very strongly alkaline.

Carbonates--Slightly effervescent to violently effervescent.

C horizons:

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 through 4.

Structure--Subangular blocky or massive.

Reaction--Strongly alkaline or very strongly alkaline.

Relict mottles--Common in any part.

Slipback Series

The Slipback series consists of very deep, well drained soils that formed in alluvium derived mainly from granite. The Slipback soils are on fan piedmont remnants and mountain valley fans. Slopes are 2 to 8 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 51 degrees F.

Taxonomic class: Fine-loamy, mixed, mesic Xerollic Natrargids.

Typical pedon: Slipback sandy loam, 2 to 8 percent slopes, is located in Kumiva Valley in an area of the Shawave-Slipback-Granshaw association, in map unit 991. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with 5 percent pebbles.

A1--0 to 4 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; weak thin platy structure; soft, very friable, nonsticky and nonplastic; many very fine roots; many fine interstitial pores; 10 percent pebbles; moderately alkaline (pH 8.0); abrupt smooth boundary.

A2--4 to 7 inches; very pale brown (10YR 7/3) silt loam, brown (10YR 5/3) moist; weak thin platy structure; slightly hard, very friable, sticky and slightly plastic; common very fine roots; common very fine and few fine tubular pores; 2 percent pebbles; moderately alkaline (pH 8.0); abrupt smooth boundary.

AB--7 to 9 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine, common fine and few medium roots; common very fine and fine tubular pores; 10 percent pebbles; moderately alkaline (pH 8.2); abrupt smooth boundary.

Bt--9 to 13 inches; pale brown (10YR 6/3) gravelly loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and plastic; many very fine, few fine, medium and coarse roots; common very fine and fine tubular pores; common thin clay films on faces of ped and lining pores; 15 percent pebbles; moderately alkaline (pH 8.2); clear smooth boundary.

Btn--13 to 16 inches; yellowish brown (10YR 5/4) gravelly sandy clay loam, dark yellowish brown

(10YR 4/4) moist; moderate fine subangular blocky structure; slightly hard, very friable, sticky and plastic; common very fine and fine, few medium roots; many very fine and common fine tubular pores; common thin clay films on faces of ped and lining pores; 25 percent pebbles; strongly alkaline (pH 8.6); clear wavy boundary.

Btnk--16 to 24 inches; yellowish brown (10YR 5/4) clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium prismatic structure parting to moderate medium subangular blocky; hard, firm, sticky and very plastic; few very fine and fine roots; many very fine and common fine tubular pores; continuous thin clay films on faces of ped and lining pores; many fine, medium and coarse lime filaments; 5 percent pebbles; strongly effervescent; strongly alkaline (pH 8.8); abrupt wavy boundary.

2Bky--24 to 38 inches; yellowish brown (10YR 5/4) gravelly coarse sandy loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; few very fine and fine roots; many very fine and few fine tubular pores; 5 percent hard, firm, 2 to 5 millimeter durinodes; common fine strongly effervescent lime filaments; few fine soft masses of gypsum; 15 percent pebbles; noneffervescent matrix; moderately alkaline (pH 8.4); gradual smooth boundary.

3Cy--38 to 46 inches; yellowish brown (10YR 5/4) loamy coarse sand, brown (10YR 4/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine roots; many very fine and fine interstitial pores; few fine soft masses of gypsum; 10 percent pebbles; strongly alkaline (pH 8.6); gradual smooth boundary.

3C--46 to 60 inches; yellowish brown (10YR 5/4) loamy coarse sand, brown (10YR 4/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine roots; many very fine and few fine interstitial and tubular pores; 10 percent pebbles; strongly alkaline (pH 8.6).

Type location: Pershing County, Nevada; approximately 10 miles east of Mt. Limbo near Juniper Springs, about 2,300 feet west and 2,400 feet north of the southeast corner of section 30, T. 28 N., R. 26 E., 40 degrees, 16 minutes, 03 seconds north latitude, 119 degrees, 06 minutes, 18 seconds west longitude.

Range in Characteristics:

Soil moisture: Moist in winter and early spring, dry from June through November.

Soil temperature: 53 to 57 degrees F.

Depth to carbonates: 14 to 25 inches.

Depth to the base of the natric horizon: 20 to 35 inches.

A horizons:

Value--5 through 7 dry, 3 through 5 moist.

Chroma--2 or 3.

Bt, Btn, and Btnk horizons:

Value--4 through 6 dry, 4 or 5 moist.

Chroma--3 or 4.

Texture--Clay loam, sandy clay loam, loam, gravelly loam or gravelly sandy clay loam.

Clay content--25 to 35 percent.

Rock fragments--5 to 25 percent, mainly fine gravel.

Structure--Prismatic or subangular blocky with some subhorizon that is prismatic.

Consistence--Slightly hard or hard dry, very friable through firm moist.

Reaction--Moderately alkaline or strongly alkaline, usually increasing with depth.

SAR--Btn and Btnk horizons range from 24 to 46.

Effervescence--Typically noneffervescent in the upper part and slightly effervescent or strongly effervescent in the lower part.

Bky horizon:

Hue--10YR or 2.5Y.

Value--5 through 7 dry, 4 or 5 moist.

Chroma--3 or 4.

Texture--Coarse sandy loam or gravelly coarse sandy loam.

Clay content--3 to 8 percent.

Rock fragments--5 to 20 percent mainly fine pebbles.

Consistence--Slightly hard or hard dry, very friable or friable moist.

Reaction--Moderately alkaline or strongly alkaline.

Other features--Parts of some pedons have up to 10 percent durinodes in a friable matrix.

C horizons:

Hue--10YR or 2.5Y.

Value--5 through 7 dry, 4 through 6 moist.

Chroma--3 or 4.

Texture--Loamy coarse sand, sand, coarse sand.

Clay content--2 to 6 percent.

Rock fragments--5 to 15 percent, mainly fine pebbles.

Structure--Massive or single grain.

Consistence--Loose, soft or slightly hard, dry, loose or very friable moist.

Reaction--Moderately alkaline or strongly alkaline.

Other features--In some pedons this horizon is not present within a depth of 50 inches.

Slocave Series

The Slocave series consists of shallow and very shallow, well drained soils. These soils formed in residuum from granodiorite. The Slocave soils are on foothill and mountain sideslopes. Slopes are 30 to 75 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 52 degrees F.

Taxonomic class: Loamy-skeletal, mixed (calcareous), mesic, shallow Typic Torriorthents.

Typical pedon: Slocave very gravelly coarse sandy loam, 30 to 50 percent slopes, is located in the Trinity Range in an area of the Slocave-Vium association, in map unit 1151. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with 50 percent pebbles.

A--0 to 1 inch; pale brown (10YR 6/3) very gravelly coarse sandy loam, brown (10YR 4/3) moist; weak thin platy structure; slightly hard, very friable, nonsticky and nonplastic; few very fine roots; common fine and medium vesicular and common fine tubular pores; 40 percent pebbles; slightly effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.

C--1 to 7 inches; pale brown (10YR 6/3) very gravelly coarse sandy loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine and fine roots; common fine tubular pores; 40 percent pebbles; slightly effervescent; moderately alkaline (pH 8.0); clear smooth boundary.

Cr--7 to 27 inches; weathered granodiorite with few very fine roots in soft pockets.

R--27 inches; unweathered granodiorite.

Type location: Pershing County, Nevada;

approximately 13 miles southwest of Lovelock, near Ragged Top Mountain, about 20 feet north and 2,400 feet east of the southwest corner of section 22, T. 25 N., R. 29 E.; 40 degrees, 00 minutes, 52 seconds north latitude, 118 degrees, 42 minutes, 42 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry, moist for short periods in winter and spring, dry from mid-May through November.

Soil temperature: 53 to 59 degrees F.

Depth to paralithic contact: 4 to 14 inches.

Depth to lithic contact: 20 to 40 inches.

Control section:

Clay content--6 to 15 percent.

Texture--Very gravelly sandy loam, very gravelly coarse sandy loam.

Rock fragments--35 to 60 percent, mainly fine pebbles.

A horizon:

Value--4 or 5 moist.

Chroma--3 or 4.

Effervescence--Slightly effervescent to violently effervescent.

C horizon:

Value--4 or 5 moist.

Chroma--3 or 4.

Texture--Very gravelly sandy loam or very gravelly coarse sandy loam, may include thin part of very gravelly loamy sand.

Clay content--6 to 16 percent.

Rock fragments--35 to 50 percent, mainly fine pebbles.

Consistence--Soft or slightly hard dry.

Effervescence--Slightly effervescent to violently effervescent.

Soar Series

The Soar series consists of shallow and very shallow, well drained soils that formed in residuum and colluvium from granite. The Soar soils are on mountain and hill sideslopes. Slopes are 4 to 50 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 50 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic, shallow Xerollic Haplargids.

Typical pedon: Soar very gravelly coarse sandy loam, 15 to 50 percent slopes, extremely stony, is located in the Trinity Range in an area of the Soar-Arclay-Rock outcrop association, in map unit 1022. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with 40 percent fine pebbles, 15 percent cobbles, and 08 percent stones.

A1--0 to 1 inch; light brownish gray (10YR 6/2) very gravelly coarse sandy loam, dark grayish brown (10YR 4/2) moist; weak thin platy structure; soft, very friable, nonsticky and nonplastic; few very fine roots; many fine interstitial pores; 35 percent pebbles; neutral (pH 7.0); clear smooth boundary.

A2--1 to 3 inches; light brownish gray (10YR 6/2) gravelly coarse sandy loam, dark grayish brown (10YR 4/2) moist; weak thin platy structure; soft, very friable, slightly sticky and slightly plastic; common very fine roots; many fine tubular and interstitial pores; 20 percent pebbles; mildly alkaline (pH 7.4); clear smooth boundary.

Bt--3 to 6 inches; pale brown (10YR 6/3) very gravelly sandy clay loam, dark brown (10YR 4/3) moist; weak fine subangular blocky structure; slightly hard, friable, sticky and plastic; common very fine and fine roots; many very fine tubular pores; common thin clay films on faces of peds, lining pores and bridging sand grains; 50 percent pebbles; mildly alkaline (pH 7.4); abrupt smooth boundary.

Cr--6 to 28 inches; fractured weathered granite with common very fine and fine roots in fractures that decrease in number with depth; gradual smooth boundary.

R--28 inches; unweathered granite.

Type location: Pershing County, Nevada; approximately 11 miles west of Oreana in the Trinity Range, about 500 feet east and 1,400 feet south of the northwest corner of section 4, T. 28 N., R. 31 E.; 40 degrees, 19 minutes, 24 seconds north latitude, 118 degrees, 30 minutes, 35 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry, moist winter and spring, dry June through October.

Soil temperature: 47 to 52 degrees F.

Depth to the paralithic contact: 6 to 14 inches.

Depth to the lithic contact: 22 to 38 inches.

Profile reaction: Neutral or mildly alkaline.

Other features: The upper 7 inches when mixed, have a value of more than 5.5 dry, 3.5 moist.

Control section:

Clay content--14 to 22 percent.

Rock fragments--35 to 50 percent, mainly fine pebbles.

A horizons:

Value--5 or 6 dry, 3 or 4 moist.

Chroma--2 or 3.

Bt horizon:

Hue--10YR or 7.5YR.

Value--4 through 6 dry, 3 or 4 moist.

Chroma--2 through 4.

Texture--Very gravelly sandy clay loam or very gravelly loam.

Clay content--20 to 26 percent.

Rock fragments--35 to 60 percent, mainly 2 to 5 millimeter pebbles.

Structure--Subangular blocky or prismatic.

Other features--Some pedons have a thin layer of sandy clay above the paralithic contact.

Sojur Series

The Sojur series consists of very shallow, well drained soils. These soils formed in residuum from phyllite, slate, and related metamorphic rocks. The Sojur soils are on foothill sideslopes. Slopes are 15 to 50 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 52 degrees F.

Taxonomic class: Loamy-skeletal, mixed (calcareous), mesic Lithic Torriorthents.

Typical pedon: Sojur extremely channery silt loam, 15 to 50 percent slopes, is located near the Kamma Mountains in an area of the Wesfil-Sojur association, in map unit 1210. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with 75 percent channers.

A--0 to 4 inches; light gray (2.5Y 7/2) extremely channery silt loam, grayish brown (2.5Y 5/2) moist; moderate thin platy structure; slightly

hard, very friable, sticky and plastic; few very fine roots; many very fine and common fine vesicular pores; 60 percent channers; violently effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary.

R--4 inches; fractured, horizontally oriented phyllite with many very fine, common fine, and few medium roots in the upper 6 inches and few very fine roots below; becoming hard at 15 inches.

Type location: Pershing County, Nevada; in an unsurveyed area about 17 miles northwest of Rye Patch Reservoir, near the Kamma Mountains, about 14,000 feet west and 400 feet south of the northwest corner of section 13, T. 34 N., R. 30 E.; 40 degrees, 49 minutes, 05 seconds north latitude, 118 degrees, 36 minutes, 40 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry, moist for short periods in winter and early spring; dry mid May through November.

Soil temperature: 53 to 57 degrees F.

Depth to lithic contact: 2 to 10 inches.

Profile reaction: Moderately alkaline or strongly alkaline.

Control section:

Clay content--18 to 25 percent.

Texture--Extremely channery loam, extremely channery silt loam or very channery silt loam.

Rock fragments--50 to 75 percent, mainly channers.

Calcium carbonate equivalent--1 to 10 percent.

Effervescence--Strongly effervescent to violently effervescent.

A horizon:

Hue--5Y, 2.5Y, or 10YR.

Value--5 through 7 dry, 4 or 5 moist.

Chroma--2 through 4.

Sondoa Series

The Sondoa series consists of very deep, well drained soils that formed in alluvium and lacustrine sediments derived from mixed rock sources. The Sondoa soils are on remnant flood plains and lake plain terraces. Slopes are 0 to 2 percent. The mean

annual precipitation is about 6 inches and the mean annual temperature is about 53 degrees F.

Taxonomic class: Fine-silty, mixed (calcareous) mesic Typic Torriorthents.

Typical pedon: Sonda silt loam, strongly saline-sodic, 0 to 2 percent slopes, in map unit 563, is located approximately 3 miles northeast of Toulon. (Colors are for dry soil unless otherwise noted.)

A1--0 to 2 inches; light gray (10YR 7/2) silt loam, grayish brown (10YR 5/2) moist; strong coarse platy structure; slightly hard, friable, very sticky and plastic; few very fine roots; many very fine and fine, common medium and coarse vesicular pores; violently effervescent; very strongly alkaline (pH 9.4); abrupt smooth boundary.

A2--2 to 4 inches; light gray (10YR 7/2) silt loam, grayish brown (10YR 5/2) moist; strong very thin platy structure; soft, very friable, slightly sticky and slightly plastic; few very fine roots; common very fine and fine tubular pores; strongly effervescent; very strongly alkaline (pH 9.4); abrupt smooth boundary.

C1--4 to 16 inches; light gray (10YR 7/2) silty clay loam, grayish brown (10YR 5/2) moist; few coarse black (10YR 2/1) stains on faces of peds; strong fine prismatic structure parting to strong medium subangular blocky; hard, firm, sticky and plastic; few very fine roots; many very fine, common fine and medium, few coarse tubular pores; few 1/4 to 1/2 inch in diameter crustacean shells; strongly effervescent; very strongly alkaline (pH 9.4); clear smooth boundary.

C2--16 to 20 inches; light gray (10YR 7/2) silty clay loam, grayish brown (10YR 5/2) moist; massive; hard, firm, sticky and plastic; few very fine roots; common very fine, few fine and medium tubular pores; strongly effervescent; very strongly alkaline (pH 9.4); clear smooth boundary.

2C3--20 to 22 inches; light gray (10YR 7/2) silt loam, grayish brown (10YR 5/2) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; common very fine, few fine and medium tubular pores; silt coats lining pores; strongly effervescent; very strongly alkaline (pH 9.4); abrupt smooth boundary.

3C4--22 to 26 inches; light gray (10YR 7/2) silty clay loam, grayish brown (10YR 5/2) moist; massive; hard, firm, sticky and very plastic; few

very fine and fine roots; many very fine and fine, common medium tubular pores; silt coats line pores; strongly effervescent; very strongly alkaline (pH 9.4); clear smooth boundary.

3C5--26 to 32 inches; light gray (10YR 7/2) silty clay loam, grayish brown (10YR 5/2) moist; few coarse black (10YR 2/1) stains; massive; slightly hard, friable, sticky and plastic; few very fine and medium roots; many very fine, common fine and medium, few coarse tubular pores; few 1/4 to 1/2 inch diameter crustacean shells; strongly effervescent; very strongly alkaline (pH 9.2); gradual smooth boundary.

3C6--32 to 47 inches; light gray (10YR 7/2) silty clay loam, grayish brown (10YR 5/2) moist; massive; slightly hard, friable, very sticky, plastic; common very fine and fine, few medium and coarse tubular pores; silt coats lining pores; strongly effervescent; very strongly alkaline (pH 9.2); clear smooth boundary.

3C7--47 to 60 inches; light gray (10YR 7/2) silty clay loam, grayish brown (10YR 5/2) moist; common medium distinct reddish yellow (7.5YR 7/6) relict mottles; common medium and coarse black (10YR 2/1) stains; massive; slightly hard, firm, sticky and plastic; many very fine and fine tubular common medium and coarse pores; silt coats line pores; strongly effervescent; very strongly alkaline (pH 9.2)

Type location: Pershing County, Nevada; approximately 3 miles northeast of Toulon, about 2,400 feet east and 2,300 feet south of the northwest corner of section 26 T. 26 N., R. 30 E.; 40 degrees, 05 minutes, 40 seconds north latitude and 118 degrees, 34 minutes, 50 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry, moist in the winter and spring, dry June through November.

Soil temperature: 53 to 57 degrees F.

Profile reaction: Strongly alkaline or very strongly alkaline.

Calcium carbonate equivalent: 4 to 12 percent.

Effervescence: Strongly effervescent to violently effervescent.

Control section:

Clay content--Averages 25 to 35 percent.

Texture--Stratified silt loam and silty clay loam.

A horizons:

Hue--10YR or 2.5Y.

Value--6 or 7 dry, 3, 4 or 5 moist. Buried A horizons near flood plain remnants commonly have value of 3 moist and lighten to 4 moist when rubbed.

Chroma--2 or 3.

Other features--Buried A horizons are common in some pedons.

C horizons:

Hue--10YR or 2.5Y.

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 or 3.

Texture--Stratified silt loam and silty clay loam.

Thin or very thin varves of fine sand are common in some pedons.

Clay content--25 to 35 percent.

Structure--Prismatic, subangular blocky or massive.

SAR--Greater than 70.

Segregated lime--Soft masses of lime are present in parts of some pedons.

Relict mottles--Are common in any subhorizon in the lower profile.

Sumya Series

The Sumya series consists of shallow and very shallow, well drained soils formed in residuum and colluvium from andesite flows and breccias. The Sumya soils are on mountain sideslopes. Slopes are 50 to 75 percent. Mean annual precipitation is about 11 inches and the mean annual temperature is about 43 degrees F.

Taxonomic class: Clayey-skeletal, montmorillonitic, nonacid, frigid Lithic Xeric Torriorthents.

Typical pedon: Sumya very stony clay loam, 50 to 75 percent slopes, is located in the Seven Troughs Range in an area of the Old Camp-Sumya-Pickup association, in map unit 801. (Colors are for dry soil unless otherwise noted.) The soil surface is partly covered with 20 percent pebbles, 10 percent cobbles, and 03 percent stones.

A1--0 to 1 inch; pale brown (10YR 6/3) very stony clay loam, dark brown (10YR 4/3) moist; moderate medium platy structure; slightly hard, friable, slightly sticky and plastic; common very fine and few fine roots; many very fine and fine,

common medium vesicular pores; 20 percent pebbles, 15 percent stones, neutral (pH 7.2); clear smooth boundary.

A2--1 to 4 inches; pale brown (10YR 6/3) very stony clay loam, dark brown (10YR 4/3) moist; weak thin platy structure; slightly hard, firm, sticky and plastic; common very fine and fine roots; common very fine and fine, few medium tubular pores; 30 percent pebbles, 5 percent cobbles, 15 percent stones; neutral (pH 7.2); clear smooth boundary.

C--4 to 8 inches; light yellowish brown (10YR 6/4) very gravelly clay loam, dark brown (10YR 4/3) moist; massive; slightly hard, firm, sticky and plastic; common very fine, fine and medium roots; common very fine, few fine tubular pores; 45 percent pebbles, 5 percent cobbles; mildly alkaline (pH 7.4); abrupt wavy boundary.

R--8 inches; andesite.

Type location: Pershing County, Nevada; approximately 3 miles northwest of Vernon in the Seven Troughs Range; about 300 feet north and 1,100 feet west of the southeast corner of section 15, T. 30 N., R. 28 E.; 40 degrees, 27 minutes, 53 seconds north latitude, 118 degrees, 49 minutes, 11 seconds west longitude.

Range in Characteristics:

Soil moisture: Moist in winter and spring, dry from July through October.

Soil temperature: 44 to 47 degrees F.

Depth to bedrock: 2 to 12 inches.

Control section:

Clay content--Averages 35 to 45 percent.
Rock fragments--35 to 60 percent, mainly pebbles.

Reaction--Neutral or mildly alkaline.

Other features--The soil is noncalcareous throughout.

A horizons:

Value--3 or 4 moist.

C horizon:

Hue--10YR or 7.5YR.

Chroma--3 or 4.

Texture--Very gravelly clay or very gravelly clay loam.

Swingler Series

The Swingler series consists of very deep, moderately well drained soils that formed in alluvium over lacustrine sediments derived from mixed rock sources. The Swingler soils are on lake plain terraces. Slopes are 0 to 2 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 53 degrees F.

Taxonomic class: Fine-silty, mixed (calcareous), mesic Typic Torriorthents.

Typical pedon: Swingler silt loam, 0 to 2 percent slopes, is located approximately 7 miles southwest of Oreana in an area of the Sondo-Swingler-Isolde association, in map unit 563. (Colors are for dry soil unless otherwise noted.)

- A1--0 to 4 inches; light gray (10YR 7/2) silt loam, brown (10YR 5/3) moist; moderate thin platy structure; hard, very friable, sticky and plastic; few very fine roots; many fine and medium vesicular pores; strongly effervescent; very strongly alkaline (pH 9.4); clear smooth boundary.
- A2--4 to 9 inches; light gray (10YR 7/2) silt loam, brown (10YR 5/3) moist; strong thin platy structure; hard, very friable, sticky and plastic; common very fine roots; many fine and medium vesicular pores; strongly effervescent; very strongly alkaline (pH 9.4); clear smooth boundary.
- C1--9 to 19 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; moderate thin platy structure; hard, very friable, sticky and plastic; many very fine, common fine and few medium roots; many fine tubular pores; strongly effervescent; strongly alkaline (pH 9.0); clear smooth boundary.
- C2--19 to 27 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; common medium distinct strong brown (7.5YR 4/6) relict mottles and few fine black (10YR 2/1) stains; moderate thin platy structure; hard, very friable, sticky and plastic; many very fine and fine, few medium and coarse roots; many fine tubular pores; few fine lime filaments; strongly effervescent; strongly alkaline (pH 8.8); clear smooth boundary.
- C3--27 to 35 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; common medium distinct strong brown (7.5YR 4/6) relict

mottles and few fine black (10YR 2/1) stains; weak thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; many fine and few medium and coarse tubular pores; few fine lime filaments; strongly effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

- 2C4--35 to 43 inches; light gray (2.5Y 7/2) silt loam, olive (5Y 5/3) moist; common medium distinct strong brown (7.5YR 4/6) relict mottles; weak thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; many fine and few medium and coarse tubular pores; few fine lime seams; violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary.
- 2C5--43 to 60 inches; light gray (2.5Y 7/2) silt loam, olive (5Y 5/3) moist; weak thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; many fine and few medium tubular pores; few fine lime seams; violently effervescent; strongly alkaline (pH 8.6).

Type location: Pershing County, Nevada; approximately 7 miles southwest of Oreana; about 2,500 feet south and 700 feet west of the northeast corner of section 24, T. 28 N., R. 31 E.; 40 degrees, 16 minutes, 37 seconds north latitude, 118 degrees, 26 minutes, 18 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry, intermittently moist winter and spring, dry early May through November.

Soil temperature: 53 to 57 degrees F.

Depth to relict mottles: 19 to 40 inches.

Carbonates: Most pedons are strongly effervescent or violently effervescent throughout. Some pedons are effervescent to at least 30 inches and noneffervescent below.

Control section:

Clay content--18 to 25 percent.

A horizons:

Hue--10YR or 2.5Y.

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 or 3.

Reaction--Mildly alkaline through very strongly alkaline.

C horizons:

Hue--10YR, 2.5Y and 5Y.

Value--6 or 7 dry, 4 or 5 moist.

Chroma--1, 2 or 3.

Texture--Dominantly silt loam or very fine sandy loam, but usually includes some thin lenses ranging from very fine sand to silty clay loam.

Reaction--Mildly alkaline through strongly alkaline.

Theon Series

The Theon series consists of very shallow and shallow, well drained soils formed in residuum and colluvium from andesite and rhyolite. Theon soils are on foothill and mountain sideslopes. Slopes are 15 to 75 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 50 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic Lithic Haplrgids.

Typical pedon: Theon very gravelly loam, 15 to 50 percent slopes, is located in the Trinity Range in an area of the Theon-Singatse association, gravelly, in map unit 1051. (Colors are for dry soil unless otherwise noted). The soil surface is partially covered with 45 percent pebbles, 10 percent cobbles, and 01 percent stones.

A1--0 to 1 inch; pale brown (10YR 6/3) very gravelly loam, brown (10YR 5/3) moist; moderate thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; many fine and few medium vesicular pores; 45 percent pebbles; slightly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

A2--1 to 3 inches; pale brown (10YR 6/3) very gravelly loam, brown (10YR 5/3) moist; moderate thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and few fine roots; many fine tubular pores; 35 percent pebbles; moderately alkaline (pH 8.2); abrupt smooth boundary.

Bt--3 to 9 inches; brown (7.5YR 5/4) very gravelly clay loam, brown (7.5YR 4/4) moist; weak fine subangular blocky structure; hard, friable, sticky

and very plastic; common very fine and fine roots; many very fine and common fine tubular pores; 50 percent pebbles; common moderately thick clay films on faces of peds and lining pores; moderately alkaline (pH 8.4); abrupt wavy boundary.

R--9 inches; unweathered rhyolite fractured in the upper 3 inches with soil material in the fractures and thin lime coats on the fracture surfaces.

Type location: Pershing County, Nevada; approximately 8 miles northeast of Lovelock, about 1,300 feet west and 200 feet south of the northeast corner of section 2, T. 27 N., R. 30 E.; 40 degrees, 14 minutes, 45 seconds north latitude, 118 degrees, 34 minutes, 28 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry, moist for short periods in winter and spring.

Soil temperature: 53 to 59 degrees F.

Combined thickness of A and Bt horizons: 8 to 14 inches.

Depth to lithic contact: 8 to 14 inches.

Control section:

Clay percent--25 to 35 percent.

Rock fragments--35 to 60 percent, mainly pebbles.

A horizons:

Value--5 through 7 dry, 3 through 5 moist.

Chroma--2 through 4.

Reaction--Neutral through moderately alkaline.

Bt horizon:

Hue--10YR, 7.5YR or 5YR.

Value--4 through 7 dry; 3, 4, or 5 moist.

Chroma--3 or 4.

Texture--Very gravelly clay loam, very gravelly sandy clay loam, or very gravelly loam. Parts of some pedons have extremely gravelly texture.

Reaction--Neutral through strongly alkaline.

R horizon:

Other features--Some pedons have discontinuous thin coats of silica or silica and lime along weak fracture planes.

Toulon Series

The Toulon series consists of very deep, excessively drained soils that formed in alluvium from mixed rock sources including tufa. Toulon soils are on beach plains, offshore bars, and barrier bars. Slopes are 2 to 8 percent. The mean annual precipitation is about 5 inches and the mean annual air temperature is about 53 degrees F.

Taxonomic class: Sandy-skeletal, mixed, mesic Typic Camborthids.

Typical pedon: Toulon very gravelly loam, 2 to 8 percent slopes, is located approximately one mile southwest of Toy in an area of the Bluewing-Toulon-Rock outcrop association, in map unit 171. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with 50 percent pebbles and 5 percent cobbles.

A1--0 to 2 inches; light brownish gray (2.5Y 6/2) very gravelly loam, dark grayish brown (2.5Y 4/2) moist; weak thin platy structure; slightly hard, very friable, nonsticky and nonplastic; common very fine roots; many fine and few medium vesicular pores; 35 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

A2--2 to 6 inches; light brownish gray (2.5Y 6/2) very gravelly loam, dark grayish brown (2.5Y 4/2) moist; moderate thin platy structure; slightly hard, very friable, nonsticky and nonplastic; many very fine roots; many fine tubular pores; 50 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Bw--6 to 14 inches; light brownish gray (2.5Y 6/2) very gravelly sandy loam, dark grayish brown (2.5Y 4/2) moist; many fine stains; weak fine subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; many very fine roots; many fine tubular pores; thin discontinuous lime coatings on undersides of rock fragments; 50 percent pebbles, 2 percent cobbles; violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

Bk1--14 to 20 inches; light brownish gray (10YR 6/2) very gravelly coarse sand, dark grayish brown (10YR 4/2) moist; single grain; loose, nonsticky and nonplastic; common very fine roots; many fine interstitial pores; thin

continuous lime coatings on undersides of rock fragments; 50 percent pebbles, 5 percent cobbles; violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

Bk2--20 to 60 inches; light gray (10YR 7/2) extremely gravelly coarse sand, dark grayish brown (10YR 4/2) moist; single grain; loose, nonsticky and nonplastic; common very fine roots; many very fine interstitial pores; thin continuous lime coatings on undersides of rock fragments; 45 percent pebbles, 15 percent cobbles; violently effervescent; moderately alkaline (pH 8.4).

Type location: Pershing County, Nevada; approximately one mile southwest of Toy; about 300 feet east and 4,600 feet south of the northwest corner of section 25, T. 25 N., R. 29 E.; 40 degrees, 00 minutes, 05 seconds north latitude, 118 degrees, 40 minutes, 50 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry, moist for intermittent periods during winter and spring; dry May through November.

Soil temperature: 53 to 57 degrees F.

Depth to base of Bw horizon: 13 to 20 inches.

Profile reaction: Mildly alkaline through strongly alkaline.

Other features: Soils on the lower parts of bars commonly have thinner A and Bw horizons than those on higher parts of bars.

A horizons:

Hue--2.5Y or 10YR.

Value--6 through 8 dry, 4 or 5 moist.

Chroma--2 or 3.

Effervescence--Noneffervescent through violently effervescent.

Bw horizon:

Hue--2.5Y or 10YR.

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 through 4.

Texture--Stratified very gravelly coarse sandy loam to very gravelly loam. Some pedons have fine stratification of fine sandy loam and very fine sandy loam.

Rock fragments--40 to 60 percent, mainly pebbles.

Structure--Subangular blocky or massive.

Effervescence--Slightly effervescent to violently effervescent.

Carbonates--Lime coatings on rock fragments range from none to few in the upper part of the Bw horizon.

Other features--Some pedons contain gypsum and tufa. Relict mottles increase with depth.

Bk horizons:

Hue: 10YR, 7.5YR or neutral.

Value--5 through 8 dry, 4 through 8 moist.

Chroma--0 through 2, 0 through 4 moist.

Texture--Stratified gravelly coarse sand to extremely cobbly coarse sand.

Clay content--0 to 5 percent.

Rock fragments--Average 5 to 35 percent cobbles, 45 to 60 percent pebbles. Any single layer may contain up to 80 percent pebbles or cobbles.

Structure--Single grain or massive.

Consistence--Soft or loose dry, very friable or loose moist.

Trocken Series

The Trocken series consists of very deep, well drained soils that formed in mixed alluvium.

Trocken soils are on barrier bars and fan skirts.

Slopes are 2 to 8 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 50 degrees F.

Taxonomic class: Loamy-skeletal, mixed (calcareous) mesic Typic Torriorthents.

Typical pedon: Trocken gravelly very fine sandy loam, 2 to 8 percent slopes, is located approximately 4 miles southwest of Sulphur in an area of the Mazuma-Trocken association, in map unit 700. (Colors are for dry soil unless otherwise noted.) The soil surface is partly covered with 25 percent pebbles and 5 percent cobbles.

A1--0 to 3 inches; light gray (10YR 7/2) gravelly very fine sandy loam, grayish brown (10YR 5/2) moist; moderate thin platy structure; slightly hard, very friable, nonsticky and slightly plastic; few very fine roots; many very fine and fine vesicular pores; 20 percent pebbles; slightly

effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

A2--3 to 6 inches; light gray (10YR 7/2) gravelly very fine sandy loam, brown (10YR 5/3) moist; moderate thin platy structure; slightly hard, very friable, nonsticky and slightly plastic; few very fine roots; many very fine and fine tubular and vesicular pores; 15 percent pebbles; slightly effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

Bw--6 to 9 inches; pale brown (10YR 6/3) very gravelly loam, brown (10YR 5/3) moist; massive; slightly hard, very friable, nonsticky and slightly plastic; few very fine roots; many very fine tubular pores; 50 percent pebbles; strongly effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

Bk1--9 to 20 inches; pale brown (10YR 6/3) very gravelly loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, nonsticky and slightly plastic; many very fine and few fine roots; many very fine tubular pores; many fine lime filaments and lime coats on undersides of pebbles; 40 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Bk2--20 to 33 inches; pale brown (10YR 6/3) very gravelly loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, nonsticky and slightly plastic; common very fine roots; many very fine tubular pores; thin lime coats on undersides of pebbles; 40 percent pebbles; violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

2Bk3--33 to 60 inches; light brown (7.5YR 6/4) extremely gravelly sandy loam, brown (7.5YR 5/4) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; many fine interstitial pores; thin lime coats on undersides of pebbles; 80 percent pebbles, 1 percent cobbles; violently effervescent; moderately alkaline (pH 8.4).

Type location: Pershing County, Nevada; approximately 4 miles southwest of Sulphur, in an unsurveyed area about 13,500 feet south and 6,500 feet east of the intersection of T. 34 N. T. 35 N. and R. 28 E. R. 29 E.; 40 degrees, 49 minutes, 10 seconds north latitude, 118 degrees, 45 minutes, 43 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry; moist for short periods in the winter and spring, dry late May through November.

Soil temperature: 53 to 57 degrees F.

Combined thickness of A and Bw horizons: 5 to 10 inches.

Profile reaction: Neutral through very strongly alkaline in the upper part and moderately alkaline through very strongly alkaline in the lower part.

Control section:

Clay content--8 to 18 percent.

Rock fragments--35 to 70 percent.

Texture--Highly stratified layers that average very cobbly loam through extremely gravelly coarse sandy loam, individual strata range from gravelly loam through extremely gravelly coarse sand.

A horizons:

Hue--10YR or 2.5Y.

Value--5, 6, or 7 dry; 4 through 6 moist.

Chroma--2 or 3.

Bw and Bk horizons:

Hue--7.5YR, 10YR or 2.5Y.

Value--5 or 6 dry, 4 or 5 moist.

Chroma--3 or 4.

Typic Torriorthents

The Typic Torriorthents soils consist of very deep soils that formed in water re-worked alluvium from mixed rocks and lacustrine sediments. Typic Torriorthents are on beach plains. Slopes are 1 to 4 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 53 degrees F.

Taxonomic class: Typic Torriorthents, mesic

Typical pedon: Typic Torriorthents extremely gravelly sandy loam, 1 to 4 percent slopes, in an area of Isolde-Typic Torriorthents-Dune land complex, in map unit 500. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with approximately 75 percent pebbles and 5 percent cobbles.

A--0 to 5 inches; grayish brown (2.5Y 5/2) extremely gravelly sandy loam, dark grayish brown (2.5Y 4/2) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; many very fine interstitial and vesicular pores; 65 percent pebbles, 5 percent cobbles; slightly effervescent; strongly alkaline (pH 8.8); clear wavy boundary.

C1--5 to 55 inches; grayish brown (2.5Y 5/2) stratified very gravelly sand to extremely gravelly loamy sand, dark grayish brown (2.5Y 4/2) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; many very fine interstitial pores; 45 percent pebbles, 10 percent cobbles; slightly effervescent; strongly alkaline (pH 9.0); clear wavy boundary.

C2--55 to 60 inches; grayish brown (2.5Y 5/2) gravelly sand, dark grayish brown (2.5Y 4/2) moist; massive; soft, very friable, nonsticky and nonplastic; few fine roots; many very fine interstitial pores; 20 percent pebbles; slightly effervescent; strongly alkaline (pH 8.6).

Type location: Pershing County, Nevada; approximately 45 miles north of Fernley; about 5,300 feet west and 1,400 feet south of the northeast corner of section 5. T. 25 N., R. 24 E.; 40 degrees, 04 minutes, 08 seconds north latitude, 119 degrees, 19 minutes, 05 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry, moist for short periods in winter and early spring.

Soil temperature: 53 to 59 degrees F.

Profile texture: Variable--ranges from extremely gravelly sand to silty clay.

Profile reaction: Moderately alkaline or strongly alkaline.

Carbonates: Slightly effervescent through violently effervescent.

Umerland Series

The Umerland series consists of very deep, somewhat poorly drained soils formed in silty lacustrine sediments from mixed rock sources. Umerland soils are on lake plain terraces. Slopes are 0 to 2 percent. Mean annual precipitation is

about 6 inches and the mean annual temperature is about 49 degrees F.

Taxonomic class: Fine, montmorillonitic (calcareous), mesic Aeric Halaquepts.

Typical pedon: Umberland silty clay loam, 0 to 2 percent slopes, is located in Hualapai Flat in an area of the Dedmount-Umberland-Umberland, ponded association, in map unit 245. (Colors are for dry soil unless otherwise noted.)

A--0 to 2 inches; light gray (2.5Y 7/2) silty clay loam, light olive brown (2.5Y 5/4) moist; massive; hard, very friable, sticky and plastic; few very fine roots; common very fine vesicular and few very fine tubular pores; violently effervescent; very strongly alkaline (pH 9.4); clear smooth boundary.

C1--2 to 6 inches; light gray (2.5Y 7/2) silty clay loam, light olive brown (2.5Y 5/4) moist; massive; hard, friable, very sticky and plastic; few very fine and fine roots; few very fine tubular pores; violently effervescent; strongly alkaline (pH 9.0); clear smooth boundary.

C2--6 to 17 inches; light gray (2.5Y 7/2) silty clay loam, light olive brown (2.5Y 5/4) moist; massive; hard, very friable, very sticky and plastic; few very fine and fine roots; few very fine tubular pores; violently effervescent; strongly alkaline (pH 8.9); clear smooth boundary.

Ck1--17 to 48 inches; light gray (2.5Y 7/2) silty clay loam, light olive brown (2.5Y 5/4) moist; few fine distinct dark yellowish brown (10YR 4/6) mottles; strong fine and medium angular blocky structure; very hard, firm, very sticky and plastic; few very fine and fine roots; common very fine interstitial pores; few fine lime nodules; violently effervescent; strongly alkaline (pH 8.9); clear smooth boundary.

Ck2--48 to 60 inches; light gray (5Y 7/2) silty clay, olive gray (5Y 5/2) moist; common fine distinct strong brown (7.5YR 4/6) mottles; strong fine angular blocky structure; very hard, firm, very sticky and plastic; few fine lime nodules; violently effervescent; strongly alkaline (pH 8.8).

Type location: Washoe County, Nevada; approximately 9 miles north of Gerlach in the Hualapai Flat; about 800 feet north and 850 feet west of the southeast corner of section 36, T. 34 N., R. 23 E.; 40 degrees, 47 minutes, 07

seconds north latitude, 119 degrees, 18 minutes, 48 seconds west longitude. This type location is outside the survey area due to the small acreage involved in joining the Washoe County, Nevada, Central Part Soil Survey Area.

Range in Characteristics:

Soil moisture: Saturated in some horizons between depths of 20 to 40 inches for at least a month during most years and the capillary fringe moistens the soil to within 6 inches of the surface.

Soil temperature: 47 to 52 degrees F.

Depth to secondary carbonate: 15 to 35 inches.

They occur as concretions or nodules.

Salt and sodium: These soils are strongly saline-alkali affected in the upper part with concentrations usually decreasing with depth.

Control section:

Clay content--35 to 50 percent.

Texture--Silty clay loam or silty clay. Some pedons have strata of clay.

A horizon:

Hue--10YR, 2.5Y or 5Y.

Value--6 through 8 dry, 4, 5 or 6 moist.

Chroma--2 through 4.

C and Ck horizons:

Hue--2.5Y or 5Y.

Value--6 through 8 dry, 4, 5, or 6 moist.

Chroma--2 through 4.

Structure--Massive, angular blocky or subangularly blocky.

Mottles (when present): Hue--5YR, 7.5YR or 10YR; Value--3 or 4; Chroma--4 through 6.

Reaction--Strongly alkaline or very strongly alkaline, usually decreasing with depth.

Unionville Series

The Unionville series consists of moderately deep, well drained soils that formed in decomposed granodiorite with some influence from tufa. The Unionville soils are on dissected undulating foothills. Slopes are 2 to 8 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 52 degrees F.

Taxonomic class: Coarse-loamy, mixed, mesic Typic Camborthids.

Typical pedon: Unionville coarse sandy loam, 2 to 8 percent slopes, is located approximately 3.5 miles east of Lovelock in an area of the Unionville-Rock outcrop complex, in map unit 1100. (Colors are for dry soil unless otherwise noted.)

A1--0 to 1 inch; light gray (10YR 7/2) coarse sandy loam, brown (10YR 5/3) moist; moderate thin platy structure; slightly hard, very friable, nonsticky and slightly plastic; few very fine roots; common fine vesicular pores; 10 percent pebbles; strongly effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

A2--1 to 5 inches; light gray (10YR 7/2) coarse sandy loam, brown (10YR 5/3) moist; moderate thin platy structure; slightly hard, very friable, nonsticky and slightly plastic; common very fine and fine roots; many very fine tubular pores; 5 percent pebbles; strongly effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

Bw--5 to 11 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 5/3) moist; moderate fine subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; many very fine and common fine roots; many very fine tubular pores; 10 percent pebbles; strongly effervescent; strongly alkaline (pH 9.0); clear smooth boundary.

Bk--11 to 23 inches; light brownish gray (2.5Y 6/2) coarse sandy loam, grayish brown (2.5Y 5/2) moist; massive; slightly hard, friable, nonsticky and nonplastic; few very fine roots; many very fine and fine tubular pores; common fine irregularly shaped lime seams; 10 percent pebbles; strongly effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

Cr--23 inches; soft, weathered granodiorite.

Type location: Pershing County, Nevada; approximately 3.5 miles west of Lovelock, about 1,700 feet west and 900 feet north of the southeast corner of section 19, T. 27 N., R. 31 E.; 40 degrees, 11 minutes, 24 seconds north latitude, 118 degrees, 32 minutes, 20 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry, moist for short periods in winter and spring, dry from May through October.

Soil temperature: 53 to 57 degrees F.

Depth to the paralithic contact: 20 to 27 inches.

Control section:

Clay content--Averages 5 to 10 percent.

Rock fragments--5 to 15 percent, mainly pebbles.

Texture--Averages coarse sandy loam or sandy loam.

A horizons:

Hue--10YR or 2.5Y.

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 or 3.

Other features--Some pedons have up to 15 percent lake laid tufa fragments.

Bw horizon:

Hue--10YR or 2.5Y.

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 or 3.

Structure--Subangular blocky or massive.

Consistence--Soft through hard, dry.

Bk horizon:

Hue--10YR or 2.5Y.

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 or 3.

Consistence--Soft or slightly hard, dry.

Upsel Series

The Upsel series consists of very deep, somewhat excessively drained soils that formed in residuum and colluvium derived from granite. The Upsel soils are on mountain sideslopes. Slopes are 50 to 75 percent. The mean annual precipitation is about 14 inches and the mean annual temperature is about 44 degrees F.

Taxonomic class: Sandy, mixed, frigid Torripsammentic Haploxerolls.

Typical pedon: Upsel gravelly loamy coarse sand, 50 to 75 percent slopes, is located in the Selenite Range in an area of the Selbit-Rock outcrop-Upsel association, in map unit 981. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with 25 percent pebbles and 1 percent boulders.

A1--0 to 2 inches; dark grayish brown (10YR 4/2) gravelly loamy coarse sand, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, nonsticky and

nonplastic; many very fine and fine roots; many very fine and fine interstitial pores; 15 percent pebbles; neutral (pH 6.8); clear smooth boundary.

A2--2 to 7 inches; dark grayish brown (10YR 4/2) loamy coarse sand, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; many very fine and fine interstitial pores; 3 percent pebbles; neutral (pH 6.8); clear smooth boundary.

A3--7 to 13 inches; dark brown (10YR 4/3) loamy coarse sand, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; many very fine and fine interstitial pores; 3 percent pebbles; neutral (pH 6.8); clear smooth boundary.

Bw1--13 to 22 inches; dark brown (10YR 4/3) loamy coarse sand, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine, few medium roots; common very fine, few fine and medium tubular pores; neutral (pH 6.8); clear smooth boundary.

Bw2--22 to 60 inches; brown (10YR 5/3) loamy coarse sand, dark brown (10YR 3/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, fine and medium roots; common very fine and fine, few medium tubular pores; neutral (pH 6.8).

Type location: Pershing County, Nevada; approximately 4 miles southeast of Cowles Ranch headquarters in the Selenite Range, in an unsurveyed area of T. 29 N., R. 24 E.; 40 degrees, 24 minutes, 10 seconds north latitude, 119 degrees, 14 minutes, 35 seconds west longitude.

Range in Characteristics:

Soil moisture: Moist in winter and spring, dry from early July through October.

Soil temperature: 45 to 47 degrees F.

Mollic epipedon thickness: 22 to 60 inches.

Depth to bedrock: More than 60 inches.

Control section:

Clay content--5 to 10 percent.

Texture--Loamy coarse sand or gravelly loamy coarse sand.

Rock fragments--Up to 20 percent, mainly pebbles.

A horizons:

Hue--7.5YR or 10YR.

Value--3 or 4 dry.

Chroma--2 or 3.

Bw horizons:

Hue--7.5YR or 10YR.

Value--4 or 5 dry.

Chroma--2 or 3.

Structure--Weak or moderate subangular blocky.

Vium Series

The Vium series consists of shallow and very shallow, well drained soils that formed in residuum and colluvium from granite. The Vium soils are on footslopes and sideslopes of low foothills. Slopes are 2 to 75 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 52 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic Lithic Haplargids.

Typical pedon: Vium gravelly coarse sandy loam, 2 to 8 percent slopes, is located in the Trinity Range in an area of the Slocave-Vium association, in map unit 1151. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with 25 percent pebbles.

A--0 to 3 inches; pale brown (10YR 6/3) gravelly coarse sandy loam, dark grayish brown (10YR 4/2) moist; weak thin platy structure; slightly hard, very friable, nonsticky and nonplastic; few very fine roots; many very fine and fine tubular and common medium vesicular pores; 25 percent pebbles; slightly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Btk--3 to 8 inches; light yellowish brown (10YR 6/4) very gravelly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and common medium roots; common very fine tubular pores; few thin clay films on faces of peds, lining pores and bridging sand grains; few

fine lime filaments; 45 percent pebbles; slightly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

R--8 to 13 inches; granite; weathered in the upper 4 to 5 inches with common very fine roots, few thin lime coats and few horizontal lime seams in fractures; becomes hard at 13 inches.

Type location: Pershing County, Nevada; approximately 5 miles southwest of Toulon near Ragged Top mountain, about 2,000 feet west and 1,600 feet south of the northeast corner of section 29, T. 25 N., R. 29 E.; 40 degrees, 00 minutes, 36 seconds north latitude, 118 degrees, 44 minutes, 48 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry, moist for short periods in winter and spring, dry from May through November.

Soil temperature: 53 to 59 degrees F.

Depth to lithic contact: 8 to 14 inches.

Other features: Up to 8 inches of the upper part of the bedrock is fractured or weathered in most pedons.

Control section:

Clay content--8 to 16 percent.

Texture--Very gravelly sandy loam, very gravelly coarse sandy loam.

Rock fragments--35 to 50 percent, mainly fine pebbles.

A horizon:

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 or 3.

Btk horizon:

Texture--Very gravelly sandy loam, very gravelly coarse sandy loam.

Clay content--10 to 18 percent.

Rock fragments--40 to 60 percent, mainly fine pebbles.

Wedekind Series

The Wedekind series consists of shallow, well drained soils that formed in residuum weathered from granite. The Wedekind soils are on mountain foot slopes. Slopes are 2 to 8 percent. The mean

annual precipitation is about 10 inches and the mean annual temperature is about 50 degrees F.

Taxonomic class: Loamy, mixed, mesic, shallow Aridic Argixerolls.

Typical pedon: Wedekind gravelly sandy loam, 2 to 8 percent slopes, is located in the Shawave Range in an area of the Acrelane-Wedekind-Arclay association, in map unit 1201. (Colors are for dry soil unless otherwise noted.) The soil surface is partly covered with 30 percent pebbles.

A1--0 to 1 inch; brown (10YR 5/3) gravelly sandy loam, dark brown (10YR 3/3) moist; weak thin platy structure; loose, very friable, nonsticky and nonplastic; few very fine roots; many fine interstitial pores; 15 percent pebbles; neutral (pH 7.0); abrupt smooth boundary.

A2--1 to 3 inches; brown (10YR 5/3) sandy loam, dark brown (10YR 3/3) moist; strong thin platy structure; slightly hard, very friable, nonsticky and nonplastic; many very fine roots; many fine tubular and vesicular pores; 10 percent pebbles; neutral (pH 7.0); clear smooth boundary.

A3--3 to 5 inches; brown (10YR 5/3) sandy loam, dark brown (10YR 3/3) moist; small bleached areas of light brownish gray (10YR 6/2); moderate thin platy structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine roots; many very fine tubular pores; 5 percent pebbles; neutral (pH 7.2); clear wavy boundary.

Bt1--5 to 11 inches; brown (7.5YR 5/4) sandy clay loam, dark brown (7.5YR 4/4) moist; weak medium subangular blocky structure; hard, firm, sticky and plastic; common very fine, few fine and medium roots; many fine and few medium tubular pores; many thin clay films on faces of peds and lining pores; 5 percent pebbles; neutral (pH 7.3); clear wavy boundary.

Bt2--11 to 18 inches; brown (10YR 5/3) sandy clay loam, dark yellowish brown (10YR 4/4) moist; weak medium subangular blocky structure; hard, firm, slightly sticky and slightly plastic; common very fine roots; many fine tubular pores; many thin clay films on faces of peds and lining pores; 5 percent pebbles; neutral (pH 7.3); clear wavy boundary.

Cr--18 to 60 inches; weathered granite.

Type location: Pershing County, Nevada; approximately 27 miles northeast of Nixon in the Shawave Range; about 1,000 feet south and 2,300 feet west of the northeast corner of section 35, T. 27 N., R. 25 E.; 40 degrees, 10 minutes, 15 seconds north latitude, 119 degrees, 08 minutes, 36 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry but moist in winter and spring.

Soil temperature: 49 to 52 degrees F.

Profile reaction: Slightly acid or neutral.

Depth to the paralithic contact: 10 to 20 inches.

Control section:

Clay content--18 to 27 percent.

Rock fragments--5 to 35 percent.

A horizons:

Value--4 or 5 dry, 2 or 3 moist.

Chroma--2 or 3.

Bt horizons:

Hue--10YR or 7.5YR.

Value--4 or 5 dry, 3 or 4 moist.

Chroma--2 through 4.

Texture--Sandy clay loam, with sandy loam or clay loam in some parts of pedons.

Clay content--22 to 27 percent.

Wesfil Series

The Wesfil series consists of very shallow, well drained soils that formed in residuum and colluvium from phyllite, slate, and related metamorphic rocks. The Wesfil soils are on foothill and mountain sideslopes. Slopes are 15 to 50 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 52 degrees F.

Taxonomic class: Loamy-skeletal, mixed (calcareous), mesic Lithic Xeric Torriorthents.

Typical pedon: Wesfil very channery loam, 15 to 50 percent slopes, is located near the Kamma Mountains in an area of the Wesfil-Sojur association, in map unit 1210. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with 60 percent channers and 5 percent flagstones.

A--0 to 2 inches; light brownish gray (2.5Y 6/2) very channery loam, dark grayish brown (2.5Y 4/2) moist; moderate medium platy structure; soft, very friable, slightly sticky and slightly plastic; few very fine roots; many very fine tubular and common fine vesicular pores; 25 percent channers; violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

Bk--2 to 4 inches; light brownish gray (2.5Y 6/2) very channery loam, olive brown (2.5Y 4/4) moist; massive; soft, very friable, slightly sticky and slightly plastic; common very fine roots; common very fine tubular pores; thin lime coats on the undersides of channers; 50 percent channers; violently effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.

R--4 inches; fractured horizontally oriented thin through thick plates of phyllite bedrock with vertical fractures at 6 inch intervals; thin and moderately thick lime coats on fracture planes of plates; many very fine, common fine, and few coarse matted roots in fractures; becomes hard at 13 inches.

Type location: Pershing County, Nevada; in an unsurveyed area about 17 miles northwest of Rye Patch Reservoir near the Kamma Mountains, about 7,500 feet west and 6,000 feet north of the northwest corner of section 26, T. 34 N., R. 30 E.; 40 degrees, 48 minutes, 28 seconds north latitude, 118 degrees, 36 minutes, 23 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry, moist in winter and spring, dry from June through early November.

Soil temperature: 53 to 57 degrees F.

Depth to the lithic contact: 4 to 10 inches.

Profile reaction: Moderately alkaline or strongly alkaline.

Control section:

Clay content--12 to 18 inches.

Texture--Very channery loam, or very channery silt loam.

Rock fragments--40 to 60 percent, mainly channers.

A horizon:

Hue--2.5Y or 10YR.

Value--6 or 7 dry, 4 or 5 moist.

Calcium carbonate equivalent--1 to 5 percent.

Bk horizon:

Hue--2.5Y or 10YR.

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 through 4.

Calcium carbonate equivalent--5 to 10 percent.

Woolsey Series

The Woolsey series consists of very deep, well drained soils that formed in mixed alluvium and lacustrine sediments. The Woolsey soils are on fan piedmonts. Slopes are 2 to 4 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 52 degrees F.

Taxonomic class: Coarse-loamy, mixed, mesic Typic Haplargids.

Typical pedon: Woolsey fine sandy loam, 2 to 4 percent slopes, is located in Hualapai Flat in an area of the Woolsey-Bluewing association, in map unit 1190. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with 1 percent cobbles.

A1--0 to 2 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 4/3) moist; weak medium platy structure; soft, very friable, slightly sticky and slightly plastic; many very fine roots; common very fine vesicular pores; 10 percent pebbles; slightly effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

A2--2 to 8 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 4/3) moist; weak medium platy structure; soft, very friable, slightly sticky and slightly plastic; many very fine and few fine roots; common very fine tubular pores; 10 percent pebbles; slightly effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

Btk--8 to 12 inches; pale brown (10YR 6/3) gravelly sandy loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and few fine roots; common very fine tubular pores; few thin clay films bridging sand grains; few thin lime coats on undersides of pebbles; 20 percent pebbles; slightly effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary.

2Bk1--12 to 24 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; weak

medium platy structure; slightly hard, very friable, nonsticky and nonplastic; common very fine and few fine roots; few very fine tubular pores; few fine lime filaments; 10 percent pebbles; slightly effervescent; strongly alkaline (pH 8.8); abrupt smooth boundary.

2Bk2--24 to 33 inches; pale brown (10YR 6/3) gravelly sandy loam, brown (10YR 4/3) moist; weak medium platy structure; hard, very friable, nonsticky and nonplastic; few very fine, fine, and medium roots; few very fine interstitial pores; few fine lime filaments; 20 percent pebbles; slightly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

2Bk3--33 to 39 inches; pale brown (10YR 6/3) gravelly sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine, fine and medium roots; few very fine interstitial pores; few fine lime filaments; 25 percent pebbles; slightly effervescent; moderately alkaline (pH 8.4); abrupt irregular boundary.

3Bk4--39 to 48 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; few very fine tubular pores; few fine lime filaments; 10 percent pebbles; slightly effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.

4Bk5--48 to 60 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; moderate medium platy structure; hard, very friable, nonsticky and nonplastic; few very fine roots; few very fine tubular pores; few fine lime filaments; 40 percent pebbles; slightly effervescent; moderately alkaline (pH 8.2).

Type location: Pershing County, Nevada; approximately 20 miles north of Gerlach in Hualapai Flat, 600 feet west and 1,100 feet north of the southeast corner of section 5, T. 35 N., R. 24 E.; 40 degrees, 56 minutes, 39 seconds north latitude, 119 degrees, 16 minutes, 21 seconds west longitude.

Range in Characteristics:

Soil moisture: Intermittently moist in winter and spring, dry from May through October.

Soil temperature: 53 to 55 degrees F.

Depth to Bt horizon: 7 to 17 inches.

Other features: In some pedons, lacustrine sediments are evident at some depth below 40 inches.

A horizons:

Hue--2.5Y or 10YR.
 Value--6 or 7 dry, 4 or 5 moist.
 Chroma--2 or 3.
 Effervescence--Slightly effervescent to strongly effervescent.

Btk horizon:

Hue--2.5Y or 10YR.
 Value--6 or 7 dry, 4 or 5 moist.
 Chroma--2 or 3.
 Clay content--8 to 18 percent.
 Rock fragments--15 to 35 percent, mainly pebbles.
 Structure--Subangular blocky, or horizon is massive.
 Consistence--Soft or slightly hard dry, very friable or friable moist.
 Clay films--Few or common, as bridges on peds or lining some pores.
 Effervescence--Slightly effervescent to strongly effervescent.

Bk horizons:

Hue--2.5Y or 10YR.
 Value--6 or 7 dry, 4 or 5 moist.
 Chroma--2 or 3.
 Texture--Stratified fine sandy loam to very gravelly sandy loam.
 Clay content--5 to 10 percent.
 Rock fragments--10 to 35 percent, mainly pebbles.
 Structure--Subangular blocky, platy, single grain or horizon is massive.
 Consistence--Soft to hard dry; or loose.
 Carbonates--Few or common lime filaments.
 Effervescence--Slightly effervescent to violent effervescent.
 Reaction--Moderately alkaline or strongly alkaline.

Yipor Series

The Yipor series consists of very deep, well drained soils formed in mixed silty alluvium. The Yipor soils are on lake plain terraces. Slopes are 0 to 2 percent. The mean annual precipitation is about 7 inches and the mean annual temperature is about 47 degrees F.

Taxonomic class: Coarse-silty, mixed (calcareous), mesic Typic Torriorthents.

Typical pedon: Yipor silt loam, 0 to 2 percent slopes, occasionally flooded, is located in Kumiva Valley, in map unit 1300. (Colors are for dry soil unless otherwise noted.)

A1--0 to 5 inches; light gray (10YR 7/2) silt loam, grayish brown (10YR 5/2) moist; medium platy structure; hard, very friable, slightly sticky and slightly plastic; few fine roots in matrix, many fine roots along faces of peds; many very fine, fine, medium and coarse vesicular pores; strongly effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary.

A2--5 to 10 inches; light gray (10YR 7/2) silt loam, grayish brown (10YR 5/2) moist; weak thin platy structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and common fine roots; common fine tubular pores; strongly effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

C1--10 to 21 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; common very fine roots; many fine tubular pores; strongly effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

C2--21 to 34 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, slightly sticky and nonplastic; few very fine roots; many fine tubular pores; strongly effervescent; very strongly alkaline (pH 9.0); clear smooth boundary.

C3--34 to 60 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; many fine tubular pores; strongly effervescent; strongly alkaline (pH 8.6).

Type location: Pershing County, Nevada; in Kumiva Valley, about 800 feet east and 1,100 feet north of the southwest corner of section 26, T. 30 N., R. 26 E.; 40 degrees, 26 minutes, 17 seconds north latitude, 119 degrees, 02 minutes, 15 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry, moist for short periods in winter and early spring, dry early May through mid-November.

Soil temperature: 47 to 52 degrees F.

Profile reaction: Strongly alkaline or very strongly alkaline.

Effervescence: Strongly effervescent to violently effervescent throughout.

Salt and sodium: Moderately or strongly saline-alkali affected. Some pedons are non or slightly saline-alkali affected in the surface layer.

Control section:

Texture--Silt loam, very fine sandy loam with thin strata of loam in some pedons.

Clay content--8 to 18 percent.

A horizons:

Value--6 or 7 dry, 4 or 5 moist.

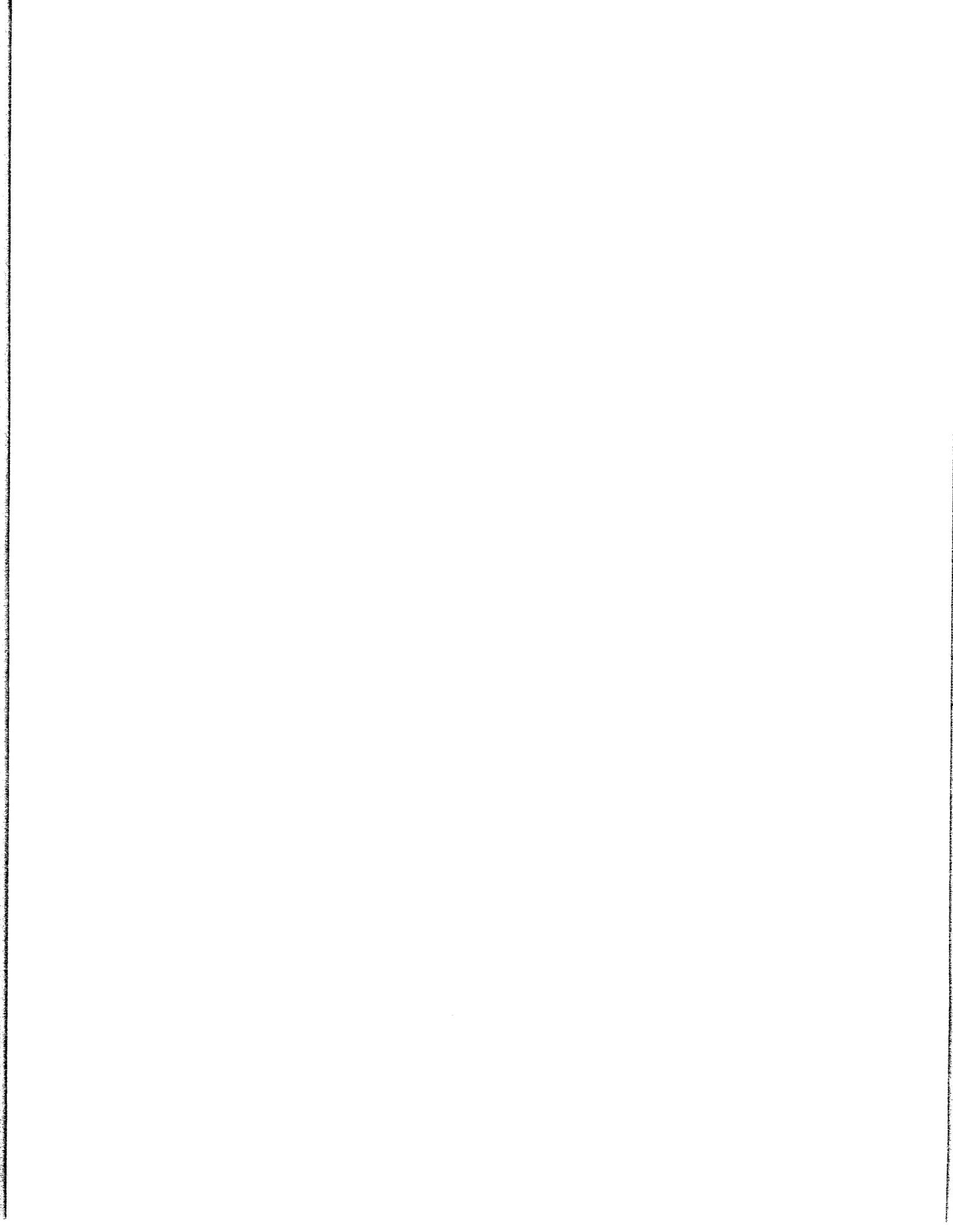
Chroma--2 or 3.

C horizons:

Value--6 or 7 dry, 4, 5, or 6 moist.

Chroma--3 or 4.

Other features--Some pedons have strata of loamy sand below 40 inches. Some pedons have a layer with a horizon of 5 to 15 percent lime concretions in the control section. Some pedons lack gypsum crystals in the lower horizons. These soils are a taxadjunct to the Yiper series because they have a high content of organic carbon in the lower part of the C horizon that is defined for the series. This difference, however, does not significantly affect their use and management.



Formation of the Soils

Soil is a natural body on the earth's surface in which plants grow. It is a mixture of varying proportions of rocks, minerals, organic matter, water, and air. The rocks and minerals are fragmented and are partly or wholly weathered. Soils have distinctive layers, or horizons, that are the product of environmental forces acting upon material deposited or accumulated through geologic activity.

Soils differ from one another in different localities and within short distances. The differences are the result of the interaction of five factors that are known to affect soil formation. These factors are (1) climate, mainly the temperature and kind and amount of precipitation that have existed since accumulation of the parent material; (2) topography, mainly as it affects the internal and external soil properties such as drainage, aeration, susceptibility to erosion, and exposure to sun and wind; (3) living organisms, mainly the plant cover and the organisms living in and on the soil; (4) parent material, including texture and structure of the material as well as its mineralogical and chemical composition; and (5) time, the length of time that the soil-forming factors have been operating.

The soil forming factors interact to form soil horizons. The age or strength of expression of the soil horizons is a reflection of the amount of weathering of parent material resulting from the interaction of moisture, temperature, and biological activity as influenced by time. The kinds and combinations of diagnostic horizons and other diagnostic properties (24, 25) together with their strength of expression, provide clues to the age of the soils in the area. Important diagnostic horizons present in soils within the area include mollic epipedons, cambic, argillic, and natric horizons, and horizons exhibiting silica cementation.

The mollic epipedon is a thick, dark colored, base rich surface horizon formed in areas where organic matter can accumulate faster than it is

oxidized. When conditions are favorable, the mollic epipedon can form in 100 to 1,000 years (25). It is formed mainly by additions of organic matter to the soil in the form of decomposed roots and organic residues from the surface that have been taken underground by animals. The mollic epipedon may occur as the only diagnostic horizon on recent soils or may occur in combination with other diagnostic horizons on older soils.

Cambic horizons in this survey area are identified by the redistribution of soluble salts and carbonates to a lower position in the soil profile, oxidation of the subsoil, and alteration of the original parent material stratification to platy or blocky soil structure. Cambic horizons occur in soils formed on stable Holocene land surfaces. Investigations in southern New Mexico indicate that cambic horizons in that region are less than about 5,000 years old (6, 9). Cambic horizons in this survey area and in other survey areas in northern and central Nevada are generally thought to be 5,000 to 10,000 years old. This has been determined mostly as a result of soil mapping in areas near and below the last high stage of Lake Lahontan age Pleistocene lakes (11, 14, 16, 18). Cambic horizons have also been described in soils that have thin Mazama ash layers in their profiles.

Argillic horizons are subsurface horizons of illuvial clay accumulation. Prominent argillic horizons in this area generally occur in soils that formed on Wisconsin and pre-Wisconsin age surfaces. This concept has been established by studies in the Southwest (7, 8), in Nevada (3, 11, 15) and is further supported in Soil Taxonomy (25). With increasing age and constancy of other conditions, argillic horizons become finer in texture, become somewhat thicker and tend to develop abrupt upper boundaries.

Natric horizons are special kinds of argillic horizons that formed under the influence of high exchangeable sodium content. Following earlier

development as argillic horizons, prominent natric horizons may have developed their present characteristics as a result of sodium supplied by eolian deposits. Transportation and deposition of sodium salts with eolian deposits are believed to be an important present-day process that affects physical and chemical properties of soils in the area.

Volcanic glass found in deposits derived from pyroclastic material and in eolian deposits of volcanic ash is a source of silica for the formation of durinodes and duripans in many of the soils in the survey area. Holocene soils developed in deposits containing a volcanic ash enriched zone often have weakly to moderately cemented horizons rich in siliceous material. These zones are described in soils as horizons with durinodes, discontinuous silica cementation, or continuous silica cementation each grading from very weak to strong. Some forms of silica cementation apparently are capable of forming during a relatively short period of time and are probably less than 6,000 years old. Platy or laminated forms of duripans tend to develop in loamy material. Duripans are massive or platy horizons that are cemented with silica and, in most instances, with accessory calcium carbonates.

The overall landscape of the area, mainly the mountains and valleys, is the result of geologic stratigraphic and structural control. The present topography and landforms, however, are primarily the result of events that occurred during Quaternary time. The kinds of soils that formed are indicative of the stability and age of the surfaces of the landforms on which they occur.

Climate

The major climatic forces that influence soil formation are precipitation and temperature. Recent soils reflect the present climate which can be directly related to soil development. Soils older than Holocene age were formed under past climatic conditions.

The present desert climate began at the start of the Pleistocene, but both precipitation and temperature have fluctuated widely. Today the climate is characterized by warm, dry summers and cool, moist winters. Precipitation is strongly influenced by north-south trending mountain ranges. The storms in the area tend to drop increasing amounts of moisture with increasing

elevation. Consequently, the average annual precipitation ranges from about 5 inches at the lower elevations of the Black Rock Desert to about 16 inches or more at the highest elevations of the Selenite and Seven Troughs Ranges. The precipitation falls mainly in the winter and spring.

The average annual air temperature ranges from about 50 degrees F. at the lower elevations of the valleys to about 41 degrees F. in some of the high mountain ranges. In winter, freezing and thawing generally occur throughout the survey area, except in those areas that generally are insulated by snow cover. The effects of frost action are discernible by the heaving of plants, development of miniature rings, rock stripes, and erosion of the surface soils resulting from solifluction.

Major climatic variations are the result of the effects of topography and relief. Temperature decreases with elevation, while precipitation increases with elevation. The soils in the survey area reflect a general zonation with respect to elevation and longitudinal location. As the precipitation increases, leaching and the production of native vegetation increases resulting in an increased organic matter supply and cycling of the bases. Amounts and fluctuations in temperature and moisture affect the rates of organic matter decomposition and accumulation and mineral weathering (4, 12).

At the lower elevations 3,850 to 5,000 feet, within the survey area, the average annual precipitation is about 4 to 8 inches and the average annual air temperature is about 50 to 55 degrees F. In this warm, arid part of the area, there is no surplus soil moisture for deep percolation. Chemical weathering of parent material is slow, leaching is incomplete, and eluviation and illuviation proceed at a very slow rate. The plant cover is sparse and consists mainly of drought-and-salt-tolerant shrubs. Typically, the soils are low in organic matter content and have thin, light colored A horizons. Soluble salts, calcium carbonate, and silica accumulate in the soil profile at a relatively shallow depth. Typic Camborthids (Labkey series) and Duric Natrargids (Dorper series) are soils that reflect soil formation in this climatic zone.

At elevations of 5,000 to 7,000 feet within the survey area, the average annual precipitation is about 8 to 12 inches and the average annual air temperature is about 47 to 49 degrees F. In this warm, semi-arid part of the survey area, the plant cover is thicker than at the lowest elevations and

consists of mainly of shrubs and grasses. Chemical weathering of parent material proceeds at a slow rate. Typically, weathering products are leached to the lower profile below the root zone and calcium carbonate and silica accumulate in the lower part of the soil profile. Soluble salts are completely leached or concentrated deep within the profile. Typically, the soils are moderately low in organic matter content and have thin, relatively dark colored A horizons, and thicker cambic or argillic horizons over horizons of silica or carbonate accumulation. Durixerollic Natrargids (Pokergap series) in the valleys and Lithic Xerollic Haplargids (Boomstick series) in the foothills reflect soil formation in this climatic zone.

At elevations of 7,000 to 8,200 feet, the average annual precipitation is about 10 to 14 inches and the average annual air temperature is about 43 to 46 degrees F. In this cool, semi-arid part of the survey area, the increased precipitation and decreased evapotranspiration result in a dense plant cover consisting mainly of shrubs and perennial grasses and localized stands of Utah juniper. The lower temperatures cause a slower rate of organic matter decomposition resulting in surface organic matter buildup. Chemical weathering is moderate in this climatic zone, leaching is complete, and eluviation and illuviation commonly proceed at a moderate rate. Typically, the soils have dark mollic epipedons and moderately leached subsoils. Pachic Haploxerolls (Shively series) and Aridic Calcic Argixerolls (Majuba series) are soils that reflect soil formation in this climatic zone.

Living Organisms

Plants, animals, insects, and microflora are important biological forces that affect soil formation in the survey area. Although mammals, such as badgers and ground squirrels, and insects such as cicadas and ants, have had some affect on soil development, plants appear to have had the major biological influence on the soils in this survey area.

The vegetation in the area has been particularly important in reducing erosion. The vegetation helped stabilize the land surfaces so that soil formation could take place.

Plants vary considerably in kinds and amounts as elevation increases because of climatic differences. On the flood plains where drainage is

restricted, the dense growth of meadow vegetation has supplied the organic matter that gives the Fluvaquentic Haplaquolls (Humboldt series) dark colored A horizons.

On fan skirts, alluvial flats and lake plains at low elevations, the main plants are drought-and-salt-tolerant shrubs. Because of the scarcity of available moisture, plants cover only a small part of the surface. They add little organic matter to the soils and provide little protection from the wind and sun. Salt tolerant shrubs also tend to recycle salts from the deeper layers to the surface soil. Examples of soils formed under these vegetation types are Typic Natrargids (Appian series) and Typic Torriorthents (Swingler series).

Fan piedmonts and foothills at higher elevations support a plant cover of shrubs and grass that is transitional from desert shrubs to the denser stands of vegetation in the mountaineous areas. The density of plants is somewhat greater, soluble salts are deeper in the soil profile, and the A horizons of these soils have accumulated moderate amounts of organic matter. Examples of soils formed under this type of vegetation are Xerollic Natrargids (Slipback series) and Xerollic Haplargids (Shawave series).

The mountainous areas support denser stands of shrubs, grasses, and in some places, trees. Because of the more abundant vegetation, the A horizons of the soils in these areas are thick, high in organic matter, and dark in color. Examples of soils formed under this type of vegetation are Lithic Argixerolls (Devada series) and Aridic Argixerolls (Burnborough series).

Topography

Topography, through its effects on drainage, runoff, erosion, and exposure to the sun and wind, has had an important effect on soil formation in the survey area. The mountain ranges, valleys, and flood plains reflect the gross variations in topography within the area.

The mountain ranges are mainly characterized by excessive topography. Runoff is rapid or very rapid, and the hazard of erosion is high. The removal of material by erosion inhibits or prevents soil development. Development in soils on unstable mountain surfaces that are subject to a high rate of geologic erosion is primarily limited to accumulation of organic matter to form a dark-

colored A horizon. A cambic or an argillic horizon has formed in the soils on more stable mountain surfaces where the rate of geologic erosion has been slower. Lithic Xerollic Haplargids (Grumblen series) and Lithic Haplargids (Theon series) are examples of soils that formed on the more stable mountain slopes and have an argillic horizon. Lithic Torriorthents (Singatse and Sojur series) are examples of soils on less stable mountain slopes where soil formation has been unable to act on parent material long enough for cambic or argillic horizons to develop.

Soils on concave and north-facing mountain slopes commonly have snow pockets that remain into late spring and early summer. The effect of temperature and moisture are enhanced in these areas resulting in dense stands of shrubs and grass. The soils in these areas have developed a thick, dark-colored A horizon with a high content of organic matter. Aridic Argixerolls (Say and Eaglerock series) are examples of these soils.

The valleys are semi-bolsos or bolsos that receive drainage primarily from the surrounding mountain ranges. Within the survey area, the valleys are characterized by a series of nearly level basin floors bordered by a piedmont slope consisting of alluvial fans or coalesced fan piedmonts (21). They consist of Tertiary-Quaternary valley-fill material. Small playas or intermittent lakes are located in Kumiva Valley and in Granite Springs Valley.

In the Sage Valley, stream erosion and drainages have dissected parts of the valley fill. Downcutting of the valleys has developed dissection patterns in these areas that have resulted in fan piedmont remnants, fan skirts, axial stream terraces and axial stream flood plains along drainageways. The areas have been relatively stable over a long period of time as a result of the bypassing of drainage water from uplands through dissecting channels. Haplic Nadurargids (Aboten series), Duric Natrargids (Jerval series) and Typic Haplargids (Granshaw series) are examples of soils on fan piedmont remnants. Typic Torriorthents (Bluewing and Kumiva series) are examples of soils along drainageways.

Granite Springs Valley, with its playas and nearly level old beach plains and alluvial flats is an example of a bolson. Runoff is medium, and the soils are moderately well drained to well drained. The soils in this area are light colored and contain high concentrations of sodium and soluble salts. Typic Natrargids (Appian series),

and Typic Torriorthents (Chumall series) are examples of soils that formed in this area.

The gently sloping to strongly sloping fan piedmonts bordering mountain areas in Sage Hen Valley have a relatively dissected surface. The soils that formed on these surfaces are subject to medium runoff and are well drained. Xerollic Natrargids (Slipback series) and Durixerollic Natrargids (Nodur series) are examples of soils in these areas.

Parent Material

Parent material is the weathered rock or unconsolidated material from which soils form. The hardness, grain size, and porosity of the parent material and its mineralogical and chemical composition greatly influence soil formation. The main sources of parent material in the survey area are intrusive and extrusive volcanic rock, sedimentary rock, lacustrine sediments, and eolian material, including volcanic ash and sand. Minor amounts of metasedimentary and metavolcanic rocks are common in localized areas.

The volcanic rock includes basalt, andesite, rhyolite and granitic rocks. It has supplied parent material components for the soils in the Antelope, Majuba, Trinity, Kamma, Seven Troughs, Bluewing, Shawave, Nightingale and Selenite mountain ranges. The material weathered from these rocks also is a component of the colluvium, alluvium and basin-fill material in adjacent valleys. Volcanic rock contains appreciable quantities of minerals that weather to clay. The more siliceous rocks, particularly tuff, are also a source of silica for the cementation of soil horizons. Because of the tendency of material derived from volcanic rock to produce clay upon weathering, most soils that formed in this material over long periods of time on sufficiently stable landforms have developed argillic horizons. Aridic Argixerolls (Burnborough series), Lithic Argixerolls (Cleavage series) and Lithic Xerollic Haplargids (Grumblen series) are examples of these soils.

Colluvium has accumulated on steep mountain slopes as a result of gravitational forces and is a soil parent material. The colluvium generally is poorly sorted, contains many rock fragments, and includes minerals that weather to clay. Many of the colluvial landscapes have not been stable long enough for an argillic horizon to have formed.

Soils such as the Aridic Haploxerolls (Selbit series) are examples.

Sedimentary rocks contribute to parent material components in the mountain ranges in the survey area. These rocks include shale, mudstone, siltstone, sandstone and limestone rocks. These materials generally weather to loam and silt loam soil materials. Xeric Torriorthents (Puett series) are examples of soils on low hills with sedimentary rocks.

Alluvium deposited on fan piedmonts, alluvial fans, alluvial flats and flood plains consists of sandy, loamy, and clayey materials of generally mixed mineralogy that have been eroded from surrounding mountains. The material deposited from mixed rock sources is mostly loamy in texture and contains gravels, cobbles, and stones. It is porous and contains minerals that, when weathered, produce clay and soluble silica for cementation of duripans. Haplic Nadurargids (Aboten series) are examples of soils with an argillic horizon and a duripan that formed on erosional fan piedmont remnants.

Alluvium deposited below the fan piedmonts as alluvial flats and flood plains consist of sandy, silty, and clayey material. Soluble salts are common in some of these soils. Although these materials contain weatherable minerals, the soils are young and do not exhibit soil development. Typic Torriorthents (Chumall and Ragtown series) are examples of these soils.

Loess, an eolian material consisting mainly of silt, was deposited over the entire survey area during the Pleistocene and Holocene periods. This material, which contains a considerable amount of volcanic glass, originated in the desert basins around the survey area. Loess has influenced soil formation in the area by contributing weatherable minerals and silica for cementation of subsurface horizons. Much of the loess deposited on mountain slopes has been washed into valleys, where it has been deposited with other material as very fine sandy loam alluvium.

The influence of loess is apparent in the upper horizons of soils that formed on erosional fan piedmont remnants and fan skirts that have been stable since the late Pleistocene and early Holocene periods. Soils which are influenced by loess parent materials are Haplic Nadurargids (Aboten series) and Durorthidic Torriorthents (Cresal series).

Sandy eolian materials are of limited extent. They occur mainly adjacent to or on lake beds, playas, terraces and fan piedmonts. Sandy soils

such as Typic Torripsamments (Hawsley series) have formed on sand sheets and sand dunes. Typic Torripsamments (Isolde series) have also formed on semi-stabilized dunes over lake plains.

Time

Time is required for the formation of soil horizons. The amount of time required depends upon the other soil-forming factors. Thickness and other characteristics of horizons reflect the relative age of soils. The age or strength of expression of the soil horizons is a reflection of the amount of weathering of parent material resulting from the interaction of moisture, temperature, and biological activity as influenced by time.

The soils in this survey area range from a few years to possibly a few hundred thousand years or more in age. This range in age is a major reason for the many kinds of soil in the area.

Many soil scientists and some geologists feel that weathering of parent material and soil profile development have been essentially continuous, with little change in rate throughout Quaternary time (19, 20, 23, 26).

Recently, geologists concerned with differentiating Quaternary deposits have proposed that soil development has not proceeded continuously at the same rate, but has taken place intermittently at rapid rates (16, 17, 18, 22). These geologists have developed the technique of mapping soil stratigraphic units which use weathering profiles as stratigraphic markers to differentiate and correlate Quaternary deposits. The concept of soil development is based on the assumption that weathering profiles formed in response to infrequent combinations of climatic factors that induced minimal erosion and deposition and a greatly accelerated rate of chemical weathering.

Although disagreements exist in regard to the relative influences of time and other soil-forming factors, the concept of intermittency of soil formation has been supported by numerous studies and provides a practical technique to discuss the age of soils in the survey area in relation to geologic climatic units in Quaternary time. For the purposes of this discussion, time-stratigraphic names as set forth by Birkeland (4) are used. These are Holocene, Late Wisconsin,

Middle Wisconsin, Early Wisconsin and pre-Wisconsin.

The kinds of diagnostic subsurface horizons and other subsurface diagnostic properties (24), together with their strength of expression, provide general clues to the age of the soils in the area. Important subsurface diagnostic horizons present in soils within the area include argillic, natric, and cambic horizons, and horizons exhibiting silica cementation.

Prominent argillic horizons in this area generally occur in soils that formed primarily during Wisconsin and pre-Wisconsin time. This concept has been established by studies in the Southwest (7, 8), and is further supported in Soil Taxonomy (25). With increasing age and constancy of other conditions, argillic horizons become finer in texture, become somewhat thicker, and tend to develop abrupt upper boundaries. Weakly expressed, thin argillic horizons may have formed during very Late Wisconsin or Early Holocene time.

Natric horizons are special kinds of argillic horizons that formed under the influence of high exchangeable sodium content. The effect of sodium on the dispersion of clay may tend to accelerate the rate of formation of argillic horizons. This is not believed to be significant, however, except in weakly expressed natric horizons that formed on Holocene surfaces. Following earlier development as argillic horizons, prominent natric horizons developed their present characteristics as a result of sodium supplied by eolian deposits. Transportation and deposition of sodium salts by eolian deposits are believed to be important present-day processes that affect the physical and chemical properties of soils in the area.

The volcanic glass in sediment derived from pyroclastic material and in eolian deposits of volcanic ash is a source of silica for the formation of duripans and durinodes in many of the soils in the survey area. Duripans are massive, platy horizons that are cemented with silica and, in most instances, with accessory calcium carbonate. Because of their association with prominent argillic horizons, massive duripans capped with silica- and lime-cemented laminar layers are probably the oldest kind of duripan in the area and are of early Wisconsin to pre-Wisconsin age. Platy forms of duripans with or without thin, discontinuous laminar layers tend to develop in loamy materials. Thin duripans lacking overlying laminar layers, weak discontinuous

silica cementation, or durinodes have apparently developed on Holocene surfaces in loess or loamy alluvium generally deposited on gravelly material. These forms of silica cementation apparently are capable of forming during a relatively short period of time and are probably less than 6,000 years old.

The degree of development of diagnostic subsurface horizons in the soils of the area indicates a sequence that ranges in age from present to pre-Wisconsin.

The youngest soils in the area are those that formed in recently aggraded material or in material recently exposed by erosion. Included among these soils are Typic Torriorthents (Mazuma series) formed in recent alluvium, shallow Xeric Torriorthents (Puett series) formed in material weathered from tuff and tuffaceous sandstone on upland slopes where geologic erosion has been active and Typic Torripsamments (Isolde series) formed in material subject to eolian activity on semi-stabilized sand dunes.

Somewhat older than the youngest soils are soils that have formed in alluvium on wet flood plains. These soils have been stable long enough to have accumulated organic matter and formed a dark-colored A horizon. They do not have diagnostic subsurface horizons or other diagnostic subsurface properties, and are probably less than about 1,000 years old. Fluvaquentic Haplaquolls (Humboldt series) are examples of soils that formed on wet flood plains.

Soils that formed in alluvium and have developed subsurface horizons containing durinodes or horizons with very weak silica cementation are also older than the youngest soils and possibly are slightly older than the soils that have developed a dark-colored A horizon as their only diagnostic feature. These soils formed in saline and alkali affected parent material containing appreciable amounts of volcanic ash and are on alluvial flats. The volcanic ash as a source of soluble silica along with the alkaline reaction, probably contributes to relatively rapid formation of durinodes and incipient silica cementation. Durorthidic Torriorthents (Boton series) are examples of soils that have horizons with incipient silica cementation.

Stable Holocene land surfaces less than about 10,000 years and more than 2,000 years old are in the survey area. Most soils that formed on these surfaces have a cambic horizon. Cambic horizons in soils within the area formed for the

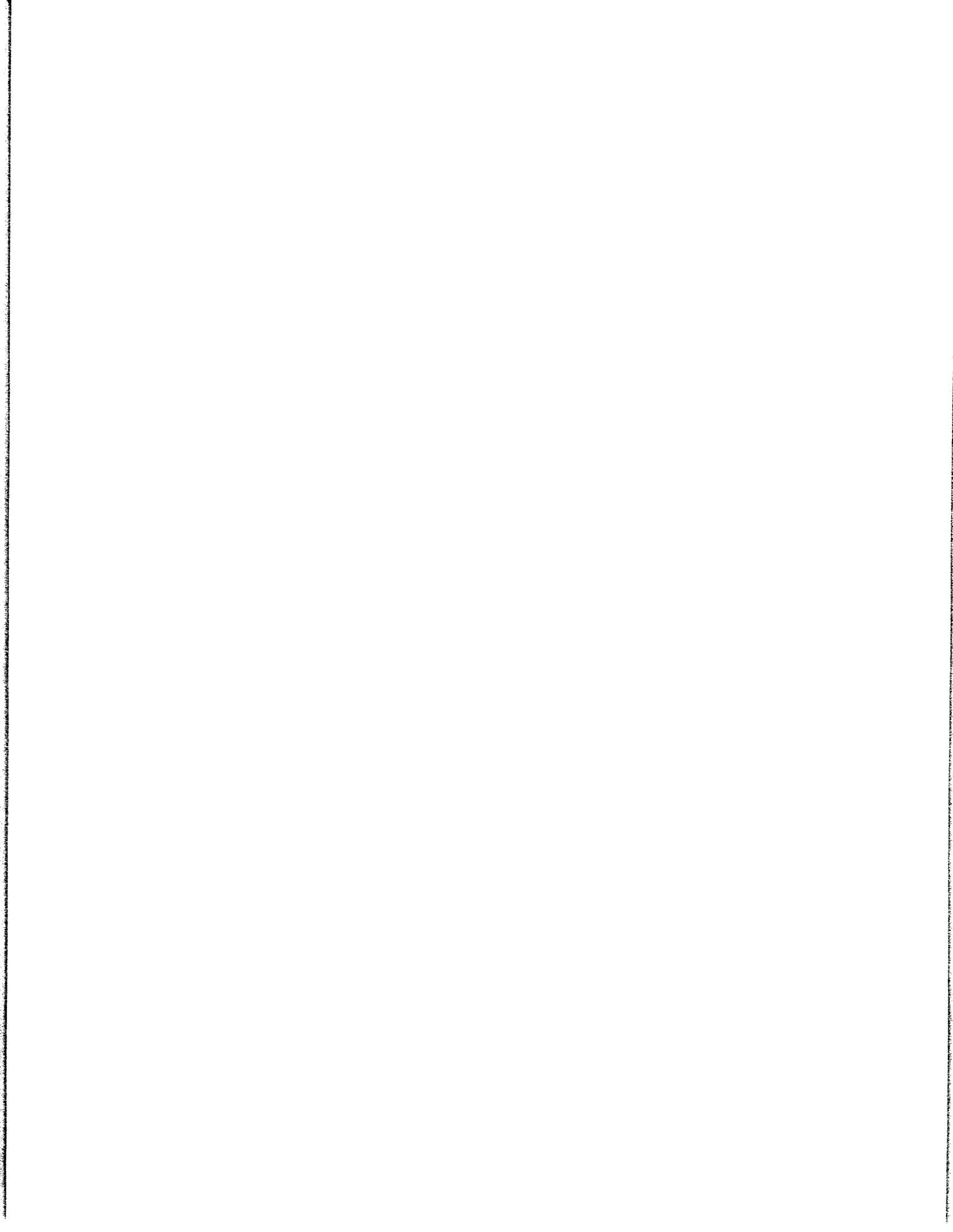
most part in calcareous sediments. Original stratification is absent, and carbonates have been removed and redeposited in underlying horizons. Investigations in southern New Mexico indicate that cambic horizons in that region are less than about 5,000 years old (6, 9). Cambic horizons in the survey area and in other areas in northern Nevada have been generally thought to be less than 10,000 years old, and possibly less than 7,000 years. This age has been determined mostly as a result of soil mapping in areas located below the last high stage of Pleistocene Lake Lahontan (10, 16, 17, 18). Typic Camborthids (Toulon series) are examples of soils with cambic horizons on pluvial lake plain terraces and bars of beach plains. Typic Camborthids (Labkey series) have also formed on inset fans and fan skirts. Torriorthentic Haploxerolls (Selbit series) have formed on mountain slopes.

Soils that have an argillic horizon are believed to be of late Holocene to pre-Wisconsin age. These soils occur extensively on mountains, plateaus, foothills, and fan piedmonts. The fact that extensive areas of these kinds of soils exist today is evidence that major erosional and depositional events have not taken place or have been minor in extent since late Pleistocene time.

Stable early-late Wisconsin or Middle Wisconsin age land surfaces are extensive. These soils have dominantly fine-loamy or loamy-skeletal argillic or natric horizons. Typic Natrargids (Appian series) are examples of soils with natric horizons on high old lake plains. Xerollic Natrargids (Slipback series) and Xerollic Haplargids (Shawave series) are examples of soils with argillic horizons on fan skirts, inset fans and erosional fan remnants. Aridic Argixerolls (Eaglerock series) and Lithic Argixerolls (Devada series) are examples of soils on mountain slopes.

During this same period, thin and moderately thick duripans were formed in some soils on the older landscapes of the area. Haplic Nadurargids (Aboten series) are examples of soils on fan piedmont remnants with duripans.

Stable early Wisconsin or early-middle Wisconsin age land surfaces are extensive. Soils on these surfaces have well developed argillic horizons. They occupy older stable land surfaces where the original subsurface horizons have been neither stripped by erosion nor deeply buried by sediment. They are above the highest levels of influence by Lake Lahontan. Duric Natrargids (Dorper series) and Durixerollic Natrargids (Nodur series) with clayey argillic horizons are examples of soils on erosional fan remnants.



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Glossary

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alkali (sodic) soil. A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Alluvial cone. The material washed down the sides of mountains and hills by ephemeral streams and deposited at the mouth of gorges in the form of a moderately steep, conical mass descending equally in all directions from the point of issue.

Alluvial fan. The fanlike deposit of a stream where it issues from a narrow valley upon a plain, or of a tributary stream near or at its junction with its main stream.

Alluvial flat. A nearly level, graded, alluvial surface in bolsons and semi-bolsons. Commonly, an alluvial flat does not manifest terraces or floodplain levels.

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.

Area reclaim (in tables). An area difficult to reclaim after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Argillite. Weakly metamorphosed mudstone or shale.

Arroyo. The flat-floored channel of an ephemeral stream, commonly with very steep to vertical banks cut in alluvium.

Aspect. The direction in which a slope faces.

Association, soil. A group of soils or miscellaneous areas geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low.....	0 to 3.5
Low	3.5 to 5
Moderate	5 to 7.5
High.....	more than 7.5

Avalanche chute. The track or path formed by an avalanche.

Back slope. The geomorphic component that forms the steepest inclined surface and principal element of many hillsides. Back slopes in profile are commonly steep, are linear, and may or may not include cliff segments.

- Backswamp.** A floodplain landform of extensive, marshy, or swampy, depressed areas of flood plains between natural levees and valley sides or terraces.
- Badland.** Steep or very steep, commonly nonstony, barren land dissected by many intermittent drainage channels. Badland is most common in semiarid and arid regions where streams are entrenched in soft geologic material. Local relief generally ranges from 25 to 500 feet. Runoff potential is very high, and geologic erosion is active.
- Ballena.** A fan remnant having a distinctively-rounded surface of fan alluvium. The ballena's broadly rounded shoulders meet from either side to form a narrow summit and merge smoothly with concave, short pediments which form smoothly-rounded drainageways between adjacent ballenas. A partial ballena is a fan remnant large enough to retain some relict fan surface on a remnant summit.
- Barrier beach.** A wide gently sloping portion of a bolson floor comprising numerous, parallel, relict longshore-bars and lagoons built by a receding pluvial lake.
- Basal area.** The area of a cross section of a tree, generally referring to the section at breast height and measured outside the bark. It is a measure of stand density, commonly expressed in square feet.
- Base saturation.** The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, K), expressed as a percentage of the total cation-exchange capacity.
- Basin floor.** A general term for the nearly level, lower-most part of intermontane basins (i.e., bolson, semi-bolsions). The basin floor includes all of the alluvial, eolian, and erosional landforms below the piedmont slope.
- Beach terrace.** The relict shorelines from pluvial lakes, generally restricted to valley sides.
- Bedding planes.** Fine strata, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.
- Bedding system.** A drainage system made by plowing, grading, or otherwise shaping the surface of a flat field. It consists of a series of low ridges separated by shallow, parallel dead furrows.
- Bedrock.** The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.
- Bedrock-controlled topography.** A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.
- Bench terrace.** A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.
- Bisequum.** Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.
- Blowout.** A shallow depression from which all or most of the soil material has been removed by 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.
- Board foot.** A unit of measure of the wood in lumber, logs, or trees. The amount of wood in a board one foot wide, one foot long, and one inch thick before finishing.
- Bolson.** A landscape term for an internally drained intermontane basin into which drainages from surrounding mountains converge inward toward a central depression.
- Boulders.** Rock fragments larger than 2 feet (60 centimeters) in diameter.
- Breaks.** The steep and very steep broken land at the border of an upland summit that is dissected by ravines.
- Breast height.** An average height of 4.5 feet above the ground surface; the point on a tree where diameter measurements are ordinarily taken.
- Brush management.** Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.
- Butte.** An isolated small mountain or hill with steep or precipitous sides and a top variously flat, rounded, or pointed that may be a residual mass isolated by erosion or an exposed volcanic neck.
- Calcareous soil.** A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

- Caldera.** A large, more or less circular depression, formed by explosion and/or collapse, which surrounds a volcanic vent or vents, and whose diameter is much greater than that of the included vent, or vents.
- Caliche.** A more or less cemented deposit of calcium carbonate in soils of warm-temperate, subhumid to arid areas. Caliche occurs as soft, thin layers in the soil or as hard, thick beds directly beneath the solum, or it is exposed at the surface by erosion.
- California bearing ratio (CBR).** The load-supporting capacity of a soil as compared to that of a standard crushed limestone, expressed as a ratio. First standardized in California. A soil having a CBR of 16 supports 16 percent of the load that would be supported by standard crushed limestone, per unit area, with the same degree of distortion.
- Canopy.** The leafy crown of trees or shrubs. (See Crown.)
- Canyon.** A long, deep, narrow, very steep sided valley with high, precipitous walls in an area of high local relief.
- Capillary water.** Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.
- Catena.** A sequence, or "chain," of soils on a landscape that formed in similar kinds of parent material but have different characteristics as a result of differences in relief and drainage.
- Cation.** An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.
- Cation-exchange capacity.** The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.
- Channeled.** Refers to a drainage area in which natural meandering or repeated branching and convergence of a streambed have created deeply incised cuts, either active or abandoned, in alluvial material.
- 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 soil.** Silty clay, sandy clay, or 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 slowly permeable soil horizon that contains much more clay than the horizons above it. A claypan is commonly hard when dry and plastic or stiff when wet.
- Clearcut.** A method of forest harvesting that removes the entire stand of trees in one cutting. Reproduction is achieved artificially or by natural seeding from adjacent stands.
- 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 completely surrounded by higher ground and having no natural outlet.
- Coarse fragments.** Mineral or rock particles larger than 2 millimeters in diameter.
- Coarse textured soil.** Sand or loamy sand.
- Cobble (or cobblestone).** A rounded, partly rounded, or angular 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 is 35 to 60 percent of these rock fragments, and extremely cobbly soil material is more than 60 percent.
- Codominant trees.** Trees whose crowns form the general level of the forest canopy and that

receive full light from above but comparatively little from the sides.

Colluvium. Unconsolidated, unsorted earth material moved and deposited by mass movement on sideslopes and at the base of slopes.

Commercial forest. Forest land capable of producing 20 cubic feet or more per acre per year at the culmination of mean annual increment.

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.

Compressible (in tables). Excessive decrease in volume of soft soil under load.

Concretions. Cemented bodies with crude internal symmetry organized around a point, a line, or a plane that typically takes the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.

Conglomerate. A coarse grained, clastic rock composed of rounded to subangular rock fragments more than 2 millimeters in diameter. It commonly has a matrix of sand and finer textured material. Conglomerate is the consolidated equivalent of gravel.

Conservation 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 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."

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.

Coprogenous earth (sedimentary peat). Fecal material deposited in water by aquatic organisms.

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.

Cuesta. A hill or ridge that has a gentle slope on one side and a steep slope on the other; specifically, an asymmetric, homoclinal ridge capped by resistant rock layers of slight or moderate dip.

Culmination of the mean annual increment (CMAI). The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual

increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

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. A soil that is 40 to 60 inches deep over bedrock or to other material that restricts the penetration of plant roots.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Delta. A body of alluvium having a surface that is nearly flat and fan shaped, deposited at or near the mouth of a river or stream where it enters a body of relatively quiet water, generally a sea or lake.

Dense layer (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Depth to rock (in tables). Bedrock is too near the surface for the specified use.

Desert pavement. On a desert surface, a layer of gravel or larger fragments that was emplaced by upward movement of the underlying sediments or that remains after finer particles have been removed by running water or the wind.

Dip slope. A slope of the land surface, roughly determined by and approximately conforming to the dip of the underlying bedrock.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Divided-slope farming. A form of field stripcropping in which crops are grown in a systematic arrangement of two strips, or bands, across the slope to reduce the hazard of water erosion. One strip is in a close-growing crop that provides protection from erosion, and the other strip is in a crop that provides less

protection from erosion. This practice is used where slopes are not long enough to permit a full stripcropping pattern to be used.

Dominant trees. Trees whose crowns form the general level of the forest canopy and that receive full light from above and from the sides.

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. An area of ground at a lower elevation than the surrounding ground and in which water collects and is drained to a closed depression or lake or to a drainageway at a lower elevation. A drainageway may or may not have distinctly incised channels at its upper reaches or throughout its course.

Duff. A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.

Dune. A mound, ridge, or hill of loose, windblown granular material (generally sand), either bare or covered with vegetation.

Ecological Site. A distinctive kind of rangeland or grazed forestland that has a unique historic potential native plant community. Ecological sites are the products of all the environmental factors that affect their development. An ecological site is capable of supporting a native plant community that has a unique kind and/or proportion of species or total vegetative production. Ecological sites in grazed forestland include both overstory and understory vegetation.

Effervescence. The quality of a soil measured when drops of diluted (1:10) hydrochloric acid (HCL) are added to the soil. The ratings are as follows:

Very slightly effervescent few bubbles
 Slightly effervescent bubbles readily
 Strongly effervescent bubbles form low foam
 Violently effervescent..... bubbles form thick foam quickly

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

Eolian soil material. Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.

Ephemeral stream. A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.
Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.
Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Erosion pavement. A layer of gravel or stones that remains on the surface after fine particles are removed by sheet or rill erosion.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Synonym: scarp.

Even aged. Refers to a stand of trees in which only small differences in age occur between the individuals. A range of 20 years is allowed.

Excess alkali (in tables). Excess exchangeable sodium in the soil. The resulting poor physical properties restrict the growth of plants.

Excess fines (in tables). Excess silt and clay in the soil. The soil does not provide a source of gravel or sand for construction purposes.

Excess lime (in tables). Excess carbonates in the soil that restrict the growth of some plants.

Excess salts (in tables). Excess water-soluble salts in the soil that restrict the growth of most plants.

Excess sodium (in tables). Excess exchangeable sodium in the soil. The resulting poor physical properties restrict the growth of plants.

Excess sulfur (in tables). Excessive amount of sulfur in the soil. The sulfur causes extreme acidity if the soil is drained, and the growth of most plants is restricted.

Extrusive rock. Igneous rock derived from deep-seated molten matter (magma) emplaced on the earth's surface.

Fallow. Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grain is grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.

Fan apron. A sheet-like mantle of relatively young alluvium covering part of an older fan piedmont surface. It somewhere buries a soil that can be traced to the edge of the fan apron.

Fan piedmont. The most extensive landform on piedmont slopes, formed by the coalescence of alluvial fans or accretions of fan aprons into one generally smooth slope.

Fan remnant. A general term for landforms that are remaining parts of older fan-landforms, that either have been dissected or partially buried.

Fan skirt. The zone of smooth, laterally-coalescing, small alluvial fans that issue from gullies cut into the fan piedmont or that are the coalescing extensions of inset fans of the fan piedmont, and that merge with the basin floor.

Fast intake (in tables). The rapid movement of water into the soil.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture,

temperature, tilth, and other growth factors are favorable.

Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the oven-dry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity*, *normal moisture capacity*, or *capillary capacity*.

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 fire fighters and equipment. Designated roads also serve as firebreaks.

First bottom. The normal flood plain of a stream, subject to frequent or occasional flooding.

Flaggy soil material. Material that is, by volume, 15 to 35 percent flagstones. Very flaggy soil material is 35 to 60 percent flagstones, and extremely flaggy soil material is more than 60 percent flagstones.

Flagstone. A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Fluvial. Of or pertaining to rivers; produced by river action, as a fluvial plain.

Foothill. A steeply sloping upland that has relief of as much as 1,000 feet (300 meters) and fringes a mountain range or high-plateau escarpment.

Foot slope. The inclined surface at the base of a hill.

Forb. Any herbaceous plant not a grass or a sedge.

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Fragile (in tables). A soil that is easily damaged by use or disturbance.

Frost action (in tables). Freezing and thawing of soil moisture. Frost action can damage roads, buildings and other structures, and plant roots.

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 clayey soils that shrink and swell considerably with changes in moisture content. Usually manifested as a succession of microbasins and microknolls in nearly level areas or of microvalleys and microridges parallel with the slope.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Graded strip cropping. Growing crops in strips that grade toward a protected waterway.

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 50 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 underlying material below the water table.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Gypsum. A mineral consisting of hydrous calcium sulfate.

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.

Heavy metal. Inorganic substances that are solid at ordinary temperatures and are not soluble in water. They form oxides and hydroxides that are basic. Examples are copper, iron, cadmium, zinc, manganese, lead, and arsenic.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

High-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

Hill. A natural elevation of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and is dependent on local usage.

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. The major horizons of mineral soil are as follows:
O horizon.--An organic layer of fresh and decaying plant residue.
A horizon.--The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.
E horizon.--The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.
B horizon.--The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than

those in the A horizon; or (4) a combination of these.

C horizon.--The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.--Soft, consolidated bedrock beneath the soil.

R layer.--Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Igneous rock. Rock formed by solidification from a molten or partially molten state. Major varieties include plutonic and volcanic rock. Examples are andesite, basalt, and granite.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

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 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 special case of the flood plain of an ephemeral stream that is confined between fan remnants, basin-floor remnants, ballenas, or closely opposed fan toeslopes.

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 flows for prolonged periods only when it receives groundwater discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Intermontane basin. A generic term for wide structural depressions between mountain ranges that are partly filled with alluvium. They may be drained internally (bolsons) or externally (semi-bolsons).

Invaders. On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, plants invade following disturbance of the surface.

Iron depletions. Low-chroma zones having a low content of iron and manganese oxide because of chemical reduction and removal, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:
Basin.--Water is applied rapidly to nearly level plains surrounded by levees or dikes.

Border.--Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes or borders.

Controlled flooding.--Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation.--Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

Drip (or trickle).--Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Furrow.--Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

Sprinkler.--Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation.--Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Wild flooding.--Water, released at high points, is allowed to flow onto an area without controlled distribution.

Lacustrine deposit. Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

Lagoon. The nearly level, filled depression behind the longshore bar on a barrier beach.

Lake plain. A surface marking the floor of an extinct lake, filled in by well sorted, stratified sediments.

Lake terrace. The narrow shelf produced along a lake shore and later exposed when the water recedes.

Lamella. A thin, generally horizontal layer of fine material illuviated within a very much thicker, coarser, eluviated layer.

Landform. Any recognizable form or feature on the earth's surface, having a characteristic shape, and produced by natural causes that provide an empirical description of similar portions of the earth's surface.

Landscape. A collection of related, natural landforms.

Landslide. The rapid downhill movement of a mass of soil and loose rock, generally when wet or saturated. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

- Large stones** (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.
- Leaching.** The removal of soluble material from soil or other material by percolating water.
- Liquid limit.** The moisture content at which the soil passes from a plastic to a liquid state.
- Loam.** Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.
- Loamy soil.** Coarse sandy loam, sandy loam, fine sandy loam, very fine sandy loam, loam, silt loam, silt, clay loam, sandy clay loam, or silty clay loam.
- Loess.** Fine grained material, dominantly of silt-sized particles, deposited by wind.
- Longshore bar.** A narrow, elongate, coarse-textured ridge, built by the wave action of a pluvial lake, that extends parallel to the shore and separated it from a lagoon; both the bar and lagoon are now relict features.
- 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.
- Marl.** An earthy, unconsolidated deposit consisting chiefly of calcium carbonate mixed with clay in approximately equal amounts.
- Masses.** Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium carbonate, gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.
- Mean annual increment (MAI).** The average annual increase in volume of a tree during the entire life of the tree.
- 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.
- Merchantable trees.** Trees that are of sufficient size to be economically processed into wood products.
- Metamorphic rock.** Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement. Nearly all such rocks are crystalline.
- Mineral soil.** Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.
- Minimum tillage.** Only the tillage essential to crop production and prevention of soil damage.
- Miscellaneous area.** An area that has little or no natural soil and supports little or no vegetation.
- Moderately coarse textured soil.** Coarse sandy loam, sandy loam, or fine sandy loam.
- Moderately deep soil.** A soil that is 20 to 40 inches deep over bedrock or to other material that restricts the penetration of plant roots.
- Moderately fine textured soil.** Clay loam, sandy clay loam, or silty clay loam.
- Mollic epipedon.** A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.
- Morphology, soil.** The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.
- Mottling, soil.** Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance--*few*, *common*, and *many*; size--*fine*, *medium*, and *coarse*; and contrast--*faint*, *distinct*, and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium*, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).
- Mountain.** A natural elevation of the land surface, rising more than 1,000 feet above surrounding lowlands, commonly of restricted summit area (relative to a plateau) and generally having steep sides. A mountain can occur as a single, isolated mass or in a group forming a chain or range.
- Muck.** Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)
- Mudstone.** Sedimentary rock formed by induration of silt and clay in approximately equal amounts.

Munsell notation. A designation of color by degrees of three simple variables--hue, value, and chroma. For example, a notation of 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 between 6.6 and 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.

Observed rooting depth. Depth to which roots have been observed to penetrate.

Organic matter. Plant and animal residue in the soil in various stages of decomposition.

Overstory. The trees in a forest that form the upper crown cover.

Oxbow. The horseshoe-shaped channel of a former meander, remaining after the stream formed a cutoff across a narrow meander neck.

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan*, *fragipan*, *claypan*, *plowpan*, and *traffic pan*.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Parna dune. An eolian dune built of sand size aggregates of clayey material that commonly occurs leeward of a playa.

Peat. Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pediment. A gently sloping erosional surface developed at the foot of a receding hill or mountain slope.

Pedisediment. A thin layer of alluvial material that mantles an erosion surface and has been

transported to its present position from higher lying areas of the erosion surface.

Pedon. The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The downward movement of water through the soil.

Percs slowly (in tables). The slow movement of water through the soil adversely affects the specified use.

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.....	0.00 to 0.01 inch
Very slow	0.01 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow.....	0.2 to 0.6 inch
Moderate.....	0.6 inch to 2.0 inches
Moderately rapid.....	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid.....	more than 20 inches

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piedmont slope. The dominant slope at the foot of a mountain. Main components of the piedmont slope include pediments, alluvial fans, fan piedmonts, fan skirts and inset fans.

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Pitting (in tables). Pits caused by melting around ice. They form on the soil after plant cover is removed.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plateau. An extensive upland mass with relatively flat summit area that is considerably elevated (more than 100 meters) above adjacent lowlands and separated from them on one or more sides by escarpments.

Playa. The generally dry and nearly level lake plain that occupies the lowest parts of closed depressional areas, such as those on intermontane basin floors. Temporary flooding occurs primarily in response to precipitation and runoff.

Pleistocene. The epoch of the Quaternary Period of geologic time preceding the Holocene (from approximately 2 million to 10 thousand years ago).

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Pluvial. Relating to former periods of abundant rains.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poor filter (in tables). Because of rapid or very rapid permeability, the soil may not adequately filter effluent from a waste disposal system.

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.

Poor outlets (in tables). Refers to areas where surface or subsurface drainage outlets are difficult or expensive to install.

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.

Quartzite, metamorphic. Rock consisting mainly of quartz that formed through recrystallization of quartz-rich sandstone or chert.

Quaternary. The period of geologic time, extending from about 2 million years ago to the present and comprising two epochs, the Pleistocene (Ice Age) and Holocene (Recent).

Quartzite, sedimentary. Very hard but unmetamorphosed sandstone consisting chiefly of quartz grains.

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 suitable for grazing or browsing. 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 . (mildly alkaline).7.4 to 7.8
 Moderately alkaline..... 7.9 to 8.4
 Strongly alkaline..... 8.5 to 9.0
 Very strongly alkaline 9.1 and higher

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. The unconsolidated mantle of weathered rock and soil material on the earth's surface; the loose earth material above the solid rock.

Relict stream terrace. One of a series of platforms in or adjacent to a stream valley that formed prior to the current stream system.

Relief. The elevations or inequalities of a land surface, considered collectively.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Rill. A steep-sided channel resulting from accelerated erosion. A rill is generally a few inches deep and not wide enough to be an obstacle to farm machinery.

Riverwash. Unstable areas of sandy, silty, clayey, or gravelly sediments. These areas are flooded, washed, and reworked by rivers so frequently that they support little or no vegetation.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Rock outcrop. Exposures of bare bedrock other than lava flows and rock-lined pits.

Rooting depth (in tables). Shallow root zone. The soil is shallow over a layer that greatly restricts roots.

Root zone. The part of the soil that can be penetrated by plant roots.

Rubble land. Areas that have more than 90 percent of the surface covered by stones or boulders. Voids contain no soil material and virtually no vegetation other than lichens. The areas commonly are at the base of mountain slopes, but some are on mountain slopes as deposits of cobbles, stones, and boulders left by Pleistocene glaciation or by periglacial phenomena.

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 groundwater runoff or seepage flow from ground water.

Saline soil. A soil containing soluble salts in an amount that impairs the growth of plants. A saline soil does not contain excess exchangeable sodium.

Salinity. The electrical conductivity of a saline soil. It is expressed, in millimhos per centimeter, as follows:

Nonsaline.....0 to 2
 Very slightly saline.....2 to 4
 Slightly saline.....4 to 8
 Moderately saline.....8 to 16
 Strongly saline More than 16

Salty water (in tables). Water that is too salty for consumption by livestock.

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.

Sand sheet. A large, irregularly shaped, surficial mantle of eolian sand.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

Sandy soil. Sand or loamy sand.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Saprolite. Unconsolidated residual material underlying the soil and grading to hard bedrock below.

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Sawlogs. Logs of suitable size and quality for the production of lumber.

Scarification. The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.

Scribner's log rule. A method of estimating the number of board feet that can be cut from a log of a given diameter and length.

Second bottom. The first terrace above the normal flood plain (or first bottom) of a river.

Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

Seepage (in tables). The movement of water through the soil. Seepage adversely affects the specified use.

Semi-bolson. An intermontane basin that is drained externally by an intermittent stream.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock formed by the hardening of a clay deposit.

Shallow soil. A soil that is 10 to 20 inches deep over bedrock or to other material that restricts the penetration of plant roots.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shelterwood system. A forest management system requiring the removal of a stand in a series of cuts so that regeneration occurs under a partial canopy. After regeneration, a final cut removes the shelterwood and allows the stand to develop in the open as an even-aged stand. The system is well suited to sites where shelter is needed for regeneration, and it can aid regeneration of the more intolerant tree species in a stand.

Shoulder slope. The uppermost inclined surface at the top of a hillside. It is the transition zone from the back slope to the summit of a hill or mountain. The surface is dominantly convex in profile and erosional in origin.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Shrub-coppice dune. A small dune that forms around shrubs or small trees.

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.

Sinkhole. A depression in the landscape where limestone has been dissolved.

Site class. A grouping of site indexes into five to seven production capability levels. Each level can be represented by a site curve.

Site curve (50-year). A set of related curves on a graph that shows the average height of dominant or dominant and codominant trees for the range of ages on soils that differ in productivity. Each level is represented by a curve. The basis of the curves is the height of dominant or dominant and codominant trees that are 50 years old or are 50 years old at breast height.

Site curve (100-year). A set of related curves on a graph that shows the average height of dominant or dominant and codominant trees for a range of ages on soils that differ in productivity. Each level is represented by a curve. The basis of the curves is the height of dominant or dominant and codominant trees that are 100 years old or are 100 years old at breast height.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Skid trails. Pathways along which logs are dragged to a common site for loading onto a logging truck.

Slash. The branches, bark, treetops, reject logs, and broken or uprooted trees left on the ground after logging.

Slickens. Accumulations of fine-textured material, such as material separated in placer-mine and ore-mill operations. Slickens from ore mills commonly consist of freshly ground rock that has undergone chemical treatment during the milling process.

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.

Slippage (in tables). Soil mass susceptible to movement downslope when loaded, excavated, or wet.

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, the following slope classes are recognized:

Nearly level 0 to 2 percent
 Gently sloping 2 to 4 percent
 Moderately sloping 4 to 8 percent

Strongly sloping..... 8 to 15 percent
 Moderately steep..... 15 to 30 percent
 Steep 30 to 50 percent
 Very steep 50 to 75 percent
 Extremely steep..... 75 percent and higher

Slope (in tables). Slope is great enough that special practices are required to ensure satisfactory performance of the soil for a specific use.

Slow intake (in tables). The slow movement of water into the soil.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Small stones (in tables). Rock fragments less than 3 inches (7.6 centimeters) in diameter. Small stones adversely affect the specified use of the soil.

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:

Very slight5-12:1
 Slight 13-30:1
 Moderate 31-45:1
 Strong 46-90:1
 Very strong more than 90:1

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand.....2.0 to 1.0
 Coarse sand 1.0 to 0.5
 Medium sand 0.5 to 0.25
 Fine sand 0.25 to 0.10
 Very fine sand 0.10 to 0.05

Silt 0.05 to 0.002

Clay..... less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons.

Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Species. A single, distinct kind of plant or animal having certain distinguishing characteristics.

Stone line. A concentration of coarse fragments in a soil. Generally, it is indicative of an old weathered surface. In a cross section, the line may be one fragment or more thick. It generally overlies material that weathered in place and is overlain by recent sediment of variable thickness.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Strath terrace. A surface cut formed by the erosion of hard or semiconsolidated bedrock and thinly mantled with stream deposits.

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. It originally formed near the level of the stream and is the dissected remnants of an abandoned flood plain, streambed, or valley floor that were produced during a former stage of erosion or deposition.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to soil blowing 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 grain* (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 and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum. The part of the soil below the solum.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

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. A general term for the top, or highest level, of an upland feature, such as a hill or mountain. It commonly refers to a higher area that has a gentle slope and is flanked by steeper slopes.

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.

Talus. Fragments of rock and other soil material accumulated by gravity at the foot of cliffs or steep slopes.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

- 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 is generally 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).** A step-like surface, ordinarily flat or undulating, bordering a river, a lake, or the sea representing a former flood plain.
- Texture, soil.** The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."
- Thin layer (in tables).** Otherwise suitable soil material too thin for the specified use.
- Till plain.** An extensive area of nearly level to undulating soils underlain by glacial till.
- Tilth, soil.** The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.
- Toe slope.** The outermost inclined surface at the base of a hill; part of a foot slope.
- Too arid (in tables).** The soil is dry most of the time, and vegetation is difficult to establish.
- 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.
- Toxicity (in tables).** Excessive amount of toxic substances, such as sodium or sulfur, that severely hinder establishment of vegetation or severely restrict plant growth.
- Trace elements.** Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.
- Trafficability.** The degree to which a soil is capable of supporting vehicular traffic across a wide range in soil moisture conditions.
- Tread.** The relatively flat terrace surface that was cut or built by stream or wave action.
- Tuff.** A compacted deposit that is 50 percent or more volcanic ash and dust.
- Understory.** Any plants in a forest community that grow to a height of less than 5 feet.
- Unstable fill (in tables).** Risk of caving or sloughing on banks of fill material.
- Upland (geology).** Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.
- Valley.** An elongated depressional area primarily developed by stream action.
- Valley fill.** In glaciated regions, material deposited in stream valleys by glacial meltwater. In nonglaciated regions, alluvium deposited by heavily loaded streams.
- Variation.** Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.
- Very deep soil.** A soil that is more than 60 inches deep over bedrock or to other material that restricts the penetration of plant roots.
- Very shallow soil.** A soil that is less than 10 inches deep over bedrock or to other material that restricts the penetration of plant roots.
- 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.
- Waterspreading.** Diverting runoff from natural channels by means of a system of dams, dikes, or ditches and spreading it over relatively flat surfaces.
- Water supplying capacity.** The total amount of water available in the soil for plant growth in a normal year from precipitation and from runoff from higher areas. Runoff and water lost to deep percolation are not included.
- Weathering.** All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.
- Well graded.** Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.
- Wilting point (or permanent wilting point).** The moisture content of soil, on an oven-dry basis, at which a plant (specifically, a sunflower)

wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow. The uprooting and tipping over of trees by the wind.

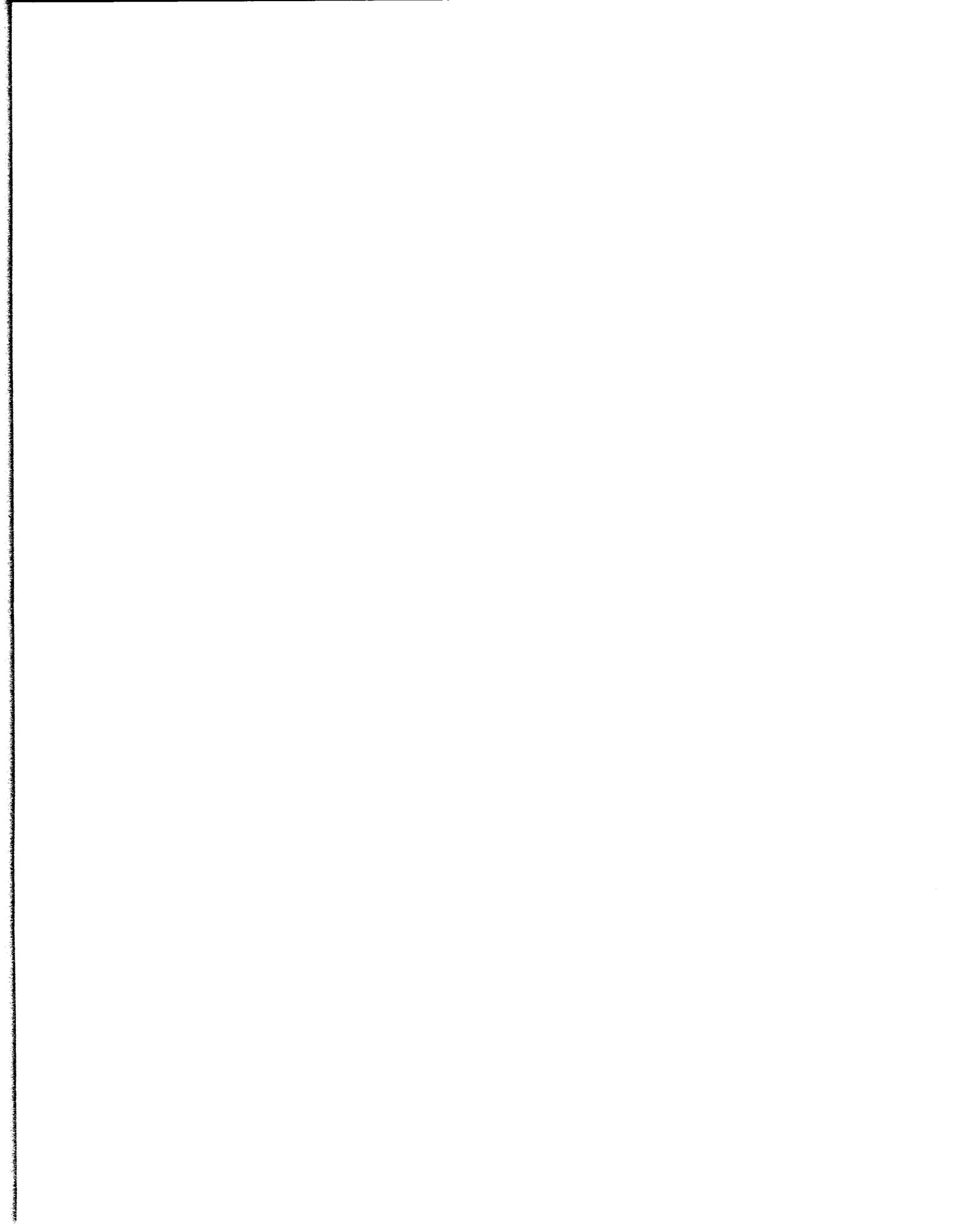
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Experiment Station

Soil Survey of Pershing County, Nevada, West Part

Part II



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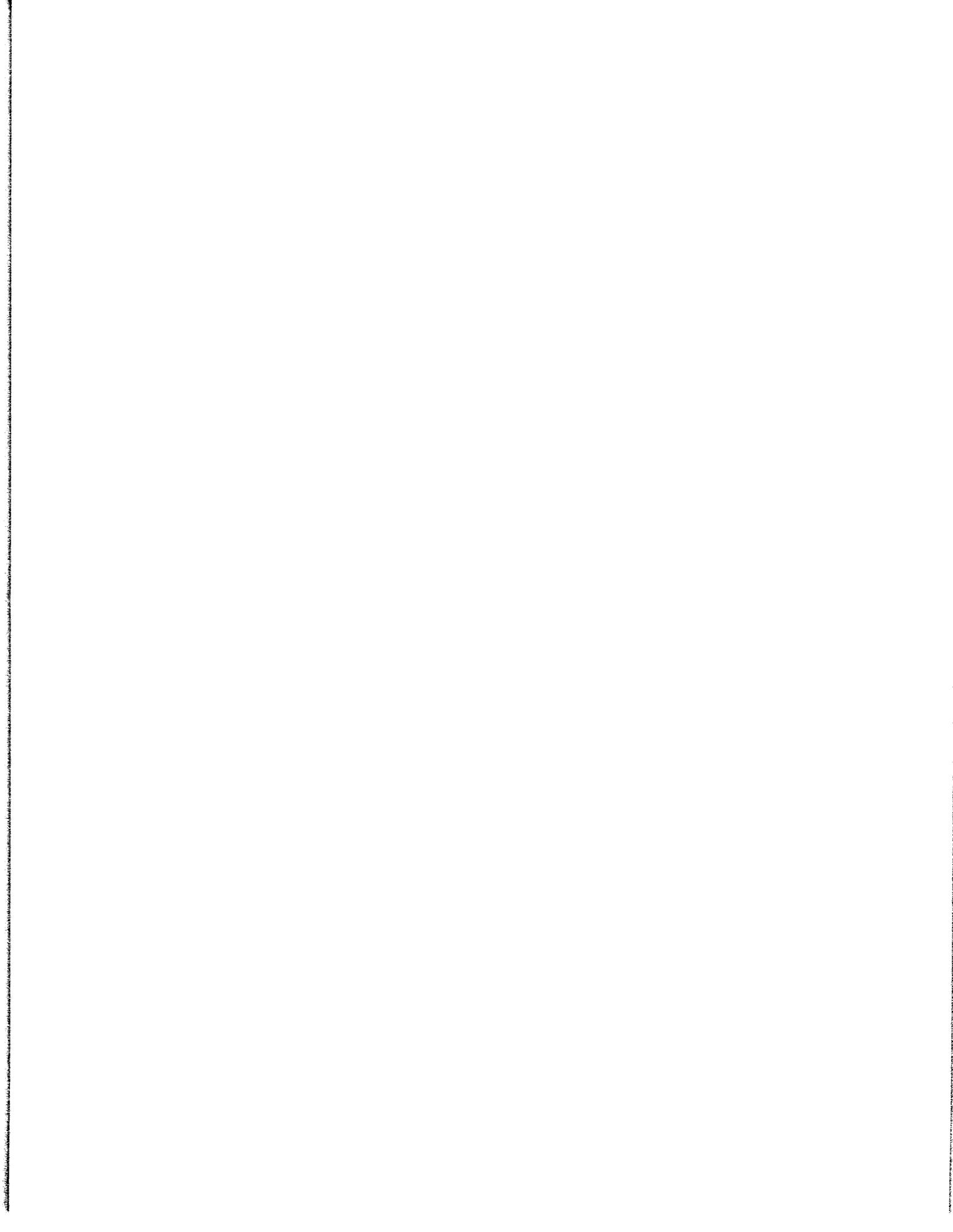
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Soil Survey of Pershing County, Nevada, West Part

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as rangeland and woodland; 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.

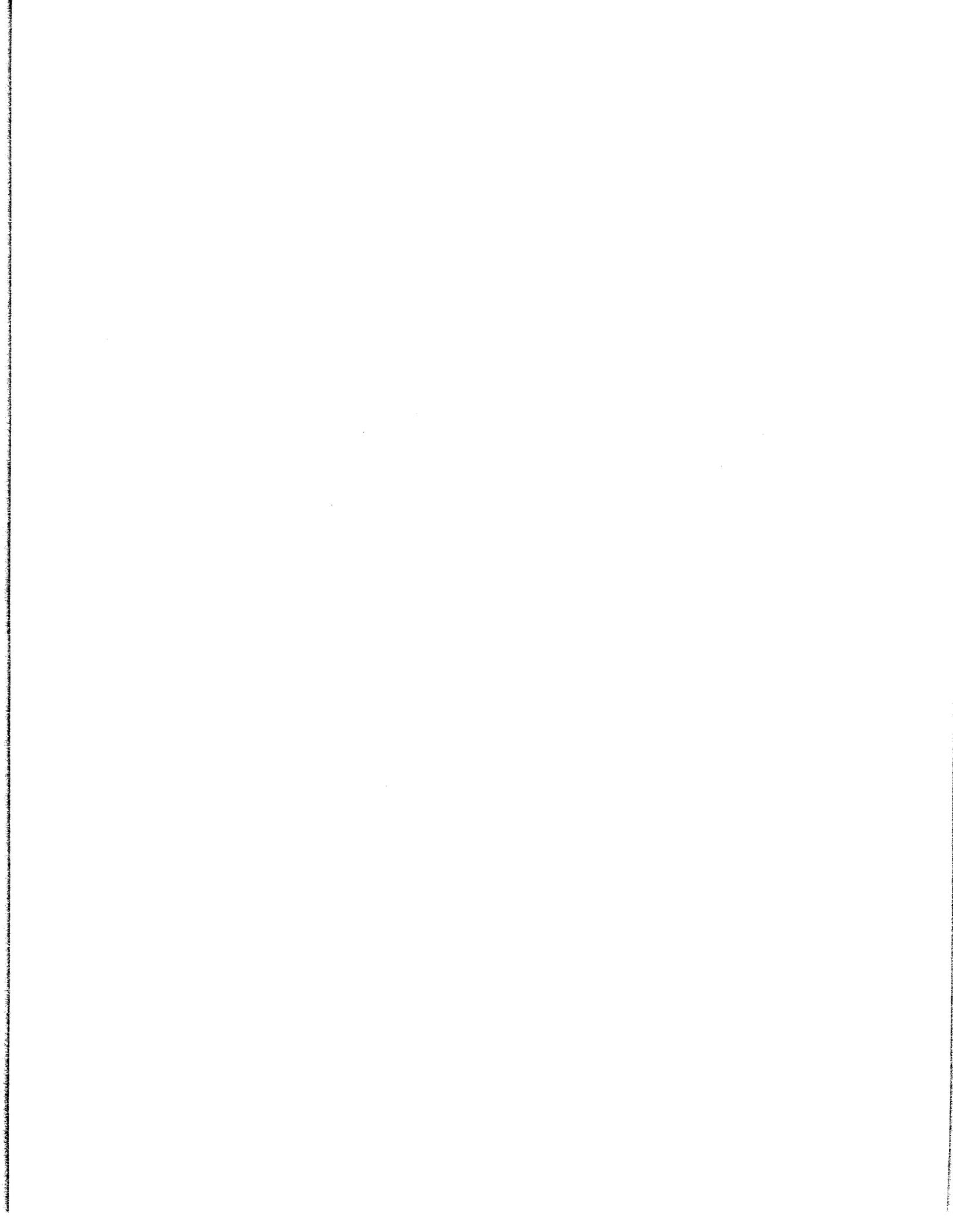
Interpretative ratings help engineers, planners, and others to understand how soil properties influence important nonagricultural uses, such as building site development and construction materials. The ratings indicate the most restrictive soil features affecting the suitability of the soils for these uses.

Soils are rated in their natural state. No unusual modification of the soil site or material is made other than that which is considered normal practice for the rated use. Even though soils may have limitations, it is important to remember that engineers and others can modify soil features or can design or adjust the plans for a structure to compensate for most of the limitations. Many of these practices, however, are costly. The final decision in selecting a site for a particular use generally involves weighing the costs of site preparation and maintenance.

Planners and others using soil survey information can evaluate the effect of specific uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, trees, and shrubs.



Crops and Pasture

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. The estimated yields of the main crops and pasture plants are listed for each soil in table 6 at the back of this publication.

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" in Part I of this Publication and in the "Soil Properties" portion of Part II. Specific information can be obtained from the local office of the Natural Resources Conservation Service or Cooperative Extension.

Cropland Limitations and Hazards

The management concerns affecting the use of the detailed soil map units in this survey area are shown in table 5, "Main Cropland Limitations and Hazards." The main concerns in managing irrigated cropland are efficient water use, control of soil blowing and water erosion, maintenance of soil fertility, pest and weed control, and timely planting and harvesting.

Efficient water use consists primarily of optimizing the water intake rate and reducing the runoff and evaporation rates. An irrigation system that provides optimum control and distribution of water is essential. Excessive irrigation wastes water, causes erosion, leaches plant nutrients, and increases the potential for ground-water pollution. It also can create drainage problems, raise the water table, and increase soil salinity. Applying conservation tillage and conservation crop rotation, farming on the contour, stripcropping, establishing field windbreaks, and leaving crop residue on the surface conserve moisture.

Generally, a combination of several practices is needed to control *soil blowing* and *water erosion*.

Conservation crop rotation, stripcropping, field windbreaks, tall grass barriers, contour farming, residue management, diversions, and grassed waterways help to prevent excessive soil loss.

Measures that are effective in maintaining *soil fertility* include applying fertilizer, both organic and inorganic, including manure; incorporating crop residue or green manure crops into the soil; and using proper crop rotations. Controlling erosion helps to prevent the loss of organic matter and plant nutrients and thus helps to maintain productivity, although the level of fertility can be reduced even in areas where erosion is controlled. All soils used for irrigated crops respond well to applications of fertilizer.

Some of the limitations and hazards shown in the table cannot be easily overcome. These are *channels, flooding, depth to rock, ponding, and gullies*.

Additional limitations and hazards are as follows:

Excessive permeability.--This limitation allows deep leaching of nutrients and pesticides. The capacity of the soil to retain moisture for plant use is poor.

Potential for ground-water pollution.--This is a hazard in soils with excessive permeability, hard bedrock, or a water table within the profile.

Lime content, poor tilth, restricted permeability, and surface crusting.--These limitations can be overcome by incorporating green manure crops, manure, or crop residue into the soil; applying a system of conservation tillage; and using conservation cropping systems. Also, crops may respond well to additions of phosphate fertilizer to soils that have a high content of lime. Applications of sulfur may be useful in minimizing crusting.

Short frost-free season.--If the growing season is less than 90 days, short-season crops or grasses should be grown.

Surface rock fragments.--This limitation causes rapid wear of tillage equipment. It cannot be easily overcome.

Slope.--Where the slope is more than 8 percent, water erosion may be accelerated unless conservation farming practices are applied.

Surface stones.--Stones or boulders on the surface can hinder normal tillage unless they are removed.

Salt and sodium content.--In areas where this is a limitation, only salt- and sodium-tolerant crops should be grown.

Following is an explanation of the criteria used to determine the limitations or hazards.

Channeled.--The word "channeled" is included in the name of the map unit.

Depth to rock.--Bedrock is within a depth of 40 inches.

Erosion by water.--The surface K factor multiplied by the upper slope limit is more than 2 (same as prime farmland criteria).

Excessive permeability.--The upper limit of the permeability range is more than 6 inches per hour within the soil profile.

Flooding.--The component of the map unit is occasionally flooded or frequently flooded.

Gullied.--The word "gullied" is included in the name of the map unit.

Lime content.--The component is assigned to wind erodibility group 4L or has more than 5 percent lime in the upper 10 inches.

Limited available water capacity.--The available water capacity calculated to a depth of 60 inches or to a root-limiting layer is 4.5 inches or less.

Ponding.--Ponding duration is assigned to the component of the map unit.

Potential for ground-water pollution.--The soil has a water table within a depth of 4 feet or hard bedrock within the profile, or permeability is more than 6 inches per hour within the soil.

Poor tilth.--The component of the map unit has more than 35 percent clay in the surface layer.

Restricted permeability.--Permeability is 0.06 inch per hour or less within the soil profile.

Salt content.--The component of the map unit has an electrical conductivity of more than 4 in the surface layer or more than 8 within a depth of 30 inches.

Short frost-free season.--The component of the map unit has a growing season of less than 90 frost-free days.

Slope.--The upper slope range of the component of the map unit is more than 8 percent.

Sodium content.--The sodium adsorption ratio of the component of the map unit is more than 13 within a depth of 30 inches.

Soil blowing.--The wind erodibility index multiplied by the selected C factor and then divided by the T factor is equal to or more than 8 for the component of the map unit.

Surface rock fragments.--The terms describing the texture of the surface layer include any rock fragment modifier except for gravelly or channery, and "surface stones" is not already indicated as a limitation.

Surface crusting.--The sodium adsorption ratio in the surface layer is 5 or more for any texture and 4 or more if the texture is silt, silt loam, loam, or very fine sandy loam.

Surface stones.--The terms describing the texture of the surface layer include any stony or bouldery modifier, or the soil is a stony or bouldery phase.

Water table.--The component of the map unit has a water table within a depth of 60 inches.

Yields per Acre

The average yields per acre that can be expected of the principal irrigated crops under a high level of management are shown in table 6, "Land Capability and Yields per Acre of Crops." In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification of each map unit also is shown in the table.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations are also considered.

For yields of irrigated crops, it is assumed that the irrigation system is adapted to the soils and to the crops grown, that good-quality irrigation water is uniformly applied as needed, and that tillage is kept to a minimum.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure,

and green manure crops; and harvesting that ensures the smallest possible loss.

The estimated yields reflect the productive capacity of each soil for each of the principal crops. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in the table are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Natural Resources Conservation Service or Cooperative Extension can provide information about the management and productivity of the soils for those crops.

Pasture and Hayland Interpretations

Under good management, proper grazing is essential for the production of high quality forage, stand survival, and erosion control. Proper grazing helps plants to maintain sufficient and generally vigorous top growth during the growing season. Brush control is essential in many areas, and weed control generally is needed. Rotation grazing and renovation also are important management practices.

Yield estimates are often provided in animal unit months (AUM), the amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

Information about forage yields other than those shown in the table "Land Capability and Yields per Acre of Crops" can be provided by the local office of the Natural Resources Conservation Service or Cooperative Extension.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute

for interpretations designed to show suitability and limitations of groups of soils for rangeland, for woodland, or for engineering purposes.

In the capability system, as described in "Land Capability Classification" 19, soils generally are grouped at three levels: capability class, subclass, and unit. These levels indicate the degree and kinds of limitations affecting mechanized farming systems that produce the more commonly grown field crops, such as corn, small grain, cotton, hay, and field-grown vegetables. Only class and subclass are used in this survey.

Capability classes, the broadest groups, are designated by Roman numerals I through VIII. The numerals indicate progressively greater limitations and narrower choices for practical use.

If properly managed, soils in classes I, II, III, and IV are suitable for the mechanized production of commonly grown field crops and for pasture and woodland. The degree of the soil limitations affecting the production of cultivated crops increases progressively from class I to class IV. The limitations can affect levels of production and the risk of permanent soil deterioration caused by erosion and other factors.

Soils in classes V, VI, and VII are generally not suited to the mechanized production of commonly grown field crops without special management, but they are suitable for plants that provide a permanent cover, such as grasses and trees. The severity of the soil limitations affecting crops increases progressively from class V to class VII. The local office of the Cooperative Extension or Natural Resources Conservation Service can provide guidance on the use of these soils as cropland.

Areas in class VIII are generally not suitable for crops, pasture, or woodland without a level of management that is impractical. These areas may have potential for other uses, such as recreational facilities and wildlife habitat.

Capability subclasses indicate the dominant limitations in the class. They are designated by adding a small letter, *e*, *w*, *s*, or *c*, to the class numeral, for example, IIe. The letter *e* shows that the main hazard is the risk of erosion unless a 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* shows that the chief limitation is a climate that is very cold or very dry.

There are no subclasses in class I because the soils of this class have few limitations. Class V contains only the subclasses indicated by *w*, *s*, or *c* because the soils in class V are subject to little or no erosion. They have other limitations that restrict their use mainly to pasture, rangeland, woodland, wildlife habitat, or recreation.

The irrigated capability classification of each farmland map unit is given in table 6, "Land Capability and Yields per Acre of Crops."

Erosion Factors

Soil erodibility factors *K_w* and *K_f* quantify the susceptibility of soil to detachment by water. A wind erodibility group (WEG) is a grouping of soils that have similar properties affecting their resistance to soil blowing. The Wind Erodibility Index (*I*) is based on the WEG and is used in the wind erosion equation. Soil erodibility factors *K_w* and *K_f* are used in the Revised Universal Soil Loss Equation. The procedure for predicting soil loss is useful in guiding the selection of soil and water conservation practices.

Soil Erodibility Factors *K_w* and *K_f*

Factor *K_w* shows the erodibility of the whole soil, and factor *K_f* shows the erodibility of only the fine-earth fraction, the material less than 2.0 millimeters in diameter. The soil erodibility factor indicates the susceptibility of a soil to sheet and rill erosion by water. The soil properties that influence erodibility are those that affect the infiltration rate, the movement of water through the soil, and the water storage capacity of the soil and those that allow the soil to resist dispersion, splashing, abrasion, and the transporting forces of rainfall and runoff. The most important soil properties are the content of silt plus very fine sand, the content of sand coarser than very fine sand, the content of organic matter, soil structure, and permeability.

Wind Erodibility Groups

Soils are assigned wind erodibility groups on the basis of the properties of the surface layer. The properties that are most important with respect to soil blowing are soil texture, content of organic matter, calcium carbonate, reaction, content of rock fragments, and aggregate stability. Wind erodibility is inversely related to the percentage of dry surface soil aggregates larger than 0.84 millimeter in diameter. From this percentage, the wind erodibility index factor (*I*) is determined.

Soil Loss Tolerance (*T*) Factor

The annual Soil Loss Tolerance (*T*) is an estimate of the maximum rate of erosion that can occur without affecting crop productivity. The *T* factor is expressed in tons of soil loss per acre per year. Values of 1 to 5 are used. *T* values are assigned according to properties of limiting subsurface soil layers. The designation of a limiting layer implies that the material above the layer has more favorable properties for crop production. The criteria for assigning *T* are based on the severity of physical or chemical properties of subsurface layers, the climatically influenced properties of soil moisture and temperature, the economic feasibility of utilizing management practices to overcome limiting layers or conditions, and the depth to the limiting layer.

Additional information about wind erodibility groups and *I*, *K_w*, *K_f*, and *T* factors can be obtained from local offices of the Natural Resources Conservation Service or Cooperative Extension.

Rangeland And Grazeable Woodland Resource Management

In this soil survey report, the term "rangeland" refers to a kind of land rather than a land use. Areas of rangeland provide many important resource values. They act as vast watersheds and provide habitat for wildlife, livestock forage, and opportunities for recreation. The resource values of rangeland are intricately related to each other and are often directly affected by rangeland management. Because of the interrelationships among rangeland resources, rangeland managers should consider all resource values when planning range improvements.

About 95 percent of the acreage in this survey area is rangeland. Livestock grazing is the principal agricultural use of the rangeland. Livestock operations are mostly cow-calf or cow-calf-sheep enterprises. Ranches range from a few hundred to several thousands acres in size. They rely heavily on permitted use of public lands. Most of the rangeland within the survey area is administered by the Bureau of Land Management. The Bureau of Indian Affairs has management responsibility for the rangeland within Indian reservations.

Soil-Site Correlation

During the course of this soil survey, ecological sites were correlated with the soils identified within the survey area. These correlations are based on the current understanding of soil-plant-climate relationships in the survey area. Soil properties that affect moisture supply and plant nutrients have the greatest influence on the productivity of range plants. Soil reaction, content of salts or lime, and topographic position are also important. The relationship of climate to vegetation and soils is considered in the classification of soils and in soil mapping criteria. In areas that have similar climate and topography, differences in the kind and amount of vegetation produced on rangeland are closely related to the kind of soil. Ecological sites

can generally be determined from soil maps and map unit legends developed for the survey area.

Range Condition

Mining is the major industrial use of rangeland in the survey area and has played an important role in the history of the area. During the mining booms of the 1870's, herds of cattle, sheep, oxen, horses, and burros were brought to Pershing County to be used as a source of power and feed for the developing mining communities. Heavy grazing pressure during these boom periods depleted native stands of forage throughout much of the survey area.

The early devastation of rangeland plant communities through uncontrolled livestock grazing ended long ago, but severely depleted areas still reflect the abuses of early settlement. In the most severely disturbed areas, palatable shrubs generally have been replaced by less desirable shrubs and many native perennial grasses and forbs have been replaced by alien or introduced annual grasses and forbs. Recovery of the plant community has been most evident where previous abuses were limited. The greater the level of deterioration, the longer the period of recovery. Although present-day rangeland production and plant diversity in the survey area are generally less than optimal, the overall condition of the rangeland is much improved from what was common in the early 1900's.

Range condition is determined by a comparison of the present plant community with the natural potential plant community on a particular rangeland ecological site. The more closely the existing community resembles the potential plant community, the higher the range condition. Range condition is an ecological rating only. It does not have a specific meaning that pertains to the present plant community for a given use. Ratings

of range condition alone do not indicate whether the present plant community is improving or deteriorating in relation to its potential. The trend in range condition is a measure of the direction of change in the condition. It is an expression of the effects of current use. The present range condition is a reflection of the accumulated effects of past use. Once the potential plant communities have been identified and the present range condition has been determined, monitoring the trend in range condition over time can indicate whether management objectives are being met.

Rangeland Management

Range management requires a knowledge of the kinds of soil and of the natural potential plant communities the soils in a given area can support. It also requires an evaluation of the present range condition. For most rangeland plant communities, good management can improve the present condition and productivity of the range and can help to prevent accelerated erosion. Proper management of rangeland depends on many factors. The season of grazing use, the kind of grazing animal, the intensity and distribution of grazing, and the range resource potential are important management considerations. Multiple-use management that meets present and future needs requires extensive knowledge of the capabilities and limitations of the range resources. An understanding of the soil properties and dynamics of native plant communities is fundamental in applying ecological principles to the evaluation and management of rangeland.

Generally, the objective of range management is to manage grazing so that the plants growing on a site are about the same in kind and amount as the natural potential plant community for that site. Such management generally results in the optimum production of vegetation, conservation of water, and control of erosion. To meet a special need or a specific use, however, it may be desirable to manage for a plant community other than the potential plant community for the site. Care must always be taken not to increase the susceptibility to erosion. Future uses and the relative ability of given sites to respond to management should be considered if the management objective is to establish a plant community other than the potential plant community.

Desirable forage plants of many plant communities within the survey area have been greatly depleted or even eliminated by excessive and untimely grazing. Generally, perennial grasses have decreased in abundance and woody plants have increased. The productivity of forage plants is below the production potential on many sites. Uneven livestock distribution has resulted in both overuse and underuse of the native forage.

An increase in the abundance and size of shrubs and an extensive invasion of cheatgrass (an introduced annual grass) have reduced the amount of soil moisture and nutrients available to perennial grasses and forbs. In areas where the range condition has not excessively deteriorated and an adequate population of desirable perennial grasses and forbs is available to respond to a release from plant competition, brush management can be effective in reversing the trend toward an increasing dominance of woody vegetation.

Abusive grazing of riparian vegetation by livestock can reduce water quality, eliminate streamside shrubs, cause soil compaction, accelerate erosion, and break down streambanks. Proper management of the rangeland in the survey area requires that special attention be given to riparian zones. Fortunately, riparian communities often respond to improved livestock management more rapidly than upland plant communities. Grazing treatments in riparian areas vary with the stability of the riparian plant community and the condition of the adjacent upland plant communities.

Rangeland Seeding

Rangeland seeding may be required following the removal of woody vegetation in areas where desirable understory plants are scarce or are not included in the present plant community. Revegetation also may be necessary for critical area treatment following a wildfire or other major disturbance. Maximum grazing capacity can be achieved in seeded stands where the objective of management is uniform grazing of the stands and prevention of the concentration of livestock. Additional water developments and fencing may be required to meet management objectives.

The success of range seeding depends on the amount of moisture available during the growing season. Even in areas where adapted species are planted and improved seeding and land treatment techniques are applied, the success of range seeding is strongly influenced by rainfall. The

distribution and amount of precipitation in the survey area fluctuate widely from one year to the next. Years of below normal precipitation are relatively frequent, and the risk of seeding failure caused by the unpredictability of climate should be acknowledged in addition to critical soil properties that affect seeding success.

Each soil in the survey area is rated in table 7, "Suitability for Rangeland Seeding." The criteria used in the development of these ratings are available from the local Nevada office of the Natural Resources Conservation Service. Where critical area treatment is necessary, providing a plant cover that helps to prevent accelerated erosion may be advantageous on soils that are poorly suited to range seeding. The plants that are suited to the soils in the area to be treated should be selected for seeding.

More specific management concerns are addressed under the heading "Plant Communities in Pershing County, West Part" later in this section. Additional information about rangeland management can be obtained from local offices of the Natural Resources Conservation Service or Cooperative Extension.

Wildlife Considerations

Reducing the extent of brush cover can benefit many game and nongame wildlife species where the habitat needs of those animals are properly identified and planned for in the manipulation of vegetation. For instance, extensive areas dominated by big sagebrush provide marginal habitat for pronghorn antelope. The habitat can be improved by measures that decrease the density and height of the sagebrush. The habitat for mule deer can be improved by removing big sagebrush and thus enhancing the diversity of understory grasses and forbs or increasing the production of green forage on transitional range that has an excessive cover of shrubs.

For other species, however, brush removal may be detrimental. Sage grouse is a habitat-specific bird, relying primarily on sagebrush to meet its life requirements. Plans for the manipulation of sagebrush stands on range inhabited by sage grouse should provide for the maintenance of suitable grouse habitat, especially nesting habitat

near strutting grounds. The optimum nesting habitat for sage grouse is one in which the crown cover of sagebrush that is less than 30 inches high is 20 to 40 percent. Treatment of the sagebrush that reduces the cover from 40 to 20 percent may not seriously degrade the nesting habitat and commonly improves the quality of forage for sage grouse.

In an assessment of how the manipulation of vegetation affects wildlife, "edge" habitat is an important consideration. The structure and dominance of plants that remain after manipulation differ with the method of treatment. Fire removes all of the vegetation, including the skeletons or woody portions of shrubs, and thus eliminates the structure of woody vegetation from the treated area. Prescribed burning may enhance the habitat for a number of wildlife species. Mule deer and many nongame species select recently burned areas for feeding. Brush treatment with herbicides leaves the dead skeletons of shrubs and retains the shrub structure. Herbicides may kill broad-leaved forbs in the shrub understory, which are staples in the diet of many game and nongame species. Chaining and, to a lesser degree, brush beating change the vegetative structure from tree/shrub or shrub to grassland, and the residue they leave on the ground creates habitat for small mammals.

Many wildlife species in the survey area depend on riparian plant communities during much of the year. These plant communities support wildlife not common to desert ecosystems, such as short-eared owls, Pacific tree frogs, and long-tailed weasels. Riparian communities also provide islands of habitat in desert environments for migrating birds. Nuthatches, warblers, and other species that nest in forest ecosystems migrate to desert riparian zones in spring and fall.

Livestock water developments can be beneficial to wildlife if the water is available when the wildlife species occupy the area. Forage for wildlife can be enhanced if adapted forbs are included in a rangeland seeding.

More specific wildlife management concerns are addressed under the heading "Plant Communities in Pershing County, West Part." Additional information about wildlife management can be obtained from local offices of the Natural Resources Conservation Service, Cooperative Extension, or Nevada Division of Wildlife.

Plant Communities in Pershing County, West Part

A rangeland ecological site is a distinctive kind of rangeland that differs from other kinds of rangeland in its ability to produce a characteristic natural plant community. An ecological site is the product of all environmental factors responsible for its development. It can support a native plant community typified by an association of species that differs from the potential plant community of other ecological sites in the kind or proportion of species or in total production. Disturbances, such as drought, fire, and grazing by native fauna, and the damage caused by insects and disease are recognized as natural factors in the development of native plant communities.

The appendix in the section "Rangeland Plants and Woodland Understory" shows the rangeland plants and woodland understory for each soil and contrasting inclusion in the detailed soil map units, the rangeland or woodland ecological site, the common plant name and scientific plant symbol for the characteristic vegetation, the average percent composition for each species in the potential plant community, the rangeland or woodland ecological site, and the total annual production of vegetation in favorable, normal, and unfavorable years. The characteristic vegetation, which consists of the grasses, forbs, shrubs, and immature trees that make up most of the potential plant community for each soil, is listed by common name. For rangeland, 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, the grazing season, and the availability of forage. Many plants, trees, and shrubs are inaccessible to foraging animals. For woodland, the percentage of the total annual production is not given because of a wide variation of production under different tree canopies. The presence of a plant species in the understory vegetation is shown by an "X" in the composition section of the table.

Total potential production is the amount of vegetation that can be expected to grow annually on well managed rangeland or woodland that supports the potential natural community. It includes all vegetation, whether or not it is palatable to grazing animals. It includes the current year's production 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, above average amounts and optimum timing of precipitation during periods of warm temperatures make growing conditions substantially better than average. In a normal year, growing conditions are about average. In an unfavorable year, growing conditions are well below average, generally because of low available soil moisture.

Riparian areas or meadows are interspersed throughout the survey area. Riparian vegetation grows on the flood plains along perennial streams. Stringer meadows are along spring-fed stream channels where moisture is available to plants throughout most of the growing season. Meadow vegetation also grows on the periphery of seeps and springs. Although they make up a small acreage in the survey area, the riparian zones are important because they provide free water, which improves the productivity of the riparian vegetation and lengthens the growing season of the vegetation. The zones are characterized by diverse plant species and a structural diversity of vegetation. The zones along stream channels are typically linear. The linear nature of the zones maximizes the edge effect between the zones and the adjacent uplands. An "edge," or ecotone, is a transition between plant communities or a joining of different vegetative structures within plant communities. It commonly is richer in wildlife than either of the adjoining communities.

Pershing County is in the western part of the Basin and Range Physiographic Province. The major plant associations in the survey area typify the general zonation of vegetation common in the Great Basin Region. Valley floors and the lower piedmont slopes are dominated by salt-desert shrub plant communities. Above the salt-desert shrub zone, sagebrush-grass plant communities are prevalent in areas where the mean annual precipitation is 8 inches or more.

Salt-desert shrub communities normally reflect either a climatically dry environment where the mean annual precipitation is less than 8 inches or physiologically dry soil conditions. High concentrations of salts that interfere with the uptake of water by plants can create physiologically dry soil conditions. Representative shrubs of the salt-desert shrub communities are shadscale, bud sagebrush, winterfat, and Douglas rabbitbrush. The common grasses include Indian

ricegrass, bottlebrush squirreltail, Sandberg bluegrass, and desert needlegrass.

The salt-desert shrub plant communities in the survey area include stands dominated by a single shrub species and stands that support relatively heterogeneous mixtures of shrubs and grasses. The vegetation is generally sparse, normally covering less than 20 percent of the surface. Wind erosion and water erosion are hazards because of the naturally sparse plant cover in most areas. The interspaces between plants in salt-desert shrub communities commonly are stabilized by surface pavements of rock fragments, by a puddled and crusted soil surface, or by microphytic (algae) surface crusts. These protective features can be damaged by livestock or off-road vehicle traffic.

Salt-desert shrub plant communities are most valuable as winter range for livestock. They can produce high-quality winter forage and are usually subject to only light snowfall. Most of the desirable forage species in these communities are adversely affected by grazing in late winter (March and April), heavy use, or both. Where native rangeland communities are grazed in winter, an emergency supply of feed should be readily available to carry livestock through periods of unusually severe weather.

Properly regulated grazing management can enhance the long-term productivity of salt-desert shrub plant communities. This management includes deferred grazing during critical growth periods in late winter, rotational grazing, and control of the intensity and season of use. Fencing, herding, water hauling, and controlling livestock access to watering facilities can achieve a better distribution of grazing. Because of the harsh environment of the salt-desert shrub zone, manipulation of vegetation and revegetation projects generally are not advisable.

Salt-desert shrub communities provide habitat for a wide variety of nongame species, including whiptail lizards, antelope ground squirrels, loggerhead shrikes, and Pacific rattlesnakes. Plant communities that are dominated by shadscale or winterfat and associated forbs and grasses provide important winter range for pronghorn antelope. Fencing can deter the migration of pronghorn antelope because these animals commonly do not jump. As a result, the lower wire of the fences should be high enough for antelope to crawl under. Where feasible, the fence lines should be routed so that they cause the least disruption to antelope travel. Livestock water developments are beneficial to antelope and other wildlife if the water is

available when the animals occupy the area. Few mule deer use salt-desert shrub communities, which generally are unimportant in deer management. Feral horses use these communities in winter.

Within the salt-desert shrub zone are low areas that commonly receive extra moisture as runoff from higher landscape positions and as shallow, low-velocity overflow during periods of runoff. Black greasewood, basin big sagebrush, and basin wildrye are important plants on these sites. When in good condition, these plant communities can produce more than 2,000 pounds of basin wildrye per acre. When in poor condition, however, they typically produce less than 500 pounds per acre. The potential for increasing the production of basin wildrye is good on many sites in poor or fair condition in the survey area. Basin wildrye provides standing dried forage during its fall and winter dormancy and can provide calving areas in late winter. Mule deer, pygmy rabbits, and northern harriers inhabit basin wildrye communities throughout the year.

Other plant communities that reflect extra moisture conditions are adjacent to valley floor playas. These areas may have a high water table during periods of runoff. Black greasewood, shadscale, inland saltgrass, and basin wildrye are the characteristic plants on these sites.

Plant communities that are dominated by black greasewood provide thermal cover for many species of wildlife but have limited value for big game. Because of its spines and coarse structure, black greasewood provides protective cover to nesting birds and small mammals. Although this species is not a preferred forage plant for livestock, cattle and sheep eat the succulent spring growth. On late fall and winter ranges, the fruit of black greasewood and shadscale provides nutritious and palatable feed. The soluble oxalates in black greasewood may be harmful to livestock, especially sheep, if the new growth is excessively grazed in spring.

As snow melts in spring, runoff commonly drains into valley floor basins. It remains for short periods, providing nesting and feeding habitat for some waterfowl. Playas containing water in spring are important resting places for migrating waterfowl. Sand dunes formed through the deposition of windblown sediment are commonly on the leeward side of the playas in this survey area. Although of limited extent, partially stabilized sand dunes provide important habitat for both predator and

prey vertebrate wildlife. Kangaroo rats, kit foxes, and bobcats inhabit the sand dunes.

Sagebrush-grass plant communities are at the lower elevations (5,000 to 7,000 feet) in the survey area. The average annual precipitation at these elevations is between 8 and 10 inches.

Wyoming big sagebrush, Lahontan sagebrush (a newly recognized subspecies of low sagebrush), and, to a lesser extent, basin big sagebrush are the dominant woody sagebrush plants at the lower elevations in the survey area. Cool-season perennial grasses are potentially the dominant herbaceous plants in the sagebrush-grass plant communities. Thurber needlegrass, Indian ricegrass, bottlebrush squirreltail, and Sandberg bluegrass are important cool-season bunch grasses. Grazing pressure has been severe on the sagebrush-grass plant communities at the lower elevations. These plant communities are the first to begin growth, or "greenup," during the warming periods of early spring and have traditionally been used for spring grazing by livestock. Close grazing spring after spring will eventually eliminate the perennial understory of grasses and forbs.

Grazing management practices can enhance the long-term productivity of sagebrush-grass communities. These practices include deferred grazing during critical growth periods in spring, rotational grazing, and control of the intensity and season of use. Fencing, herding, water hauling, and controlling livestock access to watering facilities can achieve a better distribution of grazing and facilitate grazing management.

Very few sources of perennial water are available in the sagebrush-grass zone at the lower elevations. Therefore, water developments and watering facilities are key elements in grazing management. Also, they can be of significant value to wildlife. Where the range condition has not deteriorated excessively and an adequate population of desirable perennial grasses and forbs is available to respond to a release from plant competition, brush management can greatly enhance the production of forage for livestock and wildlife.

The selection of plants available for rangeland seeding in the 8- to 10-inch precipitation zone is limited. Suitable species that are tolerant of early spring grazing, however, can be seeded. These species can play a key role in the management of grazing on the adjacent native sagebrush-grass and salt-desert shrub plant communities. Years of below normal precipitation are relatively frequent in this zone. Thus, the factors to be considered in

managing rangeland seeding include the risk of seeding failure caused by climate.

Although the sagebrush-grass communities at the lower elevations may provide transitional spring range to pronghorn antelope moving from winter to summer ranges, plant communities that are dominated by big sagebrush are not heavily used by the antelope. Fencing can deter migration of the antelope because these animals commonly do not jump. As a result, the lower wire of the fences should be high enough for the antelope to crawl under. Where feasible, the fence lines should be routed so that they cause the least disruption to antelope travel. Livestock water developments are beneficial to wildlife, especially deer and antelope, if the water is available when the animals are in the area.

During severe winters in areas of the sagebrush-grass communities at the lower elevations, sage grouse may feed on sagebrush that has not been covered by snow. Heavy snow at the higher elevations forces chukar partridge to move into these areas in search of food. The sagebrush-grass communities at the lower elevations are used primarily by mule deer and feral horses as winter range or as transitional range in spring. Spring grazing by livestock in areas used by deer as winter range should be managed so that the turn out of livestock is delayed until after spring "greenup" and the migration of most of the deer.

Sagebrush-grass communities are at intermediate elevations (7,000 to 8,200 feet) in the survey area. The average annual precipitation at these elevations is between 10 and 14 inches.

Wyoming big sagebrush dominates the shrub canopy of the mid-elevation plant communities on the warmer, drier exposures. Basin big sagebrush is most common on the deeper soils at the lower elevations in this precipitation zone. Mountain big sagebrush is prevalent on the north aspects at the lower elevations of the zone and grows on all aspects at the higher elevations. Low sagebrush is the dominant dwarf sagebrush at the mid and upper elevations in the survey area. Bluebunch wheatgrass, Thurber needlegrass, Canby bluegrass, Sandberg bluegrass, and basin wildrye are the major perennial grasses associated with these mid-elevation sagebrush-grass communities. Antelope bitterbrush is an important shrub in many plant communities at these elevations.

The mid-elevation sagebrush-grass communities are suitable for grazing by livestock in summer and fall. Deferred grazing during critical growth periods in spring and early summer, rotational grazing, and

control of the intensity and season of use can enhance the long-term productivity of these communities. Fencing, herding, and strategically locating livestock watering facilities help to achieve a better distribution of grazing and facilitate grazing management. Relatively few sources of perennial water are available in areas of the mid-elevation sagebrush-grass zone. As a result, water developments and watering facilities are key elements in grazing management and can be of significant value to wildlife.

Wyoming big sagebrush communities at mid elevations are used primarily as winter range by mule deer. They commonly provide habitat for Brewer's sparrow, black-tailed jackrabbits, and sagebrush lizards. They provide wintering areas for sage grouse. Low sagebrush communities provide important summer range for pronghorn antelope and brood-rearing habitat for sage grouse. Livestock water developments can be beneficial to wildlife, especially deer and antelope, if the water is available when the animals are in the area. Mountain big sagebrush and low sagebrush communities provide spring, summer, and fall range for mule deer and feral horses.

Seasonal grazing by livestock removes old grass residue and exposes the regrowth of succulent green stems and leaves that provide food for mule deer. The steep rock-faced cliffs common to these mid elevations have ledges, joints, cracks, and occasional caves and thus provide safe sites for birds and small mammals to nest and rear their young. The common nongame species are sage thrasher, the Great Basin gopher snake, and desert mouse. Areas of exposed lava flow rock, natural breaks in the cliffs, and the associated talus commonly are used as travel lanes by wildlife, including mule deer.

Brush management practices can be very effective in increasing the production of native forage in the mid-elevation sagebrush-grass zone. They can be beneficial to wildlife as well as livestock. Opening up large, homogeneous stands of sagebrush commonly improves the habitat for wildlife, such as mule deer and pronghorn antelope. Rangeland seeding may be required following the removal of woody vegetation where desirable understory plants are scarce or are not included in the present plant community. A number of forbs and grasses are suitable for dryland seeding in the 10-to 14-inch precipitation zone. Including suitable forbs in the seeding mixture helps to provide additional forage for wildlife, such

as pronghorn antelope, mule deer, and sage grouse.

Pinyon and juniper plant communities are at mid-elevations in the survey area. Local expansion of pinyon or juniper from woodland sites to the adjacent rangeland is common. The invasion of juniper and pinyon into sagebrush-grass communities has been attributed to overgrazing, a scarcity of naturally recurring fires, and climatic conditions. Young trees are readily killed by fire. The loss of fine fuel to carry fire and, to a lesser extent, fire control have limited the frequency and extent of natural fires in the sagebrush-grass zone. This reduction in the frequency of fires has allowed seedlings to become established in increasing numbers on sites that at one time supported virtually no trees.

Livestock commonly concentrate on the woodland sites, taking advantage of the shade and shelter provided by the tree overstory. These sites also provide habitat for nongame wildlife species, including the bushy-tailed woodrat, the blue-grey gnat-catcher, and the American kestrel; thermal cover for mule deer; and habitat for small mammals and birds.

Areas that have a heterogeneous mixture of vegetative types, including grassland, low shrub, tall shrub, and tree-shrub communities, generally provide an optimum diversity of wildlife habitat. These types of vegetative complexes are common in the sagebrush-grass zones at the intermediate and upper elevations. Moderate browsing by cattle on antelope bitterbrush in fall can enhance the vigor and growth of the bitterbrush, which is later available for grazing by mule deer and antelope.

Stringer meadows are along spring-fed stream channels in the sagebrush-grass zones at the intermediate and upper elevations. Meadow vegetation also grows on the periphery of seeps and springs. Wet meadows adjacent to sagebrush stands are important as brood-rearing areas for sage grouse. During the first weeks after leaving the nest, sage grouse chicks eat mainly insects (ants and beetles) and the succulent forbs that are common in wet meadows. Grazing of the meadows by cattle can improve the quality of feed for sage grouse if a period of regrowth is provided for the key forb species. Grazing increases the succulence of the forbs by interrupting the maturation of the plant tissues. The succulent or young leaf tissue is higher in protein and lower in fiber than mature tissue. As they seek sources of succulent forbs, sage grouse select meadows that have been grazed by cattle. Sage grouse chicks find food and

cover in properly grazed meadows, which appear patchy because of different stubble heights remaining after livestock have grazed the meadows.

Improper grazing of riparian vegetation by livestock can cause gully erosion. This erosion, in turn, can result in lower water tables, the drying out of meadows, and the loss of valuable wildlife and livestock forage. Grazing management strategies that are sensitive to the development and maintenance of healthy riparian areas are needed.

The uppermost elevations of the survey area (above 8,200 feet) typically support high-elevation sagebrush-grass plant communities. The average annual precipitation ranges from 14 to more than 18 inches. Mountain big sagebrush and low sagebrush dominate the shrub canopy of these plant communities. The shrub understory grasses include Idaho fescue, western needlegrass, mountain brome, Columbia needlegrass, Letterman needlegrass, basin wildrye, slender wheatgrass, and bluebunch wheatgrass. Mountain browse species, such as snowberry, serviceberry, and antelope bitterbrush, are common in the shrub overstory. Curleaf mountainmahogany stands are at the highest elevations, on mountain summits, and the upper side slopes. Areas of aspen woodland are common in concave pockets and along riparian zones.

Plant communities on the high-elevation sites are potentially very productive and normally respond rapidly to management. These sites remain cold and wet through spring and into early summer. They are used as summer range for livestock. Grazing should be delayed until the surface layer has dried sufficiently for compaction to be limited. Snow often blankets these sites by late fall, further restricting the period of livestock grazing. Steeply sloping areas are common throughout the high-elevation sagebrush-grass zone. Livestock tend to overuse the less sloping areas unless grazing is managed for an even distribution of grazing. Fencing, properly locating watering facilities, and herding force livestock to use areas that otherwise might remain ungrazed. Salt and mineral blocks should be placed away from water.

Mule deer use the high-elevation plant communities for summer range. North-facing slopes that have a patchwork of dense stands consisting of mountain browse are important deer-fawning areas. These dense stands should be maintained because they provide cover for wildlife. Areas of aspen woodland provide important cover for wildlife and are a source of shade for livestock and wildlife.

Seeps and springs are common at the high elevations. Water for livestock generally is readily available. Additional water developments may be needed, however, to distribute the livestock evenly. Developed springs, pipelines, and storage tanks are dependable means of supplying water. Seeps and springs developed to provide livestock water can also be beneficial to wildlife. Excluding livestock by fencing the meadow around a seep or spring and piping the water to troughs or other storage facilities outside the enclosure help to protect the meadow vegetation grazed by wildlife. Enough water must be retained in the fenced seep or spring area to maintain the meadow vegetation. Small meadows can be developed and maintained by piping overflow water from livestock troughs into fenced areas.

Many naturally occurring meadows in the sagebrush-grass zones at the mid and higher elevations have been heavily invaded by big sagebrush. The sagebrush depletes moisture from the meadows. If the sagebrush is removed, the quantity of water and the duration of waterflow increase as grasses return to the meadows. Prescribed burning of dense sagebrush stands can be an economical means of brush management in the high-elevation sagebrush-grass zone. Brush management practices should be designed so that enough of the shrub canopy remains near meadows to provide cover for wildlife.

Rangeland seeding of the high-elevation plant communities is usually not necessary. In most areas, the remnant population of desirable forbs and grasses is sufficient to respond to grazing management and a release from shrub competition. Where rangeland seeding is needed, a wide variety of suitable species can be planted because of the relatively high annual precipitation in this zone.

Forest Land

Table 8, "Woodland Management and Productivity" can be used by forest managers in planning the use of soils for wood crops. Only those soils suitable for wood crops are listed.

Woodland Ordination System

Table 8, "Woodland Management and Productivity" lists the ordination (woodland suitability) symbol for each soil. The ordination system is a nationwide uniform system of labeling soils or groups of soils that are similar in use and management. The primary factors evaluated in the woodland ordination system are productivity of the forest overstory tree species and the principal soil properties resulting in hazards and limitations that affect forest management. There are three parts of the ordination system: class, subclass, and group. The class and subclass are referred to as the ordination symbol.

Ordination Class Symbol

The first element of the ordination symbol is a number that denotes potential productivity in terms of cubic meters of wood per hectare per year for the indicator tree species. The larger the number, the greater the potential productivity. Potential productivity is based on site index and the corresponding culmination of mean annual increment. For example, the number 1 indicates a potential production of 1 cubic meter of wood per hectare per year (14.3 cubic feet per acre per year) and 10 indicates a potential production of 10 cubic meters of wood per hectare per year (143 cubic feet per acre per year).

Indicator species is a species that is common in the area and is generally, but not necessarily, the most productive on the soil. It is the species that determines the ordination class. It is the first species listed for a particular map unit in table 8, "Woodland Management and Productivity." This

table shows the productivity for all species where data have been collected.

Site index is determined by taking height measurements and determining the age of selected trees within stands of a given species. This index is the average height, in feet, that the trees attain in a specified number of years. This index applies to fully stocked, even-aged, unmanaged stands. The site indexes shown in table 8, "Woodland Management and Productivity" are averages based on measurements made at sites that are representative of the soil series. When the site index and forest land productivity of different soils are compared, the values for the same tree species should be compared. The higher the site index number, the more productive the soil for that species. Site index values are used in conjunction with yield tables to determine average annual yields. Indirectly, they are used to determine the productivity class in the ordination class symbol.

Ordination Subclass Symbol

The second element of the ordination symbol, or subclass, is a capital letter that indicates certain soil or physiographic characteristics that contribute to important hazards or limitations to be considered in management. The subclasses are defined as follows:

Subclass X indicates that forest land use and management are limited by stones or rocks.

Subclass W indicates that forest land use and management are significantly limited by excess water, either seasonally or throughout the year. Restricted drainage, a high water table, or flooding can adversely affect either stand development or management.

Subclass T indicates that the root zone has toxic substances. Excessive alkalinity, acidity, sodium salts, or other TOXIC substances impede the development of desirable species.

Subclass D indicates that forest land use and management are limited by a restricted rooting

depth. The rooting depth is restricted by hard bedrock, a hardpan, or other restrictive layers in the soil.

Subclass C indicates that forest land use and management are limited by the kind or amount of clay in the upper part of the soil.

Subclass S indicates that the soil is sandy, has a low available water capacity, and normally has a low content of available plant nutrients. The use of equipment is limited during dry periods.

Subclass F indicates that forest land use and management are limited by a high content of rock fragments that are larger than 2 millimeters and smaller than 10 inches. This subclass includes flaggy soils.

Subclass R indicates that forest land use and management are limited by excessive slope.

Subclass A indicates that no significant limitations affect forest land use and management.

Forest Land Management and Productivity

Information about the productivity and management of the forested map units in the survey area is given in table 8, "Woodland Management and Productivity".

Management Concerns

In table 8, "Woodland Management and Productivity," the soils are rated for the erosion hazard, the equipment limitation, seedling mortality, the windthrow hazard, and plant competition.

The *erosion hazard* is *slight* if the expected soil loss is small; *moderate* if some measures are needed to control erosion during logging and road construction; and *severe* if intensive management or special equipment and methods are needed to prevent excessive soil loss.

The *equipment limitation* is *slight* if the use of equipment is not limited to a particular kind of

equipment or time of year; *moderate* if there is a short seasonal limitation or a need for some modification in the management of equipment; and *severe* if there is a seasonal limitation, a need for special equipment or management, or a hazard in the use of equipment.

Seedling mortality ratings are for seedlings that are from a good planting stock and that are properly planted during a period of average rainfall. A rating of *slight* indicates that the expected mortality of the planted seedlings is less than 25 percent; *moderate*, 25 to 50 percent; and *severe*, more than 50 percent.

Windthrow hazard is *slight* if trees in wooded areas are not expected to be blown down by commonly occurring winds; *moderate* if some trees are blown down during periods of excessive soil wetness and strong winds; and *severe* if many trees are blown down during periods of excessive soil wetness and moderate or strong winds.

Plant competition is *slight* if there is little or no competition from other plants; *moderate* if plant competition is expected to hinder the development of a fully stocked stand of desirable trees; and *severe* if plant competition is expected to prevent the establishment of a desirable stand unless the site is intensively prepared, weeded, or otherwise managed for the control of undesirable plants.

Potential Productivity

The potential productivity of merchantable or *common trees* is expressed as a site index, which is described under the heading "Ordination Class Symbol." Commonly grown trees are those that forest land managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability.

Wildlife Habitat

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. If food, cover, or water is missing, inadequate, or inaccessible, wildlife will be scarce or will not inhabit the area.

If the soils have potential for habitat development, wildlife habitat can be created or improved by planting appropriate vegetation, properly managing the existing plant cover, and fostering the natural establishment of desirable plants. The soils in the survey area are rated in table 9, "Wildlife Habitat."

Elements of Wildlife Habitat

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants used by wildlife. Examples are wheat, rye, oats, and barley.

Grasses and legumes are domestic perennial grasses and herbaceous legumes planted for wildlife food and cover. Examples are fescue, brome grass, timothy, orchardgrass, clover, alfalfa, trefoil, and reed canarygrass.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds, that provide food and cover for wildlife. Examples are goldenrod, lambsquarters, arrowleaf balsamroot, dandelions, ragweed, wheatgrass, fescue, and nightshade.

The major soil properties affecting the growth of grain and forage crops and wild herbaceous plants are depth of the root zone, texture of the surface layer, the amount of water available to plants, wetness, salinity or sodicity, and flooding. The length of the growing season also is important.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage that wildlife eat. Examples are oak, cottonwood, quaking aspen, boxelder, maple, green ash and willow. Examples of fruit-producing shrubs that are suitable for planting on soils that

have good potential for these plants are hawthorn, honeysuckle, American plum, redosier dogwood, chokecherry, serviceberry, and silver buffaloberry.

Coniferous plants are cone-bearing trees, shrubs, or ground cover that provide habitat or supply food in the form of browse, seed, or fruitlike cones. Examples are pine, spruce, hemlock, fir, and juniper.

The major soil properties affecting the growth of hardwood and coniferous trees and shrubs are depth of root zone, the amount of water available to plants, and wetness.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Wetland plants produce food or cover for wetland wildlife. Examples of these plants are smartweed, rushes, sedges, bulrushes, and cattail.

The major soil properties affecting wetland plants are texture of the surface layer, wetness, acidity or alkalinity, and slope.

Shallow water areas have an average depth of less than 5 feet. They are useful as habitat for some wildlife species. They are naturally wet areas or are created by dams, levees, or water-control measures in marshes or streams. Examples are muskrat marshes, waterfowl feeding areas, wildlife watering developments, beaver ponds, and other wildlife ponds.

The major soil properties affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability.

Kinds of Wildlife Habitat

Habitat for openland wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, and shrubs. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. The wildlife attracted to these areas include Hungarian partridge, pheasant, sage grouse, meadowlark, field sparrow, killdeer, cottontail rabbit, and red fox.

Habitat for woodland wildlife consists of areas of hardwoods or conifers or a mixture of these and associated grasses, legumes, and wild herbaceous plants. The wildlife attracted to this habitat include wild turkey, grouse, thrushes, woodpeckers, owls, porcupine, raccoon, deer, and elk.

Habitat for wetland wildlife consists of open, marshy or swampy, shallow water areas that support water-tolerant plants. The wildlife

attracted to this habitat include ducks, geese, herons, bitterns, rails, kingfishers, muskrat, and beaver.

Habitat for rangeland wildlife consists of areas of shrubs and wild herbaceous plants. The wildlife attracted to rangeland include antelope, mule deer, sage grouse, meadowlark, and lark bunting.

Recreation

The soils of the survey area are rated in table 10, "Recreational Development," according to limitations that affect their suitability for recreation. The ratings 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, the ability of the soil to support vegetation, access to water, potential water impoundment sites, and either access to public sewer lines or the capacity of the soil to absorb septic tank effluent. Soils subject to flooding are limited, in varying degrees, for recreational uses by the duration of flooding and the season when it occurs. Onsite assessment of the height, duration, intensity, and frequency of flooding is essential in planning recreational facilities.

Camp areas are tracts of land used intensively as sites for tents, trailers, and campers and for outdoor activities that accompany such sites. These 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 soils are rated on the basis of soil properties that influence the ease of developing camp areas and performance of the areas after development. Also considered are the soil properties that influence trafficability and promote the growth of vegetation after heavy use.

Picnic areas are natural or landscaped tracts of land that are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The soils are rated on the basis of soil properties that influence the cost of shaping the site, trafficability, and the growth of vegetation after development. The surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry.

Playgrounds are areas used intensively for baseball, football, or similar activities. These areas require a nearly level soil that is free of stones and that can withstand heavy foot traffic and maintain an adequate cover of vegetation. The soils are rated on the basis of soil properties that influence the cost of shaping the site, trafficability, and the growth of vegetation. Slope and stoniness are the main concerns in developing playgrounds. The surface of the playgrounds should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry.

Paths and trails are areas used for hiking and horseback riding. The areas should require little or no cutting and filling during site preparation. The soils are rated on the basis of soil properties that influence trafficability and erodibility. Paths and trails should remain firm under foot traffic and not be dusty when dry.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. The best soils for use as golf fairways are firm when wet, are not dusty when dry, and are not subject to prolonged flooding during the period of use. They have moderate slopes and no stones or boulders on the surface. The suitability of the soil for tees or greens is not considered in rating the soils.

The interpretative ratings in this table help engineers, planners, and others to understand how soil properties influence recreational uses. Ratings for proposed uses are given in terms of limitations. Only the most restrictive features are listed. Other features may limit a specific recreational use.

The degree of soil limitation is expressed as slight, moderate, or severe.

Slight means that soil properties are favorable for the rated use. The limitations are minor and can be easily overcome. Good performance and low maintenance are expected.

Moderate means that soil properties are moderately favorable for the rated use. The limitations can be overcome or modified by special planning, design, or maintenance. During some part

of the year, the expected performance may be less desirable than that of soils rated *slight*.

Severe means that soil properties are unfavorable for the rated use. Examples of limitations are slope, bedrock near the surface, flooding, and a seasonal high water table. These limitations generally require major soil reclamation, special design, or intensive maintenance. Overcoming the limitations generally is difficult and costly.

The information in table 10, "Recreational Development," can be supplemented by other information in this survey, for example, interpretations for dwellings without basements and for local roads and streets in table 11, "Building Site Development," and interpretations for septic tank absorption fields in table 12, "Sanitary Facilities."

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 kind of adsorbed cations. Estimates were made for erodibility,

permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the "Glossary."

Building Site Development

Table 11, "Building Site Development," shows the degree and kind of soil limitations that affect shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping. The limitations are considered *slight* if soil properties and site features generally are favorable for the indicated use and limitations are minor and 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 increases in construction costs, and possibly increased maintenance are required. Special feasibility studies may be required where the soil limitations are severe.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for basements, graves, utility lines, open ditches, and other purposes. The ratings are based on soil properties, site features, and observed performance of the soils. The ease of digging, filling, and compacting is affected by the depth to bedrock, a cemented pan, or a very firm dense layer; stone content; soil texture; and slope. The time of the year that excavations can be made is affected by the depth to a seasonal high water table and the susceptibility of the soil to flooding. The resistance of the excavation walls or banks to sloughing or caving is affected by soil texture and depth to the water table.

Dwellings and small commercial buildings are structures built on shallow foundations on undisturbed soil. The load limit is the same as that for single-family dwellings no higher than three stories. Ratings are made for small commercial buildings without basements, for dwellings with basements, and for dwellings without basements. The ratings are based on soil properties, site features, and observed performance of the soils. A high water table, flooding, shrinking and swelling, and organic layers can cause the movement of footings. A high water table, depth to bedrock or to a cemented pan, large stones, and flooding affect the ease of excavation and construction. Landscaping and grading that require cuts and fills of more than 5 or 6 feet are not considered.

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 stabilized soil material; and a flexible or rigid surface. Cuts and fills generally are limited to less than 6 feet. The ratings are based on soil properties, site features, and observed performance of the soils. Depth to bedrock or to a cemented pan, a high water table, flooding, large stones, and slope affect the ease of excavating and grading. Soil strength (as inferred from the engineering classification of the soil), shrink-swell potential, potential for frost action, and depth to a high water table affect the traffic-supporting capacity.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be

established and maintained. The ratings are based on soil properties, site features, and observed performance of the soils. Soil reaction, a high water table, depth to bedrock or to a cemented pan, the available water capacity in the upper 40 inches, and the content of salts, sodium, and sulfidic materials affect plant growth. Flooding, wetness, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer affect trafficability after vegetation is established.

Sanitary Facilities

Table 12, "Sanitary Facilities," shows the degree and the kind of soil limitations that affect septic tank absorption fields, sewage lagoons, and sanitary landfills. It also shows the suitability of the soils for use as a daily cover for landfill.

Soil properties are important in selecting sites for sanitary facilities and in identifying limiting soil properties and site features to be considered in planning, design, and installation. Soil limitation ratings of *slight*, *moderate*, or *severe* are given for septic tank absorption fields, sewage lagoons, and trench and area sanitary landfills. Soil suitability ratings of *good*, *fair*, and *poor* are given for daily cover for landfill.

A rating of *slight* or *good* indicates that the soils have no limitations or that the limitations can be easily overcome. Good performance and low maintenance can be expected. A rating of *moderate* or *fair* indicates that the limitations should be recognized but generally can be overcome by good management or special design. A rating of *severe* or *poor* indicates that overcoming the limitations is difficult or impractical. Increased maintenance may be required.

Septic tank absorption fields are areas in which subsurface systems of tile or perforated pipe distribute effluent from a septic tank into the natural soil. The centerline of the tile is assumed to be at a depth of 24 inches. Only the part of the soil between depths of 24 and 60 inches is considered in making the ratings. The soil properties and site features considered are those that affect the absorption of the effluent, those that affect the construction and maintenance of the system, and those that may affect public health.

The ratings are based on soil properties, site features, and observed performance of the soils.

Permeability, a high water table, depth to bedrock or to a cemented pan, and flooding affect absorption of the effluent. Large stones and bedrock or a cemented pan interfere with installation.

Unsatisfactory performance of septic tank absorption fields, including excessively slow absorption of effluent, surfacing of effluent, and hillside seepage, can affect public health. Ground water can be polluted if highly permeable sand and gravel or fractured bedrock is less than 4 feet below the base of the absorption field, if slope is excessive, or if the water table is near the surface. There must be unsaturated soil material beneath the absorption field to filter the effluent effectively. Many local ordinances require that this material be a certain thickness.

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, relatively impervious soil material. Aerobic lagoons generally are designed to hold the sewage within a depth of 2 to 5 feet. Relatively impervious soil material for the lagoon floor and sides is desirable to minimize seepage and contamination of local ground water.

Table 12, "Sanitary Facilities," gives ratings for the natural soil that makes up the lagoon floor. The surface layer and, generally, 1 or 2 feet of soil material below the surface layer are excavated to provide material for the embankments. The ratings are based on soil properties, site features, and observed performance of the soils. Considered in the ratings are slope, permeability, a high water table, depth to bedrock or to a cemented pan, flooding, large stones, and content of organic matter.

Excessive seepage resulting from rapid permeability in the soil or a water table that is high enough to raise the level of sewage in the lagoon causes a lagoon to function unsatisfactorily. Pollution results if seepage is excessive or if floodwater overtops the lagoon. A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor.

Trench sanitary landfill is an area where solid waste is disposed of by placing refuse in successive layers in an excavated trench. The waste is spread, compacted, and covered daily with a thin layer of soil that is excavated from the

trench. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the landfill. Soil properties that influence the risk of pollution, the ease of excavation, trafficability, and revegetation are the major considerations in rating the soils.

Area sanitary landfill is an area where solid waste is disposed of by placing refuse in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil that is imported from a source away from the site. A final cover of soil at least 2 feet thick is placed over the completed landfill. Soil properties that influence trafficability, revegetation, and the risk of pollution are the main considerations in rating the soils for area sanitary landfills.

Both types of landfill must be able to bear heavy vehicular traffic. Both types involve a risk of ground-water pollution. The ratings in table 12, "Sanitary Facilities" are based on soil properties, site features, and observed performance of the soils. Permeability, depth to bedrock or to a cemented pan, a high water table, slope, and flooding affect both types of landfill. Texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium affect trench type landfills. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, a limitation rated slight or moderate may not be valid. Onsite investigation is needed.

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 suitability of a soil for use as cover is based on properties that affect workability and the ease of digging, moving, and spreading the material over the refuse daily during both wet and dry periods.

Soil texture, wetness, rock fragments, and slope affect the ease of removing and spreading the material during wet and dry periods. Loamy or silty soils that are free of large stones or excess gravel are the best cover for a landfill. Clayey soils are sticky or cloddy and are difficult to spread; sandy soils are subject to soil blowing.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or the water table to permit revegetation. The soil material used as final cover for a landfill should be suitable for plants. The surface layer generally has

the best workability, more organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

Waste Management

Soil properties are important when organic waste is applied as fertilizer and wastewater is applied in irrigated areas. They also are important when the soil is used as a medium for the treatment and disposal of the organic waste and wastewater. Unfavorable soil properties can result in environmental damage.

The use of organic waste and wastewater as production resources results in energy and resource conservation and minimizes the problems associated with waste disposal. If disposal is the goal, applying a maximum amount of the organic waste or the wastewater to a minimal area holds costs to a minimum and environmental damage is the main hazard. If reuse is the goal, a minimum amount should be applied to a maximum area and environmental damage is unlikely.

Interpretations developed for waste management may include ratings for manure- and food-processing waste, municipal sewage sludge, use of wastewater for irrigation, and treatment of wastewater by slow rate, overland flow, and rapid infiltration processes.

Specific information regarding waste management is available at the local office of the Natural Resources Conservation Service or Cooperative Extension.

Construction Materials

Table 13, "Construction Materials," gives information about the soils as a source of roadfill, sand, gravel, and topsoil. The soils are rated *good*, *fair*, or *poor* as a source of roadfill and topsoil. They are rated as a *probable* or *improbable* source of sand and gravel.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In table 13, "Construction Materials," 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 soil material below the surface layer to a depth of 5 or 6 feet. It is

assumed that soil layers will be mixed during excavating and spreading. Many soils have layers of contrasting suitability within their profile. Table 15, "Engineering Index Properties" provides detailed information about each soil layer. This information can help to determine the suitability of each layer for use as roadfill. The performance of soil after it is stabilized with lime or cement is not considered in the ratings.

The ratings are based on soil properties, site features, and observed performance of the soils. The thickness of suitable material is a major consideration. The ease of excavation is affected by large stones, a high water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the engineering classification of the soil) and shrink-swell potential.

Soils rated *good* contain significant amounts of sand or gravel, or both. They have at least 5 feet of suitable material, a low shrink-swell potential, few cobbles and stones, and slopes of 15 percent or less. Depth to the water table is more than 3 feet. Soils rated *fair* are more than 35 percent silt- and clay-sized particles and have a plasticity index of less than 10. They have a moderate shrink-swell potential, slopes of 15 to 25 percent, or many stones. Depth to the water table is 1 to 3 feet. Soils rated *poor* have one or more of the following characteristics: a plasticity index of more than 10, a high shrink-swell potential, many stones, slopes of more than 25 percent, or a water table at a depth of less than 1 foot. They may have layers of suitable material, but the material is less than 3 feet thick.

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 13, "Construction Materials," only the probability of finding material in suitable quantity in or below the soil is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material.

The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the engineering classification of the soil), the thickness of suitable material, and the content of rock fragments. Kinds of rock, acidity, and stratification are given in the soil series descriptions. Gradation of grain sizes is given in table 15, "Engineering Index Properties".

A soil rated as a probable source has a layer of clean sand or gravel or a layer of sand or gravel

that is as much as 12 percent silty fines. This material must be at least 3 feet thick and less than 50 percent, by weight, large stones. All other soils are rated as an improbable source. Fragments of soft bedrock, such as shale and siltstone, are not considered to be sand and gravel.

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.

Plant growth is affected by toxic material and by such properties as soil reaction, available water capacity, and fertility. The ease of excavating, loading, and spreading is affected by rock fragments, slope, a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, a water table, rock fragments, bedrock, and toxic material.

Soils rated *good* have friable, loamy material to a depth of at least 40 inches. They are free of stones and cobbles, have little or no gravel, and have slopes of less than 8 percent. They are low in content of soluble salts, are naturally fertile or respond well to fertilizer, and are not so wet that excavation is difficult.

Soils rated *fair* are sandy soils, loamy soils that have a relatively high content of clay, soils that have only 20 to 40 inches of suitable material, soils that have an appreciable amount of gravel, stones, or soluble salts, or soils that have slopes of 8 to 15 percent. The soils are not so wet that excavation is difficult.

Soils rated *poor* are very sandy or clayey; have less than 20 inches of suitable material; have a large amount of gravel, stones, or soluble salts; have slopes of more than 15 percent; or have a seasonal high water table at or near the surface.

The surface layer of most soils generally is preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Water Management

Table 14, "Water Management" gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; and aquifer-fed excavated ponds. The limitations are considered

slight if soil properties and site features generally are 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.

This table also gives for each soil the restrictive features that affect drainage, irrigation, terraces and diversions, and grassed waterways.

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 table 14, "Water Management," 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 more than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the

water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

Drainage is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the depth to bedrock, to a cemented pan, or to other layers that affect the rate of water movement; permeability; depth to a high water table or depth of standing water if the soil is subject to ponding; slope; susceptibility to flooding; subsidence of organic layers; and the potential for frost action. Excavating and grading and the stability of ditchbanks are affected by depth to bedrock or to a cemented pan, large stones, slope, and the hazard of cutbanks caving. The productivity of the soil after drainage is adversely affected by extreme acidity or by toxic substances in the root zone, such as salts, sodium, or sulfur. Availability of drainage outlets is not considered in the ratings.

Irrigation is the controlled application of water to supplement rainfall and support plant growth. The design and management of an irrigation system are affected by depth to the water table, the need for drainage, flooding, available water capacity, intake rate, permeability, erosion hazard, and slope. The construction of a system is affected by large stones and depth to bedrock or to a cemented pan.

The performance of a system is affected by the depth of the root zone, the amount of salts or sodium, and soil reaction.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to control erosion and conserve moisture by intercepting runoff.

Slope, wetness, large stones, and depth to bedrock or to a cemented pan affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of soil blowing or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Grassed waterways are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Large stones, wetness, slope, and depth to bedrock or to a cemented pan affect the construction of grassed waterways. A hazard of soil blowing, low available water capacity, restricted rooting depth, toxic substances such as salts or sodium, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey. The data and the estimates of soil and water features listed in tables are explained on the following pages.

Soil properties are determined by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine grain-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 shown in the tables include the range of grain-size distribution and Atterberg limits, the engineering classification, and the physical and chemical properties of the major layers of each soil. Pertinent soil and water features also are given.

Engineering Index Properties

Table 15, "Engineering Index Properties" gives estimates of the engineering classification and of the range of index properties for the major layers of each soil in the survey area. Most soils have layers of contrasting properties within the upper 5 or 6 feet.

Depth to the upper and lower boundaries of each layer is indicated. The range in depth and information on other properties of each layer are given in the series descriptions in Part I of this survey.

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 as much as 15 percent, an appropriate modifier is added, for example, "gravelly." Textural terms are defined in the "Glossary."

Classification of the soils is determined according to the system adopted by the American Association of State Highway and Transportation Officials (1) and the Unified soil classification system (2).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to grain-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, SP-SM.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of grain-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 oven-dry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

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 grain-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 omitted in the table.

Physical and Chemical Properties

Table 16, "Physical Properties of the Soils," and table 17, "Chemical Properties of the Soils," show estimates of some characteristics and features that affect soil behavior. These estimates are given for the major 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. The range in depth and information on other properties of each layer are given in the series descriptions in Part I of this survey.

Clay as a soil separate, or component, consists of mineral soil particles that are less than 0.002 millimeter in diameter. The estimated clay content of each major soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The amount and kind of clay greatly affect the fertility and physical condition of the soil. They determine 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 earth-moving operations.

Moist bulk density is the weight of soil (oven-dry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3-bar moisture tension. Weight is determined after drying the soil at 105 degrees C. In table 16, "Physical Properties of the Soils," the estimated moist bulk density of each major 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. A bulk density of more than 1.6 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability refers to the ability of a soil to transmit water or air. The estimates indicate the rate of downward movement of water 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 major soil layer. The capacity varies depending on soil properties that affect the retention of water and the depth of the root zone. 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.

Shrink-swell potential is the potential for volume change in a soil with a loss or gain in moisture. Volume change occurs mainly because of the interaction of clay minerals with water and varies with the amount and type of clay minerals in the soil. The size of the load on the soil and the

magnitude of the change in soil moisture content influence the amount of swelling of soils in place. Laboratory measurements of swelling of undisturbed clods were made for many soils. For others, swelling was estimated on the basis of the kind and amount of clay minerals in the soil and on measurements of similar soils.

If the shrink-swell potential is rated moderate to very high, shrinking and swelling can cause damage to buildings, roads, and other structures. Special design is often needed.

Shrink-swell potential classes are based on the change in length of an unconfined clod as moisture content is increased from air-dry to field capacity. The classes are *low*, a change of less than 3 percent; *moderate*, 3 to 6 percent; and *high*, more than 6 percent. *Very high*, more than 9 percent, is sometimes used.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In table 16, "Physical Properties of Soils," 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 or increased by returning crop residue to the soil. Organic matter affects the available water capacity, infiltration rate, and tilth. It is a source of nitrogen and other nutrients for crops.

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) to predict the average rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, very fine sand, sand, and organic matter (as much as 4 percent) and on soil structure and permeability. The estimates are modified by the presence of rock fragments. Values of K range from 0.02 to 0.69. The higher the value, the more susceptible the soil is to sheet and rill erosion.

Erosion factor K_f indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average 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 resistance to soil blowing in cultivated areas. The groups indicate the susceptibility of soil to soil blowing.

Soils are grouped according to the following distinctions:

1. Coarse sands, sands, fine sands, and very fine sands. These soils generally are not suitable for crops. They are extremely erodible and vegetation is difficult to establish.

2. Loamy coarse sands, loamy sands, loamy fine sands, loamy very fine sands, and sapric soil material. These soils are very highly erodible. Crops can be grown if intensive measures to control soil blowing are used.

3. Coarse sandy loams, sandy loams, fine sandy loams, and very fine sandy loams. These soils are highly erodible. Crops can be grown if intensive measures to control soil blowing are used.

4L. Calcareous loams, silt loams, clay loams, and silty clay loams that have more than 5 percent finely divided calcium carbonate. These soils are highly erodible. Crops can be grown if intensive measures to control soil blowing are used.

4. Clays, silty clays, noncalcareous clay loams, and silty clay loams that are more than 35 percent clay. These soils are moderately erodible. Crops can be grown if measures to control soil blowing are used.

5. Noncalcareous loams and silt loams that are less than 20 percent clay and sandy clay loams, sandy clays, and hemic soil material. These soils have less than 5 percent finely divided calcium carbonate. These soils are moderately erodible. Crops can be grown if measures to control soil blowing are used.

6. Noncalcareous loams and silt loams that are more than 20 percent clay and noncalcareous clay loams that are less than 35 percent clay. These soils have less than 5 percent finely divided calcium carbonate. These soils are moderately erodible. Crops can be grown if ordinary measures to control soil blowing are used.

7. Silts, noncalcareous silty clay loams that are less than 35 percent clay, and fibric soil material. These soils have less than 5 percent finely divided calcium carbonate. These soils are very slightly erodible. Crops can be grown if ordinary measures to control soil blowing are used.

8. Soils that are not subject to soil blowing because of rock fragments on the surface or because of surface wetness.

Wind erodibility index is a numerical value indicating the susceptibility of soil to soil blowing, or the tons per acre per year that can be expected to be lost to soil blowing. There is a close correlation between soil blowing and the size and durability of surface clods, rock fragments, organic

matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence soil blowing.

Cation-exchange capacity is 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. 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. Soils having a high cation-exchange capacity can retain cations. The ability to retain cations helps to prevent the pollution of ground water.

Soil reaction is a measure of acidity or alkalinity and is expressed as a range in pH values. The range in pH of each major 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 soil. 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 given as the percent, by weight, of hydrated calcium sulfates in the soil. Gypsum is partially soluble in water and can be dissolved and removed by water. Soils that have a high content of gypsum (more than 10 percent) 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 the soil if used as construction material, and the potential of the soil to corrode metal and concrete.

Sodium adsorption ratio is the measure of sodium relative to calcium and magnesium in the water extract from saturated soil paste. Soils having a sodium adsorption ratio of 13 or more may be characterized by an increased dispersion of organic

matter and clay particles, reduced permeability and aeration, and a general degradation of soil structure.

Water Features

Table 18, "Water Features" gives estimates of several important water features used in land use planning that involves engineering considerations. These features are described in the following paragraphs.

Hydrologic soil groups are groups of soils that, when saturated, have the same runoff potential under similar storm and ground cover conditions. The soil properties that affect the runoff potential are those that influence the minimum rate of infiltration in a bare soil after prolonged wetting and when the soil is not frozen. These properties include the depth to a seasonal high water table, the intake rate, permeability after prolonged wetting, and the depth to a very slowly permeable layer. The influences of ground cover and slope are treated independently and are not taken into account in hydrologic soil groups.

In the definitions of the hydrologic soil groups, the infiltration rate is the rate at which water enters the soil at the surface and is controlled by surface conditions. The transmission rate is the rate at which water moves through the soil and is controlled by properties of the soil layers.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist chiefly of very 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 or well drained soils that have a moderately fine 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 that have a moderately fine 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 clayey soils that have a high shrink-swell potential, soils that have a permanent

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.

Flooding, the temporary covering of the soil surface by flowing water, is caused by overflow from streams or by runoff from adjacent slopes. Shallow water standing or flowing for short periods after rainfall or snowmelt is not considered flooding. Standing water in marshes and swamps or in closed depressions is considered to be ponding.

Table 18, "Water Features," gives the frequency and duration of flooding and the time of year when flooding is most likely to occur. Frequency, duration, and probable dates of occurrence are estimated. Frequency generally is expressed as none, rare, occasional, or frequent. *None* means flooding is not probable; *rare* that it is unlikely but is possible under unusual weather conditions (the chance of flooding is nearly 0 percent 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); and *frequent* that it occurs often under normal weather conditions (the chance of flooding is 50 percent in any year). The term *common* includes both frequent and occasional flooding.

Duration is expressed as *very brief* (less than 2 days), *brief* (2 to 7 days), *long* (7 to 30 days), and *very long* (more than 30 days). The time of year that flooding is most likely to occur is expressed in months. About two-thirds to three-fourths of all flooding occurs during the stated period.

The information on flooding 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 level 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.

High water table (seasonal) is a zone of saturation at the highest average depth during the wettest season. It is at least 6 inches thick, persists in the soil for more than a few weeks, and is within 6 feet of the surface. Indicated in the table "Water Features," are the depth to the seasonal high water table, the kind of water table, and the months of the year when the water table usually is highest.

An *apparent* water table is indicated by the level at which water stands in a freshly dug, unlined borehole after adequate time for adjustments in the surrounding soil.

A *perched* water table is one that is above an unsaturated zone in the soil. The basis for determining that a water table is perched may be general knowledge of the area. The water table is proven to be perched if the water level in a borehole is observed to fall when the borehole is extended.

Two numbers in the column showing depth to the water table indicate the normal range in depth to a saturated zone. Depth is given to the nearest half foot. The first numeral in the range indicates the highest water level. A plus sign preceding the range in depth indicates that the water table is above the surface of the soil. "More than 6.0" indicates that the water table is below a depth of 6 feet or that it is within a depth of 6 feet for less than a month.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation.

Soil Features

Table 19, "Soil Features," gives estimates of several important soil features used in land use planning that involves engineering considerations. These features are described in the following paragraphs.

Depth to bedrock is given if bedrock is within a depth of 60 inches. The depth is based on many soil borings and on observations during soil mapping. The rock is specified as either soft or hard. If the rock is soft or fractured, excavations can be made with trenching machines, backhoes, or small rippers. If the rock is hard or massive, blasting or special equipment generally is needed for excavation.

A *cemented pan* is a nearly continuous layer of indurated or strongly cemented material that is hard and brittle. The particles are held together by cementing substances, such as calcium carbonate and oxides of silicon, iron, or aluminum. Pans are identified when they are within a depth of 60 inches. They are classified as thin or thick. A *thin* pan can be excavated by trenching machines, backhoes, small rippers, and other equipment commonly used to dig excavations for pipelines,

sewer lines, and graves. A *thick* pan is so thick or massive that blasting or special equipment is needed when excavations are made.

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 "Soil Features," shows the expected initial subsidence, which usually is a result of drainage, and total subsidence, which results from a combination of factors.

Potential 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 mainly to pavements and other rigid structures.

A *low* potential for frost action indicates that the soil is rarely susceptible to the formation of ice lenses; a *moderate* potential indicates that the soil is susceptible to formation of ice lenses, resulting in frost heave and the subsequent loss of soil strength; and a *high* potential indicates that the soil is highly susceptible to formation of ice lenses,

resulting in frost heave and the subsequent loss of soil strength.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that dissolves 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 in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than steel 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 is also expressed as *low*, *moderate*, or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

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Glossary

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alkali (sodic) soil. A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Alluvial cone. The material washed down the sides of mountains and hills by ephemeral streams and deposited at the mouth of gorges in the form of a moderately steep, conical mass descending equally in all directions from the point of issue.

Alluvial fan. The fanlike deposit of a stream where it issues from a narrow valley upon a plain, or of a tributary stream near or at its junction with its main stream.

Alluvial flat. A nearly level, graded, alluvial surface in bolsons and semi-bolsons. Commonly, an alluvial flat does not manifest terraces or floodplain levels.

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.

Area reclaim (in tables). An area difficult to reclaim after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Argillite. Weakly metamorphosed mudstone or shale.

Arroyo. The flat-floored channel of an ephemeral stream, commonly with very steep to vertical banks cut in alluvium.

Aspect. The direction in which a slope faces.

Association, soil. A group of soils or miscellaneous areas geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low.....	0 to 3.5
Low	3.5 to 5
Moderate	5 to 7.5
High.....	more than 7.5

Avalanche chute. The track or path formed by an avalanche.

Back slope. The geomorphic component that forms the steepest inclined surface and principal element of many hillsides. Back slopes in profile are commonly steep, are linear, and may or may not include cliff segments.

- Backswamp.** A floodplain landform of extensive, marshy, or swampy, depressed areas of flood plains between natural levees and valley sides or terraces.
- Badland.** Steep or very steep, commonly nonstony, barren land dissected by many intermittent drainage channels. Badland is most common in semiarid and arid regions where streams are entrenched in soft geologic material. Local relief generally ranges from 25 to 500 feet. Runoff potential is very high, and geologic erosion is active.
- Ballena.** A fan remnant having a distinctively-rounded surface of fan alluvium. The ballena's broadly rounded shoulders meet from either side to form a narrow summit and merge smoothly with concave, short pediments which form smoothly-rounded drainageways between adjacent ballenas. A partial ballena is a fan remnant large enough to retain some relict fan surface on a remnant summit.
- Barrier beach.** A wide gently sloping portion of a bolson floor comprising numerous, parallel, relict longshore-bars and lagoons built by a receding pluvial lake.
- Basal area.** The area of a cross section of a tree, generally referring to the section at breast height and measured outside the bark. It is a measure of stand density, commonly expressed in square feet.
- Base saturation.** The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, K), expressed as a percentage of the total cation-exchange capacity.
- Basin floor.** A general term for the nearly level, lower-most part of intermontane basins (i.e., bolson, semi-bolsions). The basin floor includes all of the alluvial, eolian, and erosional landforms below the piedmont slope.
- Beach terrace.** The relict shorelines from pluvial lakes, generally restricted to valley sides.
- Bedding planes.** Fine strata, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.
- Bedding system.** A drainage system made by plowing, grading, or otherwise shaping the surface of a flat field. It consists of a series of low ridges separated by shallow, parallel dead furrows.
- Bedrock.** The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.
- Bedrock-controlled topography.** A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.
- Bench terrace.** A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.
- Bisequum.** Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.
- Blowout.** A shallow depression from which all or most of the soil material has been removed by 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.
- Board foot.** A unit of measure of the wood in lumber, logs, or trees. The amount of wood in a board one foot wide, one foot long, and one inch thick before finishing.
- Bolson.** A landscape term for an internally drained intermontane basin into which drainages from surrounding mountains converge inward toward a central depression.
- Boulders.** Rock fragments larger than 2 feet (60 centimeters) in diameter.
- Breaks.** The steep and very steep broken land at the border of an upland summit that is dissected by ravines.
- Breast height.** An average height of 4.5 feet above the ground surface; the point on a tree where diameter measurements are ordinarily taken.
- Brush management.** Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.
- Butte.** An isolated small mountain or hill with steep or precipitous sides and a top variously flat, rounded, or pointed that may be a residual mass isolated by erosion or an exposed volcanic neck.
- Calcareous soil.** A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

- Caldera.** A large, more or less circular depression, formed by explosion and/or collapse, which surrounds a volcanic vent or vents, and whose diameter is much greater than that of the included vent, or vents.
- Caliche.** A more or less cemented deposit of calcium carbonate in soils of warm-temperate, subhumid to arid areas. Caliche occurs as soft, thin layers in the soil or as hard, thick beds directly beneath the solum, or it is exposed at the surface by erosion.
- California bearing ratio (CBR).** The load-supporting capacity of a soil as compared to that of a standard crushed limestone, expressed as a ratio. First standardized in California. A soil having a CBR of 16 supports 16 percent of the load that would be supported by standard crushed limestone, per unit area, with the same degree of distortion.
- Canopy.** The leafy crown of trees or shrubs. (See Crown.)
- Canyon.** A long, deep, narrow, very steep sided valley with high, precipitous walls in an area of high local relief.
- Capillary water.** Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.
- Catena.** A sequence, or "chain," of soils on a landscape that formed in similar kinds of parent material but have different characteristics as a result of differences in relief and drainage.
- Cation.** An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.
- Cation-exchange capacity.** The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.
- Channeled.** Refers to a drainage area in which natural meandering or repeated branching and convergence of a streambed have created deeply incised cuts, either active or abandoned, in alluvial material.
- 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 soil.** Silty clay, sandy clay, or 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 slowly permeable soil horizon that contains much more clay than the horizons above it. A claypan is commonly hard when dry and plastic or stiff when wet.
- Clearcut.** A method of forest harvesting that removes the entire stand of trees in one cutting. Reproduction is achieved artificially or by natural seeding from adjacent stands.
- 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 completely surrounded by higher ground and having no natural outlet.
- Coarse fragments.** Mineral or rock particles larger than 2 millimeters in diameter.
- Coarse textured soil.** Sand or loamy sand.
- Cobble (or cobblestone).** A rounded, partly rounded, or angular 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 is 35 to 60 percent of these rock fragments, and extremely cobbly soil material is more than 60 percent.
- Codominant trees.** Trees whose crowns form the general level of the forest canopy and that

receive full light from above but comparatively little from the sides.

Colluvium. Unconsolidated, unsorted earth material moved and deposited by mass movement on sideslopes and at the base of slopes.

Commercial forest. Forest land capable of producing 20 cubic feet or more per acre per year at the culmination of mean annual increment.

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.

Compressible (in tables). Excessive decrease in volume of soft soil under load.

Concretions. Cemented bodies with crude internal symmetry organized around a point, a line, or a plane that typically takes the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.

Conglomerate. A coarse grained, clastic rock composed of rounded to subangular rock fragments more than 2 millimeters in diameter. It commonly has a matrix of sand and finer textured material. Conglomerate is the consolidated equivalent of gravel.

Conservation 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 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."

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.

Coprogenous earth (sedimentary peat). Fecal material deposited in water by aquatic organisms.

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.

Cuesta. A hill or ridge that has a gentle slope on one side and a steep slope on the other; specifically, an asymmetric, homoclinal ridge capped by resistant rock layers of slight or moderate dip.

Culmination of the mean annual increment (CMAI). The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual

increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

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. A soil that is 40 to 60 inches deep over bedrock or to other material that restricts the penetration of plant roots.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Delta. A body of alluvium having a surface that is nearly flat and fan shaped, deposited at or near the mouth of a river or stream where it enters a body of relatively quiet water, generally a sea or lake.

Dense layer (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Depth to rock (in tables). Bedrock is too near the surface for the specified use.

Desert pavement. On a desert surface, a layer of gravel or larger fragments that was emplaced by upward movement of the underlying sediments or that remains after finer particles have been removed by running water or the wind.

Dip slope. A slope of the land surface, roughly determined by and approximately conforming to the dip of the underlying bedrock.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Divided-slope farming. A form of field stripcropping in which crops are grown in a systematic arrangement of two strips, or bands, across the slope to reduce the hazard of water erosion. One strip is in a close-growing crop that provides protection from erosion, and the other strip is in a crop that provides less

protection from erosion. This practice is used where slopes are not long enough to permit a full stripcropping pattern to be used.

Dominant trees. Trees whose crowns form the general level of the forest canopy and that receive full light from above and from the sides.

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. An area of ground at a lower elevation than the surrounding ground and in which water collects and is drained to a closed depression or lake or to a drainageway at a lower elevation. A drainageway may or may not have distinctly incised channels at its upper reaches or throughout its course.

Duff. A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.

Dune. A mound, ridge, or hill of loose, windblown granular material (generally sand), either bare or covered with vegetation.

Ecological Site. A distinctive kind of rangeland or grazed forestland that has a unique historic potential native plant community. Ecological sites are the products of all the environmental factors that affect their development. An ecological site is capable of supporting a native plant community that has a unique kind and/or proportion of species or total vegetative production. Ecological sites in grazed forestland include both overstory and understory vegetation.

Effervescence. The quality of a soil measured when drops of diluted (1:10) hydrochloric acid (HCL) are added to the soil. The ratings are as follows:

Very slightly effervescent few bubbles
 Slightly effervescent bubbles readily
 Strongly effervescent bubbles form low foam
 Violently effervescent..... bubbles form thick foam quickly

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

Eolian soil material. Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.

Ephemeral stream. A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Erosion pavement. A layer of gravel or stones that remains on the surface after fine particles are removed by sheet or rill erosion.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Synonym: scarp.

Even aged. Refers to a stand of trees in which only small differences in age occur between the individuals. A range of 20 years is allowed.

Excess alkali (in tables). Excess exchangeable sodium in the soil. The resulting poor physical properties restrict the growth of plants.

Excess fines (in tables). Excess silt and clay in the soil. The soil does not provide a source of gravel or sand for construction purposes.

Excess lime (in tables). Excess carbonates in the soil that restrict the growth of some plants.

Excess salts (in tables). Excess water-soluble salts in the soil that restrict the growth of most plants.

Excess sodium (in tables). Excess exchangeable sodium in the soil. The resulting poor physical properties restrict the growth of plants.

Excess sulfur (in tables). Excessive amount of sulfur in the soil. The sulfur causes extreme acidity if the soil is drained, and the growth of most plants is restricted.

Extrusive rock. Igneous rock derived from deep-seated molten matter (magma) emplaced on the earth's surface.

Fallow. Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grain is grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.

Fan apron. A sheet-like mantle of relatively young alluvium covering part of an older fan piedmont surface. It somewhere buries a soil that can be traced to the edge of the fan apron.

Fan piedmont. The most extensive landform on piedmont slopes, formed by the coalescence of alluvial fans or accretions of fan aprons into one generally smooth slope.

Fan remnant. A general term for landforms that are remaining parts of older fan-landforms, that either have been dissected or partially buried.

Fan skirt. The zone of smooth, laterally-coalescing, small alluvial fans that issue from gullies cut into the fan piedmont or that are the coalescing extensions of inset fans of the fan piedmont, and that merge with the basin floor.

Fast intake (in tables). The rapid movement of water into the soil.

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, tith, and other growth factors are favorable.

Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the oven-dry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity*, *normal moisture capacity*, or *capillary capacity*.

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 fire fighters and equipment. Designated roads also serve as firebreaks.

First bottom. The normal flood plain of a stream, subject to frequent or occasional flooding.

Flaggy soil material. Material that is, by volume, 15 to 35 percent flagstones. Very flaggy soil material is 35 to 60 percent flagstones, and extremely flaggy soil material is more than 60 percent flagstones.

Flagstone. A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Fluvial. Of or pertaining to rivers; produced by river action, as a fluvial plain.

Foothill. A steeply sloping upland that has relief of as much as 1,000 feet (300 meters) and fringes a mountain range or high-plateau escarpment.

Foot slope. The inclined surface at the base of a hill.

Forb. Any herbaceous plant not a grass or a sedge.

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Fragile (in tables). A soil that is easily damaged by use or disturbance.

Frost action (in tables). Freezing and thawing of soil moisture. Frost action can damage roads, buildings and other structures, and plant roots.

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 clayey soils that shrink and swell considerably with changes in moisture content. Usually manifested as a succession of microbasins and microknolls in nearly level areas or of microvalleys and microridges parallel with the slope.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Graded stripcropping. Growing crops in strips that grade toward a protected waterway.

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 50 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 underlying material below the water table.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Gypsum. A mineral consisting of hydrous calcium sulfate.

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.

Heavy metal. Inorganic substances that are solid at ordinary temperatures and are not soluble in water. They form oxides and hydroxides that are basic. Examples are copper, iron, cadmium, zinc, manganese, lead, and arsenic.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

High-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

Hill. A natural elevation of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and is dependent on local usage.

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. The major horizons of mineral soil are as follows:
O horizon.--An organic layer of fresh and decaying plant residue.
A horizon.--The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.
E horizon.--The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.
B horizon.--The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than

those in the A horizon; or (4) a combination of these.

C horizon.--The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.--Soft, consolidated bedrock beneath the soil.

R layer.--Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Igneous rock. Rock formed by solidification from a molten or partially molten state. Major varieties include plutonic and volcanic rock. Examples are andesite, basalt, and granite.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Increasesers. Species in the climax vegetation that increase in amount as the more desirable plants are reduced by close grazing. Increasesers commonly are the shorter plants and 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 special case of the flood plain of an ephemeral stream that is confined between fan remnants, basin-floor remnants, ballenas, or closely opposed fan toeslopes.

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 flows for prolonged periods only when it receives groundwater discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Intermontane basin. A generic term for wide structural depressions between mountain ranges that are partly filled with alluvium. They may be drained internally (bolsons) or externally (semi-bolsons).

Invaders. On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, plants invade following disturbance of the surface.

Iron depletions. Low-chroma zones having a low content of iron and manganese oxide because of chemical reduction and removal, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:
Basin.--Water is applied rapidly to nearly level plains surrounded by levees or dikes.

Border.--Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes or borders.

Controlled flooding.--Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation.--Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

Drip (or trickle).--Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Furrow.--Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

Sprinkler.--Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation.--Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Wild flooding.--Water, released at high points, is allowed to flow onto an area without controlled distribution.

Lacustrine deposit. Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

Lagoon. The nearly level, filled depression behind the longshore bar on a barrier beach.

Lake plain. A surface marking the floor of an extinct lake, filled in by well sorted, stratified sediments.

Lake terrace. The narrow shelf produced along a lake shore and later exposed when the water recedes.

Lamella. A thin, generally horizontal layer of fine material illuviated within a very much thicker, coarser, eluviated layer.

Landform. Any recognizable form or feature on the earth's surface, having a characteristic shape, and produced by natural causes that provide an empirical description of similar portions of the earth's surface.

Landscape. A collection of related, natural landforms.

Landslide. The rapid downhill movement of a mass of soil and loose rock, generally when wet or saturated. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

Large stones (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Leaching. The removal of soluble material from soil or other material by percolating water.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loamy soil. Coarse sandy loam, sandy loam, fine sandy loam, very fine sandy loam, loam, silt loam, silt, clay loam, sandy clay loam, or silty clay loam.

Loess. Fine grained material, dominantly of silt-sized particles, deposited by wind.

Longshore bar. A narrow, elongate, coarse-textured ridge, built by the wave action of a pluvial lake, that extends parallel to the shore and separated it from a lagoon; both the bar and lagoon are now relict features.

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.

Marl. An earthy, unconsolidated deposit consisting chiefly of calcium carbonate mixed with clay in approximately equal amounts.

Masses. Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium carbonate, gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.

Mean annual increment (MAI). The average annual increase in volume of a tree during the entire life of the tree.

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.

Merchantable trees. Trees that are of sufficient size to be economically processed into wood products.

Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement. Nearly all such rocks are crystalline.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately deep soil. A soil that is 20 to 40 inches deep over bedrock or to other material that restricts the penetration of plant roots.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Mollic epipedon. A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance--*few*, *common*, and *many*; size--*fine*, *medium*, and *coarse*; and contrast--*faint*, *distinct*, and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium*, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).

Mountain. A natural elevation of the land surface, rising more than 1,000 feet above surrounding lowlands, commonly of restricted summit area (relative to a plateau) and generally having steep sides. A mountain can occur as a single, isolated mass or in a group forming a chain or range.

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Mudstone. Sedimentary rock formed by induration of silt and clay in approximately equal amounts.

- Munsell notation.** A designation of color by degrees of three simple variables--hue, value, and chroma. For example, a notation of 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 between 6.6 and 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.
- Observed rooting depth.** Depth to which roots have been observed to penetrate.
- Organic matter.** Plant and animal residue in the soil in various stages of decomposition.
- Overstory.** The trees in a forest that form the upper crown cover.
- Oxbow.** The horseshoe-shaped channel of a former meander, remaining after the stream formed a cutoff across a narrow meander neck.
- Pan.** A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan*, *fragipan*, *claypan*, *plowpan*, and *traffic pan*.
- Parent material.** The unconsolidated organic and mineral material in which soil forms.
- Parna dune.** An eolian dune built of sand size aggregates of clayey material that commonly occurs leeward of a playa.
- Peat.** Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)
- Ped.** An individual natural soil aggregate, such as a granule, a prism, or a block.
- Pediment.** A gently sloping erosional surface developed at the foot of a receding hill or mountain slope.
- Pedisediment.** A thin layer of alluvial material that mantles an erosion surface and has been

transported to its present position from higher lying areas of the erosion surface.

- Pedon.** The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.
- Percolation.** The downward movement of water through the soil.
- Percs slowly** (in tables). The slow movement of water through the soil adversely affects the specified use.
- 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.....	0.00 to 0.01 inch
Very slow	0.01 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow.....	0.2 to 0.6 inch
Moderate.....	0.6 inch to 2.0 inches
Moderately rapid.....	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid.....	more than 20 inches

- Phase, soil.** A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.
- pH value.** A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)
- Piedmont slope.** The dominant slope at the foot of a mountain. Main components of the piedmont slope include pediments, alluvial fans, fan piedmonts, fan skirts and inset fans.
- Piping** (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.
- Pitting** (in tables). Pits caused by melting around ice. They form on the soil after plant cover is removed.
- Plasticity index.** The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plateau. An extensive upland mass with relatively flat summit area that is considerably elevated (more than 100 meters) above adjacent lowlands and separated from them on one or more sides by escarpments.

Playa. The generally dry and nearly level lake plain that occupies the lowest parts of closed depressional areas, such as those on intermontane basin floors. Temporary flooding occurs primarily in response to precipitation and runoff.

Pleistocene. The epoch of the Quaternary Period of geologic time preceding the Holocene (from approximately 2 million to 10 thousand years ago).

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Pluvial. Relating to former periods of abundant rains.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poor filter (in tables). Because of rapid or very rapid permeability, the soil may not adequately filter effluent from a waste disposal system.

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.

Poor outlets (in tables). Refers to areas where surface or subsurface drainage outlets are difficult or expensive to install.

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.

Quartzite, metamorphic. Rock consisting mainly of quartz that formed through recrystallization of quartz-rich sandstone or chert.

Quaternary. The period of geologic time, extending from about 2 million years ago to the present and comprising two epochs, the Pleistocene (Ice Age) and Holocene (Recent).

Quartzite, sedimentary. Very hard but unmetamorphosed sandstone consisting chiefly of quartz grains.

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 suitable for grazing or browsing. 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 . (mildly alkaline).	7.4 to 7.8
Moderately alkaline.....	7.9 to 8.4
Strongly alkaline.....	8.5 to 9.0
Very strongly alkaline	9.1 and higher

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. The unconsolidated mantle of weathered rock and soil material on the earth's surface; the loose earth material above the solid rock.

Relict stream terrace. One of a series of platforms in or adjacent to a stream valley that formed prior to the current stream system.

Relief. The elevations or inequalities of a land surface, considered collectively.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Rill. A steep-sided channel resulting from accelerated erosion. A rill is generally a few inches deep and not wide enough to be an obstacle to farm machinery.

Riverwash. Unstable areas of sandy, silty, clayey, or gravelly sediments. These areas are flooded, washed, and reworked by rivers so frequently that they support little or no vegetation.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Rock outcrop. Exposures of bare bedrock other than lava flows and rock-lined pits.

Rooting depth (in tables). Shallow root zone. The soil is shallow over a layer that greatly restricts roots.

Root zone. The part of the soil that can be penetrated by plant roots.

Rubble land. Areas that have more than 90 percent of the surface covered by stones or boulders. Voids contain no soil material and virtually no vegetation other than lichens. The areas commonly are at the base of mountain slopes, but some are on mountain slopes as deposits of cobbles, stones, and boulders left by Pleistocene glaciation or by periglacial phenomena.

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 groundwater runoff or seepage flow from ground water.

Saline soil. A soil containing soluble salts in an amount that impairs the growth of plants. A saline soil does not contain excess exchangeable sodium.

Salinity. The electrical conductivity of a saline soil. It is expressed, in millimhos per centimeter, as follows:

Nonsaline.....	0 to 2
Very slightly saline.....	2 to 4
Slightly saline.....	4 to 8
Moderately saline.....	8 to 16
Strongly saline	More than 16

Salty water (in tables). Water that is too salty for consumption by livestock.

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.

Sand sheet. A large, irregularly shaped, surficial mantle of eolian sand.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

Sandy soil. Sand or loamy sand.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Saprolite. Unconsolidated residual material underlying the soil and grading to hard bedrock below.

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Sawlogs. Logs of suitable size and quality for the production of lumber.

Scarification. The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.

Scribner's log rule. A method of estimating the number of board feet that can be cut from a log of a given diameter and length.

Second bottom. The first terrace above the normal flood plain (or first bottom) of a river.

Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

Seepage (in tables). The movement of water through the soil. Seepage adversely affects the specified use.

Semi-bolson. An intermontane basin that is drained externally by an intermittent stream.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock formed by the hardening of a clay deposit.

Shallow soil. A soil that is 10 to 20 inches deep over bedrock or to other material that restricts the penetration of plant roots.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shelterwood system. A forest management system requiring the removal of a stand in a series of cuts so that regeneration occurs under a partial canopy. After regeneration, a final cut removes the shelterwood and allows the stand to develop in the open as an even-aged stand. The system is well suited to sites where shelter is needed for regeneration, and it can aid regeneration of the more intolerant tree species in a stand.

Shoulder slope. The uppermost inclined surface at the top of a hillside. It is the transition zone from the back slope to the summit of a hill or mountain. The surface is dominantly convex in profile and erosional in origin.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Shrub-coppice dune. A small dune that forms around shrubs or small trees.

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.

Sinkhole. A depression in the landscape where limestone has been dissolved.

Site class. A grouping of site indexes into five to seven production capability levels. Each level can be represented by a site curve.

Site curve (50-year). A set of related curves on a graph that shows the average height of dominant or dominant and codominant trees for the range of ages on soils that differ in productivity. Each level is represented by a curve. The basis of the curves is the height of dominant or dominant and codominant trees that are 50 years old or are 50 years old at breast height.

Site curve (100-year). A set of related curves on a graph that shows the average height of dominant or dominant and codominant trees for a range of ages on soils that differ in productivity. Each level is represented by a curve. The basis of the curves is the height of dominant or dominant and codominant trees that are 100 years old or are 100 years old at breast height.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Skid trails. Pathways along which logs are dragged to a common site for loading onto a logging truck.

Slash. The branches, bark, treetops, reject logs, and broken or uprooted trees left on the ground after logging.

Slickens. Accumulations of fine-textured material, such as material separated in placer-mine and ore-mill operations. Slickens from ore mills commonly consist of freshly ground rock that has undergone chemical treatment during the milling process.

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.

Slippage (in tables). Soil mass susceptible to movement downslope when loaded, excavated, or wet.

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, the following slope classes are recognized:

Nearly level	0 to 2 percent
Gently sloping	2 to 4 percent
Moderately sloping	4 to 8 percent

Strongly sloping.....	8 to 15 percent
Moderately steep.....	15 to 30 percent
Steep	30 to 50 percent
Very steep	50 to 75 percent
Extremely steep.....	75 percent and higher

Slope (in tables). Slope is great enough that special practices are required to ensure satisfactory performance of the soil for a specific use.

Slow intake (in tables). The slow movement of water into the soil.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Small stones (in tables). Rock fragments less than 3 inches (7.6 centimeters) in diameter. Small stones adversely affect the specified use of the soil.

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:

Very slight	5-12:1
Slight	13-30:1
Moderate	31-45:1
Strong	46-90:1
Very strong.....	more than 90:1

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand.....	2.0 to 1.0
Coarse sand.....	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand.....	0.25 to 0.10
Very fine sand.....	0.10 to 0.05

Silt	0.05 to 0.002
Clay.....	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Species. A single, distinct kind of plant or animal having certain distinguishing characteristics.

Stone line. A concentration of coarse fragments in a soil. Generally, it is indicative of an old weathered surface. In a cross section, the line may be one fragment or more thick. It generally overlies material that weathered in place and is overlain by recent sediment of variable thickness.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Strath terrace. A surface cut formed by the erosion of hard or semiconsolidated bedrock and thinly mantled with stream deposits.

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. It originally formed near the level of the stream and is the dissected remnants of an abandoned flood plain, streambed, or valley floor that were produced during a former stage of erosion or deposition.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to soil blowing 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 grain* (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 and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum. The part of the soil below the solum.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

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. A general term for the top, or highest level, of an upland feature, such as a hill or mountain. It commonly refers to a higher area that has a gentle slope and is flanked by steeper slopes.

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.

Talus. Fragments of rock and other soil material accumulated by gravity at the foot of cliffs or steep slopes.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

- 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 is generally 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).** A step-like surface, ordinarily flat or undulating, bordering a river, a lake, or the sea representing a former flood plain.
- Texture, soil.** The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."
- Thin layer (in tables).** Otherwise suitable soil material too thin for the specified use.
- Till plain.** An extensive area of nearly level to undulating soils underlain by glacial till.
- Tilth, soil.** The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.
- Toe slope.** The outermost inclined surface at the base of a hill; part of a foot slope.
- Too arid (in tables).** The soil is dry most of the time, and vegetation is difficult to establish.
- 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.
- Toxicity (in tables).** Excessive amount of toxic substances, such as sodium or sulfur, that severely hinder establishment of vegetation or severely restrict plant growth.
- Trace elements.** Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.
- Trafficability.** The degree to which a soil is capable of supporting vehicular traffic across a wide range in soil moisture conditions.
- Tread.** The relatively flat terrace surface that was cut or built by stream or wave action.
- Tuff.** A compacted deposit that is 50 percent or more volcanic ash and dust.
- Understory.** Any plants in a forest community that grow to a height of less than 5 feet.
- Unstable fill (in tables).** Risk of caving or sloughing on banks of fill material.
- Upland (geology).** Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.
- Valley.** An elongated depressional area primarily developed by stream action.
- Valley fill.** In glaciated regions, material deposited in stream valleys by glacial meltwater. In nonglaciated regions, alluvium deposited by heavily loaded streams.
- Variagation.** Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.
- Very deep soil.** A soil that is more than 60 inches deep over bedrock or to other material that restricts the penetration of plant roots.
- Very shallow soil.** A soil that is less than 10 inches deep over bedrock or to other material that restricts the penetration of plant roots.
- 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.
- Waterspreading.** Diverting runoff from natural channels by means of a system of dams, dikes, or ditches and spreading it over relatively flat surfaces.
- Water supplying capacity.** The total amount of water available in the soil for plant growth in a normal year from precipitation and from runoff from higher areas. Runoff and water lost to deep percolation are not included.
- Weathering.** All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.
- Well graded.** Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.
- Wilting point (or permanent wilting point).** The moisture content of soil, on an oven-dry basis, at which a plant (specifically, a sunflower)

wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow. The uprooting and tipping over of trees by the wind.

TABLES

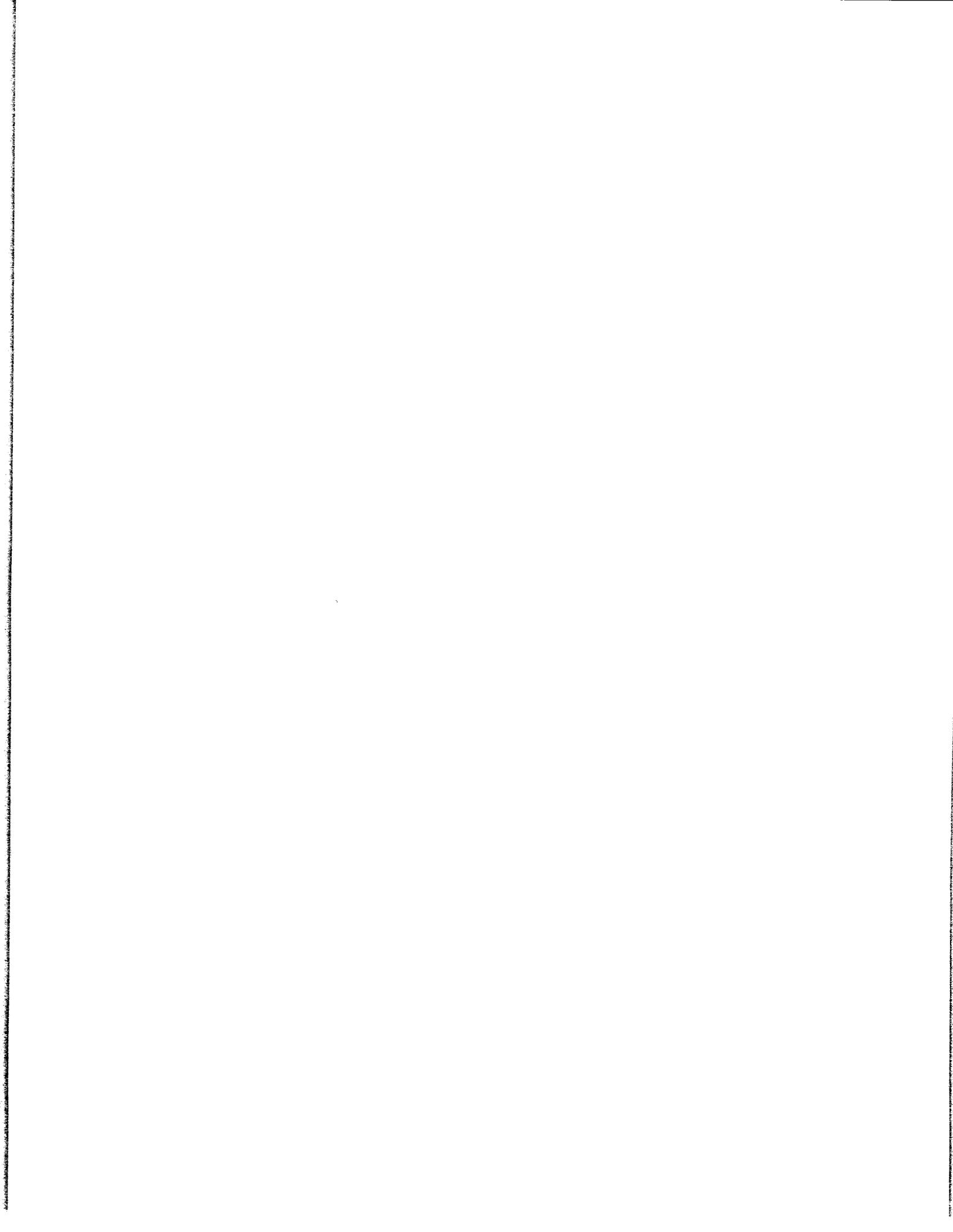


TABLE 1.--TEMPERATURE AND PRECIPITATION

(Recorded in the period 1949-91 at Imlay, Nevada)

Month	Temperature (Degrees F.)						Precipitation (Inches)			
	Average daily maximum	Average daily minimum	Average daily	2 years in 10 will have--		Average number of growing degree days*	Average	2 years in 10 will have--		Average number of days with 0.10 inch or more
				Maximum temperature higher than--	Minimum temperature lower than--			less than	more than	
January---	43.0	17.7	30.4	63	-10	17	0.71	0.26	1.15	2
February--	50.0	23.3	36.6	68	-2	43	0.63	0.19	1.09	2
March-----	56.3	27.0	41.7	75	8	103	0.69	0.24	1.25	2
April-----	65.1	32.8	48.9	85	16	232	0.75	0.31	1.28	2
May-----	73.5	41.0	57.3	93	23	487	0.93	0.38	1.53	2
June-----	83.9	49.9	66.9	102	32	700	0.85	0.43	1.75	2
July-----	93.4	56.1	74.7	105	40	1,021	0.23	0.10	0.73	0
August----	90.9	53.1	72.0	103	37	902	0.37	0.11	1.02	1
September-	81.9	44.6	63.2	98	25	618	0.43	0.22	1.05	1
October---	70.5	33.6	52.1	89	14	310	0.49	0.28	1.38	1
November--	54.9	24.7	39.8	73	4	79	0.71	0.26	1.30	2
December--	45.1	18.8	32.0	64	-6	21	0.67	0.23	1.23	2
Yearly :										
Average	67.4	35.2	51.3	----	----	----	---	---	---	---
Extreme	112	-32	---	105	-13	----	---	---	---	---
Total	---	---	---	----	----	4,532	7.46	5.02	8.63	19

*A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (40 degrees F).

TABLE 1.--TEMPERATURE AND PRECIPITATION

(Recorded in the period 1929-91 at Lovelock, Nevada)

Month	Temperature (Degrees F.)					Precipitation				
	Average daily maximum	Average daily minimum	Average daily	2 years in 10 will have		Average growing degree days*	Average	2 years in 10 will have--		Average number of days with 0.10 inch or more
				Maximum temperature higher than--	Minimum temperature lower than--			less than	more than	
January---	42.8	18.0	30.4	63	-5	14	0.64	0.16	1.04	2
February---	50.0	23.1	36.6	69	-1	43	0.60	0.21	1.00	2
March----	57.7	27.7	42.7	76	11	122	0.47	0.16	0.77	1
April-----	66.5	34.2	50.4	86	17	291	0.53	0.18	0.91	1
May-----	75.0	42.6	58.8	94	27	550	0.52	0.14	0.93	1
June-----	83.8	49.5	66.6	101	34	763	0.53	0.18	1.02	1
July-----	93.7	55.7	74.7	105	42	1,027	0.16	0.07	0.42	0
August----	91.8	52.9	72.3	103	39	913	0.24	0.09	0.60	0
September--	82.9	44.8	63.8	98	29	673	0.30	0.09	0.69	0
October---	70.5	35.0	52.8	88	18	380	0.46	0.14	0.96	1
November--	55.0	25.1	40.0	73	7	87	0.46	0.14	0.85	1
December--	45.4	19.7	32.5	62	-2	16	0.54	0.19	0.94	1
Yearly :										
Average	67.9	35.7	51.8	----	----	----	---	---	---	---
Extreme	110	-26	---	105	-10	----	---	---	---	---
Total	---	---	---	----	----	4,879	5.45	2.96	7.14	11

*A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (40 degrees F).

TABLE 1.--TEMPERATURE AND PRECIPITATION

(Recorded in the period 1952-76 at Gerlach, Nevada)

Month	Temperature (Degrees F.)						Precipitation (Inches)			
	Average daily maximum	Average daily minimum	Average daily	2 years in 10 will have--		Average number of growing degree days*	Average	2 years in 10 will have--		Average number of days with 0.10 inch or more
				Maximum temperature higher than--	Minimum temperature lower than--			less than	more than	
January---	42.2	21.4	31.8	62	-3	27	0.96	0.24	1.53	2
February--	48.2	24.5	36.4	66	6	43	0.47	0.23	0.68	2
March-----	54.7	29.3	42.0	72	13	128	0.73	0.24	1.12	2
April-----	63.7	34.9	49.3	82	20	304	0.59	0.38	0.77	1
May-----	74.4	43.3	58.9	96	25	574	0.76	0.13	1.24	2
June-----	83.8	50.2	67.0	103	32	788	0.62	0.21	1.13	1
July-----	92.5	57.4	75.0	101	40	1,007	0.16	0.07	0.44	0
August----	90.6	53.8	72.2	101	42	865	0.03	0.04	0.07	0
September-	85.5	47.9	66.7	100	34	738	0.23	0.09	0.65	1
October---	70.2	36.9	53.6	86	18	372	0.39	0.22	1.06	1
November--	54.4	26.4	40.4	73	9	88	0.31	0.15	0.53	1
December--	44.8	22.0	33.4	61	-1	16	0.83	0.28	1.48	2
Yearly :										
Average	67.1	37.3	52.2	----	----	----	---	---	---	---
Extreme	104	-6	---	103	-3	----	---	---	---	---
Total	---	---	---	----	----	4,948	6.06	4.39	7.27	15

*A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (40 degrees F).

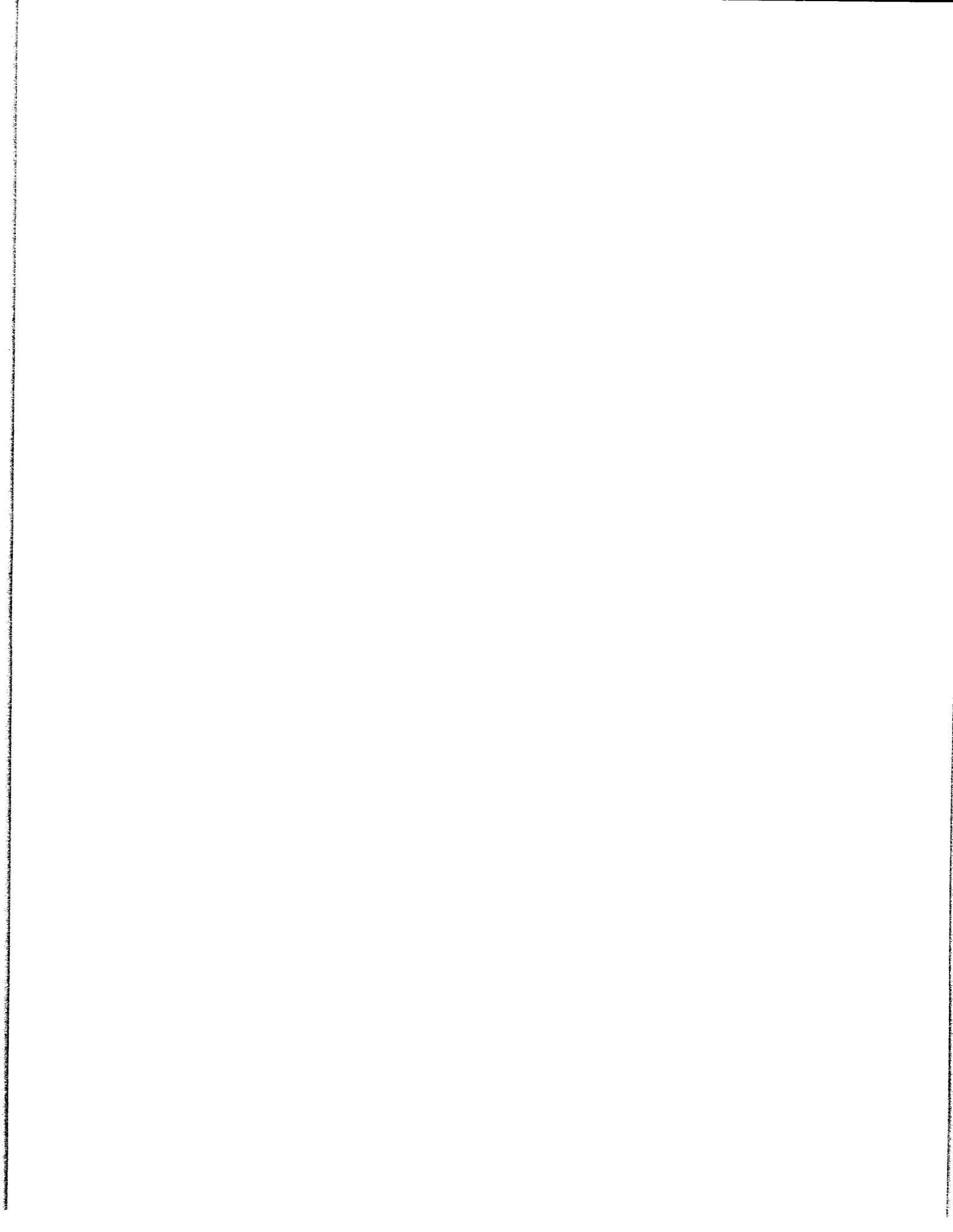


TABLE 2.--FREEZE DATES IN SPRING AND FALL

(Recorded in the period 1949-91 at Imlay, Nevada. During this period had 21 days of missing data)

Probability	Temperature		
	24 degrees F. or lower	28 degrees F. or lower	32 degrees F. or lower
Last freezing temperature in spring:			
1 year in 10 later than--	May 10	May 24	June 6
2 years in 10 later than--	May 4	May 18	May 31
5 years in 10 later than--	April 24	May 8	May 21
First freezing temperature in fall:			
1 year in 10 earlier than--	September 27	September 19	September 7
2 years in 10 earlier than--	October 4	September 24	September 13
5 years in 10 earlier than--	October 16	October 5	September 25

TABLE 2.--FREEZE DATES IN SPRING AND FALL

(Recorded in the period 1929-91 at Lovelock, Nevada. During this period, 14 days of missing data)

Probability	Temperature		
	24 degrees F. or lower	28 degrees F. or lower	32 degrees F. or lower
Last freezing temperature in spring:			
1 year in 10 later than--	May 5	May 14	May 30
2 years in 10 later than--	April 27	May 8	May 24
5 years in 10 later than--	April 14	April 26	May 11
First freezing temperature in fall:			
1 year in 10 earlier than--	October 8	September 24	September 14
2 years in 10 earlier than--			
5 years in 10 earlier than--	October 26	October 12	September 30

TABLE 2.--FREEZE DATES IN SPRING AND FALL

(Recorded in the period 1952-76 at Gerlach, Nevada. During this period, 3 days of missing data)

Probability	Temperature		
	24 degrees F. or lower	28 degrees F. or lower	32 degrees F. or lower
Last freezing temperature in spring:			
1 year in 10 later than--	May 2	May 18	June 7
2 years in 10 later than--	April 24	May 9	May 30
5 years in 10 later than--	April 8	April 23	May 15
First freezing temperature in fall:			
1 year in 10 earlier than--	October 20	October 18	September 27
2 years in 10 earlier than--	October 25	October 20	October 2
5 years in 10 earlier than--	November 3	October 24	October 10

TABLE 3.--GROWING SEASON

(Recorded in the period 1949-91 at Inlay, Nevada. During this period, 25 days or more missing data)

Probability	Daily Minimum Temperature		
	Higher than 24 degrees F.	Higher than 28 degrees F.	Higher than 32 degrees F.
	<u>Days</u>	<u>Days</u>	<u>Days</u>
9 years in 10	140	121	96
8 years in 10	147	128	105
5 years in 10	160	142	121
2 years in 10	173	155	138
1 year in 10	180	162	146

TABLE 3.--GROWING SEASON

(Recorded in the period 1929-91 at Lovelock, Nevada. During this period, 25 days or more missing data)

Probability	Daily Minimum Temperature		
	Higher than 24 degrees F.	Higher than 28 degrees F.	Higher than 32 degrees F.
	<u>Days</u>	<u>Days</u>	<u>Days</u>
9 years in 10	152	138	111
8 years in 10	163	147	121
5 years in 10	182	165	141
2 years in 10	202	182	161
1 year in 10	213	191	171

TABLE 3.--GROWING SEASON

(Recorded in the period 1952-76 at Gerlach, Nevada. During this period, 25 days or more missing data)

Probability	Daily Minimum Temperature		
	Higher than 24 degrees F.	Higher than 28 degrees F.	Higher than 32 degrees F.
	<u>Days</u>	<u>Days</u>	<u>Days</u>
9 years in 10	162	146	114
8 years in 10	171	155	124
5 years in 10	189	173	143
2 years in 10	206	191	162
1 year in 10	215	200	172

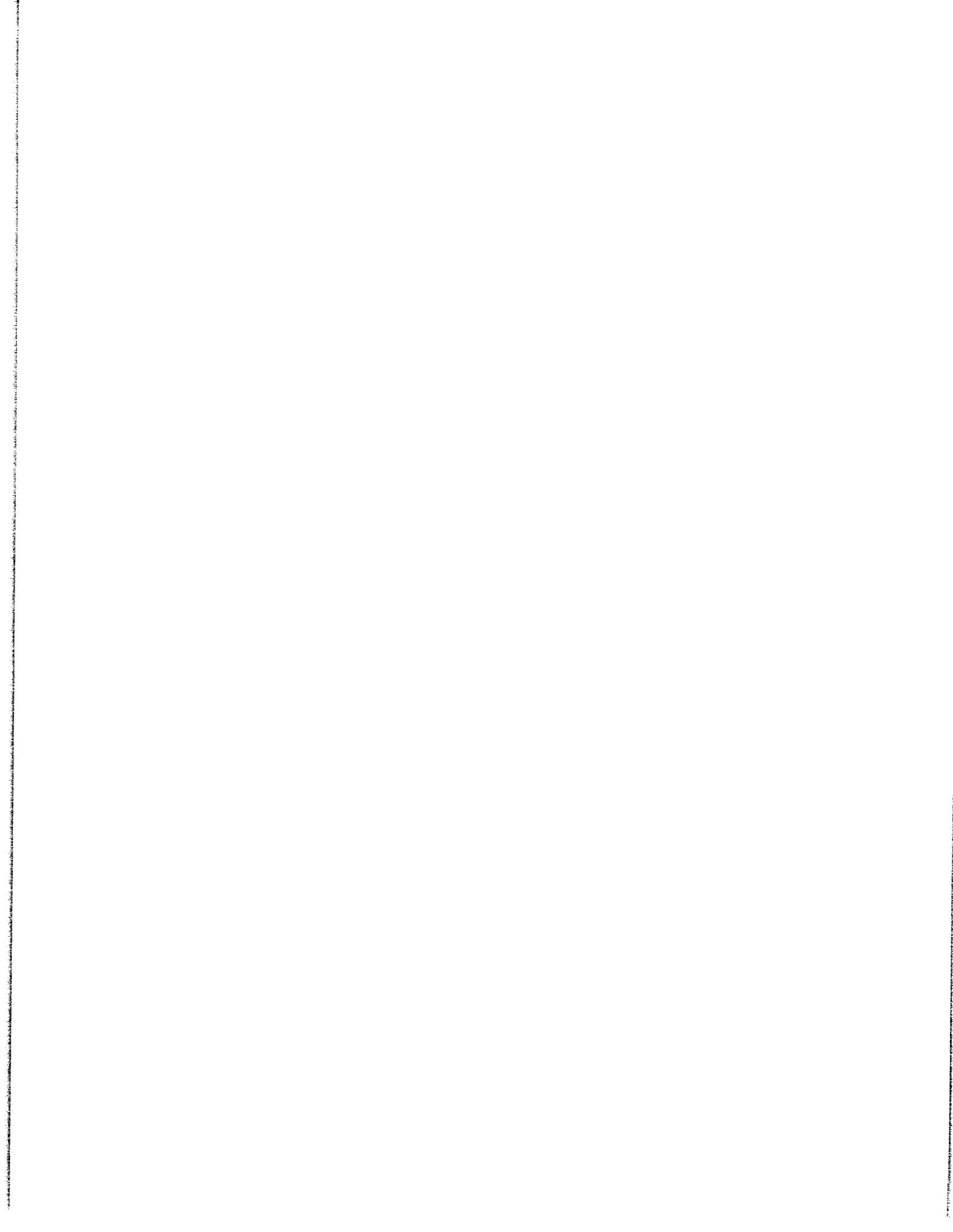


TABLE 4--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS

Map symbol	Soil name	Acres	Percent
110	Aboten-Jerval-Bluewing association-----	18,694	1.0
111	Aboten-Dorper association-----	3,009	0.2
112	Aboten-Dorper-Rednik association-----	5,886	0.3
113	Aboten very gravelly silt loam, 15 to 30 percent slopes-----	4,363	0.2
114	Aboten-Bluewing association-----	7,648	0.4
120	Appian-Isolde-Genegraf association-----	3,699	0.2
130	Boomstick-Majuba-Sojur association-----	23,774	1.3
131	Boomstick-Majuba-Phliss association-----	39,776	2.2
132	Boomstick-Majuba association-----	18,805	1.0
139	Arclay very gravelly coarse sandy loam, 4 to 15 percent slopes-----	2,034	0.1
141	Arclay-Acrelane-Soar association-----	19,978	1.1
142	Arclay-Vium-Slocave association-----	10,512	0.6
143	Ninemile-Rock outcrop complex-----	3,588	0.2
145	Ninemile-Shively-Rock outcrop association-----	605	*
150	Boton-Playas association-----	2,258	0.1
152	Benin-Benin, occasionally flooded silty clay loams-----	2,776	0.2
160	Badland-----	916	*
161	Dune land-Playas complex-----	354	*
163	Dune land-----	185	*
171	Bluewing-Toulon-Rock outcrop association-----	20,021	1.1
172	Bluewing gravelly sandy loam, 2 to 8 percent slopes-----	9,200	0.5
173	Bluewing very gravelly loamy sand, 0 to 2 percent slopes, frequently flooded-----	1,335	*
180	Biga-Granshaw-Labkey association-----	67,825	3.7
181	Biga gravelly coarse sandy loam, 2 to 8 percent slopes-----	3,047	0.2
182	Biga gravelly loam, 2 to 8 percent slopes-----	6,205	0.3
190	Cresal silt loam, 0 to 2 percent slopes-----	949	*
201	Dorper-Envol association-----	36,830	2.0
203	Dorper extremely gravelly very fine sandy loam, 2 to 8 percent slopes-----	24,149	1.3
204	Dorper, stony-Jerval-Dorper association-----	27,987	1.5
206	Dorper very gravelly sandy loam, 2 to 8 percent slopes-----	5,176	0.3
210	Dorper-Aboten-Kumiva association-----	12,973	0.7
220	Cleavage-Phliss-Majuba association-----	1,928	0.1
221	Cleavage-Burnborough association-----	9,234	0.5
230	Coldent-Isolde-Swingle association-----	7,232	0.4
231	Coldent-Hawsley-Mazuma association-----	223	*
245	Dedmount-Umberland-Umberland, ponded association-----	1,162	*
250	Devada-Rock outcrop complex-----	1,191	*
300	Envol-Frines-Rock outcrop association-----	10,613	0.6
302	Envol gravelly loam, 15 to 50 percent slopes-----	2,254	0.1
310	Eaglerock-Rock outcrop association-----	10,914	0.6
401	Genegraf-Dorper-Bluewing association-----	865	*
402	Genegraf-Bluewing-Dorper association-----	58,269	3.2
404	Genegraf-Toulon association-----	3,566	0.2
410	Granshaw-Labkey association-----	18,445	1.0
411	Granshaw-Biga-Envol association-----	7,081	0.4
412	Granshaw-Jerval-Dorper association-----	15,882	0.9
413	Granshaw-Kumiva association-----	19,117	1.1
414	Granshaw gravelly loam, 0 to 4 percent slopes-----	5,484	0.3
415	Granshaw-Biga-Puett association-----	2,221	0.1
431	Grumblen-Pickup association-----	85,349	4.7
432	Grumblen-Pickup-Old Camp association-----	35,252	1.9
451	Hawsley fine sand, 0 to 4 percent slopes-----	1,259	*
452	Hawsley-Labkey-Genegraf association-----	30,117	1.7
453	Hawsley-Bluewing association-----	1,157	*
456	Hawsley-Badland association-----	178	*
462	Hawsley-Mazuma association-----	4,209	0.2
470	Deadyon loam, 0 to 2 percent slopes-----	1,652	*
471	Deadyon-Granshaw association-----	15,001	0.8
472	Deadyon sandy loam, 2 to 8 percent slopes-----	634	*
480	Humboldt silty clay loam, slightly saline-sodic-----	189	*
500	Isolde-Typic Torriorthents-Dune land complex-----	12,134	0.7

* See footnote at end of table.

TABLE 4--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS--Continued

Map symbol	Soil name	Acres	Percent
502	Isolde-Ragtown association-----	2,360	0.1
503	Isolde fine sand, 4 to 15 percent slopes-----	716	*
510	Juva loam, 0 to 2 percent slopes-----	1,346	*
550	Kumiva-Labkey-Chumall association-----	12,846	0.7
551	Kumiva-Kumiva, occasionally flooded association-----	5,292	0.3
553	Kumiva sandy loam, 0 to 2 percent slopes, occasionally flooded-----	5,814	0.3
559	Phliss-Phliss, eroded-Majuba association-----	2,540	0.1
560	Phliss extremely channery loam, 15 to 50 percent slopes-----	21,240	1.2
562	Sondoa silt loam, strongly saline-sodic-----	1,193	*
563	Sondoa-Swingle-Isolde association-----	21,389	1.2
650	Labkey gravelly sandy loam, 2 to 8 percent slopes-----	12,366	0.7
651	Labkey-Mazuma-Hawsley association-----	2,166	0.1
652	Labkey-Hawsley-Granshaw association-----	6,915	0.4
653	Labkey-Mazuma association-----	3,385	0.2
700	Mazuma-Trocken association-----	27,035	1.5
701	Mazuma very fine sandy loam, 2 to 8 percent slopes-----	2,754	0.2
702	Mazuma-Swingle-Toulon association-----	4,952	0.3
703	Mazuma-Hardhat-Hawsley association-----	2,840	0.2
704	Mazuma fine sandy loam, strongly saline-sodic, 0 to 2 percent slopes-----	405	*
705	Mazuma-Mazuma, strongly saline-sodic association-----	26,017	1.4
706	Mazuma silt loam, moderately saline-sodic, 0 to 2 percent slopes-----	2,388	0.1
707	Mazuma-Coldent association-----	7,823	0.4
708	Mazuma-Ragtown association-----	1,695	*
750	Pickup-Rock outcrop association, moderately sloping-----	1,225	*
751	Pickup-Grumblen-Rock outcrop association-----	13,199	0.7
752	Pickup-Old Camp-Theon association-----	10,735	0.6
753	Pickup-Rock outcrop association, very steep-----	4,872	0.3
800	Old Camp-Dorper-Pokergap association-----	2,440	0.1
801	Old Camp-Sumya-Pickup association-----	2,304	0.1
810	Perwaso, occasionally flooded-Perwaso silt loams-----	257	*
850	Playas-----	81,386	4.5
851	Pits, mine-----	989	*
852	Puett-Dorper association-----	11,113	0.6
960	Rednik-Jungo-Aboten association-----	9,828	0.5
970	Say-EagleRock-Ninemile association-----	4,627	0.3
980	Selbit-Rock outcrop complex-----	6,078	0.3
981	Selbit-Rock outcrop-Upsel association-----	13,455	0.7
990	Shawave-Granshaw-Labkey association-----	3,909	0.2
991	Shawave-Slipback-Granshaw association-----	39,985	2.2
992	Shawave-Deadyon-Slipback association-----	13,066	0.7
993	Shawave-Biga-Deadyon association-----	51,551	2.8
994	Shawave-Biga-Puett association-----	19,466	1.1
996	Slaw-Slaw, occasionally flooded silt loams-----	1,666	*
1020	Soar, moderately steep-Arclay-Soar association-----	12,044	0.7
1021	Soar-Arclay association-----	18,762	1.0
1022	Soar-Arclay-Rock outcrop association-----	17,588	1.0
1030	Pokergap very gravelly very fine sandy loam, 2 to 8 percent slopes-----	5,444	0.3
1031	Pokergap-Dorper association, very gravelly-----	24,261	1.3
1032	Pokergap-Dorper association, stony-----	14,856	0.8
1033	Pokergap-Jerval-Dorper association-----	29,916	1.6
1034	Pokergap stony very fine sandy loam, 4 to 15 percent slopes-----	3,923	0.2
1035	Pokergap-Jerval association-----	54,486	3.0
1040	Sojur extremely channery silt loam, 15 to 50 percent slopes-----	22,759	1.3
1041	Sojur-Boomstick-Rubble land association-----	5,032	0.3
1042	Sojur-Phliss association-----	1,640	*
1050	Theon-Singatse association, cobbly-----	1,850	0.1
1051	Theon-Singatse association, gravelly-----	49,926	2.7
1052	Theon-Grumblen-Rubble land association-----	27,197	1.5
1053	Theon-Rock outcrop association-----	2,458	0.1
1054	Theon-Old Camp association, gravelly-----	2,416	0.1
1055	Theon-Old Camp association, cobbly-----	22,940	1.3

TABLE 4--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS--Continued

Map symbol	Soil name	Acres	Percent
1056	Theon-Pickup association-----	27,180	1.5
1080	Toulon-Appian-Bluewing association-----	6,899	0.4
1100	Unionville-Rock outcrop complex-----	2,308	0.1
1150	Slocave-Arclay-Rock outcrop association-----	8,867	0.5
1151	Slocave-Vium association-----	4,318	0.2
1190	Woolsey-Bluewing association-----	2,273	0.1
1200	Acrelane-Soar-Arclay association-----	16,972	0.9
1201	Acrelane-Wedekind-Arclay association-----	40,528	2.2
1202	Acrelane-Rock outcrop complex-----	14,383	0.8
1203	Acrelane-Shawave-Granshaw association-----	19,039	1.0
1204	Acrelane-Arclay-Eaglerock association-----	14,122	0.8
1205	Acrelane-Acrelane, moderately sloping association-----	16,420	0.9
1210	Wesfil-Sojur association-----	49,364	2.7
1300	Yipor silt loam-----	2,096	0.1
1400	Jerval-Dorper association-----	23,019	1.3
1401	Jerval-Aboten-Dorper association-----	23,132	1.3
1410	Slipback-Shawave-Nodur association-----	15,112	0.8
1610	Lovelock silt loam, 0 to 2 percent slopes-----	1,912	0.1
W	Water-----	2,000	0.1
	Total-----	1,820,475	100.0

* Less than 0.1 percent.

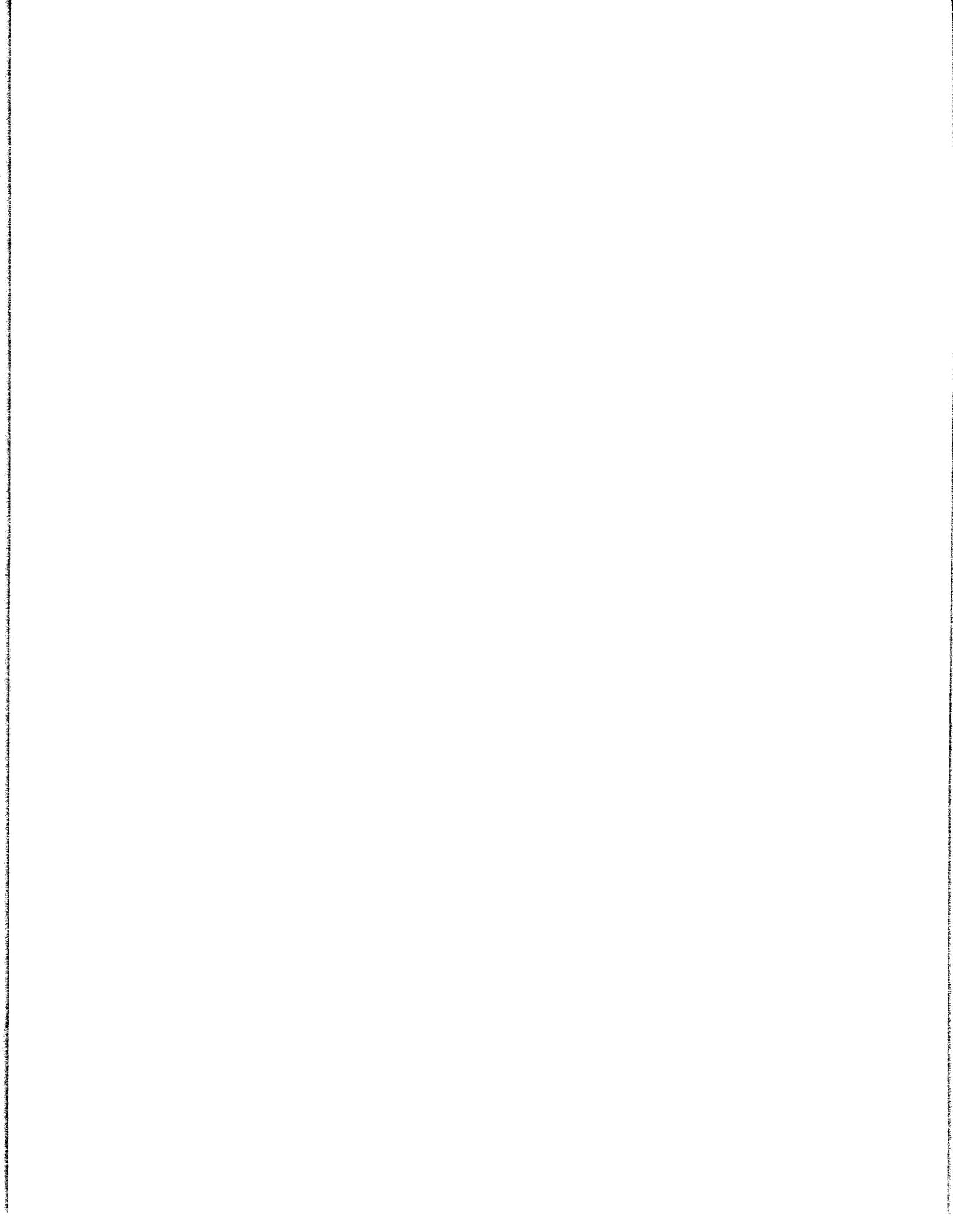


TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS

(See text for a description of the limitations and hazards listed in this table)

Soil name and map symbol	Cropland limitations or hazards
110: Aboten-----	Excessive permeability Limited available water capacity Potential for ground-water pollution Root restrictive layer Salt content Sodium content Soil blowing Surface crusting Surface rock fragments
Jerval-----	Salt content Sodium content Soil blowing Surface crusting
Bluewing-----	Excessive permeability Lime content Limited available water capacity Potential for ground-water pollution Soil blowing Surface crusting
111: Aboten-----	Erosion by water Excessive permeability Limited available water capacity Potential for ground-water pollution Root restrictive layer Salt content Slope Sodium content Soil blowing Surface crusting Surface rock fragments
Dorper-----	Lime content Limited available water capacity Salt content Sodium content Surface crusting Surface rock fragments

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
112: Aboten-----	Erosion by water Excessive permeability Limited available water capacity Potential for ground-water pollution Root restrictive layer Salt content Slope Sodium content Soil blowing Surface crusting Surface rock fragments
Dorper-----	Lime content Limited available water capacity Salt content Sodium content Soil blowing Surface crusting Surface rock fragments
Rednik-----	Erosion by water Excessive permeability Limited available water capacity Potential for ground-water pollution Slope Sodium content Surface crusting Surface rock fragments
114: Aboten-----	Excessive permeability Limited available water capacity Potential for ground-water pollution Root restrictive layer Salt content Sodium content Soil blowing Surface crusting Surface rock fragments
Bluewing-----	Excessive permeability Lime content Limited available water capacity Potential for ground-water pollution Soil blowing Surface crusting

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazard
120: Appian-----	Excessive permeability Potential for ground-water pollution Salt content Sodium content Soil blowing Surface crusting
Isolde-----	Erosion by water Excessive permeability Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface crusting
Genegraf-----	Limited available water capacity Salt content Sodium content Surface crusting Surface rock fragments
139: Arclay-----	Depth to rock Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface rock fragments
150: Boton-----	Lime content Salt content Sodium content Surface crusting
Playas-----	Nonsoil material
152: Benin-----	Lime content Poor tilth Salt content Sodium content Surface crusting
Benin-----	Flooding Lime content Poor tilth Salt content Sodium content Surface crusting

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
171: Bluewing-----	Areas of rock outcrop Excessive permeability Lime content Limited available water capacity Potential for ground-water pollution Surface crusting
Toulon-----	Areas of rock outcrop Erosion by water Excessive permeability Limited available water capacity Potential for ground-water pollution Surface crusting Surface rock fragments
Rock outcrop-----	Nonsoil material
172: Bluewing-----	Excessive permeability Lime content Limited available water capacity Potential for ground-water pollution Surface crusting
173: Bluewing-----	Excessive permeability Flooding Lime content Limited available water capacity Potential for ground-water pollution Surface crusting Surface rock fragments
180: Biga-----	Lime content Limited available water capacity Sodium content Surface crusting
Granshaw-----	Excessive permeability Limited available water capacity Potential for ground-water pollution
Labkey-----	Excessive permeability Limited available water capacity Potential for ground-water pollution Surface crusting
181: Biga-----	Lime content Limited available water capacity Sodium content Surface crusting

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
182: Biga-----	Erosion by water Lime content Limited available water capacity Sodium content Surface crusting
190: Cresal-----	Lime content Salt content Sodium content Surface crusting
201: Dorper-----	Lime content Limited available water capacity Salt content Slope Sodium content Surface crusting Surface rock fragments
Envol-----	Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Slope Surface rock fragments
203: Dorper-----	Lime content Limited available water capacity Salt content Sodium content Surface crusting Surface rock fragments

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
204: Dorper-----	Erosion by water Limited available water capacity Salt content Sodium content Surface crusting Surface stones
Jerval-----	Salt content Sodium content Surface crusting
Dorper-----	Lime content Limited available water capacity Salt content Sodium content Surface crusting Surface rock fragments
206: Dorper-----	Lime content Limited available water capacity Salt content Sodium content Surface crusting Surface rock fragments
210: Dorper-----	Erosion by water Limited available water capacity Salt content Sodium content Surface crusting Surface stones
Aboten-----	Erosion by water Excessive permeability Limited available water capacity Potential for ground-water pollution Root restrictive layer Salt content Slope Sodium content Surface crusting Surface rock fragments
Kumiva-----	Erosion by water Lime content Surface crusting

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
230: Coldent-----	Excessive permeability Limited available water capacity Potential for ground-water pollution Salt content Sodium content Surface crusting
Isolde-----	Erosion by water Excessive permeability Limited available water capacity Potential for ground-water pollution Slope Surface crusting
Swingler-----	Lime content Salt content Sodium content Surface crusting
231: Coldent-----	Excessive permeability Limited available water capacity Potential for ground-water pollution Salt content Sodium content Surface crusting
Hawsley-----	Erosion by water Excessive permeability Limited available water capacity Potential for ground-water pollution Slope
Mazuma-----	Erosion by water Lime content Salt content Sodium content Surface crusting

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
245: Dedmount-----	Lime content Salt content Sodium content Surface crusting Water table
Umberland-----	Lime content Poor tilth Salt content Sodium content Surface crusting Water table
Umberland-----	Lime content Ponding Poor tilth Potential for ground-water pollution Salt content Sodium content Surface crusting Water table
300: Envol-----	Areas of rock outcrop Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Slope
Frines-----	Areas of rock outcrop Depth to rock Erosion by water Limited available water capacity Potential for ground-water pollution Slope Surface crusting
Rock outcrop-----	Nonsoil material

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
401: Genegraf-----	Limited available water capacity Salt content Sodium content Surface crusting Surface rock fragments
Dorper-----	Lime content Limited available water capacity Salt content Sodium content Surface crusting Surface rock fragments
Bluewing-----	Excessive permeability Lime content Limited available water capacity Potential for ground-water pollution Surface crusting Surface rock fragments
402: Genegraf-----	Limited available water capacity Salt content Sodium content Surface crusting Surface rock fragments
Bluewing-----	Excessive permeability Lime content Limited available water capacity Potential for ground-water pollution Surface crusting
Dorper-----	Lime content Limited available water capacity Salt content Sodium content Surface crusting Surface rock fragments
404: Genegraf-----	Limited available water capacity Salt content Sodium content Surface crusting Surface rock fragments
Toulon-----	Erosion by water Excessive permeability Limited available water capacity Potential for ground-water pollution Surface crusting Surface rock fragments

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
410: Granshaw-----	Excessive permeability Limited available water capacity Potential for ground-water pollution
Labkey-----	Excessive permeability Limited available water capacity Potential for ground-water pollution Surface crusting
411: Granshaw-----	Excessive permeability Limited available water capacity Potential for ground-water pollution
Biga-----	Lime content Limited available water capacity Sodium content Surface crusting
Envol-----	Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Slope
412: Granshaw-----	Excessive permeability Limited available water capacity Potential for ground-water pollution
Jerval-----	Salt content Sodium content Surface crusting
Dorper-----	Erosion by water Limited available water capacity Salt content Sodium content Surface crusting Surface stones
413: Granshaw-----	Excessive permeability Limited available water capacity Potential for ground-water pollution
Kumiva-----	Surface crusting
414: Granshaw-----	Excessive permeability Limited available water capacity Potential for ground-water pollution

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
415: Granshaw-----	Excessive permeability Limited available water capacity Potential for ground-water pollution
Biga-----	Lime content Limited available water capacity Sodium content Surface crusting
Puett-----	Depth to rock Erosion by water Limited available water capacity Slope
451: Hawsley-----	Excessive permeability Limited available water capacity Potential for ground-water pollution
452: Hawsley-----	Excessive permeability Limited available water capacity Potential for ground-water pollution
Labkey-----	Excessive permeability Limited available water capacity Potential for ground-water pollution Surface crusting
Genegraf-----	Lime content Limited available water capacity Salt content Sodium content Surface crusting
453: Hawsley-----	Excessive permeability Limited available water capacity Potential for ground-water pollution
Bluewing-----	Erosion by water Excessive permeability Flooding Limited available water capacity Potential for ground-water pollution Slope Surface crusting Surface stones

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
462: Hawsley-----	Erosion by water Excessive permeability Limited available water capacity Potential for ground-water pollution Slope
Mazuma-----	Lime content Salt content Sodium content Surface crusting
470: Deadyon-----	Excessive permeability Potential for ground-water pollution
471: Deadyon-----	Excessive permeability Potential for ground-water pollution
Granshaw-----	Excessive permeability Limited available water capacity Potential for ground-water pollution
472: Deadyon-----	Erosion by water Excessive permeability Potential for ground-water pollution
480: Humboldt-----	Flooding Lime content Poor tilth Potential for ground-water pollution Salt content Sodium content Surface crusting Water table
500: Isolde-----	Erosion by water Excessive permeability Limited available water capacity Potential for ground-water pollution Slope Surface crusting
Typic Torriorthents-----	Limited available water capacity Potential for ground-water pollution Sodium content Surface crusting Surface rock fragments
Dune land-----	Nonsoil material

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
502: Isolde-----	Erosion by water Excessive permeability Limited available water capacity Potential for ground-water pollution Slope Surface crusting
Ragtown-----	Flooding Lime content Salt content Surface crusting
503: Isolde-----	Erosion by water Excessive permeability Limited available water capacity Potential for ground-water pollution Slope Surface crusting
510: Juva-----	Flooding Lime content Sodium content Surface crusting
550: Kumiva-----	Flooding Surface crusting
Labkey-----	Excessive permeability Limited available water capacity Potential for ground-water pollution Surface crusting
Chumall-----	Excessive permeability Lime content Potential for ground-water pollution Salt content Sodium content Surface crusting
551: Kumiva-----	Lime content Surface crusting
Kumiva-----	Flooding Surface crusting
553: Kumiva-----	Flooding Surface crusting

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
562: Sondoa-----	Lime content Salt content Sodium content Surface crusting
563: Sondoa-----	Lime content Salt content Sodium content Surface crusting
Swingler-----	Lime content Salt content Sodium content Surface crusting
Isolde-----	Erosion by water Excessive permeability Limited available water capacity Potential for ground-water pollution Slope Surface crusting
650: Labkey-----	Excessive permeability Limited available water capacity Potential for ground-water pollution Surface crusting
651: Labkey-----	Erosion by water Excessive permeability Limited available water capacity Potential for ground-water pollution Slope Surface crusting
Mazuma-----	Lime content Salt content Sodium content Surface crusting
Hawsley-----	Excessive permeability Limited available water capacity Potential for ground-water pollution

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
652: Labkey-----	Excessive permeability Limited available water capacity Potential for ground-water pollution Surface crusting
Hawsley-----	Excessive permeability Limited available water capacity Potential for ground-water pollution
Granshaw-----	Excessive permeability Limited available water capacity Potential for ground-water pollution
653: Labkey-----	Excessive permeability Limited available water capacity Potential for ground-water pollution Surface crusting
Mazuma-----	Lime content Salt content Sodium content Surface crusting
700: Mazuma-----	Lime content Salt content Sodium content Surface crusting
Trocken-----	Erosion by water Limited available water capacity Sodium content Surface crusting
701: Mazuma-----	Erosion by water Lime content Salt content Sodium content Surface crusting

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
702: Mazuma-----	Lime content Salt content Sodium content Surface crusting
Swingler-----	Lime content Salt content Sodium content Surface crusting
Toulon-----	Erosion by water Excessive permeability Limited available water capacity Potential for ground-water pollution Surface crusting Surface rock fragments
703: Mazuma-----	Lime content Salt content Sodium content Surface crusting
Hardhat-----	Excessive permeability Lime content Potential for ground-water pollution Surface crusting
Hawsley-----	Excessive permeability Limited available water capacity Potential for ground-water pollution
704: Mazuma-----	Lime content Salt content Sodium content Surface crusting
705: Mazuma-----	Lime content Salt content Sodium content Surface crusting
Mazuma-----	Lime content Salt content Sodium content Surface crusting

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
706: Mazuma-----	Lime content Salt content Sodium content Surface crusting
707: Mazuma-----	Lime content Salt content Sodium content Surface crusting
Coldent-----	Excessive permeability Limited available water capacity Potential for ground-water pollution Salt content Sodium content Surface crusting
708: Mazuma-----	Erosion by water Lime content Salt content Sodium content Surface crusting
Ragtown-----	Flooding Lime content Salt content Surface crusting
750: Pickup-----	Areas of rock outcrop Depth to rock Erosion by water Limited available water capacity Potential for ground-water pollution Slope Surface rock fragments
Rock outcrop-----	Nonsoil material

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
810: Perwaso-----	Excessive permeability Flooding Lime content Potential for ground-water pollution Salt content Sodium content Surface crusting
Perwaso-----	Excessive permeability Lime content Potential for ground-water pollution Salt content Sodium content Surface crusting
852: Puett-----	Depth to rock Erosion by water Limited available water capacity Slope
Dorper-----	Lime content Limited available water capacity Salt content Sodium content Surface crusting Surface rock fragments

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
960: Rednik-----	Erosion by water Excessive permeability Limited available water capacity Potential for ground-water pollution Slope Sodium content Surface crusting Surface rock fragments
Jungo-----	Erosion by water Lime content Limited available water capacity Slope Surface crusting Surface rock fragments
Aboten-----	Erosion by water Excessive permeability Limited available water capacity Potential for ground-water pollution Root restrictive layer Salt content Slope Sodium content Surface crusting
990: Shawave-----	Excessive permeability Potential for ground-water pollution Surface crusting
Granshaw-----	Excessive permeability Limited available water capacity Potential for ground-water pollution
Labkey-----	Excessive permeability Limited available water capacity Potential for ground-water pollution Surface crusting

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
991: Shawave-----	Excessive permeability Potential for ground-water pollution Surface crusting
Slipback-----	Erosion by water Excessive permeability Potential for ground-water pollution Sodium content Surface crusting
Granshaw-----	Excessive permeability Limited available water capacity Potential for ground-water pollution
992: Shawave-----	Excessive permeability Potential for ground-water pollution Surface crusting
Deadyon-----	Erosion by water Excessive permeability Potential for ground-water pollution
Slipback-----	Erosion by water Excessive permeability Potential for ground-water pollution Sodium content Surface crusting
993: Shawave-----	Excessive permeability Potential for ground-water pollution Surface crusting
Biga-----	Erosion by water Lime content Limited available water capacity Sodium content Surface crusting
Deadyon-----	Excessive permeability Potential for ground-water pollution

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
994: Shawave-----	Erosion by water Excessive permeability Potential for ground-water pollution Slope Surface crusting
Biga-----	Erosion by water Lime content Limited available water capacity Sodium content Surface crusting
Puett-----	Depth to rock Erosion by water Limited available water capacity Slope
996: Slaw-----	Lime content Salt content Sodium content Surface crusting
Slaw-----	Flooding Lime content Salt content Sodium content Surface crusting
1020: Soar-----	Depth to rock Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface rock fragments
Arclay-----	Depth to rock Erosion by water Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface rock fragments
Soar-----	Depth to rock Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface rock fragments

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
1030: Pokergap-----	Limited available water capacity Sodium content Surface crusting Surface rock fragments
1031: Pokergap-----	Limited available water capacity Sodium content Surface crusting Surface rock fragments
Dorper-----	Lime content Limited available water capacity Salt content Sodium content Soil blowing Surface crusting Surface rock fragments
1032: Pokergap-----	Erosion by water Limited available water capacity Slope Sodium content Soil blowing Surface crusting Surface stones
Dorper-----	Erosion by water Limited available water capacity Salt content Slope Sodium content Soil blowing Surface crusting Surface stones

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
1033: Pokergap-----	Erosion by water Sodium content Soil blowing Surface crusting
Jerval-----	Salt content Sodium content Soil blowing Surface crusting
Dorper-----	Erosion by water Limited available water capacity Salt content Sodium content Soil blowing Surface crusting Surface stones
1034: Pokergap-----	Erosion by water Limited available water capacity Slope Sodium content Soil blowing Surface crusting Surface stones
1035: Pokergap-----	Erosion by water Sodium content Soil blowing Surface crusting
Jerval-----	Salt content Sodium content Soil blowing Surface crusting

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
1080: Toulon-----	Erosion by water Excessive permeability Limited available water capacity Potential for ground-water pollution Soil blowing Surface crusting Surface rock fragments
Appian-----	Excessive permeability Potential for ground-water pollution Salt content Sodium content Soil blowing Surface crusting
Bluewing-----	Excessive permeability Flooding Lime content Limited available water capacity Potential for ground-water pollution Soil blowing Surface crusting Surface rock fragments
1100: Unionville-----	Areas of rock outcrop Depth to rock Limited available water capacity Soil blowing Surface crusting
Rock outcrop-----	Nonsoil material
1151: Slocave-----	Depth to rock Erosion by water Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface rock fragments
Vium-----	Depth to rock Limited available water capacity Potential for ground-water pollution Soil blowing Surface crusting

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
1190: Woolsey-----	Soil blowing Surface crusting
Bluewing-----	Excessive permeability Lime content Limited available water capacity Potential for ground-water pollution Soil blowing Surface crusting
1201: Acrelane-----	Depth to rock Erosion by water Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface rock fragments
Wedekind-----	Depth to rock Limited available water capacity Soil blowing
Arclay-----	Depth to rock Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface rock fragments
1203: Acrelane-----	Depth to rock Erosion by water Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface rock fragments
Shawave-----	Excessive permeability Potential for ground-water pollution Soil blowing Surface crusting
Granshaw-----	Excessive permeability Limited available water capacity Potential for ground-water pollution Soil blowing

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
1205: Acrelane-----	Depth to rock Erosion by water Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface rock fragments
Acrelane-----	Depth to rock Limited available water capacity Potential for ground-water pollution Soil blowing Surface rock fragments
1300: Yipor-----	Flooding Lime content Sodium content Soil blowing Surface crusting
1400: Jerval-----	Salt content Sodium content Soil blowing Surface crusting
Dorper-----	Erosion by water Limited available water capacity Salt content Sodium content Soil blowing Surface crusting Surface stones

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
1401: Jerval-----	Salt content Sodium content Soil blowing Surface crusting
Aboten-----	Erosion by water Excessive permeability Limited available water capacity Potential for ground-water pollution Root restrictive layer Salt content Sodium content Soil blowing Surface crusting
Dorper-----	Lime content Limited available water capacity Salt content Sodium content Soil blowing Surface crusting Surface rock fragments
1410: Slipback-----	Erosion by water Excessive permeability Potential for ground-water pollution Sodium content Soil blowing Surface crusting
Shawave-----	Excessive permeability Potential for ground-water pollution Soil blowing Surface crusting
Nodur-----	Erosion by water Salt content Sodium content Soil blowing Surface crusting
1610: Loveloek-----	Lime content Ponding Potential for ground-water pollution Salt content Sodium content Surface crusting Water table

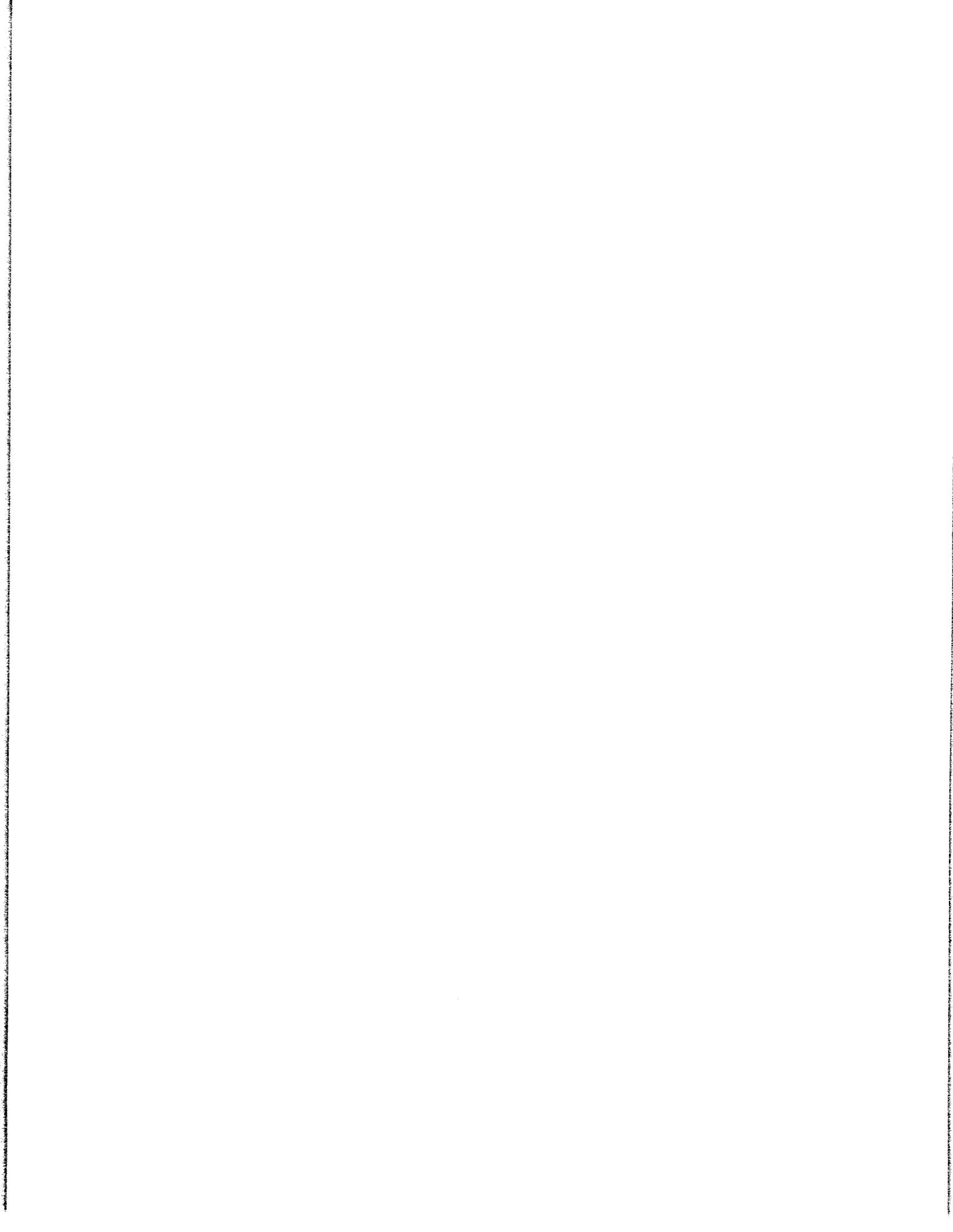


TABLE 6.--LAND CAPABILITY AND YIELDS PER ACRE OF CROPS

(Yields are those that can be expected under a high level of irrigated management by component name. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)

Map symbol and soil name	Land capability	Alfalfa hay	Grass hay
		Tons	Tons
480: Humboldt-----	5W	---	2.5
510: Juva-----	2W	4.0	---
996: Slaw-----	3S	3.5	---
Slaw-----	3W	3.5	---

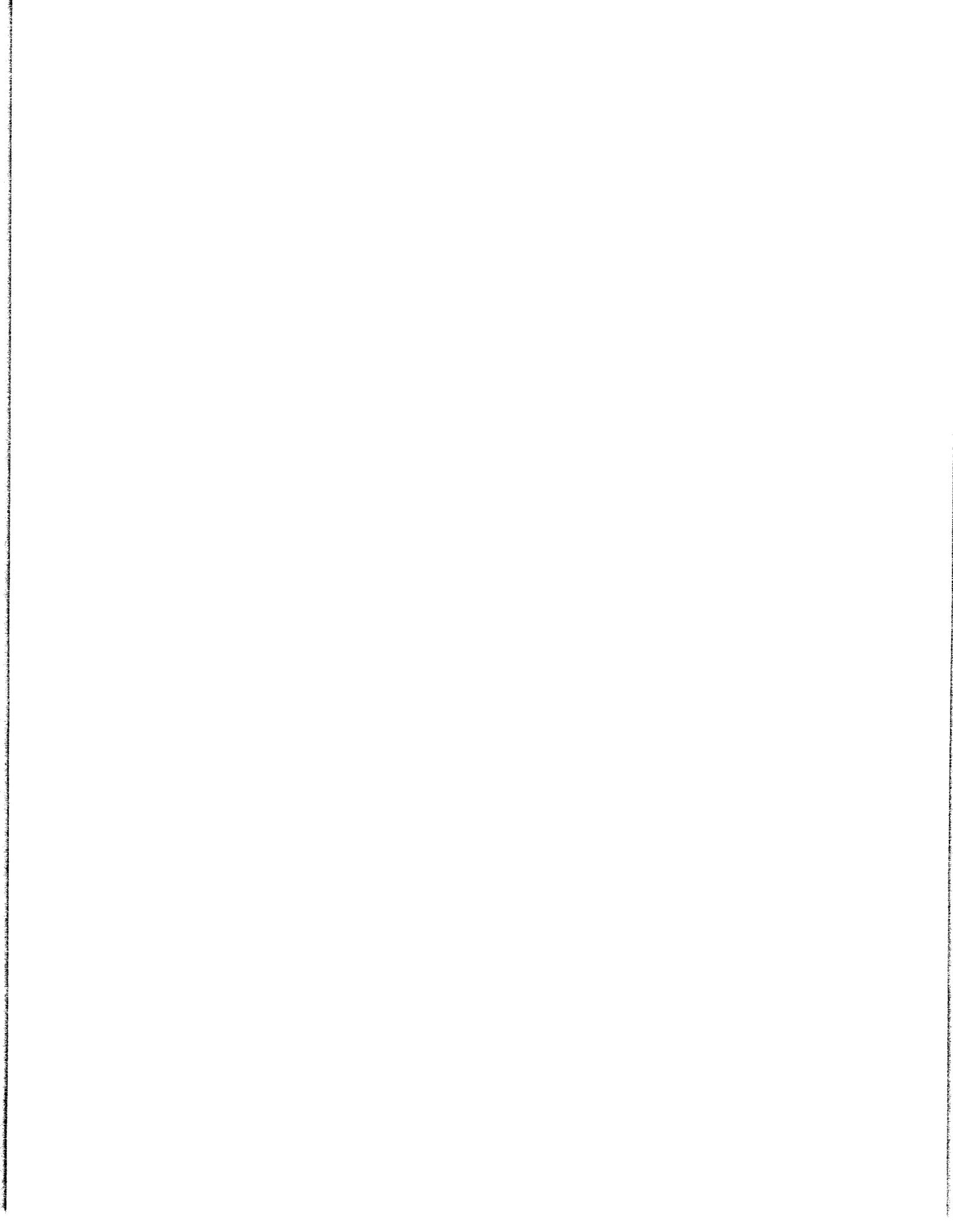


Table 7.--SUITABILITY FOR RANGELAND SEEDING

Soil name and map symbol	Limitation rating	Restrictive features
110:		
Aboten-----	Poorly suited-----	Too arid, droughty, small stones.
Jerval-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Bluewing-----	Poorly suited-----	Too arid, droughty, too sandy.
111:		
Aboten-----	Poorly suited-----	Too arid, droughty, small stones.
Dorper-----	Poorly suited-----	Too arid, rooting depth, excess salt.
112:		
Aboten-----	Poorly suited-----	Too arid, droughty, small stones.
Dorper-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Rednik-----	Poorly suited-----	Too arid, droughty, small stones.
113:		
Aboten-----	Poorly suited-----	Too arid, droughty, small stones.
114:		
Aboten-----	Poorly suited-----	Too arid, droughty, small stones.
Bluewing-----	Poorly suited-----	Too arid, droughty, too sandy.
120:		
Appian-----	Poorly suited-----	Too arid, too sandy, rooting depth.
Isolde-----	Poorly suited-----	Too arid, too sandy.
Genegraf-----	Poorly suited-----	Too arid, small stones, rooting depth.
130:		
Boomstick-----	Poorly suited-----	Droughty, small stones.
Majuba-----	Poorly suited-----	Small stones.
Sojur-----	Poorly suited-----	Too arid, droughty, small stones.
131:		
Boomstick-----	Poorly suited-----	Droughty, small stones.
Majuba-----	Poorly suited-----	Small stones.
Phliss-----	Poorly suited-----	Droughty, small stones.

Table 7.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
132: Boomstick-----	Poorly suited-----	Droughty, small stones.
Majuba-----	Poorly suited-----	Small stones.
139: Arclay-----	Poorly suited-----	Droughty, small stones, rooting depth.
141: Arclay-----	Poorly suited-----	Droughty, small stones, rooting depth.
Acrelane-----	Poorly suited-----	Droughty, small stones.
Soar-----	Poorly suited-----	Droughty, small stones.
142: Arclay-----	Poorly suited-----	Droughty, small stones, rooting depth.
Vium-----	Poorly suited-----	Too arid, droughty, small stones.
Slocave-----	Poorly suited-----	Too arid, droughty, small stones.
143: Ninemile-----	Poorly suited-----	Droughty, small stones, rooting depth.
Rock outcrop-----	Not rated-----	
145: Ninemile-----	Poorly suited-----	Droughty, small stones, rooting depth.
Shively-----	Well suited-----	
Rock outcrop-----	Not rated-----	
150: Boton-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Playas-----	Poorly suited-----	Too arid, droughty, rooting depth.
152: Benin-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Benin-----	Poorly suited-----	Too arid, excess salt, excess sodium.
160: Badland-----	Poorly suited-----	Too arid, droughty, depth to rock.

Table 7.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
161: Dune land-----	Poorly suited-----	Too arid, droughty, too sandy.
Playas-----	Poorly suited-----	Too arid, droughty, rooting depth.
163: Dune land-----	Poorly suited-----	Too arid, droughty, too sandy.
171: Bluewing-----	Poorly suited-----	Too arid, droughty, too sandy.
Toulon-----	Poorly suited-----	Too arid, small stones.
Rock outcrop-----	Not rated-----	
172: Bluewing-----	Poorly suited-----	Too arid, droughty, too sandy.
173: Bluewing-----	Poorly suited-----	Too arid, droughty, too sandy.
180: Biga-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Granshaw-----	Poorly suited-----	Too arid, droughty.
Labkey-----	Poorly suited-----	Too arid.
181: Biga-----	Poorly suited-----	Too arid, rooting depth, excess salt.
182: Biga-----	Poorly suited-----	Too arid, rooting depth, excess salt.
190: Cresal-----	Poorly suited-----	Too arid, excess salt, excess sodium.
201: Dorper-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Envol-----	Poorly suited-----	Too arid, droughty, rooting depth.
203: Dorper-----	Poorly suited-----	Too arid, rooting depth, excess salt.

Table 7.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
204:		
Dorper-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Jerval-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Dorper-----	Poorly suited-----	Too arid, rooting depth, excess salt.
206:		
Dorper-----	Poorly suited-----	Too arid, rooting depth, excess salt.
210:		
Dorper-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Aboten-----	Poorly suited-----	Too arid, droughty, small stones.
Kumiva-----	Poorly suited-----	Too arid
220:		
Cleavage-----	Poorly suited-----	Droughty, small stones.
Phliss-----	Poorly suited-----	Droughty, small stones.
Majuba-----	Poorly suited-----	Small stones.
221:		
Cleavage-----	Poorly suited-----	Droughty, small stones.
Burnborough-----	Poorly suited-----	Small stones.
230:		
Coldent-----	Poorly suited-----	Too arid, droughty, too sandy.
Isolde-----	Poorly suited-----	Too arid, too sandy.
Swingler-----	Poorly suited-----	Too arid, excess salt, excess sodium.
231:		
Coldent-----	Poorly suited-----	Too arid, droughty, too sandy.
Hawsley-----	Poorly suited-----	Too arid, droughty, too sandy.
Mazuma-----	Poorly suited-----	Too arid, excess salt, excess sodium.

Table 7.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
245: Dedmount-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Umberland-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Umberland-----	Poorly suited-----	Too arid, excess salt, excess sodium.
250: Devada-----	Poorly suited-----	Droughty, small stones, rooting depth.
Rock outcrop-----	Not rated-----	
300: Envol-----	Poorly suited-----	Too arid, droughty, rooting depth.
Frines-----	Poorly suited-----	Too arid, rooting depth.
Rock outcrop-----	Not rated-----	
302: Envol-----	Poorly suited-----	Too arid, droughty, rooting depth.
310: Eaglerock-----	Suited-----	Too arid, droughty.
Rock outcrop-----	Not rated-----	
401: Genegraf-----	Poorly suited-----	Too arid, small stones, rooting depth.
Dorper-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Bluewing-----	Poorly suited-----	Too arid, droughty, too sandy.
402: Genegraf-----	Poorly suited-----	Too arid, small stones, rooting depth.
Bluewing-----	Poorly suited-----	Too arid, droughty, too sandy.
Dorper-----	Poorly suited-----	Too arid, rooting depth, excess salt.
404: Genegraf-----	Poorly suited-----	Too arid, small stones, rooting depth.
Toulon-----	Poorly suited-----	Too arid, small stones.

Table 7.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
410: Granshaw-----	Poorly suited-----	Too arid, droughty.
Labkey-----	Poorly suited-----	Too arid.
411: Granshaw-----	Poorly suited-----	Too arid, droughty.
Biga-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Envol-----	Poorly suited-----	Too arid, droughty, rooting depth.
412: Granshaw-----	Poorly suited-----	Too arid, droughty.
Jerval-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Dorper-----	Poorly suited-----	Too arid, rooting depth, excess salt.
413: Granshaw-----	Poorly suited-----	Too arid, droughty.
Kumiva-----	Poorly suited-----	Too arid.
414: Granshaw-----	Poorly suited-----	Too arid.
415: Granshaw-----	Poorly suited-----	Too arid.
Biga-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Puett-----	Poorly suited-----	Too arid, droughty.
431: Grumblen-----	Poorly suited-----	Droughty, small stones, rooting depth.
Pickup-----	Poorly suited-----	Droughty, small stones, rooting depth.
432: Grumblen-----	Poorly suited-----	Droughty, small stones, rooting depth.
Pickup-----	Poorly suited-----	Droughty, small stones, rooting depth.
Old camp-----	Poorly suited-----	Droughty, small stones, rooting depth.
451: Hawsley-----	Poorly suited-----	Too arid, droughty, too sandy.

Table 7.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
452:		
Hawsley-----	Poorly suited-----	Too arid, droughty, soil blowing.
Labkey-----	Poorly suited-----	Too arid.
Genegraf-----	Poorly suited-----	Too arid, rooting depth, excess salt.
453:		
Hawsley-----	Poorly suited-----	Too arid, droughty, soil blowing.
Bluewing-----	Poorly suited-----	Too arid, droughty, too sandy.
456:		
Hawsley-----	Poorly suited-----	Too arid, droughty, soil blowing.
Badland-----	Poorly suited-----	Too arid, droughty, excess salt.
462:		
Hawsley-----	Poorly suited-----	Too arid, droughty, too sandy.
Mazuma-----	Poorly suited-----	Too arid, excess salt, excess sodium.
470:		
Deadyon-----	Suited-----	Too arid.
471:		
Deadyon-----	Poorly suited-----	Droughty, too sandy, soil blowing.
Granshaw-----	Poorly suited-----	Too arid, droughty.
472:		
Deadyon-----	Suited-----	Too arid, droughty.
480:		
Humboldt-----	Poorly suited-----	Excess salt, excess sodium.
500:		
Isolde-----	Poorly suited-----	Too arid, too sandy, soil blowing.
Typic torriorth-----	Poorly suited-----	Too arid, droughty, small stones.
Dune land-----	Poorly suited-----	Too arid, droughty, too sandy.
502:		
Isolde-----	Poorly suited-----	Too arid, too sandy, soil blowing.
Ragtown-----	Poorly suited-----	Too arid, excess salt.

Table 7.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
503: Isolde-----	Poorly suited-----	Too arid, too sandy, soil blowing.
510: Juva-----	Poorly suited-----	Too arid, excess sodium.
550: Kumiva-----	Poorly suited-----	Too arid.
Labkey-----	Poorly suited-----	Too arid.
Chumall-----	Poorly suited-----	Too arid, excess salt, excess sodium.
551: Kumiva-----	Poorly suited-----	Too arid.
Kumiva-----	Poorly suited-----	Too arid.
553: Kumiva-----	Poorly suited-----	Too arid.
559: Phliss-----	Poorly suited-----	Droughty, small stones.
Phliss-----	Poorly suited-----	Too arid, droughty, small stones.
Majuba-----	Poorly suited-----	Small stones.
560: Phliss-----	Poorly suited-----	Droughty, small stones.
562: Sondoa-----	Poorly suited-----	Too arid, excess salt, excess sodium.
563: Sondoa-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Swingler-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Isolde-----	Poorly suited-----	Too arid, too sandy.
650: Labkey-----	Poorly suited-----	Too arid.

Table 7.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
651:		
Labkey-----	Poorly suited-----	Too arid.
Mazuma-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Hawsley-----	Poorly suited-----	Too arid, droughty.
652:		
Labkey-----	Poorly suited-----	Too arid.
Hawsley-----	Poorly suited-----	Too arid, droughty.
Granshaw-----	Poorly suited-----	Too arid, droughty.
653:		
Labkey-----	Poorly suited-----	Too arid.
Mazuma-----	Poorly suited-----	Too arid, excess salt, excess sodium.
700:		
Mazuma-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Trocken-----	Poorly suited-----	Too arid, excess sodium.
701:		
Mazuma-----	Poorly suited-----	Too arid, excess salt, excess sodium.
702:		
Mazuma-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Swingler-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Toulon-----	Poorly suited-----	Too arid, small stones.
703:		
Mazuma-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Hardhat-----	Poorly suited-----	Too arid.
Hawsley-----	Poorly suited-----	Too arid, droughty.
704:		
Mazuma-----	Poorly suited-----	Too arid, excess salt, excess sodium.
705:		
Mazuma-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Mazuma-----	Poorly suited-----	Too arid, excess salt, excess sodium.

Table 7.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
706: Mazuma-----	Poorly suited-----	Too arid, excess salt, excess sodium.
707: Mazuma-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Coldent-----	Poorly suited-----	Too arid, droughty, too sandy.
708: Mazuma-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Ragtown-----	Poorly suited-----	Too arid, excess salt.
750: Pickup-----	Poorly suited-----	Droughty, small stones, rooting depth.
Rock outcrop-----	Not rated-----	
751: Pickup-----	Poorly suited-----	Droughty, small stones, rooting depth.
Grumblen-----	Poorly suited-----	Droughty, small stones, rooting depth.
Rock outcrop-----	Not rated-----	
752: Pickup-----	Poorly suited-----	Droughty, small stones, rooting depth.
Old camp-----	Poorly suited-----	Droughty, small stones, rooting depth.
Theon-----	Poorly suited-----	Too arid, droughty, small stones.
753: Pickup-----	Poorly suited-----	Droughty, small stones, rooting depth.
Rock outcrop-----	Not rated-----	
800: Old camp-----	Poorly suited-----	Droughty, small stones, rooting depth.
Dorper-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Pokergap-----	Poorly suited-----	Rooting depth, excess sodium.

Table 7.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
801: Old camp-----	Poorly suited-----	Droughty, small stones, rooting depth.
Sumya-----	Poorly suited-----	Droughty, depth to rock.
Pickup-----	Poorly suited-----	Droughty, small stones, rooting depth.
810: Perwaso-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Perwaso-----	Poorly suited-----	Too arid, excess salt, excess sodium.
850: Playas-----	Poorly suited-----	Too arid, droughty, rooting depth.
851: Pits,mine-----	Not rated-----	
852: Puett-----	Poorly suited-----	Too arid, droughty, erodes easily.
Dorper-----	Poorly suited-----	Too arid, rooting depth, excess salt.
960: Rednik-----	Poorly suited-----	Too arid, droughty, small stones.
Jungo-----	Poorly suited-----	Small stones.
Aboten-----	Poorly suited-----	Too arid, droughty, rooting depth.
970: Say-----	Poorly suited-----	Erodes easily.
Eaglerock-----	Suited-----	Too arid, droughty.
Ninemile-----	Poorly suited-----	Droughty, small stones, rooting depth.
980: Selbit-----	Poorly suited-----	Droughty, small stones.
Rock outcrop-----	Not rated-----	
981: Selbit-----	Poorly suited-----	Droughty, small stones.
Rock outcrop-----	Not rated-----	
Upsel-----	Poorly suited-----	Droughty, too sandy.

Table 7.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
990:		
Shawave-----	Suited-----	Too arid, droughty, excess sodium.
Granshaw-----	Poorly suited-----	Too arid, droughty.
Labkey-----	Poorly suited-----	Too arid.
991:		
Shawave-----	Suited-----	Too arid, droughty, excess sodium.
Slipback-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Granshaw-----	Poorly suited-----	Too arid, droughty.
992:		
Shawave-----	Suited-----	Too arid, droughty, excess sodium.
Deadyon-----	Suited-----	Too arid.
Slipback-----	Poorly suited-----	Too arid, rooting depth, excess salt.
993:		
Shawave-----	Suited-----	Too arid, droughty, excess sodium.
Biga-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Deadyon-----	Suited-----	Too arid.
994:		
Shawave-----	Suited-----	Too arid, droughty, excess sodium.
Biga-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Puett-----	Poorly suited-----	Too arid, droughty.
996:		
Slaw-----	Poorly suited-----	Too arid, excess salt, excess sodium.
Slaw-----	Poorly suited-----	Too arid, rooting depth, excess salt.
1020:		
Soar-----	Poorly suited-----	Droughty, small stones.
Arclay-----	Poorly suited-----	Droughty, small stones, rooting depth.
Soar-----	Poorly suited-----	Droughty, small stones.

Table 7.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
1021: Soar-----	Poorly suited-----	Droughty, small stones.
Arclay-----	Poorly suited-----	Droughty, small stones, rooting depth.
1022: Soar-----	Poorly suited-----	Droughty, small stones.
Arclay-----	Poorly suited-----	Droughty, small stones, rooting depth.
Rock outcrop-----	Not rated-----	
1030: Pokergap-----	Poorly suited-----	Small stones, rooting depth, excess sodium.
1031: Pokergap-----	Poorly suited-----	Small stones, rooting depth, excess sodium.
Dorper-----	Poorly suited-----	Too arid, rooting depth, excess salt.
1032: Pokergap-----	Poorly suited-----	Rooting depth, excess sodium.
Dorper-----	Poorly suited-----	Too arid, rooting depth, excess salt.
1033: Pokergap-----	Poorly suited-----	Excess sodium.
Jerval-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Dorper-----	Poorly suited-----	Too arid, rooting depth, excess salt.
1034: Pokergap-----	Poorly suited-----	Rooting depth, excess sodium.
1035: Pokergap-----	Poorly suited-----	Excess sodium.
Jerval-----	Poorly suited-----	Too arid, rooting depth, excess salt.
1040: Sojur-----	Poorly suited-----	Too arid, droughty, small stones.

Table 7.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
1041:		
Sojur-----	Poorly suited-----	Too arid, droughty, small stones.
Boomstick-----	Poorly suited-----	Droughty, small stones.
Rubble land-----	Poorly suited-----	Too arid, droughty, large stones.
1042:		
Sojur-----	Poorly suited-----	Too arid, droughty, small stones.
Phliss-----	Poorly suited-----	Droughty, small stones.
1050:		
Theon-----	Poorly suited-----	Too arid, droughty, small stones.
Singatse-----	Poorly suited-----	Too arid, droughty, small stones.
1051:		
Theon-----	Poorly suited-----	Too arid, droughty, small stones.
Singatse-----	Poorly suited-----	Too arid, droughty, small stones.
1052:		
Theon-----	Poorly suited-----	Too arid, droughty, small stones.
Grumblen-----	Poorly suited-----	Droughty, small stones, rooting depth.
Rubble land-----	Poorly suited-----	Too arid, droughty, large stones.
1053:		
Theon-----	Poorly suited-----	Too arid, droughty, small stones.
Rock outcrop-----	Not rated-----	
1054:		
Theon-----	Poorly suited-----	Too arid, droughty, small stones.
Old camp-----	Poorly suited-----	Droughty, small stones, rooting depth.
1055:		
Theon-----	Poorly suited-----	Too arid, droughty, small stones.
Old camp-----	Poorly suited-----	Droughty, small stones, rooting depth.
1056:		
Theon-----	Poorly suited-----	Too arid, droughty, small stones.
Pickup-----	Poorly suited-----	Droughty, small stones, rooting depth.

Table 7.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
1080:		
Toulon-----	Poorly suited-----	Too arid, small stones.
Appian-----	Poorly suited-----	Too arid, too sandy, rooting depth.
Bluewing-----	Poorly suited-----	Too arid, droughty, too sandy.
1100:		
Unionville-----	Poorly suited-----	Too arid.
Rock outcrop-----	Not rated-----	
1150:		
Slocave-----	Poorly suited-----	Too arid, droughty, small stones.
Arclay-----	Poorly suited-----	Droughty, small stones, rooting depth.
Rock outcrop-----	Not rated-----	
1151:		
Slocave-----	Poorly suited-----	Too arid, droughty, small stones.
Vium-----	Poorly suited-----	Too arid, droughty, small stones.
1190:		
Woolsey-----	Poorly suited-----	Too arid.
Bluewing-----	Poorly suited-----	Too arid, droughty.
1200:		
Acrelane-----	Poorly suited-----	Droughty, small stones.
Soar-----	Poorly suited-----	Droughty, small stones.
Arclay-----	Poorly suited-----	Droughty, small stones, rooting depth.
1201:		
Acrelane-----	Poorly suited-----	Droughty, small stones.
Wedekind-----	Suited-----	Too arid, droughty, depth to rock.
Arclay-----	Poorly suited-----	Droughty, small stones, rooting depth.
1202:		
Acrelane-----	Poorly suited-----	Droughty.
Rock outcrop-----	Not rated-----	

Table 7.--SUITABILITY FOR RANGELAND SEEDING--Continued

Soil name and map symbol	Limitation rating	Restrictive features
1203:		
Acrelane-----	Poorly suited-----	Droughty, small stones.
Shawave-----	Suited-----	Too arid, droughty, excess sodium.
Granshaw-----	Poorly suited-----	Too arid, droughty.
1204:		
Acrelane-----	Poorly suited-----	Droughty, small stones.
Arclay-----	Poorly suited-----	Droughty, small stones, rooting depth.
Eaglerock-----	Suited-----	Too arid, droughty.
1205:		
Acrelane-----	Poorly suited-----	Droughty, small stones.
Acrelane-----	Poorly suited-----	Droughty, small stones.
1210:		
Wesfil-----	Poorly suited-----	Too arid, droughty, small stones.
Sojur-----	Poorly suited-----	Too arid, droughty, small stones.
1300:		
Yipor-----	Poorly suited-----	Too arid, excess sodium.
1400:		
Jerval-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Dorper-----	Poorly suited-----	Too arid, rooting depth, excess salt.
1401:		
Jerval-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Aboten-----	Poorly suited-----	Too arid, droughty, rooting depth.
Dorper-----	Poorly suited-----	Too arid, rooting depth, excess salt.
1410:		
Slipback-----	Poorly suited-----	Too arid, rooting depth, excess salt.
Shawave-----	Suited-----	Too arid, droughty, excess sodium.
Nodur-----	Poorly suited-----	Too arid, rooting depth, excess salt.
1610:		
Levelock-----	Poorly suited-----	Excess salt, excess sodium.

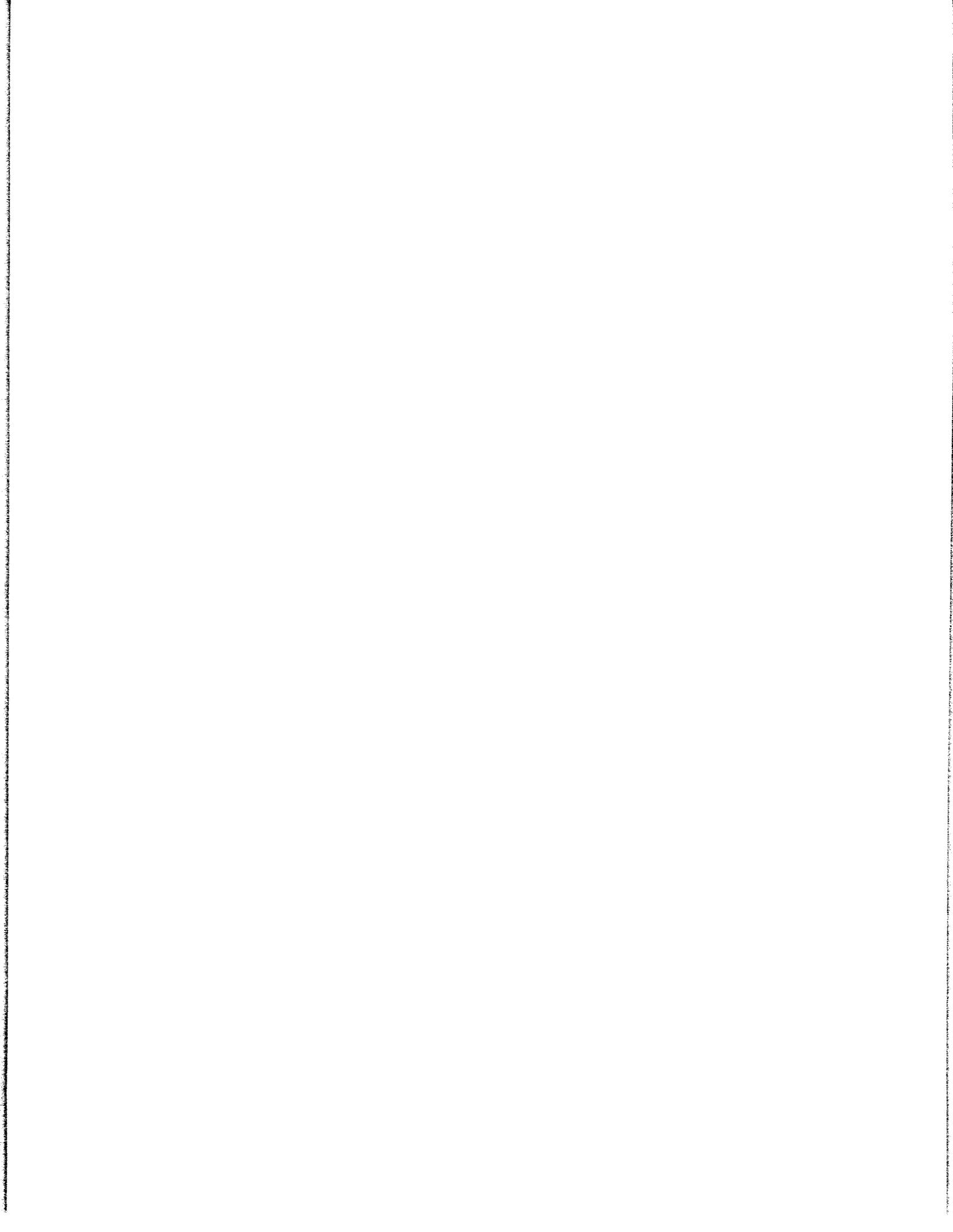


TABLE 9.--WILDLIFE HABITAT--Continued

Map symbol and soil name	Potential for habitat elements								Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Shrubs	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life	Range- land wild- life
132: Boomstick-----	---	---	Fair	---	---	Fair	---	---	---	---	---	Fair
Majuba-----	---	---	Fair	---	---	Fair	---	---	---	---	---	Fair
139: Arclay-----	---	---	Fair	---	---	Fair	---	---	---	---	---	Fair
141: Arclay-----	---	---	Fair	---	---	Fair	---	---	---	---	---	Fair
Acrelane-----	---	---	Fair	---	---	Fair	---	---	---	---	---	Fair
Soar-----	---	---	Fair	---	---	Fair	---	---	---	---	---	Fair
142: Arclay-----	---	---	Fair	---	---	Fair	---	---	---	---	---	Fair
Vium-----	---	---	Poor	---	---	Poor	---	---	---	---	---	Poor
Slocave-----	---	---	Poor	---	---	Poor	---	---	---	---	---	Poor
143: Ninemile-----	---	---	Fair	---	---	Fair	---	---	---	---	---	Fair
Rock Outcrop.												
145: Ninemile-----	---	---	Fair	---	---	Fair	---	---	---	---	---	Fair
Shively-----	---	---	Fair	---	---	Fair	---	---	---	---	---	Fair
Rock Outcrop.												
150: Boton-----	---	---	Very Poor	---	---	Very Poor	---	---	---	---	---	Very Poor
Playas-----	Very Poor	Very Poor	Very Poor	Very Poor	Very Poor	Very Poor	Very Poor	Good	Very Poor	Very Poor	Fair	Very Poor
152: Benin-----	---	---	Very Poor	---	---	Very Poor	---	---	---	---	---	Very Poor
Benin-----	---	---	Very Poor	---	---	Very Poor	---	---	---	---	---	Very Poor
160: Badland-----	Very Poor	Very Poor	Very Poor	Very Poor	Very Poor	Very Poor	Very Poor	Good	Very Poor	Very Poor	Fair	Very Poor
161: Dune Land-----	Very Poor	Very Poor	Very Poor	Very Poor	Very Poor	Very Poor	Very Poor	Very Poor	Very Poor	Very Poor	Very Poor	Very Poor
Playas-----	Very Poor	Very Poor	Very Poor	Very Poor	Very Poor	Very Poor	Very Poor	Good	Very Poor	Very Poor	Fair	Very Poor

TABLE 9.--WILDLIFE HABITAT--Continued

Map symbol and soil name	Potential for habitat elements								Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Shrubs	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life	Range- land wild- life
1400 (con.): Dorper-----	---	---	Very Poor	---	---	Very Poor	---	---	---	---	---	Very Poor
1401: Jerval-----	---	---	Very Poor	---	---	Very Poor	---	---	---	---	---	Very Poor
Aboten-----	---	---	Very Poor	---	---	Very Poor	---	---	---	---	---	Very Poor
Dorper-----	---	---	Very Poor	---	---	Very Poor	---	---	---	---	---	Very Poor
1410: Slipback-----	---	---	Very Poor	---	---	Very Poor	---	---	---	---	---	Very Poor
Shawave-----	---	---	Fair	---	---	Fair	---	---	---	---	---	Fair
Nodur-----	---	---	Very Poor	---	---	Very Poor	---	---	---	---	---	Very Poor
1610: Lovelock-----	---	---	Very Poor	---	---	Very Poor	Poor	Good	---	---	Fair	Very Poor

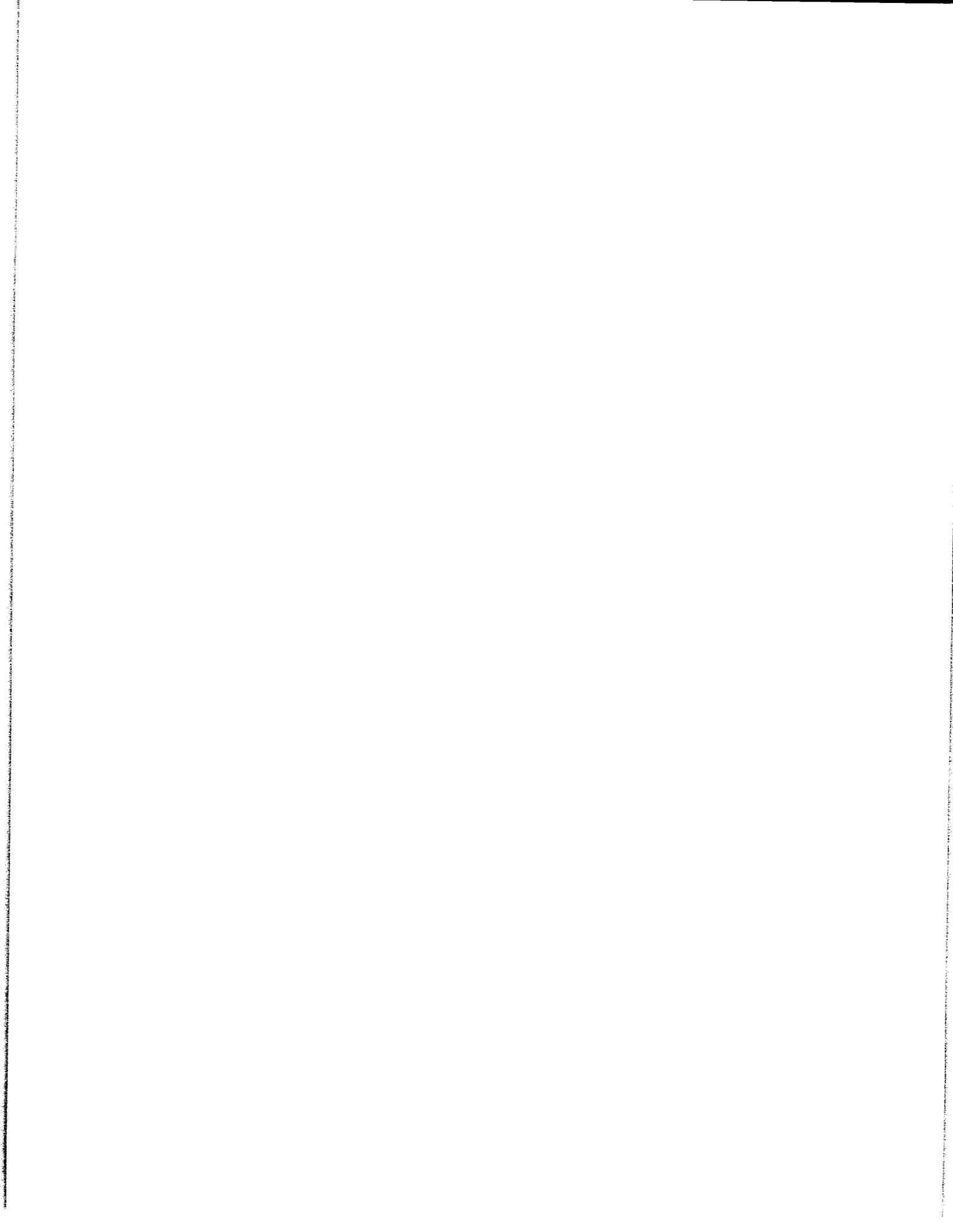


TABLE 10.--RECREATIONAL DEVELOPMENT

(The information in this report indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
110: Aboten-----	Severe: small stones, cemented pan, excess sodium	Severe: small stones, excess sodium, cemented pan	Severe: small stones, cemented pan, excess sodium	Severe: small stones	Severe: excess sodium, small stones, cemented pan
Jerval-----	Severe: excess sodium	Severe: excess sodium	Severe: small stones, excess sodium	Moderate: dusty	Severe: excess sodium
Bluewing-----	Moderate: small stones	Moderate: small stones	Severe: small stones	Slight	Severe: droughty
111: Aboten-----	Severe: small stones, cemented pan, excess sodium	Severe: small stones, excess sodium, cemented pan	Severe: slope, small stones, cemented pan	Severe: small stones	Severe: excess sodium, small stones, cemented pan
Dorper-----	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Severe: small stones	Severe: excess sodium, small stones
112: Aboten-----	Severe: small stones, cemented pan, excess sodium	Severe: small stones, excess sodium, cemented pan	Severe: slope, small stones, cemented pan	Severe: small stones	Severe: excess sodium, small stones, cemented pan
Dorper-----	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Severe: small stones	Severe: excess sodium, small stones
Rednik-----	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Moderate: slope	Severe: small stones, droughty, slope
113: Aboten-----	Severe: slope, small stones, cemented pan	Severe: slope, small stones, excess sodium	Severe: slope, small stones, cemented pan	Severe: small stones	Severe: excess sodium, small stones, slope
114: Aboten-----	Severe: small stones, cemented pan, excess sodium	Severe: small stones, excess sodium, cemented pan	Severe: small stones, cemented pan, excess sodium	Severe: small stones	Severe: excess sodium, small stones, cemented pan
Bluewing-----	Moderate: small stones	Moderate: small stones	Severe: small stones	Slight	Severe: droughty
120: Appian-----	Severe: excess sodium	Severe: excess sodium	Severe: excess sodium	Moderate: too sandy	Severe: excess sodium

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
120 (con.): Isolde-----	Severe: too sandy	Severe: too sandy	Severe: slope, too sandy	Severe: too sandy	Moderate: droughty, slope
Genegraf-----	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Severe: small stones	Severe: excess sodium, small stones
130: Boomstick-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope	Severe: small stones, slope, depth to rock
Majuba-----	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: slope	Severe: small stones, slope
Sojur-----	Severe: slope, large stones, small stones	Severe: slope, large stones, small stones	Severe: large stones, slope, small stones	Severe: slope, small stones	Severe: small stones, slope, depth to rock
131: Boomstick-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope	Severe: small stones, slope, depth to rock
Majuba-----	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: slope	Severe: small stones, slope
Phliss-----	Severe: slope, large stones, small stones	Severe: slope, large stones, small stones	Severe: large stones, slope, small stones	Severe: slope, small stones	Severe: small stones, large stones, slope
132: Boomstick-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope	Severe: small stones, slope, depth to rock
Majuba-----	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: slope	Severe: small stones, slope
139: Arclay-----	Severe: small stones, depth to rock	Severe: small stones, depth to rock	Severe: slope, small stones, depth to rock	Slight	Severe: small stones, depth to rock
141: Arclay-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope	Severe: small stones, slope, depth to rock

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
141 (con.): Acrelane-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones	Severe: small stones, slope, depth to rock
Soar-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope	Severe: small stones, slope, depth to rock
142: Arclay-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope	Severe: small stones, slope, depth to rock
Vium-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones	Severe: small stones, droughty, slope
Slocave-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones	Severe: small stones, slope, depth to rock
143: Ninemile-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones	Severe: small stones, slope, depth to rock
Rock Outcrop.					
145: Ninemile-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones	Severe: small stones, slope, depth to rock
Shively-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Rock Outcrop.					
150: Boton-----	Moderate: dusty	Moderate: dusty	Moderate: dusty	Moderate: dusty	Slight
Playas-----	Severe: flooding, ponding, percs slowly	Severe: ponding, excess salt, percs slowly	Severe: ponding, percs slowly, excess salt	Severe: ponding	Severe: excess salt, ponding, droughty
152: Benin-----	Severe: excess salt	Severe: excess salt	Severe: excess salt	Slight	Severe: excess salt
Benin-----	Severe: flooding, excess salt	Severe: excess salt	Severe: excess salt	Slight	Severe: excess salt

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
160: Badland-----	Severe: slope, depth to rock, excess salt	Severe: slope, excess salt, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, erodes easily	Severe: excess salt, slope, depth to rock
161: Dune Land-----	Severe: slope, too sandy	Severe: slope, too sandy	Severe: slope, too sandy	Severe: too sandy	Severe: droughty, slope
Playas-----	Severe: ponding, percs slowly, excess salt	Severe: ponding, excess salt, percs slowly	Severe: ponding, percs slowly, excess salt	Severe: ponding	Severe: excess salt, ponding, droughty
163: Dune Land-----	Severe: slope, too sandy	Severe: slope, too sandy	Severe: slope, too sandy	Severe: too sandy	Severe: droughty, slope
171: Bluewing-----	Moderate: small stones	Moderate: small stones	Severe: small stones	Slight	Severe: droughty
Toulon-----	Severe: small stones	Severe: small stones	Severe: small stones	Moderate: dusty	Severe: small stones, droughty
Rock Outcrop.					
172: Bluewing-----	Moderate: small stones	Moderate: small stones	Severe: small stones	Slight	Severe: droughty
173: Bluewing-----	Severe: flooding, small stones	Severe: small stones	Severe: small stones, flooding	Moderate: too sandy, flooding	Severe: small stones, droughty, flooding
180: Biga-----	Severe: excess sodium	Severe: excess sodium	Severe: small stones, excess sodium	Slight	Severe: excess sodium
Granshaw-----	Moderate: small stones	Moderate: small stones	Severe: small stones	Slight	Moderate: small stones, droughty
Labkey-----	Moderate: small stones	Moderate: small stones	Severe: small stones	Slight	Severe: droughty
181: Biga-----	Severe: excess sodium	Severe: excess sodium	Severe: small stones, excess sodium	Slight	Severe: excess sodium
182: Biga-----	Severe: excess sodium	Severe: excess sodium	Severe: small stones, excess sodium	Moderate: dusty	Severe: excess sodium

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
190: Cresal-----	Moderate: dusty	Moderate: dusty	Moderate: dusty	Moderate: dusty	Slight
201: Dorper-----	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Severe: slope, small stones, excess sodium	Severe: small stones	Severe: excess sodium, small stones
Envol-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Moderate: slope, dusty	Severe: small stones, slope, depth to rock
203: Dorper-----	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Severe: small stones	Severe: excess sodium, small stones
204: Dorper-----	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Moderate: dusty	Severe: excess sodium, small stones
Jerval-----	Severe: excess sodium	Severe: excess sodium	Severe: small stones, excess sodium	Moderate: dusty	Severe: excess sodium
Dorper-----	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Severe: small stones	Severe: excess sodium, small stones
206: Dorper-----	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Slight	Severe: excess sodium, small stones
210: Dorper-----	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Moderate: dusty	Severe: excess sodium, small stones
Aboten-----	Severe: small stones, cemented pan, excess sodium	Severe: small stones, excess sodium, cemented pan	Severe: slope, small stones, cemented pan	Severe: small stones	Severe: excess sodium, small stones, cemented pan
Kumiva-----	Severe: flooding	Moderate: dusty	Moderate: slope, dusty	Moderate: dusty	Slight
220: Cleavage-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones	Severe: small stones, slope, depth to rock
Phliss-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones	Severe: small stones, slope, depth to rock

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
220 (con.): Majuba-----	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: slope	Severe: small stones, slope
221: Cleavage-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones	Severe: small stones, slope, depth to rock
Burnborough-----	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: slope	Severe: small stones, slope
230: Coldent-----	Severe: too sandy	Severe: too sandy	Severe: small stones, too sandy	Severe: too sandy	Moderate: small stones, droughty
Isolde-----	Severe: too sandy	Severe: too sandy	Severe: slope, too sandy	Severe: too sandy	Moderate: droughty, slope
Swingler-----	Severe: excess salt	Severe: excess salt	Severe: excess salt	Moderate: dusty	Severe: excess salt
231: Coldent-----	Severe: too sandy	Severe: too sandy	Severe: small stones, too sandy	Severe: too sandy	Moderate: small stones, droughty
Hawsley-----	Severe: too sandy	Severe: too sandy	Severe: slope, too sandy	Severe: too sandy	Moderate: droughty, slope
Mazuma-----	Severe: excess salt	Severe: excess salt	Severe: excess salt	Moderate: dusty	Severe: excess salt
245: Dedmount-----	Severe: flooding	Moderate: dusty	Moderate: dusty	Moderate: dusty	Slight
Umberland-----	Severe: flooding, excess sodium, excess salt	Severe: excess sodium, excess salt	Severe: excess sodium, excess salt	Slight	Severe: excess salt, excess sodium
Umberland-----	Severe: ponding, excess sodium, excess salt	Severe: ponding, excess sodium, excess salt	Severe: ponding, excess sodium, excess salt	Severe: ponding	Severe: excess salt, excess sodium, ponding
250: Devada-----	Severe: slope, large stones, depth to rock	Severe: slope, large stones, depth to rock	Severe: large stones, slope, small stones	Severe: large stones, slope	Severe: large stones, slope, depth to rock
Rock Outcrop.					

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
300: Envol-----	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope	Severe: slope, depth to rock
Frines-----	Moderate: slope, small stones, dusty	Moderate: slope, small stones, dusty	Severe: slope, small stones	Moderate: dusty	Moderate: small stones, large stones, slope
Rock Outcrop.					
302: Envol-----	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope	Severe: slope, depth to rock
310: Eaglerock-----	Severe: slope	Severe: slope	Severe: slope, small stones	Severe: slope	Severe: slope
Rock Outcrop.					
401: Genegraf-----	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Severe: small stones	Severe: excess sodium, small stones
Dorper-----	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Severe: small stones	Severe: excess sodium, small stones
Bluewing-----	Severe: small stones	Severe: small stones	Severe: small stones	Severe: small stones	Severe: small stones, droughty
402: Genegraf-----	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Severe: small stones	Severe: excess sodium, small stones
Bluewing-----	Moderate: small stones	Moderate: small stones	Severe: small stones	Slight	Severe: droughty
Dorper-----	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Severe: small stones	Severe: excess sodium, small stones
404: Genegraf-----	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Severe: small stones	Severe: excess sodium, small stones
Toulon-----	Severe: small stones	Severe: small stones	Severe: small stones	Moderate: dusty	Severe: small stones, droughty

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
410: Granshaw-----	Moderate: small stones	Moderate: small stones	Severe: small stones	Slight	Moderate: small stones, droughty
Labkey-----	Moderate: small stones	Moderate: small stones	Severe: small stones	Slight	Severe: droughty
411: Granshaw-----	Moderate: small stones	Moderate: small stones	Severe: small stones	Slight	Moderate: small stones, droughty
Biga-----	Severe: excess sodium	Severe: excess sodium	Severe: small stones, excess sodium	Slight	Severe: excess sodium
Envol-----	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, small stones, depth to rock	Moderate: slope, dusty	Severe: slope, depth to rock
412: Granshaw-----	Moderate: small stones	Moderate: small stones	Severe: small stones	Slight	Moderate: small stones, droughty
Jerval-----	Severe: excess sodium	Severe: excess sodium	Severe: small stones, excess sodium	Moderate: dusty	Severe: excess sodium
Dorper-----	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Moderate: dusty	Severe: excess sodium, small stones
413: Granshaw-----	Moderate: small stones	Moderate: small stones	Severe: small stones	Slight	Moderate: small stones, droughty
Kumiva-----	Severe: flooding	Moderate: small stones	Severe: small stones	Slight	Moderate: small stones
414: Granshaw-----	Moderate: small stones, dusty	Moderate: small stones, dusty	Severe: small stones	Moderate: dusty	Moderate: small stones, droughty
415: Granshaw-----	Moderate: small stones, dusty	Moderate: small stones, dusty	Severe: small stones	Moderate: dusty	Moderate: small stones, droughty
Biga-----	Severe: excess sodium	Severe: excess sodium	Severe: small stones, excess sodium	Slight	Severe: excess sodium
Puett-----	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Moderate: slope	Severe: slope, depth to rock

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
431: Grumblen-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope	Severe: small stones, slope, depth to rock
Pickup-----	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: slope	Severe: small stones, slope
432: Grumblen-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope	Severe: small stones, slope, depth to rock
Pickup-----	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: slope	Severe: small stones, slope
Old Camp-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope	Severe: small stones, slope, depth to rock
451: Hawsley-----	Severe: too sandy	Severe: too sandy	Severe: too sandy	Severe: too sandy	Moderate: droughty
452: Hawsley-----	Severe: too sandy	Severe: too sandy	Severe: too sandy	Severe: too sandy	Moderate: droughty, too sandy
Labkey-----	Moderate: small stones	Moderate: small stones	Severe: small stones	Slight	Severe: droughty
Genegraf-----	Severe: excess sodium	Severe: excess sodium	Severe: small stones, excess sodium	Slight	Severe: excess sodium
453: Hawsley-----	Severe: too sandy	Severe: too sandy	Severe: too sandy	Severe: too sandy	Moderate: droughty, too sandy
Bluewing-----	Severe: flooding, small stones	Severe: small stones	Severe: large stones, slope, small stones	Severe: small stones	Severe: small stones, droughty
456: Hawsley-----	Severe: slope, too sandy	Severe: slope, too sandy	Severe: slope, too sandy	Severe: too sandy	Severe: slope
Badland-----	Severe: slope, percs slowly, excess salt	Severe: slope, excess salt, percs slowly	Severe: slope, percs slowly, excess salt	Severe: erodes easily	Severe: excess salt, slope

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
462: Hawsley-----	Severe: too sandy	Severe: too sandy	Severe: slope, too sandy	Severe: too sandy	Moderate: droughty, slope
Mazuma-----	Severe: excess salt	Severe: excess salt	Severe: excess salt	Moderate: dusty	Severe: excess salt
470: Deadyon-----	Moderate: dusty	Moderate: dusty	Moderate: small stones, dusty	Moderate: dusty	Moderate: droughty
471: Deadyon-----	Slight	Slight	Moderate: slope, small stones	Slight	Moderate: droughty
Granshaw-----	Moderate: small stones	Moderate: small stones	Severe: small stones	Slight	Moderate: small stones, droughty
472: Deadyon-----	Slight	Slight	Moderate: slope, small stones	Slight	Moderate: droughty
480: Humboldt-----	Severe: flooding, wetness, excess salt	Severe: wetness, excess salt	Severe: wetness, flooding, excess salt	Severe: wetness	Severe: excess salt, wetness, flooding
500: Isolde-----	Severe: too sandy	Severe: too sandy	Severe: slope, too sandy	Severe: too sandy	Moderate: droughty
Typic Torriorthents--	Severe: small stones	Severe: small stones	Severe: small stones	Severe: small stones	Severe: small stones
Dune Land-----	Severe: slope, too sandy	Severe: slope, too sandy	Severe: slope, too sandy	Severe: too sandy	Severe: droughty, slope
502: Isolde-----	Severe: too sandy	Severe: too sandy	Severe: slope, too sandy	Severe: too sandy	Moderate: droughty, slope
Ragtown-----	Severe: flooding, excess salt	Severe: excess salt	Severe: flooding, excess salt	Moderate: flooding, dusty	Severe: excess salt, flooding
503: Isolde-----	Severe: too sandy	Severe: too sandy	Severe: slope, too sandy	Severe: too sandy	Moderate: droughty, slope

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
510: Juva-----	Severe: flooding	Moderate: dusty	Moderate: flooding, dusty	Moderate: dusty	Moderate: droughty, flooding
550: Kumiva-----	Severe: flooding	Slight	Moderate: small stones, flooding	Slight	Moderate: flooding
Labkey-----	Moderate: small stones	Moderate: small stones	Severe: small stones	Slight	Severe: droughty
Chumall-----	Severe: excess salt	Severe: excess salt	Severe: excess salt	Moderate: dusty	Severe: excess salt
551: Kumiva-----	Severe: flooding	Moderate: dusty	Moderate: dusty	Moderate: dusty	Slight
Kumiva-----	Severe: flooding	Slight	Moderate: small stones, flooding	Slight	Moderate: flooding
553: Kumiva-----	Severe: flooding	Slight	Moderate: small stones, flooding	Slight	Moderate: flooding
559: Phliss-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones	Severe: small stones, slope, depth to rock
Phliss-----	Severe: slope, large stones, small stones	Severe: slope, large stones, small stones	Severe: large stones, slope, small stones	Severe: slope, small stones	Severe: small stones, large stones, slope
Majuba-----	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: slope	Severe: small stones, slope
560: Phliss-----	Severe: slope, large stones, small stones	Severe: slope, large stones, small stones	Severe: large stones, slope, small stones	Severe: slope, small stones	Severe: small stones, large stones, slope
562: Sondoa-----	Severe: excess salt	Severe: excess salt	Severe: excess salt	Moderate: dusty	Severe: excess salt
563: Sondoa-----	Severe: excess salt	Severe: excess salt	Severe: excess salt	Moderate: dusty	Severe: excess salt
Swingler-----	Severe: excess salt	Severe: excess salt	Severe: excess salt	Moderate: dusty	Severe: excess salt

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
563 (con.): Isolde-----	Severe: too sandy	Severe: too sandy	Severe: slope, too sandy	Severe: too sandy	Moderate: droughty, slope
650: Labkey-----	Moderate: small stones	Moderate: small stones	Severe: small stones	Slight	Severe: droughty
651: Labkey-----	Moderate: slope, small stones	Moderate: slope, small stones	Severe: slope, small stones	Slight	Severe: droughty
Mazuma-----	Severe: excess salt	Severe: excess salt	Severe: excess salt	Slight	Severe: excess salt
Hawsley-----	Severe: too sandy	Severe: too sandy	Severe: too sandy	Severe: too sandy	Moderate: droughty, too sandy
652: Labkey-----	Moderate: small stones	Moderate: small stones	Severe: small stones	Slight	Severe: droughty
Hawsley-----	Severe: too sandy	Severe: too sandy	Severe: too sandy	Severe: too sandy	Moderate: droughty, too sandy
Granshaw-----	Moderate: small stones	Moderate: small stones	Severe: small stones	Slight	Moderate: small stones, droughty
653: Labkey-----	Moderate: small stones	Moderate: small stones	Severe: small stones	Slight	Severe: droughty
Mazuma-----	Slight	Slight	Moderate: slope, small stones	Slight	Slight
700: Mazuma-----	Moderate: dusty	Moderate: dusty	Moderate: slope, small stones, dusty	Moderate: dusty	Slight
Trocken-----	Moderate: small stones, dusty	Moderate: small stones, dusty	Severe: small stones	Moderate: dusty	Moderate: small stones, large stones, droughty
701: Mazuma-----	Moderate: dusty	Moderate: dusty	Moderate: slope, small stones, dusty	Moderate: dusty	Slight
702: Mazuma-----	Severe: excess salt	Severe: excess salt	Severe: excess salt	Moderate: dusty	Severe: excess salt

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
702 (con.): Swingler-----	Severe: excess salt	Severe: excess salt	Severe: excess salt	Moderate: dusty	Severe: excess salt
Toulon-----	Severe: small stones	Severe: small stones	Severe: small stones	Moderate: dusty	Severe: small stones, droughty
703: Mazuma-----	Slight	Slight	Moderate: small stones	Slight	Slight
Hardhat-----	Severe: too sandy	Severe: too sandy	Severe: too sandy	Severe: too sandy	Moderate: too sandy
Hawsley-----	Severe: too sandy	Severe: too sandy	Severe: too sandy	Severe: too sandy	Moderate: droughty, too sandy
704: Mazuma-----	Severe: excess salt	Severe: excess salt	Severe: excess salt	Slight	Severe: excess salt
705: Mazuma-----	Slight	Slight	Moderate: small stones	Slight	Slight
Mazuma-----	Severe: excess salt	Severe: excess salt	Severe: excess salt	Slight	Severe: excess salt
706: Mazuma-----	Severe: excess salt	Severe: excess salt	Severe: excess salt	Moderate: dusty	Severe: excess salt
707: Mazuma-----	Slight	Slight	Moderate: slope, small stones	Slight	Slight
Coldent-----	Severe: too sandy	Severe: too sandy	Severe: small stones, too sandy	Severe: too sandy	Moderate: small stones, droughty
708: Mazuma-----	Severe: excess salt	Severe: excess salt	Severe: excess salt	Moderate: dusty	Severe: excess salt
Ragtown-----	Severe: flooding, excess salt	Severe: excess salt	Severe: flooding, excess salt	Moderate: flooding	Severe: excess salt, flooding
750: Pickup-----	Severe: small stones	Severe: small stones	Severe: slope, small stones	Moderate: dusty	Severe: small stones
Rock Outcrop.					
751: Pickup-----	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: slope	Severe: small stones, slope

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
751 (con.): Grumblen----- Rock Outcrop.	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope	Severe: small stones, slope, depth to rock
752: Pickup----- Old Camp----- Theon-----	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: slope	Severe: small stones, slope
753: Pickup----- Rock Outcrop.	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: slope	Severe: small stones, slope
800: Old Camp----- Dorper----- Pokergap-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope	Severe: small stones, slope, depth to rock
801: Old Camp----- Sumya----- Pickup-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Moderate: slope, dusty	Severe: excess sodium, small stones, slope
	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: large stones, slope, small stones	Severe: erodes easily	Severe: excess sodium, slope
	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope	Severe: small stones, slope, depth to rock
	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: large stones, slope, small stones	Severe: slope	Severe: slope, depth to rock
	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: slope	Severe: small stones, slope

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
810: Perwaso-----	Severe: flooding, excess salt	Severe: excess salt	Severe: excess salt	Moderate: dusty	Severe: excess salt
Perwaso-----	Severe: flooding, excess salt	Severe: excess salt	Severe: excess salt	Moderate: dusty	Severe: excess salt
850: Playas-----	Severe: ponding, percs slowly, excess salt	Severe: ponding, excess salt, percs slowly	Severe: ponding, percs slowly, excess salt	Severe: ponding	Severe: excess salt, ponding, droughty
851: Pits,Mine.					
852: Puett-----	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope	Severe: slope, depth to rock
Dorper-----	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Severe: small stones	Severe: excess sodium, small stones
960: Rednik-----	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: slope	Severe: small stones, droughty, slope
Jungo-----	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: slope	Severe: small stones, slope
Aboten-----	Severe: cemented pan, excess sodium	Severe: excess sodium, cemented pan	Severe: slope, small stones, cemented pan	Moderate: dusty	Severe: excess sodium, cemented pan
970: Say-----	Severe: slope	Severe: slope	Severe: large stones, slope, small stones	Severe: slope	Severe: slope
Eaglerock-----	Severe: slope	Severe: slope	Severe: slope, small stones	Severe: slope	Severe: slope
Ninemile-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones	Severe: small stones, slope, depth to rock
980: Selbit-----	Severe: slope, small stones, too sandy	Severe: slope, too sandy, small stones	Severe: slope, small stones, too sandy	Severe: too sandy, slope, small stones	Severe: small stones, large stones, droughty

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
980 (con.): Rock Outcrop.					
981: Selbit----- Rock Outcrop.	Severe: slope, small stones, too sandy	Severe: slope, too sandy, small stones	Severe: slope, small stones, too sandy	Severe: too sandy, slope, small stones	Severe: small stones, large stones, droughty
Upsel-----	Severe: slope	Severe: slope	Severe: slope, small stones	Severe: slope	Severe: slope
990: Shawave----- Granshaw----- Labkey-----	Moderate: small stones Moderate: small stones Moderate: small stones	Moderate: small stones Moderate: small stones Moderate: small stones	Severe: small stones Severe: small stones Severe: small stones	Slight Slight Slight	Moderate: small stones Moderate: small stones, droughty Severe: droughty
991: Shawave----- Slipback----- Granshaw-----	Moderate: small stones Severe: excess sodium Moderate: small stones	Moderate: small stones Severe: excess sodium Moderate: small stones	Severe: small stones Severe: excess sodium Severe: small stones	Slight Slight Slight	Moderate: small stones Severe: excess sodium Moderate: small stones, droughty
992: Shawave----- Deadyon----- Slipback-----	Moderate: small stones Moderate: dusty Severe: excess sodium	Moderate: small stones Moderate: dusty Severe: excess sodium	Severe: small stones Moderate: slope, small stones, dusty Severe: excess sodium	Slight Moderate: dusty Slight	Moderate: small stones Moderate: droughty Severe: excess sodium
993: Shawave----- Biga----- Deadyon-----	Moderate: small stones Severe: excess sodium Moderate: dusty	Moderate: small stones Severe: excess sodium Moderate: dusty	Severe: small stones Severe: small stones, excess sodium Moderate: slope, small stones, dusty	Slight Moderate: dusty Moderate: dusty	Moderate: small stones Severe: excess sodium Moderate: droughty

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
994: Shawave-----	Moderate: slope, small stones	Moderate: slope, small stones	Severe: slope, small stones	Slight	Moderate: small stones, slope
Biga-----	Severe: excess sodium	Severe: excess sodium	Severe: small stones, excess sodium	Moderate: dusty	Severe: excess sodium
Puett-----	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Moderate: slope	Severe: slope, depth to rock
996: Slaw-----	Severe: excess salt	Severe: excess salt	Severe: excess salt	Moderate: dusty	Severe: excess salt
Slaw-----	Severe: flooding, excess salt	Severe: excess salt	Severe: excess salt	Moderate: dusty	Severe: excess salt
1020: Soar-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Moderate: slope	Severe: small stones, slope, depth to rock
Arclay-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Moderate: slope	Severe: small stones, slope, depth to rock
Soar-----	Severe: small stones, depth to rock	Severe: small stones, depth to rock	Severe: slope, small stones, depth to rock	Slight	Severe: small stones, depth to rock
1021: Soar-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope	Severe: small stones, slope, depth to rock
Arclay-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope	Severe: small stones, slope, depth to rock
1022: Soar-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope	Severe: small stones, slope, depth to rock
Arclay-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones	Severe: small stones, slope, depth to rock
Rock Outcrop.					

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
1030: Pokergap-----	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Moderate: dusty	Severe: excess sodium, small stones
1031: Pokergap-----	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Moderate: dusty	Severe: excess sodium, small stones
Dorper-----	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Severe: small stones	Severe: excess sodium, small stones
1032: Pokergap-----	Severe: excess sodium	Severe: excess sodium	Severe: slope, excess sodium	Severe: erodes easily	Severe: excess sodium
Dorper-----	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Severe: large stones, slope, small stones	Moderate: dusty	Severe: excess sodium, small stones
1033: Pokergap-----	Severe: excess sodium	Severe: excess sodium	Severe: excess sodium	Moderate: dusty	Severe: excess sodium
Jerval-----	Severe: excess sodium	Severe: excess sodium	Severe: small stones, excess sodium	Moderate: dusty	Severe: excess sodium
Dorper-----	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Moderate: dusty	Severe: excess sodium, small stones
1034: Pokergap-----	Severe: excess sodium	Severe: excess sodium	Severe: slope, excess sodium	Severe: erodes easily	Severe: excess sodium
1035: Pokergap-----	Severe: excess sodium	Severe: excess sodium	Severe: excess sodium	Moderate: dusty	Severe: excess sodium
Jerval-----	Severe: excess sodium	Severe: excess sodium	Severe: small stones, excess sodium	Moderate: dusty	Severe: excess sodium
1040: Sojur-----	Severe: slope, large stones, small stones	Severe: slope, large stones, small stones	Severe: large stones, slope, small stones	Severe: slope, small stones	Severe: small stones, slope, depth to rock
1041: Sojur-----	Severe: slope, large stones, small stones	Severe: slope, large stones, small stones	Severe: large stones, slope, small stones	Severe: slope, small stones	Severe: small stones, slope, depth to rock

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
1041 (con.): Boomstick-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope	Severe: small stones, slope, depth to rock
Rubble Land-----	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: large stones, slope, small stones	Severe: small stones, large stones, droughty
1042: Sojur-----	Severe: slope, large stones, small stones	Severe: slope, large stones, small stones	Severe: large stones, slope, small stones	Severe: slope, small stones	Severe: small stones, slope, depth to rock
Phliss-----	Severe: slope, large stones, small stones	Severe: slope, large stones, small stones	Severe: large stones, slope, small stones	Severe: slope, small stones	Severe: small stones, large stones, slope
1050: Theon-----	Severe: slope, large stones, depth to rock	Severe: slope, large stones, depth to rock	Severe: large stones, slope, small stones	Severe: large stones, slope	Severe: large stones, slope, depth to rock
Singatse-----	Severe: slope, large stones, small stones	Severe: slope, large stones, small stones	Severe: large stones, slope, small stones	Severe: slope, small stones	Severe: small stones, slope, depth to rock
1051: Theon-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones	Severe: small stones, slope, depth to rock
Singatse-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope	Severe: small stones, slope, depth to rock
1052: Theon-----	Severe: slope, large stones, depth to rock	Severe: slope, large stones, depth to rock	Severe: large stones, slope, small stones	Severe: large stones, slope	Severe: large stones, slope, depth to rock
Grumblen-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope	Severe: small stones, slope, depth to rock
Rubble Land-----	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: large stones, slope, small stones	Severe: small stones, large stones, droughty

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
1053: Theon----- Rock Outcrop.	Severe: slope, large stones, depth to rock	Severe: slope, large stones, depth to rock	Severe: large stones, slope, small stones	Severe: large stones, slope	Severe: large stones, slope, depth to rock
1054: Theon----- Old Camp-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones	Severe: small stones, slope, depth to rock
1055: Theon----- Old Camp-----	Severe: slope, large stones, depth to rock	Severe: slope, large stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope	Severe: small stones, slope, depth to rock
1056: Theon----- Pickup-----	Severe: slope, large stones, depth to rock	Severe: slope, large stones, depth to rock	Severe: large stones, slope, small stones	Severe: large stones	Severe: large stones, slope, depth to rock
1080: Toulon----- Appian----- Bluewing-----	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Moderate: slope, dusty	Severe: small stones, slope, depth to rock
1100: Unionville----- Rock Outcrop.	Severe: excess sodium	Severe: excess sodium	Severe: excess sodium	Severe: slope, small stones, depth to rock	Severe: small stones, depth to rock
	Severe: flooding, small stones	Severe: small stones	Severe: small stones, flooding	Moderate: too sandy, flooding	Severe: small stones, droughty, flooding
	Slight	Slight	Moderate: slope, small stones, depth to rock	Slight	Moderate: depth to rock

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
1150: Slocave-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones	Severe: small stones, slope, depth to rock
Arclay-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope	Severe: small stones, slope, depth to rock
Rock Outcrop.					
1151: Slocave-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones	Severe: small stones, slope, depth to rock
Vium-----	Severe: depth to rock	Severe: depth to rock	Severe: small stones, depth to rock	Slight	Severe: droughty, depth to rock
1190: Woolsey-----	Slight	Slight	Moderate: slope, small stones	Slight	Slight
Bluewing-----	Moderate: small stones	Moderate: small stones	Severe: small stones	Slight	Severe: droughty
1200: Acrelane-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones	Severe: small stones, slope, depth to rock
Soar-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope	Severe: small stones, slope, depth to rock
Arclay-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope	Severe: small stones, slope, depth to rock
1201: Acrelane-----	Severe: small stones, depth to rock	Severe: small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: small stones	Severe: small stones, depth to rock
Wedekind-----	Severe: depth to rock	Severe: depth to rock	Severe: small stones, depth to rock	Slight	Severe: depth to rock
Arclay-----	Severe: small stones, depth to rock	Severe: small stones, depth to rock	Severe: slope, small stones, depth to rock	Slight	Severe: small stones, depth to rock

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
1202: Acrelane----- Rock Outcrop.	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: large stones, slope, small stones	Severe: slope	Severe: slope, depth to rock
1203: Acrelane----- Shawave----- Granshaw-----	Severe: small stones, depth to rock	Severe: small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: small stones	Severe: small stones, depth to rock
	Moderate: small stones	Moderate: small stones	Severe: small stones	Slight	Moderate: small stones
	Moderate: small stones	Moderate: small stones	Severe: small stones	Slight	Moderate: small stones, droughty
1204: Acrelane----- Arclay----- Eaglerock-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones	Severe: small stones, slope, depth to rock
	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope	Severe: small stones, slope, depth to rock
	Severe: slope	Severe: slope	Severe: slope, small stones	Severe: slope	Severe: slope
1205: Acrelane----- Acrelane-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones	Severe: small stones, slope, depth to rock
	Severe: small stones, depth to rock	Severe: small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: small stones	Severe: small stones, depth to rock
1210: Wesfil----- Sojur-----	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope	Severe: small stones, slope, depth to rock
	Severe: slope, large stones, small stones	Severe: slope, large stones, small stones	Severe: large stones, slope, small stones	Severe: slope, small stones	Severe: small stones, slope, depth to rock
1300: Yipor-----	Severe: flooding	Moderate: dusty	Moderate: flooding, dusty	Moderate: dusty	Moderate: flooding

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
1400: Jerval-----	Severe: excess sodium	Severe: excess sodium	Severe: small stones, excess sodium	Moderate: dusty	Severe: excess sodium
Dorper-----	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Moderate: dusty	Severe: excess sodium, small stones
1401: Jerval-----	Severe: excess sodium	Severe: excess sodium	Severe: small stones, excess sodium	Moderate: dusty	Severe: excess sodium
Aboten-----	Severe: cemented pan, excess sodium	Severe: excess sodium, cemented pan	Severe: small stones, cemented pan, excess sodium	Moderate: dusty	Severe: excess sodium, cemented pan
Dorper-----	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Severe: small stones, excess sodium	Severe: small stones	Severe: excess sodium, small stones
1410: Slipback-----	Severe: excess sodium	Severe: excess sodium	Severe: excess sodium	Slight	Severe: excess sodium
Shawave-----	Moderate: small stones	Moderate: small stones	Severe: small stones	Slight	Moderate: small stones
Nodur-----	Severe: excess sodium	Severe: excess sodium	Severe: excess sodium	Slight	Severe: excess sodium
1610: Lovelock-----	Severe: ponding, excess salt	Severe: ponding, excess salt	Severe: ponding, excess salt	Severe: ponding	Severe: excess salt, ponding

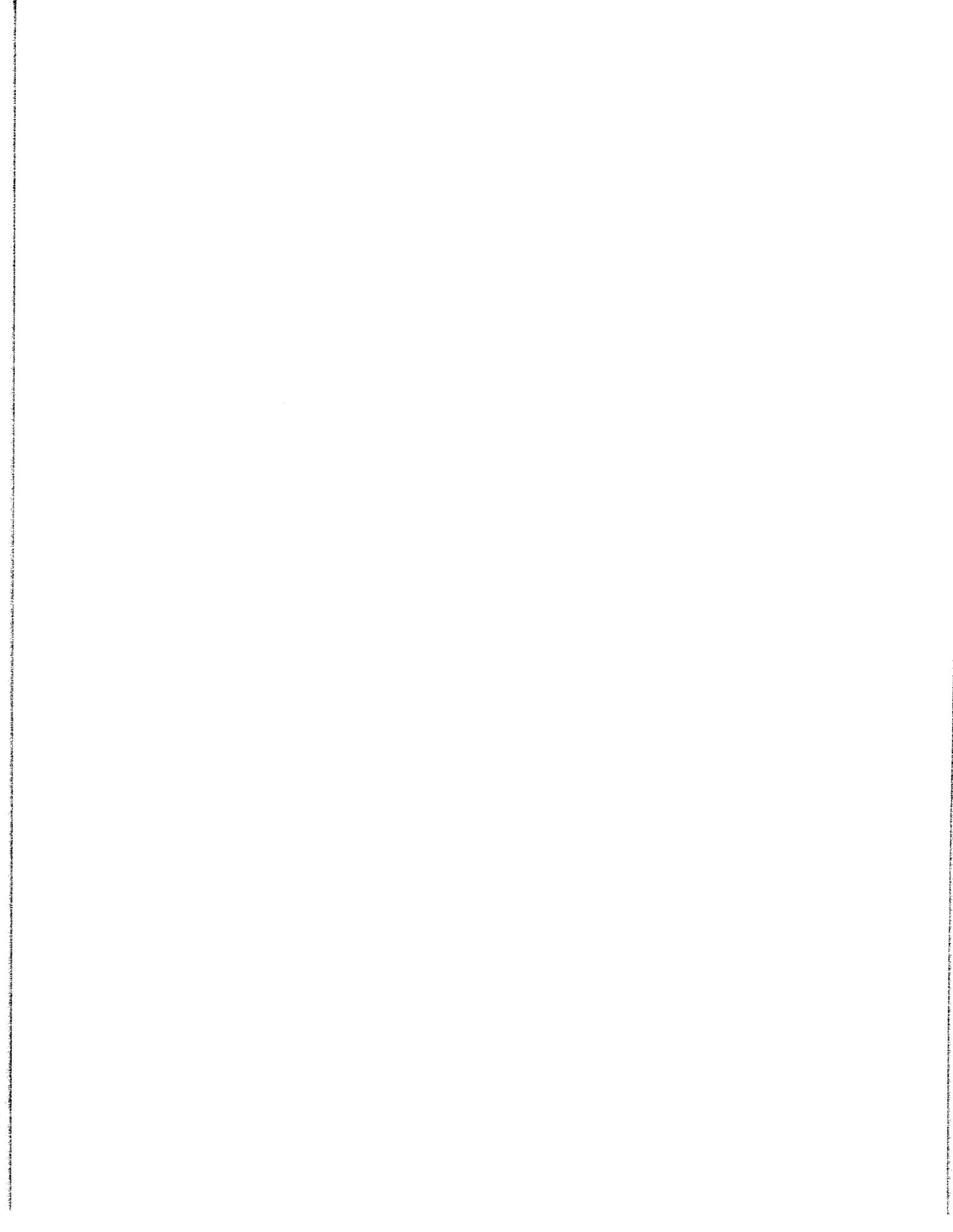


TABLE 11.--BUILDING SITE DEVELOPMENT

(The information in this report indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
110: Aboten-----	Severe: cemented pan, cutbanks cave	Moderate: cemented pan	Severe: cemented pan	Moderate: slope, cemented pan	Moderate: cemented pan	Severe: excess sodium, small stones, cemented pan
Jerval-----	Slight	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium
Bluewing-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: droughty
111: Aboten-----	Severe: cemented pan, cutbanks cave	Moderate: slope, cemented pan	Severe: cemented pan	Severe: slope	Moderate: cemented pan, slope	Severe: excess sodium, small stones, cemented pan
Dorper-----	Slight	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium, small stones
112: Aboten-----	Severe: cemented pan, cutbanks cave	Moderate: slope, cemented pan	Severe: cemented pan	Severe: slope	Moderate: cemented pan, slope	Severe: excess sodium, small stones, cemented pan
Dorper-----	Slight	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium, small stones
Rednik-----	Severe: cutbanks cave, slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: small stones, droughty, slope
113: Aboten-----	Severe: cemented pan, cutbanks cave, slope	Severe: slope	Severe: cemented pan, slope	Severe: slope	Severe: slope	Severe: excess sodium, small stones, slope
114: Aboten-----	Severe: cemented pan, cutbanks cave	Moderate: cemented pan	Severe: cemented pan	Moderate: slope, cemented pan	Moderate: cemented pan	Severe: excess sodium, small stones, cemented pan
Bluewing-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: droughty
120: Appian-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: excess sodium

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
120 (con.): Isolde-----	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: droughty, slope
Genegraf-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium, small stones
130: Boomstick-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Majuba-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope
Sojur-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
131: Boomstick-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Majuba-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope
Phliss-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, large stones, slope
132: Boomstick-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Majuba-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope
139: Arclay-----	Severe: depth to rock	Moderate: shrink-swell, slope, depth to rock	Severe: depth to rock	Severe: slope	Moderate: depth to rock, shrink-swell, slope	Severe: small stones, depth to rock
141: Arclay-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope, depth to rock

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
141 (con.): Acrelane-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope, depth to rock
Soar-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope, depth to rock
142: Arclay-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope, depth to rock
Vium-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, droughty, slope
Slocave-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope, depth to rock
143: Ninemile-----	Severe: depth to rock, slope	Severe: shrink-swell, slope, depth to rock	Severe: depth to rock, slope, shrink-swell	Severe: shrink-swell, slope, depth to rock	Severe: depth to rock, shrink-swell, low strength	Severe: small stones, slope, depth to rock
Rock Outcrop.						
145: Ninemile-----	Severe: depth to rock, slope	Severe: shrink-swell, slope, depth to rock	Severe: depth to rock, slope, shrink-swell	Severe: shrink-swell, slope, depth to rock	Severe: depth to rock, shrink-swell, low strength	Severe: small stones, slope, depth to rock
Shively-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Rock Outcrop.						
150: Boton-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Slight
Playas-----	Severe: ponding	Severe: flooding, ponding, shrink-swell	Severe: flooding, ponding, shrink-swell	Severe: flooding, ponding, shrink-swell	Severe: shrink-swell, low strength, ponding	Severe: excess salt, ponding, droughty
152: Benin-----	Moderate: too clayey	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell	Severe: shrink-swell, low strength	Severe: excess salt

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
152 (con.): Benin-----	Moderate: too clayey, flooding	Severe: flooding, shrink-swell	Severe: flooding, shrink-swell	Severe: flooding, shrink-swell	Severe: shrink-swell, low strength, flooding	Severe: excess salt
160: Badland-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: excess salt, slope, depth to rock
161: Dune Land-----	Severe: cutbanks cave, slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: droughty, slope
Playas-----	Severe: ponding	Severe: ponding, shrink-swell	Severe: ponding, shrink-swell	Severe: ponding, shrink-swell	Severe: shrink-swell, low strength, ponding	Severe: excess salt, ponding, droughty
163: Dune Land-----	Severe: cutbanks cave, slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: droughty, slope
171: Bluewing-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: droughty
Toulon-----	Severe: cutbanks cave	Moderate: large stones	Moderate: large stones	Moderate: slope, large stones	Moderate: large stones	Severe: small stones, droughty
Rock Outcrop.						
172: Bluewing-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: droughty
173: Bluewing-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: small stones, droughty, flooding
180: Biga-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium
Granshaw-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: small stones, droughty
Labkey-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: droughty
181: Biga-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
182: Biga-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium
190: Cresal-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Slight
201: Dorper-----	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Severe: excess sodium, small stones
Envol-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
203: Dorper-----	Slight	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium, small stones
204: Dorper-----	Slight	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium, small stones
Jerval-----	Slight	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium
Dorper-----	Slight	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium, small stones
206: Dorper-----	Slight	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium, small stones
210: Dorper-----	Slight	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium, small stones
Aboten-----	Severe: cemented pan, cutbanks cave	Moderate: slope, cemented pan	Severe: cemented pan	Severe: slope	Moderate: cemented pan, slope	Severe: excess sodium, small stones, cemented pan
Kumiva-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Slight
220: Cleavage-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
220 (con.): Phliss-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Majuba-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope
221: Cleavage-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Burnborough----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: small stones, slope
230: Coldent-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Moderate: small stones, droughty
Isolde-----	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: droughty, slope
Swingler-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell, low strength	Severe: excess salt
231: Coldent-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: small stones, droughty
Hawsley-----	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: droughty, slope
Mazuma-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: excess salt
245: Dedmount-----	Moderate: too clayey, wetness	Severe: flooding, shrink-swell	Severe: flooding, shrink-swell	Severe: flooding, shrink-swell	Severe: shrink-swell, low strength, frost action	Slight
Umberland-----	Moderate: too clayey, wetness	Severe: flooding, shrink-swell	Severe: flooding, shrink-swell	Severe: flooding, shrink-swell	Severe: shrink-swell, low strength, frost action	Severe: excess salt, excess sodium
Umberland-----	Severe: ponding	Severe: ponding, shrink-swell	Severe: ponding, shrink-swell	Severe: ponding, shrink-swell	Severe: shrink-swell, low strength, ponding	Severe: excess salt, excess sodium, ponding

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
250: Devada----- Rock Outcrop.	Severe: depth to rock, slope	Severe: shrink-swell, slope, depth to rock	Severe: depth to rock, slope, shrink-swell	Severe: shrink-swell, slope, depth to rock	Severe: depth to rock, shrink-swell, low strength	Severe: large stones, slope, depth to rock
300: Envol----- Frines----- Rock Outcrop.	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock
302: Envol-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock
310: Eaglerock----- Rock Outcrop.	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
401: Genegraf----- Dorper----- Bluewing-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium, small stones
402: Genegraf----- Bluewing----- Dorper-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium, small stones
404: Genegraf-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium, small stones

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
404 (con.): Toulon-----	Severe: cutbanks cave	Moderate: large stones	Moderate: large stones	Moderate: slope, large stones	Moderate: large stones	Severe: small stones, droughty
410: Granshaw-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Moderate: small stones, droughty
Labkey-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: droughty
411: Granshaw-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: small stones, droughty
Biga-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium
Envol-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock
412: Granshaw-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: small stones, droughty
Jerval-----	Slight	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium
Dorper-----	Slight	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium, small stones
413: Granshaw-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: small stones, droughty
Kumiva-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Moderate: small stones
414: Granshaw-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Moderate: small stones, droughty
415: Granshaw-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Moderate: small stones, droughty
Biga-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium
Puett-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: slope, depth to rock

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
431: Grumblyen-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Pickup-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope
432: Grumblyen-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Pickup-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope
Old Camp-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
451: Hawsley-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Moderate: droughty
452: Hawsley-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: droughty, too sandy
Labkey-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: droughty
Genegraf-----	Slight	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium
453: Hawsley-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: droughty, too sandy
Bluewing-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding, slope	Severe: flooding	Severe: small stones, droughty
456: Hawsley-----	Severe: cutbanks cave, slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Badland-----	Severe: slope	Severe: shrink-swell, slope	Severe: slope, shrink-swell	Severe: shrink-swell, slope	Severe: shrink-swell, low strength, slope	Severe: excess salt, slope

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
462: Hawsley-----	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: droughty, slope
Mazuma-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: excess salt
470: Deadyon-----	Severe: cutbanks cave	Slight	Slight	Slight	Moderate: frost action	Moderate: droughty
471: Deadyon-----	Severe: cutbanks cave	Slight	Slight	Slight	Moderate: frost action	Moderate: droughty
Granshaw-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: small stones, droughty
472: Deadyon-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Moderate: droughty
480: Humboldt-----	Severe: wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: low strength, wetness, flooding	Severe: excess salt, wetness, flooding
500: Isolde-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: droughty
Typic Torriorthents--	Slight	Slight	Slight	Slight	Slight	Severe: small stones
Dune Land-----	Severe: cutbanks cave, slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: droughty, slope
502: Isolde-----	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: droughty, slope
Ragtown-----	Moderate: too clayey, flooding	Severe: flooding, shrink-swell	Severe: flooding, shrink-swell	Severe: flooding, shrink-swell	Severe: shrink-swell, low strength, flooding	Severe: excess salt, flooding
503: Isolde-----	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: droughty, slope
510: Juva-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: droughty, flooding

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
550: Kumiva-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding
Labkey-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: droughty
Chumall-----	Severe: cutbanks cave	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Severe: excess salt
551: Kumiva-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Slight
Kumiva-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding
553: Kumiva-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding
559: Phliss-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Phliss-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, large stones, slope
Majuba-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope
560: Phliss-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, large stones, slope
562: Sondoa-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Severe: excess salt
563: Sondoa-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Severe: excess salt
Swingler-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell, low strength	Severe: excess salt
Isolde-----	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: droughty, slope
650: Labkey-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: droughty

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
651: Labkey-----	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Severe: droughty
Mazuma-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: excess salt
Hawsley-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: droughty, too sandy
652: Labkey-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: droughty
Hawsley-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: droughty, too sandy
Granshaw-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Moderate: small stones, droughty
653: Labkey-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: droughty
Mazuma-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Slight
700: Mazuma-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Slight
Trocken-----	Severe: cutbanks cave	Moderate: large stones	Moderate: large stones	Moderate: slope, large stones	Moderate: large stones	Moderate: small stones, large stones, droughty
701: Mazuma-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Slight
702: Mazuma-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: excess salt
Swingler-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell, low strength	Severe: excess salt
Toulon-----	Severe: cutbanks cave	Moderate: large stones	Moderate: large stones	Moderate: slope, large stones	Moderate: large stones	Severe: small stones, droughty
703: Mazuma-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Slight
Hardhat-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Moderate: too sandy

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
703 (con.): Hawsley-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Moderate: droughty, too sandy
704: Mazuma-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: excess salt
705: Mazuma-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Slight
Mazuma-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: excess salt
706: Mazuma-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: excess salt
707: Mazuma-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Slight
Coldent-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: small stones, droughty
708: Mazuma-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: excess salt
Ragtown-----	Moderate: too clayey, flooding	Severe: flooding, shrink-swell	Severe: flooding, shrink-swell	Severe: flooding, shrink-swell	Severe: shrink-swell, low strength, flooding	Severe: excess salt, flooding
750: Pickup-----	Severe: depth to rock	Moderate: shrink-swell, slope, depth to rock	Severe: depth to rock	Severe: slope	Moderate: depth to rock, shrink-swell, slope	Severe: small stones
Rock Outcrop.						
751: Pickup-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope
Grumblen-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Rock Outcrop.						
752: Pickup-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
752 (con.): Old Camp-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Theon-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
753: Pickup-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope
Rock Outcrop.						
800: Old Camp-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Dorper-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: excess sodium, small stones, slope
Pokergap-----	Severe: cutbanks cave, slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: excess sodium, slope
801: Old Camp-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Sumya-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock
Pickup-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope
810: Perwaso-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: excess salt
Perwaso-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: shrink-swell, flooding	Severe: excess salt
850: Playas-----	Severe: ponding	Severe: ponding, shrink-swell	Severe: ponding, shrink-swell	Severe: ponding, shrink-swell	Severe: shrink-swell, low strength, ponding	Severe: excess salt, ponding, droughty

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
851: Pits, Mine.						
852: Puett-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: slope, depth to rock
Dorper-----	Slight	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium, small stones
960: Rednik-----	Severe: cutbanks cave, slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: small stones, droughty, slope
Jungo-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: small stones, slope
Abotan-----	Severe: cemented pan, cutbanks cave	Moderate: slope, cemented pan	Severe: cemented pan	Severe: slope	Moderate: cemented pan, slope	Severe: excess sodium, cemented pan
970: Say-----	Severe: cutbanks cave, slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Eaglerock-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Ninemile-----	Severe: depth to rock, slope	Severe: shrink-swell, slope, depth to rock	Severe: depth to rock, slope, shrink-swell	Severe: shrink-swell, slope, depth to rock	Severe: depth to rock, shrink-swell, low strength	Severe: small stones, slope, depth to rock
980: Selbit-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, large stones, droughty
Rock Outcrop.						
981: Selbit-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, large stones, droughty
Rock Outcrop.						
Upsel-----	Severe: cutbanks cave, slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
990: Shawave-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Moderate: small stones

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
990 (con.): Granshaw-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: small stones, droughty
Labkey-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: droughty
991: Shawave-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Moderate: small stones
Slipback-----	Severe: cutbanks cave	Moderate: shrink-swell	Slight	Moderate: shrink-swell, slope	Moderate: shrink-swell, frost action	Severe: excess sodium
Granshaw-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: small stones, droughty
992: Shawave-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Moderate: small stones
Deadyon-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Moderate: droughty
Slipback-----	Severe: cutbanks cave	Moderate: shrink-swell	Slight	Moderate: shrink-swell, slope	Moderate: shrink-swell, frost action	Severe: excess sodium
993: Shawave-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Moderate: small stones
Biga-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium
Deadyon-----	Severe: cutbanks cave	Slight	Slight	Slight	Moderate: frost action	Moderate: droughty
994: Shawave-----	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Moderate: small stones, slope
Biga-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium
Puett-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: slope, depth to rock
996: Slaw-----	Slight	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Severe: low strength	Severe: excess salt
Slaw-----	Moderate: too clayey, flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: low strength, flooding	Severe: excess salt

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
1020: Soar-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope, depth to rock
Arclay-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope, depth to rock
Soar-----	Severe: depth to rock	Moderate: slope, depth to rock	Severe: depth to rock	Severe: slope	Moderate: depth to rock, slope, frost action	Severe: small stones, depth to rock
1021: Soar-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope, depth to rock
Arclay-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope, depth to rock
1022: Soar-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope, depth to rock
Arclay-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope, depth to rock
Rock Outcrop.						
1030: Pokergap-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Severe: excess sodium, small stones
1031: Pokergap-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Severe: excess sodium, small stones
Dorper-----	Slight	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium, small stones
1032: Pokergap-----	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Severe: excess sodium
Dorper-----	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Severe: excess sodium, small stones

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
1033: Pokergap-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Severe: excess sodium
Jerval-----	Slight	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium
Dorper-----	Slight	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium, small stones
1034: Pokergap-----	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Severe: excess sodium
1035: Pokergap-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Severe: excess sodium
Jerval-----	Slight	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium
1040: Sojur-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
1041: Sojur-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Boomstick-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Rubble Land-----	Severe: large stones, slope	Severe: slope, large stones	Severe: slope, large stones	Severe: slope, large stones	Severe: slope, large stones	Severe: small stones, large stones, droughty
1042: Sojur-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Phliss-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, large stones, slope
1050: Theon-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: large stones, slope, depth to rock

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
1050 (con.): Singatse-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
1051: Theon-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Singatse-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
1052: Theon-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: large stones, slope, depth to rock
Grumblen-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Rubble Land-----	Severe: large stones, slope	Severe: slope, large stones	Severe: slope, large stones	Severe: slope, large stones	Severe: slope, large stones	Severe: small stones, large stones, droughty
1053: Theon-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: large stones, slope, depth to rock
Rock Outcrop.						
1054: Theon-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Old Camp-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
1055: Theon-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: large stones, slope, depth to rock
Old Camp-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
1056: Theon-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: large stones, slope, depth to rock
Pickup-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope
1080: Toulon-----	Severe: cutbanks cave	Moderate: large stones	Moderate: large stones	Moderate: slope, large stones	Moderate: large stones	Severe: small stones, droughty
Appian-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: excess sodium
Bluewing-----	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: small stones, droughty, flooding
1100: Unionville-----	Moderate: depth to rock	Slight	Moderate: depth to rock	Moderate: slope	Slight	Moderate: depth to rock
Rock Outcrop.						
1150: Slocave-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope, depth to rock
Arclay-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope, depth to rock
Rock Outcrop.						
1151: Slocave-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope, depth to rock
Vium-----	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: droughty, depth to rock
1190: Woolsey-----	Slight	Slight	Slight	Slight	Slight	Slight
Bluewing-----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: droughty

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
1200: Acrelane-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope, depth to rock
Soar-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope, depth to rock
Arclay-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope, depth to rock
1201: Acrelane-----	Severe: depth to rock	Moderate: slope, depth to rock	Severe: depth to rock	Severe: slope	Moderate: depth to rock, slope, frost action	Severe: small stones, depth to rock
Wedekind-----	Severe: depth to rock	Moderate: shrink-swell, depth to rock	Severe: depth to rock	Moderate: shrink-swell, slope, depth to rock	Moderate: depth to rock, shrink-swell, frost action	Severe: depth to rock
Arclay-----	Severe: depth to rock	Moderate: shrink-swell, slope, depth to rock	Severe: depth to rock	Severe: slope	Moderate: depth to rock, shrink-swell, slope	Severe: small stones, depth to rock
1202: Acrelane-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: slope, depth to rock
Rock Outcrop.						
1203: Acrelane-----	Severe: depth to rock	Moderate: slope, depth to rock	Severe: depth to rock	Severe: slope	Moderate: depth to rock, slope, frost action	Severe: small stones, depth to rock
Shawave-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Moderate: small stones
Granshaw-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: small stones, droughty
1204: Acrelane-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope, depth to rock
Arclay-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope, depth to rock

TABLE 11.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
1204 (con.): Eaglerock-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
1205: Acrelane-----	Severe: depth to rock, slope	Severe: slope	Severe: depth to rock, slope	Severe: slope	Severe: slope	Severe: small stones, slope, depth to rock
Acrelane-----	Severe: depth to rock	Moderate: depth to rock	Severe: depth to rock	Moderate: slope, depth to rock	Moderate: depth to rock, frost action	Severe: small stones, depth to rock
1210: Wesfil-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Sojur-----	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
1300: Yipor-----	Moderate: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding
1400: Jerval-----	Slight	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium
Dorper-----	Slight	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium, small stones
1401: Jerval-----	Slight	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium
Aboten-----	Severe: cemented pan, cutbanks cave	Moderate: cemented pan	Severe: cemented pan	Moderate: slope, cemented pan	Moderate: cemented pan	Severe: excess sodium, cemented pan
Dorper-----	Slight	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium, small stones
1410: Slipback-----	Severe: cutbanks cave	Moderate: shrink-swell	Slight	Moderate: shrink-swell, slope	Moderate: shrink-swell, frost action	Severe: excess sodium
Shawave-----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Moderate: small stones
Nodur-----	Moderate: dense layer	Slight	Slight	Moderate: slope	Slight	Severe: excess sodium

TABLE 12.--SANITARY FACILITIES

(The information in this report indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
110: Aboten-----	Severe: cemented pan, poor filter	Severe: seepage cemented pan	Moderate: cemented pan, too sandy	Slight	Poor: cemented pan, seepage small stones
Jerval-----	Slight	Severe: seepage	Slight	Slight	Poor: small stones
Bluewing-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage too sandy, small stones
111: Aboten-----	Severe: cemented pan, poor filter	Severe: seepage cemented pan, slope	Moderate: cemented pan, slope, too sandy	Moderate: slope	Poor: cemented pan, seepage small stones
Dorper-----	Severe: percs slowly	Moderate: slope	Severe: excess salt	Slight	Poor: seepage small stones
112: Aboten-----	Severe: cemented pan, poor filter	Severe: seepage cemented pan, slope	Moderate: cemented pan, slope, too sandy	Moderate: slope	Poor: cemented pan, seepage small stones
Dorper-----	Severe: percs slowly	Moderate: slope	Severe: excess salt	Slight	Poor: seepage small stones
Rednik-----	Severe: percs slowly, poor filter, slope	Severe: seepage slope	Severe: slope	Severe: slope	Poor: small stones, slope
113: Aboten-----	Severe: cemented pan, poor filter, slope	Severe: seepage cemented pan, slope	Severe: slope	Severe: slope	Poor: cemented pan, seepage small stones
114: Aboten-----	Severe: cemented pan, poor filter	Severe: seepage cemented pan	Moderate: cemented pan, too sandy	Slight	Poor: cemented pan, seepage small stones
Bluewing-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage too sandy, small stones

TABLE 12.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
120: Appian-----	Severe: percs slowly, poor filter	Severe: seepage	Severe: too sandy, excess salt	Slight	Poor: seepage too sandy
Isolde-----	Severe: poor filter	Severe: seepage slope	Severe: too sandy	Moderate: slope	Poor: seepage too sandy
Genegraf-----	Moderate: percs slowly	Moderate: seepage slope	Moderate: too sandy	Slight	Poor: seepage small stones
130: Boomstick-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Majuba-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Sojur-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
131: Boomstick-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Majuba-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Phliss-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
132: Boomstick-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Majuba-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
139: Arclay-----	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock

TABLE 12.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
141: Arclay-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Acrelane-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Soar-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
142: Arclay-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Vium-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Slocave-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
143: Ninemile-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope, too clayey	Severe: depth to rock, slope	Poor: depth to rock, too clayey, hard to pack
Rock Outcrop.					
145: Ninemile-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope, too clayey	Severe: depth to rock, slope	Poor: depth to rock, too clayey, hard to pack
Shively-----	Severe: slope	Severe: seepage slope	Severe: seepage slope	Severe: seepage slope	Poor: slope
Rock Outcrop.					
150: Boton-----	Severe: percs slowly	Slight	Severe: excess salt	Slight	Good
Playas-----	Severe: ponding, percs slowly	Severe: ponding	Severe: ponding, too clayey, excess salt	Severe: ponding	Poor: too clayey, hard to pack, ponding
152: Benin-----	Severe: percs slowly	Slight	Slight	Slight	Poor: hard to pack

TABLE 12.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
152 (con.): Benin-----	Severe: flooding, percs slowly	Severe: flooding	Severe: flooding, excess salt	Severe: flooding	Poor: hard to pack
160: Badland-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope, excess salt	Severe: depth to rock, slope	Poor: depth to rock, slope, excess salt
161: Dune Land-----	Severe: poor filter, slope	Severe: seepage slope	Severe: seepage slope, too sandy	Severe: seepage slope	Poor: seepage too sandy, slope
Playas-----	Severe: ponding, percs slowly	Severe: ponding	Severe: ponding, too clayey, excess salt	Severe: ponding	Poor: too clayey, hard to pack, ponding
163: Dune Land-----	Severe: poor filter, slope	Severe: seepage slope	Severe: seepage slope, too sandy	Severe: seepage slope	Poor: seepage too sandy, slope
171: Bluewing-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage too sandy, small stones
Toulon-----	Severe: poor filter	Severe: seepage	Severe: too sandy, large stones	Slight	Poor: seepage too sandy, small stones
Rock Outcrop.					
172: Bluewing-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage too sandy, small stones
173: Bluewing-----	Severe: flooding, poor filter	Severe: seepage flooding	Severe: flooding, too sandy	Severe: flooding	Poor: seepage too sandy, small stones
180: Biga-----	Severe: percs slowly	Moderate: slope	Moderate: too sandy	Slight	Fair: too sandy, small stones
Granshaw-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage too sandy

TABLE 12.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
180 (con.): Labkey-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage too sandy, small stones
181: Biga-----	Severe: percs slowly	Moderate: slope	Moderate: too sandy	Slight	Fair: too sandy, small stones
182: Biga-----	Severe: percs slowly	Moderate: slope	Moderate: too sandy	Slight	Fair: too sandy, small stones
190: Cresal-----	Severe: percs slowly	Slight	Severe: excess salt	Slight	Good
201: Dorper-----	Severe: percs slowly	Severe: slope	Severe: excess salt	Moderate: slope	Poor: seepage small stones
Envol-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
203: Dorper-----	Severe: percs slowly	Moderate: slope	Severe: excess salt	Slight	Poor: seepage small stones
204: Dorper-----	Severe: percs slowly	Moderate: slope	Severe: excess salt	Slight	Poor: seepage small stones
Jerval-----	Slight	Severe: seepage	Slight	Slight	Poor: small stones
Dorper-----	Severe: percs slowly	Moderate: slope	Severe: excess salt	Slight	Poor: seepage small stones
206: Dorper-----	Severe: percs slowly	Moderate: slope	Severe: excess salt	Slight	Poor: seepage small stones
210: Dorper-----	Severe: percs slowly	Moderate: slope	Severe: excess salt	Slight	Poor: seepage small stones
Aboten-----	Severe: cemented pan, poor filter	Severe: seepage cemented pan, slope	Moderate: cemented pan, slope, too sandy	Moderate: slope	Poor: cemented pan, seepage small stones

TABLE 12.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
210 (con.): Kumiva-----	Moderate: flooding, percs slowly	Severe: seepage	Moderate: flooding	Moderate: flooding	Good
220: Cleavage-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Poor: depth to rock, small stones, slope
Phliss-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Majuba-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
221: Cleavage-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Poor: depth to rock, small stones, slope
Burnborough----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
230: Coldent-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage too sandy, small stones
Isolde-----	Severe: poor filter	Severe: seepage slope	Severe: too sandy	Moderate: slope	Poor: seepage too sandy
Swingler-----	Severe: percs slowly	Slight	Severe: excess salt	Slight	Good
231: Coldent-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage too sandy, small stones
Hawsley-----	Severe: poor filter	Severe: seepage slope	Severe: too sandy	Moderate: slope	Poor: seepage too sandy
Mazuma-----	Slight	Severe: seepage	Severe: too sandy, excess salt	Slight	Poor: too sandy
245: Dedmount-----	Severe: percs slowly	Slight	Severe: wetness, too clayey	Moderate: flooding, wetness	Poor: too clayey, hard to pack

TABLE 12.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
245 (con.): Umberland-----	Severe: wetness, percs slowly	Severe: wetness	Severe: wetness, excess sodium, excess salt	Severe: wetness	Poor: excess salt, excess sodium
Umberland-----	Severe: ponding, percs slowly	Severe: ponding	Severe: ponding, excess sodium, excess salt	Severe: ponding	Poor: ponding, excess salt, excess sodium
250: Devada-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope, too clayey	Severe: depth to rock, slope	Poor: depth to rock, too clayey, hard to pack
Rock Outcrop.					
300: Envol-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Frines-----	Severe: depth to rock	Severe: seepage depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock, small stones
Rock Outcrop.					
302: Envol-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
310: Eaglerock-----	Severe: depth to rock, percs slowly, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Rock Outcrop.					
401: Genegraf-----	Moderate: percs slowly	Moderate: seepage slope	Moderate: too sandy	Slight	Poor: seepage small stones
Dorper-----	Severe: percs slowly	Moderate: slope	Severe: excess salt	Slight	Poor: seepage small stones
Bluewing-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage too sandy, small stones
402: Genegraf-----	Moderate: percs slowly	Moderate: seepage slope	Moderate: too sandy	Slight	Poor: seepage small stones

TABLE 12.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
402 (con.): Bluewing-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage too sandy, small stones
Dorper-----	Severe: percs slowly	Moderate: slope	Severe: excess salt	Slight	Poor: seepage small stones
404: Genegraf-----	Moderate: percs slowly	Moderate: seepage slope	Moderate: too sandy	Slight	Poor: seepage small stones
Toulon-----	Severe: poor filter	Severe: seepage	Severe: too sandy, large stones	Slight	Poor: seepage too sandy, small stones
410: Granshaw-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage too sandy
Labkey-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage too sandy, small stones
411: Granshaw-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage too sandy
Biga-----	Severe: percs slowly	Moderate: slope	Moderate: too sandy	Slight	Fair: too sandy, small stones
Envol-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
412: Granshaw-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage too sandy
Jerval-----	Slight	Severe: seepage	Slight	Slight	Poor: small stones
Dorper-----	Severe: percs slowly	Moderate: slope	Severe: excess salt	Slight	Poor: seepage small stones
413: Granshaw-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage too sandy

TABLE 12.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
413 (con.): Kumiva-----	Moderate: flooding, percs slowly	Severe: seepage	Moderate: flooding	Moderate: flooding	Good
414: Granshaw-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage too sandy
415: Granshaw-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage too sandy
Biga-----	Severe: percs slowly	Moderate: slope	Moderate: too sandy	Slight	Fair: too sandy, small stones
Puett-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
431: Grumblen-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Pickup-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
432: Grumblen-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Pickup-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Old Camp-----	Severe: depth to rock, slope	Severe: depth to rock, slope, large stones	Severe: depth to rock, slope, large stones	Severe: slope	Poor: depth to rock, small stones, slope
451: Hawsley-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage too sandy
452: Hawsley-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage too sandy

TABLE 12.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
452 (con.): Labkey-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage too sandy, small stones
Genegraf-----	Severe: percs slowly	Moderate: slope	Severe: excess salt	Slight	Poor: small stones
453: Hawsley-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage too sandy
Bluewing-----	Severe: flooding, poor filter	Severe: seepage flooding, slope	Severe: flooding, too sandy	Severe: flooding	Poor: seepage too sandy, small stones
456: Hawsley-----	Severe: poor filter, slope	Severe: seepage slope	Severe: slope, too sandy	Severe: slope	Poor: seepage too sandy, slope
Badland-----	Severe: percs slowly, slope	Severe: slope	Severe: slope, too clayey, excess salt	Severe: slope	Poor: too clayey, hard to pack, slope
462: Hawsley-----	Severe: poor filter	Severe: seepage slope	Severe: too sandy	Moderate: slope	Poor: seepage too sandy
Mazuma-----	Slight	Severe: seepage	Severe: too sandy, excess salt	Slight	Poor: too sandy
470: Deadyon-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: too sandy
471: Deadyon-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: too sandy
Granshaw-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage too sandy
472: Deadyon-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: too sandy
480: Humboldt-----	Severe: flooding, wetness, percs slowly	Severe: flooding, wetness	Severe: flooding, wetness, too clayey	Severe: flooding, wetness	Poor: too clayey, hard to pack, wetness

TABLE 12.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
500: Isolde-----	Severe: poor filter	Severe: seepage slope	Severe: too sandy	Slight	Poor: seepage too sandy
Typic Torriorthents--	Slight	Moderate: slope	Slight	Slight	Poor: thin layer
Dune Land-----	Severe: poor filter, slope	Severe: seepage slope	Severe: seepage slope, too sandy	Severe: seepage slope	Poor: seepage too sandy, slope
502: Isolde-----	Severe: poor filter	Severe: seepage slope	Severe: too sandy	Moderate: slope	Poor: seepage too sandy
Ragtown-----	Severe: flooding, percs slowly	Severe: flooding	Severe: flooding, excess salt	Severe: flooding	Poor: hard to pack
503: Isolde-----	Severe: poor filter	Severe: seepage slope	Severe: too sandy	Moderate: slope	Poor: seepage too sandy
510: Juva-----	Severe: flooding	Severe: flooding	Severe: flooding, too sandy	Severe: flooding	Poor: too sandy
550: Kumiva-----	Severe: flooding	Severe: seepage flooding	Severe: flooding	Severe: flooding	Good
Labkey-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage too sandy, small stones
Chumall-----	Severe: percs slowly	Severe: seepage	Severe: excess salt	Slight	Fair: thin layer
551: Kumiva-----	Moderate: flooding, percs slowly	Severe: seepage	Moderate: flooding	Moderate: flooding	Good
Kumiva-----	Severe: flooding	Severe: seepage flooding	Severe: flooding	Severe: flooding	Good
553: Kumiva-----	Severe: flooding	Severe: seepage flooding	Severe: flooding	Severe: flooding	Good

TABLE 12.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
559: Phliss-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Phliss-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Majuba-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
560: Phliss-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
562: Sondoa-----	Severe: percs slowly	Slight	Severe: excess salt	Slight	Good
563: Sondoa-----	Severe: percs slowly	Slight	Severe: excess salt	Slight	Good
Swingler-----	Severe: percs slowly	Slight	Severe: excess salt	Slight	Good
Isolde-----	Severe: poor filter	Severe: seepage slope	Severe: too sandy	Moderate: slope	Poor: seepage too sandy
650: Labkey-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage too sandy, small stones
651: Labkey-----	Severe: poor filter	Severe: seepage slope	Severe: too sandy	Moderate: slope	Poor: seepage too sandy, small stones
Mazuma-----	Slight	Severe: seepage	Severe: too sandy, excess salt	Slight	Poor: too sandy
Hawsley-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage too sandy
652: Labkey-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage too sandy, small stones

TABLE 12.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
652 (con.): Hawsley-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage too sandy
Granshaw-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage too sandy
653: Labkey-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage too sandy, small stones
Mazuma-----	Slight	Severe: seepage	Severe: too sandy	Slight	Poor: too sandy
700: Mazuma-----	Slight	Severe: seepage	Severe: too sandy	Slight	Poor: too sandy
Trocken-----	Moderate: percs slowly, large stones	Moderate: seepage slope, large stones	Severe: large stones	Slight	Poor: small stones
701: Mazuma-----	Slight	Severe: seepage	Severe: too sandy	Slight	Poor: too sandy
702: Mazuma-----	Slight	Severe: seepage	Severe: too sandy, excess salt	Slight	Poor: too sandy
Swingler-----	Severe: percs slowly	Slight	Severe: excess salt	Slight	Good
Toulon-----	Severe: poor filter	Severe: seepage	Severe: too sandy, large stones	Slight	Poor: seepage too sandy, small stones
703: Mazuma-----	Slight	Severe: seepage	Severe: too sandy	Slight	Poor: too sandy
Hardhat-----	Severe: percs slowly	Moderate: seepage	Slight	Slight	Poor: thin layer
Hawsley-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage too sandy
704: Mazuma-----	Slight	Severe: seepage	Severe: too sandy, excess salt	Slight	Poor: too sandy

TABLE 12.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
705: Mazuma-----	Slight	Severe: seepage	Severe: too sandy	Slight	Poor: too sandy
Mazuma-----	Slight	Severe: seepage	Severe: too sandy, excess salt	Slight	Poor: too sandy
706: Mazuma-----	Slight	Severe: seepage	Severe: too sandy, excess salt	Slight	Poor: too sandy
707: Mazuma-----	Slight	Severe: seepage	Severe: too sandy	Slight	Poor: too sandy
Coldent-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage too sandy, small stones
708: Mazuma-----	Slight	Severe: seepage	Severe: too sandy, excess salt	Slight	Poor: too sandy
Ragtown-----	Severe: flooding, percs slowly	Severe: flooding	Severe: flooding, excess salt	Severe: flooding	Poor: hard to pack
750: Pickup-----	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock, small stones
Rock Outcrop.					
751: Pickup-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Grumblen-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Rock Outcrop.					
752: Pickup-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Old Camp-----	Severe: depth to rock, slope	Severe: depth to rock, slope, large stones	Severe: depth to rock, slope, large stones	Severe: slope	Poor: depth to rock, small stones, slope

TABLE 12.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
752 (con.): Thecn-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
753: Pickup-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Rock Outcrop.					
800: Old Camp-----	Severe: depth to rock, slope	Severe: depth to rock, slope, large stones	Severe: depth to rock, slope, large stones	Severe: slope	Poor: depth to rock, small stones, slope
Dorper-----	Severe: percs slowly, slope	Severe: slope	Severe: slope, excess salt	Severe: slope	Poor: seepage small stones, slope
Pokergap-----	Severe: slope	Severe: seepage slope	Severe: slope	Severe: slope	Poor: small stones, slope
801: Old Camp-----	Severe: depth to rock, slope	Severe: depth to rock, slope, large stones	Severe: depth to rock, slope, large stones	Severe: slope	Poor: depth to rock, small stones, slope
Sumya-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Pickup-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
810: Perwaso-----	Severe: flooding, poor filter	Severe: seepage flooding	Severe: flooding, excess salt	Severe: flooding	Poor: thin layer
Perwaso-----	Severe: poor filter	Severe: seepage	Severe: excess salt	Moderate: flooding	Poor: thin layer
850: Playas-----	Severe: ponding, percs slowly	Severe: ponding	Severe: ponding, too clayey, excess salt	Severe: ponding	Poor: too clayey, hard to pack, ponding
851: Pits,Mine.					

TABLE 12.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
852: Puett-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Dorper-----	Severe: percs slowly	Moderate: slope	Severe: excess salt	Slight	Poor: seepage small stones
960: Rednik-----	Severe: percs slowly, poor filter, slope	Severe: seepage slope	Severe: slope	Severe: slope	Poor: small stones, slope
Jungo-----	Severe: percs slowly, slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
Aboten-----	Severe: cemented pan, poor filter	Severe: seepage cemented pan, slope	Moderate: cemented pan, slope, too sandy	Moderate: slope	Poor: cemented pan, seepage small stones
970: Say-----	Severe: depth to rock, slope	Severe: seepage depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Eaglerock-----	Severe: depth to rock, percs slowly, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Ninemile-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope, too clayey	Severe: depth to rock, slope	Poor: depth to rock, too clayey, hard to pack
980: Selbit-----	Severe: depth to rock, slope	Severe: seepage depth to rock, slope	Severe: depth to rock, seepage slope	Severe: depth to rock, slope	Poor: depth to rock, seepage too sandy
Rock Outcrop.					
981: Selbit-----	Severe: depth to rock, slope	Severe: seepage depth to rock, slope	Severe: depth to rock, seepage slope	Severe: depth to rock, slope	Poor: depth to rock, seepage too sandy
Rock Outcrop.					
Upsel-----	Severe: poor filter, slope	Severe: seepage slope	Severe: seepage slope	Severe: seepage slope	Poor: slope

TABLE 12.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
990: Shawave-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: too sandy
Granshaw-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage too sandy
Labkey-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage too sandy, small stones
991: Shawave-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: too sandy
Slipback-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: too sandy
Granshaw-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage too sandy
992: Shawave-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: too sandy
Deadyon-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: too sandy
Slipback-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: too sandy
993: Shawave-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: too sandy
Biga-----	Severe: percs slowly	Moderate: slope	Moderate: too sandy	Slight	Fair: too sandy, small stones
Deadyon-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: too sandy
994: Shawave-----	Severe: poor filter	Severe: seepage slope	Severe: too sandy	Moderate: slope	Poor: too sandy
Biga-----	Severe: percs slowly	Moderate: slope	Moderate: too sandy	Slight	Fair: too sandy, small stones
Puett-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
996: Slaw-----	Severe: percs slowly	Slight	Severe: excess salt	Slight	Good

TABLE 12.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
996 (con.): Slaw-----	Severe: flooding, percs slowly	Severe: flooding	Severe: flooding, excess salt	Severe: flooding	Good
1020: Soar-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Arclay-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Soar-----	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock
1021: Soar-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Arclay-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
1022: Soar-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Arclay-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Rock Outcrop.					
1030: Pokergap-----	Moderate: percs slowly	Severe: seepage	Slight	Slight	Poor: small stones
1031: Pokergap-----	Moderate: percs slowly	Severe: seepage	Slight	Slight	Poor: small stones
Dorper-----	Severe: percs slowly	Moderate: slope	Severe: excess salt	Slight	Poor: seepage small stones
1032: Pokergap-----	Moderate: percs slowly, slope	Severe: seepage slope	Moderate: slope	Moderate: slope	Poor: small stones
Dorper-----	Severe: percs slowly	Severe: slope	Severe: excess salt	Moderate: slope	Poor: seepage small stones
1033: Pokergap-----	Moderate: percs slowly	Severe: seepage	Slight	Slight	Poor: small stones

TABLE 12.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
1033 (con.): Jerval-----	Slight	Severe: seepage	Slight	Slight	Poor: small stones
Dorper-----	Severe: percs slowly	Moderate: slope	Severe: excess salt	Slight	Poor: seepage small stones
1034: Pokergap-----	Moderate: percs slowly, slope	Severe: seepage slope	Moderate: slope	Moderate: slope	Poor: small stones
1035: Pokergap-----	Moderate: percs slowly	Severe: seepage	Slight	Slight	Poor: small stones
Jerval-----	Slight	Severe: seepage	Slight	Slight	Poor: small stones
1040: Sojur-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
1041: Sojur-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Boomstick-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Rubble Land-----	Severe: poor filter, slope, large stones	Severe: seepage slope, large stones	Severe: depth to rock, seepage slope	Severe: seepage slope	Poor: seepage small stones, slope
1042: Sojur-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Phliss-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
1050: Theon-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Singatse-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope

TABLE 12.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
1051: Theon-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Singatse-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
1052: Theon-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Grumblen-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Rubble Land----	Severe: poor filter, slope, large stones	Severe: seepage slope, large stones	Severe: depth to rock, seepage slope	Severe: seepage slope	Poor: seepage small stones, slope
1053: Theon-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Rock Outcrop.					
1054: Theon-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Old Camp-----	Severe: depth to rock, slope	Severe: depth to rock, slope, large stones	Severe: depth to rock, slope, large stones	Severe: slope	Poor: depth to rock, small stones, slope
1055: Theon-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Old Camp-----	Severe: depth to rock, slope	Severe: depth to rock, slope, large stones	Severe: depth to rock, slope, large stones	Severe: slope	Poor: depth to rock, small stones, slope
1056: Theon-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Pickup-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope

TABLE 12.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
1080: Toulon-----	Severe: poor filter	Severe: seepage	Severe: too sandy, large stones	Slight	Poor: seepage too sandy, small stones
Appian-----	Severe: percs slowly, poor filter	Severe: seepage	Severe: too sandy, excess salt	Slight	Poor: seepage too sandy
Bluewing-----	Severe: flooding, poor filter	Severe: seepage flooding	Severe: flooding, too sandy	Severe: flooding	Poor: seepage too sandy, small stones
1100: Unionville-----	Severe: depth to rock	Severe: seepage depth to rock	Severe: depth to rock	Slight	Poor: depth to rock
Rock Outcrop.					
1150: Slocave-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Arclay-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Rock Outcrop.					
1151: Slocave-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Vium-----	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Slight	Poor: depth to rock
1190: Woolsey-----	Slight	Severe: seepage	Slight	Slight	Fair: small stones
Bluewing-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage too sandy, small stones
1200: Acrelane-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Soar-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope

TABLE 12.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
1200 (con.): Arclay-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
1201: Acrelane-----	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock, small stones
Wedekind-----	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Slight	Poor: depth to rock
Arclay-----	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock
1202: Acrelane-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Rock Outcrop.					
1203: Acrelane-----	Severe: depth to rock	Severe: depth to rock, slope	Severe: depth to rock	Moderate: slope	Poor: depth to rock, small stones
Shawave-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: too sandy
Granshaw-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: seepage too sandy
1204: Acrelane-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Arclay-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Eaglerock-----	Severe: depth to rock, percs slowly, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
1205: Acrelane-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, small stones, slope
Acrelane-----	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Slight	Poor: depth to rock, small stones

TABLE 12.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
1210: Wesfil-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
Sojur-----	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: slope	Poor: depth to rock, slope
1300: Yipor-----	Severe: flooding	Severe: flooding	Severe: flooding, excess salt	Severe: flooding	Good
1400: Jerval-----	Slight	Severe: seepage	Slight	Slight	Poor: small stones
Dorper-----	Severe: percs slowly	Moderate: slope	Severe: excess salt	Slight	Poor: seepage small stones
1401: Jerval-----	Slight	Severe: seepage	Slight	Slight	Poor: small stones
Aboten-----	Severe: cemented pan, poor filter	Severe: seepage cemented pan	Moderate: cemented pan, too sandy	Slight	Poor: cemented pan, seepage small stones
Dorper-----	Severe: percs slowly	Moderate: slope	Severe: excess salt	Slight	Poor: seepage small stones
1410: Slipback-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: too sandy
Shawave-----	Severe: poor filter	Severe: seepage	Severe: too sandy	Slight	Poor: too sandy
Nodur-----	Severe: percs slowly	Moderate: slope	Slight	Slight	Fair: small stones
1610: Lovelock-----	Severe: ponding	Severe: ponding	Severe: ponding, too clayey, excess salt	Severe: ponding	Poor: too clayey, hard to pack, ponding

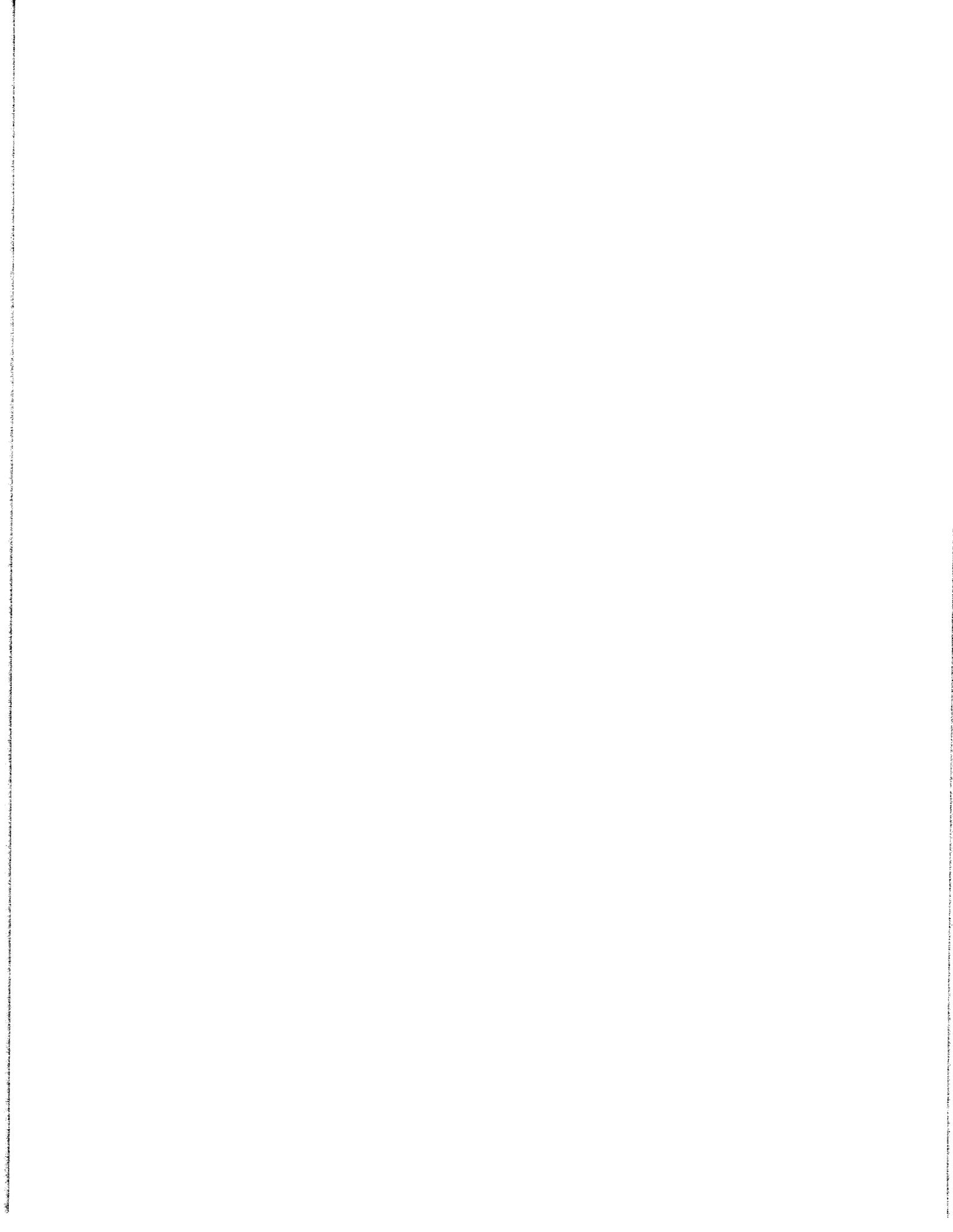


TABLE 13.--CONSTRUCTION MATERIALS

(The information in this report indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
110: Aboten-----	Good	Improbable: small stones	Probable	Poor: cemented pan, small stones, area reclaim
Jerval-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, excess salt
Bluewing-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
111: Aboten-----	Good	Improbable: small stones	Probable	Poor: cemented pan, small stones, area reclaim
Dorper-----	Good	Improbable: small stones	Probable	Poor: small stones, area reclaim, excess salt
112: Aboten-----	Good	Improbable: small stones	Probable	Poor: cemented pan, small stones, area reclaim
Dorper-----	Good	Improbable: small stones	Probable	Poor: small stones, area reclaim, excess salt
Rednik-----	Fair: large stones, slope	Probable	Probable	Poor: small stones, area reclaim, slope
113: Aboten-----	Fair: slope	Improbable: small stones	Probable	Poor: cemented pan, small stones, area reclaim
114: Aboten-----	Good	Improbable: small stones	Probable	Poor: cemented pan, small stones, area reclaim

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
114 (con.): Bluewing-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
120: Appian-----	Good	Improbable: thin layer	Improbable: too sandy	Poor: too sandy, excess salt, excess sodium
Isolde-----	Good	Probable	Improbable: too sandy	Poor: too sandy
Genegraf-----	Good	Probable	Probable	Poor: small stones, area reclaim, excess sodium
130: Boomstick-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Majuba-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, slope
Sojur-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
131: Boomstick-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Majuba-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, slope
Phliss-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
132: Boomstick-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Majuba-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, slope

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
139: Arclay-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones
141: Arclay-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Acrelane-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Soar-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
142: Arclay-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Vium-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Slocave-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
143: Ninemile-----	Poor: depth to rock, shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, small stones
Rock Outcrop.				
145: Ninemile-----	Poor: depth to rock, shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, small stones
Shively-----	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope
Rock Outcrop.				
150: Boton-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: excess salt

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
150 (con.): Playas-----	Poor: shrink-swell, low strength, wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt, wetness
152: Benin-----	Poor: shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt
Benin-----	Poor: shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt
160: Badland-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, excess salt
161: Dune Land-----	Fair: slope	Probable	Improbable: too sandy	Poor: too sandy, slope
Playas-----	Poor: shrink-swell, low strength, wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt, wetness
163: Dune Land-----	Fair: slope	Probable	Improbable: too sandy	Poor: too sandy, slope
171: Bluewing-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
Toulon-----	Fair: large stones	Probable	Probable	Poor: too sandy, small stones, area reclaim
Rock Outcrop.				
172: Bluewing-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
173: Bluewing-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
180: Biga-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, excess sodium
Granshaw-----	Good	Probable	Improbable: too sandy	Poor: too sandy, small stones
Labkey-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
181: Biga-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, excess sodium
182: Biga-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, excess sodium
190: Cresal-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: excess salt
201: Dorper-----	Good	Improbable: small stones	Probable	Poor: small stones, area reclaim, excess salt
Envol-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, small stones
203: Dorper-----	Good	Improbable: small stones	Probable	Poor: small stones, area reclaim, excess salt
204: Dorper-----	Good	Improbable: small stones	Probable	Poor: small stones, area reclaim, excess salt
Jerval-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, excess salt
Dorper-----	Good	Improbable: small stones	Probable	Poor: small stones, area reclaim, excess salt

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
206: Dorper-----	Good	Improbable: small stones	Probable	Poor: small stones, area reclaim, excess salt
210: Dorper-----	Good	Improbable: small stones	Probable	Poor: small stones, area reclaim, excess salt
Aboten-----	Good	Improbable: small stones	Probable	Poor: cemented pan, small stones, area reclaim
Kumiva-----	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones
220: Cleavage-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Phliss-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Majuba-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, slope
221: Cleavage-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Burnborough----	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
230: Coldent-----	Good	Probable	Probable	Poor: small stones, area reclaim, excess salt
Isolde-----	Good	Probable	Improbable: too sandy	Poor: too sandy
Swingler-----	Fair: shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: excess salt

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
231: Coldent-----	Good	Probable	Probable	Poor: small stones, area reclaim, excess salt
Hawsley-----	Good	Probable	Improbable: too sandy	Poor: too sandy
Mazuma-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: too sandy, excess salt
245: Dedmount-----	Poor: shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt
Umberland-----	Poor: shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: excess salt, excess sodium
Umberland-----	Poor: shrink-swell, low strength, wetness	Improbable: excess fines	Improbable: excess fines	Poor: excess salt, wetness, excess sodium
250: Devada-----	Poor: depth to rock, shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, small stones
Rock Outcrop.				
300: Envol-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, small stones
Frines-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: small stones
Rock Outcrop.				
302: Envol-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, small stones
310: Eaglerock-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, slope
Rock Outcrop.				

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
401: Genegraf-----	Good	Probable	Probable	Poor: small stones, area reclaim, excess sodium
Dorper-----	Good	Improbable: small stones	Probable	Poor: small stones, area reclaim, excess salt
Bluewing-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
402: Genegraf-----	Good	Probable	Probable	Poor: small stones, area reclaim, excess sodium
Bluewing-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
Dorper-----	Good	Improbable: small stones	Probable	Poor: small stones, area reclaim, excess salt
404: Genegraf-----	Good	Probable	Probable	Poor: small stones, area reclaim, excess sodium
Toulon-----	Fair: large stones	Probable	Probable	Poor: too sandy, small stones, area reclaim
410: Granshaw-----	Good	Probable	Improbable: too sandy	Poor: too sandy, small stones
Labkey-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
411: Granshaw-----	Good	Probable	Improbable: too sandy	Poor: too sandy, small stones
Biga-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, excess sodium

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
411 (con.): Envol-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, small stones
412: Granshaw-----	Good	Probable	Improbable: too sandy	Poor: too sandy, small stones
Jerval-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, excess salt
Dorper-----	Good	Improbable: small stones	Probable	Poor: small stones, area reclaim, excess salt
413: Granshaw-----	Good	Probable	Improbable: too sandy	Poor: too sandy, small stones
Kumiva-----	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones
414: Granshaw-----	Good	Probable	Improbable: too sandy	Poor: too sandy, small stones
415: Granshaw-----	Good	Probable	Improbable: too sandy	Poor: too sandy, small stones
Biga-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, excess sodium
Puett-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, slope
431: Grumblen-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, small stones
Pickup-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, small stones, slope
432: Grumblen-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, small stones

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
432 (con.): Pickup-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, small stones, slope
Old Camp-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
451: Hawsley-----	Good	Probable	Improbable: too sandy	Poor: too sandy
452: Hawsley-----	Good	Probable	Improbable: too sandy	Poor: too sandy
Labkey-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
Genegraf-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, excess salt
453: Hawsley-----	Good	Probable	Improbable: too sandy	Poor: too sandy
Bluewing-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
456: Hawsley-----	Fair: slope	Probable	Improbable: too sandy	Poor: too sandy, slope
Badland-----	Poor: shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt, slope
462: Hawsley-----	Good	Probable	Improbable: too sandy	Poor: too sandy
Mazuma-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: too sandy, excess salt
470: Deadyon-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
471: Deadyon-----	Good	Improbable: excess fines	Improbable: excess fines	Fair: too sandy, small stones, area reclaim
Granshaw-----	Good	Probable	Improbable: too sandy	Poor: too sandy, small stones
472: Deadyon-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones
480: Humboldt-----	Poor: low strength, wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt, wetness
500: Isolde-----	Good	Probable	Improbable: too sandy	Poor: too sandy
Typic Torriorthents--	Poor: thin layer	Improbable: excess fines	Improbable: excess fines	Poor: small stones
Dune Land-----	Fair: slope	Probable	Improbable: too sandy	Poor: too sandy, slope
502: Isolde-----	Good	Probable	Improbable: too sandy	Poor: too sandy
Ragtown-----	Poor: shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt
503: Isolde-----	Good	Probable	Improbable: too sandy	Poor: too sandy
510: Juva-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: too sandy, small stones
550: Kumiva-----	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones
Labkey-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
Chumall-----	Good	Probable	Improbable: too sandy	Poor: excess salt

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsail
551: Kumiva-----	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones
Kumiva-----	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones
553: Kumiva-----	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones
559: Phliss-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Phliss-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Majuba-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, slope
560: Phliss-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
562: Sondoa-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: excess salt
563: Sondoa-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: excess salt
Swingler-----	Fair: shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: excess salt
Isolde-----	Good	Probable	Improbable: too sandy	Poor: too sandy
650: Labkey-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
651: Labkey-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
Mazuma-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: too sandy, excess salt

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
651 (con.): Hawsley-----	Good	Probable	Improbable: too sandy	Poor: too sandy
652: Labkey-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
Hawsley-----	Good	Probable	Improbable: too sandy	Poor: too sandy
Granshaw-----	Good	Probable	Improbable: too sandy	Poor: too sandy, small stones
653: Labkey-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
Mazuma-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: too sandy, excess salt
700: Mazuma-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: too sandy, excess salt
Trocken-----	Fair: large stones	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
701: Mazuma-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: too sandy, excess salt
702: Mazuma-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: too sandy, excess salt
Swingler-----	Fair: shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: excess salt
Toulon-----	Fair: large stones	Probable	Probable	Poor: too sandy, small stones, area reclaim
703: Mazuma-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: too sandy, excess salt
Hardhat-----	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones, area reclaim

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
703 (con.): Hawsley-----	Good	Probable	Improbable: too sandy	Poor: too sandy
704: Mazuma-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: too sandy, excess salt
705: Mazuma-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: too sandy, excess salt
Mazuma-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: too sandy, excess salt
706: Mazuma-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: too sandy, excess salt
707: Mazuma-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: too sandy, excess salt
Coldent-----	Good	Probable	Probable	Poor: small stones, area reclaim, excess salt
708: Mazuma-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: too sandy, excess salt
Ragtown-----	Poor: shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt
750: Pickup-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, small stones
Rock Outcrop.				
751: Pickup-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, small stones, slope
Grumblen-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, small stones
Rock Outcrop.				

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
752: Pickup-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, small stones, slope
Old Camp-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Theon-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
753: Pickup-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, small stones, slope
Rock Outcrop.				
800: Old Camp-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Dorper-----	Fair: slope	Improbable: small stones	Probable	Poor: small stones, area reclaim, excess salt
Pokergap-----	Fair: slope	Improbable: small stones	Probable	Poor: small stones, area reclaim, excess sodium
801: Old Camp-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Sunya-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Pickup-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, small stones, slope
810: Perwaso-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: excess salt

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
810 (con.): Perwaso-----	Good	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, area reclaim, thin layer
850: Playas-----	Poor: shrink-swell, low strength, wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt, wetness
851: Pits, Mine.				
852: Puett-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, slope
Dorper-----	Good	Improbable: small stones	Probable	Poor: small stones, area reclaim, excess salt
960: Rednik-----	Poor: slope	Probable	Probable	Poor: small stones, area reclaim, slope
Jungo-----	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
Aboten-----	Good	Improbable: small stones	Probable	Poor: cemented pan, small stones, area reclaim
970: Say-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, slope
Eaglerock-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, slope
Ninemile-----	Poor: depth to rock, shrink-swell, low strength	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, small stones
980: Selbit-----	Poor: depth to rock, slope	Improbable: thin layer	Improbable: thin layer	Poor: depth to rock, too sandy, small stones
Rock Outcrop.				

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
981: Selbit-----	Poor: depth to rock, slope	Improbable: thin layer	Improbable: thin layer	Poor: depth to rock, too sandy, small stones
Rock Outcrop.				
Upsel-----	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, slope
990: Shawave-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones
Granshaw-----	Good	Probable	Improbable: too sandy	Poor: too sandy, small stones
Labkey-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
991: Shawave-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones
Slipback-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, excess sodium
Granshaw-----	Good	Probable	Improbable: too sandy	Poor: too sandy, small stones
992: Shawave-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones
Deadyon-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones
Slipback-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, excess sodium
993: Shawave-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones
Biga-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, excess sodium
Deadyon-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones
994: Shawave-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
994 (con.): Biga-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, excess sodium
Puett-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, slope
996: Slaw-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: excess salt
Slaw-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess salt
1020: Soar-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Arclay-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Soar-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones
1021: Soar-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Arclay-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
1022: Soar-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Arclay-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Rock Outcrop.				
1030: Pokergap-----	Good	Improbable: small stones	Probable	Poor: small stones, area reclaim, excess sodium

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
1031: Pokergap-----	Good	Improbable: small stones	Probable	Poor: small stones, area reclaim, excess sodium
Dorper-----	Good	Improbable: small stones	Probable	Poor: small stones, area reclaim, excess salt
1032: Pokergap-----	Good	Improbable: small stones	Probable	Poor: small stones, area reclaim, excess sodium
Dorper-----	Good	Improbable: small stones	Probable	Poor: small stones, area reclaim, excess salt
1033: Pokergap-----	Good	Improbable: small stones	Probable	Poor: small stones, area reclaim, excess sodium
Jerval-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, excess salt
Dorper-----	Good	Improbable: small stones	Probable	Poor: small stones, area reclaim, excess salt
1034: Pokergap-----	Good	Improbable: small stones	Probable	Poor: small stones, area reclaim, excess sodium
1035: Pokergap-----	Good	Improbable: small stones	Probable	Poor: small stones, area reclaim, excess sodium
Jerval-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, excess salt
1040: Sejur-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
1041: Sojur-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Boomstick-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Rubble Land-----	Poor: large stones, slope	Improbable: small stones, large stones	Improbable: large stones	Poor: area reclaim, small stones, slope
1042: Sojur-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Phliis-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
1050: Theon-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Singatse-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
1051: Theon-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Singatse-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
1052: Theon-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Grumblen-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, too clayey, small stones

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
1052 (con.): Rubble Land-----	Poor: large stones, slope	Improbable: small stones, large stones	Improbable: large stones	Poor: area reclaim, small stones, slope
1053: Theon-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Rock Outcrop.				
1054: Theon-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Old Camp-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
1055: Theon-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Old Camp-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
1056: Theon-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Pickup-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, small stones, slope
1080: Toulon-----	Fair: large stones	Probable	Probable	Poor: too sandy, small stones, area reclaim
Appian-----	Good	Improbable: thin layer	Improbable: too sandy	Poor: too sandy, excess salt, excess sodium
Bluewing-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
1100: Unionville----- Rock Outcrop.	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: depth to rock, small stones, thin layer
1150: Slocave----- Arclay----- Rock Outcrop.	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
1151: Slocave----- Vium-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
1190: Woolsey----- Bluewing-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones
1200: Acrelane----- Soar----- Arclay-----	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
1201: Acrelane-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
1201 (con.): Wedekind-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones
Arclay-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones
1202: Acrelane-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Rock Outcrop.				
1203: Acrelane-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones
Shawave-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones
Granshaw-----	Good	Probable	Improbable: too sandy	Poor: too sandy, small stones
1204: Acrelane-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Arclay-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Eaglerock-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, slope
1205: Acrelane-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Acrelane-----	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones
1210: Wesfil-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope

TABLE 13.--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
1210 (con.): Sojur-----	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
1300: Yipor-----	Good	Improbable: excess fines	Improbable: excess fines	Fair: excess salt, thin layer
1400: Jerval-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, excess salt
Dorper-----	Good	Improbable: small stones	Probable	Poor: small stones, area reclaim, excess salt
1401: Jerval-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, excess salt
Aboten-----	Good	Improbable: small stones	Probable	Poor: cemented pan, small stones, area reclaim
Dorper-----	Good	Improbable: small stones	Probable	Poor: small stones, area reclaim, excess salt
1410: Slipback-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, excess sodium
Shawave-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones
Nodur-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim, small stones, excess sodium
1610: Lovelock-----	Poor: shrink-swell, low strength, wetness	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, wetness

TABLE 14.--WATER MANAGEMENT

(The information in this report indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
110: Aboten-----	Severe: seepage, cemented pan	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Large stones, cemented pan, too sandy
Jerval-----	Severe: seepage	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, excess sodium	Favorable
Bluewing-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Large stones, too sandy
111: Aboten-----	Severe: seepage, cemented pan, slope	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope, large stones, cemented pan
Dorper-----	Moderate: slope	Severe: seepage, excess sodium, excess salt	Severe: no water	Deep to water	Slope, droughty, percs slowly	Erodes easily
112: Aboten-----	Severe: seepage, cemented pan, slope	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope, large stones, cemented pan
Dorper-----	Moderate: slope	Severe: seepage, excess sodium, excess salt	Severe: no water	Deep to water	Slope, droughty, percs slowly	Erodes easily
Rednik-----	Severe: seepage, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones
113: Aboten-----	Severe: seepage, cemented pan, slope	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope, large stones, cemented pan
114: Aboten-----	Severe: seepage, cemented pan	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Large stones, cemented pan, too sandy
Bluewing-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Large stones, too sandy

TABLE 14.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
120: Appian-----	Severe: seepage	Severe: seepage, excess sodium, excess salt	Severe: no water	Deep to water	Droughty, fast intake, soil blowing	Too sandy, soil blowing
Isolde-----	Severe: seepage, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Slope, too sandy, soil blowing
Genegra-----	Moderate: seepage, slope	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, excess sodium	Too sandy
130: Boomstick-----	Severe: depth to rock, slope	Severe: seepage	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Majuba-----	Severe: slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Sojur-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
131: Boomstick-----	Severe: depth to rock, slope	Severe: seepage	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Majuba-----	Severe: slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Phliss-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, large stones, depth to rock
132: Boomstick-----	Severe: depth to rock, slope	Severe: seepage	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Majuba-----	Severe: slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
139: Arclay-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
141: Arclay-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock

TABLE 14.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
141 (con.): Acrelane-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Soar-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
142: Arclay-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Vium-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Slocave-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
143: Ninemile-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, percs slowly, depth to rock	Slope, depth to rock, percs slowly
Rock Outcrop.						
145: Ninemile-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, percs slowly, depth to rock	Slope, depth to rock, percs slowly
Shively-----	Severe: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope	Slope
Rock Outcrop.						
150: Boton-----	Slight	Severe: piping, excess salt	Severe: no water	Deep to water	Erodes easily, excess salt	Erodes easily
Playas-----	Slight	Severe: hard to pack, ponding, excess salt	Severe: slow refill, salty water	Ponding, percs slowly, excess salt	Ponding, droughty, percs slowly	Erodes easily, ponding, percs slowly
152: Benin-----	Slight	Severe: hard to pack	Severe: no water	Deep to water	Percs slowly, erodes easily, excess salt	Erodes easily, percs slowly
Benin-----	Slight	Severe: hard to pack, excess salt	Severe: no water	Deep to water	Percs slowly, erodes easily, flooding	Erodes easily, percs slowly

TABLE 14.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
160: Badland-----	Severe: depth to rock, slope	Severe: excess salt	Severe: no water	Deep to water	Slope, depth to rock, rooting depth	Slope, depth to rock, erodes easily
161: Dune Land-----	Severe: seepage, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Slope, too sandy, soil blowing
Playas-----	Slight	Severe: hard to pack, ponding, excess salt	Severe: slow refill, salty water	Ponding, percs slowly, excess salt	Ponding, droughty, percs slowly	Erodes easily, ponding, percs slowly
163: Dune Land-----	Severe: seepage, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Slope, too sandy, soil blowing
171: Bluewing-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Large stones, too sandy
Toulon-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, large stones, droughty	Large stones, too sandy
Rock Outcrop.						
172: Bluewing-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Large stones, too sandy
173: Bluewing-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Droughty, fast intake, flooding	Large stones, too sandy
180: Biga-----	Moderate: slope	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Erodes easily, too sandy, percs slowly
Granshaw-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
Labkey-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Droughty	Too sandy
181: Biga-----	Moderate: slope	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Erodes easily, too sandy, percs slowly
182: Biga-----	Moderate: slope	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Erodes easily, too sandy, percs slowly

TABLE 14.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
190: Cresal-----	Slight	Severe: piping, excess salt	Severe: no water	Deep to water	Erodes easily, excess salt	Erodes easily
201: Dorper-----	Severe: slope	Severe: seepage, excess sodium, excess salt	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope, erodes easily
Envol-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, percs slowly, depth to rock	Slope, depth to rock
203: Dorper-----	Moderate: slope	Severe: seepage, excess sodium, excess salt	Severe: no water	Deep to water	Slope, droughty, percs slowly	Erodes easily
204: Dorper-----	Moderate: slope	Severe: seepage, excess sodium, excess salt	Severe: no water	Deep to water	Slope, droughty, percs slowly	Erodes easily
Jerval-----	Severe: seepage	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, excess sodium	Favorable
Dorper-----	Moderate: slope	Severe: seepage, excess sodium, excess salt	Severe: no water	Deep to water	Slope, droughty, percs slowly	Erodes easily
206: Dorper-----	Moderate: slope	Severe: seepage, excess sodium, excess salt	Severe: no water	Deep to water	Slope, droughty, percs slowly	Erodes easily
210: Dorper-----	Moderate: slope	Severe: seepage, excess sodium, excess salt	Severe: no water	Deep to water	Slope, droughty, percs slowly	Erodes easily
Aboten-----	Severe: seepage, cemented pan, slope	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope, large stones, cemented pan
Kumiva-----	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Erodes easily	Erodes easily
220: Cleavage-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, depth to rock	Slope, large stones, depth to rock

TABLE 14.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
220 (con.): Phliss-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Majuba-----	Severe: slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
221: Cleavage-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, depth to rock	Slope, large stones, depth to rock
Burnborough----	Severe: slope	Moderate: large stones	Severe: no water	Deep to water	Slope, droughty	Slope, large stones
230: Coldent-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Droughty, fast intake, soil blowing	Too sandy, soil blowing
Isolde-----	Severe: seepage, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Slope, too sandy, soil blowing
Swingler-----	Slight	Severe: piping, excess salt	Severe: no water	Deep to water	Erodes easily, excess salt	Erodes easily
231: Coldent-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, fast intake	Too sandy, soil blowing
Hawsley-----	Severe: seepage, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Slope, too sandy, soil blowing
Mazuma-----	Severe: seepage	Severe: piping, excess salt	Severe: no water	Deep to water	Droughty, erodes easily, excess salt	Erodes easily, too sandy
245: Dedmount-----	Slight	Severe: hard to pack	Severe: slow refill	Deep to water	Percs slowly, erodes easily, excess salt	Erodes easily, percs slowly
Umberland-----	Slight	Severe: excess sodium, excess salt	Severe: slow refill, salty water	Frost action, excess salt, excess sodium	Wetness, percs slowly, erodes easily	Erodes easily, wetness
Umberland-----	Slight	Severe: ponding, excess sodium, excess salt	Severe: slow refill, salty water	Ponding, frost action, excess salt	Ponding, percs slowly, erodes easily	Erodes easily, ponding

TABLE 14.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
250: Devada----- Rock Outcrop.	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, percs slowly	Slope, large stones, depth to rock
300: Envol----- Frines----- Rock Outcrop.	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, percs slowly, depth to rock	Slope, depth to rock
302: Envol----- 310: Eaglerock----- Rock Outcrop.	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, percs slowly, depth to rock	Slope, depth to rock
310: Eaglerock----- Rock Outcrop.	Severe: slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
401: Genegraf----- Dorper----- Bluewing-----	Moderate: seepage, slope	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, excess sodium	Too sandy
401: Genegraf----- Dorper----- Bluewing-----	Moderate: slope	Severe: seepage, excess sodium, excess salt	Severe: no water	Deep to water	Slope, droughty, percs slowly	Erodes easily
402: Genegraf----- Bluewing----- Dorper-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Droughty	Large stones, too sandy
402: Genegraf----- Bluewing----- Dorper-----	Moderate: seepage, slope	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, excess sodium	Too sandy
402: Genegraf----- Bluewing----- Dorper-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Large stones, too sandy
402: Genegraf----- Bluewing----- Dorper-----	Moderate: slope	Severe: seepage, excess sodium, excess salt	Severe: no water	Deep to water	Slope, droughty, percs slowly	Erodes easily

TABLE 14.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
404: Genegraf-----	Moderate: seepage, slope	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, excess sodium	Too sandy
Toulon-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, large stones, droughty	Large stones, too sandy
410: Granshaw-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Droughty	Too sandy
Labkey-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Droughty	Too sandy
411: Granshaw-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
Biga-----	Moderate: slope	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Erodes easily, too sandy, percs slowly
Envol-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, percs slowly, depth to rock	Slope, depth to rock
412: Granshaw-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
Jerval-----	Severe: seepage	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, excess sodium	Favorable
Dorper-----	Moderate: slope	Severe: seepage, excess sodium, excess salt	Severe: no water	Deep to water	Slope, droughty, percs slowly	Erodes easily
413: Granshaw-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
Kumiva-----	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Favorable	Favorable
414: Granshaw-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Droughty	Too sandy
415: Granshaw-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
Biga-----	Moderate: slope	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Erodes easily, too sandy, percs slowly

TABLE 14.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
415 (con.): Puett-----	Severe: depth to rock, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, soil blowing, depth to rock	Slope, depth to rock, soil blowing
431: Grumblen-----	Severe: depth to rock, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope, depth to rock, percs slowly
Pickup-----	Severe: slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope, large stones, depth to rock
432: Grumblen-----	Severe: depth to rock, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope, depth to rock, percs slowly
Pickup-----	Severe: slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope, large stones, depth to rock
Old Camp-----	Severe: depth to rock, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
451: Hawsley-----	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Droughty, fast intake, soil blowing	Too sandy, soil blowing
452: Hawsley-----	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Too sandy, soil blowing
Labkey-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
Genegraf-----	Moderate: slope	Severe: seepage, excess sodium, excess salt	Severe: no water	Deep to water	Slope, droughty, excess sodium	Favorable
453: Hawsley-----	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Too sandy, soil blowing
Bluewing-----	Severe: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, fast intake	Slope, large stones, too sandy
456: Hawsley-----	Severe: seepage, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Slope, too sandy, soil blowing

TABLE 14.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
456 (con.): Badland-----	Severe: slope	Severe: hard to pack, excess salt	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope, erodes easily, percs slowly
462: Hawsley-----	Severe: seepage, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Slope, too sandy, soil blowing
Mazuma-----	Severe: seepage	Severe: piping, excess salt	Severe: no water	Deep to water	Droughty, erodes easily, excess salt	Erodes easily, too sandy
470: Deadyon-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Droughty, erodes easily	Erodes easily, too sandy
471: Deadyon-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Droughty, fast intake, soil blowing	Too sandy, soil blowing
Granshaw-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
472: Deadyon-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, soil blowing	Too sandy, soil blowing
480: Humboldt-----	Moderate: seepage	Severe: hard to pack, wetness, excess salt	Severe: slow refill, salty water	Flooding, frost action, excess salt	Wetness, erodes easily, flooding	Erodes easily, wetness
500: Isolde-----	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Too sandy, soil blowing
Typic Torriorthents--	Slight	Severe: thin layer	Severe: no water	Deep to water	Droughty, rooting depth	Favorable
Dune Land-----	Severe: seepage, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Slope, too sandy, soil blowing
502: Isolde-----	Severe: seepage, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Slope, too sandy, soil blowing
Ragtown-----	Slight	Severe: excess salt	Severe: no water	Deep to water	Percs slowly, erodes easily, flooding	Erodes easily, percs slowly

TABLE 14.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
503: Isolde-----	Severe: seepage, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Slope, too sandy, soil blowing
510: Juva-----	Moderate: seepage	Severe: piping	Severe: no water	Deep to water	Droughty, erodes easily, flooding	Erodes easily, too sandy
550: Kumiva-----	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Soil blowing, flooding	Soil blowing
Labkey-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Droughty	Too sandy
Chumall-----	Severe: seepage	Severe: piping, excess salt	Severe: no water	Deep to water	Erodes easily, excess salt	Erodes easily
551: Kumiva-----	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Erodes easily	Erodes easily
Kumiva-----	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Soil blowing, flooding	Soil blowing
553: Kumiva-----	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Soil blowing, flooding	Soil blowing
559: Phliss-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Phliss-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, large stones, depth to rock
Majuba-----	Severe: slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
560: Phliss-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, large stones, depth to rock
562: Sondoa-----	Slight	Severe: excess salt	Severe: no water	Deep to water	Erodes easily, excess salt	Erodes easily
563: Sondoa-----	Slight	Severe: excess salt	Severe: no water	Deep to water	Erodes easily, excess salt	Erodes easily

TABLE 14.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
563 (con.): Swingler-----	Slight	Severe: piping, excess salt	Severe: no water	Deep to water	Erodes easily, excess salt	Erodes easily
Isolde-----	Severe: seepage, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Slope, too sandy, soil blowing
650: Labkey-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
651: Labkey-----	Severe: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Slope, too sandy
Mazuma-----	Severe: seepage	Severe: piping, excess salt	Severe: no water	Deep to water	Droughty, soil blowing, excess salt	Erodes easily, too sandy, soil blowing
Hawsley-----	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Too sandy, soil blowing
652: Labkey-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Droughty	Too sandy
Hawsley-----	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Too sandy, soil blowing
Granshaw-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Droughty	Too sandy
653: Labkey-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
Mazuma-----	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Soil blowing, excess salt	Too sandy, soil blowing
700: Mazuma-----	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Slope, soil blowing, erodes easily	Erodes easily, too sandy, soil blowing
Trocken-----	Moderate: seepage, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Large stones, too sandy
701: Mazuma-----	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Slope, soil blowing, erodes easily	Erodes easily, too sandy, soil blowing

TABLE 14.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
702: Mazuma-----	Severe: seepage	Severe: piping, excess salt	Severe: no water	Deep to water	Droughty, erodes easily, excess salt	Erodes easily, too sandy
Swingler-----	Slight	Severe: piping, excess salt	Severe: no water	Deep to water	Erodes easily, excess salt	Erodes easily
Toulon-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, large stones, droughty	Large stones, too sandy
703: Mazuma-----	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Fast intake, soil blowing, erodes easily	Erodes easily, too sandy, soil blowing
Hardhat-----	Moderate: seepage	Severe: piping	Severe: no water	Deep to water	Fast intake, soil blowing	Erodes easily, soil blowing
Hawsley-----	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Droughty, fast intake, soil blowing	Too sandy, soil blowing
704: Mazuma-----	Severe: seepage	Severe: piping, excess salt	Severe: no water	Deep to water	Droughty, soil blowing, excess salt	Erodes easily, too sandy, soil blowing
705: Mazuma-----	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Fast intake, soil blowing, erodes easily	Erodes easily, too sandy, soil blowing
Mazuma-----	Severe: seepage	Severe: piping, excess salt	Severe: no water	Deep to water	Droughty, soil blowing, excess salt	Erodes easily, too sandy, soil blowing
706: Mazuma-----	Severe: seepage	Severe: piping, excess salt	Severe: no water	Deep to water	Droughty, erodes easily, excess salt	Erodes easily, too sandy
707: Mazuma-----	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Soil blowing, excess salt	Too sandy, soil blowing
Coldent-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, fast intake	Too sandy, soil blowing
708: Mazuma-----	Severe: seepage	Severe: piping, excess salt	Severe: no water	Deep to water	Droughty, erodes easily, excess salt	Erodes easily, too sandy
Ragtown-----	Slight	Severe: excess salt	Severe: no water	Deep to water	Percs slowly, erodes easily, flooding	Erodes easily, percs slowly

TABLE 14.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
750: Pickup----- Rock Outcrop.	Severe: slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope, large stones, depth to rock
751: Pickup----- Grumblen----- Rock Outcrop.	Severe: slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope, large stones, depth to rock
752: Pickup----- Old Camp----- Theon-----	Severe: depth to rock, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope, depth to rock, percs slowly
753: Pickup----- Rock Outcrop.	Severe: slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope, large stones, depth to rock
800: Old Camp----- Dorper-----	Severe: depth to rock, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Pokergap-----	Severe: slope	Severe: seepage, excess sodium, excess salt	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope, erodes easily
801: Old Camp-----	Severe: seepage, slope	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, erodes easily	Slope, erodes easily
Sumya-----	Severe: depth to rock, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope, large stones, depth to rock

TABLE 14.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
801 (con.): Pickup-----	Severe: slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope, large stones, depth to rock
810: Perwaso-----	Severe: seepage	Severe: piping, excess salt	Severe: no water	Deep to water	Erodes easily, flooding, excess salt	Erodes easily
Perwaso-----	Severe: seepage	Severe: piping, excess salt	Severe: no water	Deep to water	Erodes easily, excess salt	Erodes easily
850: Playas-----	Slight	Severe: hard to pack, ponding, excess salt	Severe: slow refill, salty water	Ponding, percs slowly, excess salt	Ponding, droughty, percs slowly	Erodes easily, ponding, percs slowly
851: Pits, Mine.						
852: Puett-----	Severe: depth to rock, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, soil blowing, depth to rock	Slope, depth to rock, soil blowing
Dorper-----	Moderate: slope	Severe: seepage, excess sodium, excess salt	Severe: no water	Deep to water	Slope, droughty, percs slowly	Erodes easily
960: Rednik-----	Severe: seepage, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones
Jungo-----	Severe: slope	Moderate: large stones	Severe: no water	Deep to water	Slope, droughty	Slope, large stones
Aboten-----	Severe: seepage, cemented pan, slope	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope, cemented pan, too sandy
970: Say-----	Severe: seepage, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, depth to rock	Slope, large stones, depth to rock
Eaglerock-----	Severe: slope	Moderate: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Ninemile-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, percs slowly, depth to rock	Slope, depth to rock, percs slowly

TABLE 14.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
980: Selbit----- Rock Outcrop.	Severe: depth to rock, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, fast intake	Slope, large stones, depth to rock
981: Selbit----- Rock Outcrop.	Severe: depth to rock, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, fast intake	Slope, large stones, depth to rock
Upsel-----	Severe: seepage, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, droughty, fast intake	Slope, too sandy, soil blowing
990: Shawave-----	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Slope	Too sandy
Granshaw-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
Labkey-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Droughty	Too sandy
991: Shawave-----	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Slope	Too sandy
Slipback-----	Severe: seepage	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, soil blowing, erodes easily	Erodes easily, too sandy, soil blowing
Granshaw-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy
992: Shawave-----	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Slope	Too sandy
Deadyon-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, erodes easily	Erodes easily, too sandy
Slipback-----	Severe: seepage	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, soil blowing, erodes easily	Erodes easily, too sandy, soil blowing
993: Shawave-----	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Slope	Too sandy

TABLE 14.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
993 (con.): Biga-----	Moderate: slope	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Erodes easily, too sandy, percs slowly
Deadyon-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Droughty, erodes easily	Erodes easily, too sandy
994: Shawave-----	Severe: seepage, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope	Slope, too sandy
Biga-----	Moderate: slope	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Erodes easily, too sandy, percs slowly
Puett-----	Severe: depth to rock, slope	Severe: seepage, piping	Severe: no water	Deep to water	Slope, soil blowing, depth to rock	Slope, depth to rock, soil blowing
996: Slaw-----	Slight	Severe: piping, excess salt	Severe: no water	Deep to water	Percs slowly, erodes easily, excess salt	Erodes easily, percs slowly
Slaw-----	Slight	Severe: excess salt	Severe: no water	Deep to water	Percs slowly, erodes easily, flooding	Erodes easily, percs slowly
1020: Soar-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Arclay-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Soar-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
1021: Soar-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Arclay-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
1022: Soar-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Arclay-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock

TABLE 14.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
1022 (con.): Rock Outcrop.						
1030: Pokergap-----	Severe: seepage	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, excess sodium	Favorable
1031: Pokergap-----	Severe: seepage	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, excess sodium	Favorable
Dorper-----	Moderate: slope	Severe: seepage, excess sodium, excess salt	Severe: no water	Deep to water	Slope, droughty, percs slowly	Erodes easily
1032: Pokergap-----	Severe: seepage, slope	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, erodes easily	Slope, erodes easily
Dorper-----	Severe: slope	Severe: seepage, excess sodium, excess salt	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope, erodes easily
1033: Pokergap-----	Severe: seepage	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, erodes easily	Erodes easily
Jerval-----	Severe: seepage	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, excess sodium	Favorable
Dorper-----	Moderate: slope	Severe: seepage, excess sodium, excess salt	Severe: no water	Deep to water	Slope, droughty, percs slowly	Erodes easily
1034: Pokergap-----	Severe: seepage, slope	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, erodes easily	Slope, erodes easily
1035: Pokergap-----	Severe: seepage	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, erodes easily	Erodes easily
Jerval-----	Severe: seepage	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, excess sodium	Favorable
1040: Sojur-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock

TABLE 14.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
1041: Sojur-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Boomstick-----	Severe: depth to rock, slope	Severe: seepage	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Rubble Land-----	Severe: seepage, slope	Severe: seepage, large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones
1042: Sojur-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Phliss-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, large stones, depth to rock
1050: Theon-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Singatse-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, large stones, depth to rock
1051: Theon-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Singatse-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
1052: Theon-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Grumblen-----	Severe: depth to rock, slope	Severe: seepage	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope, depth to rock, percs slowly
Rubble Land-----	Severe: seepage, slope	Severe: seepage, large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones
1053: Theon-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Rock Outcrop.						

TABLE 14.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
1054: Theon-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Old Camp-----	Severe: depth to rock, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
1055: Theon-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Old Camp-----	Severe: depth to rock, slope	Severe: large stones	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
1056: Theon-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
Pickup-----	Severe: slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, percs slowly	Slope, large stones, depth to rock
1080: Toulon-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, large stones, droughty	Large stones, too sandy
Appian-----	Severe: seepage	Severe: seepage, excess sodium, excess salt	Severe: no water	Deep to water	Droughty, fast intake, soil blowing	Too sandy, soil blowing
Bluewing-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Droughty, fast intake, flooding	Large stones, too sandy
1100: Unionville-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, soil blowing, depth to rock	Depth to rock, soil blowing
Rock Outcrop.						
1150: Slocave-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Arclay-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Rock Outcrop.						

TABLE 14.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
1151: Slocave-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Vium-----	Severe: depth to rock	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Depth to rock
1190: Woolsey-----	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Slope, soil blowing, erodes easily	Erodes easily, soil blowing
Bluewing-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Large stones, too sandy
1200: Acrelane-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Soar-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Arclay-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
1201: Acrelane-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Wedekind-----	Severe: depth to rock	Severe: thin layer	Severe: no water	Deep to water	Slope, depth to rock	Depth to rock
Arclay-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
1202: Acrelane-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, large stones, depth to rock
Rock Outcrop.						
1203: Acrelane-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Shawave-----	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Slope	Too sandy
Granshaw-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Slope, droughty	Too sandy

TABLE 14.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
1204: Acrelane-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Arclay-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Eaglerock-----	Severe: slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
1205: Acrelane-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, depth to rock
Acrelane-----	Severe: depth to rock	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Depth to rock
1210: Wesfil-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, droughty, depth to rock	Slope, large stones, depth to rock
Sojur-----	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, large stones, droughty	Slope, large stones, depth to rock
1300: Yipor-----	Moderate: seepage	Severe: piping, excess salt	Severe: no water	Deep to water	Erodes easily, flooding, excess salt	Erodes easily
1400: Jerval-----	Severe: seepage	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, excess sodium	Favorable
Dorper-----	Moderate: slope	Severe: seepage, excess sodium, excess salt	Severe: no water	Deep to water	Slope, droughty, percs slowly	Erodes easily
1401: Jerval-----	Severe: seepage	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, excess sodium	Favorable
Aboten-----	Severe: seepage, cemented pan	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, droughty, percs slowly	Cemented pan, too sandy
Dorper-----	Moderate: slope	Severe: seepage, excess sodium, excess salt	Severe: no water	Deep to water	Slope, droughty, percs slowly	Erodes easily

TABLE 14.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions
1410: Slipback-----	Severe: seepage	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, soil blowing, erodes easily	Erodes easily, too sandy, soil blowing
Shawave-----	Severe: seepage	Severe: seepage, piping	Severe: no water	Deep to water	Slope	Too sandy
Nodur-----	Moderate: slope	Severe: seepage, excess sodium	Severe: no water	Deep to water	Slope, soil blowing, percs slowly	Soil blowing
1610: Lovelock-----	Moderate: seepage	Severe: hard to pack, ponding, excess salt	Severe: salty water	Ponding, excess salt	Ponding, excess salt	Ponding



TABLE 15.--ENGINEERING INDEX PROPERTIES

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
110: Aboten-----	0-7	Very gravelly silt loam	GM	A-2, A-4	0	5-25	35-55	30-50	25-50	25-45	15-25	NP-5
	7-15	Clay loam, loam	ML, CL	A-6	0	0-10	80-100	75-90	70-90	50-70	35-40	10-15
	15-27	Cemented			0	0	0	0	0	0	---	NP
	27-60	Extremely gravelly sandy loam, very gravelly loamy sand	GP-GM, GM	A-1	0	0-15	25-40	20-35	10-20	5-15	---	NP
Jerval-----	0-8	Gravelly very fine sandy loam	SM	A-4	0	0-10	70-85	55-75	50-75	35-50	---	NP
	8-20	Gravelly clay loam, gravelly silty clay loam	CL	A-6	0	0-5	65-85	60-75	55-75	50-65	35-40	15-20
	20-60	Very gravelly sandy loam, very gravelly fine sandy loam	GM	A-1	0	0-10	45-60	35-50	25-45	15-25	---	NP
Bluewing-----	0-2	Gravelly sandy loam	SM	A-1, A-2	0	0-10	60-80	55-75	30-60	20-35	---	NP
	2-60	Stratified very gravelly sand to extremely gravelly loamy coarse sand	GP-GM	A-1	0	5-25	30-40	25-35	15-25	5-10	---	NP
111: Aboten-----	0-7	Very gravelly silt loam	GM	A-2, A-4	0	5-25	35-55	30-50	25-50	25-45	15-25	NP-5
	7-15	Clay loam, loam	ML, CL	A-6	0	0-10	80-100	75-90	70-90	50-70	35-40	10-15
	15-27	Cemented			0	0	0	0	0	0	---	NP
	27-60	Extremely gravelly sandy loam, very gravelly loamy sand	GP-GM, GM	A-1	0	0-15	25-40	20-35	10-20	5-15	---	NP
Dorper-----	0-2	Extremely gravelly very fine sandy loam	GP-GM, GM	A-1	0-1	0-15	20-30	15-25	10-25	5-15	15-25	NP-5
	2-7	Gravelly very fine sandy loam, silt loam	SM, ML, GM	A-4	0	0	65-100	60-100	55-100	35-70	15-25	NP-5
	7-17	Gravelly clay loam, clay, clay loam	GC, CL	A-7	0	0	65-95	60-90	50-80	45-70	40-50	15-25
	17-60	Very gravelly coarse sandy loam, extremely gravelly sandy loam	GM, GP-GM	A-1	0-1	10-15	15-50	10-45	5-40	5-25	15-25	NP-5

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
112: Aboten-----	0-7	Very gravelly silt loam	GM	A-2, A-4	0	5-25	35-55	30-50	25-50	25-45	15-25	NP-5
	7-15	Clay loam, loam	ML, CL	A-6	0	0-10	80-100	75-90	70-90	50-70	35-40	10-15
	15-27	Cemented			0	0	0	0	0	0	---	NP
	27-60	Extremely gravelly sandy loam, very gravelly loamy sand	GP-GM, GM	A-1	0	0-15	25-40	20-35	10-20	5-15	---	NP
Dorper-----	0-2	Very gravelly very fine sandy loam	GM	A-1, A-2	0-1	0-15	30-55	25-50	25-50	10-30	15-25	NP-5
	2-7	Gravelly very fine sandy loam, silt loam	SM, ML, GM	A-4	0	0	65-100	60-100	55-100	35-70	15-25	NP-5
	7-17	Gravelly clay loam, clay, clay loam	GC, CL	A-7	0	0	65-95	60-90	50-80	45-70	40-50	15-25
	17-60	Very gravelly coarse sandy loam, extremely gravelly sandy loam	GM, GP-GM	A-1	0-1	10-15	15-50	10-45	5-40	5-25	15-25	NP-5
Rednik-----	0-2	Very gravelly sandy loam	GM	A-1	0	0-5	45-55	35-50	25-40	15-25	---	NP
	2-30	Very gravelly sandy loam, extremely gravelly loam, very gravelly sandy clay loam	GC	A-2	0-10	5-30	35-60	30-50	20-35	15-30	25-35	10-15
	30-41	Very gravelly sandy loam, very gravelly fine sandy loam, extremely gravelly sandy loam	GM	A-1	0-10	5-30	35-60	30-50	15-40	10-25	---	NP
	41-60	Very gravelly sand, extremely gravelly loamy sand, extremely gravelly loamy coarse sand	GP, GP-GM, SP-SM, GM	A-1	0-10	5-30	30-60	25-60	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		
					Pct	Pct						
113: Aboten-----	In											
	0-7	Very gravelly silt loam	GM	A-2, A-4	0	5-25	35-55	30-50	25-50	25-45	15-25	NP-5
	7-15	Clay loam, loam	ML, CL	A-6	0	0-10	80-100	75-90	70-90	50-70	35-40	10-15
	15-27	Cemented			0	0	0	0	0	0	---	NP
	27-60	Extremely gravelly sandy loam, very gravelly loamy sand	GP-GM, GM	A-1	0	0-15	25-40	20-35	10-20	5-15	---	NP
114: Aboten-----	0-7	Very gravelly silt loam	GM	A-2, A-4	0	5-25	35-55	30-50	25-50	25-45	15-25	NP-5
	7-15	Clay loam, loam	ML, CL	A-6	0	0-10	80-100	75-90	70-90	50-70	35-40	10-15
	15-27	Cemented			0	0	0	0	0	0	---	NP
	27-60	Extremely gravelly sandy loam, very gravelly loamy sand	GP-GM, GM	A-1	0	0-15	25-40	20-35	10-20	5-15	---	NP
Bluewing-----	0-2	Gravelly sandy loam	SM	A-1, A-2	0	0-10	60-80	55-75	30-60	20-35	---	NP
	2-60	Stratified very gravelly sand to extremely gravelly loamy coarse sand	GP-GM	A-1	0	5-25	30-40	25-35	15-25	5-10	---	NP
120: Appian-----	0-5	Loamy coarse sand	SM	A-1, A-2	0	0	85-100	75-100	30-55	15-30	---	NP
	5-15	Clay loam, sandy clay loam	SC, CL	A-6, A-7	0	0	95-100	90-100	75-90	40-60	35-45	15-20
	15-28	Stratified sand to sandy loam	SM	A-2	0	0	75-100	75-90	50-65	10-25	---	NP
	28-53	Sand, coarse sand	SP, SP-SM	A-1	0	0	85-100	75-90	30-50	0-10	---	NP
	53-60	Silt loam	CL-ML, ML	A-4	0	0	100	100	95-100	85-95	20-35	5-10
Isolde-----	0-4	Fine sand	SP, SP-SM	A-3	0	0	100	100	75-90	0-10	---	NP
	4-60	Fine sand, sand	SP, SP-SM	A-3	0	0	100	100	50-80	0-10	---	NP
Genegraf-----	0-6	Very gravelly very fine sandy loam	GM	A-1, A-2	0	0-10	30-50	25-45	25-45	15-30	15-25	NP-5
	6-18	Clay loam, sandy clay loam, gravelly clay loam	SC	A-6	0	0-5	70-90	60-85	50-70	35-50	30-40	10-20
	18-60	Very gravelly loamy sand	GM, GP-GM	A-1	0	5-15	40-50	30-40	20-30	5-15	---	NP

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct						
130: Boomstick-----	0-5	Very channery silt loam	GM-GC	A-2, A-4	0-5	0-10	45-65	35-55	30-55	25-50	25-30	5-10
	5-16	Extremely channery loam, very channery clay loam, extremely channery clay loam	GC, GM	A-2, A-6	0-5	25-40	35-65	25-55	20-45	15-40	35-40	10-15
	16-20	Unweathered bedrock			0	0	0	0	0	0	---	NP
Majuba-----	0-6	Very channery loam	GM	A-2, A-4, A-1	0-5	15-30	40-65	35-60	25-50	20-40	20-25	NP-5
	6-23	Very channery loam, very channery clay loam	GC	A-2, A-6	0	15-25	45-60	40-50	35-50	25-40	30-35	10-15
	23-35	Very channery loam, extremely channery loam	GM	A-2, A-1	0	15-30	30-50	25-40	20-35	15-30	20-25	NP-5
	35-39	Unweathered bedrock			0	0	0	0	0	0	---	NP
Sojur-----	0-4	Extremely channery silt loam	GM-GC	A-2	0	15-30	40-50	20-30	15-25	10-20	25-30	5-10
	4-15	Weathered bedrock			0	0	0	0	0	0	---	NP
	15-19	Unweathered bedrock			0	0	0	0	0	0	---	NP
131: Boomstick-----	0-5	Very channery silt loam	GM-GC	A-2, A-4	0-5	0-10	45-65	35-55	30-55	25-50	25-30	5-10
	5-16	Extremely channery loam, very channery clay loam, extremely channery clay loam	GC, GM	A-2, A-6	0-5	25-40	35-65	25-55	20-45	15-40	35-40	10-15
	16-20	Unweathered bedrock			0	0	0	0	0	0	---	NP
Majuba-----	0-6	Very channery loam	GM	A-2, A-4, A-1	0-5	15-30	40-65	35-60	25-50	20-40	20-25	NP-5
	6-23	Very channery loam, very channery clay loam	GC	A-2, A-6	0	15-25	45-60	40-50	35-50	25-40	30-35	10-15
	23-35	Very channery loam, extremely channery loam	GM	A-2, A-1	0	15-30	30-50	25-40	20-35	15-30	20-25	NP-5
	35-39	Unweathered bedrock			0	0	0	0	0	0	---	NP

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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
131 (con.): Phliss-----	0-3	Extremely channery loam	GM-GC	A-2	0-2	30-45	30-45	20-35	15-35	15-30	25-30	5-10
	3-13	Very channery loam, extremely channery clay loam	GC	A-2	0-1	10-15	30-35	20-35	15-30	10-25	30-35	10-15
	13-23	Unweathered bedrock			0	0	0	0	0	0	---	NP
132: Boomstick-----	0-5	Very channery silt loam	GM-GC	A-2, A-4	0-5	0-10	45-65	35-55	30-55	25-50	25-30	5-10
	5-16	Extremely channery loam, very channery clay loam, extremely channery clay loam	GC, GM	A-2, A-6	0-5	25-40	35-65	25-55	20-45	15-40	35-40	10-15
	16-20	Unweathered bedrock			0	0	0	0	0	0	---	NP
Majuba-----	0-6	Very channery loam	GM	A-2, A-4, A-1	0-5	15-30	40-65	35-60	25-50	20-40	20-25	NP-5
	6-23	Very channery loam, very channery clay loam	GC	A-2, A-6	0	15-25	45-60	40-50	35-50	25-40	30-35	10-15
	23-35	Very channery loam, extremely channery loam	GM	A-2, A-1	0	15-30	30-50	25-40	20-35	15-30	20-25	NP-5
	35-39	Unweathered bedrock			0	0	0	0	0	0	---	NP
139: Arclay-----	0-5	Very gravelly coarse sandy loam	GM, SM	A-1	0	0-10	50-65	35-50	15-30	10-20	---	NP
	5-16	Gravelly clay loam, gravelly sandy clay loam, gravelly loam	SM, SC	A-2, A-6	0	0-5	70-90	55-75	35-55	20-40	35-40	10-15
	16-42	Weathered bedrock			0	0	0	0	0	0	---	NP
	42-46	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
141: Arclay-----	0-5	Very gravelly coarse sandy loam	GM, SM	A-1	0	0-10	50-65	35-50	15-30	10-20	---	NP
	5-16	Gravelly clay loam, gravelly sandy clay loam, gravelly loam	SM, SC	A-2, A-6	0	0-5	70-90	55-75	35-55	20-40	35-40	10-15
	16-42	Weathered bedrock			0	0	0	0	0	0	---	NP
	42-46	Unweathered bedrock			0	0	0	0	0	0	---	NP
Acrelane-----	0-6	Very gravelly coarse sandy loam	SM	A-1	0	0-5	60-80	30-45	15-30	10-20	---	NP
	6-15	Very gravelly sandy clay loam, very gravelly sandy loam, very gravelly coarse sandy loam	SC-SM, SC	A-2	0	0-10	60-80	30-50	25-40	15-30	20-30	5-15
	15-60	Weathered bedrock			0	0	0	0	0	0	---	NP
Soar-----	0-3	Very gravelly coarse sandy loam	SP-SM, SM, SC-SM, SP-SC	A-1, A-2	0-2	0-10	90-95	35-50	15-35	5-20	20-30	NP-10
	3-6	Very gravelly sandy clay loam, very gravelly loam	SC	A-2	0-2	0-10	90-95	25-50	15-40	10-25	30-35	10-15
	6-28	Weathered bedrock			0	0	0	0	0	0	---	NP
	28-38	Unweathered bedrock			0	0	0	0	0	0	---	NP
142: Arclay-----	0-5	Very gravelly coarse sandy loam	GM, SM	A-1	0	0-10	50-65	35-50	15-30	10-20	---	NP
	5-16	Gravelly clay loam, gravelly sandy clay loam, gravelly loam	SM, SC	A-2, A-6	0	0-5	70-90	55-75	35-55	20-40	35-40	10-15
	16-42	Weathered bedrock			0	0	0	0	0	0	---	NP
	42-46	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plasticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct						
142 (con.): Vium-----	0-3	Very gravelly coarse sandy loam	SM	A-1	0	0-10	70-85	30-50	15-30	10-20	---	NP
	3-8	Very gravelly sandy loam, very gravelly coarse sandy loam	SM	A-1	0	0	60-90	25-45	15-30	10-25	20-25	NP-5
	8-12	Unweathered bedrock			0	0	0	0	0	0	---	NP
Slocave-----	0-1	Very gravelly coarse sandy loam	SM	A-1	0-2	0-10	70-85	30-50	15-30	10-20	15-20	NP-5
	1-7	Very gravelly sandy loam, very gravelly coarse sandy loam	SM	A-1	0	0	75-90	25-50	15-35	10-25	15-25	NP-5
	7-27	Weathered bedrock			0	0	0	0	0	0	---	NP
	27-37	Unweathered bedrock			0	0	0	0	0	0	---	NP
143: Rock Outcrop.												
Ninemile-----	0-5	Very gravelly coarse sandy loam	SM, SP-SM	A-1	0	0-10	85-95	25-50	10-35	5-20	---	NP
	5-16	Clay, gravelly clay	CL, CH, SC	A-7	0	0-5	95-100	65-100	55-95	40-80	45-65	20-35
	16-20	Unweathered bedrock			0	0	0	0	0	0	---	NP
145: Rock Outcrop.												
Ninemile-----	0-5	Very gravelly sandy loam	SM	A-1, A-2	0	0-10	85-95	25-50	20-45	10-30	---	NP
	5-16	Clay, gravelly clay	CL, CH, SC	A-7	0	0-5	95-100	65-100	55-95	40-80	45-65	20-35
	16-20	Unweathered bedrock			0	0	0	0	0	0	---	NP
Shively-----	0-6	Loam	ML	A-4	0	0	95-100	90-100	70-100	50-70	15-25	NP-5
	6-35	Loam, sandy loam	SM, ML	A-2, A-4	0	0-5	95-100	85-90	60-80	30-60	15-25	NP-5
	35-60	Sandy loam	SM	A-2, A-4	0	0-5	95-100	85-90	60-80	25-50	15-25	NP-5
150: Boton-----	0-10	Silt loam	ML	A-4	0	0	100	100	95-100	75-95	25-35	NP-5
	10-27	Silt loam	CL, ML	A-4, A-6	0	0	100	100	95-100	80-95	30-40	5-15
	27-60	Silt loam	CL, ML	A-4, A-6	0	0	100	100	95-100	80-95	30-40	5-15
Playas-----	0-6	Silty clay loam	ML	A-6, A-7	0	0	100	100	100	90-100	35-50	10-20
	6-60	Silty clay loam, clay, silty clay	CL, CH, 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 In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
					Pct	Pct						
152: Benin-----	0-1	Silty clay loam	CL, ML	A-7	0	0	100	100	95-100	85-95	40-50	15-20
	1-60	Clay, silty clay	CL, CH, MH	A-7	0	0	100	100	90-100	85-95	45-55	20-25
Benin-----	0-1	Silty clay loam	ML, CL	A-6, A-7	0	0	100	100	90-100	85-95	35-45	10-20
	1-60	Silty clay, clay	CL, CH, MH	A-7	0	0	100	100	95-100	85-95	45-55	20-25
160: Badland-----	0-2	Variable	CL, CH, MH, GC	A-6, A-7	0-5	0-10	65-100	50-100	40-100	35-100	20-75	10-35
	2-60	Weathered bedrock			0	0	0	0	0	0	---	NP
161: Dune Land-----	0-6	Fine sand	SP, SP-SM, SM	A-3, A-2	0	0	100	100	60-80	0-25	0-14	NP
	6-60	Sand, fine sand	SP, SP-SM, SM	A-3, A-2	0	0	100	100	50-80	0-25	0-14	NP
Playas-----	0-6	Silty clay loam	ML	A-6, A-7	0	0	100	100	100	90-100	35-50	10-20
	6-60	Silty clay loam, clay, silty clay	CL, CH, MH	A-7	0	0	100	100	100	90-100	45-75	20-40
163: Dune Land-----	0-6	Fine sand	SP, SP-SM, SM	A-3, A-2	0	0	100	100	60-80	0-25	0-14	NP
	6-60	Sand, fine sand	SP, SP-SM, SM	A-3, A-2	0	0	100	100	50-80	0-25	0-14	NP
171: Rock Outcrop.												
Bluewing-----	0-2	Gravelly sandy loam	SM	A-1, A-2	0	0-10	60-80	55-75	30-60	20-35	---	NP
	2-60	Stratified very gravelly sand to extremely gravelly loamy coarse sand	GP-GM	A-1	0	5-25	30-40	25-35	15-25	5-10	---	NP
Toulon-----	0-6	Very gravelly loam	GM, SM	A-1, A-2	0	0-10	55-70	40-50	30-45	20-35	---	NP
	6-14	Very gravelly sandy loam, very gravelly loam, very gravelly coarse sandy loam	GM	A-1, A-2	0	0-5	40-60	25-40	15-35	10-30	---	NP
	14-60	Stratified gravelly coarse sand to extremely cobble coarse sand	GP, GP-GM	A-1	0-5	25-50	40-50	25-40	5-20	0-10	---	NP

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct						
172: Bluewing-----	0-2	Gravelly sandy loam	SM	A-1, A-2	0	0-10	60-80	55-75	30-60	20-35	---	NP
	2-60	Stratified very gravelly sand to extremely gravelly loamy coarse sand	GP-GM	A-1	0	5-25	30-40	25-35	15-25	5-10	---	NP
173: Bluewing-----	0-2	Very gravelly loamy sand	SP-SM	A-1	0	10-25	70-85	35-45	15-30	5-10	---	NP
	2-60	Stratified very gravelly sand to extremely gravelly loamy coarse sand	GP-GM, GP	A-1	0-5	0-25	40-50	20-35	10-15	0-10	---	NP
180: Biga-----	0-6	Gravelly coarse sandy loam	SM	A-1, A-2	0	0-5	85-100	55-75	25-45	15-35	---	NP
	6-12	Clay, sandy clay, clay loam	SC, CL	A-7	0	0	95-100	75-100	65-85	45-65	40-50	15-25
	12-60	Stratified sandy loam to gravelly loamy coarse sand	SM	A-1, A-2	0	0-5	80-100	60-90	20-40	15-30	---	NP
Granshaw-----	0-13	Gravelly coarse sandy loam	SM	A-1, A-2	0	0	90-100	55-75	30-50	20-35	---	NP
	13-23	Sandy loam, coarse sandy loam	SM	A-2, A-4	0	0	95-100	75-100	45-65	25-45	20-25	NP-5
	23-60	Stratified coarse sandy loam to very gravelly coarse sand	SM, SP-SM	A-1, A-2	0	0	85-100	50-90	25-50	5-30	---	NP
Labkey-----	0-4	Gravelly sandy loam	SM	A-1, A-2	0	0	80-100	55-75	35-55	20-35	---	NP
	4-12	Gravelly sandy loam, gravelly coarse sandy loam	SM	A-1, A-2	0	0	80-100	50-70	25-45	15-30	---	NP
	12-60	Stratified gravelly sandy loam to extremely gravelly coarse sand	SP-SM, SM	A-1	0	0	60-80	25-45	10-25	5-15	---	NP

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
181: Biga-----	0-6	Gravelly coarse sandy loam	SM	A-1, A-2	0	0-5	85-100	55-75	25-45	15-35	---	NP
	6-12	Clay, sandy clay, clay loam	SC, CL	A-7	0	0	95-100	75-100	65-85	45-65	40-50	15-25
	12-60	Stratified sandy loam to gravelly loamy coarse sand	SM	A-1, A-2	0	0-5	80-100	60-90	20-40	15-30	---	NP
182: Biga-----	0-6	Gravelly loam	SM	A-2, A-4	0	0-5	85-100	55-75	35-50	30-45	20-25	NP-5
	6-12	Clay, sandy clay, clay loam	SC, CL	A-7	0	0	95-100	75-100	65-85	45-65	40-50	15-25
	12-60	Stratified sandy loam to gravelly loamy coarse sand	SM	A-1, A-2	0	0-5	80-100	60-90	20-40	15-30	---	NP
190: Cresal-----	0-7	Silt loam	ML	A-4	0	0	100	95-100	90-100	65-85	15-20	NP-5
	7-27	Stratified very fine sandy loam to silt loam	ML	A-4	0	0	100	100	95-100	75-90	20-25	NP-5
	27-60	Stratified loamy very fine sand to silt loam	ML	A-4	0	0	100	95-100	95-100	75-90	20-25	NP-5
201: Dorper-----	0-2	Extremely gravelly very fine sandy loam	GP-GM, GM	A-1	0-1	0-15	20-30	15-25	10-25	5-15	15-25	NP-5
	2-7	Gravelly very fine sandy loam, silt loam	SM, ML, GM	A-4	0	0	65-100	60-100	55-100	35-70	15-25	NP-5
	7-17	Gravelly clay loam, clay, clay loam	GC, CL	A-7	0	0	65-95	60-90	50-80	45-70	40-50	15-25
	17-60	Very gravelly coarse sandy loam, extremely gravelly sandy loam	GM, GP-GM	A-1	0-1	10-15	15-50	10-45	5-40	5-25	15-25	NP-5
Envol-----	0-3	Very gravelly loam	GM-GC, GC, SC-SM, SC	A-2	0-1	0-10	55-70	40-50	30-45	20-35	25-35	5-15
	3-10	Clay, gravelly clay, gravelly clay loam	SC, CL	A-7	0	0-5	70-100	55-85	50-80	40-70	40-50	15-25
	10-20	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct						
203: Dorper-----	0-2	Extremely gravelly very fine sandy loam	GP-GM, GM	A-1	0-1	0-15	20-30	15-25	10-25	5-15	15-25	NP-5
	2-7	Gravelly very fine sandy loam, silt loam	SM, ML, GM	A-4	0	0	65-100	60-100	55-100	35-70	15-25	NP-5
	7-17	Gravelly clay loam, clay, clay loam	GC, CL	A-7	0	0	65-95	60-90	50-80	45-70	40-50	15-25
	17-60	Very gravelly coarse sandy loam, extremely gravelly sandy loam	GM, GP-GM	A-1	0-1	10-15	15-50	10-45	5-40	5-25	15-25	NP-5
204: Dorper-----	0-2	Stony very fine sandy loam	GM	A-2	1-5	5-10	50-65	45-60	40-60	25-35	15-25	NP-5
	2-7	Gravelly very fine sandy loam, silt loam	SM, ML, GM	A-4	0	0	65-100	60-100	55-100	35-70	15-25	NP-5
	7-17	Gravelly clay loam, clay, clay loam	GC, CL	A-7	0	0	65-95	60-90	50-80	45-70	40-50	15-25
	17-60	Very gravelly coarse sandy loam, extremely gravelly sandy loam	GM, GP-GM	A-1	0-5	10-15	15-50	10-45	5-40	5-25	15-25	NP-5
Jerval-----	0-8	Gravelly very fine sandy loam	SM	A-4	0	0-10	70-85	55-75	50-75	35-50	---	NP
	8-20	Gravelly clay loam, gravelly silty clay loam	CL	A-6	0	0-5	65-85	60-75	55-75	50-65	35-40	15-20
	20-60	Very gravelly sandy loam, very gravelly fine sandy loam	GM	A-1	0	0-10	45-60	35-50	25-45	15-25	---	NP

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
204 (con.): Dorper-----	0-2	Extremely gravelly very fine sandy loam	GP-GM, GM	A-1	0-1	0-15	20-30	15-25	10-25	5-15	15-25	NP-5
	2-7	Gravelly very fine sandy loam, silt loam	SM, ML, GM	A-4	0	0	65-100	60-100	55-100	35-70	15-25	NP-5
	7-17	Gravelly clay loam, clay, clay loam	GC, CL	A-7	0	0	65-95	60-90	50-80	45-70	40-50	15-25
	17-60	Very gravelly coarse sandy loam, extremely gravelly sandy loam	GM, GP-GM	A-1	0-1	10-15	15-50	10-45	5-40	5-25	15-25	NP-5
206: Dorper-----	0-2	Very gravelly sandy loam	GM	A-1, A-2	0-1	0-10	50-65	35-50	25-40	20-30	15-25	NP-5
	2-7	Gravelly very fine sandy loam, silt loam	SM, ML, GM	A-4	0	0	65-100	60-100	55-100	35-70	15-25	NP-5
	7-17	Gravelly clay loam, clay, clay loam	GC, CL	A-7	0	0	65-95	60-90	50-80	45-70	40-50	15-25
	17-60	Very gravelly coarse sandy loam, extremely gravelly sandy loam	GM, GP-GM	A-1	0-1	10-15	15-50	10-45	5-40	5-25	15-25	NP-5
210: Dorper-----	0-2	Stony very fine sandy loam	GM	A-2	1-5	5-10	50-65	45-60	40-60	25-35	15-25	NP-5
	2-7	Gravelly very fine sandy loam, silt loam	SM, ML, GM	A-4	0	0	65-100	60-100	55-100	35-70	15-25	NP-5
	7-17	Gravelly clay loam, clay, clay loam	GC, CL	A-7	0	0	65-95	60-90	50-80	45-70	40-50	15-25
	17-60	Very gravelly coarse sandy loam, extremely gravelly sandy loam	GM, GP-GM	A-1	0-5	10-15	15-50	10-45	5-40	5-25	15-25	NP-5

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
210 (con.): Aboten-----	0-7	Very gravelly silt loam	GM	A-2, A-4	0	5-25	35-55	30-50	25-50	25-45	15-25	NP-5
	7-15	Clay loam, loam	ML, CL	A-6	0	0-10	80-100	75-90	70-90	50-70	35-40	10-15
	15-27	Cemented			0	0	0	0	0	0	---	NP
	27-60	Extremely gravelly sandy loam, very gravelly loamy sand	GP-GM, GM	A-1	0	0-15	25-40	20-35	10-20	5-15	---	NP
Kumiva-----	0-5	Silt loam	ML	A-4	0	0	100	95-100	80-95	65-80	20-25	NP-5
	5-56	Stratified sandy loam to silt loam	SM, ML	A-4	0	0-5	90-100	85-100	65-85	40-65	0-14	NP
	56-60	Loamy sand	SM	A-2, A-4	0	0-5	90-100	85-100	50-70	30-50	0-14	NP
220: Cleavage-----	0-7	Extremely gravelly loam	GM-GC	A-2	0	0-10	35-45	15-25	10-25	10-20	25-30	5-10
	7-15	Very cobbly clay loam, extremely gravelly clay loam, very gravelly loam	GC	A-2	0-5	0-45	40-55	30-45	25-45	20-35	30-45	10-20
	15-19	Unweathered bedrock			0	0	0	0	0	0	---	NP
Phliss-----	0-3	Very channery loam	GM-GC	A-2	0-2	0-10	40-60	30-50	25-50	20-35	25-30	5-10
	3-13	Very channery loam, extremely channery clay loam	GC	A-2	0-1	10-15	30-35	20-35	15-30	10-25	30-35	10-15
	13-23	Unweathered bedrock			0	0	0	0	0	0	---	NP
Majuba-----	0-6	Very channery loam	GM	A-2, A-4, A-1	0-5	15-30	40-65	35-60	25-50	20-40	20-25	NP-5
	6-23	Very channery loam, very channery clay loam	GC	A-2, A-6	0	15-25	45-60	40-50	35-50	25-40	30-35	10-15
	23-35	Very channery loam, extremely channery loam	GM	A-2, A-1	0	15-30	30-50	25-40	20-35	15-30	20-25	NP-5
	35-39	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
221: Cleavage-----	0-7	Very gravelly loam	GM-GC, GC	A-2, A-4, A-6	0	0-10	50-70	30-50	25-45	20-40	25-35	5-15
	7-15	Very cobbly clay loam, extremely gravelly clay loam, very gravelly loam	GC	A-2	0-5	0-45	40-55	30-45	25-45	20-35	30-45	10-20
	15-19	Unweathered bedrock			0	0	0	0	0	0	---	NP
Burnborough-----	0-8	Very gravelly loam	SC, SC-SM	A-2	0	5-10	65-75	40-55	30-45	25-35	20-35	5-15
	8-60	Very gravelly loam, very gravelly clay loam	GC, SC	A-2	0-5	15-25	55-65	35-60	20-35	15-30	25-40	10-20
230: Coldent-----	0-9	Gravelly fine sand	SP-SM, SM	A-2, A-1, A-3	0	0	65-90	50-75	45-65	5-20	---	NP
	9-19	Stratified loamy sand to fine sandy loam	SM	A-2, A-4	0	0	85-100	75-90	55-80	20-40	---	NP
	19-31	Stratified gravelly loamy sand to gravelly fine sandy loam	SM	A-2, A-1	0	0	60-85	50-75	40-65	15-35	---	NP
	31-60	Stratified very gravelly loamy sand to very gravelly coarse sand	SP-SM, SM, GP-GM, GM	A-1	0	0	40-65	25-50	15-30	5-15	---	NP
Isolde-----	0-4	Fine sand	SP, SP-SM	A-3	0	0	100	100	75-90	0-10	---	NP
	4-60	Fine sand, sand	SP, SP-SM	A-3	0	0	100	100	50-80	0-10	---	NP
Swingler-----	0-9	Silt loam	CL-ML, ML	A-4	0	0	100	100	95-100	80-95	25-35	5-10
	9-60	Silt loam, very fine sandy loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	75-80	25-35	5-15

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct						
300 (con.): Envol-----	0-3	Gravelly loam	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6	0-1	0-10	70-95	55-75	45-70	30-55	25-35	5-15
	3-10	Clay, gravelly clay, gravelly clay loam	SC, CL	A-7	0	0-5	70-100	55-85	50-80	40-70	40-50	15-25
	10-20	Unweathered bedrock			0	0	0	0	0	0	---	NP
Frines-----	0-3	Gravelly loam	GM-GC, GC, SC-SM, SC	A-4, A-6	0	0-10	60-80	55-75	45-65	35-50	25-35	5-15
	3-13	Clay, gravelly clay loam	GC, CL	A-7	0	0-5	65-95	60-90	55-80	45-75	40-50	15-25
	13-24	Very gravelly sandy loam, gravelly sandy loam	GM, SM	A-1, A-2	0	0-5	40-75	35-70	25-60	10-35	---	NP
	24-47	Weathered bedrock			0	0	0	0	0	0	---	NP
	47-51	Unweathered bedrock			0	0	0	0	0	0	---	NP
302: Envol-----	0-3	Gravelly loam	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6	0-1	0-10	70-95	55-75	45-70	30-55	25-35	5-15
	3-10	Clay, gravelly clay, gravelly clay loam	SC, CL	A-7	0	0-5	70-100	55-85	50-80	40-70	40-50	15-25
	10-20	Unweathered bedrock			0	0	0	0	0	0	---	NP
310: Rock Outcrop.												
Eaglerock-----	0-5	Gravelly coarse sandy loam	SM	A-1, A-2	5-10	5-10	80-90	55-75	25-45	15-30	---	NP
	5-31	Very gravelly loam, very gravelly sandy clay loam, very gravelly sandy loam	SC-SM, GM-GC	A-2	0	0-10	55-70	35-50	25-40	15-30	25-30	5-10
	31-60	Weathered bedrock			0	0	0	0	0	0	---	NP
401: Genegraf-----	0-6	Very gravelly very fine sandy loam	GM	A-1, A-2	0	0-10	30-50	25-45	25-45	15-30	15-25	NP-5
	6-18	Clay loam, sandy clay loam, gravelly clay loam	SC	A-6	0	0-5	70-90	60-85	50-70	35-50	30-40	10-20
	18-60	Very gravelly loamy sand	GM, GP-GM	A-1	0	5-15	40-50	30-40	20-30	5-15	---	NP

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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
401 (con.): Dorper-----	0-2	Very gravelly very fine sandy loam	GM	A-1, A-2	0-1	0-15	30-55	25-50	25-50	10-30	15-25	NP-5
	2-7	Gravelly very fine sandy loam, silt loam	SM, ML, GM	A-4	0	0	65-100	60-100	55-100	35-70	15-25	NP-5
	7-17	Gravelly clay loam, clay, clay loam	GC, CL	A-7	0	0	65-95	60-90	50-80	45-70	40-50	15-25
	17-60	Very gravelly coarse sandy loam, extremely gravelly sandy loam	GM, GP-GM	A-1	0-1	10-15	15-50	10-45	5-40	5-25	15-25	NP-5
Bluewing-----	0-2	Very gravelly sandy loam	GM	A-1	0	0-10	40-60	30-50	20-40	15-25	---	NP
	2-60	Stratified very gravelly sand to extremely gravelly loamy coarse sand	GP-GM	A-1	0	5-25	30-40	25-35	15-25	5-10	---	NP
402: Genegra-----	0-5	Very gravelly very fine sandy loam	GM	A-1, A-2	0	0-10	30-50	25-45	25-45	15-30	15-25	NP-5
	5-12	Clay loam, sandy clay loam, gravelly clay loam	SC	A-6	0	0-5	70-90	60-85	50-70	35-50	30-40	10-20
	12-21	Very gravelly fine sandy loam, very gravelly sandy loam, gravelly fine sandy loam	SM, GM	A-1	0	0-10	45-70	35-60	25-50	10-25	15-25	NP-5
	21-60	Very gravelly loamy sand	GM, GP-GM	A-1	0	5-15	40-50	30-40	20-30	5-15	---	NP
Bluewing-----	0-2	Gravelly sandy loam	SM	A-1, A-2	0	0-10	60-80	55-75	30-60	20-35	---	NP
	2-60	Stratified very gravelly sand to extremely gravelly loamy coarse sand	GP-GM	A-1	0	5-25	30-40	25-35	15-25	5-10	---	NP

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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
402 (con.): Dorper-----	0-2	Extremely gravelly very fine sandy loam	GP-GM, GM	A-1	0-1	0-15	20-30	15-25	10-25	5-15	15-25	NP-5
	2-7	Gravelly very fine sandy loam, silt loam	SM, ML, GM	A-4	0	0	65-100	60-100	55-100	35-70	15-25	NP-5
	7-17	Gravelly clay loam, clay, clay loam	GC, CL	A-7	0	0	65-95	60-90	50-80	45-70	40-50	15-25
	17-60	Very gravelly coarse sandy loam, extremely gravelly sandy loam	GM, GP-GM	A-1	0-1	10-15	15-50	10-45	5-40	5-25	15-25	NP-5
404: Genegraf-----	0-6	Very gravelly very fine sandy loam	GM	A-1, A-2	0	0-10	30-50	25-45	25-45	15-30	15-25	NP-5
	6-18	Clay loam, sandy clay loam, gravelly clay loam	SC	A-6	0	0-5	70-90	60-85	50-70	35-50	30-40	10-20
	18-60	Very gravelly loamy sand	GM, GP-GM	A-1	0	5-15	40-50	30-40	20-30	5-15	---	NP
Toulon-----	0-6	Very gravelly loam	GM, SM	A-1, A-2	0	0-10	55-70	40-50	30-45	20-35	---	NP
	6-14	Very gravelly sandy loam, very gravelly loam, very gravelly coarse sandy loam	GM	A-1, A-2	0	0-5	40-60	25-40	15-35	10-30	---	NP
	14-60	Stratified gravelly coarse sand to extremely cobble coarse sand	GP, GP-GM	A-1	0-5	25-50	40-50	25-40	5-20	0-10	---	NP
410: Granshaw-----	0-13	Gravelly coarse sandy loam	SM	A-1, A-2	0	0	90-100	55-75	30-50	20-35	---	NP
	13-23	Sandy loam, coarse sandy loam	SM	A-2, A-4	0	0	95-100	75-100	45-65	25-45	20-25	NP-5
	23-60	Stratified coarse sandy loam to very gravelly coarse sand	SM, SP-SM	A-1, A-2	0	0	85-100	50-90	25-50	5-30	---	NP

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	3-10	4	10	40	200		
					inches	inches						
					Pct	Pct					Pct	
410 (con.): Labkey-----	0-4	Gravelly sandy loam	SM	A-1, A-2	0	0	80-100	55-75	35-55	20-35	---	NP
	4-12	Gravelly sandy loam, gravelly coarse sandy loam	SM	A-1, A-2	0	0	80-100	50-70	25-45	15-30	---	NP
	12-60	Stratified gravelly sandy loam to extremely gravelly coarse sand	SP-SM, SM	A-1	0	0	60-80	25-45	10-25	5-15	---	NP
411: Granshaw-----	0-13	Gravelly coarse sandy loam	SM	A-1, A-2	0	0	90-100	55-75	30-50	20-35	---	NP
	13-23	Sandy loam, coarse sandy loam	SM	A-2, A-4	0	0	95-100	75-100	45-65	25-45	20-25	NP-5
	23-60	Stratified coarse sandy loam to very gravelly coarse sand	SM, SP-SM	A-1, A-2	0	0	85-100	50-90	25-50	5-30	---	NP
Biga-----	0-6	Gravelly coarse sandy loam	SM	A-1, A-2	0	0-5	85-100	55-75	25-45	15-35	---	NP
	6-12	Clay, sandy clay, clay loam	SC, CL	A-7	0	0	95-100	75-100	65-85	45-65	40-50	15-25
	12-60	Stratified sandy loam to gravelly loamy coarse sand	SM	A-1, A-2	0	0-5	80-100	60-90	20-40	15-30	---	NP
Envol-----	0-3	Gravelly loam	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6	0-1	0-10	70-95	55-75	45-70	30-55	25-35	5-15
	3-10	Clay, gravelly clay, gravelly clay loam	SC, CL	A-7	0	0-5	70-100	55-85	50-80	40-70	40-50	15-25
	10-20	Unweathered bedrock			0	0	0	0	0	0	---	NP
412: Granshaw-----	0-13	Gravelly coarse sandy loam	SM	A-1, A-2	0	0	90-100	55-75	30-50	20-35	---	NP
	13-23	Sandy loam, coarse sandy loam	SM	A-2, A-4	0	0	95-100	75-100	45-65	25-45	20-25	NP-5
	23-60	Stratified coarse sandy loam to very gravelly coarse sand	SM, SP-SM	A-1, A-2	0	0	85-100	50-90	25-50	5-30	---	NP

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
412 (con.): Jerval-----	0-8	Gravelly very fine sandy loam	SM	A-4	0	0-10	70-85	55-75	50-75	35-50	---	NP
	8-20	Gravelly clay loam, gravelly silty clay loam	CL	A-6	0	0-5	65-85	60-75	55-75	50-65	35-40	15-20
	20-60	Very gravelly sandy loam, very gravelly fine sandy loam	GM	A-1	0	0-10	45-60	35-50	25-45	15-25	---	NP
Dorper-----	0-2	Stony very fine sandy loam	GM	A-2	1-5	5-10	50-65	45-60	40-60	25-35	15-25	NP-5
	2-7	Gravelly very fine sandy loam, silt loam	SM, ML, GM	A-4	0	0	65-100	60-100	55-100	35-70	15-25	NP-5
	7-17	Gravelly clay loam, clay, clay loam	GC, CL	A-7	0	0	65-95	60-90	50-80	45-70	40-50	15-25
	17-60	Very gravelly coarse sandy loam, extremely gravelly sandy loam	GM, GP-GM	A-1	0-5	10-15	15-50	10-45	5-40	5-25	15-25	NP-5
413: Granshaw-----	0-13	Gravelly coarse sandy loam	SM	A-1, A-2	0	0	90-100	55-75	30-50	20-35	---	NP
	13-23	Sandy loam, coarse sandy loam	SM	A-2, A-4	0	0	95-100	75-100	45-65	25-45	20-25	NP-5
	23-60	Stratified coarse sandy loam to very gravelly coarse sand	SM, SP-SM	A-1, A-2	0	0	85-100	50-90	25-50	5-30	---	NP
Kumiva-----	0-5	Gravelly sandy loam	GM, SM	A-2	0-1	0-5	55-80	50-75	35-50	25-35	15-25	NP-5
	5-56	Stratified sandy loam to silt loam	SM, ML	A-4	0	0-5	90-100	85-100	65-85	40-65	0-14	NP
	56-60	Loamy sand	SM	A-2, A-4	0	0-5	90-100	85-100	50-70	30-50	0-14	NP
414: Granshaw-----	0-13	Gravelly loam	SM	A-4	0	0	90-100	55-75	50-70	35-50	15-25	NP-5
	13-23	Sandy loam, coarse sandy loam	SM	A-2, A-4	0	0	95-100	75-100	45-65	25-45	20-25	NP-5
	23-60	Stratified coarse sandy loam to very gravelly coarse sand	SM, SP-SM	A-1, A-2	0	0	85-100	50-90	25-50	5-30	---	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		
					Pct	Pct						
415: Granshaw-----	In											
	0-13	Gravelly loam	SM	A-4	0	0	90-100	55-75	50-70	35-50	15-25	NP-5
	13-23	Sandy loam, coarse sandy loam	SM	A-2, A-4	0	0	95-100	75-100	45-65	25-45	20-25	NP-5
	23-60	Stratified coarse sandy loam to very gravelly coarse sand	SM, SP-SM	A-1, A-2	0	0	85-100	50-90	25-50	5-30	---	NP
Biga-----	0-6	Gravelly coarse sandy loam	SM	A-1, A-2	0	0-5	85-100	55-75	25-45	15-35	---	NP
	6-12	Clay, sandy clay, clay loam	SC, CL	A-7	0	0	95-100	75-100	65-85	45-65	40-50	15-25
	12-60	Stratified sandy loam to gravelly loamy coarse sand	SM	A-1, A-2	0	0-5	80-100	60-90	20-40	15-30	---	NP
Puett-----	0-3	Coarse sandy loam	SM	A-1, A-2	0	0	90-100	85-95	40-50	20-30	---	NP
	3-12	Coarse sandy loam, fine sandy loam, sandy loam	SM, ML	A-1, A-2, A-4	0	0	80-100	75-95	40-80	15-55	---	NP
	12-16	Weathered bedrock			0	0	0	0	0	0	---	NP
431: Grumblen-----	0-4	Very gravelly loam	GM-GC	A-2	0	0-15	40-55	35-50	30-45	20-35	25-30	5-10
	4-8	Very gravelly clay, very gravelly clay loam	GC, GM	A-2, A-7	0	0-10	35-55	30-50	25-45	15-40	40-55	15-25
	8-18	Very gravelly clay, very gravelly clay loam	GC, GM	A-2, A-7	0	0-15	35-55	30-50	25-45	15-40	40-55	15-25
	18-22	Unweathered bedrock			0	0	0	0	0	0	---	NP
Pickup-----	0-5	Very gravelly loam	GM-GC	A-2	0	5-25	45-65	35-55	25-45	15-35	25-30	5-10
	5-22	Very gravelly clay	GC	A-2, A-7	0	10-25	50-65	35-50	30-50	25-45	45-60	20-30
	22-32	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
432: Grumbles-----	0-4	Very gravelly loam	GM-GC	A-2	0	0-15	40-55	35-50	30-45	20-35	25-30	5-10
	4-8	Very gravelly clay, very gravelly clay loam	GC, GM	A-2, A-7	0	0-10	35-55	30-50	25-45	15-40	40-55	15-25
	8-18	Very gravelly clay, very gravelly clay loam	GC, GM	A-2, A-7	0	0-15	35-55	30-50	25-45	15-40	40-55	15-25
	18-22	Unweathered bedrock			0	0	0	0	0	0	---	NP
Pickup-----	0-5	Very gravelly loam	GM-GC	A-2	0	5-25	45-65	35-55	25-45	15-35	25-30	5-10
	5-22	Very gravelly clay	GC	A-2, A-7	0	10-25	50-65	35-50	30-50	25-45	45-60	20-30
	22-32	Unweathered bedrock			0	0	0	0	0	0	---	NP
Old Camp-----	0-6	Very gravelly loam	GM, GM-GC	A-1, A-2	0-1	0-15	50-60	35-45	30-40	20-30	15-25	NP-10
	6-18	Very cobbly clay loam, extremely stony sandy clay loam, very stony clay loam	GC	A-2, A-6	25-50	25-50	40-55	35-50	30-45	25-40	30-40	15-25
	18-22	Unweathered bedrock			0	0	0	0	0	0	---	NP
451: Hawsley-----	0-5	Fine sand	SM	A-2	0	0	100	100	75-95	15-30	---	NP
	5-60	Stratified fine sand to coarse sand	SM, SP-SM	A-2, A-3	0	0	85-100	75-100	55-70	5-25	---	NP
452: Hawsley-----	0-5	Sand	SM, SP-SM	A-2, A-3	0	0	100	90-100	75-90	5-20	---	NP
	5-60	Stratified fine sand to coarse sand	SM, SP-SM	A-2, A-3	0	0	85-100	75-100	55-70	5-25	---	NP
Labkey-----	0-4	Gravelly sandy loam	SM	A-1, A-2	0	0	80-100	55-75	35-55	20-35	---	NP
	4-12	Gravelly sandy loam, gravelly coarse sandy loam	SM	A-1, A-2	0	0	80-100	50-70	25-45	15-30	---	NP
	12-60	Stratified gravelly sandy loam to extremely gravelly coarse sand	SP-SM, SM	A-1	0	0	60-80	25-45	10-25	5-15	---	NP

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
					Pct	Pct						
452 (con.): Genegraf-----	0-6	Gravelly sandy loam	SM	A-1, A-2	0	0-5	60-80	55-70	30-45	20-35	15-25	NP-5
	6-18	Clay loam, sandy clay loam, gravelly clay loam	SC	A-6	0	0-5	70-90	60-85	50-70	35-50	30-40	10-20
	18-60	Very gravelly fine sandy loam, very gravelly sandy loam	SM, GM	A-1	0-1	0-10	45-65	35-55	25-50	10-25	0-14	NP
453: Hawsley-----	0-5	Sand	SM, SP-SM	A-2, A-3	0	0	100	90-100	75-90	5-20	---	NP
	5-60	Stratified fine sand to coarse sand	SM, SP-SM	A-2, A-3	0	0	85-100	75-100	55-70	5-25	---	NP
Bluewing-----	0-2	Very stony loamy sand	GP-GM	A-1	5-20	15-20	30-40	25-35	15-25	5-10	---	NP
	2-60	Stratified extremely gravelly sand to extremely gravelly loamy coarse sand	GP-GM	A-1	0-5	5-20	30-40	25-35	15-25	5-10	---	NP
456: Hawsley-----	0-5	Sand	SM, SP-SM	A-2, A-3	0	0	100	90-100	75-90	5-20	---	NP
	5-60	Stratified fine sand to coarse sand	SM, SP-SM	A-2, A-3	0	0	85-100	75-100	55-70	5-25	---	NP
Badland-----	0-6	Variable	CL, CH, MH, ML	A-7	0	0	100	100	100	90-100	45-75	20-35
	6-60	Silty clay loam, clay, silty clay	CL, CH, MH, ML	A-7	0	0	100	100	100	90-100	45-75	20-35
462: Hawsley-----	0-5	Fine sand	SM	A-2	0	0	100	100	75-95	15-30	---	NP
	5-60	Stratified fine sand to coarse sand	SM, SP-SM	A-2, A-3	0	0	85-100	75-100	55-70	5-25	---	NP
Mazuma-----	0-6	Silt loam	ML	A-4	0	0	100	100	90-100	70-80	20-25	NP-5
	6-22	Sandy loam, fine sandy loam	SM	A-4, A-2	0	0	100	100	90-100	30-50	20-25	NP-5
	22-60	Stratified silt loam to gravelly coarse sand	SM, ML	A-2, A-4	0	0	75-100	70-85	50-75	25-55	20-25	NP-5

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
470: Deadyon-----	0-5	Loam	SM, ML	A-4	0	0	95-100	85-100	55-80	45-65	15-25	NP-5
	5-24	Loam, sandy loam, coarse sandy loam	SM, ML	A-1, A-2, A-4	0	0	95-100	75-90	40-70	20-55	20-25	NP-5
	24-35	Sandy loam, coarse sandy loam, loam	SM	A-1, A-2, A-4	0	0	95-100	75-90	30-70	20-50	---	NP
	35-60	Stratified sandy loam to very gravelly coarse sand	SM	A-1, A-2	0	0	95-100	50-75	10-60	10-30	---	NP
471: Deadyon-----	0-14	Loamy sand	SM	A-2	0	0	95-100	85-100	55-70	20-35	---	NP
	14-26	Loam, sandy loam, coarse sandy loam	SM, ML	A-1, A-2, A-4	0	0	95-100	75-90	40-70	20-55	20-25	NP-5
	26-41	Sandy loam, coarse sandy loam, loam	SM	A-1, A-2, A-4	0	0	95-100	75-90	30-70	20-50	---	NP
	41-60	Stratified sandy loam to very gravelly coarse sand	SM	A-1, A-2	0	0	95-100	50-75	10-60	10-30	---	NP
Granshaw-----	0-13	Gravelly coarse sandy loam	SM	A-1, A-2	0	0	90-100	55-75	30-50	20-35	---	NP
	13-23	Sandy loam, coarse sandy loam	SM	A-2, A-4	0	0	95-100	75-100	45-65	25-45	20-25	NP-5
	23-60	Stratified coarse sandy loam to very gravelly coarse sand	SM, SP-SM	A-1, A-2	0	0	85-100	50-90	25-50	5-30	---	NP
472: Deadyon-----	0-5	Sandy loam	SM, ML	A-2, A-4	0	0	95-100	85-100	50-70	25-55	15-25	NP-5
	5-24	Loam, sandy loam, coarse sandy loam	SM, ML	A-1, A-2, A-4	0	0	95-100	75-90	40-70	20-55	20-25	NP-5
	24-35	Sandy loam, coarse sandy loam, loam	SM	A-1, A-2, A-4	0	0	95-100	75-90	30-70	20-50	---	NP
	35-60	Stratified sandy loam to very gravelly coarse sand	SM	A-1, A-2	0	0	95-100	50-75	10-60	10-30	---	NP
480: Humboldt-----	0-12	Silty clay loam	CL	A-7	0	0	100	100	100	90-100	40-50	20-25
	12-36	Stratified silty clay loam to clay	MH	A-7	0	0	90-100	90-100	85-100	80-100	50-60	15-25
	36-60	Stratified silt loam to silty clay	ML, CL	A-6, A-7	0	0	90-100	90-100	85-100	80-100	30-50	10-20

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
500: Isolde-----	0-4	Fine sand	SP, SP-SM	A-3	0	0	100	100	75-90	0-10	---	NP
	4-60	Fine sand, sand	SP, SP-SM	A-3	0	0	100	100	50-80	0-10	---	NP
Typic Torriorthents--	0-5	Extremely gravelly sandy loam	GP-GM, GM	A-1	0	0-10	25-30	20-25	15-20	5-20	---	NP
	5-60	Variable			0	0	0	0	0	0	---	NP
Dune Land-----	0-6	Fine sand	SP, SP-SM, SM	A-3, A-2	0	0	100	100	60-80	0-25	0-14	NP
	6-60	Sand, fine sand	SP, SP-SM, SM	A-3, A-2	0	0	100	100	50-80	0-25	0-14	NP
502: Isolde-----	0-4	Fine sand	SP, SP-SM	A-3	0	0	100	100	75-90	0-10	---	NP
	4-60	Fine sand, sand	SP, SP-SM	A-3	0	0	100	100	50-80	0-10	---	NP
Ragtown-----	0-7	Silt loam	ML, CL-ML	A-4	0	0	100	100	90-100	75-85	20-30	NP-10
	7-16	Stratified sandy clay loam to silty clay loam	CL	A-6	0	0	100	100	80-95	50-75	35-40	15-20
	16-60	Stratified silty clay loam to clay	CL, CH	A-7	0	0	100	100	90-100	75-95	40-55	20-30
503: Isolde-----	0-4	Fine sand	SP, SP-SM	A-3	0	0	100	100	75-90	0-10	---	NP
	4-60	Fine sand, sand	SP, SP-SM	A-3	0	0	100	100	50-80	0-10	---	NP
510: Juva-----	0-8	Loam	CL-ML	A-4	0	0-5	90-100	90-100	80-90	60-80	20-30	5-10
	8-60	Stratified gravelly sand to silt loam	SM	A-2, A-1	0	0-5	90-100	75-95	45-60	20-35	20-35	NP-5
550: Kumiva-----	0-5	Sandy loam	SM	A-2, A-4	0	0	90-100	85-100	65-80	30-50	0-14	NP
	5-56	Stratified sandy loam to silt loam	SM, ML	A-4	0	0-5	90-100	85-100	65-85	40-65	0-14	NP
	56-60	Loamy sand	SM	A-2, A-4	0	0-5	90-100	85-100	50-70	30-50	0-14	NP
Labkey-----	0-4	Gravelly sandy loam	SM	A-1, A-2	0	0	80-100	55-75	35-55	20-35	---	NP
	4-12	Gravelly sandy loam, gravelly coarse sandy loam	SM	A-1, A-2	0	0	80-100	50-70	25-45	15-30	---	NP
	12-60	Stratified gravelly sandy loam to extremely gravelly coarse sand	SP-SM, SM	A-1	0	0	60-80	25-45	10-25	5-15	---	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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
550 (con.): Chumall-----	0-5	Silt loam	CL-ML, ML	A-4	0	0	100	100	95-100	85-100	25-35	5-10
	5-19	Silt loam	CL-ML, ML	A-4	0	0	100	100	95-100	85-100	25-35	5-10
	19-44	Stratified silt loam to silty clay loam	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	85-100	25-40	5-15
	44-60	Fine sand	SM, SP-SM	A-2, A-3	0	0	100	100	75-100	5-30	0-14	NP
551: Kumiva-----	0-5	Silt loam	ML	A-4	0	0	100	95-100	80-95	65-80	20-25	NP-5
	5-56	Stratified sandy loam to silt loam	SM, ML	A-4	0	0-5	90-100	85-100	65-85	40-65	0-14	NP
	56-60	Loamy sand	SM	A-2, A-4	0	0-5	90-100	85-100	50-70	30-50	0-14	NP
Kumiva-----	0-5	Sandy loam	SM	A-2, A-4	0	0	90-100	85-100	65-80	30-50	0-14	NP
	5-56	Stratified sandy loam to silt loam	SM, ML	A-4	0	0-5	90-100	85-100	65-85	40-65	0-14	NP
	56-60	Loamy sand	SM	A-2, A-4	0	0-5	90-100	85-100	50-70	30-50	0-14	NP
553: Kumiva-----	0-5	Sandy loam	SM	A-2, A-4	0	0	90-100	85-100	65-80	30-50	0-14	NP
	5-56	Stratified sandy loam to silt loam	SM, ML	A-4	0	0-5	90-100	85-100	65-85	40-65	0-14	NP
	56-60	Loamy sand	SM	A-2, A-4	0	0-5	90-100	85-100	50-70	30-50	0-14	NP
559: Phliss-----	0-3	Very channery loam	GM-GC	A-2	0-2	0-10	40-60	30-50	25-50	20-35	25-30	5-10
	3-13	Very channery loam, extremely channery clay loam	GC	A-2	0-1	10-15	30-35	20-35	15-30	10-25	30-35	10-15
	13-23	Unweathered bedrock			0	0	0	0	0	0	---	NP
Phliss-----	0-1	Extremely channery loam	GM-GC	A-2	0-2	30-45	30-45	20-35	15-35	15-30	25-30	5-10
	1-10	Very channery loam, extremely channery clay loam	GC	A-2	0-1	10-15	30-35	20-35	15-30	10-25	30-35	10-15
	10-14	Unweathered bedrock			0	0	0	0	0	0	---	NP
Majuba-----	0-6	Very channery loam	GM	A-2, A-4, A-1	0-5	15-30	40-65	35-60	25-50	20-40	20-25	NP-5
	6-23	Very channery loam, very channery clay loam	GC	A-2, A-6	0	15-25	45-60	40-50	35-50	25-40	30-35	10-15
	23-35	Very channery loam, extremely channery loam	GM	A-2, A-1	0	15-30	30-50	25-40	20-35	15-30	20-25	NP-5
	35-39	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct						
560: Phliss-----	0-3	Extremely channery loam	GM-GC	A-2	0-2	30-45	30-45	20-35	15-35	15-30	25-30	5-10
	3-13	Very channery loam, extremely channery clay loam	GC	A-2	0-1	10-15	30-35	20-35	15-30	10-25	30-35	10-15
	13-23	Unweathered bedrock			0	0	0	0	0	0	---	NP
562: Sondoa-----	0-4	Silt loam	CL, ML	A-4, A-6	0	0	100	100	95-100	85-95	30-40	5-15
	4-60	Stratified silt loam to silty clay loam	CL, ML	A-6, A-7	0	0	100	100	95-100	85-95	35-50	10-25
563: Sondoa-----	0-4	Silt loam	CL, ML	A-4, A-6	0	0	100	100	95-100	85-95	30-40	5-15
	4-60	Stratified silt loam to silty clay loam	CL, ML	A-6, A-7	0	0	100	100	95-100	85-95	35-50	10-25
Swingler-----	0-9	Silt loam	CL-ML, ML	A-4	0	0	100	100	95-100	80-95	25-35	5-10
	9-60	Silt loam, very fine sandy loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	75-80	25-35	5-15
Isolde-----	0-4	Fine sand	SP, SP-SM	A-3	0	0	100	100	75-90	0-10	---	NP
	4-60	Fine sand, sand	SP, SP-SM	A-3	0	0	100	100	50-80	0-10	---	NP
650: Labkey-----	0-4	Gravelly sandy loam	SM	A-1, A-2	0	0	80-100	55-75	35-55	20-35	---	NP
	4-12	Gravelly sandy loam, gravelly coarse sandy loam	SM	A-1, A-2	0	0	80-100	50-70	25-45	15-30	---	NP
	12-60	Stratified gravelly sandy loam to extremely gravelly coarse sand	SP-SM, SM	A-1	0	0	60-80	25-45	10-25	5-15	---	NP
651: Labkey-----	0-4	Gravelly sandy loam	SM	A-1, A-2	0	0	80-100	55-75	35-55	20-35	---	NP
	4-12	Gravelly sandy loam, gravelly coarse sandy loam	SM	A-1, A-2	0	0	80-100	50-70	25-45	15-30	---	NP
	12-60	Stratified gravelly sandy loam to extremely gravelly coarse sand	SP-SM, SM	A-1	0	0	60-80	25-45	10-25	5-15	---	NP

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
651 (con.): Mazuma-----	0-6	Fine sandy loam	SM	A-2, A-4	0	0	100	100	70-90	30-50	20-25	NP-5
	6-22	Sandy loam, fine sandy loam	SM	A-4, A-2	0	0	100	100	90-100	30-50	20-25	NP-5
	22-60	Stratified silt loam to gravelly coarse sand	SM, ML	A-2, A-4	0	0	75-100	70-85	50-75	25-55	20-25	NP-5
Hawsley-----	0-5	Sand	SM, SP-SM	A-2, A-3	0	0	100	90-100	75-90	5-20	---	NP
	5-60	Stratified fine sand to coarse sand	SM, SP-SM	A-2, A-3	0	0	85-100	75-100	55-70	5-25	---	NP
652: Labkey-----	0-4	Gravelly sandy loam	SM	A-1, A-2	0	0	80-100	55-75	35-55	20-35	---	NP
	4-12	Gravelly sandy loam, gravelly coarse sandy loam	SM	A-1, A-2	0	0	80-100	50-70	25-45	15-30	---	NP
	12-60	Stratified gravelly sandy loam to extremely gravelly coarse sand	SP-SM, SM	A-1	0	0	60-80	25-45	10-25	5-15	---	NP
Hawsley-----	0-5	Sand	SM, SP-SM	A-2, A-3	0	0	100	90-100	75-90	5-20	---	NP
	5-60	Stratified fine sand to coarse sand	SM, SP-SM	A-2, A-3	0	0	85-100	75-100	55-70	5-25	---	NP
Granshaw-----	0-13	Gravelly coarse sandy loam	SM	A-1, A-2	0	0	90-100	55-75	30-50	20-35	---	NP
	13-23	Sandy loam, coarse sandy loam	SM	A-2, A-4	0	0	95-100	75-100	45-65	25-45	20-25	NP-5
	23-60	Stratified coarse sandy loam to very gravelly coarse sand	SM, SP-SM	A-1, A-2	0	0	85-100	50-90	25-50	5-30	---	NP
653: Labkey-----	0-4	Gravelly sandy loam	SM	A-1, A-2	0	0	80-100	55-75	35-55	20-35	---	NP
	4-12	Gravelly sandy loam, gravelly coarse sandy loam	SM	A-1, A-2	0	0	80-100	50-70	25-45	15-30	---	NP
	12-60	Stratified gravelly sandy loam to extremely gravelly coarse sand	SP-SM, SM	A-1	0	0	60-80	25-45	10-25	5-15	---	NP

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
653 (con.): Mazuma-----	0-6	Fine sandy loam	SM	A-2, A-4	0	0	95-100	85-100	70-85	30-50	20-25	NP-5
	6-60	Stratified gravelly coarse sand to silt loam	SM	A-4	0	0	95-100	75-100	70-90	35-50	20-25	NP-5
700: Mazuma-----	0-6	Very fine sandy loam	ML	A-4	0	0	95-100	85-100	70-90	50-65	20-25	NP-5
	6-60	Stratified gravelly coarse sand to silt loam	SM	A-4	0	0	95-100	75-100	70-90	35-50	20-25	NP-5
Trocken-----	0-6	Gravelly very fine sandy loam	GM, SM	A-2, A-4	0	0-15	65-85	60-75	50-70	30-50	20-25	NP-5
	6-60	Stratified extremely gravelly loamy coarse sand to very cobbly loam	GM-GC, GP-GC	A-2	0	5-40	20-60	15-40	10-35	5-25	20-30	5-10
701: Mazuma-----	0-6	Very fine sandy loam	ML	A-4	0	0	95-100	85-100	70-90	50-65	20-25	NP-5
	6-60	Stratified gravelly coarse sand to silt loam	SM	A-4	0	0	95-100	75-100	70-90	35-50	20-25	NP-5
702: Mazuma-----	0-6	Silt loam	ML	A-4	0	0	100	100	90-100	70-80	20-25	NP-5
	6-22	Sandy loam, fine sandy loam	SM	A-4, A-2	0	0	100	100	90-100	30-50	20-25	NP-5
	22-60	Stratified silt loam to gravelly coarse sand	SM, ML	A-2, A-4	0	0	75-100	70-85	50-75	25-55	20-25	NP-5
Swingler-----	0-9	Silt loam	CL-ML, ML	A-4	0	0	100	100	95-100	80-95	25-35	5-10
	9-60	Silt loam, very fine sandy loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	75-80	25-35	5-15

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plasticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
702 (con.): Toulon-----	0-6	Very gravelly loam	GM, SM	A-1, A-2	0	0-10	55-70	40-50	30-45	20-35	---	NP
	6-14	Very gravelly sandy loam, very gravelly loam, very gravelly coarse sandy loam	GM	A-1, A-2	0	0-5	40-60	25-40	15-35	10-30	---	NP
	14-60	Stratified gravelly coarse sand to extremely cobble coarse sand	GP, GP-GM	A-1	0-5	25-50	40-50	25-40	5-20	0-10	---	NP
703: Mazuma-----	0-6	Loamy fine sand	SM	A-2, A-4	0	0	95-100	85-100	75-95	30-50	---	NP
	6-60	Stratified gravelly coarse sand to silt loam	SM	A-4	0	0	95-100	75-100	70-90	35-50	20-25	NP-5
Hardhat-----	0-3	Sand	SP-SM, SM	A-1, A-2, A-3	0	0	95-100	90-100	45-70	5-15	0-14	NP
	3-41	Silt loam, very fine sandy loam	ML	A-4	0	0	80-100	75-100	70-95	50-80	15-25	NP-5
	41-60	Stratified silt loam to gravelly sand	SM	A-1, A-2, A-4	0	0	70-95	60-90	35-85	20-50	15-25	NP-5
Hawsley-----	0-5	Sand	SM, SP-SM	A-2, A-3	0	0	100	90-100	75-90	5-20	---	NP
	5-60	Stratified fine sand to coarse sand	SM, SP-SM	A-2, A-3	0	0	85-100	75-100	55-70	5-25	---	NP
704: Mazuma-----	0-6	Fine sandy loam	SM	A-2, A-4	0	0	100	100	70-90	30-50	20-25	NP-5
	6-22	Sandy loam, fine sandy loam	SM	A-4, A-2	0	0	100	100	90-100	30-50	20-25	NP-5
	22-60	Stratified silt loam to gravelly coarse sand	SM, ML	A-2, A-4	0	0	75-100	70-85	50-75	25-55	20-25	NP-5
705: Mazuma-----	0-6	Loamy fine sand	SM	A-2, A-4	0	0	95-100	85-100	75-95	30-50	---	NP
	6-60	Stratified gravelly coarse sand to silt loam	SM	A-4	0	0	95-100	75-100	70-90	35-50	20-25	NP-5

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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
705 (con.): Mazuma-----	0-6	Fine sandy loam	SM	A-2, A-4	0	0	100	100	70-90	30-50	20-25	NP-5
	6-22	Sandy loam, fine sandy loam	SM	A-4, A-2	0	0	100	100	90-100	30-50	20-25	NP-5
	22-60	Stratified silt loam to gravelly coarse sand	SM, ML	A-2, A-4	0	0	75-100	70-85	50-75	25-55	20-25	NP-5
706: Mazuma-----	0-6	Silt loam	ML	A-4	0	0	100	100	90-100	70-80	20-25	NP-5
	6-22	Sandy loam, fine sandy loam	SM	A-4, A-2	0	0	100	100	90-100	30-50	20-25	NP-5
	22-60	Stratified silt loam to gravelly coarse sand	SM, ML	A-2, A-4	0	0	75-100	70-85	50-75	25-55	20-25	NP-5
707: Mazuma-----	0-6	Fine sandy loam	SM	A-2, A-4	0	0	95-100	85-100	70-85	30-50	20-25	NP-5
	6-60	Stratified gravelly coarse sand to silt loam	SM	A-4	0	0	95-100	75-100	70-90	35-50	20-25	NP-5
Coldent-----	0-9	Gravelly fine sand	SP-SM, SM	A-2, A-1, A-3	0	0	65-90	50-75	45-65	5-20	---	NP
	9-19	Stratified loamy sand to fine sandy loam	SM	A-2, A-4	0	0	85-100	75-90	55-80	20-40	---	NP
	19-31	Stratified gravelly loamy sand to gravelly fine sandy loam	SM	A-2, A-1	0	0	60-85	50-75	40-65	15-35	---	NP
	31-60	Stratified very gravelly loamy sand to very gravelly coarse sand	SP-SM, SM, GP-GM, GM	A-1	0	0	40-65	25-50	15-30	5-15	---	NP
708: Mazuma-----	0-6	Silt loam	ML	A-4	0	0	100	100	90-100	70-80	20-25	NP-5
	6-22	Sandy loam, fine sandy loam	SM	A-4, A-2	0	0	100	100	90-100	30-50	20-25	NP-5
	22-60	Stratified silt loam to gravelly coarse sand	SM, ML	A-2, A-4	0	0	75-100	70-85	50-75	25-55	20-25	NP-5

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct						
708 (con.): Ragtown-----	0-7	Silty clay loam	CL, ML	A-7	0	0	100	100	95-100	80-90	40-50	15-20
	7-16	Stratified sandy clay loam to silty clay loam	CL	A-6	0	0	100	100	80-95	50-75	35-40	15-20
	16-60	Stratified silty clay loam to clay	CL, CH	A-7	0	0	100	100	90-100	75-95	40-55	20-30
750: Rock Outcrop.												
Pickup-----	0-5	Very gravelly loam	GM-GC	A-2	0	5-25	45-65	35-55	25-45	15-35	25-30	5-10
	5-22	Very gravelly clay	GC	A-2, A-7	0	10-25	50-65	35-50	30-50	25-45	45-60	20-30
	22-32	Unweathered bedrock			0	0	0	0	0	0	---	NP
751: Rock Outcrop.												
Pickup-----	0-5	Very gravelly loam	GM-GC	A-2	0	5-25	45-65	35-55	25-45	15-35	25-30	5-10
	5-22	Very gravelly clay	GC	A-2, A-7	0	10-25	50-65	35-50	30-50	25-45	45-60	20-30
	22-32	Unweathered bedrock			0	0	0	0	0	0	---	NP
Grumbler-----												
	0-4	Very gravelly loam	GM-GC	A-2	0	0-15	40-55	35-50	30-45	20-35	25-30	5-10
	4-8	Very gravelly clay, very gravelly clay loam	GC, GM	A-2, A-7	0	0-10	35-55	30-50	25-45	15-40	40-55	15-25
	8-18	Very gravelly clay, very gravelly clay loam	GC, GM	A-2, A-7	0	0-15	35-55	30-50	25-45	15-40	40-55	15-25
	18-22	Unweathered bedrock			0	0	0	0	0	0	---	NP
752: Pickup-----												
	0-5	Very gravelly loam	GM-GC	A-2	0	5-25	45-65	35-55	25-45	15-35	25-30	5-10
	5-22	Very gravelly clay	GC	A-2, A-7	0	10-25	50-65	35-50	30-50	25-45	45-60	20-30
	22-32	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
752 (con.): Old Camp-----	0-6	Very gravelly loam	GM, GM-GC	A-1, A-2	0-1	0-15	50-60	35-45	30-40	20-30	15-25	NP-10
	6-18	Very cobbly clay loam, extremely stony sandy clay loam, very stony clay loam	GC	A-2, A-6	25-50	25-50	40-55	35-50	30-45	25-40	30-40	15-25
	18-22	Unweathered bedrock			0	0	0	0	0	0	---	NP
Theon-----	0-3	Very stony loam	GM-GC, SC-SM	A-2, A-4	5-25	10-30	55-80	45-75	35-50	20-45	20-30	5-10
	3-9	Very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam	GC	A-2	0-2	5-25	40-60	25-50	15-40	10-30	30-40	10-20
	9-12	Weathered bedrock			0	0	0	0	0	0	---	NP
	12-16	Unweathered bedrock			0	0	0	0	0	0	---	NP
753: Rock Outcrop. Pickup-----	0-5	Very gravelly loam	GM-GC	A-2	0	5-25	45-65	35-55	25-45	15-35	25-30	5-10
	5-22	Very gravelly clay	GC	A-2, A-7	0	10-25	50-65	35-50	30-50	25-45	45-60	20-30
	22-32	Unweathered bedrock			0	0	0	0	0	0	---	NP
800: Old Camp-----	0-6	Very gravelly loam	GM, GM-GC	A-1, A-2	0-1	0-15	50-60	35-45	30-40	20-30	15-25	NP-10
	6-18	Very cobbly clay loam, extremely stony sandy clay loam, very stony clay loam	GC	A-2, A-6	25-50	25-50	40-55	35-50	30-45	25-40	30-40	15-25
	18-22	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
800 (con.): Dorper-----	0-2	Stony very fine sandy loam	GM	A-2	1-5	5-10	50-65	45-60	40-60	25-35	15-25	NP-5
	2-7	Gravelly very fine sandy loam, silt loam	SM, ML, GM	A-4	0	0	65-100	60-100	55-100	35-70	15-25	NP-5
	7-17	Gravelly clay loam, clay, clay loam	GC, CL	A-7	0	0	65-95	60-90	50-80	45-70	40-50	15-25
	17-60	Very gravelly coarse sandy loam, extremely gravelly sandy loam	GM, GP-GM	A-1	0-5	10-15	15-50	10-45	5-40	5-25	15-25	NP-5
Pokergap-----	0-6	Stony very fine sandy loam	SM	A-4	1-5	5-10	90-100	85-95	65-80	35-50	15-20	NP-5
	6-14	Loam, clay loam, gravelly clay loam	SC	A-6	0	0-5	70-90	65-85	55-75	35-50	30-35	10-15
	14-50	Stratified gravelly loam to extremely gravelly coarse sandy loam	GM	A-1	0-1	0-15	35-55	30-50	20-35	10-25	20-25	NP-5
	50-60	Stratified very gravelly coarse sandy loam to extremely gravelly loamy coarse sand	GM, GP-GM	A-1	0-1	0-25	25-40	20-35	10-20	5-15	0-14	NP
801: Old Camp-----	0-6	Very gravelly loam	GM, GM-GC	A-1, A-2	0-1	0-15	50-60	35-45	30-40	20-30	15-25	NP-10
	6-18	Very cobbly clay loam, extremely stony sandy clay loam, very stony clay loam	GC	A-2, A-6	25-50	25-50	40-55	35-50	30-45	25-40	30-40	15-25
	18-22	Unweathered bedrock			0	0	0	0	0	0	---	NP
Sumya-----	0-4	Very stony clay loam	GC, CL	A-6, A-7	5-15	5-20	65-75	60-70	55-65	45-55	35-45	15-20
	4-8	Very gravelly clay loam, very gravelly clay	GC	A-2	0	0-15	35-55	30-50	25-40	20-35	40-50	20-25
	8-12	Unweathered bedrock			0	0	0	0	0	0	---	NP

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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
801 (con.): Pickup-----	0-5	Very gravelly loam	GM-GC	A-2	0	5-25	45-65	35-55	25-45	15-35	25-30	5-10
	5-22	Very gravelly clay	GC	A-2, A-7	0	10-25	50-65	35-50	30-50	25-45	45-60	20-30
	22-32	Unweathered bedrock			0	0	0	0	0	0	---	NP
810: Perwaso-----	0-3	Silt loam	ML	A-4	0	0	100	100	90-100	80-90	30-35	5-10
	3-36	Stratified silt loam to sandy clay loam	ML	A-4	0	0	100	100	70-80	55-70	30-35	5-10
	36-60	Stratified gravelly loamy coarse sand to gravelly coarse sand	SM	A-1	0	0	75-80	70-75	35-50	15-25	0-14	NP
Perwaso-----	0-3	Silt loam	ML	A-4	0	0	100	100	90-100	80-90	30-35	5-10
	3-36	Stratified silt loam to sandy clay loam	ML	A-4	0	0	100	100	70-80	55-70	30-35	5-10
	36-60	Stratified gravelly loamy coarse sand to gravelly coarse sand	SM	A-1	0	0	75-80	70-75	35-50	15-25	0-14	NP
850: Playas-----	0-6	Silty clay loam	ML	A-6, A-7	0	0	100	100	100	90-100	35-50	10-20
	6-60	Silty clay loam, clay, silty clay	CL, CH, MH	A-7	0	0	100	100	100	90-100	45-75	20-40
851: Pits, Mine.												
852: Puett-----	0-3	Coarse sandy loam	SM	A-1, A-2	0	0	90-100	85-95	40-50	20-30	---	NP
	3-12	Coarse sandy loam, fine sandy loam, sandy loam	SM, ML	A-1, A-2, A-4	0	0	80-100	75-95	40-80	15-55	---	NP
	12-16	Weathered bedrock			0	0	0	0	0	0	---	NP

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
852 (con.): Dorper-----	0-2	Extremely gravelly very fine sandy loam	GP-GM, GM	A-1	0-1	0-15	20-30	15-25	10-25	5-15	15-25	NP-5
	2-7	Gravelly very fine sandy loam, silt loam	SM, ML, GM	A-4	0	0	65-100	60-100	55-100	35-70	15-25	NP-5
	7-17	Gravelly clay loam, clay, clay loam	GC, CL	A-7	0	0	65-95	60-90	50-80	45-70	40-50	15-25
	17-60	Very gravelly coarse sandy loam, extremely gravelly sandy loam	GM, GP-GM	A-1	0-1	10-15	15-50	10-45	5-40	5-25	15-25	NP-5
960: Rednik-----	0-2	Very gravelly sandy loam	GM	A-1	0	0-5	45-55	35-50	25-40	15-25	---	NP
	2-30	Very gravelly sandy loam, extremely gravelly loam, very gravelly sandy clay loam	GC	A-2	0-10	5-30	35-60	30-50	20-35	15-30	25-35	10-15
	30-41	Very gravelly sandy loam, very gravelly fine sandy loam, extremely gravelly sandy loam	GM	A-1	0-10	5-30	35-60	30-50	15-40	10-25	---	NP
	41-60	Very gravelly sand, extremely gravelly loamy sand, extremely gravelly loamy coarse sand	GP, GP-GM, SP-SM, GM	A-1	0-10	5-30	30-60	25-60	15-30	0-15	---	NP
Jungo-----	0-6	Very gravelly loam	GM-GC	A-2	0	0-10	40-55	35-50	25-45	20-35	25-30	5-10
	6-20	Very gravelly sandy clay loam, very gravelly clay loam	GC	A-2	0-10	0-10	30-55	25-50	20-40	15-35	35-40	15-20
	20-60	Extremely gravelly clay loam, extremely gravelly sandy clay loam	GC, GP-GC	A-2	0-10	10-25	15-40	10-30	10-30	5-25	35-40	15-20

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
					Pct	Pct						
981 (con.): Selbit-----	0-4	Very gravelly coarse sand	SP, SP-SM	A-1	0-5	30-50	60-80	25-50	10-20	0-10	0-14	NP
	4-17	Very stony loamy coarse sand, very stony sand, very stony loamy sand	SP, SM, SP-SM	A-1	15-30	10-15	60-80	45-65	15-35	0-15	0-14	NP
	17-60	Weathered bedrock			0	0	0	0	0	0	---	NP
Upsel-----	0-2	Gravelly loamy coarse sand	SM	A-1	0-1	5-10	90-100	55-75	30-40	10-20	0-14	NP
	2-60	Loamy coarse sand, gravelly loamy coarse sand	SM	A-1, A-2	0	0-10	90-100	70-100	45-55	10-25	0-14	NP
990: Shawave-----	0-8	Gravelly sandy loam	SM	A-1, A-2	0	0	75-90	60-75	40-60	20-35	---	NP
	8-21	Sandy loam, sandy clay loam, loam	SC, CL	A-6	0	0	95-100	75-100	55-75	35-55	25-30	10-15
	21-37	Sandy loam, coarse sandy loam	SM	A-2, A-4	0	0	95-100	75-100	50-70	20-40	---	NP
	37-60	Loamy coarse sand, coarse sand, sand	SM	A-1, A-2	0	0	95-100	75-100	45-60	10-25	---	NP
Granshaw-----	0-13	Gravelly coarse sandy loam	SM	A-1, A-2	0	0	90-100	55-75	30-50	20-35	---	NP
	13-23	Sandy loam, coarse sandy loam	SM	A-2, A-4	0	0	95-100	75-100	45-65	25-45	20-25	NP-5
	23-60	Stratified coarse sandy loam to very gravelly coarse sand	SM, SP-SM	A-1, A-2	0	0	85-100	50-90	25-50	5-30	---	NP
Labkey-----	0-4	Gravelly sandy loam	SM	A-1, A-2	0	0	80-100	55-75	35-55	20-35	---	NP
	4-12	Gravelly sandy loam, gravelly coarse sandy loam	SM	A-1, A-2	0	0	80-100	50-70	25-45	15-30	---	NP
	12-60	Stratified gravelly sandy loam to extremely gravelly coarse sand	SP-SM, SM	A-1	0	0	60-80	25-45	10-25	5-15	---	NP

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
					Pct	Pct						
991: Shawave-----	0-8	Gravelly sandy loam	SM	A-1, A-2	0	0	75-90	60-75	40-60	20-35	---	NP
	8-21	Sandy loam, sandy clay loam, loam	SC, CL	A-6	0	0	95-100	75-100	55-75	35-55	25-30	10-15
	21-37	Sandy loam, coarse sandy loam	SM	A-2, A-4	0	0	95-100	75-100	50-70	20-40	---	NP
	37-60	Loamy coarse sand, coarse sand, sand	SM	A-1, A-2	0	0	95-100	75-100	45-60	10-25	---	NP
Slipback-----	0-9	Sandy loam	SM	A-2, A-4	0	0	95-100	85-100	65-80	30-50	15-20	NP-5
	9-24	Clay loam, sandy clay loam, gravelly loam	SC, CL	A-6	0	0	80-100	70-90	50-75	35-55	35-40	15-20
	24-38	Coarse sandy loam, gravelly coarse sandy loam	SM	A-1, A-2	0	0	80-100	70-90	35-55	10-30	0-14	NP
	38-60	Loamy coarse sand, sand, coarse sand	SM	A-1, A-2	0	0	85-100	75-90	35-55	10-25	0-14	NP
Granshaw-----	0-13	Gravelly coarse sandy loam	SM	A-1, A-2	0	0	90-100	55-75	30-50	20-35	---	NP
	13-23	Sandy loam, coarse sandy loam	SM	A-2, A-4	0	0	95-100	75-100	45-65	25-45	20-25	NP-5
	23-60	Stratified coarse sandy loam to very gravelly coarse sand	SM, SP-SM	A-1, A-2	0	0	85-100	50-90	25-50	5-30	---	NP
992: Shawave-----	0-8	Gravelly sandy loam	SM	A-1, A-2	0	0	75-90	60-75	40-60	20-35	---	NP
	8-21	Sandy loam, sandy clay loam, loam	SC, CL	A-6	0	0	95-100	75-100	55-75	35-55	25-30	10-15
	21-37	Sandy loam, coarse sandy loam	SM	A-2, A-4	0	0	95-100	75-100	50-70	20-40	---	NP
	37-60	Loamy coarse sand, coarse sand, sand	SM	A-1, A-2	0	0	95-100	75-100	45-60	10-25	---	NP
Deadyon-----	0-5	Loam	SM, ML	A-4	0	0	95-100	85-100	55-80	45-65	15-25	NP-5
	5-24	Loam, sandy loam, coarse sandy loam	SM, ML	A-1, A-2, A-4	0	0	95-100	75-90	40-70	20-55	20-25	NP-5
	24-35	Sandy loam, coarse sandy loam, loam	SM	A-1, A-2, A-4	0	0	95-100	75-90	30-70	20-50	---	NP
	35-60	Stratified sandy loam to very gravelly coarse sand	SM	A-1, A-2	0	0	95-100	50-75	10-60	10-30	---	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		
					Pct	Pct						
992 (con.): Slipback-----	In											
	0-9	Sandy loam	SM	A-2, A-4	0	0	95-100	85-100	65-80	30-50	15-20	NP-5
	9-24	Clay loam, sandy clay loam, gravelly loam	SC, CL	A-6	0	0	80-100	70-90	50-75	35-55	35-40	15-20
	24-38	Coarse sandy loam, gravelly coarse sandy loam	SM	A-1, A-2	0	0	80-100	70-90	35-55	10-30	0-14	NP
	38-60	Loamy coarse sand, sand, coarse sand	SM	A-1, A-2	0	0	85-100	75-90	35-55	10-25	0-14	NP
993: Shawave-----	0-8	Gravelly sandy loam	SM	A-1, A-2	0	0	75-90	60-75	40-60	20-35	---	NP
	8-21	Sandy loam, sandy clay loam, loam	SC, CL	A-6	0	0	95-100	75-100	55-75	35-55	25-30	10-15
	21-37	Sandy loam, coarse sandy loam	SM	A-2, A-4	0	0	95-100	75-100	50-70	20-40	---	NP
	37-60	Loamy coarse sand, coarse sand, sand	SM	A-1, A-2	0	0	95-100	75-100	45-60	10-25	---	NP
Biga-----	0-6	Gravelly loam	SM	A-2, A-4	0	0-5	85-100	55-75	35-50	30-45	20-25	NP-5
	6-12	Clay, sandy clay, clay loam	SC, CL	A-7	0	0	95-100	75-100	65-85	45-65	40-50	15-25
	12-60	Stratified sandy loam to gravelly loamy coarse sand	SM	A-1, A-2	0	0-5	80-100	60-90	20-40	15-30	---	NP
Deadyon-----	0-5	Loam	SM, ML	A-4	0	0	95-100	85-100	55-80	45-65	15-25	NP-5
	5-24	Loam, sandy loam, coarse sandy loam	SM, ML	A-1, A-2, A-4	0	0	95-100	75-90	40-70	20-55	20-25	NP-5
	24-35	Sandy loam, coarse sandy loam, loam	SM	A-1, A-2, A-4	0	0	95-100	75-90	30-70	20-50	---	NP
	35-60	Stratified sandy loam to very gravelly coarse sand	SM	A-1, A-2	0	0	95-100	50-75	10-60	10-30	---	NP
994: Shawave-----	0-8	Gravelly sandy loam	SM	A-1, A-2	0	0	75-90	60-75	40-60	20-35	---	NP
	8-21	Sandy loam, sandy clay loam, loam	SC, CL	A-6	0	0	95-100	75-100	55-75	35-55	25-30	10-15
	21-37	Sandy loam, coarse sandy loam	SM	A-2, A-4	0	0	95-100	75-100	50-70	20-40	---	NP
	37-60	Loamy coarse sand, coarse sand, sand	SM	A-1, A-2	0	0	95-100	75-100	45-60	10-25	---	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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
994 (con.): Biga-----	0-6	Gravelly loam	SM	A-2, A-4	0	0-5	85-100	55-75	35-50	30-45	20-25	NP-5
	6-12	Clay, sandy clay, clay loam	SC, CL	A-7	0	0	95-100	75-100	65-85	45-65	40-50	15-25
	12-60	Stratified sandy loam to gravelly loamy coarse sand	SM	A-1, A-2	0	0-5	80-100	60-90	20-40	15-30	---	NP
Fuett-----	0-3	Coarse sandy loam	SM	A-1, A-2	0	0	90-100	85-95	40-50	20-30	---	NP
	3-12	Coarse sandy loam, fine sandy loam, sandy loam	SM, ML	A-1, A-2, A-4	0	0	80-100	75-95	40-80	15-55	---	NP
	12-16	Weathered bedrock			0	0	0	0	0	0	---	NP
996: Slaw-----	0-10	Silt loam	ML, CL-ML	A-4	0	0	100	100	95-100	80-90	25-35	5-10
	10-60	Stratified very fine sandy loam to silty clay loam	CL, CL-ML	A-4, A-6, A-7	0	0	100	100	95-100	85-95	25-45	5-20
Slaw-----	0-9	Silt loam	CL-ML	A-4	0	0	100	100	95-100	80-90	15-25	5-10
	9-60	Stratified very fine sandy loam to silty clay	ML, CL	A-6, A-7	0	0	100	100	95-100	85-95	35-45	10-20
1020: Soar-----	0-3	Very gravelly coarse sandy loam	SP-SM, SM, SC-SM, SP-SC	A-1, A-2	0-2	0-10	90-95	35-50	15-35	5-20	20-30	NP-10
	3-6	Very gravelly sandy clay loam, very gravelly loam	SC	A-2	0-2	0-10	90-95	25-50	15-40	10-25	30-35	10-15
	6-28	Weathered bedrock			0	0	0	0	0	0	---	NP
	28-38	Unweathered bedrock			0	0	0	0	0	0	---	NP
Arclay-----	0-5	Very gravelly coarse sandy loam	GM, SM	A-1	0	0-10	50-65	35-50	15-30	10-20	---	NP
	5-16	Gravelly clay loam, gravelly sandy clay loam, gravelly loam	SM, SC	A-2, A-6	0	0-5	70-90	55-75	35-55	20-40	35-40	10-15
	16-42	Weathered bedrock			0	0	0	0	0	0	---	NP
	42-46	Unweathered bedrock			0	0	0	0	0	0	---	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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
1020 (con.): Soar-----	0-3	Very gravelly coarse sandy loam	SP-SM, SM, SC-SM, SP-SC	A-1, A-2	0-2	0-10	90-95	35-50	15-35	5-20	20-30	NP-10
	3-6	Very gravelly sandy clay loam, very gravelly loam	SC	A-2	0-2	0-10	90-95	25-50	15-40	10-25	30-35	10-15
	6-28	Weathered bedrock			0	0	0	0	0	0	---	NP
	28-38	Unweathered bedrock			0	0	0	0	0	0	---	NP
1021: Soar-----	0-3	Very gravelly coarse sandy loam	SP-SM, SM, SC-SM, SP-SC	A-1, A-2	0-2	0-10	90-95	35-50	15-35	5-20	20-30	NP-10
	3-6	Very gravelly sandy clay loam, very gravelly loam	SC	A-2	0-2	0-10	90-95	25-50	15-40	10-25	30-35	10-15
	6-28	Weathered bedrock			0	0	0	0	0	0	---	NP
	28-38	Unweathered bedrock			0	0	0	0	0	0	---	NP
Arclay-----	0-5	Very gravelly coarse sandy loam	GM, SM	A-1	0	0-10	50-65	35-50	15-30	10-20	---	NP
	5-16	Gravelly clay loam, gravelly sandy clay loam, gravelly loam	SM, SC	A-2, A-6	0	0-5	70-90	55-75	35-55	20-40	35-40	10-15
	16-42	Weathered bedrock			0	0	0	0	0	0	---	NP
	42-46	Unweathered bedrock			0	0	0	0	0	0	---	NP
1022: Rock Outcrop. Soar-----	0-3	Very gravelly coarse sandy loam	SP-SM, SM, SC-SM, SP-SC	A-1, A-2	0-2	0-10	90-95	35-50	15-35	5-20	20-30	NP-10
	3-6	Very gravelly sandy clay loam, very gravelly loam	SC	A-2	0-2	0-10	90-95	25-50	15-40	10-25	30-35	10-15
	6-28	Weathered bedrock			0	0	0	0	0	0	---	NP
	28-38	Unweathered bedrock			0	0	0	0	0	0	---	NP

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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
1022 (con.): Arclay-----	0-5	Very gravelly coarse sandy loam	SM, GM	A-1	5-10	5-20	40-70	25-50	15-30	10-25	---	NP
	5-16	Gravelly clay loam, gravelly sandy clay loam, gravelly loam	SM, SC	A-2, A-6	0	0-5	70-90	55-75	35-55	20-40	35-40	10-15
	16-42	Weathered bedrock			0	0	0	0	0	0	---	NP
	42-46	Unweathered bedrock			0	0	0	0	0	0	---	NP
1030: Pokergap-----	0-6	Very gravelly very fine sandy loam	GM	A-1, A-2	0	0-10	40-55	35-50	25-45	15-30	15-20	NP-5
	6-14	Loam, clay loam, gravelly clay loam	SC, CL	A-6	0	0-5	70-90	65-85	55-75	35-55	30-35	10-15
	14-50	Stratified gravelly loam to extremely gravelly coarse sandy loam	GM	A-1	0-1	0-15	35-55	30-50	20-35	10-25	20-25	NP-5
	50-60	Stratified very gravelly coarse sandy loam to extremely gravelly loamy coarse sand	GM, GP-GM	A-1	0-1	0-25	25-40	20-35	10-20	5-15	0-14	NP
1031: Pokergap-----	0-6	Very gravelly very fine sandy loam	GM	A-1, A-2	0	0-10	40-55	35-50	25-45	15-30	15-20	NP-5
	6-14	Loam, clay loam, gravelly clay loam	SC, CL	A-6	0	0-5	70-90	65-85	55-75	35-55	30-35	10-15
	14-50	Stratified gravelly loam to extremely gravelly coarse sandy loam	GM	A-1	0-1	0-15	35-55	30-50	20-35	10-25	20-25	NP-5
	50-60	Stratified very gravelly coarse sandy loam to extremely gravelly loamy coarse sand	GM, GP-GM	A-1	0-1	0-25	25-40	20-35	10-20	5-15	0-14	NP

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
					Pct	Pct						
1031 (con.): Dorper-----	0-2	Very gravelly very fine sandy loam	GM	A-1, A-2	0-1	0-15	30-55	25-50	25-50	10-30	15-25	NP-5
	2-7	Gravelly very fine sandy loam, silt loam	SM, ML, GM	A-4	0	0	65-100	60-100	55-100	35-70	15-25	NP-5
	7-17	Gravelly clay loam, clay, clay loam	GC, CL	A-7	0	0	65-95	60-90	50-80	45-70	40-50	15-25
	17-60	Very gravelly coarse sandy loam, extremely gravelly sandy loam	GM, GP-GM	A-1	0-1	10-15	15-50	10-45	5-40	5-25	15-25	NP-5
1032: Pokergap-----	0-6	Stony very fine sandy loam	SM	A-4	1-5	5-10	90-100	85-95	65-80	35-50	15-20	NP-5
	6-14	Loam, clay loam, gravelly clay loam	SC	A-6	0	0-5	70-90	65-85	55-75	35-50	30-35	10-15
	14-50	Stratified gravelly loam to extremely gravelly coarse sandy loam	GM	A-1	0-1	0-15	35-55	30-50	20-35	10-25	20-25	NP-5
	50-60	Stratified very gravelly coarse sandy loam to extremely gravelly loamy coarse sand	GM, GP-GM	A-1	0-1	0-25	25-40	20-35	10-20	5-15	0-14	NP
Dorper-----	0-2	Very stony very fine sandy loam	GM	A-1, A-2	5-15	5-20	50-65	45-60	40-60	20-35	15-25	NP-5
	2-7	Gravelly very fine sandy loam, silt loam	SM, ML, GM	A-4	0	0	65-100	60-100	55-100	35-70	15-25	NP-5
	7-17	Gravelly clay loam, clay, clay loam	GC, CL	A-7	0	0	65-95	60-90	50-80	45-70	40-50	15-25
	17-60	Very gravelly coarse sandy loam, extremely gravelly sandy loam	GM, GP-GM	A-1	0-5	10-15	15-50	10-45	5-40	5-25	15-25	NP-5

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
					Pct	Pct						
1033: Pokergap-----	0-6	Silt loam	CL-ML	A-4	0	0-5	90-100	85-100	75-95	50-70	20-25	5-10
	6-14	Loam, clay loam, gravelly clay loam	SC, CL	A-6	0	0-5	70-90	65-85	55-75	35-55	30-35	10-15
	14-50	Stratified gravelly loam to extremely gravelly coarse sandy loam	GM	A-1	0-1	0-15	35-55	30-50	20-35	10-25	20-25	NP-5
	50-60	Stratified very gravelly coarse sandy loam to extremely gravelly loamy coarse sand	GM, GP-GM	A-1	0-1	0-25	25-40	20-35	10-20	5-15	0-14	NP
Jerval-----	0-8	Gravelly very fine sandy loam	SM	A-4	0	0-10	70-85	55-75	50-75	35-50	---	NP
	8-20	Gravelly clay loam, gravelly silty clay loam	CL	A-6	0	0-5	65-85	60-75	55-75	50-65	35-40	15-20
	20-60	Very gravelly sandy loam, very gravelly fine sandy loam	GM	A-1	0	0-10	45-60	35-50	25-45	15-25	---	NP
Dorper-----	0-2	Stony very fine sandy loam	GM	A-2	1-5	5-10	50-65	45-60	40-60	25-35	15-25	NP-5
	2-7	Gravelly very fine sandy loam, silt loam	SM, ML, GM	A-4	0	0	65-100	60-100	55-100	35-70	15-25	NP-5
	7-17	Gravelly clay loam, clay, clay loam	GC, CL	A-7	0	0	65-95	60-90	50-80	45-70	40-50	15-25
	17-60	Very gravelly coarse sandy loam, extremely gravelly sandy loam	GM, GP-GM	A-1	0-5	10-15	15-50	10-45	5-40	5-25	15-25	NP-5

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
1034: Pokergap-----	0-6	Stony very fine sandy loam	SM	A-4	1-5	5-10	90-100	85-95	65-80	35-50	15-20	NP-5
	6-14	Loam, clay loam, gravelly clay loam	SC	A-6	0	0-5	70-90	65-85	55-75	35-50	30-35	10-15
	14-50	Stratified gravelly loam to extremely gravelly coarse sandy loam	GM	A-1	0-1	0-15	35-55	30-50	20-35	10-25	20-25	NP-5
	50-60	Stratified very gravelly coarse sandy loam to extremely gravelly loamy coarse sand	GM, GP-GM	A-1	0-1	0-25	25-40	20-35	10-20	5-15	0-14	NP
1035: Pokergap-----	0-6	Silt loam	CL-ML	A-4	0	0-5	90-100	85-100	75-95	50-70	20-25	5-10
	6-14	Loam, clay loam, gravelly clay loam	SC, CL	A-6	0	0-5	70-90	65-85	55-75	35-55	30-35	10-15
	14-50	Stratified gravelly loam to extremely gravelly coarse sandy loam	GM	A-1	0-1	0-15	35-55	30-50	20-35	10-25	20-25	NP-5
	50-60	Stratified very gravelly coarse sandy loam to extremely gravelly loamy coarse sand	GM, GP-GM	A-1	0-1	0-25	25-40	20-35	10-20	5-15	0-14	NP
Jerval-----	0-8	Gravelly very fine sandy loam	SM	A-4	0	0-10	70-85	55-75	50-75	35-50	---	NP
	8-20	Gravelly clay loam, gravelly silty clay loam	CL	A-6	0	0-5	65-85	60-75	55-75	50-65	35-40	15-20
	20-60	Very gravelly sandy loam, very gravelly fine sandy loam	GM	A-1	0	0-10	45-60	35-50	25-45	15-25	---	NP
1040: Sojur-----	0-4	Extremely channery silt loam	GM-GC	A-2	0	15-30	40-50	20-30	15-25	10-20	25-30	5-10
	4-15	Weathered bedrock			0	0	0	0	0	0	---	NP
	15-19	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
1041: Sojur-----	In											
	0-4	Extremely channery silt loam	GM-GC	A-2	0	15-30	40-50	20-30	15-25	10-20	25-30	5-10
	4-15	Weathered bedrock			0	0	0	0	0	0	---	NP
	15-19	Unweathered bedrock			0	0	0	0	0	0	---	NP
Boomstick-----	0-5	Very channery silt loam	GM-GC	A-2, A-4	0-5	0-10	45-65	35-55	30-55	25-50	25-30	5-10
	5-16	Extremely channery loam, very channery clay loam, extremely channery clay loam	GC, GM	A-2, A-6	0-5	25-40	35-65	25-55	20-45	15-40	35-40	10-15
	16-20	Unweathered bedrock			0	0	0	0	0	0	---	NP
Rubble Land-----	0-60	Fragmental material	GP	A-1	30-65	30-65	0-10	0-5	0-5	0	0-14	NP
1042: Sojur-----	0-4	Extremely channery silt loam	GM-GC	A-2	0	15-30	40-50	20-30	15-25	10-20	25-30	5-10
	4-15	Weathered bedrock			0	0	0	0	0	0	---	NP
	15-19	Unweathered bedrock			0	0	0	0	0	0	---	NP
Phliss-----	0-3	Extremely channery loam	GM-GC	A-2	0-2	30-45	30-45	20-35	15-35	15-30	25-30	5-10
	3-13	Very channery loam, extremely channery clay loam	GC	A-2	0-1	10-15	30-35	20-35	15-30	10-25	30-35	10-15
	13-23	Unweathered bedrock			0	0	0	0	0	0	---	NP
1050: Theon-----	0-3	Very cobbly loam	GM-GC, GM, SC-SM, SM	A-2, A-4	0-5	30-55	55-75	50-70	40-60	30-45	20-30	NP-10
	3-9	Very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam	GC	A-2	0	0-15	40-60	30-50	25-40	20-30	30-40	10-20
	9-12	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
1050 (con.): Singatse-----	0-4	Extremely cobble loam	GM	A-1, A-2	5-25	20-30	30-40	25-35	20-30	15-30	20-25	NP-5
	4-8	Very gravelly sandy loam, very gravelly loam	GM	A-1, A-2	0-5	0-10	35-55	30-50	20-45	10-35	15-25	NP-5
	8-10	Weathered bedrock			0	0	0	0	0	0	---	NP
	10-14	Unweathered bedrock			0	0	0	0	0	0	---	NP
1051: Theon-----	0-3	Very gravelly loam	GM-GC, GM	A-1, A-2	0-1	5-10	40-60	30-50	20-45	15-35	20-30	NP-10
	3-9	Very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam	GC	A-2	0-2	5-15	40-60	30-50	25-40	15-30	30-40	10-20
	9-12	Weathered bedrock			0	0	0	0	0	0	---	NP
	12-16	Unweathered bedrock			0	0	0	0	0	0	---	NP
Singatse-----	0-4	Very gravelly loam	SM	A-2	0	0-10	70-80	45-55	35-45	25-35	15-25	NP-5
	4-8	Very gravelly sandy loam, very gravelly loam	SM	A-1, A-2	0	0-10	60-70	30-50	20-30	10-30	15-25	NP-5
	8-10	Weathered bedrock			0	0	0	0	0	0	---	NP
	10-14	Unweathered bedrock			0	0	0	0	0	0	---	NP
1052: Theon-----	0-3	Very cobbly loam	GM-GC, GM, SC-SM, SM	A-2, A-4	0-5	30-55	55-75	50-70	40-60	30-45	20-30	NP-10
	3-9	Very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam	GC	A-2	0	0-15	40-60	30-50	25-40	20-30	30-40	10-20
	9-12	Unweathered bedrock			0	0	0	0	0	0	---	NP
Grumblen-----	0-4	Very gravelly loam	GM-GC	A-2	0	0-15	40-55	35-50	30-45	20-35	25-30	5-10
	4-8	Very gravelly clay, very gravelly clay loam	GC, GM	A-2, A-7	0	0-10	35-55	30-50	25-45	15-40	40-55	15-25
	8-18	Very gravelly clay, very gravelly clay loam	GC, GM	A-2, A-7	0	0-15	35-55	30-50	25-45	15-40	40-55	15-25
	18-22	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
1052 (con.): Rubble Land-----	0-60	Fragmental material	GP	A-1	30-65	30-65	0-10	0-5	0-5	0	0-14	NP
1053: Rock Outcrop. Theon-----	0-3	Very cobbly loam	GM-GC, GM, SC-SM, SM	A-2, A-4	0-5	30-55	55-75	50-70	40-60	30-45	20-30	NP-10
	3-9	Very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam	GC	A-2	0	0-15	40-60	30-50	25-40	20-30	30-40	10-20
	9-12	Unweathered bedrock			0	0	0	0	0	0	---	NP
1054: Theon-----	0-3	Very gravelly loam	GM-GC, GM	A-1, A-2	0-1	5-10	40-60	30-50	20-45	15-35	20-30	NP-10
	3-9	Very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam	GC	A-2	0-2	5-15	40-60	30-50	25-40	15-30	30-40	10-20
	9-12	Weathered bedrock			0	0	0	0	0	0	---	NP
	12-16	Unweathered bedrock			0	0	0	0	0	0	---	NP
Old Camp-----	0-6	Very gravelly loam	GM, GM-GC	A-1, A-2	0-1	0-15	50-60	35-45	30-40	20-30	15-25	NP-10
	6-18	Very cobbly clay loam, extremely stony sandy clay loam, very stony clay loam	GC	A-2, A-6	25-50	25-50	40-55	35-50	30-45	25-40	30-40	15-25
	18-22	Unweathered bedrock			0	0	0	0	0	0	---	NP
1055: Theon-----	0-3	Very cobbly loam	GM-GC, GM, SC-SM, SM	A-2, A-4	0-5	30-55	55-75	50-70	40-60	30-45	20-30	NP-10
	3-9	Very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam	GC	A-2	0	0-15	40-60	30-50	25-40	20-30	30-40	10-20
	9-12	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
					Pct	Pct						
1055 (con.): Old Camp-----	0-6	Very gravelly loam	GM, GM-GC	A-1, A-2	0-1	0-15	50-60	35-45	30-40	20-30	15-25	NP-10
	6-18	Very cobbly clay loam, extremely stony sandy clay loam, very stony clay loam	GC	A-2, A-6	25-50	25-50	40-55	35-50	30-45	25-40	30-40	15-25
	18-22	Unweathered bedrock			0	0	0	0	0	0	---	NP
1056: Theon-----	0-3	Very cobbly loam	GM-GC, GM, SC-SM, SM	A-2, A-4	0-5	30-55	55-75	50-70	40-60	30-45	20-30	NP-10
	3-9	Very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam	GC	A-2	0	0-15	40-60	30-50	25-40	20-30	30-40	10-20
	9-12	Unweathered bedrock			0	0	0	0	0	0	---	NP
Pickup-----	0-5	Very gravelly loam	GM-GC	A-2	0	5-25	45-65	35-55	25-45	15-35	25-30	5-10
	5-22	Very gravelly clay	GC	A-2, A-7	0	10-25	50-65	35-50	30-50	25-45	45-60	20-30
	22-32	Unweathered bedrock			0	0	0	0	0	0	---	NP
1080: Toulon-----	0-6	Very gravelly fine sandy loam	SM, GM	A-1, A-2	0	0-10	55-70	40-50	30-45	20-35	---	NP
	6-14	Very gravelly sandy loam, very gravelly loam, very gravelly coarse sandy loam	GM	A-1, A-2	0	0-5	40-60	25-40	15-35	10-30	---	NP
	14-60	Stratified gravelly coarse sand to extremely cobbly coarse sand	GP, GP-GM	A-1	0-5	25-50	40-50	25-40	5-20	0-10	---	NP
Appian-----	0-5	Loamy coarse sand	SM	A-1, A-2	0	0	85-100	75-100	30-55	15-30	---	NP
	5-15	Clay loam, sandy clay loam	SC, CL	A-6, A-7	0	0	95-100	90-100	75-90	40-60	35-45	15-20
	15-28	Stratified sand to sandy loam	SM	A-2	0	0	75-100	75-90	50-65	10-25	---	NP
	28-53	Sand, coarse sand	SP, SP-SM	A-1	0	0	85-100	75-90	30-50	0-10	---	NP
	53-60	Silt loam	CL-ML, ML	A-4	0	0	100	100	95-100	85-95	20-35	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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
1080 (con.): Bluewing-----	0-2	Very gravelly loamy sand	SP-SM	A-1	0	10-25	70-85	35-45	15-30	5-10	---	NP
	2-60	Stratified very gravelly sand to extremely gravelly loamy coarse sand	GP-GM, GP	A-1	0-5	0-25	40-50	20-35	10-15	0-10	---	NP
1100: Rock Outcrop.												
Unionville-----	0-5	Coarse sandy loam	SM	A-1, A-2	0	0	90-100	75-90	30-40	15-30	---	NP
	5-23	Coarse sandy loam, sandy loam	SM	A-1, A-2	0	0	90-100	75-90	30-60	15-30	---	NP
	23-27	Weathered bedrock			0	0	0	0	0	0	---	NP
1150: Rock Outcrop.												
Slocave-----	0-1	Very gravelly coarse sandy loam	SM	A-1	0-2	0-10	70-85	30-50	15-30	10-20	15-20	NP-5
	1-7	Very gravelly sandy loam, very gravelly coarse sandy loam	SM	A-1	0	0	75-90	25-50	15-35	10-25	15-25	NP-5
	7-27	Weathered bedrock			0	0	0	0	0	0	---	NP
	27-37	Unweathered bedrock			0	0	0	0	0	0	---	NP
Arclay-----	0-5	Very gravelly coarse sandy loam	GM, SM	A-1	0	0-10	50-65	35-50	15-30	10-20	---	NP
	5-16	Gravelly clay loam, gravelly sandy clay loam, gravelly loam	SM, SC	A-2, A-6	0	0-5	70-90	55-75	35-55	20-40	35-40	10-15
	16-42	Weathered bedrock			0	0	0	0	0	0	---	NP
	42-46	Unweathered bedrock			0	0	0	0	0	0	---	NP

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
1151: Slocave-----	0-1	Very gravelly coarse sandy loam	SM	A-1	0-2	0-10	70-85	30-50	15-30	10-20	15-20	NP-5
	1-7	Very gravelly sandy loam, very gravelly coarse sandy loam	SM	A-1	0	0	75-90	25-50	15-35	10-25	15-25	NP-5
	7-27	Weathered bedrock			0	0	0	0	0	0	---	NP
	27-37	Unweathered bedrock			0	0	0	0	0	0	---	NP
Vium-----	0-3	Gravelly coarse sandy loam	SM	A-1, A-2	0	0-10	85-100	55-70	30-50	15-35	---	NP
	3-8	Very gravelly sandy loam, very gravelly coarse sandy loam	SM	A-1	0	0	60-90	25-45	15-30	10-25	20-25	NP-5
	8-12	Unweathered bedrock			0	0	0	0	0	0	---	NP
1190: Woolsey-----	0-8	Fine sandy loam	SM	A-4	0	0	80-100	75-100	60-75	40-50	---	NP
	8-12	Gravelly sandy loam	GM-GC, SC-SM, GM, SM	A-2	0	0	55-90	50-75	40-50	25-35	20-30	NP-10
	12-60	Stratified sandy loam to very gravelly sandy loam	GM, ML, SM	A-2, A-4	0	0	55-90	50-85	40-70	30-55	---	NP
Bluewing-----	0-5	Gravelly sandy loam	SM	A-1, A-2	0	0-10	60-80	55-75	30-60	20-35	---	NP
	5-60	Stratified very gravelly sand to extremely gravelly loamy coarse sand	GP-GM	A-1	0	5-25	30-40	25-35	15-25	5-10	---	NP
1200: Acrelane-----	0-6	Very gravelly coarse sandy loam	SM	A-1	0	0-5	60-80	30-45	15-30	10-20	---	NP
	6-15	Very gravelly sandy clay loam, very gravelly sandy loam, very gravelly coarse sandy loam	SC-SM, SC	A-2	0	0-10	60-80	30-50	25-40	15-30	20-30	5-15
	15-60	Weathered bedrock			0	0	0	0	0	0	---	NP

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
1200 (con.): Soar-----	0-3	Very gravelly coarse sandy loam	SP-SM, SM, SC-SM, SP-SC	A-1, A-2	0-2	0-10	90-95	35-50	15-35	5-20	20-30	NP-10
	3-6	Very gravelly sandy clay loam, very gravelly loam	SC	A-2	0-2	0-10	90-95	25-50	15-40	10-25	30-35	10-15
	6-28	Weathered bedrock			0	0	0	0	0	0	---	NP
	28-38	Unweathered bedrock			0	0	0	0	0	0	---	NP
Arclay-----	0-5	Very gravelly coarse sandy loam	GM, SM	A-1	0	0-10	50-65	35-50	15-30	10-20	---	NP
	5-16	Gravelly clay loam, gravelly sandy clay loam, gravelly loam	SM, SC	A-2, A-6	0	0-5	70-90	55-75	35-55	20-40	35-40	10-15
	16-42	Weathered bedrock			0	0	0	0	0	0	---	NP
	42-46	Unweathered bedrock			0	0	0	0	0	0	---	NP
1201: Acrelane-----	0-6	Very gravelly coarse sandy loam	SM	A-1	0	0-5	60-80	30-45	15-30	10-20	---	NP
	6-15	Very gravelly sandy clay loam, very gravelly sandy loam, very gravelly coarse sandy loam	SC-SM, SC	A-2	0	0-10	60-80	30-50	25-40	15-30	20-30	5-15
	15-60	Weathered bedrock			0	0	0	0	0	0	---	NP
Wedekind-----	0-5	Gravelly sandy loam	SM	A-1	0	0-5	75-85	50-65	30-45	15-25	15-25	NP-5
	5-18	Sandy clay loam, clay loam, gravelly sandy clay loam	SC	A-2, A-6	0	0-5	80-90	55-90	45-70	20-50	30-40	10-20
	18-60	Weathered bedrock			0	0	0	0	0	0	---	NP

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
1201 (con.): Arclay-----	0-5	Very gravelly coarse sandy loam	GM, SM	A-1	0	0-10	50-65	35-50	15-30	10-20	---	NP
	5-16	Gravelly clay loam, gravelly sandy clay loam, gravelly loam	SM, SC	A-2, A-6	0	0-5	70-90	55-75	35-55	20-40	35-40	10-15
	16-42	Weathered bedrock			0	0	0	0	0	0	---	NP
	42-46	Unweathered bedrock			0	0	0	0	0	0	---	NP
1202: Rock Outcrop.												
Acrelane-----	0-6	Very bouldery coarse sandy loam	SM	A-1	5-20	0-25	90-100	60-75	30-45	10-20	---	NP
	6-15	Very gravelly sandy clay loam, very gravelly sandy loam, very gravelly coarse sandy loam	SC-SM, SC	A-2	0	0-10	60-80	30-50	25-40	15-30	20-30	5-15
	15-19	Weathered bedrock			0	0	0	0	0	0	---	NP
1203:												
Acrelane-----	0-6	Very gravelly coarse sandy loam	SM	A-1	0	0-5	60-80	30-45	15-30	10-20	---	NP
	6-15	Very gravelly sandy clay loam, very gravelly sandy loam, very gravelly coarse sandy loam	SC-SM, SC	A-2	0	0-10	60-80	30-50	25-40	15-30	20-30	5-15
	15-60	Weathered bedrock			0	0	0	0	0	0	---	NP
Shawave-----	0-8	Gravelly sandy loam	SM	A-1, A-2	0	0	75-90	60-75	40-60	20-35	---	NP
	8-21	Sandy loam, sandy clay loam, loam	SC, CL	A-6	0	0	95-100	75-100	55-75	35-55	25-30	10-15
	21-37	Sandy loam, coarse sandy loam	SM	A-2, A-4	0	0	95-100	75-100	50-70	20-40	---	NP
	37-60	Loamy coarse sand, coarse sand, sand	SM	A-1, A-2	0	0	95-100	75-100	45-60	10-25	---	NP

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	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
1203 (con.): Granshaw-----	0-13	Gravelly coarse sandy loam	SM	A-1, A-2	0	0	90-100	55-75	30-50	20-35	---	NP
	13-23	Sandy loam, coarse sandy loam	SM	A-2, A-4	0	0	95-100	75-100	45-65	25-45	20-25	NP-5
	23-60	Stratified coarse sandy loam to very gravelly coarse sand	SM, SP-SM	A-1, A-2	0	0	85-100	50-90	25-50	5-30	---	NP
1204: Acrelane-----	0-6	Very gravelly coarse sandy loam	SM	A-1	0	0-5	60-80	30-45	15-30	10-20	---	NP
	6-15	Very gravelly sandy clay loam, very gravelly sandy loam, very gravelly coarse sandy loam	SC-SM, SC	A-2	0	0-10	60-80	30-50	25-40	15-30	20-30	5-15
	15-60	Weathered bedrock			0	0	0	0	0	0	---	NP
Arclay-----	0-5	Very gravelly coarse sandy loam	GM, SM	A-1	0	0-10	50-65	35-50	15-30	10-20	---	NP
	5-16	Gravelly clay loam, gravelly sandy clay loam, gravelly loam	SM, SC	A-2, A-6	0	0-5	70-90	55-75	35-55	20-40	35-40	10-15
	16-42	Weathered bedrock			0	0	0	0	0	0	---	NP
	42-46	Unweathered bedrock			0	0	0	0	0	0	---	NP
Eaglerock-----	0-5	Gravelly coarse sandy loam	SM	A-1, A-2	5-10	5-10	80-90	55-75	25-45	15-30	---	NP
	5-31	Very gravelly loam, very gravelly sandy clay loam, very gravelly sandy loam	SC-SM, GM-GC	A-2	0	0-10	55-70	35-50	25-40	15-30	25-30	5-10
	31-60	Weathered bedrock			0	0	0	0	0	0	---	NP

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth In	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
1205: Acrelane-----	0-6	Very gravelly coarse sandy loam	SM	A-1	0	0-5	60-80	30-45	15-30	10-20	---	NP
	6-15	Very gravelly sandy clay loam, very gravelly sandy loam, very gravelly coarse sandy loam	SC-SM, SC	A-2	0	0-10	60-80	30-50	25-40	15-30	20-30	5-15
	15-60	Weathered bedrock			0	0	0	0	0	0	---	NP
Acrelane-----	0-6	Very gravelly coarse sandy loam	SM	A-1	0	0-5	60-80	30-45	15-30	10-20	---	NP
	6-15	Very gravelly sandy clay loam, very gravelly sandy loam, very gravelly coarse sandy loam	SC-SM, SC	A-2	0	0-10	60-80	30-50	25-40	15-30	20-30	5-15
	15-60	Weathered bedrock			0	0	0	0	0	0	---	NP
1210: Wesfil-----	0-4	Very channery loam	GM-GC	A-2	0	10-25	50-65	35-50	25-45	20-35	20-25	5-10
	4-13	Weathered bedrock			0	0	0	0	0	0	---	NP
	13-17	Unweathered bedrock			0	0	0	0	0	0	---	NP
Sojur-----	0-4	Extremely channery silt loam	GM-GC	A-2	0	15-30	40-50	20-30	15-25	10-20	25-30	5-10
	4-15	Weathered bedrock			0	0	0	0	0	0	---	NP
	15-19	Unweathered bedrock			0	0	0	0	0	0	---	NP
1300: Yipor-----	0-10	Silt loam	ML	A-4	0	0	100	100	95-100	85-100	20-30	NP-5
	10-34	Silt loam, very fine sandy loam	ML	A-4	0	0	100	100	95-100	75-100	20-30	NP-5
	34-60	Silt loam, very fine sandy loam	ML	A-4	0	0	100	100	95-100	75-100	20-30	NP-5

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct						
1400: Jerval-----	0-8	Gravelly very fine sandy loam	SM	A-4	0	0-10	70-85	55-75	50-75	35-50	---	NP
	8-20	Gravelly clay loam, gravelly silty clay loam	CL	A-6	0	0-5	65-85	60-75	55-75	50-65	35-40	15-20
	20-60	Very gravelly sandy loam, very gravelly fine sandy loam	GM	A-1	0	0-10	45-60	35-50	25-45	15-25	---	NP
Dorper-----	0-2	Stony very fine sandy loam	GM	A-2	1-5	5-10	50-65	45-60	40-60	25-35	15-25	NP-5
	2-7	Gravelly very fine sandy loam, silt loam	SM, ML, GM	A-4	0	0	65-100	60-100	55-100	35-70	15-25	NP-5
	7-17	Gravelly clay loam, clay, clay loam	GC, CL	A-7	0	0	65-95	60-90	50-80	45-70	40-50	15-25
	17-60	Very gravelly coarse sandy loam, extremely gravelly sandy loam	GM, GP-GM	A-1	0-5	10-15	15-50	10-45	5-40	5-25	15-25	NP-5
1401: Jerval-----	0-8	Gravelly very fine sandy loam	SM	A-4	0	0-10	70-85	55-75	50-75	35-50	---	NP
	8-20	Gravelly clay loam, gravelly silty clay loam	CL	A-6	0	0-5	65-85	60-75	55-75	50-65	35-40	15-20
	20-60	Very gravelly sandy loam, very gravelly fine sandy loam	GM	A-1	0	0-10	45-60	35-50	25-45	15-25	---	NP
Aboten-----	0-7	Gravelly silt loam	ML, GM	A-4	0	0-15	55-80	50-75	45-70	40-65	15-25	NP-5
	7-15	Clay loam, loam	ML, CL	A-6	0	0-10	80-100	75-90	70-90	50-70	35-40	10-15
	15-27	Cemented			0	0	0	0	0	0	---	NP
	27-60	Extremely gravelly sandy loam, very gravelly loamy sand	GP-GM, GM	A-1	0	0-15	25-40	20-35	10-20	5-15	---	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		
					Pct	Pct						
1401 (con.): Dorper-----	In											
	0-2	Extremely gravelly very fine sandy loam	GP-GM, GM	A-1	0-1	0-15	20-30	15-25	10-25	5-15	15-25	NP-5
	2-7	Gravelly very fine sandy loam, silt loam	SM, ML, GM	A-4	0	0	65-100	60-100	55-100	35-70	15-25	NP-5
	7-17	Gravelly clay loam, clay, clay loam	GC, CL	A-7	0	0	65-95	60-90	50-80	45-70	40-50	15-25
	17-60	Very gravelly coarse sandy loam, extremely gravelly sandy loam	GM, GP-GM	A-1	0-1	10-15	15-50	10-45	5-40	5-25	15-25	NP-5
1410: Slipback-----	0-9	Sandy loam	SM	A-2, A-4	0	0	95-100	85-100	65-80	30-50	15-20	NP-5
	9-24	Clay loam, sandy clay loam, gravelly loam	SC, CL	A-6	0	0	80-100	70-90	50-75	35-55	35-40	15-20
	24-38	Coarse sandy loam, gravelly coarse sandy loam	SM	A-1, A-2	0	0	80-100	70-90	35-55	10-30	0-14	NP
	38-60	Loamy coarse sand, sand, coarse sand	SM	A-1, A-2	0	0	85-100	75-90	35-55	10-25	0-14	NP
Shawave-----	0-8	Gravelly sandy loam	SM	A-1, A-2	0	0	75-90	60-75	40-60	20-35	---	NP
	8-21	Sandy loam, sandy clay loam, loam	SC, CL	A-6	0	0	95-100	75-100	55-75	35-55	25-30	10-15
	21-37	Sandy loam, coarse sandy loam	SM	A-2, A-4	0	0	95-100	75-100	50-70	20-40	---	NP
	37-60	Loamy coarse sand, coarse sand, sand	SM	A-1, A-2	0	0	95-100	75-100	45-60	10-25	---	NP
Nodur-----	0-4	Sandy loam	SM	A-2, A-4	0	0-5	95-100	85-100	60-75	30-50	---	NP
	4-16	Clay, sandy clay, clay loam	CL, CH	A-7	0	0	95-100	85-100	65-85	50-70	45-55	20-30
	16-60	Sandy loam, gravelly sandy loam, gravelly coarse sandy loam	SM	A-1, A-2	0	0-5	70-95	60-85	40-60	15-30	---	NP
1610: Loveloek-----	0-15	Silt loam	OL, OH	A-5, A-7, A-8	0	0	100	100	100	95-100	40-60	5-20
	15-60	Stratified clay to silt loam	CH, MH	A-7	0	0	100	100	100	95-100	55-75	25-45

TABLE 16.--PHYSICAL PROPERTIES OF SOILS

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodability index" apply only to the surface layer)

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
110: Aboten-----	0-7	5-15	1.35-1.50	0.60-2.00	0.08-0.13	Low	0.5-1.0	0.15	0.55	2	6	48
	7-15	25-35	1.30-1.50	0.06-0.20	0.15-0.19	Moderate	0.0-0.5	0.28	0.37			
	15-27	---	---	0.00-0.20	---	---	---	---	---			
	27-60	3-8	1.50-1.60	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.05	0.24			
Jerval-----	0-8	5-10	1.40-1.55	0.60-2.00	0.10-0.12	Low	0.0-0.5	0.17	0.49	5	4	86
	8-20	27-35	1.20-1.40	0.20-0.60	0.14-0.16	Moderate	0.0-0.5	0.24	0.43			
	20-60	5-12	1.35-1.50	2.00-6.00	0.06-0.07	Low	0.0-0.5	0.15	0.32			
Bluewing-----	0-2	6-10	1.40-1.60	2.00-6.00	0.07-0.09	Low	0.0-0.5	0.24	0.32	5	4	86
	2-60	3-8	1.45-1.65	>20.00	0.03-0.05	Low	0.0-0.5	0.05	0.20			
111: Aboten-----	0-7	5-15	1.35-1.50	0.60-2.00	0.08-0.13	Low	0.5-1.0	0.15	0.55	2	6	48
	7-15	25-35	1.30-1.50	0.06-0.20	0.15-0.19	Moderate	0.0-0.5	0.28	0.37			
	15-27	---	---	0.00-0.20	---	---	---	---	---			
	27-60	3-8	1.50-1.60	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.05	0.24			
Dorper-----	0-2	5-15	1.35-1.55	0.60-2.00	0.05-0.07	Low	0.0-0.5	0.05	0.49	2	8	---
	2-7	5-15	1.35-1.55	0.60-2.00	0.15-0.19	Low	0.0-0.5	0.49	0.64			
	7-17	35-45	1.30-1.50	0.00-0.06	0.13-0.17	High	0.0-0.5	0.43	0.49			
	17-60	8-15	1.40-1.60	0.20-0.60	0.04-0.06	Low	0.0-0.5	0.10	0.28			
112: Aboten-----	0-7	5-15	1.35-1.50	0.60-2.00	0.08-0.13	Low	0.5-1.0	0.15	0.55	2	6	48
	7-15	25-35	1.30-1.50	0.06-0.20	0.15-0.19	Moderate	0.0-0.5	0.28	0.37			
	15-27	---	---	0.00-0.20	---	---	---	---	---			
	27-60	3-8	1.50-1.60	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.05	0.24			
Dorper-----	0-2	5-15	1.35-1.55	0.60-2.00	0.07-0.10	Low	0.0-0.5	0.15	0.55	2	5	56
	2-7	5-15	1.35-1.55	0.60-2.00	0.15-0.19	Low	0.0-0.5	0.49	0.64			
	7-17	35-45	1.30-1.50	0.00-0.06	0.13-0.17	High	0.0-0.5	0.43	0.49			
	17-60	8-15	1.40-1.60	0.20-0.60	0.04-0.06	Low	0.0-0.5	0.10	0.28			
Rednik-----	0-2	5-15	1.35-1.55	2.00-6.00	0.05-0.06	Low	0.0-0.5	0.20	0.32	5	5	56
	2-30	18-27	1.30-1.50	0.20-0.60	0.05-0.07	Low	0.0-0.5	0.10	0.43			
	30-41	5-15	1.45-1.65	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.15	0.32			
	41-60	0-7	1.50-1.65	>20.00	0.03-0.04	Low	0.0-0.5	0.05	0.20			
113: Aboten-----	0-7	5-15	1.35-1.50	0.60-2.00	0.08-0.13	Low	0.5-1.0	0.15	0.55	2	6	48
	7-15	25-35	1.30-1.50	0.06-0.20	0.15-0.19	Moderate	0.0-0.5	0.28	0.37			
	15-27	---	---	0.00-0.20	---	---	---	---	---			
	27-60	3-8	1.50-1.60	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.05	0.24			
114: Aboten-----	0-7	5-15	1.35-1.50	0.60-2.00	0.08-0.13	Low	0.5-1.0	0.15	0.55	2	6	48
	7-15	25-35	1.30-1.50	0.06-0.20	0.15-0.19	Moderate	0.0-0.5	0.28	0.37			
	15-27	---	---	0.00-0.20	---	---	---	---	---			
	27-60	3-8	1.50-1.60	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.05	0.24			
Bluewing-----	0-2	6-10	1.40-1.60	2.00-6.00	0.07-0.09	Low	0.0-0.5	0.24	0.32	5	4	86
	2-60	3-8	1.45-1.65	>20.00	0.03-0.05	Low	0.0-0.5	0.05	0.20			

TABLE 16.--PHYSICAL PROPERTIES OF SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
120:												
Appian -----	0-5	2-5	1.50-1.70	2.00-6.00	0.05-0.07	Low	0.0-0.5	0.10	0.10	3	2	134
	5-15	27-35	1.45-1.65	0.20-0.60	0.17-0.20	Moderate	0.0-0.5	0.32	0.32			
	15-28	2-5	1.45-1.65	2.00-6.00	0.05-0.09	Low	0.0-0.5	0.17	0.24			
	28-53	0-5	1.55-1.70	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.10	0.15			
	53-60	10-25	1.40-1.60	0.06-0.20	0.19-0.21	Moderate	0.0-0.5	0.55	0.55			
Isolde -----	0-4	0-5	1.40-1.60	>20.00	0.06-0.09	Low	0.0-0.5	0.17	0.17	5	1	250
	4-60	0-5	1.50-1.70	>20.00	0.06-0.09	Low	0.0-0.5	0.17	0.17			
Genegraf -----	0-6	8-14	1.40-1.55	0.60-2.00	0.07-0.08	Low	0.0-0.5	0.17	0.64	5	5	56
	6-18	25-35	1.30-1.50	0.20-0.60	0.15-0.19	Moderate	0.0-0.5	0.24	0.37			
	18-60	5-10	1.55-1.70	0.60-2.00	0.03-0.05	Low	0.0-0.5	0.10	0.24			
130:												
Boomstick -----	0-5	15-20	1.30-1.45	0.60-2.00	0.09-0.10	Low	1.0-2.0	0.15	0.43	1	7	38
	5-16	23-35	1.40-1.60	0.20-0.60	0.05-0.07	Low	0.0-0.8	0.05	0.43			
	16-20	---	---	0.00-0.01	---	---	---	---	---			
Majuba -----	0-6	12-18	1.30-1.50	0.60-2.00	0.10-0.12	Low	1.0-2.0	0.24	0.43	2	7	38
	6-23	20-30	1.35-1.55	0.20-0.60	0.11-0.13	Low	0.5-1.0	0.20	0.43			
	23-35	12-18	1.40-1.55	0.60-2.00	0.06-0.08	Low	0.0-0.5	0.20	0.43			
	35-39	---	---	0.00-0.01	---	---	---	---	---			
Sojur -----	0-4	18-25	1.25-1.45	0.60-2.00	0.05-0.08	Low	0.0-0.5	0.05	0.43	1	8	---
	4-15	---	---	0.00-20.00	---	---	---	---	---			
	15-19	---	---	0.00-0.01	---	---	---	---	---			
131:												
Boomstick -----	0-5	15-20	1.30-1.45	0.60-2.00	0.09-0.10	Low	1.0-2.0	0.15	0.43	1	7	38
	5-16	23-35	1.40-1.60	0.20-0.60	0.05-0.07	Low	0.0-0.8	0.05	0.43			
	16-20	---	---	0.00-0.01	---	---	---	---	---			
Majuba -----	0-6	12-18	1.30-1.50	0.60-2.00	0.10-0.12	Low	1.0-2.0	0.24	0.43	2	7	38
	6-23	20-30	1.35-1.55	0.20-0.60	0.11-0.13	Low	0.5-1.0	0.20	0.43			
	23-35	12-18	1.40-1.55	0.60-2.00	0.06-0.08	Low	0.0-0.5	0.20	0.43			
	35-39	---	---	0.00-0.01	---	---	---	---	---			
Phliss -----	0-3	15-20	1.35-1.50	0.60-2.00	0.05-0.06	Low	1.0-2.0	0.10	0.43	1	8	---
	3-13	20-30	1.40-1.60	0.20-0.60	0.05-0.07	Low	0.0-0.8	0.10	0.43			
	13-23	---	---	0.00-0.01	---	---	---	---	---			
132:												
Boomstick -----	0-5	15-20	1.30-1.45	0.60-2.00	0.09-0.10	Low	1.0-2.0	0.15	0.43	1	7	38
	5-16	23-35	1.40-1.60	0.20-0.60	0.05-0.07	Low	0.0-0.8	0.05	0.43			
	16-20	---	---	0.00-0.01	---	---	---	---	---			
Majuba -----	0-6	12-18	1.30-1.50	0.60-2.00	0.10-0.12	Low	1.0-2.0	0.24	0.43	2	7	38
	6-23	20-30	1.35-1.55	0.20-0.60	0.11-0.13	Low	0.5-1.0	0.20	0.43			
	23-35	12-18	1.40-1.55	0.60-2.00	0.06-0.08	Low	0.0-0.5	0.20	0.43			
	35-39	---	---	0.00-0.01	---	---	---	---	---			
139:												
Arclay -----	0-5	5-12	1.25-1.40	2.00-6.00	0.04-0.07	Low	1.0-2.0	0.10	0.20	2	5	56
	5-16	25-35	1.30-1.50	0.20-0.60	0.11-0.13	Moderate	1.0-2.0	0.24	0.43			
	16-42	---	---	0.00-20.00	---	---	---	---	---			
	42-46	---	---	0.00-0.01	---	---	---	---	---			

TABLE 16.--PHYSICAL PROPERTIES OF SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
141:												
Arclay-----	0-5	5-12	1.25-1.40	2.00-6.00	0.04-0.07	Low	1.0-2.0	0.10	0.20	2	5	56
	5-16	25-35	1.30-1.50	0.20-0.60	0.11-0.13	Moderate	1.0-2.0	0.24	0.43			
	16-42	---	---	0.00-20.00	---	---	---	---	---			
	42-46	---	---	0.00-0.01	---	---	---	---	---			
Acrelane-----	0-6	6-12	1.25-1.45	2.00-6.00	0.05-0.07	Low	1.0-2.0	0.15	0.20	2	5	56
	6-15	18-30	1.30-1.50	0.60-2.00	0.07-0.10	Low	0.5-2.0	0.20	0.37			
	15-60	---	---	0.00-20.00	---	---	---	---	---			
Soar-----	0-3	12-20	1.30-1.50	2.00-6.00	0.05-0.07	Low	0.5-1.0	0.05	0.15	2	5	56
	3-6	20-26	1.40-1.60	0.20-0.60	0.06-0.08	Low	0.0-0.5	0.15	0.55			
	6-28	---	---	0.00-20.00	---	---	---	---	---			
	28-38	---	---	0.00-0.01	---	---	---	---	---			
142:												
Arclay-----	0-5	5-12	1.25-1.40	2.00-6.00	0.04-0.07	Low	1.0-2.0	0.10	0.20	2	5	56
	5-16	25-35	1.30-1.50	0.20-0.60	0.11-0.13	Moderate	1.0-2.0	0.24	0.43			
	16-42	---	---	0.00-20.00	---	---	---	---	---			
	42-46	---	---	0.00-0.01	---	---	---	---	---			
Vium-----	0-3	6-12	1.40-1.60	2.00-6.00	0.05-0.07	Low	0.0-0.5	0.10	0.20	1	5	56
	3-8	10-18	1.40-1.60	2.00-6.00	0.04-0.06	Low	0.0-0.5	0.10	0.28			
	8-12	---	---	0.00-0.01	---	---	---	---	---			
Slocave-----	0-1	6-14	1.40-1.60	2.00-6.00	0.06-0.08	Low	0.0-0.5	0.10	0.20	1	5	56
	1-7	6-16	1.40-1.60	2.00-6.00	0.06-0.08	Low	0.0-0.5	0.10	0.28			
	7-27	---	---	0.00-20.00	---	---	---	---	---			
	27-37	---	---	0.00-0.01	---	---	---	---	---			
143:												
Rock Outcrop.												
Ninemile-----	0-5	5-10	1.20-1.40	2.00-6.00	0.04-0.06	Low	1.0-2.0	0.05	0.17	1	5	56
	5-16	40-60	1.20-1.40	0.00-0.06	0.14-0.16	High	1.0-2.0	0.20	0.37			
	16-20	---	---	0.00-0.01	---	---	---	---	---			
145:												
Rock Outcrop.												
Ninemile-----	0-5	5-10	1.20-1.40	2.00-6.00	0.06-0.09	Low	1.0-2.0	0.05	0.32	1	5	56
	5-16	40-60	1.20-1.40	0.00-0.06	0.14-0.16	High	1.0-2.0	0.20	0.37			
	16-20	---	---	0.00-0.01	---	---	---	---	---			
Shively-----	0-6	10-18	1.15-1.35	0.60-2.00	0.16-0.18	Low	1.0-3.0	0.32	0.32	5	5	56
	6-35	10-18	1.15-1.35	0.60-2.00	0.12-0.17	Low	1.0-2.0	0.32	0.37			
	35-60	10-18	1.40-1.60	2.00-6.00	0.11-0.13	Low	0.0-0.5	0.32	0.37			
150:												
Boton-----	0-10	12-18	1.25-1.45	0.60-2.00	0.19-0.21	Low	0.0-0.5	0.55	0.55	5	4L	86
	10-27	18-27	1.40-1.60	0.20-0.60	0.19-0.21	Moderate	0.0-0.5	0.49	0.49			
	27-60	18-27	1.40-1.60	0.20-0.60	0.19-0.21	Moderate	0.0-0.5	0.49	0.49			
Playas-----	0-6	27-40	1.50-1.70	0.00-0.06	0.02-0.04	High	0.0-0.1	0.37	0.37	---	4L	86
	6-60	35-70	1.60-1.80	0.00-0.06	0.02-0.04	High	0.0-0.1	0.37	0.37			
152:												
Benin-----	0-1	30-40	1.30-1.50	0.06-0.20	0.19-0.21	High	0.0-0.5	0.37	0.37	5	4L	86
	1-60	40-50	1.50-1.70	0.00-0.06	0.14-0.16	High	0.0-0.5	0.37	0.37			

TABLE 16.--PHYSICAL PROPERTIES OF SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
152 (con.): Benin-----	0-1 1-60	27-40 40-50	1.45-1.65 1.50-1.70	0.20-0.60 0.00-0.06	0.19-0.21 0.15-0.17	Moderate High	0.0-0.5 0.0-0.5	0.43 0.43	0.43 0.43	3	4L	86
160: Badland-----	0-2 2-60	25-70 ---	1.40-1.60 1.60-1.80	0.00-0.06 0.00-0.01	0.18-0.22 ---	High	0.0-0.1 ---	0.37 ---	0.37 ---	5	4L	86
161: Dune Land-----	0-6 6-60	0-1 0-1	1.50-1.60 1.50-1.60	6.00-20.00 6.00-20.00	0.04-0.05 0.03-0.05	Low Low	0.0-0.1 0.0-0.1	0.15 0.10	0.20 0.20	5	1	250
Playas-----	0-6 6-60	27-40 35-70	1.50-1.70 1.60-1.80	0.00-0.06 0.00-0.06	0.02-0.04 0.02-0.04	High High	0.0-0.1 0.0-0.1	0.37 0.37	0.37 0.37	---	4L	86
163: Dune Land-----	0-6 6-60	0-1 0-1	1.50-1.60 1.50-1.60	6.00-20.00 6.00-20.00	0.04-0.05 0.03-0.05	Low Low	0.0-0.1 0.0-0.1	0.15 0.10	0.20 0.20	5	1	250
171: Rock Outcrop.												
Bluewing-----	0-2 2-60	6-10 3-8	1.40-1.60 1.45-1.65	2.00-6.00 >20.00	0.07-0.09 0.03-0.05	Low Low	0.0-0.5 0.0-0.5	0.24 0.05	0.32 0.20	5	4	86
Toulon-----	0-6 6-14 14-60	10-12 12-15 0-3	1.45-1.65 1.40-1.60 1.50-1.65	2.00-6.00 2.00-6.00 >20.00	0.06-0.10 0.06-0.08 0.03-0.06	Low Low Low	0.0-0.5 0.0-0.5 0.0-0.5	0.28 0.10 0.05	0.43 0.43 0.15	3	6	48
172: Bluewing-----	0-2 2-60	6-10 3-8	1.40-1.60 1.45-1.65	2.00-6.00 >20.00	0.07-0.09 0.03-0.05	Low Low	0.0-0.5 0.0-0.5	0.24 0.05	0.32 0.20	5	4	86
173: Bluewing-----	0-2 2-60	6-12 0-8	1.40-1.60 1.45-1.65	6.00-20.00 >20.00	0.04-0.07 0.03-0.06	Low Low	0.0-0.5 0.0-0.5	0.10 0.05	0.32 0.15	5	4	86
180: Biga-----	0-6 6-12 12-60	4-12 35-45 2-10	1.40-1.55 1.30-1.45 1.55-1.75	2.00-6.00 0.06-0.20 0.06-0.20	0.06-0.09 0.15-0.19 0.05-0.07	Low High Low	0.0-0.5 0.0-0.5 0.0-0.5	0.20 0.37 0.24	0.24 0.37 0.24	2	4	86
Granshaw-----	0-13 13-23 23-60	4-10 10-17 2-8	1.40-1.55 1.40-1.60 1.50-1.70	2.00-6.00 2.00-6.00 6.00-20.00	0.06-0.08 0.10-0.12 0.03-0.06	Low Low Low	0.0-0.5 0.0-0.5 0.0-0.5	0.17 0.24 0.15	0.28 0.28 0.17	3	4	86
Labkey-----	0-4 4-12 12-60	5-12 5-12 2-8	1.45-1.60 1.45-1.60 1.50-1.65	2.00-6.00 2.00-6.00 6.00-20.00	0.07-0.09 0.06-0.09 0.03-0.06	Low Low Low	0.0-0.5 0.0-0.5 0.0-0.5	0.20 0.20 0.10	0.37 0.37 0.24	2	4	86
181: Biga-----	0-6 6-12 12-60	4-12 35-45 2-10	1.40-1.55 1.30-1.45 1.55-1.75	2.00-6.00 0.06-0.20 0.06-0.20	0.06-0.09 0.15-0.19 0.05-0.07	Low High Low	0.0-0.5 0.0-0.5 0.0-0.5	0.20 0.37 0.24	0.24 0.37 0.24	2	4	86
182: Biga-----	0-6 6-12 12-60	10-16 35-45 2-10	1.45-1.60 1.30-1.45 1.55-1.75	0.60-2.00 0.06-0.20 0.06-0.20	0.14-0.16 0.15-0.19 0.05-0.07	Low High Low	0.0-0.8 0.0-0.5 0.0-0.5	0.28 0.37 0.24	0.49 0.37 0.24	2	6	48

TABLE 16.--PHYSICAL PROPERTIES OF SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
190: Cresal-----	0-7	6-12	1.35-1.55	0.60-2.00	0.19-0.21	Low	0.0-0.5	0.55	0.55	5	4L	86
	7-27	8-15	1.30-1.50	0.20-0.60	0.17-0.20	Low	0.0-0.5	0.55	0.55			
	27-60	8-18	1.45-1.60	0.20-0.60	0.16-0.20	Low	0.0-0.5	0.55	0.55			
201: Dorper-----	0-2	5-15	1.35-1.55	0.60-2.00	0.05-0.07	Low	0.0-0.5	0.05	0.49	2	8	---
	2-7	5-15	1.35-1.55	0.60-2.00	0.15-0.19	Low	0.0-0.5	0.49	0.64			
	7-17	35-45	1.30-1.50	0.00-0.06	0.13-0.17	High	0.0-0.5	0.43	0.49			
	17-60	8-15	1.40-1.60	0.20-0.60	0.04-0.06	Low	0.0-0.5	0.10	0.28			
Envol-----	0-3	15-24	1.35-1.55	0.60-2.00	0.07-0.10	Low	0.0-0.5	0.17	0.49	1	6	48
	3-10	30-50	1.20-1.40	0.06-0.20	0.12-0.15	High	0.0-0.5	0.20	0.32			
	10-20	---	---	0.00-0.01	---	---	---	---	---			
203: Dorper-----	0-2	5-15	1.35-1.55	0.60-2.00	0.05-0.07	Low	0.0-0.5	0.05	0.49	2	8	---
	2-7	5-15	1.35-1.55	0.60-2.00	0.15-0.19	Low	0.0-0.5	0.49	0.64			
	7-17	35-45	1.30-1.50	0.00-0.06	0.13-0.17	High	0.0-0.5	0.43	0.49			
	17-60	8-15	1.40-1.60	0.20-0.60	0.04-0.06	Low	0.0-0.5	0.10	0.28			
204: Dorper-----	0-2	5-15	1.35-1.55	0.60-2.00	0.12-0.14	Low	0.0-0.5	0.28	0.64	2	4	86
	2-7	5-15	1.35-1.55	0.60-2.00	0.15-0.19	Low	0.0-0.5	0.49	0.64			
	7-17	35-45	1.30-1.50	0.00-0.06	0.13-0.17	High	0.0-0.5	0.43	0.49			
	17-60	8-15	1.40-1.60	0.20-0.60	0.04-0.06	Low	0.0-0.5	0.10	0.28			
Jerval-----	0-8	5-10	1.40-1.55	0.60-2.00	0.10-0.12	Low	0.0-0.5	0.17	0.49	5	4	86
	8-20	27-35	1.20-1.40	0.20-0.60	0.14-0.16	Moderate	0.0-0.5	0.24	0.43			
	20-60	5-12	1.35-1.50	2.00-6.00	0.06-0.07	Low	0.0-0.5	0.15	0.32			
Dorper-----	0-2	5-15	1.35-1.55	0.60-2.00	0.05-0.07	Low	0.0-0.5	0.05	0.49	2	8	---
	2-7	5-15	1.35-1.55	0.60-2.00	0.15-0.19	Low	0.0-0.5	0.49	0.64			
	7-17	35-45	1.30-1.50	0.00-0.06	0.13-0.17	High	0.0-0.5	0.43	0.49			
	17-60	8-15	1.40-1.60	0.20-0.60	0.04-0.06	Low	0.0-0.5	0.10	0.28			
206: Dorper-----	0-2	8-15	1.35-1.55	2.00-6.00	0.05-0.07	Low	0.0-0.5	0.10	0.32	2	5	56
	2-7	5-15	1.35-1.55	0.60-2.00	0.15-0.19	Low	0.0-0.5	0.49	0.64			
	7-17	35-45	1.30-1.50	0.00-0.06	0.13-0.17	High	0.0-0.5	0.43	0.49			
	17-60	8-15	1.40-1.60	0.20-0.60	0.04-0.06	Low	0.0-0.5	0.10	0.28			
210: Dorper-----	0-2	5-15	1.35-1.55	0.60-2.00	0.12-0.14	Low	0.0-0.5	0.28	0.64	2	4	86
	2-7	5-15	1.35-1.55	0.60-2.00	0.15-0.19	Low	0.0-0.5	0.49	0.64			
	7-17	35-45	1.30-1.50	0.00-0.06	0.13-0.17	High	0.0-0.5	0.43	0.49			
	17-60	8-15	1.40-1.60	0.20-0.60	0.04-0.06	Low	0.0-0.5	0.10	0.28			
Aboten-----	0-7	5-15	1.35-1.50	0.60-2.00	0.08-0.13	Low	0.5-1.0	0.15	0.55	2	6	48
	7-15	25-35	1.30-1.50	0.06-0.20	0.15-0.19	Moderate	0.0-0.5	0.28	0.37			
	15-27	---	---	0.00-0.20	---	---	---	---	---			
	27-60	3-8	1.50-1.60	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.05	0.24			
Kumiva-----	0-5	10-16	1.35-1.55	0.60-2.00	0.19-0.21	Low	0.0-0.5	0.55	0.55	5	4L	86
	5-56	6-12	1.50-1.70	0.60-2.00	0.12-0.15	Low	0.0-0.5	0.32	0.37			
	56-60	5-10	1.60-1.75	2.00-6.00	0.06-0.08	Low	0.0-0.5	0.28	0.32			
220: Cleavage-----	0-7	15-20	1.15-1.35	0.60-2.00	0.10-0.12	Low	1.0-3.0	0.05	0.43	1	8	---
	7-15	20-35	1.25-1.45	0.20-0.60	0.10-0.12	Low	0.5-1.0	0.10	0.49			
	15-19	---	---	0.00-0.01	---	---	---	---	---			

TABLE 16.--PHYSICAL PROPERTIES OF SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
220 (con.): Phliss-----	0-3	15-20	1.35-1.50	0.60-2.00	0.09-0.10	Low	1.0-2.0	0.17	0.55	1	7	38
	3-13	20-30	1.40-1.60	0.20-0.60	0.05-0.07	Low	0.0-0.8	0.10	0.43			
	13-23	---	---	0.00-0.01	---		---	---	---			
Majuba-----	0-6	12-18	1.30-1.50	0.60-2.00	0.10-0.12	Low	1.0-2.0	0.24	0.43	2	7	38
	6-23	20-30	1.35-1.55	0.20-0.60	0.11-0.13	Low	0.5-1.0	0.20	0.43			
	23-35	12-18	1.40-1.55	0.60-2.00	0.06-0.08	Low	0.0-0.5	0.20	0.43			
	35-39	---	---	0.00-0.01	---		---	---	---			
221: Cleavage-----	0-7	15-25	1.15-1.35	0.60-2.00	0.12-0.14	Low	1.0-3.0	0.10	0.32	1	7	38
	7-15	20-35	1.25-1.45	0.20-0.60	0.10-0.12	Low	0.5-1.0	0.10	0.49			
	15-19	---	---	0.00-0.01	---		---	---	---			
Burnborough----	0-8	10-25	1.25-1.45	0.60-2.00	0.10-0.13	Moderate	1.0-2.0	0.15	0.43	5	7	38
	8-60	18-35	1.30-1.50	0.60-2.00	0.08-0.11	Moderate	0.0-1.0	0.15	0.43			
230: Coldent-----	0-9	1-5	1.45-1.60	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.24	0.24	3	2	134
	9-19	6-12	1.55-1.70	0.06-0.20	0.10-0.14	Low	0.0-0.5	0.32	0.37			
	19-31	2-10	1.45-1.65	2.00-6.00	0.08-0.12	Low	0.0-0.5	0.24	0.37			
	31-60	1-5	1.50-1.70	6.00-20.00	0.02-0.04	Low	0.0-0.5	0.05	0.17			
Isolde-----	0-4	0-5	1.40-1.60	>20.00	0.06-0.09	Low	0.0-0.5	0.17	0.17	5	1	250
	4-60	0-5	1.50-1.70	>20.00	0.06-0.09	Low	0.0-0.5	0.17	0.17			
Swingler-----	0-9	15-25	1.25-1.45	0.20-0.60	0.17-0.19	Low	0.5-1.0	0.55	0.55	5	4L	86
	9-60	18-25	1.40-1.55	0.20-0.60	0.15-0.19	Moderate	0.0-0.5	0.49	0.49			
231: Coldent-----	0-9	1-5	1.45-1.60	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.24	0.24	3	2	134
	9-19	6-12	1.55-1.70	0.06-0.20	0.10-0.14	Low	0.0-0.5	0.32	0.37			
	19-31	2-10	1.45-1.65	2.00-6.00	0.08-0.12	Low	0.0-0.5	0.24	0.37			
	31-60	1-5	1.50-1.70	6.00-20.00	0.02-0.04	Low	0.0-0.5	0.05	0.17			
Hawsley-----	0-5	0-5	1.50-1.70	6.00-20.00	0.05-0.07	Low	0.0-0.5	0.15	0.15	5	1	250
	5-60	0-5	1.50-1.70	>20.00	0.06-0.08	Low	0.0-0.5	0.10	0.10			
Mazuma-----	0-6	5-15	1.40-1.55	0.60-2.00	0.19-0.21	Low	0.0-0.5	0.55	0.55	5	4L	86
	6-22	5-15	1.40-1.55	2.00-6.00	0.11-0.13	Low	0.0-0.5	0.43	0.43			
	22-60	5-15	1.45-1.65	2.00-6.00	0.06-0.08	Low	0.0-0.5	0.24	0.32			
245: Dedmount-----	0-2	19-22	1.25-1.45	0.60-2.00	0.16-0.18	Moderate	0.0-0.5	0.37	0.37	5	4L	86
	2-66	35-45	1.30-1.45	0.06-0.20	0.17-0.20	High	0.0-0.5	0.37	0.37			
Umberland-----	0-48	35-40	1.25-1.40	0.20-0.60	0.17-0.21	High	0.5-1.0	0.43	0.43	5	4L	86
	48-60	35-50	1.30-1.45	0.00-0.06	0.15-0.21	High	0.5-1.0	0.32	0.32			
Umberland-----	0-48	35-40	1.25-1.40	0.20-0.60	0.19-0.21	High	0.5-1.0	0.37	0.37	5	4L	86
	48-60	35-50	1.30-1.45	0.00-0.06	0.15-0.21	High	0.0-0.5	0.32	0.32			
250: Rock Outcrop.												
Devada-----	0-6	15-27	1.10-1.30	0.60-2.00	0.07-0.09	Moderate	1.0-3.0	0.15	0.37	1	7	38
	6-16	40-60	1.20-1.40	0.06-0.20	0.14-0.16	High	0.8-2.0	0.17	0.32			
	16-20	---	---	0.00-0.01	---		---	---	---			

TABLE 16.--PHYSICAL PROPERTIES OF SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
300: Rock Outcrop.												
Envol-----	0-3	15-24	1.35-1.55	0.60-2.00	0.12-0.14	Moderate	0.0-0.5	0.28	0.55	1	5	56
	3-10	30-50	1.20-1.40	0.06-0.20	0.12-0.15	High	0.0-0.5	0.20	0.32			
	10-20	---	---	0.00-0.01	---		---	---	---			
Frines-----	0-3	18-27	1.35-1.55	0.60-2.00	0.13-0.15	Moderate	0.0-0.5	0.28	0.43	3	7	38
	3-13	35-45	1.25-1.45	0.06-0.20	0.14-0.18	High	0.0-0.5	0.28	0.43			
	13-24	3-10	1.45-1.60	2.00-6.00	0.08-0.11	Low	0.0-0.5	0.15	0.32			
	24-47	---	---	0.00-20.00	---		---	---	---			
	47-51	---	---	0.00-0.01	---		---	---	---			
302:												
Envol-----	0-3	15-24	1.35-1.55	0.60-2.00	0.12-0.14	Moderate	0.0-0.5	0.28	0.55	1	5	56
	3-10	30-50	1.20-1.40	0.06-0.20	0.12-0.15	High	0.0-0.5	0.20	0.32			
	10-20	---	---	0.00-0.01	---		---	---	---			
310: Rock Outcrop.												
Eaglerock-----	0-5	5-10	1.30-1.50	2.00-6.00	0.05-0.07	Low	3.0-5.0	0.10	0.20	3	4	86
	5-31	18-27	1.30-1.50	0.20-0.60	0.08-0.10	Low	0.5-2.0	0.10	0.32			
	31-60	---	---	0.00-0.01	---		---	---	---			
401:												
Genegraf-----	0-6	8-14	1.40-1.55	0.60-2.00	0.07-0.08	Low	0.0-0.5	0.17	0.64	5	5	56
	6-18	25-35	1.30-1.50	0.20-0.60	0.15-0.19	Moderate	0.0-0.5	0.24	0.37			
	18-60	5-10	1.55-1.70	0.60-2.00	0.03-0.05	Low	0.0-0.5	0.10	0.24			
Dorper-----	0-2	5-15	1.35-1.55	0.60-2.00	0.07-0.10	Low	0.0-0.5	0.15	0.55	2	5	56
	2-7	5-15	1.35-1.55	0.60-2.00	0.15-0.19	Low	0.0-0.5	0.49	0.64			
	7-17	35-45	1.30-1.50	0.00-0.06	0.13-0.17	High	0.0-0.5	0.43	0.49			
	17-60	8-15	1.40-1.60	0.20-0.60	0.04-0.06	Low	0.0-0.5	0.10	0.28			
Bluewing-----	0-2	6-10	1.40-1.60	2.00-6.00	0.05-0.07	Low	0.0-0.5	0.10	0.32	5	5	56
	2-60	3-8	1.45-1.65	>20.00	0.03-0.05	Low	0.0-0.5	0.05	0.20			
402:												
Genegraf-----	0-5	8-14	1.40-1.55	0.60-2.00	0.07-0.08	Low	0.0-0.5	0.17	0.64	5	5	56
	5-12	25-35	1.30-1.50	0.20-0.60	0.15-0.19	Moderate	0.0-0.5	0.24	0.37			
	12-21	8-16	1.55-1.70	0.20-0.60	0.04-0.07	Low	0.0-0.5	0.10	0.28			
	21-60	5-10	1.55-1.70	0.60-2.00	0.03-0.05	Low	0.0-0.5	0.10	0.24			
Bluewing-----	0-2	6-10	1.40-1.60	2.00-6.00	0.07-0.09	Low	0.0-0.5	0.24	0.32	5	4	86
	2-60	3-8	1.45-1.65	>20.00	0.03-0.05	Low	0.0-0.5	0.05	0.20			
Dorper-----	0-2	5-15	1.35-1.55	0.60-2.00	0.05-0.07	Low	0.0-0.5	0.05	0.49	2	6	48
	2-7	5-15	1.35-1.55	0.60-2.00	0.15-0.19	Low	0.0-0.5	0.49	0.64			
	7-17	35-45	1.30-1.50	0.00-0.06	0.13-0.17	High	0.0-0.5	0.43	0.49			
	17-60	8-15	1.40-1.60	0.20-0.60	0.04-0.06	Low	0.0-0.5	0.10	0.28			
404:												
Genegraf-----	0-6	8-14	1.40-1.55	0.60-2.00	0.07-0.08	Low	0.0-0.5	0.17	0.64	5	5	56
	6-18	25-35	1.30-1.50	0.20-0.60	0.15-0.19	Moderate	0.0-0.5	0.24	0.37			
	18-60	5-10	1.55-1.70	0.60-2.00	0.03-0.05	Low	0.0-0.5	0.10	0.24			
Toulon-----	0-6	10-12	1.45-1.65	2.00-6.00	0.06-0.10	Low	0.0-0.5	0.28	0.43	3	6	48
	6-14	12-15	1.40-1.60	2.00-6.00	0.06-0.08	Low	0.0-0.5	0.10	0.43			
	14-60	0-3	1.50-1.65	>20.00	0.03-0.06	Low	0.0-0.5	0.05	0.15			

TABLE 16.--PHYSICAL PROPERTIES OF SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
410: Granshaw-----	0-13	4-10	1.40-1.55	2.00-6.00	0.06-0.08	Low	0.0-0.5	0.17	0.28	3	4	86
	13-23	10-17	1.40-1.60	2.00-6.00	0.10-0.12	Low	0.0-0.5	0.24	0.28			
	23-60	2-8	1.50-1.70	6.00-20.00	0.03-0.06	Low	0.0-0.5	0.15	0.17			
Labkey-----	0-4	5-12	1.45-1.60	2.00-6.00	0.07-0.09	Low	0.0-0.5	0.20	0.37	2	4	86
	4-12	5-12	1.45-1.60	2.00-6.00	0.06-0.09	Low	0.0-0.5	0.20	0.37			
	12-60	2-8	1.50-1.65	6.00-20.00	0.03-0.06	Low	0.0-0.5	0.10	0.24			
411: Granshaw-----	0-13	4-10	1.40-1.55	2.00-6.00	0.06-0.08	Low	0.0-0.5	0.17	0.28	3	4	86
	13-23	10-17	1.40-1.60	2.00-6.00	0.10-0.12	Low	0.0-0.5	0.24	0.28			
	23-60	2-8	1.50-1.70	6.00-20.00	0.03-0.06	Low	0.0-0.5	0.15	0.17			
Biga-----	0-6	4-12	1.40-1.55	2.00-6.00	0.06-0.09	Low	0.0-0.5	0.20	0.24	2	4	86
	6-12	35-45	1.30-1.45	0.06-0.20	0.15-0.19	High	0.0-0.5	0.37	0.37			
	12-60	2-10	1.55-1.75	0.06-0.20	0.05-0.07	Low	0.0-0.5	0.24	0.24			
Envol-----	0-3	15-24	1.35-1.55	0.60-2.00	0.12-0.14	Moderate	0.0-0.5	0.28	0.55	1	5	56
	3-10	30-50	1.20-1.40	0.06-0.20	0.12-0.15	High	0.0-0.5	0.20	0.32			
	10-20	---	---	0.00-0.01	---	---	---	---	---			
412: Granshaw-----	0-13	4-10	1.40-1.55	2.00-6.00	0.06-0.08	Low	0.0-0.5	0.17	0.28	3	4	86
	13-23	10-17	1.40-1.60	2.00-6.00	0.10-0.12	Low	0.0-0.5	0.24	0.28			
	23-60	2-8	1.50-1.70	6.00-20.00	0.03-0.06	Low	0.0-0.5	0.15	0.17			
Jerval-----	0-8	5-10	1.40-1.55	0.60-2.00	0.10-0.12	Low	0.0-0.5	0.17	0.49	5	4	86
	8-20	27-35	1.20-1.40	0.20-0.60	0.14-0.16	Moderate	0.0-0.5	0.24	0.43			
	20-60	5-12	1.35-1.50	2.00-6.00	0.06-0.07	Low	0.0-0.5	0.15	0.32			
Dorper-----	0-2	5-15	1.35-1.55	0.60-2.00	0.12-0.14	Low	0.0-0.5	0.28	0.64	2	4	86
	2-7	5-15	1.35-1.55	0.60-2.00	0.15-0.19	Low	0.0-0.5	0.49	0.64			
	7-17	35-45	1.30-1.50	0.00-0.06	0.13-0.17	High	0.0-0.5	0.43	0.49			
	17-60	8-15	1.40-1.60	0.20-0.60	0.04-0.06	Low	0.0-0.5	0.10	0.28			
413: Granshaw-----	0-13	4-10	1.40-1.55	2.00-6.00	0.06-0.08	Low	0.0-0.5	0.17	0.28	3	4	86
	13-23	10-17	1.40-1.60	2.00-6.00	0.10-0.12	Low	0.0-0.5	0.24	0.28			
	23-60	2-8	1.50-1.70	6.00-20.00	0.03-0.06	Low	0.0-0.5	0.15	0.17			
Kumiva-----	0-5	5-15	1.50-1.65	2.00-6.00	0.07-0.09	Low	0.0-0.5	0.24	0.32	5	4	86
	5-56	6-12	1.50-1.70	0.60-2.00	0.12-0.15	Low	0.0-0.5	0.32	0.37			
	56-60	5-10	1.60-1.75	2.00-6.00	0.06-0.08	Low	0.0-0.5	0.28	0.32			
414: Granshaw-----	0-13	8-15	1.40-1.55	0.60-2.00	0.12-0.16	Low	0.0-0.5	0.20	0.37	3	6	48
	13-23	10-17	1.40-1.60	2.00-6.00	0.10-0.12	Low	0.0-0.5	0.24	0.28			
	23-60	2-8	1.50-1.70	6.00-20.00	0.03-0.06	Low	0.0-0.5	0.15	0.17			
415: Granshaw-----	0-13	8-15	1.40-1.55	0.60-2.00	0.12-0.16	Low	0.0-0.5	0.20	0.37	3	6	48
	13-23	10-17	1.40-1.60	2.00-6.00	0.10-0.12	Low	0.0-0.5	0.24	0.28			
	23-60	2-8	1.50-1.70	6.00-20.00	0.03-0.06	Low	0.0-0.5	0.15	0.17			
Biga-----	0-6	4-12	1.40-1.55	2.00-6.00	0.06-0.09	Low	0.0-0.5	0.20	0.24	2	4	86
	6-12	35-45	1.30-1.45	0.06-0.20	0.15-0.19	High	0.0-0.5	0.37	0.37			
	12-60	2-10	1.55-1.75	0.06-0.20	0.05-0.07	Low	0.0-0.5	0.24	0.24			

TABLE 16.--PHYSICAL PROPERTIES OF SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
415 (con.): Puett-----	0-3 3-12 12-16	5-10 5-10 ---	1.30-1.50 1.35-1.55 ---	2.00-6.00 2.00-6.00 0.00-0.01	0.09-0.11 0.13-0.15 ---	Low Low ---	0.5-1.0 0.0-0.5 ---	0.20 0.28 ---	0.24 0.32 ---	2 ---	3	86
431: Grumblen-----	0-4 4-8 8-18 18-22	16-24 35-50 35-50 ---	1.25-1.45 1.25-1.45 1.25-1.45 ---	0.60-2.00 0.06-0.20 0.06-0.20 0.00-0.01	0.07-0.10 0.08-0.12 0.07-0.11 ---	Low Moderate Moderate ---	0.8-2.0 0.0-0.8 0.0-0.5 ---	0.15 0.10 0.10 ---	0.49 0.32 0.32 ---	1 ---	7	38
Pickup-----	0-5 5-22 22-32	14-22 40-55 ---	1.15-1.35 1.20-1.35 ---	0.20-0.60 0.06-0.20 0.00-0.01	0.08-0.10 0.10-0.13 ---	Low Moderate ---	1.0-2.0 0.5-2.0 ---	0.15 0.10 ---	0.49 0.32 ---	2 ---	7	38
432: Grumblen-----	0-4 4-8 8-18 18-22	16-24 35-50 35-50 ---	1.25-1.45 1.25-1.45 1.25-1.45 ---	0.60-2.00 0.06-0.20 0.06-0.20 0.00-0.01	0.07-0.10 0.08-0.12 0.07-0.11 ---	Low Moderate Moderate ---	0.8-2.0 0.0-0.8 0.0-0.5 ---	0.15 0.10 0.10 ---	0.49 0.32 0.32 ---	1 ---	7	38
Pickup-----	0-5 5-22 22-32	14-22 40-55 ---	1.15-1.35 1.20-1.35 ---	0.20-0.60 0.06-0.20 0.00-0.01	0.08-0.10 0.10-0.13 ---	Low Moderate ---	1.0-2.0 0.5-2.0 ---	0.15 0.10 ---	0.49 0.32 ---	2 ---	7	38
Old Camp-----	0-6 6-18 18-22	8-20 27-35 ---	1.35-1.50 1.30-1.50 ---	2.00-6.00 0.20-0.60 0.00-0.01	0.08-0.10 0.08-0.11 ---	Low Low ---	1.0-2.0 0.5-1.0 ---	0.17 0.15 ---	0.43 0.43 ---	1 ---	7	38
451: Hawsley-----	0-5 5-60	0-5 0-5	1.50-1.70 1.50-1.70	6.00-20.00 >20.00	0.05-0.07 0.06-0.08	Low Low	0.0-0.5 0.0-0.5	0.15 0.10	0.15 0.10	5 ---	1	250
452: Hawsley-----	0-5 5-60	0-5 0-5	1.50-1.70 1.50-1.70	>20.00 >20.00	0.06-0.08 0.06-0.08	Low Low	0.0-0.5 0.0-0.5	0.10 0.10	0.10 0.10	5 ---	1	220
Labkey-----	0-4 4-12 12-60	5-12 5-12 2-8	1.45-1.60 1.45-1.60 1.50-1.65	2.00-6.00 2.00-6.00 6.00-20.00	0.07-0.09 0.06-0.09 0.03-0.06	Low Low Low	0.0-0.5 0.0-0.5 0.0-0.5	0.20 0.20 0.10	0.37 0.37 0.24	2 ---	4	86
Genegraf-----	0-6 6-18 18-60	8-14 25-35 8-16	1.40-1.55 1.30-1.50 1.55-1.70	0.60-2.00 0.20-0.60 0.20-0.60	0.08-0.11 0.15-0.19 0.04-0.07	Low Moderate Low	0.0-0.5 0.0-0.5 0.0-0.5	0.24 0.24 0.10	0.32 0.37 0.28	5 ---	4	86
453: Hawsley-----	0-5 5-60	0-5 0-5	1.50-1.70 1.50-1.70	>20.00 >20.00	0.06-0.08 0.06-0.08	Low Low	0.0-0.5 0.0-0.5	0.10 0.10	0.10 0.10	5 ---	1	220
Bluewing-----	0-2 2-60	3-10 3-10	1.40-1.60 1.45-1.65	6.00-20.00 >20.00	0.04-0.05 0.04-0.06	Low Low	0.0-0.5 0.0-0.5	0.15 0.05	0.24 0.28	5 ---	4	86
456: Hawsley-----	0-5 5-60	0-5 0-5	1.50-1.70 1.50-1.70	>20.00 >20.00	0.06-0.08 0.06-0.08	Low Low	0.0-0.5 0.0-0.5	0.10 0.10	0.10 0.10	5 ---	1	220
Badland-----	0-6 6-60	35-70 35-70	1.60-1.80 1.60-1.80	0.00-0.06 0.00-0.06	0.05-0.07 0.05-0.07	High High	0.0-0.1 0.0-0.1	0.37 0.37	0.37 0.37	5 ---	5	56

TABLE 16.--PHYSICAL PROPERTIES OF SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
462: Hawley-----	0-5 5-60	0-5 0-5	1.50-1.70 1.50-1.70	6.00-20.00 >20.00	0.05-0.07 0.06-0.08	Low Low	0.0-0.5 0.0-0.5	0.15 0.10	0.15 0.10	5	1	250
Mazuma-----	0-6 6-22 22-60	5-15 5-15 5-15	1.40-1.55 1.40-1.55 1.45-1.65	0.60-2.00 2.00-6.00 2.00-6.00	0.19-0.21 0.11-0.13 0.06-0.08	Low Low Low	0.0-0.5 0.0-0.5 0.0-0.5	0.55 0.43 0.24	0.55 0.43 0.32	5	4L	86
470: Deadyon-----	0-5 5-24 24-35 35-60	8-15 12-18 3-8 3-7	1.35-1.50 1.40-1.60 1.45-1.65 1.45-1.65	0.60-2.00 0.60-2.00 6.00-20.00 6.00-20.00	0.13-0.15 0.10-0.15 0.09-0.13 0.05-0.11	Low Low Low Low	1.0-2.0 0.0-0.5 0.0-0.5 0.0-0.5	0.37 0.24 0.20 0.10	0.37 0.32 0.24 0.20	4	5	56
471: Deadyon-----	0-14 14-26 26-41 41-60	2-6 12-18 3-8 3-7	1.40-1.60 1.40-1.60 1.45-1.65 1.45-1.65	6.00-20.00 0.60-2.00 6.00-20.00 6.00-20.00	0.05-0.07 0.10-0.15 0.09-0.13 0.05-0.11	Low Low Low Low	0.8-2.0 0.0-0.5 0.0-0.5 0.0-0.5	0.17 0.24 0.20 0.10	0.20 0.32 0.24 0.20	4	2	134
Granshaw-----	0-13 13-23 23-60	4-10 10-17 2-8	1.40-1.55 1.40-1.60 1.50-1.70	2.00-6.00 2.00-6.00 6.00-20.00	0.06-0.08 0.10-0.12 0.03-0.06	Low Low Low	0.0-0.5 0.0-0.5 0.0-0.5	0.17 0.24 0.15	0.28 0.28 0.17	3	4	86
472: Deadyon-----	0-5 5-24 24-35 35-60	5-15 12-18 3-8 3-7	1.40-1.50 1.40-1.60 1.45-1.65 1.45-1.65	2.00-6.00 0.60-2.00 6.00-20.00 6.00-20.00	0.11-0.13 0.10-0.15 0.09-0.13 0.05-0.11	Low Low Low Low	0.8-2.0 0.0-0.5 0.0-0.5 0.0-0.5	0.32 0.24 0.20 0.10	0.37 0.32 0.24 0.20	4	3	86
480: Humboldt-----	0-12 12-36 36-60	30-40 35-45 20-35	1.15-1.25 1.05-1.15 1.10-1.20	0.20-2.00 0.20-0.60 0.20-2.00	0.19-0.21 0.17-0.19 0.17-0.19	Moderate Moderate Moderate	1.0-3.0 0.0-0.5 0.0-0.5	0.37 0.32 0.37	0.37 0.32 0.37	5	4L	86
500: Isolde-----	0-4 4-60	0-5 0-5	1.40-1.60 1.50-1.70	>20.00 >20.00	0.06-0.09 0.06-0.09	Low Low	0.0-0.5 0.0-0.5	0.17 0.17	0.17 0.17	5	1	250
Typic Torriorthents--	0-5 5-60	2-5 ---	1.55-1.75 ---	0.20-20.00 0.20-20.00	0.05-0.07 ---	Low Low	0.0-0.5 ---	0.02 ---	0.20 ---	5	8	---
Dune Land-----	0-6 6-60	0-1 0-1	1.50-1.60 1.50-1.60	6.00-20.00 6.00-20.00	0.04-0.05 0.03-0.05	Low Low	0.0-0.1 0.0-0.1	0.15 0.10	0.20 0.20	5	1	250
502: Isolde-----	0-4 4-60	0-5 0-5	1.40-1.60 1.50-1.70	>20.00 >20.00	0.06-0.09 0.06-0.09	Low Low	0.0-0.5 0.0-0.5	0.17 0.17	0.17 0.17	5	1	250
Ragtown-----	0-7 7-16 16-60	12-24 28-35 35-45	1.30-1.50 1.40-1.55 1.40-1.60	0.60-2.00 0.20-0.60 0.06-0.20	0.19-0.21 0.17-0.19 0.14-0.18	Moderate Moderate High	0.0-0.5 0.0-0.5 0.0-0.5	0.55 0.28 0.32	0.55 0.28 0.32	5	4L	86
503: Isolde-----	0-4 4-60	0-5 0-5	1.40-1.60 1.50-1.70	>20.00 >20.00	0.06-0.09 0.06-0.09	Low Low	0.0-0.5 0.0-0.5	0.17 0.17	0.17 0.17	5	1	250
510: Juva-----	0-8 8-60	10-20 5-15	1.30-1.45 1.40-1.55	0.60-2.00 0.60-2.00	0.15-0.17 0.07-0.10	Low Low	0.0-1.0 ---	0.37 0.20	0.37 0.24	5	4L	86

TABLE 16.--PHYSICAL PROPERTIES OF SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
550: Kumiva-----	0-5	6-12	1.45-1.65	2.00-6.00	0.11-0.13	Low	0.0-0.5	0.32	0.37	5	3	86
	5-56	6-12	1.50-1.70	0.60-2.00	0.12-0.15	Low	0.0-0.5	0.32	0.37			
	56-60	5-10	1.60-1.75	2.00-6.00	0.06-0.08	Low	0.0-0.5	0.28	0.32			
Labkey-----	0-4	5-12	1.45-1.60	2.00-6.00	0.07-0.09	Low	0.0-0.5	0.20	0.37	2	4	86
	4-12	5-12	1.45-1.60	2.00-6.00	0.06-0.09	Low	0.0-0.5	0.20	0.37			
	12-60	2-8	1.50-1.65	6.00-20.00	0.03-0.06	Low	0.0-0.5	0.10	0.24			
Chumall-----	0-5	12-22	1.35-1.50	0.20-0.60	0.19-0.21	Moderate	0.0-0.7	0.55	0.55	4	4L	86
	5-19	18-27	1.25-1.45	0.20-0.60	0.17-0.20	Moderate	0.0-0.5	0.55	0.55			
	19-44	18-35	1.35-1.55	0.20-0.60	0.15-0.17	Moderate	0.0-0.5	0.55	0.55			
	44-60	1-5	1.50-1.70	6.00-20.00	0.05-0.07	Low	0.0-0.5	0.20	0.20			
551: Kumiva-----	0-5	10-16	1.35-1.55	0.60-2.00	0.19-0.21	Low	0.0-0.5	0.55	0.55	5	4L	86
	5-56	6-12	1.50-1.70	0.60-2.00	0.12-0.15	Low	0.0-0.5	0.32	0.37			
	56-60	5-10	1.60-1.75	2.00-6.00	0.06-0.08	Low	0.0-0.5	0.28	0.32			
Kumiva-----	0-5	6-12	1.45-1.65	2.00-6.00	0.11-0.13	Low	0.0-0.5	0.32	0.37	5	3	86
	5-56	6-12	1.50-1.70	0.60-2.00	0.12-0.15	Low	0.0-0.5	0.32	0.37			
	56-60	5-10	1.60-1.75	2.00-6.00	0.06-0.08	Low	0.0-0.5	0.28	0.32			
553: Kumiva-----	0-5	6-12	1.45-1.65	2.00-6.00	0.11-0.13	Low	0.0-0.5	0.32	0.37	5	3	86
	5-56	6-12	1.50-1.70	0.60-2.00	0.12-0.15	Low	0.0-0.5	0.32	0.37			
	56-60	5-10	1.60-1.75	2.00-6.00	0.06-0.08	Low	0.0-0.5	0.28	0.32			
559: Phliss-----	0-3	15-20	1.35-1.50	0.60-2.00	0.09-0.10	Low	1.0-2.0	0.17	0.55	1	7	38
	3-13	20-30	1.40-1.60	0.20-0.60	0.05-0.07	Low	0.0-0.8	0.10	0.43			
	13-23	---	---	0.00-0.01	---	---	---	---	---			
Phliss-----	0-1	15-20	1.35-1.50	0.60-2.00	0.05-0.06	Low	1.0-2.0	0.10	0.43	1	8	---
	1-10	20-30	1.40-1.60	0.20-0.60	0.05-0.07	Low	0.0-0.8	0.10	0.43			
	10-14	---	---	0.00-0.01	---	---	---	---	---			
Majuba-----	0-6	12-18	1.30-1.50	0.60-2.00	0.10-0.12	Low	1.0-2.0	0.24	0.43	2	7	38
	6-23	20-30	1.35-1.55	0.20-0.60	0.11-0.13	Low	0.5-1.0	0.20	0.43			
	23-35	12-18	1.40-1.55	0.60-2.00	0.06-0.08	Low	0.0-0.5	0.20	0.43			
	35-39	---	---	0.00-0.01	---	---	---	---	---			
560: Phliss-----	0-3	15-20	1.35-1.50	0.60-2.00	0.05-0.06	Low	1.0-2.0	0.10	0.43	1	8	---
	3-13	20-30	1.40-1.60	0.20-0.60	0.05-0.07	Low	0.0-0.8	0.10	0.43			
	13-23	---	---	0.00-0.01	---	---	---	---	---			
562: Sondoa-----	0-4	20-27	1.35-1.50	0.20-0.60	0.19-0.21	Moderate	0.8-2.0	0.49	0.49	5	4L	86
	4-60	25-35	1.40-1.55	0.20-0.60	0.19-0.21	Moderate	0.0-0.5	0.49	0.49			
563: Sondoa-----	0-4	20-27	1.35-1.50	0.20-0.60	0.19-0.21	Moderate	0.8-2.0	0.49	0.49	5	4L	86
	4-60	25-35	1.40-1.55	0.20-0.60	0.19-0.21	Moderate	0.0-0.5	0.49	0.49			
Swingler-----	0-9	15-25	1.25-1.45	0.20-0.60	0.17-0.19	Low	0.5-1.0	0.55	0.55	5	4L	86
	9-60	18-25	1.40-1.55	0.20-0.60	0.15-0.19	Moderate	0.0-0.5	0.49	0.49			
Isolde-----	0-4	0-5	1.40-1.60	>20.00	0.06-0.09	Low	0.0-0.5	0.17	0.17	5	1	250
	4-60	0-5	1.50-1.70	>20.00	0.06-0.09	Low	0.0-0.5	0.17	0.17			

TABLE 16.--PHYSICAL PROPERTIES OF SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
650: Labkey-----	0-4	5-12	1.45-1.60	2.00-6.00	0.07-0.09	Low	0.0-0.5	0.20	0.37	2	4	86
	4-12	5-12	1.45-1.60	2.00-6.00	0.06-0.09	Low	0.0-0.5	0.20	0.37			
	12-60	2-8	1.50-1.65	6.00-20.00	0.03-0.06	Low	0.0-0.5	0.10	0.24			
651: Labkey-----	0-4	5-12	1.45-1.60	2.00-6.00	0.07-0.09	Low	0.0-0.5	0.20	0.37	2	4	86
	4-12	5-12	1.45-1.60	2.00-6.00	0.06-0.09	Low	0.0-0.5	0.20	0.37			
	12-60	2-8	1.50-1.65	6.00-20.00	0.03-0.06	Low	0.0-0.5	0.10	0.24			
Mazuma-----	0-6	5-15	1.40-1.55	2.00-6.00	0.11-0.13	Low	0.0-0.5	0.28	0.28	5	3	86
	6-22	5-15	1.40-1.55	2.00-6.00	0.11-0.13	Low	0.0-0.5	0.43	0.43			
	22-60	5-15	1.45-1.65	2.00-6.00	0.06-0.08	Low	0.0-0.5	0.24	0.32			
Hawsley-----	0-5	0-5	1.50-1.70	>20.00	0.06-0.08	Low	0.0-0.5	0.10	0.10	5	1	220
	5-60	0-5	1.50-1.70	>20.00	0.06-0.08	Low	0.0-0.5	0.10	0.10			
652: Labkey-----	0-4	5-12	1.45-1.60	2.00-6.00	0.07-0.09	Low	0.0-0.5	0.20	0.37	2	4	86
	4-12	5-12	1.45-1.60	2.00-6.00	0.06-0.09	Low	0.0-0.5	0.20	0.37			
	12-60	2-8	1.50-1.65	6.00-20.00	0.03-0.06	Low	0.0-0.5	0.10	0.24			
Hawsley-----	0-5	0-5	1.50-1.70	>20.00	0.06-0.08	Low	0.0-0.5	0.10	0.10	5	1	220
	5-60	0-5	1.50-1.70	>20.00	0.06-0.08	Low	0.0-0.5	0.10	0.10			
Granshaw-----	0-13	4-10	1.40-1.55	2.00-6.00	0.06-0.08	Low	0.0-0.5	0.17	0.28	3	4	86
	13-23	10-17	1.40-1.60	2.00-6.00	0.10-0.12	Low	0.0-0.5	0.24	0.28			
	23-60	2-8	1.50-1.70	6.00-20.00	0.03-0.06	Low	0.0-0.5	0.15	0.17			
653: Labkey-----	0-4	5-12	1.45-1.60	2.00-6.00	0.07-0.09	Low	0.0-0.5	0.20	0.37	2	4	86
	4-12	5-12	1.45-1.60	2.00-6.00	0.06-0.09	Low	0.0-0.5	0.20	0.37			
	12-60	2-8	1.50-1.65	6.00-20.00	0.03-0.06	Low	0.0-0.5	0.10	0.24			
Mazuma-----	0-6	8-12	1.40-1.55	2.00-6.00	0.12-0.14	Low	0.0-0.5	0.28	0.32	5	3	86
	6-60	5-15	1.45-1.65	2.00-6.00	0.10-0.14	Low	0.0-0.5	0.24	0.55			
700: Mazuma-----	0-6	10-14	1.40-1.55	0.60-2.00	0.13-0.15	Low	0.0-0.5	0.43	0.49	5	3	86
	6-60	5-15	1.45-1.65	2.00-6.00	0.10-0.14	Low	0.0-0.5	0.24	0.55			
Trocken-----	0-6	5-15	1.40-1.55	0.60-2.00	0.09-0.11	Low	0.0-0.5	0.32	0.55	5	4	86
	6-60	8-18	1.50-1.70	0.60-2.00	0.05-0.08	Low	0.0-0.5	0.17	0.32			
701: Mazuma-----	0-6	10-14	1.40-1.55	0.60-2.00	0.13-0.15	Low	0.0-0.5	0.43	0.49	5	3	86
	6-60	5-15	1.45-1.65	2.00-6.00	0.10-0.14	Low	0.0-0.5	0.24	0.55			
702: Mazuma-----	0-6	5-15	1.40-1.55	0.60-2.00	0.19-0.21	Low	0.0-0.5	0.55	0.55	5	4L	86
	6-22	5-15	1.40-1.55	2.00-6.00	0.11-0.13	Low	0.0-0.5	0.43	0.43			
	22-60	5-15	1.45-1.65	2.00-6.00	0.06-0.08	Low	0.0-0.5	0.24	0.32			
Swingler-----	0-9	15-25	1.25-1.45	0.20-0.60	0.17-0.19	Low	0.5-1.0	0.55	0.55	5	4L	86
	9-60	18-25	1.40-1.55	0.20-0.60	0.15-0.19	Moderate	0.0-0.5	0.49	0.49			
Toulon-----	0-6	10-12	1.45-1.65	2.00-6.00	0.06-0.10	Low	0.0-0.5	0.28	0.43	3	6	48
	6-14	12-15	1.40-1.60	2.00-6.00	0.06-0.08	Low	0.0-0.5	0.10	0.43			
	14-60	0-3	1.50-1.65	>20.00	0.03-0.06	Low	0.0-0.5	0.05	0.15			

TABLE 16.--PHYSICAL PROPERTIES OF SOILS--Continued

Map symbol and soil name	Depth In	Clay Pct	Moist bulk density g/cc	Permea- bility In/hr	Available water capacity In/in	Shrink- swell potential	Organic matter Pct	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
703: Mazuma-----	0-6 6-60	3-8 5-15	1.50-1.65 1.45-1.65	2.00-6.00 2.00-6.00	0.11-0.13 0.10-0.14	Low Low	0.0-0.5 0.0-0.5	0.37 0.24	0.43 0.55	5	2	134
Hardhat-----	0-3 3-41 41-60	1-5 8-18 5-15	1.50-1.65 1.20-1.40 1.50-1.70	>20.00 0.60-2.00 0.20-0.60	0.05-0.07 0.15-0.19 0.11-0.16	Low Low Low	0.0-0.5 0.0-0.5 0.0-0.5	0.10 0.43 0.32	0.10 0.49 0.49	5	1	220
Hawsley-----	0-5 5-60	0-5 0-5	1.50-1.70 1.50-1.70	>20.00 >20.00	0.06-0.08 0.06-0.08	Low Low	0.0-0.5 0.0-0.5	0.10 0.10	0.10 0.10	5	1	220
704: Mazuma-----	0-6 6-22 22-60	5-15 5-15 5-15	1.40-1.55 1.40-1.55 1.45-1.65	2.00-6.00 2.00-6.00 2.00-6.00	0.11-0.13 0.11-0.13 0.06-0.08	Low Low Low	0.0-0.5 0.0-0.5 0.0-0.5	0.28 0.43 0.24	0.28 0.43 0.32	5	3	86
705: Mazuma-----	0-6 6-60	3-8 5-15	1.50-1.65 1.45-1.65	2.00-6.00 2.00-6.00	0.11-0.13 0.10-0.14	Low Low	0.0-0.5 0.0-0.5	0.37 0.24	0.43 0.55	5	2	134
Mazuma-----	0-6 6-22 22-60	5-15 5-15 5-15	1.40-1.55 1.40-1.55 1.45-1.65	2.00-6.00 2.00-6.00 2.00-6.00	0.11-0.13 0.11-0.13 0.06-0.08	Low Low Low	0.0-0.5 0.0-0.5 0.0-0.5	0.28 0.43 0.24	0.28 0.43 0.32	5	3	86
706: Mazuma-----	0-6 6-22 22-60	5-15 5-15 5-15	1.40-1.55 1.40-1.55 1.45-1.65	0.60-2.00 2.00-6.00 2.00-6.00	0.19-0.21 0.11-0.13 0.06-0.08	Low Low Low	0.0-0.5 0.0-0.5 0.0-0.5	0.55 0.43 0.24	0.55 0.43 0.32	5	4L	86
707: Mazuma-----	0-6 6-60	8-12 5-15	1.40-1.55 1.45-1.65	2.00-6.00 2.00-6.00	0.12-0.14 0.10-0.14	Low Low	0.0-0.5 0.0-0.5	0.28 0.24	0.32 0.55	5	3	86
Coldent-----	0-9 9-19 19-31 31-60	1-5 6-12 2-10 1-5	1.45-1.60 1.55-1.70 1.45-1.65 1.50-1.70	6.00-20.00 0.06-0.20 2.00-6.00 6.00-20.00	0.04-0.06 0.10-0.14 0.08-0.12 0.02-0.04	Low Low Low Low	0.0-0.5 0.0-0.5 0.0-0.5 0.0-0.5	0.24 0.32 0.24 0.05	0.24 0.37 0.37 0.17	3	2	134
708: Mazuma-----	0-6 6-22 22-60	5-15 5-15 5-15	1.40-1.55 1.40-1.55 1.45-1.65	0.60-2.00 2.00-6.00 2.00-6.00	0.19-0.21 0.11-0.13 0.06-0.08	Low Low Low	0.0-0.5 0.0-0.5 0.0-0.5	0.55 0.43 0.24	0.55 0.43 0.32	5	4L	86
Ragtown-----	0-7 7-16 16-60	27-35 28-35 35-45	1.30-1.50 1.40-1.55 1.40-1.60	0.20-0.60 0.20-0.60 0.06-0.20	0.19-0.21 0.17-0.19 0.14-0.18	Moderate Moderate High	0.0-0.5 0.0-0.5 0.0-0.5	0.43 0.28 0.32	0.43 0.28 0.32	5	4L	86
750: Rock Outcrop.												
Pickup-----	0-5 5-22 22-32	14-22 40-55 ---	1.15-1.35 1.20-1.35 ---	0.20-0.60 0.06-0.20 0.00-0.01	0.08-0.10 0.10-0.13 ---	Low Moderate ---	1.0-2.0 0.5-2.0 ---	0.15 0.10 ---	0.49 0.32 ---	2	7	38
751: Rock Outcrop.												
Pickup-----	0-5 5-22 22-32	14-22 40-55 ---	1.15-1.35 1.20-1.35 ---	0.20-0.60 0.06-0.20 0.00-0.01	0.08-0.10 0.10-0.13 ---	Low Moderate ---	1.0-2.0 0.5-2.0 ---	0.15 0.10 ---	0.49 0.32 ---	2	7	38

TABLE 16.--PHYSICAL PROPERTIES OF SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
751 (con.): Grumblen-----	0-4	16-24	1.25-1.45	0.60-2.00	0.07-0.10	Low	0.8-2.0	0.15	0.49	1	7	38
	4-8	35-50	1.25-1.45	0.06-0.20	0.08-0.12	Moderate	0.0-0.8	0.10	0.32			
	8-18	35-50	1.25-1.45	0.06-0.20	0.07-0.11	Moderate	0.0-0.5	0.10	0.32			
	18-22	---	---	0.00-0.01	---	---	---	---	---			
752: Pickup-----	0-5	14-22	1.15-1.35	0.20-0.60	0.08-0.10	Low	1.0-2.0	0.15	0.49	2	7	38
	5-22	40-55	1.20-1.35	0.06-0.20	0.10-0.13	Moderate	0.5-2.0	0.10	0.32			
	22-32	---	---	0.00-0.01	---	---	---	---	---			
Old Camp-----	0-6	8-20	1.35-1.50	2.00-6.00	0.08-0.10	Low	1.0-2.0	0.17	0.43	1	7	38
	6-18	27-35	1.30-1.50	0.20-0.60	0.08-0.11	Low	0.5-1.0	0.15	0.43			
	18-22	---	---	0.00-0.01	---	---	---	---	---			
Theon-----	0-3	12-20	1.40-1.55	0.60-6.00	0.04-0.09	Low	0.0-0.5	0.15	0.37	1	7	38
	3-9	25-35	1.30-1.50	0.20-0.60	0.06-0.09	Low	0.0-0.5	0.10	0.37			
	9-12	---	---	0.00-0.01	---	---	---	---	---			
	12-16	---	---	0.00-0.01	---	---	---	---	---			
753: Rock Outcrop.												
Pickup-----	0-5	14-22	1.15-1.35	0.20-0.60	0.08-0.10	Low	1.0-2.0	0.15	0.49	2	7	38
	5-22	40-55	1.20-1.35	0.06-0.20	0.10-0.13	Moderate	0.5-2.0	0.10	0.32			
	22-32	---	---	0.00-0.01	---	---	---	---	---			
800: Old Camp-----	0-6	8-20	1.35-1.50	2.00-6.00	0.08-0.10	Low	1.0-2.0	0.17	0.43	1	7	38
	6-18	27-35	1.30-1.50	0.20-0.60	0.08-0.11	Low	0.5-1.0	0.15	0.43			
	18-22	---	---	0.00-0.01	---	---	---	---	---			
Dorper-----	0-2	5-15	1.35-1.55	0.60-2.00	0.12-0.14	Low	0.0-0.5	0.28	0.64	2	4	86
	2-7	5-15	1.35-1.55	0.60-2.00	0.15-0.19	Low	0.0-0.5	0.49	0.64			
	7-17	35-45	1.30-1.50	0.00-0.06	0.13-0.17	High	0.0-0.5	0.43	0.49			
	17-60	8-15	1.40-1.60	0.20-0.60	0.04-0.06	Low	0.0-0.5	0.10	0.28			
Pokergap-----	0-6	6-12	1.35-1.50	0.60-2.00	0.10-0.12	Low	0.6-2.0	0.37	0.43	3	4	86
	6-14	20-30	1.40-1.60	0.20-0.60	0.13-0.16	Moderate	0.0-0.5	0.32	0.49			
	14-50	7-15	1.55-1.70	0.60-2.00	0.05-0.08	Low	0.0-0.5	0.10	0.32			
	50-60	5-10	1.45-1.65	2.00-6.00	0.02-0.05	Low	0.0-0.5	0.05	0.17			
801: Old Camp-----	0-6	8-20	1.35-1.50	2.00-6.00	0.08-0.10	Low	1.0-2.0	0.17	0.43	1	7	38
	6-18	27-35	1.30-1.50	0.20-0.60	0.08-0.11	Low	0.5-1.0	0.15	0.43			
	18-22	---	---	0.00-0.01	---	---	---	---	---			
Sumya-----	0-4	30-40	1.30-1.45	0.20-0.60	0.07-0.10	Moderate	1.0-2.0	0.15	0.37	1	6	48
	4-8	35-45	1.30-1.45	0.06-0.20	0.06-0.08	Moderate	0.5-1.0	0.10	0.32			
	8-12	---	---	0.00-0.01	---	---	---	---	---			
Pickup-----	0-5	14-22	1.15-1.35	0.20-0.60	0.08-0.10	Low	1.0-2.0	0.15	0.49	2	7	38
	5-22	40-55	1.20-1.35	0.06-0.20	0.10-0.13	Moderate	0.5-2.0	0.10	0.32			
	22-32	---	---	0.00-0.01	---	---	---	---	---			
810: Perwaso-----	0-3	18-27	1.40-1.60	0.60-2.00	0.19-0.21	Moderate	0.5-1.0	0.43	0.43	3	4L	86
	3-36	18-27	1.40-1.60	0.60-2.00	0.16-0.18	Moderate	0.0-1.0	0.49	0.49			
	36-60	3-7	1.50-1.65	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.24	0.28			

TABLE 16.--PHYSICAL PROPERTIES OF SOILS--Continued

Map symbol and soil name	Depth In	Clay Pct	Moist bulk density g/cc	Permea- bility In/hr	Available water capacity In/in	Shrink- swell potential	Organic matter Pct	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
981 (con.): Selbit-----	0-4 4-17 17-60	2-5 3-8 ---	1.45-1.65 1.40-1.60 ---	>20.00 6.00-20.00 0.00-0.01	0.03-0.05 0.03-0.06 ---	Low Low ---	2.0-5.0 1.0-3.0 ---	0.02 0.05 ---	0.15 0.20 ---	2	3	86
Upsel-----	0-2 2-60	5-10 5-10	1.35-1.55 1.35-1.55	>20.00 6.00-20.00	0.05-0.07 0.06-0.08	Low Low	1.0-2.0 0.5-2.0	0.10 0.10	0.20 0.15	5	3	86
990: Shawave-----	0-8 8-21 21-37 37-60	6-12 18-25 4-10 2-6	1.35-1.50 1.40-1.60 1.50-1.70 1.50-1.70	2.00-6.00 0.20-0.60 2.00-6.00 6.00-20.00	0.10-0.12 0.14-0.16 0.08-0.11 0.03-0.06	Low Low Low Low	0.8-2.0 0.0-0.5 0.0-0.5 0.0-0.5	0.24 0.28 0.15 0.10	0.43 0.32 0.17 0.10	3	4	86
Granshaw-----	0-13 13-23 23-60	4-10 10-17 2-8	1.40-1.55 1.40-1.60 1.50-1.70	2.00-6.00 2.00-6.00 6.00-20.00	0.06-0.08 0.10-0.12 0.03-0.06	Low Low Low	0.0-0.5 0.0-0.5 0.0-0.5	0.17 0.24 0.15	0.28 0.28 0.17	3	4	86
Labkey-----	0-4 4-12 12-60	5-12 5-12 2-8	1.45-1.60 1.45-1.60 1.50-1.65	2.00-6.00 2.00-6.00 6.00-20.00	0.07-0.09 0.06-0.09 0.03-0.06	Low Low Low	0.0-0.5 0.0-0.5 0.0-0.5	0.20 0.20 0.10	0.37 0.37 0.24	2	4	86
991: Shawave-----	0-8 8-21 21-37 37-60	6-12 18-25 4-10 2-6	1.35-1.50 1.40-1.60 1.50-1.70 1.50-1.70	2.00-6.00 0.20-0.60 2.00-6.00 6.00-20.00	0.10-0.12 0.14-0.16 0.08-0.11 0.03-0.06	Low Low Low Low	0.8-2.0 0.0-0.5 0.0-0.5 0.0-0.5	0.24 0.28 0.15 0.10	0.43 0.32 0.17 0.10	3	4	86
Slipback-----	0-9 9-24 24-38 38-60	6-12 25-35 3-8 2-6	1.45-1.60 1.40-1.60 1.45-1.65 1.50-1.70	2.00-6.00 0.20-0.60 2.00-6.00 6.00-20.00	0.11-0.13 0.15-0.18 0.08-0.10 0.03-0.05	Low Moderate Low Low	1.0-2.0 0.5-1.0 0.0-0.5 0.0-0.5	0.37 0.17 0.10 0.05	0.43 0.37 0.15 0.05	3	3	86
Granshaw-----	0-13 13-23 23-60	4-10 10-17 2-8	1.40-1.55 1.40-1.60 1.50-1.70	2.00-6.00 2.00-6.00 6.00-20.00	0.06-0.08 0.10-0.12 0.03-0.06	Low Low Low	0.0-0.5 0.0-0.5 0.0-0.5	0.17 0.24 0.15	0.28 0.28 0.17	3	4	86
992: Shawave-----	0-8 8-21 21-37 37-60	6-12 18-25 4-10 2-6	1.35-1.50 1.40-1.60 1.50-1.70 1.50-1.70	2.00-6.00 0.20-0.60 2.00-6.00 6.00-20.00	0.10-0.12 0.14-0.16 0.08-0.11 0.03-0.06	Low Low Low Low	0.8-2.0 0.0-0.5 0.0-0.5 0.0-0.5	0.24 0.28 0.15 0.10	0.43 0.32 0.17 0.10	3	4	86
Deadyon-----	0-5 5-24 24-35 35-60	8-15 12-18 3-8 3-7	1.35-1.50 1.40-1.60 1.45-1.65 1.45-1.65	0.60-2.00 0.60-2.00 6.00-20.00 6.00-20.00	0.13-0.15 0.10-0.15 0.09-0.13 0.05-0.11	Low Low Low Low	1.0-2.0 0.0-0.5 0.0-0.5 0.0-0.5	0.37 0.24 0.20 0.10	0.37 0.32 0.24 0.20	4	5	56
Slipback-----	0-9 9-24 24-38 38-60	6-12 25-35 3-8 2-6	1.45-1.60 1.40-1.60 1.45-1.65 1.50-1.70	2.00-6.00 0.20-0.60 2.00-6.00 6.00-20.00	0.11-0.13 0.15-0.18 0.08-0.10 0.03-0.05	Low Moderate Low Low	1.0-2.0 0.5-1.0 0.0-0.5 0.0-0.5	0.37 0.17 0.10 0.05	0.43 0.37 0.15 0.05	3	3	86
993: Shawave-----	0-8 8-21 21-37 37-60	6-12 18-25 4-10 2-6	1.35-1.50 1.40-1.60 1.50-1.70 1.50-1.70	2.00-6.00 0.20-0.60 2.00-6.00 6.00-20.00	0.10-0.12 0.14-0.16 0.08-0.11 0.03-0.06	Low Low Low Low	0.8-2.0 0.0-0.5 0.0-0.5 0.0-0.5	0.24 0.28 0.15 0.10	0.43 0.32 0.17 0.10	3	4	86

TABLE 16.--PHYSICAL PROPERTIES OF SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
1022 (con.): Soar-----	0-3	12-20	1.30-1.50	2.00-6.00	0.05-0.07	Low	0.5-1.0	0.05	0.15	2	5	56
	3-6	20-26	1.40-1.60	0.20-0.60	0.06-0.08	Low	0.0-0.5	0.15	0.55			
	6-28	---	---	0.00-20.00	---		---	---	---			
	28-38	---	---	0.00-0.01	---		---	---	---			
Arclay-----	0-5	5-12	1.25-1.40	2.00-6.00	0.05-0.07	Low	1.0-2.0	0.10	0.20	2	5	56
	5-16	25-35	1.30-1.50	0.20-0.60	0.11-0.13	Moderate	0.5-2.0	0.24	0.43			
	16-42	---	---	0.01-20.00	---		---	---	---			
	42-46	---	---	0.00-0.01	---		---	---	---			
1030: Pokergap-----	0-6	6-12	1.35-1.50	0.60-2.00	0.08-0.10	Low	0.6-2.0	0.20	0.64	5	5	56
	6-14	20-30	1.40-1.60	0.20-0.60	0.13-0.16	Moderate	0.0-0.5	0.32	0.49			
	14-50	7-15	1.55-1.70	0.60-2.00	0.05-0.08	Low	0.0-0.5	0.10	0.32			
	50-60	4-10	1.45-1.65	2.00-6.00	0.03-0.05	Low	0.0-0.5	0.05	0.17			
1031: Pokergap-----	0-6	6-12	1.35-1.50	0.60-2.00	0.08-0.10	Low	0.6-2.0	0.20	0.64	5	5	56
	6-14	20-30	1.40-1.60	0.20-0.60	0.13-0.16	Moderate	0.0-0.5	0.32	0.49			
	14-50	7-15	1.55-1.70	0.60-2.00	0.05-0.08	Low	0.0-0.5	0.10	0.32			
	50-60	4-10	1.45-1.65	2.00-6.00	0.03-0.05	Low	0.0-0.5	0.05	0.17			
Dorper-----	0-2	5-15	1.35-1.55	0.60-2.00	0.07-0.10	Low	0.0-0.5	0.15	0.55	2	5	56
	2-7	5-15	1.35-1.55	0.60-2.00	0.15-0.19	Low	0.0-0.5	0.49	0.64			
	7-17	35-45	1.30-1.50	0.00-0.06	0.13-0.17	High	0.0-0.5	0.43	0.49			
	17-60	8-15	1.40-1.60	0.20-0.60	0.04-0.06	Low	0.0-0.5	0.10	0.28			
1032: Pokergap-----	0-6	6-12	1.35-1.50	0.60-2.00	0.10-0.12	Low	0.6-2.0	0.37	0.43	3	4	86
	6-14	20-30	1.40-1.60	0.20-0.60	0.13-0.16	Moderate	0.0-0.5	0.32	0.49			
	14-50	7-15	1.55-1.70	0.60-2.00	0.05-0.08	Low	0.0-0.5	0.10	0.32			
	50-60	5-10	1.45-1.65	2.00-6.00	0.02-0.05	Low	0.0-0.5	0.05	0.17			
Dorper-----	0-2	5-15	1.35-1.55	0.60-2.00	0.11-0.13	Low	0.0-0.5	0.20	0.55	2	5	56
	2-7	5-15	1.35-1.55	0.60-2.00	0.15-0.19	Low	0.0-0.5	0.49	0.64			
	7-17	35-45	1.30-1.50	0.00-0.06	0.13-0.17	High	0.0-0.5	0.43	0.49			
	17-60	8-15	1.40-1.60	0.20-0.60	0.04-0.06	Low	0.0-0.5	0.10	0.28			
1033: Pokergap-----	0-6	12-18	1.35-1.50	0.60-2.00	0.19-0.21	Low	0.6-2.0	0.49	0.55	3	5	56
	6-14	20-30	1.40-1.60	0.20-0.60	0.13-0.16	Moderate	0.0-0.5	0.32	0.49			
	14-50	7-15	1.55-1.70	0.60-2.00	0.05-0.08	Low	0.0-0.5	0.10	0.32			
	50-60	4-10	1.45-1.65	2.00-6.00	0.03-0.05	Low	0.0-0.5	0.05	0.17			
Jerval-----	0-8	5-10	1.40-1.55	0.60-2.00	0.10-0.12	Low	0.0-0.5	0.17	0.49	5	4	86
	8-20	27-35	1.20-1.40	0.20-0.60	0.14-0.16	Moderate	0.0-0.5	0.24	0.43			
	20-60	5-12	1.35-1.50	2.00-6.00	0.06-0.07	Low	0.0-0.5	0.15	0.32			
Dorper-----	0-2	5-15	1.35-1.55	0.60-2.00	0.12-0.14	Low	0.0-0.5	0.28	0.64	2	4	86
	2-7	5-15	1.35-1.55	0.60-2.00	0.15-0.19	Low	0.0-0.5	0.49	0.64			
	7-17	35-45	1.30-1.50	0.00-0.06	0.13-0.17	High	0.0-0.5	0.43	0.49			
	17-60	8-15	1.40-1.60	0.20-0.60	0.04-0.06	Low	0.0-0.5	0.10	0.28			
1034: Pokergap-----	0-6	6-12	1.35-1.50	0.60-2.00	0.10-0.12	Low	0.6-2.0	0.37	0.43	3	4	86
	6-14	20-30	1.40-1.60	0.20-0.60	0.13-0.16	Moderate	0.0-0.5	0.32	0.49			
	14-50	7-15	1.55-1.70	0.60-2.00	0.05-0.08	Low	0.0-0.5	0.10	0.32			
	50-60	5-10	1.45-1.65	2.00-6.00	0.02-0.05	Low	0.0-0.5	0.05	0.17			

TABLE 16.--PHYSICAL PROPERTIES OF SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
1035:												
Pokergap-----	0-6	12-18	1.35-1.50	0.60-2.00	0.19-0.21	Low	0.6-2.0	0.49	0.55	3	5	56
	6-14	20-30	1.40-1.60	0.20-0.60	0.13-0.16	Moderate	0.0-0.5	0.32	0.49			
	14-50	7-15	1.55-1.70	0.60-2.00	0.05-0.08	Low	0.0-0.5	0.10	0.32			
	50-60	4-10	1.45-1.65	2.00-6.00	0.03-0.05	Low	0.0-0.5	0.05	0.17			
Jerval-----	0-8	5-10	1.40-1.55	0.60-2.00	0.10-0.12	Low	0.0-0.5	0.17	0.49	5	4	86
	8-20	27-35	1.20-1.40	0.20-0.60	0.14-0.16	Moderate	0.0-0.5	0.24	0.43			
	20-60	5-12	1.35-1.50	2.00-6.00	0.06-0.07	Low	0.0-0.5	0.15	0.32			
1040:												
Sojur-----	0-4	18-25	1.25-1.45	0.60-2.00	0.05-0.08	Low	0.0-0.5	0.05	0.43	1	8	---
	4-15	---	---	0.00-20.00	---	---	---	---	---			
	15-19	---	---	0.00-0.01	---	---	---	---	---			
1041:												
Sojur-----	0-4	18-25	1.25-1.45	0.60-2.00	0.05-0.08	Low	0.0-0.5	0.05	0.43	1	8	---
	4-15	---	---	0.00-20.00	---	---	---	---	---			
	15-19	---	---	0.00-0.01	---	---	---	---	---			
Boomstick-----	0-5	15-20	1.30-1.45	0.60-2.00	0.09-0.10	Low	1.0-2.0	0.15	0.43	1	7	38
	5-16	23-35	1.40-1.60	0.20-0.60	0.05-0.07	Low	0.0-0.8	0.05	0.43			
	16-20	---	---	0.00-0.01	---	---	---	---	---			
Rubble Land-----	0-60	---	1.70-2.35	>20.00	0.00-0.10	Low	0.0-0.1	---	---	---	8	---
1042:												
Sojur-----	0-4	18-25	1.25-1.45	0.60-2.00	0.05-0.08	Low	0.0-0.5	0.05	0.43	1	8	---
	4-15	---	---	0.00-20.00	---	---	---	---	---			
	15-19	---	---	0.00-0.01	---	---	---	---	---			
Phliss-----	0-3	15-20	1.35-1.50	0.60-2.00	0.05-0.06	Low	1.0-2.0	0.10	0.43	1	8	---
	3-13	20-30	1.40-1.60	0.20-0.60	0.05-0.07	Low	0.0-0.8	0.10	0.43			
	13-23	---	---	0.00-0.01	---	---	---	---	---			
1050:												
Theon-----	0-3	10-20	1.40-1.55	0.60-2.00	0.09-0.10	Low	0.0-0.5	0.17	0.43	1	6	48
	3-9	25-35	1.30-1.50	0.20-0.60	0.08-0.11	Moderate	0.0-0.5	0.15	0.49			
	9-12	---	---	0.00-0.01	---	---	---	---	---			
Singatse-----	0-4	10-15	1.40-1.60	0.60-2.00	0.03-0.06	Low	0.4-0.6	0.10	0.43	1	8	---
	4-8	5-15	1.40-1.60	0.60-2.00	0.07-0.10	Low	0.0-0.5	0.10	0.37			
	8-10	---	---	0.00-20.00	---	---	---	---	---			
	10-14	---	---	0.00-0.01	---	---	---	---	---			
1051:												
Theon-----	0-3	10-20	1.40-1.55	2.00-6.00	0.06-0.09	Low	0.0-0.5	0.05	0.43	1	6	48
	3-9	25-35	1.30-1.50	0.20-0.60	0.06-0.09	Low	0.0-0.5	0.15	0.55			
	9-12	---	---	0.00-20.00	---	---	---	---	---			
	12-16	---	---	0.00-0.01	---	---	---	---	---			
Singatse-----	0-4	7-15	1.40-1.60	0.60-2.00	0.07-0.09	Low	0.0-0.5	0.17	0.43	1	6	48
	4-8	5-15	1.40-1.60	0.60-2.00	0.05-0.07	Low	0.0-0.5	0.10	0.32			
	8-10	---	---	0.00-0.02	---	---	---	---	---			
	10-14	---	---	0.00-0.01	---	---	---	---	---			
1052:												
Theon-----	0-3	10-20	1.40-1.55	0.60-2.00	0.09-0.10	Low	0.0-0.5	0.17	0.43	1	6	48
	3-9	25-35	1.30-1.50	0.20-0.60	0.08-0.11	Moderate	0.0-0.5	0.15	0.49			
	9-12	---	---	0.00-0.01	---	---	---	---	---			

TABLE 16.--PHYSICAL PROPERTIES OF SOILS--Continued

Map symbol and soil name	Depth In	Clay Pct	Moist bulk density g/cc	Permeability In/hr	Available water capacity In/in	Shrink-swell potential	Organic matter Pct	Erosion factors			Wind erodibility group	Wind erodibility index
								K	Kf	T		
1100 (con.): Unionville-----	0-5 5-23 23-27	5-10 5-10 ---	1.40-1.55 1.40-1.55 ---	2.00-6.00 2.00-6.00 0.00-0.01	0.10-0.12 0.10-0.13 ---	Low Low ---	0.0-0.5 0.0-0.5 ---	0.20 0.20 ---	0.24 0.24 ---	3	3	86
1150: Rock Outcrop.												
Slocave-----	0-1 1-7 7-27 27-37	6-14 6-16 --- ---	1.40-1.60 1.40-1.60 --- ---	2.00-6.00 2.00-6.00 0.00-20.00 0.00-0.01	0.06-0.08 0.06-0.08 --- ---	Low Low --- ---	0.0-0.5 0.0-0.5 --- ---	0.10 0.10 --- ---	0.20 0.28 --- ---	1	5	56
Arclay-----	0-5 5-16 16-42 42-46	5-12 25-35 --- ---	1.25-1.40 1.30-1.50 --- ---	2.00-6.00 0.20-0.60 0.00-20.00 0.00-0.01	0.04-0.07 0.11-0.13 --- ---	Low Moderate --- ---	1.0-2.0 1.0-2.0 --- ---	0.10 0.24 --- ---	0.20 0.43 --- ---	2	5	56
1151: Slocave-----	0-1 1-7 7-27 27-37	6-14 6-16 --- ---	1.40-1.60 1.40-1.60 --- ---	2.00-6.00 2.00-6.00 0.00-20.00 0.00-0.01	0.06-0.08 0.06-0.08 --- ---	Low Low --- ---	0.0-0.5 0.0-0.5 --- ---	0.10 0.10 --- ---	0.20 0.28 --- ---	1	5	56
Vium-----	0-3 3-8 8-12	6-12 10-18 ---	1.40-1.60 1.40-1.60 ---	2.00-6.00 2.00-6.00 0.00-0.01	0.06-0.08 0.04-0.06 ---	Low Low ---	0.0-0.5 0.0-0.5 ---	0.17 0.10 ---	0.20 0.28 ---	1	4	86
1190: Woolsey-----	0-8 8-12 12-60	4-12 8-18 5-10	1.40-1.55 1.40-1.55 1.40-1.55	2.00-6.00 2.00-6.00 2.00-6.00	0.13-0.15 0.07-0.09 0.11-0.13	Low Low Low	0.0-0.5 0.0-0.5 0.0-0.5	0.49 0.15 0.20	0.55 0.28 0.32	5	3	86
Bluewing-----	0-5 5-60	6-10 3-8	1.40-1.60 1.45-1.65	2.00-6.00 >20.00	0.07-0.09 0.03-0.05	Low Low	0.0-0.5 0.0-0.5	0.24 0.05	0.32 0.20	5	4	86
1200: Acrelane-----	0-6 6-15 15-60	6-12 18-30 ---	1.25-1.45 1.30-1.50 ---	2.00-6.00 0.60-2.00 0.00-20.00	0.05-0.07 0.07-0.10 ---	Low Low ---	1.0-2.0 0.5-2.0 ---	0.15 0.20 ---	0.20 0.37 ---	2	5	56
Soar-----	0-3 3-6 6-28 28-38	12-20 20-26 --- ---	1.30-1.50 1.40-1.60 --- ---	2.00-6.00 0.20-0.60 0.00-20.00 0.00-0.01	0.05-0.07 0.06-0.08 --- ---	Low Low --- ---	0.5-1.0 0.0-0.5 --- ---	0.05 0.15 --- ---	0.15 0.55 --- ---	2	5	56
Arclay-----	0-5 5-16 16-42 42-46	5-12 25-35 --- ---	1.25-1.40 1.30-1.50 --- ---	2.00-6.00 0.20-0.60 0.00-20.00 0.00-0.01	0.04-0.07 0.11-0.13 --- ---	Low Moderate --- ---	1.0-2.0 1.0-2.0 --- ---	0.10 0.24 --- ---	0.20 0.43 --- ---	2	5	56
1201: Acrelane-----	0-6 6-15 15-60	6-12 18-30 ---	1.25-1.45 1.30-1.50 ---	2.00-6.00 0.60-2.00 0.00-20.00	0.05-0.07 0.07-0.10 ---	Low Low ---	1.0-2.0 0.5-2.0 ---	0.15 0.20 ---	0.20 0.37 ---	2	5	56
Wedekind-----	0-5 5-18 18-60	8-15 22-32 ---	1.30-1.45 1.30-1.50 ---	2.00-6.00 0.20-0.60 0.00-0.01	0.07-0.12 0.15-0.20 ---	Low Moderate ---	0.8-2.0 0.5-1.0 ---	0.15 0.20 ---	0.32 0.32 ---	2	4	86

TABLE 16.--PHYSICAL PROPERTIES OF SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
1201 (con.): Arclay-----	0-5 5-16 16-42 42-46	5-12 25-35 --- ---	1.25-1.40 1.30-1.50 --- ---	2.00-6.00 0.20-0.60 0.00-20.00 0.00-0.01	0.04-0.07 0.11-0.13 --- ---	Low Moderate --- ---	1.0-2.0 1.0-2.0 --- ---	0.10 0.24 --- ---	0.20 0.43 --- ---	2 --- --- ---	5	56
1202: Rock Outcrop.												
Acrelane-----	0-6 6-15 15-19	6-12 18-30 ---	1.25-1.45 1.30-1.50 ---	2.00-6.00 0.60-2.00 0.00-20.00	0.06-0.09 0.07-0.10 ---	Low Low ---	1.0-2.0 0.5-2.0 ---	0.17 0.20 ---	0.20 0.37 ---	2 --- ---	5	56
1203: Acrelane-----	0-6 6-15 15-60	6-12 18-30 ---	1.25-1.45 1.30-1.50 ---	2.00-6.00 0.60-2.00 0.00-20.00	0.05-0.07 0.07-0.10 ---	Low Low ---	1.0-2.0 0.5-2.0 ---	0.15 0.20 ---	0.20 0.37 ---	2 --- ---	5	56
Shawave-----	0-8 8-21 21-37 37-60	6-12 18-25 4-10 2-6	1.35-1.50 1.40-1.60 1.50-1.70 1.50-1.70	2.00-6.00 0.20-0.60 2.00-6.00 6.00-20.00	0.10-0.12 0.14-0.16 0.08-0.11 0.03-0.06	Low Low Low Low	0.8-2.0 0.0-0.5 0.0-0.5 0.0-0.5	0.24 0.28 0.15 0.10	0.43 0.32 0.17 0.10	3 --- --- ---	4	86
Granshaw-----	0-13 13-23 23-60	4-10 10-17 2-8	1.40-1.55 1.40-1.60 1.50-1.70	2.00-6.00 2.00-6.00 6.00-20.00	0.06-0.08 0.10-0.12 0.03-0.06	Low Low Low	0.0-0.5 0.0-0.5 0.0-0.5	0.17 0.24 0.15	0.28 0.28 0.17	3 --- ---	4	86
1204: Acrelane-----	0-6 6-15 15-60	6-12 18-30 ---	1.25-1.45 1.30-1.50 ---	2.00-6.00 0.60-2.00 0.00-20.00	0.05-0.07 0.07-0.10 ---	Low Low ---	1.0-2.0 0.5-2.0 ---	0.15 0.20 ---	0.20 0.37 ---	2 --- ---	5	56
Arclay-----	0-5 5-16 16-42 42-46	5-12 25-35 --- ---	1.25-1.40 1.30-1.50 --- ---	2.00-6.00 0.20-0.60 0.00-20.00 0.00-0.01	0.04-0.07 0.11-0.13 --- ---	Low Moderate --- ---	1.0-2.0 1.0-2.0 --- ---	0.10 0.24 --- ---	0.20 0.43 --- ---	2 --- --- ---	5	56
Eaglerock-----	0-5 5-31 31-60	5-10 18-27 ---	1.30-1.50 1.30-1.50 ---	2.00-6.00 0.20-0.60 0.00-0.01	0.05-0.07 0.08-0.10 ---	Low Low ---	3.0-5.0 0.5-2.0 ---	0.10 0.10 ---	0.20 0.32 ---	3 --- ---	4	86
1205: Acrelane-----	0-6 6-15 15-60	6-12 18-30 ---	1.25-1.45 1.30-1.50 ---	2.00-6.00 0.60-2.00 0.00-20.00	0.05-0.07 0.07-0.10 ---	Low Low ---	1.0-2.0 0.5-2.0 ---	0.15 0.20 ---	0.20 0.37 ---	2 --- ---	5	56
Acrelane-----	0-6 6-15 15-60	6-12 18-30 ---	1.25-1.45 1.30-1.50 ---	2.00-6.00 0.60-2.00 0.00-20.00	0.05-0.07 0.07-0.10 ---	Low Low ---	1.0-2.0 0.5-2.0 ---	0.15 0.20 ---	0.20 0.37 ---	2 --- ---	5	56
1210: Wesfil-----	0-4 4-13 13-17	12-18 --- ---	1.30-1.50 --- ---	0.60-2.00 0.00-20.00 0.00-0.01	0.07-0.10 --- ---	Low --- ---	1.0-2.0 --- ---	0.10 --- ---	0.43 --- ---	1 --- ---	6	48
Sojur-----	0-4 4-15 15-19	18-25 --- ---	1.25-1.45 --- ---	0.60-2.00 0.00-20.00 0.00-0.01	0.05-0.08 --- ---	Low --- ---	0.0-0.5 --- ---	0.05 --- ---	0.43 --- ---	1 --- ---	8	---

TABLE 16.--PHYSICAL PROPERTIES OF SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								K	Kf	T		
	In	Pct	g/cc	In/hr	In/in		Pct					
1300: Yipor-----	0-10	8-18	1.30-1.50	0.60-2.00	0.19-0.21	Low	0.0-0.5	0.55	0.55	5	4L	86
	10-34	8-18	1.30-1.50	0.60-2.00	0.16-0.19	Low	0.0-0.5	0.49	0.49			
	34-60	8-18	1.30-1.50	0.60-2.00	0.16-0.19	Low	0.0-0.5	0.49	0.49			
1400: Jerval-----	0-8	5-10	1.40-1.55	0.60-2.00	0.10-0.12	Low	0.0-0.5	0.17	0.49	5	4	86
	8-20	27-35	1.20-1.40	0.20-0.60	0.14-0.16	Moderate	0.0-0.5	0.24	0.43			
	20-60	5-12	1.35-1.50	2.00-6.00	0.06-0.07	Low	0.0-0.5	0.15	0.32			
Dorper-----	0-2	5-15	1.35-1.55	0.60-2.00	0.12-0.14	Low	0.0-0.5	0.28	0.64	2	4	86
	2-7	5-15	1.35-1.55	0.60-2.00	0.15-0.19	Low	0.0-0.5	0.49	0.64			
	7-17	35-45	1.30-1.50	0.00-0.06	0.13-0.17	High	0.0-0.5	0.43	0.49			
	17-60	8-15	1.40-1.60	0.20-0.60	0.04-0.06	Low	0.0-0.5	0.10	0.28			
1401: Jerval-----	0-8	5-10	1.40-1.55	0.60-2.00	0.10-0.12	Low	0.0-0.5	0.17	0.49	5	4	86
	8-20	27-35	1.20-1.40	0.20-0.60	0.14-0.16	Moderate	0.0-0.5	0.24	0.43			
	20-60	5-12	1.35-1.50	2.00-6.00	0.06-0.07	Low	0.0-0.5	0.15	0.32			
Aboten-----	0-7	5-15	1.35-1.50	0.60-2.00	0.13-0.17	Low	0.5-1.0	0.32	0.64	2	5	56
	7-15	25-35	1.30-1.50	0.06-0.20	0.15-0.19	Moderate	0.0-0.5	0.28	0.37			
	15-27	---	---	0.00-0.20	---	---	---	---	---			
	27-60	3-8	1.50-1.60	6.00-20.00	0.04-0.06	Low	0.0-0.5	0.05	0.24			
Dorper-----	0-2	5-15	1.35-1.55	0.60-2.00	0.05-0.07	Low	0.0-0.5	0.05	0.49	2	6	48
	2-7	5-15	1.35-1.55	0.60-2.00	0.15-0.19	Low	0.0-0.5	0.49	0.64			
	7-17	35-45	1.30-1.50	0.00-0.06	0.13-0.17	High	0.0-0.5	0.43	0.49			
	17-60	8-15	1.40-1.60	0.20-0.60	0.04-0.06	Low	0.0-0.5	0.10	0.28			
1410: Slipback-----	0-9	6-12	1.45-1.60	2.00-6.00	0.11-0.13	Low	1.0-2.0	0.37	0.43	3	3	86
	9-24	25-35	1.40-1.60	0.20-0.60	0.15-0.18	Moderate	0.5-1.0	0.17	0.37			
	24-38	3-8	1.45-1.65	2.00-6.00	0.08-0.10	Low	0.0-0.5	0.10	0.15			
	38-60	2-6	1.50-1.70	6.00-20.00	0.03-0.05	Low	0.0-0.5	0.05	0.05			
Shawave-----	0-8	6-12	1.35-1.50	2.00-6.00	0.10-0.12	Low	0.8-2.0	0.24	0.43	3	4	86
	8-21	18-25	1.40-1.60	0.20-0.60	0.14-0.16	Low	0.0-0.5	0.28	0.32			
	21-37	4-10	1.50-1.70	2.00-6.00	0.08-0.11	Low	0.0-0.5	0.15	0.17			
	37-60	2-6	1.50-1.70	6.00-20.00	0.03-0.06	Low	0.0-0.5	0.10	0.10			
Nodur-----	0-4	5-10	1.20-1.40	2.00-6.00	0.11-0.13	Low	0.8-2.0	0.28	0.32	2	3	86
	4-16	35-50	1.35-1.55	0.00-0.06	0.14-0.17	High	0.0-1.0	0.32	0.32			
	16-60	5-10	1.65-1.85	0.20-0.60	0.08-0.10	Low	0.0-0.5	0.15	0.28			
1610: Lovelock-----	0-15	15-27	0.85-1.00	0.60-2.00	0.20-0.22	Moderate	10-20	0.32	0.32	5	4L	86
	15-60	35-60	0.85-1.00	0.60-2.00	0.19-0.21	High	1.0-10	0.24	0.24			

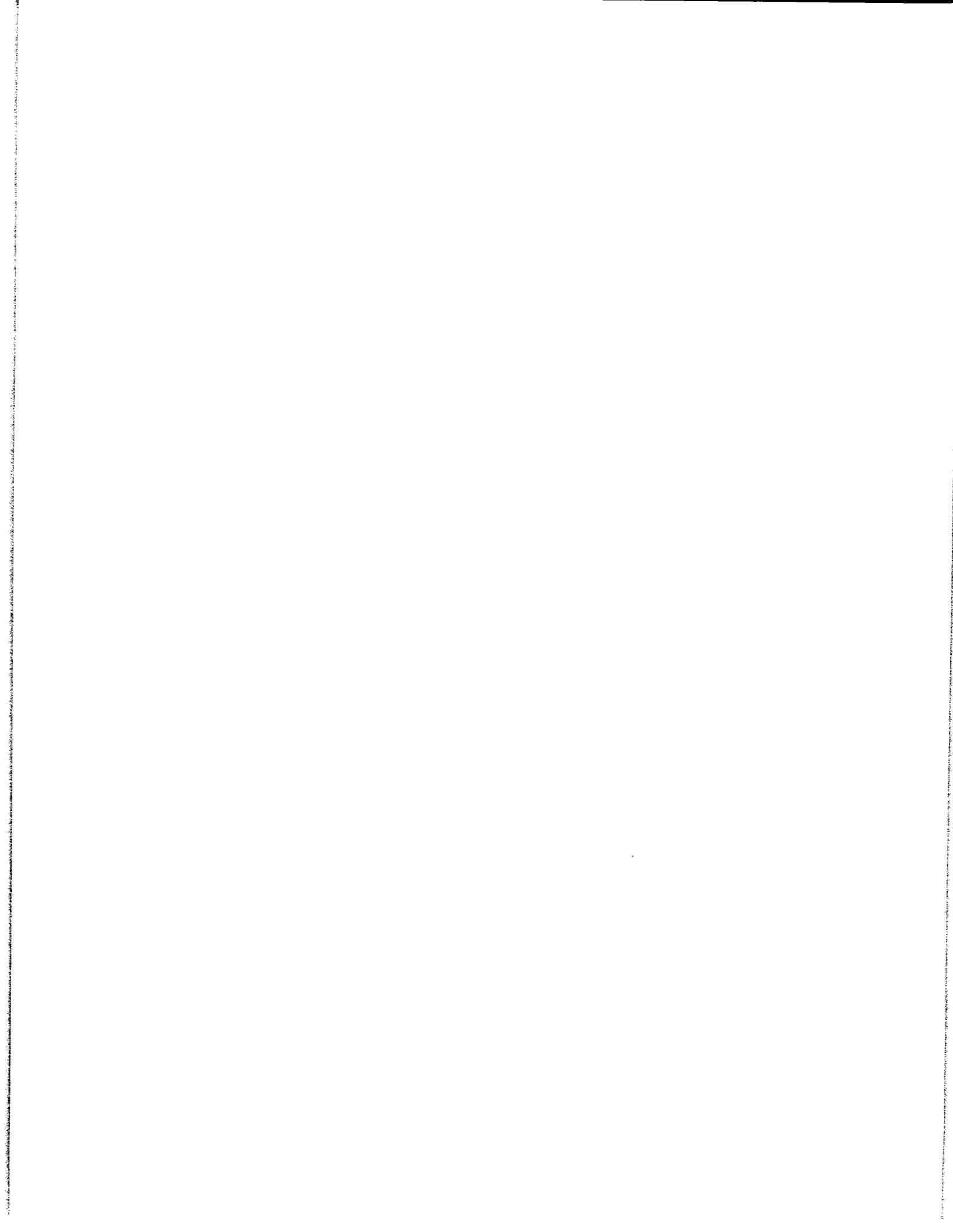


TABLE 17.--CHEMICAL PROPERTIES OF THE SOILS

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
110: Aboten-----	0-7	5-15	4.0-11.0	7.9-9.0	0-5	---	0-2	1-12
	7-15	25-35	15.0-22.0	7.9-9.0	1-5	---	2-4	13-90
	15-27	---	---	---	---	---	---	---
	27-60	3-8	1.0-6.0	7.9-9.0	1-10	0-5	4-16	31-45
Jerval-----	0-8	5-10	8.0-20.0	7.9-8.4	0-2	---	2-4	1-12
	8-20	27-35	20.0-30.0	7.9-9.0	1-5	0-3	8-16	13-30
	20-60	5-12	2.0-10.0	7.9-9.0	1-10	1-5	8-16	13-30
Bluewing-----	0-2	6-10	4.0-7.0	7.9-9.0	1-5	---	0-2	1-12
	2-60	3-8	1.0-5.0	7.9-9.0	5-15	0-1	0-4	1-12
111: Aboten-----	0-7	5-15	4.0-11.0	7.9-9.0	0-5	---	0-2	1-12
	7-15	25-35	15.0-22.0	7.9-9.0	1-5	---	2-4	13-90
	15-27	---	---	---	---	---	---	---
	27-60	3-8	1.0-6.0	7.9-9.0	1-10	0-5	4-16	31-45
Dorper-----	0-2	5-15	3.0-10.0	7.9-9.0	0-5	---	0-2	1-12
	2-7	5-15	3.0-10.0	7.9-9.0	1-5	---	2-4	1-12
	7-17	35-45	21.0-28.0	7.9-9.0	1-10	0-1	2-8	13-45
	17-60	8-15	4.0-10.0	7.9-9.0	1-10	0-5	16-32	31-90
112: Aboten-----	0-7	5-15	4.0-11.0	7.9-9.0	0-5	---	0-2	1-12
	7-15	25-35	15.0-22.0	7.9-9.0	1-5	---	2-4	13-90
	15-27	---	---	---	---	---	---	---
	27-60	3-8	1.0-6.0	7.9-9.0	1-10	0-5	4-16	31-45
Dorper-----	0-2	5-15	3.0-10.0	7.9-9.0	0-5	---	0-2	1-12
	2-7	5-15	3.0-10.0	7.9-9.0	1-5	---	2-4	1-12
	7-17	35-45	21.0-28.0	7.9-9.0	1-10	0-1	2-8	13-45
	17-60	8-15	4.0-10.0	7.9-9.0	1-10	0-5	16-32	31-90
Rednik-----	0-2	5-15	3.0-10.0	7.4-9.0	0-3	---	0-2	1-12
	2-30	18-27	15.0-20.0	7.9-9.0	1-5	0-1	4-8	13-30
	30-41	5-15	3.0-10.0	8.5-9.6	1-5	0-2	2-8	13-30
	41-60	0-7	1.0-5.0	8.5-9.6	1-5	0-2	0-4	5-30
113: Aboten-----	0-7	5-15	4.0-11.0	7.9-9.0	0-5	---	0-2	1-12
	7-15	25-35	15.0-22.0	7.9-9.0	1-5	---	2-4	13-90
	15-27	---	---	---	---	---	---	---
	27-60	3-8	1.0-6.0	7.9-9.0	1-10	0-5	4-16	31-45
114: Aboten-----	0-7	5-15	4.0-11.0	7.9-9.0	0-5	---	0-2	1-12
	7-15	25-35	15.0-22.0	7.9-9.0	1-5	---	2-4	13-90
	15-27	---	---	---	---	---	---	---
	27-60	3-8	1.0-6.0	7.9-9.0	1-10	0-5	4-16	31-45
Bluewing-----	0-2	6-10	4.0-7.0	7.9-9.0	1-5	---	0-2	1-12
	2-60	3-8	1.0-5.0	7.9-9.0	5-15	0-1	0-4	1-12
120: Appian-----	0-5	2-5	1.0-3.0	8.5-9.6	---	---	4-8	0-12
	5-15	27-35	20.0-30.0	8.5-9.6	---	0-1	16-32	13-65
	15-28	2-5	1.0-3.0	8.5-9.6	---	0-1	16-32	13-65
	28-53	0-5	0.0-3.0	8.5-9.6	---	0-1	0-2	0-13
	53-60	10-25	8.0-20.0	8.5-9.6	---	0-1	0-2	0-13

TABLE 17.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth		Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct							
141 (con.): Soar-----	0-3	12-20	7.0-14.0	6.6-7.8	---	---	---	---	
	3-6	20-26	12.0-16.0	6.6-7.8	---	---	---	---	
	6-28	---	---	---	---	---	---	---	
	28-38	---	---	---	---	---	---	---	
142: Arclay-----	0-5	5-12	5.0-11.0	6.6-7.8	---	---	---	---	
	5-16	25-35	17.0-25.0	6.6-7.8	---	---	---	---	
	16-42	---	---	---	---	---	---	---	
	42-46	---	---	---	---	---	---	---	
Vium-----	0-3	6-12	4.0-8.0	7.9-8.4	1-3	---	0-2	0-12	
	3-8	10-18	6.0-12.0	7.9-8.4	1-5	---	0-2	0-12	
	8-12	---	---	---	---	---	---	---	
Slocave-----	0-1	6-14	4.0-10.0	7.9-8.4	1-5	---	0-2	---	
	1-7	6-16	4.0-12.0	7.9-8.4	1-5	---	0-2	---	
	7-27	---	---	---	---	---	---	---	
	27-37	---	---	---	---	---	---	---	
143: Rock Outcrop.									
Ninemile-----	0-5	5-10	10.0-20.0	6.6-7.8	---	---	---	---	
	5-16	40-60	45.0-75.0	6.6-7.8	---	---	---	---	
	16-20	---	---	---	---	---	---	---	
145: Rock Outcrop.									
Ninemile-----	0-5	5-10	10.0-20.0	6.6-7.8	---	---	---	---	
	5-16	40-60	45.0-75.0	6.6-7.8	---	---	---	---	
	16-20	---	---	---	---	---	---	---	
Shively-----	0-6	10-18	8.0-17.0	6.6-7.8	---	---	---	---	
	6-35	10-18	8.0-15.0	6.6-7.8	---	---	---	---	
	35-60	10-18	6.0-11.0	6.6-7.8	---	---	---	---	
150: Boton-----	0-10	12-18	7.0-15.0	7.9-9.6	1-5	---	0-4	13-30	
	10-27	18-27	11.0-22.0	7.9-9.6	5-20	0-5	8-16	46-99	
	27-60	18-27	11.0-22.0	8.5-9.6	5-20	0-5	16-32	46-99	
Playas-----	0-6	27-40	24.0-35.0	8.5-9.6	1-5	1-5	16-32	46-90	
	6-60	35-70	30.0-60.0	8.5-9.6	1-10	1-10	16-32	46-90	
152: Benin-----	0-1	30-40	15.0-25.0	7.9-9.0	1-5	---	8-16	0-12	
	1-60	40-50	25.0-30.0	7.9-9.6	1-10	1-5	4-16	13-50	
Benin-----	0-1	27-40	17.0-38.0	7.9-9.0	1-5	---	8-16	13-30	
	1-60	40-50	28.0-48.0	7.9-9.0	0-3	---	16-32	13-45	
160: Badland-----	0-2	25-70	15.0-60.0	7.4-9.6	1-40	0-5	0-32	0-99	
	2-60	---	---	---	---	---	---	---	
161: Dune Land-----	0-6	0-1	0.0-1.0	7.4-8.4	---	---	---	---	
	6-60	0-1	0.0-1.0	7.4-8.4	---	---	---	---	

TABLE 17.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
161 (con.): Playas-----	0-6	27-40	24.0-35.0	8.5-9.6	1-5	1-5	16-32	46-90
	6-60	35-70	30.0-60.0	8.5-9.6	1-10	1-10	16-32	46-90
163: Dune Land-----	0-6	0-1	0.0-1.0	7.4-8.4	---	---	---	---
	6-60	0-1	0.0-1.0	7.4-8.4	---	---	---	---
171: Rock Outcrop.								
Bluewing-----	0-2	6-10	4.0-7.0	7.9-9.0	1-5	---	0-2	1-12
	2-60	3-8	1.0-5.0	7.9-9.0	5-15	0-1	0-4	1-12
Toulon-----	0-6	10-12	5.0-10.0	7.9-9.0	0-5	0-2	2-4	0-12
	6-14	12-15	5.0-10.0	7.9-9.0	1-5	0-2	2-4	0-12
	14-60	0-3	0.0-3.0	7.9-9.0	1-5	0-2	2-4	0-12
172: Bluewing-----	0-2	6-10	4.0-7.0	7.9-9.0	1-5	---	0-2	1-12
	2-60	3-8	1.0-5.0	7.9-9.0	5-15	0-1	0-4	1-12
173: Bluewing-----	0-2	6-12	4.0-9.0	7.9-9.0	0-5	---	0-2	1-12
	2-60	0-8	1.0-5.0	7.9-9.0	5-15	0-1	0-4	1-12
180: Biga-----	0-6	4-12	2.0-8.0	7.4-8.4	---	---	0-2	0-12
	6-12	35-45	21.0-28.0	8.5-9.6	5-10	---	2-8	13-45
	12-60	2-10	1.0-7.0	7.9-9.6	5-10	---	2-8	13-45
Granshaw-----	0-13	4-10	0.0-5.0	7.9-9.0	---	---	0-2	---
	13-23	10-17	5.0-15.0	7.9-9.0	1-5	---	0-2	---
	23-60	2-8	0.0-5.0	7.9-9.6	5-15	---	0-2	---
Labkey-----	0-4	5-12	3.0-8.0	7.9-8.4	---	---	0-2	1-5
	4-12	5-12	3.0-8.0	7.9-9.0	---	---	0-2	1-12
	12-60	2-8	1.0-6.0	7.9-9.0	1-5	---	2-4	1-12
181: Biga-----	0-6	4-12	2.0-8.0	7.4-8.4	---	---	0-2	0-12
	6-12	35-45	21.0-28.0	8.5-9.6	5-10	---	2-8	13-45
	12-60	2-10	1.0-7.0	7.9-9.6	5-10	---	2-8	13-45
182: Biga-----	0-6	10-16	6.0-12.0	7.4-8.4	---	---	0-2	0-12
	6-12	35-45	21.0-28.0	8.5-9.6	5-10	---	2-8	13-45
	12-60	2-10	1.0-7.0	7.9-9.6	5-10	---	2-8	13-45
190: Cresal-----	0-7	6-12	20.0-25.0	7.9-9.0	1-5	---	0-4	1-10
	7-27	8-15	20.0-30.0	7.9-9.0	3-15	0-1	4-16	10-25
	27-60	8-18	18.0-35.0	7.9-9.0	3-20	0-5	8-32	15-80
201: Dorper-----	0-2	5-15	3.0-10.0	7.9-9.0	0-5	---	0-2	1-12
	2-7	5-15	3.0-10.0	7.9-9.0	1-5	---	2-4	1-12
	7-17	35-45	21.0-28.0	7.9-9.0	1-10	0-1	2-8	13-45
	17-60	8-15	4.0-10.0	7.9-9.0	1-10	0-5	16-32	31-90

TABLE 17.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
221: Cleavage-----	0-7 7-15 15-19	15-25 20-35 ---	15.0-25.0 15.0-30.0 ---	6.6-7.8 6.6-7.8 ---	--- --- ---	--- --- ---	--- --- ---	--- --- ---
Burnborough-----	0-8 8-60	10-25 18-35	10.0-25.0 15.0-30.0	6.1-7.3 6.1-7.3	--- ---	--- ---	--- ---	--- ---
230: Coldent-----	0-9 9-19 19-31 31-60	1-5 6-12 2-10 1-5	0.0-4.0 3.0-7.0 0.0-7.0 0.0-4.0	7.9-9.0 7.9-9.0 7.9-9.0 7.9-9.0	--- 1-5 1-5 1-5	0-5 0-5 0-5 0-5	0-2 4-8 8-16 4-8	0-12 13-30 13-46 13-30
Isolde-----	0-4 4-60	0-5 0-5	1.0-5.0 1.0-5.0	6.6-8.4 6.6-8.4	0-1 0-3	--- 0-1	--- 0-2	0-5 0-5
Swingler-----	0-9 9-60	15-25 18-25	15.0-30.0 20.0-30.0	8.5-9.6 7.9-9.6	1-5 5-10	--- 0-1	16-32 8-16	13-45 13-45
231: Coldent-----	0-9 9-19 19-31 31-60	1-5 6-12 2-10 1-5	0.0-4.0 3.0-7.0 0.0-7.0 0.0-4.0	7.9-9.0 7.9-9.0 7.9-9.0 7.9-9.0	--- 1-5 1-5 1-5	0-5 0-5 0-5 0-5	0-2 4-8 8-16 4-8	0-12 13-30 13-46 13-30
Hawsley-----	0-5 5-60	0-5 0-5	1.0-5.0 1.0-5.0	6.6-8.4 7.4-9.0	--- 1-5	--- ---	--- 0-2	--- 1-5
Mazuma-----	0-6 6-22 22-60	5-15 5-15 5-15	3.0-9.0 3.0-9.0 3.0-9.0	8.5-9.6 8.5-9.6 7.9-9.6	1-5 5-10 5-10	--- 0-1 0-1	8-16 8-32 2-32	31-45 13-30 13-30
245: Dedmount-----	0-2 2-66	19-22 35-45	15.0-20.0 30.0-40.0	8.5-9.0 8.5-9.6	1-5 1-10	--- 0-2	0-2 8-16	31-45 13-45
Umberland-----	0-48 48-60	35-40 35-50	22.0-26.0 22.0-32.0	9.1-9.6 8.5-9.6	10-25 10-25	--- 1-5	16-32 4-16	46-90 46-90
Umberland-----	0-48 48-60	35-40 35-50	20.0-25.0 20.0-30.0	9.1-9.6 8.5-9.6	10-25 10-25	--- 1-5	16-32 4-16	46-90 31-90
250: Rock Outcrop.								
Devada-----	0-6 6-16 16-20	15-27 40-60 ---	20.0-30.0 32.0-48.0 ---	6.1-7.8 6.1-7.8 ---	--- --- ---	--- --- ---	--- --- ---	--- --- ---
300: Rock Outcrop.								
Envol-----	0-3 3-10 10-20	15-24 30-50 ---	9.0-15.0 18.0-31.0 ---	7.9-8.4 7.9-9.0 ---	1-5 5-10 ---	--- --- ---	0-2 0-2 ---	--- 0-5 ---

TABLE 17.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
300 (con.): Frines-----	0-3 3-13 13-24 24-47 47-51	18-27 35-45 3-10 --- ---	12.0-16.0 21.0-28.0 2.0-7.0 --- ---	7.9-9.0 7.9-9.0 7.9-9.0 --- ---	0-1 1-5 5-10 --- ---	--- --- --- --- ---	--- --- --- --- ---	0-12 0-12 0-12 --- ---
302: Envol-----	0-3 3-10 10-20	15-24 30-50 ---	9.0-15.0 18.0-31.0 ---	7.9-8.4 7.9-9.0 ---	1-5 5-10 ---	--- --- ---	0-2 0-2 ---	--- 0-5 ---
310: Rock Outcrop. Eaglerock-----	0-5 5-31 31-60	5-10 18-27 ---	10.0-20.0 15.0-30.0 ---	6.1-7.3 6.1-7.3 ---	--- --- ---	--- --- ---	--- --- ---	--- --- ---
401: Genegraf-----	0-6 6-18 18-60	8-14 25-35 5-10	5.0-12.0 15.0-30.0 2.0-8.0	7.9-9.6 8.5-9.6 7.9-9.6	0-1 1-5 1-10	--- --- ---	0-4 8-16 4-8	1-12 31-90 31-45
Dorper-----	0-2 2-7 7-17 17-60	5-15 5-15 35-45 8-15	3.0-10.0 3.0-10.0 21.0-28.0 4.0-10.0	7.9-9.0 7.9-9.0 7.9-9.0 7.9-9.0	0-5 1-5 1-10 1-10	--- --- 0-1 0-5	0-2 2-4 2-8 16-32	1-12 1-12 13-45 31-90
Bluewing-----	0-2 2-60	6-10 3-8	4.0-7.0 1.0-5.0	7.9-9.0 7.9-9.0	1-5 5-15	--- 0-1	0-2 0-4	1-12 1-12
402: Genegraf-----	0-5 5-12 12-21 21-60	8-14 25-35 8-16 5-10	5.0-12.0 15.0-30.0 5.0-13.0 2.0-8.0	7.9-9.6 8.5-9.6 8.5-9.6 7.9-9.6	0-1 1-5 1-5 1-10	--- --- --- ---	0-4 8-16 8-16 4-8	1-12 31-90 31-90 31-45
Bluewing-----	0-2 2-60	6-10 3-8	4.0-7.0 1.0-5.0	7.9-9.0 7.9-9.0	1-5 5-15	--- 0-1	0-2 0-4	1-12 1-12
Dorper-----	0-2 2-7 7-17 17-60	5-15 5-15 35-45 8-15	3.0-10.0 3.0-10.0 21.0-28.0 4.0-10.0	7.9-9.0 7.9-9.0 7.9-9.0 7.9-9.0	0-5 1-5 1-10 1-10	--- --- 0-1 0-5	0-2 2-4 2-8 16-32	1-12 1-12 13-45 31-90
404: Genegraf-----	0-6 6-18 18-60	8-14 25-35 5-10	5.0-12.0 15.0-30.0 2.0-8.0	7.9-9.6 8.5-9.6 7.9-9.6	0-1 1-5 1-10	--- --- ---	0-4 8-16 4-8	1-12 31-90 31-45
Toulon-----	0-6 6-14 14-60	10-12 12-15 0-3	5.0-10.0 5.0-10.0 0.0-3.0	7.9-9.0 7.9-9.0 7.9-9.0	0-5 1-5 1-5	0-2 0-2 0-2	2-4 2-4 2-4	0-12 0-12 0-12
410: Granshaw-----	0-13 13-23 23-60	4-10 10-17 2-8	0.0-5.0 5.0-15.0 0.0-5.0	7.9-9.0 7.9-9.0 7.9-9.6	--- 1-5 5-15	--- --- ---	0-2 0-2 0-2	--- --- ---

TABLE 17.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
431:								
Grumbler-----	0-4	16-24	11.0-18.0	7.4-8.4	---	---	---	---
	4-8	35-50	21.0-32.0	7.4-8.4	---	---	---	---
	8-18	35-50	21.0-31.0	7.9-8.4	1-5	---	0-4	0-5
	18-22	---	---	---	---	---	---	---
Pickup-----	0-5	14-22	10.0-18.0	6.6-8.4	---	---	---	---
	5-22	40-55	25.0-37.0	6.6-8.4	---	---	0-2	0-5
	22-32	---	---	---	---	---	---	---
432:								
Grumbler-----	0-4	16-24	11.0-18.0	7.4-8.4	---	---	---	---
	4-8	35-50	21.0-32.0	7.4-8.4	---	---	---	---
	8-18	35-50	21.0-31.0	7.9-8.4	1-5	---	0-4	0-5
	18-22	---	---	---	---	---	---	---
Pickup-----	0-5	14-22	10.0-18.0	6.6-8.4	---	---	---	---
	5-22	40-55	25.0-37.0	6.6-8.4	---	---	0-2	0-5
	22-32	---	---	---	---	---	---	---
Old Camp-----	0-6	8-20	7.0-16.0	6.6-7.8	---	---	---	0-5
	6-18	27-35	17.0-23.0	6.6-9.0	0-5	---	0-2	0-5
	18-22	---	---	---	---	---	---	---
451:								
Hawsley-----	0-5	0-5	1.0-5.0	6.6-8.4	---	---	---	---
	5-60	0-5	1.0-5.0	7.4-9.0	1-5	---	0-2	1-5
452:								
Hawsley-----	0-5	0-5	1.0-5.0	6.6-8.4	---	---	---	---
	5-60	0-5	1.0-5.0	7.4-9.0	1-5	---	0-2	1-5
Labkey-----	0-4	5-12	3.0-8.0	7.9-8.4	---	---	0-2	1-5
	4-12	5-12	3.0-8.0	7.9-9.0	---	---	0-2	1-12
	12-60	2-8	1.0-6.0	7.9-9.0	1-5	---	2-4	1-12
Genegraf-----	0-6	8-14	5.0-12.0	7.9-9.0	1-5	---	0-4	1-12
	6-18	25-35	15.0-30.0	8.5-9.0	5-10	---	8-16	31-90
	18-60	8-16	5.0-13.0	8.5-9.0	5-10	---	8-32	31-45
453:								
Hawsley-----	0-5	0-5	1.0-5.0	6.6-8.4	---	---	---	---
	5-60	0-5	1.0-5.0	7.4-9.0	1-5	---	0-2	1-5
Bluewing-----	0-2	3-10	2.0-8.0	7.4-9.0	0-5	---	0-2	0-5
	2-60	3-10	2.0-8.0	7.4-9.0	1-5	---	0-4	0-12
456:								
Hawsley-----	0-5	0-5	1.0-5.0	6.6-8.4	---	---	---	---
	5-60	0-5	1.0-5.0	7.4-9.0	1-5	---	0-2	0-5
Badland-----	0-6	35-70	20.0-40.0	7.4-9.6	1-5	1-10	0-32	0-99
	6-60	35-70	20.0-40.0	7.4-9.6	1-10	1-15	0-32	0-99
462:								
Hawsley-----	0-5	0-5	1.0-5.0	6.6-8.4	---	---	---	---
	5-60	0-5	1.0-5.0	7.4-9.0	1-5	---	0-2	1-5
Mazuma-----	0-6	5-15	3.0-9.0	8.5-9.6	1-5	---	4-8	13-30
	6-22	5-15	3.0-9.0	8.5-9.6	5-10	0-1	8-32	13-30
	22-60	5-15	3.0-9.0	7.9-9.6	5-10	0-1	2-32	13-30

TABLE 17.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth		Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
470:									
Deadyon-----	0-5	8-15		5.0-15.0	7.4-8.4	---	---	---	---
	5-24	12-18		10.0-15.0	7.4-8.4	---	---	---	0-5
	24-35	3-8		2.0-7.0	7.4-8.4	---	---	---	0-12
	35-60	3-7		2.0-5.0	7.9-9.0	---	---	0-2	1-12
471:									
Deadyon-----	0-14	2-6		5.0-10.0	7.9-8.4	---	---	---	---
	14-26	12-18		10.0-15.0	7.4-8.4	---	---	---	0-5
	26-41	3-8		2.0-7.0	7.4-8.4	---	---	---	0-12
	41-60	3-7		2.0-5.0	7.9-9.0	---	---	0-2	1-12
Granshaw-----	0-13	4-10		0.0-5.0	7.9-9.0	---	---	0-2	---
	13-23	10-17		5.0-15.0	7.9-9.0	1-5	---	0-2	---
	23-60	2-8		0.0-5.0	7.9-9.6	5-15	---	0-2	---
472:									
Deadyon-----	0-5	5-15		5.0-15.0	6.6-8.4	---	---	---	---
	5-24	12-18		10.0-15.0	7.4-8.4	---	---	---	0-5
	24-35	3-8		2.0-7.0	7.4-8.4	---	---	---	0-12
	35-60	3-7		2.0-5.0	7.9-9.0	---	---	0-2	1-12
480:									
Humboldt-----	0-12	30-40		15.0-40.0	8.5-9.0	1-10	---	4-8	13-30
	12-36	35-45		20.0-35.0	7.9-9.0	1-10	---	2-32	13-30
	36-60	20-35		10.0-30.0	7.9-9.0	1-10	---	2-32	1-12
500:									
Isolde-----	0-4	0-5		1.0-5.0	6.6-8.4	0-1	---	---	0-5
	4-60	0-5		1.0-5.0	6.6-8.4	0-3	0-1	0-2	0-5
Typic Torriorthents--	0-5	2-5		1.0-5.0	7.9-9.0	1-3	---	0-4	13-30
	5-60	---		---	---	---	---	---	---
Dune Land-----	0-6	0-1		0.0-1.0	7.4-8.4	---	---	---	---
	6-60	0-1		0.0-1.0	7.4-8.4	---	---	---	---
502:									
Isolde-----	0-4	0-5		1.0-5.0	6.6-8.4	0-1	---	---	0-5
	4-60	0-5		1.0-5.0	6.6-8.4	0-3	0-1	0-2	0-5
Ragtown-----	0-7	12-24		10.0-25.0	7.9-9.6	0-1	---	16-32	1-5
	7-16	28-35		20.0-30.0	7.9-9.6	0-1	0-1	16-32	1-12
	16-60	35-45		20.0-35.0	7.9-9.6	0-5	0-5	4-16	1-12
503:									
Isolde-----	0-4	0-5		1.0-5.0	6.6-8.4	0-1	---	---	0-5
	4-60	0-5		1.0-5.0	6.6-8.4	0-3	0-1	0-2	0-5
510:									
Juva-----	0-8	10-20		7.0-16.0	7.9-9.0	0-5	---	0-2	1-12
	8-60	5-15		4.0-11.0	7.9-9.0	1-10	---	0-4	13-30
550:									
Kumiva-----	0-5	6-12		4.0-7.0	7.4-9.0	1-2	---	0-2	0-12
	5-56	6-12		4.0-7.0	7.4-9.0	1-5	---	0-2	0-12
	56-60	5-10		3.0-7.0	7.4-9.0	1-5	---	0-4	0-12

TABLE 17.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
550 (con.): Labkey-----	0-4 4-12 12-60	5-12 5-12 2-8	3.0-8.0 3.0-8.0 1.0-6.0	7.9-8.4 7.9-9.0 7.9-9.0	--- --- 1-5	--- --- ---	0-2 0-2 2-4	1-5 1-12 1-12
Chumall-----	0-5 5-19 19-44 44-60	12-22 18-27 18-35 1-5	9.0-14.0 12.0-18.0 12.0-22.0 0.0-4.0	7.9-9.0 8.5-9.0 8.5-9.0 8.5-9.0	1-5 1-5 1-5 1-5	--- --- 0-1 0-1	16-32 16-32 16-32 16-32	13-30 46-90 46-90 46-90
551: Kumiva-----	0-5 5-56 56-60	10-16 6-12 5-10	6.0-10.0 4.0-7.0 3.0-7.0	7.4-9.0 7.4-9.0 7.4-9.0	1-5 1-5 1-5	--- --- ---	0-2 0-2 0-4	0-12 0-12 0-12
Kumiva-----	0-5 5-56 56-60	6-12 6-12 5-10	4.0-7.0 4.0-7.0 3.0-7.0	7.4-9.0 7.4-9.0 7.4-9.0	1-2 1-5 1-5	--- --- ---	0-2 0-2 0-4	0-12 0-12 0-12
553: Kumiva-----	0-5 5-56 56-60	6-12 6-12 5-10	4.0-7.0 4.0-7.0 3.0-7.0	7.4-9.0 7.4-9.0 7.4-9.0	1-2 1-5 1-5	--- --- ---	0-2 0-2 0-4	0-12 0-12 0-12
559: Phliss-----	0-3 3-13 13-23	15-20 20-30 ---	11.0-16.0 12.0-19.0 ---	7.9-8.4 7.9-8.4 ---	0-1 1-5 ---	--- --- ---	0-2 0-2 ---	--- --- ---
Phliss-----	0-1 1-10 10-14	15-20 20-30 ---	11.0-16.0 12.0-19.0 ---	7.9-8.4 7.9-8.4 ---	0-1 1-5 ---	--- --- ---	0-2 0-2 ---	--- --- ---
Majuba-----	0-6 6-23 23-35 35-39	12-18 20-30 12-18 ---	9.0-15.0 13.0-23.0 7.0-14.0 ---	7.4-8.4 7.9-9.0 7.9-9.0 ---	--- 0-1 1-5 ---	--- --- --- ---	--- --- 0-2 ---	--- --- --- ---
560: Phliss-----	0-3 3-13 13-23	15-20 20-30 ---	11.0-16.0 12.0-19.0 ---	7.9-8.4 7.9-8.4 ---	0-1 1-5 ---	--- --- ---	0-2 0-2 ---	--- --- ---
562: Sondoa-----	0-4 4-60	20-27 25-35	20.0-35.0 25.0-40.0	8.5-9.6 8.5-9.6	5-15 5-15	--- 0-1	16-32 4-16	46-90 91-130
563: Sondoa-----	0-4 4-60	20-27 25-35	20.0-35.0 25.0-40.0	8.5-9.6 8.5-9.6	5-15 5-15	--- 0-1	16-32 4-16	46-90 91-130
Swingler-----	0-9 9-60	15-25 18-25	15.0-30.0 20.0-30.0	8.5-9.6 7.9-9.6	1-5 5-10	--- 0-1	16-32 8-16	13-45 13-45
Isolde-----	0-4 4-60	0-5 0-5	1.0-5.0 1.0-5.0	6.6-8.4 6.6-8.4	0-1 0-3	--- 0-1	--- 0-2	0-5 0-5
650: Labkey-----	0-4 4-12 12-60	5-12 5-12 2-8	3.0-8.0 3.0-8.0 1.0-6.0	7.9-8.4 7.9-9.0 7.9-9.0	--- --- 1-5	--- --- ---	0-2 0-2 2-4	1-5 1-12 1-12

TABLE 17.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
651:								
Labkey-----	0-4	5-12	3.0-8.0	7.9-8.4	---	---	0-2	1-5
	4-12	5-12	3.0-8.0	7.9-9.0	---	---	0-2	1-12
	12-60	2-8	1.0-6.0	7.9-9.0	1-5	---	2-4	1-12
Mazuma-----	0-6	5-15	3.0-9.0	8.5-9.6	1-5	---	8-16	13-30
	6-22	5-15	3.0-9.0	8.5-9.6	5-10	0-1	8-32	13-30
	22-60	5-15	3.0-9.0	7.9-9.6	5-10	0-1	2-32	13-30
Hawsley-----	0-5	0-5	1.0-5.0	6.6-8.4	---	---	---	---
	5-60	0-5	1.0-5.0	7.4-9.0	1-5	---	0-2	0-5
652:								
Labkey-----	0-4	5-12	3.0-8.0	7.9-8.4	---	---	0-2	1-5
	4-12	5-12	3.0-8.0	7.9-9.0	---	---	0-2	1-12
	12-60	2-8	1.0-6.0	7.9-9.0	1-5	---	2-4	1-12
Hawsley-----	0-5	0-5	1.0-5.0	6.6-8.4	---	---	---	---
	5-60	0-5	1.0-5.0	7.4-9.0	1-5	---	0-2	0-5
Granshaw-----	0-13	4-10	0.0-5.0	7.9-9.0	---	---	0-2	---
	13-23	10-17	5.0-15.0	7.9-9.0	1-5	---	0-2	---
	23-60	2-8	0.0-5.0	7.9-9.6	5-15	---	0-2	---
653:								
Labkey-----	0-4	5-12	3.0-8.0	7.9-8.4	---	---	0-2	1-5
	4-12	5-12	3.0-8.0	7.9-9.0	---	---	0-2	1-12
	12-60	2-8	1.0-6.0	7.9-9.0	1-5	---	2-4	1-12
Mazuma-----	0-6	8-12	5.0-8.0	7.9-9.6	1-5	---	0-4	1-5
	6-60	5-15	3.0-9.0	7.9-9.6	1-10	---	4-16	13-45
700:								
Mazuma-----	0-6	10-14	6.0-10.0	7.9-9.6	1-5	---	0-4	1-5
	6-60	5-15	3.0-9.0	7.9-9.6	1-10	---	4-16	13-45
Trocken-----	0-6	5-15	3.0-10.0	7.9-9.0	0-1	---	0-2	5-12
	6-60	8-18	5.0-12.0	7.9-9.6	0-5	---	2-4	13-45
701:								
Mazuma-----	0-6	10-14	6.0-10.0	7.9-9.6	1-5	---	0-4	1-5
	6-60	5-15	3.0-9.0	7.9-9.6	1-10	---	4-16	13-45
702:								
Mazuma-----	0-6	5-15	3.0-9.0	8.5-9.6	1-5	---	8-16	13-30
	6-22	5-15	3.0-9.0	8.5-9.6	5-10	0-1	8-32	13-30
	22-60	5-15	3.0-9.0	7.9-9.6	5-10	0-1	2-32	13-30
Swingler-----	0-9	15-25	15.0-30.0	8.5-9.6	1-5	---	16-32	13-45
	9-60	18-25	20.0-30.0	7.9-9.6	5-10	0-1	8-16	13-45
Toulon-----	0-6	10-12	5.0-10.0	7.9-9.0	0-5	0-2	2-4	0-12
	6-14	12-15	5.0-10.0	7.9-9.0	1-5	0-2	2-4	0-12
	14-60	0-3	0.0-3.0	7.9-9.0	1-5	0-2	2-4	0-12
703:								
Mazuma-----	0-6	3-8	2.0-6.0	7.9-9.6	1-5	---	0-4	1-5
	6-60	5-15	3.0-9.0	7.9-9.6	1-10	---	4-16	13-45

TABLE 17.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth In	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
		Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
703 (con.): Hardhat-----	0-3 3-41 41-60	1-5 8-18 5-15	0.0-3.0 4.0-12.0 3.0-10.0	7.9-8.4 7.9-9.0 7.9-9.0	1-10 10-20 10-20	--- 1-2 1-5	0-4 0-2 2-8	1-5 1-12 13-30
Hawsley-----	0-5 5-60	0-5 0-5	1.0-5.0 1.0-5.0	6.6-8.4 7.4-9.0	--- 1-5	--- ---	--- 0-2	--- 1-5
704: Mazuma-----	0-6 6-22 22-60	5-15 5-15 5-15	3.0-9.0 3.0-9.0 3.0-9.0	8.5-9.6 8.5-9.6 7.9-9.6	1-5 5-10 5-10	--- 0-1 0-1	16-32 8-32 2-32	46-90 13-30 13-30
705: Mazuma-----	0-6 6-60	3-8 5-15	2.0-6.0 3.0-9.0	7.9-9.6 7.9-9.6	1-5 1-10	--- ---	0-4 4-16	1-5 13-45
Mazuma-----	0-6 6-22 22-60	5-15 5-15 5-15	3.0-9.0 3.0-9.0 3.0-9.0	8.5-9.6 8.5-9.6 7.9-9.6	1-5 5-10 5-10	--- 0-1 0-1	16-32 8-32 2-32	46-90 13-30 13-30
706: Mazuma-----	0-6 6-22 22-60	5-15 5-15 5-15	3.0-9.0 3.0-9.0 3.0-9.0	8.5-9.6 8.5-9.6 7.9-9.6	1-5 5-10 5-10	--- 0-1 0-1	8-16 8-32 2-32	31-45 13-30 13-30
707: Mazuma-----	0-6 6-60	8-12 5-15	5.0-8.0 3.0-9.0	7.9-9.6 7.9-9.6	1-5 1-10	--- ---	0-4 4-16	1-5 13-45
Coldent-----	0-9 9-19 19-31 31-60	1-5 6-12 2-10 1-5	0.0-4.0 3.0-7.0 0.0-7.0 0.0-4.0	7.9-9.0 7.9-9.0 7.9-9.0 7.9-9.0	--- 1-5 1-5 1-5	0-5 0-5 0-5 0-5	0-2 4-8 8-16 4-8	0-12 13-30 13-46 13-30
708: Mazuma-----	0-6 6-22 22-60	5-15 5-15 5-15	3.0-9.0 3.0-9.0 3.0-9.0	8.5-9.6 8.5-9.6 7.9-9.6	1-5 5-10 5-10	--- 0-1 0-1	8-16 8-32 2-32	31-45 13-30 13-30
Ragtown-----	0-7 7-16 16-60	27-35 28-35 35-45	25.0-35.0 20.0-30.0 20.0-35.0	7.9-9.6 7.9-9.6 7.9-9.6	0-1 0-1 0-5	--- 0-1 0-5	16-32 16-32 4-16	1-5 1-12 1-12
750: Rock Outcrop.								
Pickup-----	0-5 5-22 22-32	14-22 40-55 ---	10.0-18.0 25.0-37.0 ---	6.6-8.4 6.6-8.4 ---	--- --- ---	--- --- ---	--- 0-2 ---	--- 0-5 ---
751: Rock Outcrop.								
Pickup-----	0-5 5-22 22-32	14-22 40-55 ---	10.0-18.0 25.0-37.0 ---	6.6-8.4 6.6-8.4 ---	--- --- ---	--- --- ---	--- 0-2 ---	--- 0-5 ---

TABLE 17.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
751 (con.): Grumbler-----	0-4	16-24	11.0-18.0	7.4-8.4	---	---	---	---
	4-8	35-50	21.0-32.0	7.4-8.4	---	---	---	---
	8-18	35-50	21.0-31.0	7.9-8.4	1-5	---	0-4	0-5
	18-22	---	---	---	---	---	---	---
752: Pickup-----	0-5	14-22	10.0-18.0	6.6-8.4	---	---	---	---
	5-22	40-55	25.0-37.0	6.6-8.4	---	---	0-2	0-5
	22-32	---	---	---	---	---	---	---
Old Camp-----	0-6	8-20	7.0-16.0	6.6-7.8	---	---	---	0-5
	6-18	27-35	17.0-23.0	6.6-9.0	0-5	---	0-2	0-5
	18-22	---	---	---	---	---	---	---
Theon-----	0-3	12-20	7.0-13.0	6.6-8.4	0-1	---	0-2	0-12
	3-9	25-35	15.0-22.0	6.6-9.0	0-1	---	0-2	0-12
	9-12	---	---	---	---	---	---	---
	12-16	---	---	---	---	---	---	---
753: Rock Outcrop. Pickup-----	0-5	14-22	10.0-18.0	6.6-8.4	---	---	---	---
	5-22	40-55	25.0-37.0	6.6-8.4	---	---	0-2	0-5
	22-32	---	---	---	---	---	---	---
800: Old Camp-----	0-6	8-20	7.0-16.0	6.6-7.8	---	---	---	0-5
	6-18	27-35	17.0-23.0	6.6-9.0	0-5	---	0-2	0-5
	18-22	---	---	---	---	---	---	---
Dorper-----	0-2	5-15	5.0-15.0	7.9-9.0	0-1	---	0-2	1-12
	2-7	5-15	5.0-15.0	7.9-9.0	0-5	---	2-4	1-12
	7-17	35-45	25.0-35.0	7.9-9.0	0-5	0-1	2-8	13-45
	17-60	8-15	5.0-15.0	7.9-9.0	1-10	0-5	16-32	31-90
Pokergap-----	0-6	6-12	4.0-8.0	7.9-8.4	---	---	0-2	1-12
	6-14	20-30	12.0-19.0	7.9-9.0	1-2	---	0-4	13-30
	14-50	7-15	4.0-10.0	7.9-9.0	1-3	---	0-4	31-45
	50-60	5-10	3.0-7.0	7.9-9.0	1-3	---	0-4	13-30
801: Old Camp-----	0-6	8-20	7.0-16.0	6.6-7.8	---	---	---	0-5
	6-18	27-35	17.0-23.0	6.6-9.0	0-5	---	0-2	0-5
	18-22	---	---	---	---	---	---	---
Sumya-----	0-4	30-40	20.0-35.0	6.6-7.3	---	---	---	---
	4-8	35-45	25.0-40.0	6.6-7.8	---	---	---	---
	8-12	---	---	---	---	---	---	---
Pickup-----	0-5	14-22	10.0-18.0	6.6-8.4	---	---	---	---
	5-22	40-55	25.0-37.0	6.6-8.4	---	---	0-2	0-5
	22-32	---	---	---	---	---	---	---
810: Perwaso-----	0-3	18-27	13.0-17.0	8.5-9.0	1-5	---	16-32	31-45
	3-36	18-27	12.0-17.0	7.9-9.0	1-5	---	16-32	31-175
	36-60	3-7	2.0-5.0	7.9-9.0	1-5	---	8-16	31-45

TABLE 17.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
981 (con.): Selbit-----	0-4 4-17 17-60	2-5 3-8 ---	5.0-13.0 4.0-11.0 ---	6.6-7.8 6.6-7.8 ---	--- --- ---	--- --- ---	--- --- ---	--- --- ---
Upsel-----	0-2 2-60	5-10 5-10	5.0-10.0 4.0-10.0	6.6-7.3 6.6-7.3	--- ---	--- ---	--- ---	--- ---
990: Shawave-----	0-8 8-21 21-37 37-60	6-12 18-25 4-10 2-6	6.0-12.0 16.0-24.0 2.0-10.0 2.0-4.0	7.4-8.4 7.4-8.4 7.4-8.4 7.4-8.4	--- --- 0-4 0-4	--- --- --- ---	0-2 0-2 0-2 0-2	0-12 0-12 5-12 5-12
Granshaw-----	0-13 13-23 23-60	4-10 10-17 2-8	0.0-5.0 5.0-15.0 0.0-5.0	7.9-9.0 7.9-9.0 7.9-9.6	--- 1-5 5-15	--- --- ---	0-2 0-2 0-2	--- --- ---
Labkey-----	0-4 4-12 12-60	5-12 5-12 2-8	3.0-8.0 3.0-8.0 1.0-6.0	7.9-8.4 7.9-9.0 7.9-9.0	--- --- 1-5	--- --- ---	0-2 0-2 2-4	1-5 1-12 1-12
991: Shawave-----	0-8 8-21 21-37 37-60	6-12 18-25 4-10 2-6	6.0-12.0 16.0-24.0 2.0-10.0 2.0-4.0	7.4-8.4 7.4-8.4 7.4-8.4 7.4-8.4	--- --- 0-4 0-4	--- --- --- ---	0-2 0-2 0-2 0-2	0-12 0-12 5-12 5-12
Slipback-----	0-9 9-24 24-38 38-60	6-12 25-35 3-8 2-6	5.0-11.0 15.0-23.0 2.0-5.0 1.0-4.0	7.9-8.4 7.9-9.0 7.9-9.0 7.9-9.0	--- 0-5 1-5 0-1	--- --- 1-5 1-5	0-2 0-8 0-4 0-4	5-12 13-45 13-30 13-30
Granshaw-----	0-13 13-23 23-60	4-10 10-17 2-8	0.0-5.0 5.0-15.0 0.0-5.0	7.9-9.0 7.9-9.0 7.9-9.6	--- 1-5 5-15	--- --- ---	0-2 0-2 0-2	--- --- ---
992: Shawave-----	0-8 8-21 21-37 37-60	6-12 18-25 4-10 2-6	6.0-12.0 16.0-24.0 2.0-10.0 2.0-4.0	7.4-8.4 7.4-8.4 7.4-8.4 7.4-8.4	--- --- 0-4 0-4	--- --- --- ---	0-2 0-2 0-2 0-2	0-12 0-12 5-12 5-12
Deadyon-----	0-5 5-24 24-35 35-60	8-15 12-18 3-8 3-7	5.0-15.0 10.0-15.0 2.0-7.0 2.0-5.0	7.4-8.4 7.4-8.4 7.4-8.4 7.9-9.0	--- --- --- ---	--- --- --- ---	--- --- --- 0-2	--- 0-5 0-12 1-12
Slipback-----	0-9 9-24 24-38 38-60	6-12 25-35 3-8 2-6	5.0-11.0 15.0-23.0 2.0-5.0 1.0-4.0	7.9-8.4 7.9-9.0 7.9-9.0 7.9-9.0	--- 0-5 1-5 0-1	--- --- 1-5 1-5	0-2 0-8 0-4 0-4	5-12 13-45 13-30 13-30
993: Shawave-----	0-8 8-21 21-37 37-60	6-12 18-25 4-10 2-6	6.0-12.0 16.0-24.0 2.0-10.0 2.0-4.0	7.4-8.4 7.4-8.4 7.4-8.4 7.4-8.4	--- --- 0-4 0-4	--- --- --- ---	0-2 0-2 0-2 0-2	0-12 0-12 5-12 5-12

TABLE 17.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
1022 (con.): Soar-----	0-3 3-6 6-28 28-38	12-20 20-26 --- ---	7.0-14.0 12.0-16.0 --- ---	6.6-7.8 6.6-7.8 --- ---	--- --- --- ---	--- --- --- ---	--- --- --- ---	--- --- --- ---
Arclay-----	0-5 5-16 16-42 42-46	5-12 25-35 --- ---	5.0-11.0 16.0-25.0 --- ---	6.6-7.8 6.6-7.8 --- ---	--- --- --- ---	--- --- --- ---	--- --- --- ---	--- --- --- ---
1030: Pokergap-----	0-6 6-14 14-50 50-60	6-12 20-30 7-15 4-10	4.0-8.0 12.0-19.0 4.0-10.0 3.0-10.0	7.9-8.4 7.9-9.0 7.9-9.0 7.9-9.0	--- 1-2 1-3 1-3	--- --- --- ---	0-2 0-4 0-4 0-4	1-12 13-30 31-45 13-30
1031: Pokergap-----	0-6 6-14 14-50 50-60	6-12 20-30 7-15 4-10	4.0-8.0 12.0-19.0 4.0-10.0 3.0-10.0	7.9-8.4 7.9-9.0 7.9-9.0 7.9-9.0	--- 1-2 1-3 1-3	--- --- --- ---	0-2 0-4 0-4 0-4	1-12 13-30 31-45 13-30
Dorper-----	0-2 2-7 7-17 17-60	5-15 5-15 35-45 8-15	3.0-10.0 3.0-10.0 21.0-28.0 4.0-10.0	7.9-9.0 7.9-9.0 7.9-9.0 7.9-9.0	0-5 1-5 1-10 1-10	--- --- 0-1 0-5	0-2 2-4 2-8 16-32	1-12 1-12 13-45 31-90
1032: Pokergap-----	0-6 6-14 14-50 50-60	6-12 20-30 7-15 5-10	4.0-8.0 12.0-19.0 4.0-10.0 3.0-7.0	7.9-8.4 7.9-9.0 7.9-9.0 7.9-9.0	--- 1-2 1-3 1-3	--- --- --- ---	0-2 0-4 0-4 0-4	1-12 13-30 31-45 13-30
Dorper-----	0-2 2-7 7-17 17-60	5-15 5-15 35-45 8-15	5.0-15.0 5.0-15.0 25.0-35.0 5.0-15.0	7.9-9.0 7.9-9.0 7.9-9.0 7.9-9.0	0-1 0-5 0-5 1-10	--- --- 0-1 0-5	0-2 2-4 2-8 16-32	1-12 1-12 13-45 31-90
1033: Pokergap-----	0-6 6-14 14-50 50-60	12-18 20-30 7-15 4-10	7.0-15.0 12.0-19.0 4.0-10.0 3.0-10.0	7.9-8.4 7.9-9.0 7.9-9.0 7.9-9.0	--- 1-2 1-3 1-3	--- --- --- ---	0-2 0-4 0-4 0-4	1-12 13-30 31-45 13-30
Jerval-----	0-8 8-20 20-60	5-10 27-35 5-12	8.0-20.0 20.0-30.0 2.0-10.0	7.9-8.4 7.9-9.0 7.9-9.0	0-2 1-5 1-10	--- 0-3 1-5	2-4 8-16 8-16	1-12 13-30 13-30
Dorper-----	0-2 2-7 7-17 17-60	5-15 5-15 35-45 8-15	5.0-15.0 5.0-15.0 25.0-35.0 5.0-15.0	7.9-9.0 7.9-9.0 7.9-9.0 7.9-9.0	0-1 0-5 0-5 1-10	--- --- 0-1 0-5	0-2 2-4 2-8 16-32	1-12 1-12 13-45 31-90
1034: Pokergap-----	0-6 6-14 14-50 50-60	6-12 20-30 7-15 5-10	4.0-8.0 12.0-19.0 4.0-10.0 3.0-7.0	7.9-8.4 7.9-9.0 7.9-9.0 7.9-9.0	--- 1-2 1-3 1-3	--- --- --- ---	0-2 0-4 0-4 0-4	1-12 13-30 31-45 13-30

TABLE 17.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
1100 (con.): Unionville-----	0-5 5-23 23-27	5-10 5-10 ---	0.0-10.0 0.0-10.0 ---	8.5-9.0 8.5-9.0 ---	1-5 1-5 ---	--- 0-1 ---	0-4 0-4 ---	1-12 1-12 ---
1150: Rock Outcrop.								
Slocave-----	0-1 1-7 7-27 27-37	6-14 6-16 --- ---	4.0-10.0 4.0-12.0 --- ---	7.9-8.4 7.9-8.4 --- ---	1-5 1-5 --- ---	--- --- --- ---	0-2 0-2 --- ---	--- --- --- ---
Arclay-----	0-5 5-16 16-42 42-46	5-12 25-35 --- ---	5.0-11.0 17.0-25.0 --- ---	6.6-7.8 6.6-7.8 --- ---	--- --- --- ---	--- --- --- ---	--- --- --- ---	--- --- --- ---
1151: Slocave-----	0-1 1-7 7-27 27-37	6-14 6-16 --- ---	4.0-10.0 4.0-12.0 --- ---	7.9-8.4 7.9-8.4 --- ---	1-5 1-5 --- ---	--- --- --- ---	0-2 0-2 --- ---	--- --- --- ---
Vium-----	0-3 3-8 8-12	6-12 10-18 ---	4.0-8.0 6.0-12.0 ---	7.9-8.4 7.9-8.4 ---	1-3 1-5 ---	--- --- ---	0-2 0-2 ---	0-12 0-12 ---
1190: Woolsey-----	0-8 8-12 12-60	4-12 8-18 5-10	0.0-10.0 5.0-10.0 0.0-10.0	8.5-9.0 8.5-9.0 8.5-9.0	1-5 1-5 1-5	--- 0-1 0-1	2-4 0-4 0-4	1-12 1-12 1-12
Bluewing-----	0-5 5-60	6-10 3-8	4.0-7.0 1.0-5.0	7.9-9.0 7.9-9.0	1-5 5-15	--- 0-1	0-2 0-4	1-12 1-12
1200: Acrelane-----	0-6 6-15 15-60	6-12 18-30 ---	8.0-15.0 15.0-25.0 ---	6.1-7.3 6.6-7.8 ---	--- --- ---	--- --- ---	--- --- ---	--- --- ---
Soar-----	0-3 3-6 6-28 28-38	12-20 20-26 --- ---	7.0-14.0 12.0-16.0 --- ---	6.6-7.8 6.6-7.8 --- ---	--- --- --- ---	--- --- --- ---	--- --- --- ---	--- --- --- ---
Arclay-----	0-5 5-16 16-42 42-46	5-12 25-35 --- ---	5.0-11.0 17.0-25.0 --- ---	6.6-7.8 6.6-7.8 --- ---	--- --- --- ---	--- --- --- ---	--- --- --- ---	--- --- --- ---
1201: Acrelane-----	0-6 6-15 15-60	6-12 18-30 ---	8.0-15.0 15.0-25.0 ---	6.1-7.3 6.6-7.8 ---	--- --- ---	--- --- ---	--- --- ---	--- --- ---
Wedekind-----	0-5 5-18 18-60	8-15 22-32 ---	5.0-15.0 20.0-25.0 ---	6.1-7.3 6.1-7.3 ---	--- --- ---	--- --- ---	--- --- ---	--- --- ---

TABLE 17.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation- exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	Pct	mmhos/cm	
1300: Yipor-----	0-10	8-18	5.0-12.0	8.5-9.0	5-10	---	0-4	1-12
	10-34	8-18	5.0-12.0	8.5-9.0	5-10	0-1	4-8	13-30
	34-60	8-18	5.0-12.0	8.5-9.0	5-10	0-5	8-32	13-45
1400: Jerval-----	0-8	5-10	8.0-20.0	7.9-8.4	0-2	---	2-4	1-12
	8-20	27-35	20.0-30.0	7.9-9.0	1-5	0-3	8-16	13-30
	20-60	5-12	2.0-10.0	7.9-9.0	1-10	1-5	8-16	13-30
Dorper-----	0-2	5-15	5.0-15.0	7.9-9.0	0-1	---	0-2	1-12
	2-7	5-15	5.0-15.0	7.9-9.0	0-5	---	2-4	1-12
	7-17	35-45	25.0-35.0	7.9-9.0	0-5	0-1	2-8	13-45
	17-60	8-15	5.0-15.0	7.9-9.0	1-10	0-5	16-32	31-90
1401: Jerval-----	0-8	5-10	8.0-20.0	7.9-8.4	0-2	---	2-4	1-12
	8-20	27-35	20.0-30.0	7.9-9.0	1-5	0-3	8-16	13-30
	20-60	5-12	2.0-10.0	7.9-9.0	1-10	1-5	8-16	13-30
Aboten-----	0-7	5-15	4.0-11.0	7.9-9.0	0-5	---	0-2	1-12
	7-15	25-35	15.0-22.0	7.9-9.0	1-5	---	2-4	13-90
	15-27	---	---	---	---	---	---	---
	27-60	3-8	1.0-6.0	7.9-9.0	1-10	0-5	4-16	31-45
Dorper-----	0-2	5-15	3.0-10.0	7.9-9.0	0-5	---	0-2	1-12
	2-7	5-15	3.0-10.0	7.9-9.0	1-5	---	2-4	1-12
	7-17	35-45	21.0-28.0	7.9-9.0	1-10	0-1	2-8	13-45
	17-60	8-15	4.0-10.0	7.9-9.0	1-10	0-5	16-32	31-90
1410: Slipback-----	0-9	6-12	5.0-11.0	7.9-8.4	---	---	0-2	5-12
	9-24	25-35	15.0-23.0	7.9-9.0	0-5	---	0-8	13-45
	24-38	3-8	2.0-5.0	7.9-9.0	1-5	1-5	0-4	13-30
	38-60	2-6	1.0-4.0	7.9-9.0	0-1	1-5	0-4	13-30
Shawave-----	0-8	6-12	6.0-12.0	7.4-8.4	---	---	0-2	0-13
	8-21	18-25	16.0-24.0	7.4-8.4	---	---	0-2	0-13
	21-37	4-10	2.0-10.0	7.4-8.4	0-4	---	0-2	5-13
	37-60	2-6	2.0-4.0	7.4-8.4	0-4	---	0-2	5-13
Nodur-----	0-4	5-10	5.0-11.0	6.6-7.8	---	---	0-4	0-5
	4-16	35-50	24.0-42.0	7.9-9.0	0-3	---	4-16	13-45
	16-60	5-10	3.0-7.0	7.9-9.0	1-5	0-1	0-8	13-45
1610: Lovelock-----	0-15	15-27	25.0-50.0	7.9-9.0	5-10	---	16-32	13-30
	15-60	35-60	25.0-65.0	7.9-9.0	5-15	0-1	0-8	13-30

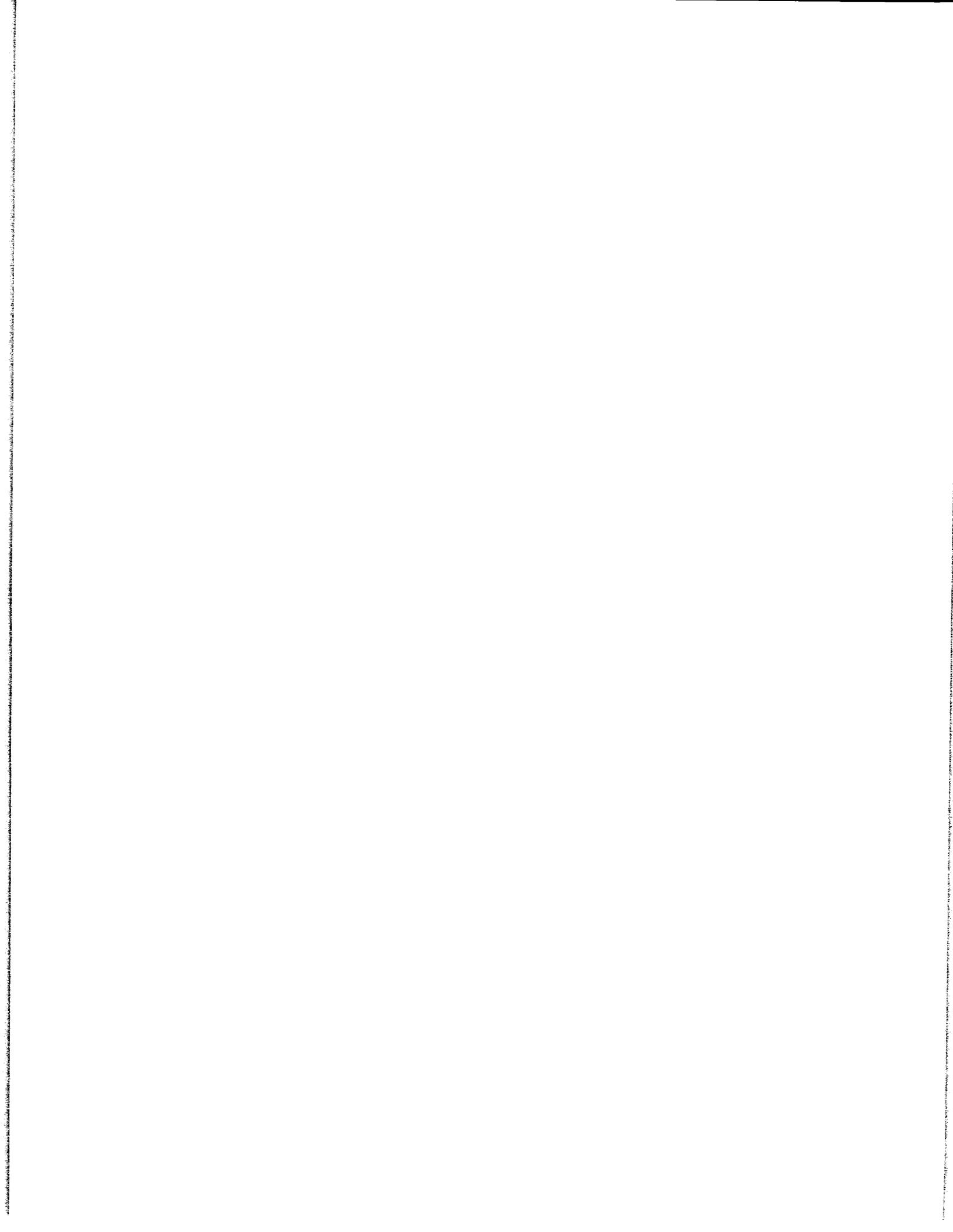


TABLE 18.--WATER FEATURES

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
110: Aboten-----	D	None	---	---	>6.0	---	---	---	---
Jerval-----	B	None	---	---	>6.0	---	---	---	---
Bluewing-----	A	None	---	---	>6.0	---	---	---	---
111: Aboten-----	D	None	---	---	>6.0	---	---	---	---
Dorper-----	D	None	---	---	>6.0	---	---	---	---
112: Aboten-----	D	None	---	---	>6.0	---	---	---	---
Dorper-----	D	None	---	---	>6.0	---	---	---	---
Rednik-----	B	None	---	---	>6.0	---	---	---	---
113: Aboten-----	D	None	---	---	>6.0	---	---	---	---
114: Aboten-----	D	None	---	---	>6.0	---	---	---	---
Bluewing-----	A	None	---	---	>6.0	---	---	---	---
120: Appian-----	B	None	---	---	>6.0	---	---	---	---
Isolde-----	A	None	---	---	>6.0	---	---	---	---
Genegraf-----	B	None	---	---	>6.0	---	---	---	---
130: Boomstick-----	D	None	---	---	>6.0	---	---	---	---
Majuba-----	C	None	---	---	>6.0	---	---	---	---
Sojur-----	D	None	---	---	>6.0	---	---	---	---
131: Boomstick-----	D	None	---	---	>6.0	---	---	---	---
Majuba-----	C	None	---	---	>6.0	---	---	---	---
Phliss-----	D	None	---	---	>6.0	---	---	---	---
132: Boomstick-----	D	None	---	---	>6.0	---	---	---	---
Majuba-----	C	None	---	---	>6.0	---	---	---	---
139: Arclay-----	D	None	---	---	>6.0	---	---	---	---
141: Arclay-----	D	None	---	---	>6.0	---	---	---	---
Acrelane-----	C	None	---	---	>6.0	---	---	---	---

TABLE 18.--WATER FEATURES--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding					
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth	
					Ft					Ft
141 (con.): Soar-----	D	None	---	---	>6.0	---	---	---	---	
142: Arclay-----	D	None	---	---	>6.0	---	---	---	---	
Vium-----	D	None	---	---	>6.0	---	---	---	---	
Slocave-----	D	None	---	---	>6.0	---	---	---	---	
143: Ninemile-----	D	None	---	---	>6.0	---	---	---	---	
Rock Outcrop.										
145: Ninemile-----	D	None	---	---	>6.0	---	---	---	---	
Shively-----	B	None	---	---	>6.0	---	---	---	---	
Rock Outcrop.										
150: Boton-----	B	None	---	---	>6.0	---	---	---	---	
Playas-----	D	Rare	---	---	-1.0-1.0	Apparent	Feb-Sep	Long	1.0	
152: Benin-----	D	None	---	---	>6.0	---	---	---	---	
Benin-----	D	Occasional	---	Nov-Jun	>6.0	---	---	---	---	
160: Badland-----	D	None	---	---	>6.0	---	---	---	---	
161: Dune Land-----	A	None	---	---	>6.0	---	---	---	---	
Playas-----	D	None	---	---	-1.0-1.0	Apparent	Feb-Sep	Long	1.0	
163: Dune Land-----	A	None	---	---	>6.0	---	---	---	---	
171: Bluewing-----	A	None	---	---	>6.0	---	---	---	---	
Toulon-----	B	None	---	---	>6.0	---	---	---	---	
Rock Outcrop.										
172: Bluewing-----	A	None	---	---	>6.0	---	---	---	---	
173: Bluewing-----	A	Frequent	---	Nov-Sep	>6.0	---	---	---	---	
180: Biga-----	C	None	---	---	>6.0	---	---	---	---	
Granshaw-----	B	None	---	---	>6.0	---	---	---	---	

TABLE 18.--WATER FEATURES--Continued

Map symbol and soil name	Hydro-logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
180 (con.): Labkey-----	B	None	---	---	>6.0	---	---	---	---
181: Biga-----	C	None	---	---	>6.0	---	---	---	---
182: Biga-----	C	None	---	---	>6.0	---	---	---	---
190: Cresal-----	B	None	---	---	>6.0	---	---	---	---
201: Dorper-----	D	None	---	---	>6.0	---	---	---	---
Envol-----	D	None	---	---	>6.0	---	---	---	---
203: Dorper-----	D	None	---	---	>6.0	---	---	---	---
204: Dorper-----	D	None	---	---	>6.0	---	---	---	---
Jerval-----	B	None	---	---	>6.0	---	---	---	---
Dorper-----	D	None	---	---	>6.0	---	---	---	---
206: Dorper-----	D	None	---	---	>6.0	---	---	---	---
210: Dorper-----	D	None	---	---	>6.0	---	---	---	---
Aboten-----	D	None	---	---	>6.0	---	---	---	---
Kumiva-----	B	Rare	---	---	>6.0	---	---	---	---
220: Cleavage-----	D	None	---	---	>6.0	---	---	---	---
Phliss-----	D	None	---	---	>6.0	---	---	---	---
Majuba-----	C	None	---	---	>6.0	---	---	---	---
221: Cleavage-----	D	None	---	---	>6.0	---	---	---	---
Burnborough-----	B	None	---	---	>6.0	---	---	---	---
230: Coldent-----	C	None	---	---	>6.0	---	---	---	---
Isolde-----	A	None	---	---	>6.0	---	---	---	---
Swingler-----	B	None	---	---	>6.0	---	---	---	---
231: Coldent-----	C	None	---	---	>6.0	---	---	---	---
Hawsley-----	A	None	---	---	>6.0	---	---	---	---

TABLE 18.--WATER FEATURES--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
231 (con.): Mazuma-----	B	None	---	---	>6.0	---	---	---	---
245: Dedmount-----	C	Rare	---	---	4.0-5.0	Apparent	Jan-Apr	---	---
Umberland-----	D	Rare	---	---	2.5-5.0	Apparent	Dec-Jun	---	---
Umberland-----	D	None	---	---	-1.0-2.5	Apparent	Jan-Dec	Long	1.0
250: Devada-----	D	None	---	---	>6.0	---	---	---	---
Rock Outcrop.									
300: Envol-----	D	None	---	---	>6.0	---	---	---	---
Frines-----	C	None	---	---	>6.0	---	---	---	---
Rock Outcrop.									
302: Envol-----	D	None	---	---	>6.0	---	---	---	---
310: Eaglerock-----	C	None	---	---	>6.0	---	---	---	---
Rock Outcrop.									
401: Genegraf-----	B	None	---	---	>6.0	---	---	---	---
Dorper-----	D	None	---	---	>6.0	---	---	---	---
Bluewing-----	A	None	---	---	>6.0	---	---	---	---
402: Genegraf-----	B	None	---	---	>6.0	---	---	---	---
Bluewing-----	A	None	---	---	>6.0	---	---	---	---
Dorper-----	D	None	---	---	>6.0	---	---	---	---
404: Genegraf-----	B	None	---	---	>6.0	---	---	---	---
Toulon-----	B	None	---	---	>6.0	---	---	---	---
410: Granshaw-----	B	None	---	---	>6.0	---	---	---	---
Labkey-----	B	None	---	---	>6.0	---	---	---	---
411: Granshaw-----	B	None	---	---	>6.0	---	---	---	---
Biga-----	C	None	---	---	>6.0	---	---	---	---
Envol-----	D	None	---	---	>6.0	---	---	---	---

TABLE 18.--WATER FEATURES--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
412: Granshaw-----	B	None	---	---	>6.0	---	---	---	---
Jerval-----	B	None	---	---	>6.0	---	---	---	---
Dorper-----	D	None	---	---	>6.0	---	---	---	---
413: Granshaw-----	B	None	---	---	>6.0	---	---	---	---
Kumiva-----	B	Rare	---	---	>6.0	---	---	---	---
414: Granshaw-----	B	None	---	---	>6.0	---	---	---	---
415: Granshaw-----	B	None	---	---	>6.0	---	---	---	---
Biga-----	C	None	---	---	>6.0	---	---	---	---
Puett-----	D	None	---	---	>6.0	---	---	---	---
431: Grumblen-----	D	None	---	---	>6.0	---	---	---	---
Pickup-----	C	None	---	---	>6.0	---	---	---	---
432: Grumblen-----	D	None	---	---	>6.0	---	---	---	---
Pickup-----	C	None	---	---	>6.0	---	---	---	---
Old Camp-----	D	None	---	---	>6.0	---	---	---	---
451: Hawsley-----	A	None	---	---	>6.0	---	---	---	---
452: Hawsley-----	A	None	---	---	>6.0	---	---	---	---
Labkey-----	B	None	---	---	>6.0	---	---	---	---
Genegraf-----	B	None	---	---	>6.0	---	---	---	---
453: Hawsley-----	A	None	---	---	>6.0	---	---	---	---
Bluewing-----	A	Occasional	---	Jul-Sep	>6.0	---	---	---	---
456: Hawsley-----	A	None	---	---	>6.0	---	---	---	---
Badland-----	D	None	---	---	>6.0	---	---	---	---
462: Hawsley-----	A	None	---	---	>6.0	---	---	---	---
Mazuma-----	B	None	---	---	>6.0	---	---	---	---

TABLE 18.--WATER FEATURES--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
470: Deadyon-----	B	None	---	---	>6.0	---	---	---	---
471: Deadyon-----	B	None	---	---	>6.0	---	---	---	---
Granshaw-----	B	None	---	---	>6.0	---	---	---	---
472: Deadyon-----	B	None	---	---	>6.0	---	---	---	---
480: Humboldt-----	D	Frequent	Long	Feb-Jun	0.5-2.0	Apparent	Dec-Jun	---	---
500: Isolde-----	A	None	---	---	>6.0	---	---	---	---
Typic Torriorthents--	B	None	---	---	>6.0	---	---	---	---
Dune Land-----	A	None	---	---	>6.0	---	---	---	---
502: Isolde-----	A	None	---	---	>6.0	---	---	---	---
Ragtown-----	C	Frequent	---	Nov-Jun	>6.0	---	---	---	---
503: Isolde-----	A	None	---	---	>6.0	---	---	---	---
510: Juva-----	B	Occasional	---	Jun-Sep	>6.0	---	---	---	---
550: Kumiva-----	B	Occasional	Brief	Mar-Jun	>6.0	---	---	---	---
Labkey-----	B	None	---	---	>6.0	---	---	---	---
Chumall-----	B	None	---	---	>6.0	---	---	---	---
551: Kumiva-----	B	Rare	---	---	>6.0	---	---	---	---
Kumiva-----	B	Occasional	Brief	Mar-Jun	>6.0	---	---	---	---
553: Kumiva-----	B	Occasional	Brief	Mar-Jun	>6.0	---	---	---	---
559: Phliss-----	D	None	---	---	>6.0	---	---	---	---
Phliss-----	D	None	---	---	>6.0	---	---	---	---
Majuba-----	C	None	---	---	>6.0	---	---	---	---
560: Phliss-----	D	None	---	---	>6.0	---	---	---	---
562: Sondoa-----	B	None	---	---	>6.0	---	---	---	---

TABLE 18.--WATER FEATURES--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
563: Sondoa-----	B	None	---	---	>6.0	---	---	---	---
Swingler-----	B	None	---	---	>6.0	---	---	---	---
Isolde-----	A	None	---	---	>6.0	---	---	---	---
650: Labkey-----	B	None	---	---	>6.0	---	---	---	---
651: Labkey-----	B	None	---	---	>6.0	---	---	---	---
Mazuma-----	B	None	---	---	>6.0	---	---	---	---
Hawsley-----	A	None	---	---	>6.0	---	---	---	---
652: Labkey-----	B	None	---	---	>6.0	---	---	---	---
Hawsley-----	A	None	---	---	>6.0	---	---	---	---
Granshaw-----	B	None	---	---	>6.0	---	---	---	---
653: Labkey-----	B	None	---	---	>6.0	---	---	---	---
Mazuma-----	B	None	---	---	>6.0	---	---	---	---
700: Mazuma-----	B	None	---	---	>6.0	---	---	---	---
Trocken-----	B	None	---	---	>6.0	---	---	---	---
701: Mazuma-----	B	None	---	---	>6.0	---	---	---	---
702: Mazuma-----	B	None	---	---	>6.0	---	---	---	---
Swingler-----	B	None	---	---	>6.0	---	---	---	---
Toulon-----	B	None	---	---	>6.0	---	---	---	---
703: Mazuma-----	B	None	---	---	>6.0	---	---	---	---
Hardhat-----	B	None	---	---	>6.0	---	---	---	---
Hawsley-----	A	None	---	---	>6.0	---	---	---	---
704: Mazuma-----	B	None	---	---	>6.0	---	---	---	---
705: Mazuma-----	B	None	---	---	>6.0	---	---	---	---
Mazuma-----	B	None	---	---	>6.0	---	---	---	---

TABLE 18.--WATER FEATURES--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
706: Mazuma-----	B	None	---	---	>6.0	---	---	---	---
707: Mazuma-----	B	None	---	---	>6.0	---	---	---	---
Coldent-----	C	None	---	---	>6.0	---	---	---	---
708: Mazuma-----	B	None	---	---	>6.0	---	---	---	---
Ragtown-----	C	Frequent	---	Nov-Jun	>6.0	---	---	---	---
750: Pickup-----	C	None	---	---	>6.0	---	---	---	---
Rock Outcrop.									
751: Pickup-----	C	None	---	---	>6.0	---	---	---	---
Grumblen-----	D	None	---	---	>6.0	---	---	---	---
Rock Outcrop.									
752: Pickup-----	C	None	---	---	>6.0	---	---	---	---
Old Camp-----	D	None	---	---	>6.0	---	---	---	---
Theon-----	D	None	---	---	>6.0	---	---	---	---
753: Pickup-----	C	None	---	---	>6.0	---	---	---	---
Rock Outcrop.									
800: Old Camp-----	D	None	---	---	>6.0	---	---	---	---
Dorper-----	D	None	---	---	>6.0	---	---	---	---
Pokergap-----	B	None	---	---	>6.0	---	---	---	---
801: Old Camp-----	D	None	---	---	>6.0	---	---	---	---
Sumya-----	D	None	---	---	>6.0	---	---	---	---
Pickup-----	C	None	---	---	>6.0	---	---	---	---
810: Perwaso-----	B	Occasional	Brief	Dec-May	>6.0	---	---	---	---
Perwaso-----	B	Rare	---	---	>6.0	---	---	---	---
850: Playas-----	D	None	---	---	-1.0-1.0	Apparent	Feb-Sep	Long	1.0

TABLE 18.--WATER FEATURES--Continued

Map symbol and soil name	Hydro-logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
851: Pits, Mine.									
852: Puett-----	D	None	---	---	>6.0	---	---	---	---
Dorper-----	D	None	---	---	>6.0	---	---	---	---
960: Rednik-----	B	None	---	---	>6.0	---	---	---	---
Jungo-----	B	None	---	---	>6.0	---	---	---	---
Aboten-----	D	None	---	---	>6.0	---	---	---	---
970: Say-----	B	None	---	---	>6.0	---	---	---	---
Eaglerock-----	C	None	---	---	>6.0	---	---	---	---
Ninemile-----	D	None	---	---	>6.0	---	---	---	---
980: Selbit-----	B	None	---	---	>6.0	---	---	---	---
Rock Outcrop.									
981: Selbit-----	B	None	---	---	>6.0	---	---	---	---
Rock Outcrop.									
Upsel-----	A	None	---	---	>6.0	---	---	---	---
990: Shawave-----	B	None	---	---	>6.0	---	---	---	---
Granshaw-----	B	None	---	---	>6.0	---	---	---	---
Labkey-----	B	None	---	---	>6.0	---	---	---	---
991: Shawave-----	B	None	---	---	>6.0	---	---	---	---
Slipback-----	B	None	---	---	>6.0	---	---	---	---
Granshaw-----	B	None	---	---	>6.0	---	---	---	---
992: Shawave-----	B	None	---	---	>6.0	---	---	---	---
Deadyon-----	B	None	---	---	>6.0	---	---	---	---
Slipback-----	B	None	---	---	>6.0	---	---	---	---
993: Shawave-----	B	None	---	---	>6.0	---	---	---	---
Biga-----	C	None	---	---	>6.0	---	---	---	---

TABLE 18.--WATER FEATURES--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
993 (con.): Deadyon-----	B	None	---	---	>6.0	---	---	---	---
994: Shawave-----	B	None	---	---	>6.0	---	---	---	---
Biga-----	C	None	---	---	>6.0	---	---	---	---
Puett-----	D	None	---	---	>6.0	---	---	---	---
996: Slaw-----	C	None	---	---	>6.0	---	---	---	---
Slaw-----	C	Occasional	Brief	Dec-May	>6.0	---	---	---	---
1020: Soar-----	D	None	---	---	>6.0	---	---	---	---
Arclay-----	D	None	---	---	>6.0	---	---	---	---
Soar-----	D	None	---	---	>6.0	---	---	---	---
1021: Soar-----	D	None	---	---	>6.0	---	---	---	---
Arclay-----	D	None	---	---	>6.0	---	---	---	---
1022: Soar-----	D	None	---	---	>6.0	---	---	---	---
Arclay-----	D	None	---	---	>6.0	---	---	---	---
Rock Outcrop.									
1030: Pokergap-----	B	None	---	---	>6.0	---	---	---	---
1031: Pokergap-----	B	None	---	---	>6.0	---	---	---	---
Dorper-----	D	None	---	---	>6.0	---	---	---	---
1032: Pokergap-----	B	None	---	---	>6.0	---	---	---	---
Dorper-----	D	None	---	---	>6.0	---	---	---	---
1033: Pokergap-----	B	None	---	---	>6.0	---	---	---	---
Jerval-----	B	None	---	---	>6.0	---	---	---	---
Dorper-----	D	None	---	---	>6.0	---	---	---	---
1034: Pokergap-----	B	None	---	---	>6.0	---	---	---	---
1035: Pokergap-----	B	None	---	---	>6.0	---	---	---	---

TABLE 18.--WATER FEATURES--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
1035 (con.): Jerval-----	B	None	---	---	>6.0	---	---	---	---
1040: Sojur-----	D	None	---	---	>6.0	---	---	---	---
1041: Sojur-----	D	None	---	---	>6.0	---	---	---	---
Boomstick-----	D	None	---	---	>6.0	---	---	---	---
Rubble Land-----	A	None	---	---	>6.0	---	---	---	---
1042: Sojur-----	D	None	---	---	>6.0	---	---	---	---
Phliss-----	D	None	---	---	>6.0	---	---	---	---
1050: Theon-----	D	None	---	---	>6.0	---	---	---	---
Singatse-----	D	None	---	---	>6.0	---	---	---	---
1051: Theon-----	D	None	---	---	>6.0	---	---	---	---
Singatse-----	D	None	---	---	>6.0	---	---	---	---
1052: Theon-----	D	None	---	---	>6.0	---	---	---	---
Grumblen-----	D	None	---	---	>6.0	---	---	---	---
Rubble Land-----	A	None	---	---	>6.0	---	---	---	---
1053: Theon-----	D	None	---	---	>6.0	---	---	---	---
Rock Outcrop.									
1054: Theon-----	D	None	---	---	>6.0	---	---	---	---
Old Camp-----	D	None	---	---	>6.0	---	---	---	---
1055: Theon-----	D	None	---	---	>6.0	---	---	---	---
Old Camp-----	D	None	---	---	>6.0	---	---	---	---
1056: Theon-----	D	None	---	---	>6.0	---	---	---	---
Pickup-----	C	None	---	---	>6.0	---	---	---	---
1080: Toulon-----	B	None	---	---	>6.0	---	---	---	---
Appian-----	B	None	---	---	>6.0	---	---	---	---

TABLE 18.--WATER FEATURES--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
1080 (con.): Bluewing-----	A	Frequent	---	Nov-Sep	>6.0	---	---	---	---
1100: Unionville-----	B	None	---	---	>6.0	---	---	---	---
Rock Outcrop.									
1150: Slocave-----	D	None	---	---	>6.0	---	---	---	---
Arclay-----	D	None	---	---	>6.0	---	---	---	---
Rock Outcrop.									
1151: Slocave-----	D	None	---	---	>6.0	---	---	---	---
Vium-----	D	None	---	---	>6.0	---	---	---	---
1190: Woolsey-----	B	None	---	---	>6.0	---	---	---	---
Bluewing-----	A	None	---	---	>6.0	---	---	---	---
1200: Acrelane-----	C	None	---	---	>6.0	---	---	---	---
Soar-----	D	None	---	---	>6.0	---	---	---	---
Arclay-----	D	None	---	---	>6.0	---	---	---	---
1201: Acrelane-----	C	None	---	---	>6.0	---	---	---	---
Wedekind-----	D	None	---	---	>6.0	---	---	---	---
Arclay-----	D	None	---	---	>6.0	---	---	---	---
1202: Acrelane-----	C	None	---	---	>6.0	---	---	---	---
Rock Outcrop.									
1203: Acrelane-----	C	None	---	---	>6.0	---	---	---	---
Shawave-----	B	None	---	---	>6.0	---	---	---	---
Granshaw-----	B	None	---	---	>6.0	---	---	---	---
1204: Acrelane-----	C	None	---	---	>6.0	---	---	---	---
Arclay-----	D	None	---	---	>6.0	---	---	---	---
Eaglerock-----	C	None	---	---	>6.0	---	---	---	---
1205: Acrelane-----	C	None	---	---	>6.0	---	---	---	---

TABLE 18.--WATER FEATURES--Continued

Map symbol and soil name	Hydro- logic group	Flooding			High water table and ponding				
		Frequency	Duration	Months	Water table depth	Kind of water table	Months	Ponding duration	Maximum ponding depth
					Ft				Ft
1205 (con.): Acrelane-----	C	None	---	---	>6.0	---	---	---	---
1210: Wesfil-----	D	None	---	---	>6.0	---	---	---	---
Sojur-----	D	None	---	---	>6.0	---	---	---	---
1300: Yipor-----	B	Occasional	---	Feb-May	>6.0	---	---	---	---
1400: Jerval-----	B	None	---	---	>6.0	---	---	---	---
Dorper-----	D	None	---	---	>6.0	---	---	---	---
1401: Jerval-----	B	None	---	---	>6.0	---	---	---	---
Aboten-----	D	None	---	---	>6.0	---	---	---	---
Dorper-----	D	None	---	---	>6.0	---	---	---	---
1410: Slipback-----	B	None	---	---	>6.0	---	---	---	---
Shawave-----	B	None	---	---	>6.0	---	---	---	---
Nodur-----	D	None	---	---	>6.0	---	---	---	---
1610: Levelock-----	D	None	---	---	-3.0-3.0	Apparent	Jan-Dec	Long	3.0

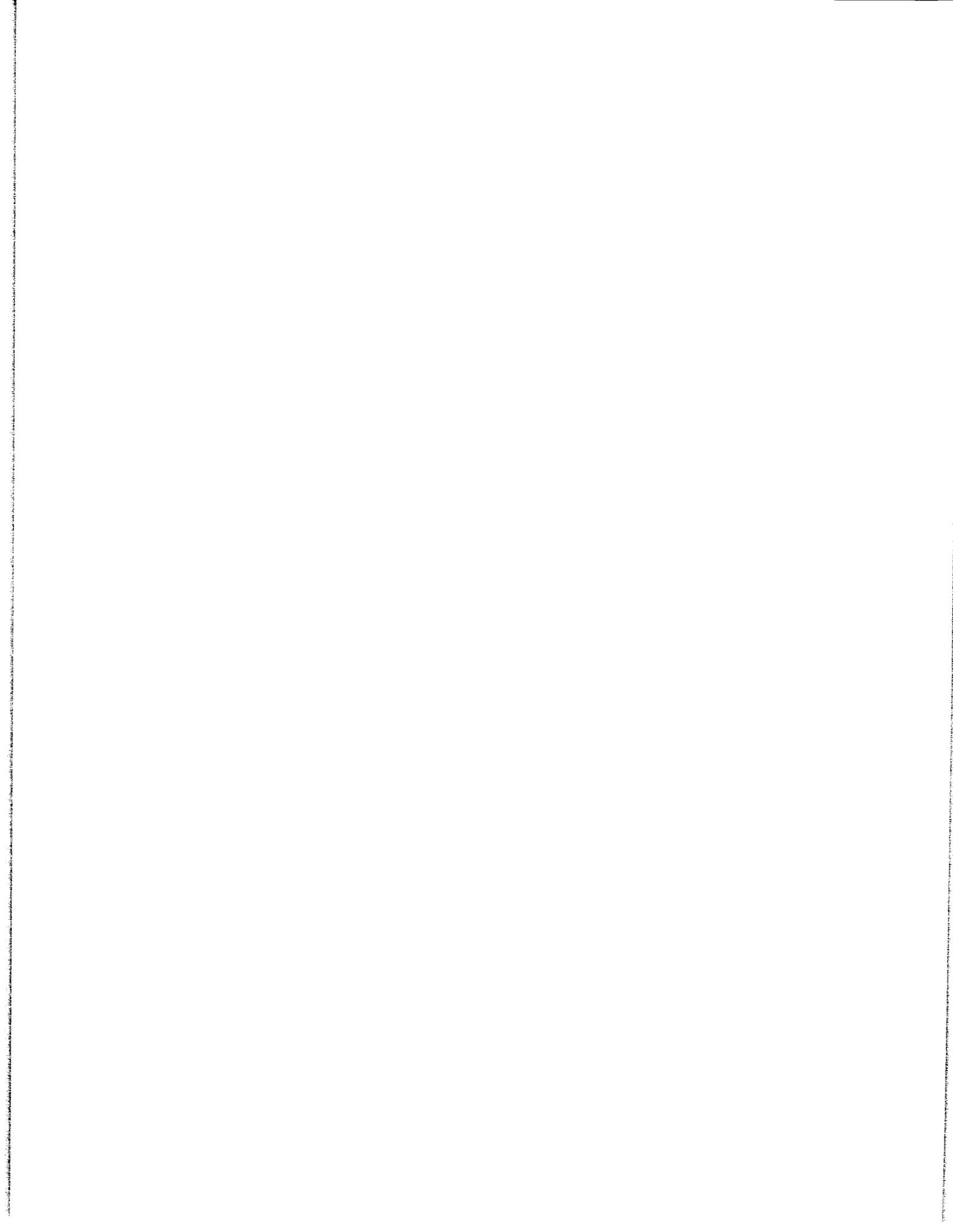


TABLE 19.--SOIL FEATURES

Map symbol and soil name	Bedrock		Cemented pan		Subsidence		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Kind	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
110: Aboten-----	>60	---	14-20	Thin	---	---	Low	High	Moderate
Jerval-----	>60	---	---	---	---	---	Low	High	High
Bluewing-----	>60	---	---	---	---	---	Low	High	Low
111: Aboten-----	>60	---	14-20	Thin	---	---	Low	High	Moderate
Dorper-----	>60	---	---	---	---	---	Low	High	High
112: Aboten-----	>60	---	14-20	Thin	---	---	Low	High	Moderate
Dorper-----	>60	---	---	---	---	---	Low	High	High
Rednik-----	>60	---	---	---	---	---	Low	High	Low
113: Aboten-----	>60	---	14-20	Thin	---	---	Low	High	Moderate
114: Aboten-----	>60	---	14-20	Thin	---	---	Low	High	Moderate
Bluewing-----	>60	---	---	---	---	---	Low	High	Low
120: Appian-----	>60	---	---	---	---	---	Low	High	High
Isolde-----	>60	---	---	---	---	---	Low	High	Low
Genegraf-----	>60	---	---	---	---	---	Low	High	Moderate
130: Boomstick-----	14-20	Hard	---	---	---	---	Moderate	High	Low
Majuba-----	25-40	Hard	---	---	---	---	Moderate	High	Low
Sojur-----	4-10	Hard	---	---	---	---	Low	High	Low
131: Boomstick-----	14-20	Hard	---	---	---	---	Moderate	High	Low
Majuba-----	25-40	Hard	---	---	---	---	Moderate	High	Low
Phliss-----	10-20	Hard	---	---	---	---	Moderate	High	Low
132: Boomstick-----	14-20	Hard	---	---	---	---	Moderate	High	Low
Majuba-----	25-40	Hard	---	---	---	---	Moderate	High	Low
139: Arclay-----	14-20	Soft	---	---	---	---	Moderate	Moderate	Low
141: Arclay-----	14-20	Soft	---	---	---	---	Moderate	Moderate	Low
Acrelane-----	10-20	Soft	---	---	---	---	Moderate	Moderate	Moderate

TABLE 19.--SOIL FEATURES --Continued

Map symbol and soil name	Bedrock		Cemented pan		Subsidence		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Kind	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
141 (con.): Scar-----	6-14	Soft	---	---	---	---	Moderate	Moderate	Low
142: Arclay-----	14-20	Soft	---	---	---	---	Moderate	Moderate	Low
Vium-----	8-14	Hard	---	---	---	---	Low	High	Low
Slocave-----	4-14	Soft	---	---	---	---	Low	High	Low
143: Ninemile-----	10-20	Hard	---	---	---	---	Low	Moderate	Low
Rock Outcrop.									
145: Ninemile-----	10-20	Hard	---	---	---	---	Low	Moderate	Low
Shively-----	>60	---	---	---	---	---	Moderate	Moderate	Low
Rock Outcrop.									
150: Boton-----	>60	---	---	---	---	---	Low	High	High
Playas-----	>60	---	---	---	---	---	None	High	High
152: Benin-----	>60	---	---	---	---	---	Low	High	High
Benin-----	>60	---	---	---	---	---	Low	High	High
160: Badland-----	1-4	Soft	---	---	---	---	None	High	High
161: Dune Land-----	>60	---	---	---	---	---	None	Low	Low
Playas-----	>60	---	---	---	---	---	None	High	High
163: Dune Land-----	>60	---	---	---	---	---	None	Low	Low
171: Bluewing-----	>60	---	---	---	---	---	Low	High	Low
Toulon-----	>60	---	---	---	---	---	Low	High	Low
Rock Outcrop.									
172: Bluewing-----	>60	---	---	---	---	---	Low	High	Low
173: Bluewing-----	>60	---	---	---	---	---	Low	High	Low
180: Biga-----	>60	---	---	---	---	---	Low	High	Low
Granshaw-----	>60	---	---	---	---	---	Low	High	Low

TABLE 19.--SOIL FEATURES --Continued

Map symbol and soil name	Bedrock		Cemented pan		Subsidence		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Kind	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
180 (con.): Labkey-----	>60	---	---	---	---	---	Low	High	Low
181: Biga-----	>60	---	---	---	---	---	Low	High	Low
182: Biga-----	>60	---	---	---	---	---	Low	High	Low
190: Cresal-----	>60	---	---	---	---	---	Low	High	High
201: Dorper-----	>60	---	---	---	---	---	Low	High	High
Envol-----	6-14	Hard	---	---	---	---	Low	High	Low
203: Dorper-----	>60	---	---	---	---	---	Low	High	High
204: Dorper-----	>60	---	---	---	---	---	Low	High	High
Jerval-----	>60	---	---	---	---	---	Low	High	High
Dorper-----	>60	---	---	---	---	---	Low	High	High
206: Dorper-----	>60	---	---	---	---	---	Low	High	High
210: Dorper-----	>60	---	---	---	---	---	Low	High	High
Aboten-----	>60	---	14-20	Thin	---	---	Low	High	Moderate
Kumiva-----	>60	---	---	---	---	---	Low	High	Low
220: Cleavage-----	14-20	Hard	---	---	---	---	Moderate	Moderate	Low
Phliss-----	10-20	Hard	---	---	---	---	Moderate	High	Low
Majuba-----	25-40	Hard	---	---	---	---	Moderate	High	Low
221: Cleavage-----	14-20	Hard	---	---	---	---	Moderate	Moderate	Low
Burnborough-----	>60	---	---	---	---	---	Moderate	Moderate	Low
230: Coldent-----	>60	---	---	---	---	---	Low	High	High
Isolde-----	>60	---	---	---	---	---	Low	High	Low
Swingler-----	>60	---	---	---	---	---	Low	High	High
231: Coldent-----	>60	---	---	---	---	---	Low	High	High
Hawsley-----	>60	---	---	---	---	---	Low	High	Low

TABLE 19.--SOIL FEATURES --Continued

Map symbol and soil name	Bedrock		Cemented pan		Subsidence		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Kind	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
231 (con.): Mazuma-----	>60	---	---	---	---	---	Low	High	High
245: Dedmount-----	>60	---	---	---	---	---	High	High	High
Umberland-----	>60	---	---	---	---	---	High	High	High
Umberland-----	>60	---	---	---	---	---	High	High	High
250: Devada-----	12-20	Hard	---	---	---	---	Low	Moderate	Low
Rock Outcrop.									
300: Envol-----	6-14	Hard	---	---	---	---	Low	High	Low
Frines-----	20-30	Soft	---	---	---	---	Low	High	Low
Rock Outcrop.									
302: Envol-----	6-14	Hard	---	---	---	---	Low	High	Low
310: Eaglerock-----	20-40	Soft	---	---	---	---	Moderate	Moderate	Low
Rock Outcrop.									
401: Genegraf-----	>60	---	---	---	---	---	Low	High	Moderate
Dorper-----	>60	---	---	---	---	---	Low	High	High
Bluewing-----	>60	---	---	---	---	---	Low	High	Low
402: Genegraf-----	>60	---	---	---	---	---	Low	High	Moderate
Bluewing-----	>60	---	---	---	---	---	Low	High	Low
Dorper-----	>60	---	---	---	---	---	Low	High	High
404: Genegraf-----	>60	---	---	---	---	---	Low	High	Moderate
Toulon-----	>60	---	---	---	---	---	Low	High	Low
410: Granshaw-----	>60	---	---	---	---	---	Low	High	Low
Labkey-----	>60	---	---	---	---	---	Low	High	Low
411: Granshaw-----	>60	---	---	---	---	---	Low	High	Low
Biga-----	>60	---	---	---	---	---	Low	High	Low
Envol-----	6-14	Hard	---	---	---	---	Low	High	Low

TABLE 19.--SOIL FEATURES --Continued

Map symbol and soil name	Bedrock		Cemented pan		Subsidence		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Kind	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
412: Granshaw-----	>60	---	---	---	---	---	Low	High	Low
Jerval-----	>60	---	---	---	---	---	Low	High	High
Dorper-----	>60	---	---	---	---	---	Low	High	High
413: Granshaw-----	>60	---	---	---	---	---	Low	High	Low
Kumiva-----	>60	---	---	---	---	---	Low	High	Low
414: Granshaw-----	>60	---	---	---	---	---	Low	High	Low
415: Granshaw-----	>60	---	---	---	---	---	Low	High	Low
Biga-----	>60	---	---	---	---	---	Low	High	Low
Puett-----	10-20	Soft	---	---	---	---	Moderate	High	Low
431: Grumblen-----	14-20	Hard	---	---	---	---	Low	High	Low
Pickup-----	20-40	Hard	---	---	---	---	Low	High	Low
432: Grumblen-----	14-20	Hard	---	---	---	---	Low	High	Low
Pickup-----	20-40	Hard	---	---	---	---	Low	High	Low
Old Camp-----	10-20	Hard	---	---	---	---	Moderate	High	Low
451: Hawsley-----	>60	---	---	---	---	---	Low	High	Low
452: Hawsley-----	>60	---	---	---	---	---	Low	High	Low
Labkey-----	>60	---	---	---	---	---	Low	High	Low
Genegra-----	>60	---	---	---	---	---	Low	High	Moderate
453: Hawsley-----	>60	---	---	---	---	---	Low	High	Low
Bluewing-----	>60	---	---	---	---	---	Low	High	Low
456: Hawsley-----	>60	---	---	---	---	---	Low	High	Low
Badland-----	>60	---	---	---	---	---	None	High	High
462: Hawsley-----	>60	---	---	---	---	---	Low	High	Low
Mazuma-----	>60	---	---	---	---	---	Low	High	High
470: Deadyon-----	>60	---	---	---	---	---	Moderate	High	Low

TABLE 19.--SOIL FEATURES --Continued

Map symbol and soil name	Bedrock		Cemented pan		Subsidence		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Kind	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
471: Deadyon-----	>60	---	---	---	---	---	Moderate	High	Low
Granshaw-----	>60	---	---	---	---	---	Low	High	Low
472: Deadyon-----	>60	---	---	---	---	---	Moderate	High	Low
480: Humboldt-----	>60	---	---	---	---	---	High	High	High
500: Isolde-----	>60	---	---	---	---	---	Low	High	Low
Typic Torriorthents--	>60	---	---	---	---	---	Low	Moderate	High
Dune Land-----	>60	---	---	---	---	---	None	Low	Low
502: Isolde-----	>60	---	---	---	---	---	Low	High	Low
Ragtown-----	>60	---	---	---	---	---	Low	High	High
503: Isolde-----	>60	---	---	---	---	---	Low	High	Low
510: Juva-----	>60	---	---	---	---	---	Low	High	Moderate
550: Kumiva-----	>60	---	---	---	---	---	Low	High	Low
Labkey-----	>60	---	---	---	---	---	Low	High	Low
Chumall-----	>60	---	---	---	---	---	Low	High	High
551: Kumiva-----	>60	---	---	---	---	---	Low	High	Low
Kumiva-----	>60	---	---	---	---	---	Low	High	Low
553: Kumiva-----	>60	---	---	---	---	---	Low	High	Low
559: Phliss-----	10-20	Hard	---	---	---	---	Moderate	High	Low
Phliss-----	10-20	Hard	---	---	---	---	Moderate	High	Low
Majuba-----	25-40	Hard	---	---	---	---	Moderate	High	Low
560: Phliss-----	10-20	Hard	---	---	---	---	Moderate	High	Low
562: Sondoa-----	>60	---	---	---	---	---	Low	High	Moderate
563: Sondoa-----	>60	---	---	---	---	---	Low	High	Moderate

TABLE 19.--SOIL FEATURES --Continued

Map symbol and soil name	Bedrock		Cemented pan		Subsidence		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Kind	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
563 (con.): Swingler-----	>60	---	---	---	---	---	Low	High	High
Isolde-----	>60	---	---	---	---	---	Low	High	Low
650: Labkey-----	>60	---	---	---	---	---	Low	High	Low
651: Labkey-----	>60	---	---	---	---	---	Low	High	Low
Mazuma-----	>60	---	---	---	---	---	Low	High	High
Hawsley-----	>60	---	---	---	---	---	Low	High	Low
652: Labkey-----	>60	---	---	---	---	---	Low	High	Low
Hawsley-----	>60	---	---	---	---	---	Low	High	Low
Granshaw-----	>60	---	---	---	---	---	Low	High	Low
653: Labkey-----	>60	---	---	---	---	---	Low	High	Low
Mazuma-----	>60	---	---	---	---	---	Low	High	High
700: Mazuma-----	>60	---	---	---	---	---	Low	High	High
Trocken-----	>60	---	---	---	---	---	Low	High	High
701: Mazuma-----	>60	---	---	---	---	---	Low	High	High
702: Mazuma-----	>60	---	---	---	---	---	Low	High	High
Swingler-----	>60	---	---	---	---	---	Low	High	High
Toulon-----	>60	---	---	---	---	---	Low	High	Low
703: Mazuma-----	>60	---	---	---	---	---	Low	High	High
Hardhat-----	>60	---	---	---	---	---	Low	High	High
Hawsley-----	>60	---	---	---	---	---	Low	High	Low
704: Mazuma-----	>60	---	---	---	---	---	Low	High	High
705: Mazuma-----	>60	---	---	---	---	---	Low	High	High
Mazuma-----	>60	---	---	---	---	---	Low	High	High
706: Mazuma-----	>60	---	---	---	---	---	Low	High	High

TABLE 19.--SOIL FEATURES --Continued

Map symbol and soil name	Bedrock		Cemented pan		Subsidence		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Kind	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
707: Mazuma-----	>60	---	---	---	---	---	Low	High	High
Coldent-----	>60	---	---	---	---	---	Low	High	High
708: Mazuma-----	>60	---	---	---	---	---	Low	High	High
Ragtown-----	>60	---	---	---	---	---	Low	High	High
750: Pickup-----	20-40	Hard	---	---	---	---	Low	High	Low
Rock Outcrop.									
751: Pickup-----	20-40	Hard	---	---	---	---	Low	High	Low
Grumblen-----	14-20	Hard	---	---	---	---	Low	High	Low
Rock Outcrop.									
752: Pickup-----	20-40	Hard	---	---	---	---	Low	High	Low
Old Camp-----	10-20	Hard	---	---	---	---	Moderate	High	Low
Theon-----	8-14	Hard	---	---	---	---	Low	High	Low
753: Pickup-----	20-40	Hard	---	---	---	---	Low	High	Low
Rock Outcrop.									
800: Old Camp-----	10-20	Hard	---	---	---	---	Moderate	High	Low
Dorper-----	>60	---	---	---	---	---	Low	High	High
Pokergap-----	>60	---	---	---	---	---	Moderate	High	Low
801: Old Camp-----	10-20	Hard	---	---	---	---	Moderate	High	Low
Sumya-----	7-12	Hard	---	---	---	---	Low	Moderate	Low
Pickup-----	20-40	Hard	---	---	---	---	Low	High	Low
810: Perwaso-----	>60	---	---	---	---	---	Low	High	Moderate
Perwaso-----	>60	---	---	---	---	---	Low	High	Moderate
850: Playas-----	>60	---	---	---	---	---	None	High	High
851: Pits, Mine.									
852: Puett-----	10-20	Soft	---	---	---	---	Moderate	High	Low

TABLE 19.--SOIL FEATURES --Continued

Map symbol and soil name	Bedrock		Cemented pan		Subsidence		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Kind	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
852 (con.): Dorper-----	>60	---	---	---	---	---	Low	High	High
960: Rednik-----	>60	---	---	---	---	---	Low	High	Low
Jungo-----	>60	---	---	---	---	---	Moderate	High	High
Aboten-----	>60	---	14-20	Thin	---	---	Low	High	Moderate
970: Say-----	20-40	Soft	---	---	---	---	Moderate	Moderate	Low
Eaglerock-----	20-40	Soft	---	---	---	---	Moderate	Moderate	Low
Ninemile-----	10-20	Hard	---	---	---	---	Low	Moderate	Low
980: Selbit-----	14-20	Soft	---	---	---	---	Low	Moderate	Low
Rock Outcrop.									
981: Selbit-----	14-20	Soft	---	---	---	---	Low	Moderate	Low
Rock Outcrop.									
Upsel-----	>60	---	---	---	---	---	Low	Moderate	Low
990: Shawave-----	>60	---	---	---	---	---	Moderate	High	Low
Granshaw-----	>60	---	---	---	---	---	Low	High	Low
Labkey-----	>60	---	---	---	---	---	Low	High	Low
991: Shawave-----	>60	---	---	---	---	---	Moderate	High	Low
Slipback-----	>60	---	---	---	---	---	Moderate	High	High
Granshaw-----	>60	---	---	---	---	---	Low	High	Low
992: Shawave-----	>60	---	---	---	---	---	Moderate	High	Low
Deadyon-----	>60	---	---	---	---	---	Moderate	High	Low
Slipback-----	>60	---	---	---	---	---	Moderate	High	High
993: Shawave-----	>60	---	---	---	---	---	Moderate	High	Low
Biga-----	>60	---	---	---	---	---	Low	High	Low
Deadyon-----	>60	---	---	---	---	---	Moderate	High	Low
994: Shawave-----	>60	---	---	---	---	---	Moderate	High	Low
Biga-----	>60	---	---	---	---	---	Low	High	Low

TABLE 19.--SOIL FEATURES --Continued

Map symbol and soil name	Bedrock		Cemented pan		Subsidence		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Kind	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
994 (con.): Puett-----	10-20	Soft	---	---	---	---	Moderate	High	Low
996: Slaw-----	>60	---	---	---	---	---	Low	High	High
Slaw-----	>60	---	---	---	---	---	Low	High	High
1020: Soar-----	6-14	Soft	---	---	---	---	Moderate	Moderate	Low
Arclay-----	14-20	Soft	---	---	---	---	Moderate	Moderate	Low
Soar-----	6-14	Soft	---	---	---	---	Moderate	Moderate	Low
1021: Soar-----	6-14	Soft	---	---	---	---	Moderate	Moderate	Low
Arclay-----	14-20	Soft	---	---	---	---	Moderate	Moderate	Low
1022: Soar-----	6-14	Soft	---	---	---	---	Moderate	Moderate	Low
Arclay-----	14-20	Soft	---	---	---	---	Moderate	Moderate	Low
Rock Outcrop.									
1030: Pokergap-----	>60	---	---	---	---	---	Moderate	High	Low
1031: Pokergap-----	>60	---	---	---	---	---	Moderate	High	Low
Dorper-----	>60	---	---	---	---	---	Low	High	High
1032: Pokergap-----	>60	---	---	---	---	---	Moderate	High	Low
Dorper-----	>60	---	---	---	---	---	Low	High	High
1033: Pokergap-----	>60	---	---	---	---	---	Moderate	High	Low
Jerval-----	>60	---	---	---	---	---	Low	High	High
Dorper-----	>60	---	---	---	---	---	Low	High	High
1034: Pokergap-----	>60	---	---	---	---	---	Moderate	High	Low
1035: Pokergap-----	>60	---	---	---	---	---	Moderate	High	Low
Jerval-----	>60	---	---	---	---	---	Low	High	High
1040: Sojur-----	4-10	Hard	---	---	---	---	Low	High	Low
1041: Sojur-----	4-10	Hard	---	---	---	---	Low	High	Low

TABLE 19.--SOIL FEATURES --Continued

Map symbol and soil name	Bedrock		Cemented pan		Subsidence		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Kind	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
1041 (con.): Boomstick-----	14-20	Hard	---	---	---	---	Moderate	High	Low
Rubble Land-----	>40	Hard	---	---	---	---	None	---	---
1042: Sojur-----	4-10	Hard	---	---	---	---	Low	High	Low
Phliss-----	10-20	Hard	---	---	---	---	Moderate	High	Low
1050: Theon-----	8-14	Hard	---	---	---	---	Low	High	Low
Singatse-----	4-10	Hard	---	---	---	---	Low	High	Low
1051: Theon-----	8-14	Hard	---	---	---	---	Low	High	Low
Singatse-----	4-10	Hard	---	---	---	---	Low	High	Low
1052: Theon-----	8-14	Hard	---	---	---	---	Low	High	Low
Grumblen-----	14-20	Hard	---	---	---	---	Low	High	Low
Rubble Land-----	>40	Hard	---	---	---	---	None	---	---
1053: Theon-----	8-14	Hard	---	---	---	---	Low	High	Low
Rock Outcrop.									
1054: Theon-----	8-14	Hard	---	---	---	---	Low	High	Low
Old Camp-----	10-20	Hard	---	---	---	---	Moderate	High	Low
1055: Theon-----	8-14	Hard	---	---	---	---	Low	High	Low
Old Camp-----	10-20	Hard	---	---	---	---	Moderate	High	Low
1056: Theon-----	8-14	Hard	---	---	---	---	Low	High	Low
Pickup-----	20-40	Hard	---	---	---	---	Low	High	Low
1080: Toulon-----	>60	---	---	---	---	---	Low	High	Low
Appian-----	>60	---	---	---	---	---	Low	High	High
Bluewing-----	>60	---	---	---	---	---	Low	High	Low
1100: Unionville-----	20-27	Soft	---	---	---	---	Low	High	Low
Rock Outcrop.									
1150: Slocave-----	4-14	Soft	---	---	---	---	Low	High	Low

TABLE 19.--SOIL FEATURES --Continued

Map symbol and soil name	Bedrock		Cemented pan		Subsidence		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Kind	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
1150 (con.): Arclay-----	14-20	Soft	---	---	---	---	Moderate	Moderate	Low
Rock Outcrop.									
1151: Slocave-----	4-14	Soft	---	---	---	---	Low	High	Low
Vium-----	8-14	Hard	---	---	---	---	Low	High	Low
1190: Woolsey-----	>60	---	---	---	---	---	Low	High	Low
Bluewing-----	>60	---	---	---	---	---	Low	High	Low
1200: Acrelane-----	10-20	Soft	---	---	---	---	Moderate	Moderate	Moderate
Soar-----	6-14	Soft	---	---	---	---	Moderate	Moderate	Low
Arclay-----	14-20	Soft	---	---	---	---	Moderate	Moderate	Low
1201: Acrelane-----	10-20	Soft	---	---	---	---	Moderate	Moderate	Moderate
Wedekind-----	10-20	Soft	---	---	---	---	Moderate	Moderate	Low
Arclay-----	14-20	Soft	---	---	---	---	Moderate	Moderate	Low
1202: Acrelane-----	10-20	Soft	---	---	---	---	Moderate	Moderate	Moderate
Rock Outcrop.									
1203: Acrelane-----	10-20	Soft	---	---	---	---	Moderate	Moderate	Moderate
Shawave-----	>60	---	---	---	---	---	Moderate	High	Low
Granshaw-----	>60	---	---	---	---	---	Low	High	Low
1204: Acrelane-----	10-20	Soft	---	---	---	---	Moderate	Moderate	Moderate
Arclay-----	14-20	Soft	---	---	---	---	Moderate	Moderate	Low
Eaglerock-----	20-40	Soft	---	---	---	---	Moderate	Moderate	Low
1205: Acrelane-----	10-20	Soft	---	---	---	---	Moderate	Moderate	Moderate
Acrelane-----	10-20	Soft	---	---	---	---	Moderate	Moderate	Moderate
1210: Wesfil-----	4-10	Hard	---	---	---	---	Moderate	High	Low
Sojur-----	4-10	Hard	---	---	---	---	Low	High	Low
1300: Yipor-----	>60	---	---	---	---	---	Low	High	High

TABLE 19.--SOIL FEATURES --Continued

Map symbol and soil name	Bedrock		Cemented pan		Subsidence		Potential frost action	Risk of corrosion	
	Depth	Hardness	Depth	Kind	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
1400: Jerval-----	>60	---	---	---	---	---	Low	High	High
Dorper-----	>60	---	---	---	---	---	Low	High	High
1401: Jerval-----	>60	---	---	---	---	---	Low	High	High
Aboten-----	>60	---	14-20	Thin	---	---	Low	High	Moderate
Dorper-----	>60	---	---	---	---	---	Low	High	High
1410: Slipback-----	>60	---	---	---	---	---	Moderate	High	High
Shawave-----	>60	---	---	---	---	---	Moderate	High	Low
Nodur-----	>60	---	---	---	---	---	Low	High	Moderate
1610: Lovelock-----	>60	---	---	---	---	---	Moderate	High	High

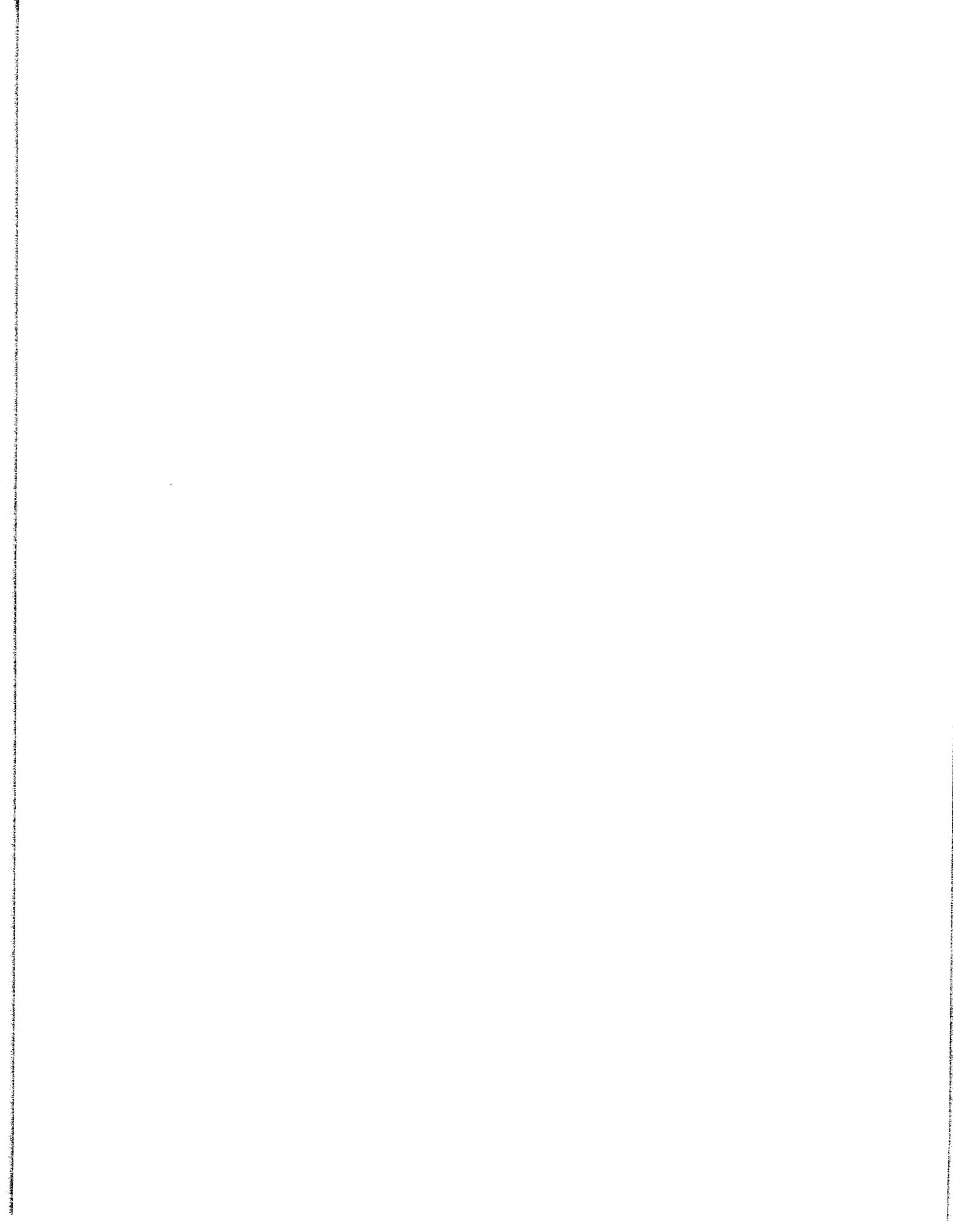


TABLE 20.--CLASSIFICATION OF THE SOILS

Soil name	Family or higher taxonomic class
Aboten-----	Haplic Nadurargids, loamy, mixed, mesic, shallow
Acrelane-----	Aridic Argixerolls, loamy-skeletal, mixed, mesic, shallow
Appian-----	Typic Natrargids, fine-loamy over sandy or sandy-skeletal, mixed, mesic
Arclay-----	Aridic Argixerolls, loamy, mixed, mesic, shallow
Benin-----	Typic Torriorthents, fine, montmorillonitic (calcareous), mesic
Biga-----	Duric Natrargids, fine, montmorillonitic, mesic
Bluewing-----	Typic Torriorthents, sandy-skeletal, mixed, mesic
Boomstick-----	Lithic Xerollic Haplargids, loamy-skeletal, mixed, mesic
Boton-----	Haploduridic Torriorthents, fine-silty, mixed (calcareous), mesic
Burnborough-----	Aridic Argixerolls, loamy-skeletal, mixed, frigid
Chumall-----	Typic Torriorthents, fine-silty, mixed (calcareous), mesic
Cleavage-----	Lithic Argixerolls, loamy-skeletal, mixed, frigid
Coldent-----	Haploduridic Torriorthents, coarse-loamy, mixed (calcareous), mesic
Cresal-----	Haploduridic Torriorthents, coarse-silty, mixed (calcareous), mesic
Deadyon-----	Xerollic Haplargids, coarse-loamy, mixed, mesic
Dedmount-----	Aquic Torriorthents, fine, montmorillonitic (calcareous), mesic
Devada-----	Lithic Argixerolls, clayey, montmorillonitic, mesic
Dorper-----	Duric Natrargids, fine, montmorillonitic, mesic
Eaglerock-----	Aridic Argixerolls, loamy-skeletal, mixed, mesic
Envol-----	Lithic Haplargids, loamy, mixed, mesic
Frines-----	Typic Haplargids, fine, montmorillonitic, mesic
Genegraf-----	Duric Natrargids, fine-loamy, mixed, mesic
Granshaw-----	Typic Haplargids, coarse-loamy, mixed, mesic
Grumblen-----	Lithic Xerollic Haplargids, clayey-skeletal, montmorillonitic, mesic
Hardhat-----	Haploduridic Torriorthents, coarse-loamy, mixed (calcareous), mesic
Hawsley-----	Typic Torripsamments, mixed, mesic
Humboldt-----	Fluvaquentic Endoaquolls, fine, montmorillonitic (calcareous), mesic
Isolde-----	Typic Torripsamments, mixed, mesic
Jerval-----	Duric Natrargids, fine-loamy, mixed, mesic
Jungo-----	Xerollic Haplargids, loamy-skeletal, mixed, mesic
Juva-----	Typic Torrifluvents, coarse-loamy, mixed (calcareous), mesic
Kumiva-----	Typic Torriorthents, coarse-loamy, mixed (calcareous), mesic
Labkey-----	Typic Camborthids, sandy-skeletal, mixed, mesic
Lovelock-----	Fluvaquentic Endoaquolls, fine, mixed (calcareous), mesic
Majuba-----	Aridic Calcic Argixerolls, loamy-skeletal, mixed, frigid
Mazuma-----	Typic Torriorthents, coarse-loamy, mixed (calcareous), mesic
Ninemile-----	Lithic Argixerolls, clayey, montmorillonitic, frigid
Nodur-----	Durixerollic Natrargids, fine, montmorillonitic, mesic
Old Camp-----	Lithic Xeric Haplargids, loamy-skeletal, mixed, mesic
Perwaso-----	Typic Torrifluvents, fine-loamy over sandy or sandy-skeletal, mixed (calcareous), mesic
Phliss-----	Lithic Xerollic Haplargids, loamy-skeletal, mixed, mesic
Pickup-----	Aridic Argixerolls, clayey-skeletal, montmorillonitic, mesic
Pokergap-----	Durixerollic Natrargids, fine-loamy, mixed, mesic
Puett-----	Xeric Torriorthents, loamy, mixed (calcareous), mesic, shallow
Ragtown-----	Typic Torriorthents, fine, montmorillonitic (calcareous), mesic
Rednik-----	Typic Haplargids, loamy-skeletal, mixed, mesic
Say-----	Aridic Argixerolls, fine-loamy, mixed, frigid
Selbit-----	Torriorthentic Haploxerolls, sandy-skeletal, mixed, mesic, shallow
Shawave-----	Xerollic Haplargids, fine-loamy, mixed, mesic
Shively-----	Pachic Haploxerolls, coarse-loamy, mixed, frigid
Singatse-----	Lithic Torriorthents, loamy-skeletal, mixed (calcareous), mesic
Slaw-----	Typic Torrifluvents, fine-silty, mixed (calcareous), mesic
Slipback-----	Xerollic Natrargids, fine-loamy, mixed, mesic
Slocave-----	Typic Torriorthents, loamy-skeletal, mixed (calcareous), mesic, shallow
Soar-----	Xerollic Haplargids, loamy-skeletal, mixed, mesic, shallow
Sojur-----	Lithic Torriorthents, loamy-skeletal, mixed (calcareous), mesic
Sondoa-----	Typic Torriorthents, fine-silty, mixed (calcareous), mesic

TABLE 20.--CLASSIFICATION OF THE SOILS--Continued

Soil name	Family or higher taxonomic class
Sumya-----	Lithic Xeric Torriorthents, clayey-skeletal, montmorillonitic, nonacid, frigid
Swingler-----	Typic Torriorthents, fine-silty, mixed (calcareous), mesic
Theon-----	Lithic Haplargids, loamy-skeletal, mixed, mesic
Toulon-----	Typic Camborthids, sandy-skeletal, mixed, mesic
Trocken-----	Typic Torriorthents, loamy-skeletal, mixed (calcareous), mesic
Typic Torriorthents-----	Typic Torriorthents, mesic
Umberland-----	Aeric Halaquepts, fine, montmorillonitic (calcareous), mesic
Unionville-----	Typic Camborthids, coarse-loamy, mixed, mesic
Upsel-----	Torripsammentic Haploxerolls, sandy, mixed, frigid
Vium-----	Lithic Haplargids, loamy-skeletal, mixed, mesic
Wedekind-----	Aridic Argixerolls, loamy, mixed, mesic, shallow
Wesfil-----	Lithic Xeric Torriorthents, loamy-skeletal, mixed (calcareous), mesic
Woolsey-----	Typic Haplargids, coarse-loamy, mixed, mesic
Yipor-----	Typic Torriorthents, coarse-silty, mixed (calcareous), mesic

RANGELAND PLANTS AND WOODLAND UNDERSTORY

110--ABOTEN-JERVAL-BLUEWING ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		ABOTEN	JERVAL	BLUEWING	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	10-20	15-30	10-20	5-10	15-30	10-20	40-50
Sandberg bluegrass	POSE	5-10	2-15	5-10	---	2-15	5-10	---
bottlebrush squirreltail	SIHY	2-8	2-8	2-8	5-10	2-8	2-8	2-5
needleandthread	STCO4	---	---	---	---	---	---	5-15
globemallow	SPHAE	---	---	---	---	---	---	2-5
Bailey greasewood	SAVEB	20-30	---	20-30	---	---	20-30	---
Nevada ephedra	EPNE	---	---	---	5-10	---	---	---
bud sagebrush	ARSP5	5-15	15-25	5-15	---	15-25	5-15	5-15
burrobrush	HYMEN3	---	---	---	5-10	---	---	---
fourwing saltbush	ATCA2	---	---	---	5-10	---	---	---
littleleaf horsebrush	TEGL	---	---	---	10-20	---	---	---
rubber rabbitbrush	CHNA2	---	---	---	10-20	---	---	---
shadscale	ATCO	15-30	20-35	15-30	---	20-35	15-30	---
spiny hopsage	GRSP	---	---	---	10-20	---	---	---
winterfat	EULA5	---	5-10	---	---	5-10	---	25-30

Range site number	027XY018NV	027XY013NV	027XY018NV	027XY022NV	027XY013NV	027XY018NV	027XY014NV
Potential production (lb/acre):							
Favorable years	400	600	400	400	600	400	700
Normal years	250	450	250	200	450	250	500
Unfavorable years	100	250	100	50	250	100	350

111--ABOTEN-DORPER ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		ABOTEN	DORPER	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	10-20	10-20	5-10	---	15-25	---
Sandberg bluegrass	POSE	5-10	5-10	---	2-8	---	---
bottlebrush squirreltail	SIHY	2-8	2-8	5-10	---	---	---
desert needlegrass	STSP3	---	---	---	30-40	2-10	---
Bailey greasewood	SAVEB	20-30	20-30	---	---	---	---
Lahontan sagebrush	ARARL*	---	---	---	25-35	---	---
Nevada ephedra	EPNE	---	---	5-10	---	2-5	---
bud sagebrush	ARSP5	5-15	5-15	---	---	2-8	---
burrobrush	HYMEN3	---	---	5-10	---	---	---
fourwing saltbush	ATCA2	---	---	5-10	---	---	---
littleleaf horsebrush	TEGL	---	---	10-20	---	---	---
rubber rabbitbrush	CHNA2	---	---	10-20	---	---	---
shadscale	ATCO	15-30	15-30	---	---	30-40	---
spiny hopsage	GRSP	---	---	10-20	2-8	---	---
winterfat	EULA5	---	---	---	---	2-8	---
Range site number		027XY018NV	027XY018NV	027XY022NV	027XY020NV	027XY027NV	none
Potential production (lb/acre):							
Favorable years		400	400	400	450	200	
Normal years		250	250	200	300	100	
Unfavorable years		100	100	50	150	50	

112--ABOTEN-DORPER-REDNIK ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		ABOTEN	DORPER	REDNIK	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORBY	10-20	15-30	15-25	5-10	20-25	10-20	---
Sandberg bluegrass	POSE	5-10	2-15	---	---	2-5	2-10	---
bottlebrush squirreltail	SIHY	2-8	2-8	---	5-10	2-5	---	---
desert needlegrass	STSP3	---	---	2-10	---	---	5-15	---
needleandthread	STCO4	---	---	---	---	5-15	---	---
Bailey greasewood	SAVEB	20-30	---	---	---	---	10-20	---
Lahontan sagebrush	ARARL*	---	---	---	---	---	35-50	---
Nevada ephedra	EPNE	---	---	2-5	5-10	2-5	2-8	---
Wyoming big sagebrush	ARTRW	---	---	---	---	20-30	---	---
bud sagebrush	ARSP5	5-15	15-25	2-8	---	---	---	---
burrobrush	HYMEN3	---	---	---	5-10	---	---	---
fourwing saltbush	ATCA2	---	---	---	5-10	---	---	---
littleleaf horsebrush	TEGL	---	---	---	10-20	---	---	---
rubber rabbitbrush	CHNA2	---	---	---	10-20	---	---	---
shadscale	ATCO	15-30	20-35	30-40	---	---	2-5	---
spiny hopsage	GRSP	---	---	---	10-20	10-25	2-5	---
winterfat	EULA5	---	5-10	2-8	---	2-5	---	---
Range site number		027XY018NV	027XY013NV	027XY027NV	027XY022NV	027XY008NV	027XY070NV	none
Potential production (lb/acre):								
Favorable years		400	600	200	400	700	400	
Normal years		250	450	100	200	500	250	
Unfavorable years		100	250	50	50	300	100	

113--ABOTEN VERY GRAVELLY SILT LOAM, 15 TO 30 PERCENT SLOPES

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		ABOTEN	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORRY	10-20	---	5-10	15-25
Sandberg bluegrass	POSE	5-10	2-8	---	---
Thurber needlegrass	STTE2	---	20-35	---	---
bottlebrush squirreltail	SIHY	2-8	---	5-10	---
desert needlegrass	STSP3	---	2-5	---	2-10
Bailey greasewood	SAVEB	20-30	---	---	---
Lahontan sagebrush	ARARL*	---	30-35	---	---
Nevada ephedra	EPNE	---	---	5-10	2-5
bud sagebrush	ARSP5	5-15	---	---	2-8
burrobrush	HYMEN3	---	---	5-10	---
fourwing saltbush	ATCA2	---	---	5-10	---
littleleaf horsebrush	TEGL	---	---	10-20	---
rubber rabbitbrush	CHNA2	---	---	10-20	---
shadscale	ATCO	15-30	---	---	30-40
spiny hopsage	GRSP	---	2-5	10-20	---
winterfat	EULAS	---	---	---	2-8

Range site number	027XY018NV	027XY079NV	027XY022NV	027XY027NV
Potential production (lb/acre):				
Favorable years	400	500	400	200
Normal years	250	350	200	100
Unfavorable years	100	200	50	50

114--ABOTEN-BLUEWING ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		ABOTEN	BLUEWING	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	OREY	10-20	10-20	5-10	15-25	---
Sandberg bluegrass	POSE	5-10	5-10	---	---	---
bottlebrush squirreltail	SIHY	2-8	2-8	5-10	---	---
desert needlegrass	STSP3	---	---	---	2-10	---
Bailey greasewood	SAVEB	20-30	20-30	---	---	---
Nevada ephedra	EPNE	---	---	5-10	2-5	---
bud sagebrush	ARSP5	5-15	5-15	---	2-8	---
burrobrush	HYMEN3	---	---	5-10	---	---
fourwing saltbush	ATCA2	---	---	5-10	---	---
littleleaf horsebrush	TEGL	---	---	10-20	---	---
rubber rabbitbrush	CHNA2	---	---	10-20	---	---
shadscale	ATCO	15-30	15-30	---	30-40	---
spiny hopsage	GRSP	---	---	10-20	---	---
winterfat	EULA5	---	---	---	2-8	---

Range site number	027XY018NV	027XY018NV	027XY022NV	027XY027NV	none
Potential production (lb/acre):					
Favorable years	400	400	400	200	
Normal years	250	250	200	100	
Unfavorable years	100	100	50	50	

120--APPIAN-ISOLDE-GENEGRAF ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		APPIAN	ISOLDE	GENEGRAF	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	10-15	20-30	10-20	10-20	5-10	---
Sandberg bluegrass	POSE	---	---	5-10	5-10	---	---
bottlebrush squirreltail	SIHY	5-10	---	2-8	2-8	5-10	---
inland saltgrass	DISPS2	2-5	---	---	---	---	---
needleandthread	STCO4	---	5-15	---	---	---	---
Bailey greasewood	SAVEB	T-5	---	20-30	20-30	---	---
Nevada dalea	PSPO	---	2-8	---	---	---	---
Nevada ephedra	EPNE	---	---	---	---	5-10	---
black greasewood	SAVE4	20-30	---	---	---	---	---
bud sagebrush	ARSP5	2-5	---	5-15	5-15	---	---
burrobrush	HYMEN3	---	---	---	---	5-10	---
fourwing saltbush	ATCA2	---	15-25	---	---	5-10	---
hairy horsebrush	TECO2	---	25-35	---	---	---	---
littleleaf horsebrush	TEGL	---	2-5	---	---	10-20	---
rubber rabbitbrush	CHNA2	---	---	---	---	10-20	---
shadscale	ATCO	20-35	---	15-30	15-30	---	---
spiny hopsage	GRSP	---	---	---	---	10-20	---
Range site number		027XY024NV	027XY023NV	027XY018NV	027XY018NV	027XY022NV	none
Potential production (lb/acre):							
Favorable years		500	700	400	400	400	
Normal years		350	500	250	250	200	
Unfavorable years		150	300	100	100	50	

130--BOOMSTICK-MAJUBA-SOJUR ASSOCIATION

(An X indicates that the named plant is in the potential native woodland understory and the percentage is highly variable. Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		BOOMSTICK	MAJUBA	SOJUR	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	OREY	---	---	15-25	---	5-15	15-25	---
Sandberg bluegrass	POSE	2-8	2-8	---	X	2-8	---	2-8
Thurber needlegrass	STTH2	20-35	20-35	---	X	25-35	---	---
basin wildrye	ELCI2	---	---	---	---	---	5-15	---
desert needlegrass	STSP3	2-5	2-5	2-10	---	---	---	30-40
Lahontan sagebrush	ARARL*	30-35	30-35	---	---	---	---	25-35
Nevada ephedra	EPNE	---	---	2-5	---	2-5	---	---
Wyoming big sagebrush	ARTRW	---	---	---	X	25-35	---	---
basin big sagebrush	ARTRT	---	---	---	---	---	20-30	---
bud sagebrush	ARSP5	---	---	2-8	---	---	---	---
mountain big sagebrush	ARVA2	---	---	---	X	---	---	---
rabbitbrush	CHRY59	---	---	---	---	---	2-5	---
shadscale	ATCO	---	---	30-40	---	---	---	---
spiny hopsage	GRSP	2-5	2-5	---	---	2-8	10-20	2-8
winterfat	EULA5	---	---	2-8	---	---	---	---
Utah juniper	JUOS	---	---	---	X	---	---	---

Range site number	027XY079NV	027XY079NV	027XY027NV	027XY075NV	027XY007NV	027XY029NV	027XY020NV
Potential production (lb/acre):							
Favorable years	500	500	200	500	700	800	450
Normal years	350	350	100	350	500	500	300
Unfavorable years	200	200	50	200	300	300	150

131--BOOMSTICK-MAJUBA-PHLISS ASSOCIATION

(An X indicates that the named plant is in the potential native woodland understory and the percentage is highly variable. Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		BOOMSTICK	MAJUBA	PHLISS	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Canby bluegrass	POCA	---	---	---	---	---	---	---
Indian ricegrass	OREY	---	---	5-15	---	---	15-25	---
Sandberg bluegrass	POSE	2-8	2-8	2-8	---	---	---	X
Thurber needlegrass	STH2	20-35	20-35	25-35	---	30-40	---	X
basin wildrye	ELCI2	---	---	---	---	---	5-15	---
bluegrass	POA++	---	---	---	---	2-8	---	---
desert needlegrass	STSP3	2-5	2-5	---	---	---	---	---
Lahontan sagebrush	ARARL*	30-35	30-35	---	---	---	---	---
Nevada ephedra	EPNE	---	---	2-5	---	---	---	---
Wyoming big sagebrush	ARTRW	---	---	25-35	---	---	---	X
basin big sagebrush	ARTRT	---	---	---	---	---	20-30	---
big sagebrush	ARTR2	---	---	---	---	20-30	---	---
mountain big sagebrush	ARVA2	---	---	---	---	---	---	X
rabbitbrush	CHRYS9	---	---	---	---	---	2-5	---
spiny hopsage	GRSP	2-5	2-5	2-8	---	---	10-20	---
Utah juniper	JUOS	---	---	---	---	---	---	X

Range site number	027XY079NV	027XY079NV	027XY007NV	none	027XY054NV	027XY029NV	027XY075NV
Potential production (lb/acre):							
Favorable years	500	500	700		900	800	500
Normal years	350	350	500		700	500	350
Unfavorable years	200	200	300		500	300	200

132--BOOMSTICK-MAJUBA ASSOCIATION

(An X indicates that the named plant is in the potential native woodland understory and the percentage is highly variable. Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		BOOMSTICK	MAJUBA	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Canby bluegrass	POCA	---	---	---	---	---	---
Indian ricegrass	ORHY	---	---	---	15-25	---	---
Sandberg bluegrass	POSE	2-8	2-8	---	---	2-8	X
Thurber needlegrass	STTE2	20-35	20-35	30-40	---	20-35	X
basin wildrye	ELCI2	---	---	---	5-15	---	---
bluegrass	POA++	---	---	2-8	---	---	---
desert needlegrass	STSP3	2-5	2-5	---	---	2-5	---
Lahontan sagebrush	ARARL*	30-35	30-35	---	---	30-35	---
Wyoming big sagebrush	ARTRW	---	---	---	---	---	X
basin big sagebrush	ARTRT	---	---	---	20-30	---	---
big sagebrush	ARTR2	---	---	20-30	---	---	---
mountain big sagebrush	ARVA2	---	---	---	---	---	X
rabbitbrush	CHRY9	---	---	---	2-5	---	---
spiny hopsage	GRSP	2-5	2-5	---	10-20	2-5	---
Utah juniper	JUOS	---	---	---	---	---	X

Range site number	027XY079NV	027XY079NV	027XY054NV	027XY029NV	027XY079NV	027XY075NV
Potential production (lb/acre):						
Favorable years	500	500	900	800	500	500
Normal years	350	350	700	500	350	350
Unfavorable years	200	200	500	300	200	200

139--ARCLAY VERY GRAVELLY COARSE SANDY LOAM, 4 TO 15 PERCENT SLOPES

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		ARCLAY	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	---	2-10	5-15	15-25	---
Sandberg bluegrass	POSE	2-8	---	2-8	---	---
Thurber needlegrass	STTH2	20-35	40-50	25-35	---	---
basin wildrye	ELCI2	---	---	---	5-15	---
desert needlegrass	STSP3	2-5	---	---	---	---
Lahontan sagebrush	ARARL*	30-35	---	---	---	---
Nevada ephedra	EPNE	---	---	2-5	---	---
Wyoming big sagebrush	ARTRW	---	---	25-35	---	---
basin big sagebrush	ARTRT	---	---	---	20-30	---
big sagebrush	ARTR2	---	15-25	---	---	---
mountain big sagebrush	ARVA2	---	---	---	---	---
rabbitbrush	CHRY59	---	---	---	2-5	---
spiny hopsage	GRSP	2-5	2-5	2-8	10-20	---
Range site number		027XY079NV	027XY072NV	027XY007NV	027XY029NV	none
Potential production (lb/acre):						
Favorable years		500	800	700	800	
Normal years		350	600	500	500	
Unfavorable years		200	400	300	300	

141--ARCLAY-ACRELANE-SOAR ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		ARCLAY	ACRELANE	SOAR	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	---	2-10	---	---	15-25	20-25
Sandberg bluegrass	POSE	2-8	---	---	2-8	---	2-5
Thurber needlegrass	STTH2	20-35	40-50	---	20-35	---	---
basin wildrye	ELCI2	---	---	---	---	5-15	---
bottlebrush squirreltail	SIHY	---	---	---	---	---	2-5
desert needlegrass	STSP3	2-5	---	50-60	2-5	---	---
needleandthread	STCO4	---	---	---	---	---	5-15
Lahontan sagebrush	ARAL*	30-35	---	25-30	30-35	---	---
Nevada ephedra	EPNE	---	---	---	---	---	2-5
Wyoming big sagebrush	ARTRW	---	---	---	---	---	20-30
basin big sagebrush	ARTRT	---	---	---	---	20-30	---
big sagebrush	ARTR2	---	15-25	---	---	---	---
mountain big sagebrush	ARVA2	---	---	---	---	---	---
rabbitbrush	CHRY59	---	---	---	---	2-5	---
spiny hopsage	GRSP	2-5	2-5	2-8	2-5	10-20	10-25
winterfat	EULA5	---	---	2-8	---	---	2-5

Range site number	027XY079NV	027XY072NV	027XY068NV	027XY079NV	027XY029NV	027XY008NV
Potential production (lb/acre):						
Favorable years	500	800	900	500	800	700
Normal years	350	600	600	350	500	500
Unfavorable years	200	400	350	200	300	300

142--ARCLAY-VIUM-SLOCAVE ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		ARCLAY	VIUM	SLOCAVE	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	---	15-25	5-15	2-10	---	---	10-20
Sandberg bluegrass	POSE	2-8	---	---	---	---	---	5-10
Thurber needlegrass	STTE2	20-35	---	---	40-50	---	---	---
bottlebrush squirreltail	SIHY	---	---	---	---	---	---	2-8
desert needlegrass	STSP3	2-5	2-10	40-60	---	---	50-60	---
globemallow	SPHAE	---	---	1-3	---	---	---	---
Anderson wolfberry	LYAN	---	---	2-5	---	---	---	---
Bailey greasewood	SAVEB	---	---	---	---	---	---	20-30
Lahontan sagebrush	ARARL*	30-35	---	---	---	---	25-30	---
Nevada ephedra	EPNE	---	2-5	2-5	---	---	---	---
Wyoming big sagebrush	ARTRW	---	---	---	---	---	---	---
big sagebrush	ARTR2	---	---	---	15-25	---	---	---
bud sagebrush	ARSP5	---	2-8	---	---	---	---	5-15
mountain big sagebrush	ARVA2	---	---	---	---	---	---	---
shadscale	ATCO	---	30-40	20-35	---	---	---	15-30
spiny hopsage	GRSP	2-5	---	2-8	2-5	---	2-8	---
winterfat	EULA5	---	2-8	---	---	---	2-8	---

Range site number	027XY079NV	027XY027NV	027XY017NV	027XY072NV	none	027XY068NV	027XY018NV
Potential production (lb/acre):							
Favorable years	500	200	400	800		900	400
Normal years	350	100	200	600		600	250
Unfavorable years	200	50	100	400		350	100

143--NINEMILE-ROCK OUTCROP COMPLEX

(An X indicates that the named plant is in the potential native woodland understory and the percentage is highly variable. Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		NINEMILE	ROCK OUTCROP	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	---	---	X	2-10	15-25	---
Thurber needlegrass	STTE2	10-25	---	X	40-50	---	---
basin wildrye	ELCI2	---	---	X	---	5-15	---
bluebunch wheatgrass	AGSP	20-50	---	---	---	---	---
bluegrass	POA++	5-10	---	---	---	---	---
desert needlegrass	STSP3	---	---	40-60	---	---	50-60
Lahontan sagebrush	ARARL*	---	---	X	---	---	25-30
Wyoming big sagebrush	ARTRW	---	---	---	---	---	---
basin big sagebrush	ARTRT	---	---	---	---	20-30	---
big sagebrush	ARTE2	---	---	---	15-25	---	---
low sagebrush	ARAR8	10-20	---	---	---	---	---
mountain big sagebrush	ARVA2	---	---	X	---	---	---
rabbitbrush	CHRY59	---	---	---	---	2-5	---
spiny hopsage	GRSP	---	---	---	2-5	10-20	2-8
winterfat	EULA5	---	---	---	---	---	2-8
Utah juniper	JUOS	---	---	X	---	---	---

Range site number	023XY031NV	none	027XY075NV	027XY072NV	027XY029NV	027XY068NV
Potential production (lb/acre):						
Favorable years	900		500	800	800	900
Normal years	700		350	600	500	600
Unfavorable years	500		200	400	300	350

145--NINEMILE-SHIVELY-ROCK OUTCROP ASSOCIATION

(An X indicates that the named plant is in the potential native woodland understory and the percentage is highly variable. Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		NINEMILE	SHIVELY	ROCK OUTCROP	Inclusion 1	Inclusion 2	Inclusion 3
Cusick bluegrass	POCU3	---	---	---	2-5	---	---
Idaho fescue	FEID	---	30-40	---	5-15	---	X
Letterman needlegrass	STLE4	---	---	---	2-5	---	---
Nevada bluegrass	PONE3	---	---	---	2-5	---	X
Thurber needlegrass	STTE2	10-25	---	---	---	5-10	---
basin wildrye	ELCI2	---	---	---	2-5	---	---
big squirreltail	SIJU	---	---	---	---	---	X
bluebunch wheatgrass	AGSP	20-50	15-30	---	5-15	50-60	---
bluegrass	POA++	5-10	2-8	---	---	---	---
melic	MELIC	---	---	---	---	---	X
mountain brome	BRCA5	---	---	---	5-10	---	X
slender wheatgrass	AGTR	---	---	---	2-5	---	X
arrowleaf balsamroot	BASA3	---	2-5	---	---	1-2	---
meadowrue	TEALI2	---	---	---	---	---	X
tapertip hawksbeard	CRAC2	---	2-5	---	---	1-2	---
antelope bitterbrush	PUTR2	---	2-5	---	---	5-10	---
currant	RIBES	---	---	---	2-8	---	---
low sagebrush	ARAR8	10-20	---	---	---	---	---
mountain big sagebrush	ARVA2	---	15-20	---	5-15	15-25	X
oceanspray	HOLOD	---	---	---	5-15	---	---
serviceberry	AMELA	---	---	---	5-15	---	---
snowberry	SYMPH	---	2-5	---	2-10	---	X
threetip sagebrush	ARTR4	---	---	---	2-10	---	---
quaking aspen	POTRT	---	---	---	---	---	X

Range site number	023XY031NV	023XY043NV	none	024XY034NV	023XY042NV	023XY028NV
Potential production (lb/acre):						
Favorable years	900	1300		1600	1000	600
Normal years	700	700		1200	800	400
Unfavorable years	500	400		800	600	250

150--BOTON-PLAYAS ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		BOTON	PLAYAS	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	10-15	---	15-30	10-15	---
Sandberg bluegrass	POSE	---	---	2-15	---	---
bottlebrush squirreltail	SIEY	5-10	---	2-8	5-10	---
inland saltgrass	DISPS2	2-5	---	---	2-5	2-10
Bailey greasewood	SAVEB	T-5	---	---	T-5	---
black greasewood	SAVE4	20-30	---	---	20-30	60-70
bud sagebrush	ARSP5	2-5	---	15-25	2-5	---
seepweed	SUAE	---	---	---	---	2-8
shadscale	ATCO	20-35	---	20-35	20-35	2-10
winterfat	EULA5	---	---	5-10	---	---
Range site number		027XY024NV	none	027XY013NV	027XY024NV	027XY025NV
Potential production (lb/acre):						
Favorable years		500		600	500	500
Normal years		350		450	350	350
Unfavorable years		150		250	150	200

152--BENIN-BENIN, OCCASIONALLY FLOODED SILTY CLAY LOAMS

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		BENIN	BENIN	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
alkali sacaton	SPAI	---	---	---	5-15	---	---
basin wildrye	ELCI2	5-15	30-45	30-45	10-20	30-45	---
inland saltgrass	DISPS2	5-10	---	---	5-10	---	---
other perennial grasses	PPGG	---	2-15	2-15	5-10	2-15	---
Torrey quailbush	ATTO	---	30-40	30-40	---	30-40	---
basin big sagebrush	ARTRT	---	2-10	2-10	---	2-10	---
black greasewood	SAVE4	60-75	5-10	5-10	5-15	5-10	---
rubber rabbitbrush	CHNA2	---	---	---	2-5	---	---
shadscale	ATCO	---	---	---	5-15	---	---
silver buffaloberry	SHAR	---	---	---	15-30	---	---
Range site number		024XY011NV	024XY015NV	024XY015NV	024XY064NV	024XY015NV	none
Potential production (lb/acre):							
Favorable years		500	1500	1500	1400	1500	
Normal years		350	1200	1200	1000	1200	
Unfavorable years		200	800	800	700	800	

161--DUNE LAND-PLAYAS COMPLEX

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions	
		Soil name or Inclusion number--	
		DUNE LAND	PLAYAS

Range site number

none

none

Potential production (lb/acre):

Favorable years

Normal years

Unfavorable years

171--BLUEWING-TOULON-ROCK OUTCROP ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		BLUEWING	TOULON	ROCK OUTCROP	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	10-20	10-20	---	15-30	10-15	10-20
Sandberg bluegrass	POSE	5-10	5-10	---	2-15	---	5-10
bottlebrush squirreltail	SIHY	2-8	2-8	---	2-8	5-10	2-8
inland saltgrass	DISPS2	---	---	---	---	2-5	---
Bailey greasewood	SAVEB	20-30	20-30	---	---	T-5	20-30
black greasewood	SAVE4	---	---	---	---	20-30	---
bud segebrush	ARSP5	5-15	5-15	---	15-25	2-5	5-15
shadscale	ATCO	15-30	15-30	---	20-35	20-35	15-30
winterfat	EULA5	---	---	---	5-10	---	---
Range site number		027XY018NV	027XY018NV	none	027XY013NV	027XY024NV	027XY018NV
Potential production (lb/acre):							
Favorable years		400	400		600	500	400
Normal years		250	250		450	350	250
Unfavorable years		100	100		250	150	100

172--BLUEWING GRAVELLY SANDY LOAM, 2 TO 8 PERCENT SLOPES

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		BLUEWING	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	10-20	15-30	---	5-10
Sandberg bluegrass	POSE	5-10	2-15	---	---
bottlebrush squirreltail	SIBY	2-8	2-8	---	5-10
inland saltgrass	DISPS2	---	---	2-10	---
Bailey greasewood	SAVEB	20-30	---	---	---
Nevada ephedra	EPNE	---	---	---	5-10
black greasewood	SAVE4	---	---	60-70	---
bud sagebrush	ARSF5	5-15	15-25	---	---
burrobrush	HYMEN3	---	---	---	5-10
fourwing saltbush	ATCA2	---	---	---	5-10
littleleaf horsebrush	TEGL	---	---	---	10-20
rubber rabbitbrush	CHNA2	---	---	---	10-20
seepweed	SUAED	---	---	2-8	---
shadscale	ATCO	15-30	20-35	2-10	---
spiny hopsage	GRSP	---	---	---	10-20
winterfat	EULA5	---	5-10	---	---

Range site number	027XY018NV	027XY013NV	027XY025NV	027XY022NV
Potential production (lb/acre):				
Favorable years	400	600	500	400
Normal years	250	450	350	200
Unfavorable years	100	250	200	50

173--BLUEWING VERY GRAVELLY LOAMY SAND, 0 TO 2 PERCENT SLOPES, FREQUENTLY FLOODED

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions		
		Soil name or Inclusion number--		
		BLUEWING	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	5-10	10-15	40-50
bottlebrush squirreltail	SIHY	5-10	5-10	2-5
inland saltgrass	DISPS2	---	2-5	---
needleandthread	STCO4	---	---	5-15
globemallow	SPHAE	---	---	2-5
Bailey greasewood	SAVEB	---	T-5	---
Nevada ephedra	EPNE	5-10	---	---
black greasewood	SAVE4	---	20-30	---
bud sagebrush	ARSP5	---	2-5	5-15
burrobrush	HYMEN3	5-10	---	---
fourwing saltbush	ATCA2	5-10	---	---
littleleaf horsebrush	TEGL	10-20	---	---
rubber rabbitbrush	CBNA2	10-20	---	---
shadscale	ATCO	---	20-35	---
spiny hopsage	GRSP	10-20	---	---
winterfat	EULA5	---	---	25-30
Range site number		027XY022NV	027XY024NV	027XY014NV
Potential production (lb/acre):				
Favorable years		400	500	700
Normal years		200	350	500
Unfavorable years		50	150	350

180--BIGA-GRANSHAW-LABKEY ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		BIGA	GRANSHAW	LABKEY	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	10-20	15-30	10-20	40-50	5-10	50-70	20-25
Sandberg bluegrass	POSE	5-10	2-15	5-10	---	---	---	2-5
bottlebrush squirreltail	SIHY	2-8	2-8	2-8	2-5	5-10	---	2-5
needleandthread	STCO4	---	---	---	5-15	---	5-15	5-15
globemallow	SPHA8	---	---	---	2-5	---	---	---
Bailey greasewood	SAVEB	20-30	---	20-30	---	---	---	---
Nevada dalea	PSPO	---	---	---	---	---	0-5	---
Nevada ephedra	EPNE	---	---	---	---	5-10	---	2-5
Wyoming big sagebrush	ARTRW	---	---	---	---	---	---	20-30
bud sagebrush	ARSP5	5-15	15-25	5-15	5-15	---	---	---
burrobrush	HYMEN3	---	---	---	---	5-10	---	---
fourwing saltbush	ATCA2	---	---	---	---	5-10	10-20	---
littleleaf horsebrush	TEGL	---	---	---	---	10-20	---	---
rubber rabbitbrush	CHNA2	---	---	---	---	10-20	---	---
shadscale	ATCO	15-30	20-35	15-30	---	---	---	---
spiny hopsage	GRSP	---	---	---	---	10-20	2-5	10-25
winterfat	EULA5	---	5-10	---	25-30	---	2-8	2-5

Range site number	027XY018NV	027XY013NV	027XY018NV	027XY014NV	027XY022NV	027XY009NV	027XY008NV
Potential production (lb/acre):							
Favorable years	400	600	400	700	400	700	700
Normal years	250	450	250	500	200	450	500
Unfavorable years	100	250	100	350	50	250	300

181--BIGA GRAVELLY COARSE SANDY LOAM, 2 TO 8 PERCENT SLOPES

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		BIGA	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	10-20	20-25	---	5-10	40-50
Sandberg bluegrass	POSE	5-10	2-5	---	---	---
bottlebrush squirreltail	SIHY	2-8	2-5	---	5-10	2-5
desert needlegrass	STSP3	---	---	50-60	---	---
needleandthread	STCO4	---	5-15	---	---	5-15
globemallow	SPHA8	---	---	---	---	2-5
Bailey greasewood	SAVE8	20-30	---	---	---	---
Lahontan sagebrush	ARARL*	---	---	25-30	---	---
Nevada ephedra	EPNE	---	2-5	---	5-10	---
Wyoming big sagebrush	ARTRW	---	20-30	---	---	---
bud sagebrush	ARSP5	5-15	---	---	---	5-15
burrobrush	HYMEN3	---	---	---	5-10	---
fourwing saltbush	ATCA2	---	---	---	5-10	---
littleleaf horsebrush	TEGL	---	---	---	10-20	---
rubber rabbitbrush	CHNA2	---	---	---	10-20	---
shadscale	ATCO	15-30	---	---	---	---
spiny hopsage	GRSP	---	10-25	2-8	10-20	---
winterfat	EULA5	---	2-5	2-8	---	25-30

Range site number	027XY018NV	027XY008NV	027XY068NV	027XY022NV	027XY014NV
Potential production (lb/acre):					
Favorable years	400	700	900	400	700
Normal years	250	500	600	200	500
Unfavorable years	100	300	350	50	350

182--BIGA GRAVELLY LOAM, 2 TO 8 PERCENT SLOPES

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		BIGA	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	15-30	15-30	20-25	20-25	15-30
Sandberg bluegrass	POSE	2-15	2-15	2-5	2-5	2-15
bottlebrush squirreltail	SINY	2-8	2-8	2-5	2-5	2-8
needleandthread	STCO4	---	---	5-15	5-15	---
Nevada ephedra	EPNE	---	---	2-5	2-5	---
Wyoming big sagebrush	ARTRW	---	---	20-30	20-30	---
bud sagebrush	ARSP5	15-25	15-25	---	---	15-25
shadscale	ATCO	20-35	20-35	---	---	20-35
spiny hopsage	GRSP	---	---	10-25	10-25	---
winterfat	EULA5	5-10	5-10	2-5	2-5	5-10
Range site number		027XY013NV	027XY013NV	027XY008NV	027XY008NV	027XY013NV
Potential production (lb/acre):						
Favorable years		600	600	700	700	600
Normal years		450	450	500	500	450
Unfavorable years		250	250	300	300	250

190--CRESAL SILT LOAM, 0 TO 2 PERCENT SLOPES

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions		
		Soil name or Inclusion number--		
		CRESAL	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	---	10-15	10-15
bottlebrush squirreltail	SIHY	2-10	5-10	5-10
inland saltgrass	DISPS2	---	2-5	2-5
Bailey greasewood	SAVEB	---	T-5	T-5
black greasewood	SAVE4	---	20-30	20-30
bud sagebrush	ARSP5	---	2-5	2-5
shadscale	ATCO	75-85	20-35	20-35
Range site number		024XY067NV	027XY024NV	027XY024NV
Potential production (lb/acre):				
Favorable years		300	500	500
Normal years		200	350	350
Unfavorable years		75	150	150

201--DORPER-ENVOL ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		DORPER	ENVOL	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	10-20	15-25	15-30	---	5-10	40-50
Sandberg bluegrass	POSE	5-10	---	2-15	---	---	---
bottlebrush squirreltail	SIHY	2-8	---	2-8	---	5-10	2-5
desert needlegrass	STSP3	---	2-10	---	---	---	---
needleandthread	STCO4	---	---	---	---	---	5-15
globemallow	SPHAE	---	---	---	---	---	2-5
Bailey greasewood	SAVEB	20-30	---	---	---	---	---
Nevada ephedra	EPNE	---	2-5	---	---	5-10	---
bud sagebrush	ARSP5	5-15	2-8	15-25	---	---	5-15
burrobrush	HYMEN3	---	---	---	---	5-10	---
fourwing saltbush	ATCA2	---	---	---	---	5-10	---
littleleaf horsebrush	TEGL	---	---	---	---	10-20	---
rubber rabbitbrush	CHNA2	---	---	---	---	10-20	---
shadscale	ATCO	15-30	30-40	20-35	---	---	---
spiny hopsage	GRSP	---	---	---	---	10-20	---
winterfat	EULA5	---	2-8	5-10	---	---	25-30

Range site number	027XY018NV	027XY027NV	027XY013NV	none	027XY022NV	027XY014NV
Potential production (lb/acre):						
Favorable years	400	200	600		400	700
Normal years	250	100	450		200	500
Unfavorable years	100	50	250		50	350

203--DORPER EXTREMELY GRAVELLY VERY FINE SANDY LOAM, 2 TO 8 PERCENT SLOPES

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		DORPER	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	10-20	5-10	10-20	---
Sandberg bluegrass	POSE	5-10	---	5-10	2-8
bottlebrush squirreltail	SIHY	2-8	5-10	2-8	---
desert needlegrass	STSP3	---	---	---	30-40
Bailey greasewood	SAVEB	20-30	---	20-30	---
Lahontan sagebrush	ARARL+	---	---	---	25-35
Nevada ephedra	EPNE	---	5-10	---	---
bud sagebrush	ARSP5	5-15	---	5-15	---
burrobrush	HYMEN3	---	5-10	---	---
fourwing saltbush	ATCA2	---	5-10	---	---
littleleaf horsebrush	TEGL	---	10-20	---	---
rubber rabbitbrush	CHNA2	---	10-20	---	---
shadscale	ATCO	15-30	---	15-30	---
spiny hopsage	GRSP	---	10-20	---	2-8

Range site number	027XY018NV	027XY022NV	027XY018NV	027XY020NV
Potential production (lb/acre):				
Favorable years	400	400	400	450
Normal years	250	200	250	300
Unfavorable years	100	50	100	150

204--DORPER, STONY-JERVAL-DORPER ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		DORPER	JERVAL	DORPER	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	15-30	15-30	10-20	10-20	15-25	15-30	---
Sandberg bluegrass	POSE	2-15	2-15	5-10	5-10	---	2-15	2-8
Thurber needlegrass	STH2	---	---	---	---	---	---	20-35
basin wildrye	ELCI2	---	---	---	---	5-15	---	---
bottlebrush squirreltail	SIHY	2-8	2-8	2-8	2-8	---	2-8	---
desert needlegrass	STSP3	---	---	---	---	---	---	2-5
Bailey greasewood	SAVEB	---	---	20-30	20-30	---	---	---
Lahontan sagebrush	ARARL*	---	---	---	---	---	---	30-35
basin big sagebrush	ARTRT	---	---	---	---	20-30	---	---
bud sagebrush	ARSP5	15-25	15-25	5-15	5-15	---	15-25	---
rabbitbrush	CHRS9	---	---	---	---	2-5	---	---
shadscale	ATCO	20-35	20-35	15-30	15-30	---	20-35	---
spiny hopsage	GRSP	---	---	---	---	10-20	---	2-5
winterfat	EULA5	5-10	5-10	---	---	---	5-10	---

Range site number	027XY013NV	027XY013NV	027XY018NV	027XY018NV	027XY029NV	027XY013NV	027XY079NV
Potential production (lb/acre):							
Favorable years	600	600	400	400	800	600	500
Normal years	450	450	250	250	500	450	350
Unfavorable years	250	250	100	100	300	250	200

206--DORPER VERY GRAVELLY SANDY LOAM, 2 TO 8 PERCENT SLOPES

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		DORPER	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	10-20	---	40-50	50-70	5-10
Sandberg bluegrass	POSE	5-10	---	---	---	---
bottlebrush squirreltail	SIHY	2-8	---	2-5	---	5-10
needleandthread	STCO4	---	---	5-15	5-15	---
globemallow	SPHAE	---	---	2-5	---	---
Bailey greasewood	SAVEB	20-30	---	---	---	---
Nevada dalea	PSPO	---	---	---	0-5	---
Nevada ephedra	EPNE	---	---	---	---	5-10
bud sagebrush	ARSP5	5-15	---	5-15	---	---
burrobrush	HYMEN3	---	---	---	---	5-10
fourwing saltbush	ATCA2	---	---	---	10-20	5-10
littleleaf horsebrush	TEGL	---	---	---	---	10-20
rubber rabbitbrush	CHNA2	---	---	---	---	10-20
shadscale	ATCO	15-30	---	---	---	---
spiny hopsage	GRSP	---	---	---	2-5	10-20
winterfat	EULA5	---	---	25-30	2-8	---
Range site number		027XY018NV	none	027XY014NV	027XY009NV	027XY022NV
Potential production (lb/acre):						
Favorable years		400		700	700	400
Normal years		250		500	450	200
Unfavorable years		100		350	250	50

210--DORPER-ABOTEN-KUMIVA ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		DORPER	ABOTEN	KUMIVA	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	15-30	10-20	40-50	15-25	15-25
Sandberg bluegrass	POSE	2-15	5-10	---	---	---
basin wildrye	ELCI2	---	---	---	5-15	---
bottlebrush squirreltail	SIHY	2-8	2-8	2-5	---	---
desert needlegrass	STSP3	---	---	---	---	2-10
needleandthread	STCO4	---	---	5-15	---	---
globemallow	SPHAE	---	---	2-5	---	---
Bailey greasewood	SAVEB	---	20-30	---	---	---
Nevada ephedra	EPNE	---	---	---	---	2-5
basin big sagebrush	ARTRT	---	---	---	20-30	---
bud sagebrush	ARSP5	15-25	5-15	5-15	---	2-8
rabbitbrush	CHRS9	---	---	---	2-5	---
shadscale	ATCO	20-35	15-30	---	---	30-40
spiny hopsage	GRSP	---	---	---	10-20	---
winterfat	EULA5	5-10	---	25-30	---	2-8
Range site number		027XY013NV	027XY018NV	027XY014NV	027XY029NV	027XY027NV
Potential production (lb/acre):						
Favorable years		600	400	700	800	200
Normal years		450	250	500	500	100
Unfavorable years		250	100	350	300	50

220--CLEAVAGE-PHLISS-MAJUBA ASSOCIATION

(An X indicates that the named plant is in the potential native woodland understory and the percentage is highly variable.
Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		CLEAVAGE	PHLISS	MAJUBA	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Canby bluegrass	POCA	---	---	---	---	---	---	---
Cusick bluegrass	POCU3	---	---	---	---	2-8	---	---
Idaho fescue	FEID	20-40	---	---	---	30-50	---	15-25
Nevada bluegrass	PONE3	---	---	---	---	---	---	---
Sandberg bluegrass	POSE	---	---	2-8	---	---	X	---
Thurber needlegrass	STTR2	2-8	5-15	20-35	---	---	X	---
Webber needlegrass	STWE	---	---	---	---	---	---	2-5
basin wildrye	ELCI2	---	2-5	---	---	---	---	---
bluebunch wheatgrass	AGSP	10-20	40-60	---	---	10-30	---	2-5
bluegrass	POA++	2-8	2-8	---	---	---	---	5-10
desert needlegrass	STSP3	---	---	2-5	---	---	---	---
pine bluegrass	POSC	---	---	---	---	---	---	---
arrowleaf balsamroot	BASA3	---	2-5	---	---	---	---	---
goldenweed	HAPLO2	---	---	---	---	---	---	2-5
tapertip hawkbeard	CRAC2	---	2-5	---	---	2-5	---	---
Lahontan sagebrush	ARARL*	---	---	30-35	---	---	---	---
Wyoming big sagebrush	ARTRW	---	---	---	---	---	X	---
big sagebrush	ARTR2	---	15-25	---	---	---	---	---
black sagebrush	ARARN	---	---	---	---	---	---	---
low sagebrush	ARAR8	20-30	---	---	---	---	---	---
mountain big sagebrush	ARVA2	---	---	---	---	---	X	---
sagebrush	ARTEM	---	---	---	---	---	---	35-40
spiny hopsage	GRSP	---	---	2-5	---	---	---	---
threetip sagebrush	ARTR4	---	---	---	---	15-25	---	---
Utah juniper	JUOS	---	---	---	---	---	X	---

Range site number	024XY027NV	024XY028NV	027XY079NV	none	024XY046NV	027XY075NV	024XY016NV
Potential production (lb/acre):							
Favorable years	1200	1000	500		1100	500	350
Normal years	800	700	350		900	350	250
Unfavorable years	600	500	200		600	200	150

221--CLEAVAGE-BURNBOROUGH ASSOCIATION

(An X indicates that the named plant is in the potential native woodland understory and the percentage is highly variable.
Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		CLEAVAGE	BURNBOROUGH	Inclusion 1	Inclusion 2	Inclusion 3
Canby bluegrass	POCA	---	---	---	---	---
Cusick bluegrass	POCU3	---	---	---	---	---
Idaho fescue	FEID	20-40	20-40	---	25-35	---
Nevada bluegrass	PONE3	---	---	---	---	---
Sandberg bluegrass	POSE	---	---	X	---	---
Thurber needlegrass	STHE2	2-8	2-8	X	---	40-50
basin wildrye	ELCI2	---	2-15	---	---	5-15
bluebunch wheatgrass	AGSP	10-20	20-40	---	---	---
bluegrass	POA++	2-8	---	---	5-15	2-5
muttongrass	POFE	---	---	---	---	---
needlegrass	STIPA	---	---	---	5-10	---
western needlegrass	STOC2	---	---	---	---	---
arrowleaf balsamroot	BASA3	---	1-5	---	---	---
helianthella	HELIA	---	1-2	---	---	---
tapertip hawksbeard	CRAC2	---	1-5	---	---	---
white stoneseed	LIRU4	---	1-2	---	---	---
Wyoming big sagebrush	ARTRW	---	---	X	---	---
big sagebrush	ARTR2	---	---	---	---	15-25
low sagebrush	ARAR8	20-30	---	---	20-30	---
mountain big sagebrush	ARVA2	---	15-25	X	---	---
Utah juniper	JUOS	---	---	X	---	---

Range site number	024XY027NV	024XY021NV	027XY075NV	027XY046NV	027XY058NV
Potential production (lb/acre):					
Favorable years	1200	1400	500	600	1200
Normal years	800	1000	350	400	1000
Unfavorable years	600	700	200	250	700

230--COLDENT-ISOLDE-SWINGLER ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		COLDENT	ISOLDE	SWINGLER	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORRY	10-20	20-30	10-15	---	---	5-10	10-20
Sandberg bluegrass	POSE	5-10	---	---	---	---	---	5-10
bottlebrush squirreltail	SIRY	2-8	---	5-10	---	---	5-10	2-8
inland saltgrass	DISPS2	---	2-5	2-5	2-10	---	---	---
Bailey greasewood	SAVEB	20-30	---	T-5	---	---	---	20-30
Nevada ephedra	EPNE	---	---	---	---	---	5-10	---
black greasewood	SAVE4	---	30-50	20-30	60-70	---	---	---
bud sagebrush	ARSP5	5-15	---	2-5	---	---	---	5-15
burrobrush	HYMEN3	---	---	---	---	---	5-10	---
fourwing saltbush	ATCA2	---	2-5	---	---	---	5-10	---
littleleaf horsebrush	TEGL	---	---	---	---	---	10-20	---
rubber rabbitbrush	CHNA2	---	---	---	---	---	10-20	---
seepweed	SUAED	---	---	---	2-8	---	---	---
shadscale	ATCO	15-30	2-5	20-35	2-10	---	---	15-30
spiny hopsage	GRSP	---	---	---	---	---	10-20	---
Range site number		027XY018NV	027XY016NV	027XY024NV	027XY025NV	none	027XY022NV	027XY018NV
Potential production (lb/acre):								
Favorable years		400	500	500	500		400	400
Normal years		250	300	350	350		200	250
Unfavorable years		100	150	150	200		50	100

231--COLDENT-HAWSLEY-MAZUMA ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		COLDENT	HAWSLEY	MAZUMA	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORBY	10-20	50-70	10-15	5-10	---	---
Sandberg bluegrass	POSE	5-10	---	---	---	---	---
bottlebrush squirreltail	SIRY	2-8	---	5-10	5-10	---	---
inland saltgrass	DISPS2	---	---	2-5	---	---	---
needleandthread	STCO4	---	5-15	---	---	---	---
Bailey greasewood	SAVEB	20-30	---	T-5	---	---	---
Nevada dalea	PSPO	---	0-5	---	---	---	---
Nevada ephedra	EPNE	---	---	---	5-10	---	---
black greasewood	SAVE4	---	---	20-30	---	---	---
bud sagebrush	ARSP5	5-15	---	2-5	---	---	---
burrobrush	HYMEN3	---	---	---	5-10	---	---
fourwing saltbush	ATCA2	---	10-20	---	5-10	---	---
littleleaf horsebrush	TEGL	---	---	---	10-20	---	---
rubber rabbitbrush	CHNA2	---	---	---	10-20	---	---
shadscale	ATCO	15-30	---	20-35	---	---	---
spiny hopsage	GRSP	---	2-5	---	10-20	---	---
winterfat	EULA5	---	2-8	---	---	---	---
Range site number		027XY018NV	027XY009NV	027XY024NV	027XY022NV	none	none
Potential production (lb/acre):							
Favorable years		400	700	500	400		
Normal years		250	450	350	200		
Unfavorable years		100	250	150	50		

245--DEDMOUNT-UMBERLAND-UMBERLAND, PONDED ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		DEDMOUNT	UMBERLAND	UMBERLAND	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	---	---	---	---	2-5	---	---
alkali sacaton	SPAI	---	---	---	---	---	5-25	---
basin wildrye	ELCI2	55-65	30-45	---	55-65	5-20	50-60	---
bottlebrush squirreltail	SIHY	---	---	---	---	2-5	---	---
creeping wildrye	ELTR3	5-15	---	---	5-15	---	---	---
inland saltgrass	DISPS2	---	---	60-90	---	---	---	---
other perennial grasses	PPGG	---	2-15	---	---	---	---	---
western wheatgrass	AGSM	5-15	---	---	5-15	---	---	---
globemallow	SPHAE	---	---	---	---	1-2	---	---
other perennial forbs	PPFF	---	---	1-5	---	---	---	---
thelypody	THELY	---	---	---	---	2-4	---	---
Torrey quailbush	ATTO	---	30-40	---	---	---	---	---
Wyoming big sagebrush	ARTRW	---	---	---	---	---	---	---
basin big sagebrush	ARTRT	10-15	2-10	---	10-15	---	---	---
big sagebrush	ARTR2	---	---	---	---	10-25	---	---
black greasewood	SAVE4	2-8	5-10	---	2-8	20-30	5-15	---
rubber rabbitbrush	CHNA2	---	---	---	---	---	2-5	---
spiny hopsage	GRSP	---	---	---	---	5-15	---	---

Range site number	024XY006NV	024XY015NV	026XY002NV	024XY006NV	024XY022NV	024XY007NV	none
Potential production (lb/acre):							
Favorable years	1500	1500	2000	1500	800	1900	
Normal years	1100	1200	1700	1100	600	1400	
Unfavorable years	600	800	1200	600	350	800	

250--DEVADA-ROCK OUTCROP COMPLEX

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		DEVADA	ROCK OUTCROP	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Canby bluegrass	POCA	---	---	---	---	---	---
Idaho fescue	FEID	---	---	---	15-25	---	---
Nevada bluegrass	PONE3	---	---	---	---	---	2-8
Sandberg bluegrass	POSE	---	---	---	---	---	---
Thurber needlegrass	STTH2	10-25	---	40-50	---	---	---
basin wildrye	ELCI2	---	---	5-15	---	---	65-75
bluebunch wheatgrass	AGSP	20-50	---	---	---	---	---
bluegrass	POA++	5-10	---	2-5	5-15	---	---
goldenweed	HAPLO2	---	---	---	2-5	---	---
Douglas rabbitbrush	CHVI8	---	---	---	2-5	---	---
Wyoming big sagebrush	ARTRW	---	---	---	---	---	---
basin big sagebrush	ARTRT	---	---	---	---	---	5-10
big sagebrush	ARTR2	---	---	15-25	---	---	---
low sagebrush	ARAR8	10-20	---	---	35-45	---	---
mountain big sagebrush	ARVA2	---	---	---	---	---	---
rubber rabbitbrush	CHNA2	---	---	---	---	---	1-3

Range site number	023XY031NV	none	027XY058NV	023XY008NV	none	023XY009NV
Potential production (lb/acre):						
Favorable years	900		1200	400		5500
Normal years	700		1000	250		4500
Unfavorable years	500		700	200		2500

300--ENVOL-FRINES-ROCK OUTCROP ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		ENVOL	FRINES	ROCK OUTCROP	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	15-25	10-20	---	5-15	---	5-10
Sandberg bluegrass	POSE	---	5-10	---	---	2-8	---
Thurber needlegrass	STTH2	---	---	---	---	20-35	---
bottlebrush squirreltail	SIRY	---	2-8	---	2-5	---	5-10
desert needlegrass	STSP3	2-10	---	---	2-8	2-5	---
Bailey greasewood	SAVEB	---	20-30	---	15-30	---	---
Lahontan sagebrush	ARARL*	---	---	---	---	30-35	---
Nevada ephedra	EPNE	2-5	---	---	---	---	5-10
bud sagebrush	ARSP5	2-8	5-15	---	2-8	---	---
burrobrush	HYMEN3	---	---	---	---	---	5-10
fourwing saltbush	ATCA2	---	---	---	---	---	5-10
littleleaf horsebrush	TEGL	---	---	---	---	---	10-20
rubber rabbitbrush	CHNA2	---	---	---	---	---	10-20
shadscale	ATCO	30-40	15-30	---	15-35	---	---
spiny hopsage	GRSP	---	---	---	---	2-5	10-20
winterfat	EULA5	2-8	---	---	---	---	---

Range site number	027XY027NV	027XY018NV	none	027XY019NV	027XY079NV	027XY022NV
Potential production (lb/acre):						
Favorable years	200	400		300	500	400
Normal years	100	250		175	350	200
Unfavorable years	50	100		50	200	50

302--ENVOL GRAVELLY LOAM, 15 TO 50 PERCENT SLOPES

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		ENVOL	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	15-25	10-20	---	5-15	15-25
Sandberg bluegrass	POSE	---	5-10	---	2-8	---
Thurber needlegrass	STTH2	---	---	---	25-35	---
basin wildrye	ELCI2	---	---	---	---	5-15
bottlebrush squirreltail	SIHY	---	2-8	---	---	---
desert needlegrass	STSP3	2-10	---	---	---	---
Bailey greasewood	SAVEB	---	20-30	---	---	---
Nevada ephedra	EPNE	2-5	---	---	2-5	---
Wyoming big sagebrush	ARTRW	---	---	---	25-35	---
basin big sagebrush	ARTRT	---	---	---	---	20-30
bud sagebrush	ARSP5	2-8	5-15	---	---	---
rabbitbrush	CHRY9	---	---	---	---	2-5
shadscale	ATCO	30-40	15-30	---	---	---
spiny hopsage	GRSP	---	---	---	2-8	10-20
winterfat	EULA5	2-8	---	---	---	---
Range site number		027XY027NV	027XY018NV	none	027XY007NV	027XY029NV
Potential production (lb/acre):						
Favorable years		200	400		700	800
Normal years		100	250		500	500
Unfavorable years		50	100		300	300

310--EAGLEROCK-ROCK OUTCROP ASSOCIATION

(An X indicates that the named plant is in the potential native woodland understory and the percentage is highly variable. Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		EAGLEROCK	ROCK OUTCROP	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Canby bluegrass	POCA	---	---	---	---	---	---
Cusick bluegrass	POCU3	---	---	---	---	---	---
Indian ricegrass	ORHY	---	---	---	---	---	15-25
Sandberg bluegrass	POSE	---	---	X	2-8	---	---
Thurber needlegrass	STH2	40-50	---	X	20-35	---	---
basin wildrye	ELCI2	---	---	---	---	---	5-15
bluegrass	POA++	2-5	---	---	---	---	---
desert needlegrass	STSP3	---	---	---	2-5	50-60	---
Lahontan sagebrush	ARARL*	---	---	---	30-35	25-30	---
Wyoming big sagebrush	ARTRW	---	---	X	---	---	---
basin big sagebrush	ARTRT	---	---	---	---	---	20-30
green ephedra	EPVI	2-5	---	---	---	---	---
mountain big sagebrush	ARVA2	15-25	---	X	---	---	---
rabbitbrush	CHYS9	---	---	---	---	---	2-5
spiny hopsage	GRSP	---	---	---	2-5	2-8	10-20
winterfat	EULA5	---	---	---	---	2-8	---
Utah juniper	JUOS	---	---	X	---	---	---

Range site number	027XY073NV	none	027XY075NV	027XY079NV	027XY068NV	027XY029NV
Potential production (lb/acre):						
Favorable years	1100		500	500	900	800
Normal years	900		350	350	600	500
Unfavorable years	700		200	200	350	300

401--GENEGRAF-DORPER-BLUEWING ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		GENEGRAF	DORPER	BLUEWING	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	OREY	10-20	15-30	10-20	10-20	5-10	10-15
Sandberg bluegrass	POSE	5-10	2-15	5-10	5-10	---	---
bottlebrush squirreltail	SIEY	2-8	2-8	2-8	2-8	5-10	5-10
inland saltgrass	DISPS2	---	---	---	---	---	2-5
Bailey greasewood	SAVEB	20-30	---	20-30	20-30	---	T-5
Nevada ephedra	EPNE	---	---	---	---	5-10	---
black greasewood	SAVE4	---	---	---	---	---	20-30
bud sagebrush	ARSP5	5-15	15-25	5-15	5-15	---	2-5
burrobrush	HYMEN3	---	---	---	---	5-10	---
fourwing saltbush	ATCA2	---	---	---	---	5-10	---
littleleaf horsebrush	TEGL	---	---	---	---	10-20	---
rubber rabbitbrush	CHNA2	---	---	---	---	10-20	---
shadscale	ATCO	15-30	20-35	15-30	15-30	---	20-35
spiny hopsage	GRSP	---	---	---	---	10-20	---
winterfat	EULA5	---	5-10	---	---	---	---
Range site number		027XY018NV	027XY013NV	027XY018NV	027XY018NV	027XY022NV	027XY024NV
Potential production (lb/acre):							
Favorable years		400	600	400	400	400	500
Normal years		250	450	250	250	200	350
Unfavorable years		100	250	100	100	50	150

402--GENEGRAF-BLUEWING-DORPER ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		GENEGRAF	BLUEWING	DORPER	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	10-20	10-20	10-20	15-30	5-10	50-70
Sandberg bluegrass	POSE	5-10	5-10	5-10	2-15	---	---
bottlebrush squirreltail	SIRY	2-8	2-8	2-8	2-8	5-10	---
needleandthread	STCO4	---	---	---	---	---	5-15
Bailey greasewood	SAVEB	20-30	20-30	20-30	---	---	---
Nevada dalea	PSPO	---	---	---	---	---	0-5
Nevada ephedra	EPNE	---	---	---	---	5-10	---
bud sagebrush	ARSP5	5-15	5-15	5-15	15-25	---	---
burrobrush	HYMEN3	---	---	---	---	5-10	---
fourwing saltbush	ATCA2	---	---	---	---	5-10	10-20
littleleaf horsebrush	TEGL	---	---	---	---	10-20	---
rubber rabbitbrush	CENA2	---	---	---	---	10-20	---
shadscale	ATCO	15-30	15-30	15-30	20-35	---	---
spiny hopsage	GRSP	---	---	---	---	10-20	2-5
winterfat	EULA5	---	---	---	5-10	---	2-8
Range site number		027XY018NV	027XY018NV	027XY018NV	027XY013NV	027XY022NV	027XY009NV
Potential production (lb/acre):							
Favorable years		400	400	400	600	400	700
Normal years		250	250	250	450	200	450
Unfavorable years		100	100	100	250	50	250

404--GENEGRAF-TOULON ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		GENEGRAF	TOULON	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	10-20	10-20	5-10	10-15	40-50	---
Sandberg bluegrass	POSE	5-10	5-10	---	---	---	---
basin wildrye	ELCY2	---	---	---	---	2-5	---
bottlebrush squirreltail	SIHY	2-8	2-8	5-10	5-10	---	---
inland saltgrass	DISPS2	---	---	---	2-5	---	---
needleandthread	STCO4	---	---	---	---	10-20	---
Bailey greasewood	SAVEB	20-30	20-30	---	T-5	---	---
Nevada ephedra	EPNE	---	---	5-10	---	---	---
black greasewood	SAVE4	---	---	---	20-30	10-15	---
bud sagebrush	ARSP5	5-15	5-15	---	2-5	---	---
burrobrush	HYMEN3	---	---	5-10	---	---	---
fourwing saltbush	ATCA2	---	---	5-10	---	2-5	---
littleleaf horsebrush	TEGL	---	---	10-20	---	---	---
rubber rabbitbrush	CHNA2	---	---	10-20	---	---	---
shadscale	ATCO	15-30	15-30	---	20-35	---	---
spiny hopsage	GRSP	---	---	10-20	---	2-5	---
winterfat	EULA5	---	---	---	---	5-10	---

Range site number	027XY018NV	027XY018NV	027XY022NV	027XY024NV	027XY012NV	none
Potential production (lb/acre):						
Favorable years	400	400	400	500	600	
Normal years	250	250	200	350	400	
Unfavorable years	100	100	50	150	200	

410--GRANSHAW-LABKEY ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		GRANSHAW	LABKEY	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	15-30	10-20	40-50	5-10	50-70
Sandberg bluegrass	POSE	2-15	5-10	---	---	---
bottlebrush squirreltail	SIHY	2-8	2-8	2-5	5-10	---
needleandthread	STCO4	---	---	5-15	---	5-15
globemallow	SPHA8	---	---	2-5	---	---
Bailey greasewood	SAVEB	---	20-30	---	---	---
Nevada dalea	PSPO	---	---	---	---	0-5
Nevada ephedra	EPNE	---	---	---	5-10	---
bud sagebrush	ARSP5	15-25	5-15	5-15	---	---
burrobrush	HYMEN3	---	---	---	5-10	---
fourwing saltbush	ATCA2	---	---	---	5-10	10-20
littleleaf horsebrush	TEGL	---	---	---	10-20	---
rubber rabbitbrush	CHNA2	---	---	---	10-20	---
shadscale	ATCO	20-35	15-30	---	---	---
spiny hopsage	GRSP	---	---	---	10-20	2-5
winterfat	EULA5	5-10	---	25-30	---	2-8
Range site number		027XY013NV	027XY018NV	027XY014NV	027XY022NV	027XY009NV
Potential production (lb/acre):						
Favorable years		600	400	700	400	700
Normal years		450	250	500	200	450
Unfavorable years		250	100	350	50	250

411--GRANSHAW-BIGA-ENVOL ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		GRANSHAW	BIGA	ENVOL	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	15-30	10-20	15-25	15-25	40-50	---	15-30
Sandberg bluegrass	POSE	2-15	5-10	---	---	---	2-8	2-15
Thurber needlegrass	STTH2	---	---	---	---	---	20-35	---
basin wildrye	ELCI2	---	---	---	5-15	---	---	---
bottlebrush squirreltail	SIEY	2-8	2-8	---	---	2-5	---	2-8
desert needlegrass	STSP3	---	---	2-10	---	---	2-5	---
needleandthread	STCO4	---	---	---	---	5-15	---	---
globemallow	SPHAE	---	---	---	---	2-5	---	---
Bailey greasewood	SAVEB	---	20-30	---	---	---	---	---
Lahontan sagebrush	ARARL*	---	---	---	---	---	30-35	---
Nevada ephedra	EPNE	---	---	2-5	---	---	---	---
basin big sagebrush	ARTRT	---	---	---	20-30	---	---	---
bud sagebrush	ARSP5	15-25	5-15	2-8	---	5-15	---	15-25
rabbitbrush	CHRS9	---	---	---	2-5	---	---	---
shadscale	ATCO	20-35	15-30	30-40	---	---	---	20-35
spiny hopsage	GRSP	---	---	---	10-20	---	2-5	---
winterfat	EULA5	5-10	---	2-8	---	25-30	---	5-10

Range site number	027XY013NV	027XY018NV	027XY027NV	027XY029NV	027XY014NV	027XY079NV	027XY013NV
Potential production (lb/acre):							
Favorable years	600	400	200	800	700	500	600
Normal years	450	250	100	500	500	350	450
Unfavorable years	250	100	50	300	350	200	250

412--GRANSHAW-JERVAL-DORPER ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		GRANSHAW	JERVAL	DORPER	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORRY	15-30	15-30	15-30	40-50	15-25	5-10	---
Sandberg bluegrass	POSE	2-15	2-15	2-15	---	---	---	---
basin wildrye	ELCI2	---	---	---	---	5-15	---	---
bottlebrush squirreltail	SIHY	2-8	2-8	2-8	2-5	---	5-10	---
desert needlegrass	STSP3	---	---	---	---	---	---	50-60
needleandthread	STCO4	---	---	---	5-15	---	---	---
globemallow	SPHAE	---	---	---	2-5	---	---	---
Lahontan sagebrush	ARARL*	---	---	---	---	---	---	25-30
Nevada ephedra	EPNE	---	---	---	---	---	5-10	---
basin big sagebrush	ARTRT	---	---	---	---	20-30	---	---
bud sagebrush	ARSP5	15-25	15-25	15-25	5-15	---	---	---
burrobrush	HYMEN3	---	---	---	---	---	5-10	---
fourwing saltbush	ATCA2	---	---	---	---	---	5-10	---
littleleaf horsebrush	TEGL	---	---	---	---	---	10-20	---
rabbitbrush	CHRYS9	---	---	---	---	2-5	---	---
rubber rabbitbrush	CHNA2	---	---	---	---	---	10-20	---
shadscale	ATCO	20-35	20-35	20-35	---	---	---	---
spiny hopsage	GRSP	---	---	---	---	10-20	10-20	2-8
winterfat	EULA5	5-10	5-10	5-10	25-30	---	---	2-8

Range site number	027XY013NV	027XY013NV	027XY013NV	027XY014NV	027XY029NV	027XY022NV	027XY068NV
Potential production (lb/acre):							
Favorable years	600	600	600	700	800	400	900
Normal years	450	450	450	500	500	200	600
Unfavorable years	250	250	250	350	300	50	350

413--GRANSEAW-KUMIVA ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		GRANSEAW	KUMIVA	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	OREY	15-30	40-50	15-30	15-25	20-25
Sandberg bluegrass	POSE	2-15	---	2-15	---	2-5
basin wildrye	ELCI2	---	---	---	5-15	---
bottlebrush squirreltail	SIHY	2-8	2-5	2-8	---	2-5
needleandthread	STCO4	---	5-15	---	---	5-15
globemallow	SPHAE	---	2-5	---	---	---
Nevada ephedra	EPNE	---	---	---	---	2-5
Wyoming big sagebrush	ARTRW	---	---	---	---	20-30
basin big sagebrush	ARTRT	---	---	---	20-30	---
bud sagebrush	ARSP5	15-25	5-15	15-25	---	---
rabbithrush	CHRS9	---	---	---	2-5	---
shadscale	ATCO	20-35	---	20-35	---	---
spiny hopsage	GRSP	---	---	---	10-20	10-25
winterfat	EULA5	5-10	25-30	5-10	---	2-5

Range site number	027XY013NV	027XY014NV	027XY013NV	027XY029NV	027XY008NV
Potential production (lb/acre):					
Favorable years	600	700	600	800	700
Normal years	450	500	450	500	500
Unfavorable years	250	350	250	300	300

414--GRANSHAW GRAVELLY LOAM, 0 TO 4 PERCENT SLOPES

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		GRANSHAW	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	15-30	15-25	10-20	20-25
Sandberg bluegrass	POSE	2-15	---	5-10	2-5
basin wildrye	ELCI2	---	5-15	---	---
bottlebrush squirreltail	SIRY	2-8	---	2-8	2-5
needleandthread	STCO4	---	---	---	5-15
Bailey greasewood	SAVEB	---	---	20-30	---
Nevada ephedra	EPNE	---	---	---	2-5
Wyoming big sagebrush	ARTRW	---	---	---	20-30
basin big sagebrush	ARTRT	---	20-30	---	---
bud sagebrush	ARSP5	15-25	---	5-15	---
rabbitbrush	CHRS9	---	2-5	---	---
shadscale	ATCO	20-35	---	15-30	---
spiny hopsage	GRSP	---	10-20	---	10-25
winterfat	EULA5	5-10	---	---	2-5

Range site number	027XY013NV	027XY029NV	027XY018NV	027XY008NV
Potential production (lb/acre):				
Favorable years	600	800	400	700
Normal years	450	500	250	500
Unfavorable years	250	300	100	300

415--GRANSHAW-BIGA-PUETT ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		GRANSHAW	BIGA	PUETT	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	15-30	10-20	5-15	15-25	40-50	---	50-70
Sandberg bluegrass	POSE	2-15	5-10	---	---	---	---	---
Thurber needlegrass	STTH2	---	---	15-30	---	---	---	---
basin wildrye	ELCI2	---	---	---	5-15	---	---	---
bottlebrush squirreltail	SIHY	2-8	2-8	---	---	2-5	---	---
needleandthread	STCO4	---	---	---	---	5-15	---	5-15
globemallow	SPHAE	---	---	2-5	---	2-5	---	---
Bailey greasewood	SAVEB	---	20-30	---	---	---	---	---
Nevada dalea	PSPO	---	---	---	---	---	---	0-5
basin big sagebrush	ARTRT	---	---	---	20-30	---	---	---
black sagebrush	ARARN	---	---	25-35	---	---	---	---
bud sagebrush	ARSP5	15-25	5-15	---	---	5-15	---	---
fourwing saltbush	ATCA2	---	---	---	---	---	---	10-20
rabbitbrush	CHRY9	---	---	---	2-5	---	---	---
shadscale	ATCO	20-35	15-30	---	---	---	---	---
spiny hopsage	GRSP	---	---	---	10-20	---	---	2-5
winterfat	EULA5	5-10	---	---	---	25-30	---	2-8

Range site number	027XY013NV	027XY018NV	024XY030NV	027XY029NV	027XY014NV	none	027XY009NV
Potential production (lb/acre):							
Favorable years	600	400	500	800	700		700
Normal years	450	250	350	500	500		450
Unfavorable years	250	100	250	300	350		250

431--GRUMBLIN-PICKUP ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		GRUMBLIN	PICKUP	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	10-20	---	5-15	---	15-25	20-25
Sandberg bluegrass	POSE	2-10	2-8	2-8	---	---	2-5
Thurber needlegrass	STTH2	---	20-35	25-35	---	---	---
basin wildrye	ELCI2	---	---	---	---	5-15	---
bottlebrush squirreltail	SIRY	---	---	---	---	---	2-5
desert needlegrass	STSP3	5-15	2-5	---	---	---	---
needleandthread	STCO4	---	---	---	---	---	5-15
Bailey greasewood	SAVEB	10-20	---	---	---	---	---
Lahontan sagebrush	ARARL*	35-50	30-35	---	---	---	---
Nevada ephedra	EPNE	2-8	---	2-5	---	---	2-5
Wyoming big sagebrush	ARTRW	---	---	25-35	---	---	20-30
basin big sagebrush	ARTRT	---	---	---	---	20-30	---
rabbitbrush	CHRY59	---	---	---	---	2-5	---
shadscale	ATCO	2-5	---	---	---	---	---
spiny hopsage	GRSP	2-5	2-5	2-8	---	10-20	10-25
winterfat	EULA5	---	---	---	---	---	2-5

Range site number	027XY070NV	027XY079NV	027XY007NV	none	027XY029NV	027XY008NV
Potential production (lb/acre):						
Favorable years	400	500	700		800	700
Normal years	250	350	500		500	500
Unfavorable years	100	200	300		300	300

432--GRUMBLEN-PICKUP-OLD CAMP ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		GRUMBLEN	PICKUP	OLD CAMP	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	10-20	---	5-15	---	5-15	10-20	15-25
Sandberg bluegrass	POSE	2-10	2-8	2-8	---	---	2-10	---
Thurber needlegrass	STTH2	---	20-35	25-35	---	---	---	---
basin wildrye	ELCI2	---	---	---	---	---	---	5-15
bottlebrush squirreltail	SIHY	---	---	---	---	2-5	---	---
desert needlegrass	STSP3	5-15	2-5	---	---	2-8	5-15	---
Bailey greasewood	SAVEB	10-20	---	---	---	15-30	10-20	---
Lahontan sagebrush	ARARL*	35-50	30-35	---	---	---	35-50	---
Nevada ephedra	EPNE	2-8	---	2-5	---	---	2-8	---
Wyoming big sagebrush	ARTRW	---	---	25-35	---	---	---	---
basin big sagebrush	ARTRT	---	---	---	---	---	---	20-30
bud sagebrush	ARSP5	---	---	---	---	2-8	---	---
rabbitbrush	CHRS9	---	---	---	---	---	---	2-5
shadscale	ATCO	2-5	---	---	---	15-35	2-5	---
spiny hopsage	GRSP	2-5	2-5	2-8	---	---	2-5	10-20

Range site number	027XY070NV	027XY079NV	027XY007NV	none	027XY019NV	027XY070NV	027XY029NV
Potential production (lb/acre):							
Favorable years	400	500	700		300	400	800
Normal years	250	350	500		175	250	500
Unfavorable years	100	200	300		50	100	300

451--HAWLEY FINE SAND, 0 TO 4 PERCENT SLOPES

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions		
		Soil name or Inclusion number--		
		HAWLEY	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	50-70	15-30	10-20
Sandberg bluegrass	POSE	---	2-15	5-10
bottlebrush squirreltail	SIHY	---	2-8	2-8
needleandthread	STCO4	5-15	---	---
Bailey greasewood	SAVEB	---	---	20-30
Nevada dalea	PSPO	0-5	---	---
bud sagebrush	ARSP5	---	15-25	5-15
fourwing saltbush	ATCA2	10-20	---	---
shadscale	ATCO	---	20-35	15-30
spiny hopsage	GRSP	2-5	---	---
winterfat	EULA5	2-8	5-10	---
Range site number		027XY009NV	027XY013NV	027XY018NV
Potential production (lb/acre):				
Favorable years		700	600	400
Normal years		450	450	250
Unfavorable years		250	250	100

452--HAWSEY-LABKEY-GENEGRAF ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		HAWSEY	LABKEY	GENEGRAF	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	50-70	10-20	10-20	10-20	15-30	5-10
Sandberg bluegrass	POSE	---	5-10	5-10	5-10	2-15	---
bottlebrush squirreltail	SIHY	---	2-8	2-8	2-8	2-8	5-10
needleandthread	STCO4	5-15	---	---	---	---	---
Bailey greasewood	SAVEB	---	20-30	20-30	20-30	---	---
Nevada dalea	PSPO	0-5	---	---	---	---	---
Nevada ephedra	EPNE	---	---	---	---	---	5-10
bud sagebrush	ARSP5	---	5-15	5-15	5-15	15-25	---
burrobrush	HYMEN3	---	---	---	---	---	5-10
fourwing saltbush	ATCA2	10-20	---	---	---	---	5-10
littleleaf horsebrush	TEGL	---	---	---	---	---	10-20
rubber rabbitbrush	CHNA2	---	---	---	---	---	10-20
shadscale	ATCO	---	15-30	15-30	15-30	20-35	---
spiny hopsage	GRSP	2-5	---	---	---	---	10-20
winterfat	EULA5	2-8	---	---	---	5-10	---
Range site number		027XY009NV	027XY018NV	027XY018NV	027XY018NV	027XY013NV	027XY022NV
Potential production (lb/acre):							
Favorable years		700	400	400	400	600	400
Normal years		450	250	250	250	450	200
Unfavorable years		250	100	100	100	250	50

453--HAWSLEY-BLUEWING ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		HAWSLEY	BLUEWING	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	50-70	10-20	50-70	10-20	15-30	---
Sandberg bluegrass	POSE	---	5-10	---	5-10	2-15	---
bottlebrush squirreltail	SIHY	---	2-8	---	2-8	2-8	---
needleandthread	STCO4	5-15	---	5-15	---	---	---
Bailey greasewood	SAVEB	---	20-30	---	20-30	---	---
Nevada dalea	PSPO	0-5	---	0-5	---	---	---
bud sagebrush	ARSP5	---	5-15	---	5-15	15-25	---
fourwing saltbush	ATCA2	10-20	---	10-20	---	---	---
shadscale	ATCO	---	15-30	---	15-30	20-35	---
spiny hopsage	GRSP	2-5	---	2-5	---	---	---
winterfat	EULA5	2-8	---	2-8	---	5-10	---
Range site number		027XY009NV	027XY018NV	027XY009NV	027XY018NV	027XY013NV	none
Potential production (lb/acre):							
Favorable years		700	400	700	400	600	
Normal years		450	250	450	250	450	
Unfavorable years		250	100	250	100	250	

456--HAWLSLEY-BADLAND ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		HAWLSLEY	BADLAND	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORRY	50-70	---	10-20	50-70	20-30
Sandberg bluegrass	POSE	---	---	5-10	---	---
bottlebrush squirreltail	SIHY	---	---	2-8	---	---
inland saltgrass	DISPS2	---	---	---	---	2-5
needleandthread	STCO4	5-15	---	---	5-15	---
Bailey greasewood	SAVEB	---	---	20-30	---	---
Nevada dalea	PSPO	0-5	---	---	0-5	---
black greasewood	SAVE4	---	---	---	---	30-50
bud sagebrush	ARSP5	---	---	5-15	---	---
fourwing saltbush	ATCA2	10-20	---	---	10-20	2-5
shadscale	ATCO	---	---	15-30	---	2-5
spiny hopsage	GRSP	2-5	---	---	2-5	---
winterfat	EULA5	2-8	---	---	2-8	---
Range site number		027XY009NV	none	027XY018NV	027XY009NV	027XY016NV
Potential production (lb/acre):						
Favorable years		700		400	700	500
Normal years		450		250	450	300
Unfavorable years		250		100	250	150

462--HAWSEY-MAZUMA ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		HAWSEY	MAZUMA	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	50-70	10-15	---	5-10	---
bottlebrush squirreltail	SIHY	---	5-10	---	5-10	---
inland saltgrass	DISPS2	---	2-5	---	---	---
needleandthread	STCO4	5-15	---	---	---	---
Bailey greasewood	SAVEB	---	T-5	---	---	---
Nevada dalea	PSPO	0-5	---	---	---	---
Nevada ephedra	EPNE	---	---	---	5-10	---
black greasewood	SAVE4	---	20-30	---	---	---
bud sagebrush	ARSP5	---	2-5	---	---	---
burrobrush	HYMEN3	---	---	---	5-10	---
fourwing saltbush	ATCA2	10-20	---	---	5-10	---
littleleaf horsebrush	TEGL	---	---	---	10-20	---
rubber rabbitbrush	CHNA2	---	---	---	10-20	---
shadscale	ATCO	---	20-35	---	---	---
spiny hopsage	GRSP	2-5	---	---	10-20	---
winterfat	EULA5	2-8	---	---	---	---
Range site number		027XY009NV	027XY024NV	none	027XY022NV	none
Potential production (lb/acre):						
Favorable years		700	500		400	
Normal years		450	350		200	
Unfavorable years		250	150		50	

470--DEADYON LOAM, 0 TO 2 PERCENT SLOPES

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions		
		Soil name or Inclusion number--		
		DEADYON	Inclusion 1	Inclusion 2
Indian ricegrass	OREY	20-25	2-10	15-25
Sandberg bluegrass	POSE	2-5	---	---
Thurber needlegrass	STTH2	---	40-50	---
basin wildrye	ELCI2	---	---	5-15
bottlebrush squirreltail	SIEY	2-5	---	---
needleandthread	STCO4	5-15	---	---
Nevada ephedra	EPNE	2-5	---	---
Wyoming big sagebrush	ARTRW	20-30	---	---
basin big sagebrush	ARTRT	---	---	20-30
big sagebrush	ARTR2	---	15-25	---
mountain big sagebrush	ARVA2	---	---	---
rabbitbrush	CHRS9	---	---	2-5
spiny hopsage	GRSP	10-25	2-5	10-20
winterfat	EULA5	2-5	---	---
Range site number		027XY008NV	027XY072NV	027XY029NV
Potential production (lb/acre):				
Favorable years		700	800	800
Normal years		500	600	500
Unfavorable years		300	400	300

471--DEADYON-GRANSHAW ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		DEADYON	GRANSHAW	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	15-30	15-30	15-25	50-70
Sandberg bluegrass	POSE	---	2-15	---	---
basin wildrye	ELCI2	---	---	5-15	---
bottlebrush squirreltail	SIHY	---	2-8	---	---
needleandthread	STCO4	5-10	---	---	5-15
thickspike wheatgrass	AGDA	---	---	---	---
western wheatgrass	AGSM	---	---	---	---
wheatgrass	AGROP2	5-15	---	---	---
Nevada dalea	PSPO	---	---	---	0-5
basin big sagebrush	ARTRT	15-25	---	20-30	---
bud sagebrush	ARSP5	---	15-25	---	---
fourwing saltbush	ATCA2	2-8	---	---	10-20
rabbitbrush	CHRY59	---	---	2-5	---
shadscale	ATCO	---	20-35	---	---
spiny hopsage	GRSP	5-10	---	10-20	2-5
winterfat	EULA5	---	5-10	---	2-8

Range site number	027XY045NV	027XY013NV	027XY029NV	027XY009NV
Potential production (lb/acre):				
Favorable years	800	600	800	700
Normal years	600	450	500	450
Unfavorable years	400	250	300	250

472--DEADYON SANDY LOAM, 2 TO 8 PERCENT SLOPES

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions		
		Soil name or Inclusion number--		
		DEADYON	Inclusion 1	Inclusion 2
Indian ricegrass	OREY	---	---	20-25
Sandberg bluegrass	POSE	---	---	2-5
Thurber needlegrass	STH2	10-25	10-25	---
basin wildrye	ELCI2	20-30	20-30	---
bottlebrush squirreltail	SIHY	---	---	2-5
needleandthread	STCO4	---	---	5-15
Nevada ephedra	EPNE	---	---	2-5
Wyoming big sagebrush	ARTRW	---	---	20-30
big sagebrush	ARTR2	15-25	15-25	---
black greasewood	SAVE4	2-5	2-5	---
spiny hopsage	GRSP	5-10	5-10	10-25
winterfat	EULA5	---	---	2-5
Range site number		023XY040NV	023XY040NV	027XY008NV
Potential production (lb/acre):				
Favorable years		1000	1000	700
Normal years		800	800	500
Unfavorable years		600	600	300

480--HUMBOLDT SILTY CLAY LOAM, SLIGHTLY SALINE-SODIC

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		HUMBOLDT	Inclusion 1	Inclusion 2	Inclusion 3
Nevada bluegrass	PONE3	5-15	---	5-15	---
alkali sacaton	SPAI	---	---	---	5-25
basin wildrye	ELCI2	---	55-65	---	50-60
creeping wildrye	ELTR3	---	5-15	---	---
inland saltgrass	DISPS2	2-5	---	2-5	---
mat muhly	MURI	2-5	---	2-5	---
sedge	CAREX	2-10	---	2-10	---
western wheatgrass	AGSM	---	5-15	---	---
wildrye	ELYMU	60-80	---	60-80	---
basin big sagebrush	ARTRT	---	10-15	---	---
black greasewood	SAVE4	---	2-8	---	5-15
rubber rabbitbrush	CHNA2	---	---	---	2-5
willow	SALIX	5-10	---	5-10	---
Range site number		025XY001NV	024XY006NV	025XY001NV	024XY007NV
Potential production (lb/acre):					
Favorable years		3500	1500	3500	1900
Normal years		2500	1100	2500	1400
Unfavorable years		1800	600	1800	800

500--ISOLDE-TYPIC TORRIORTHENTS-DUNE LAND COMPLEX

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		ISOLDE	TYPIC TORRIO	DUNE LAND	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	20-30	---	---	10-20	---	---	5-10
Sandberg bluegrass	POSE	---	---	---	5-10	---	---	---
bottlebrush squirreltail	SIHY	---	---	---	2-8	---	---	5-10
inland saltgrass	DISPS2	2-5	---	---	---	60-90	---	---
other perennial forbs	PPFF	---	---	---	---	1-5	---	---
Bailey greasewood	SAVEB	---	---	---	20-30	---	---	---
Nevada ephedra	EPNE	---	---	---	---	---	---	5-10
black greasewood	SAVE4	30-50	---	---	---	---	---	---
bud sagebrush	ARSP5	---	---	---	5-15	---	---	---
burrobrush	HYMEN3	---	---	---	---	---	---	5-10
fourwing saltbush	ATCA2	2-5	---	---	---	---	---	5-10
littleleaf horsebrush	TEGL	---	---	---	---	---	---	10-20
rubber rabbitbrush	CHNA2	---	---	---	---	---	---	10-20
shadscale	ATCO	2-5	---	---	15-30	---	---	---
spiny hopsage	GRSP	---	---	---	---	---	---	10-20
Range site number		027XY016NV	none	none	027XY018NV	026XY002NV	none	027XY022NV
Potential production (lb/acre):								
Favorable years		500			400	2000		400
Normal years		300			250	1700		200
Unfavorable years		150			100	1200		50

502--ISOLDE-RAGTOWN ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		ISOLDE	RAGTOWN	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	20-30	---	---	---
inland saltgrass	DISPS2	2-5	2-10	2-10	---
black greasewood	SAVE4	30-50	60-70	60-70	---
fourwing saltbush	ATCA2	2-5	---	---	---
seepweed	SUAED	---	2-8	2-8	---
shadscale	ATCO	2-5	2-10	2-10	---
Range site number		027XY016NV	027XY025NV	027XY025NV	none
Potential production (lb/acre):					
Favorable years		500	500	500	
Normal years		300	350	350	
Unfavorable years		150	200	200	

503--ISOLDE FINE SAND, 4 TO 15 PERCENT SLOPES

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		ISOLDE	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	20-30	20-30	50-70	10-20
Sandberg bluegrass	POSE	---	---	---	5-10
bottlebrush squirreltail	SIHY	---	---	---	2-8
inland saltgrass	DISPS2	---	2-5	---	---
needleandthread	STCO4	5-15	---	5-15	---
Bailey greasewood	SAVEB	---	---	---	20-30
Nevada dalea	PSPO	2-8	---	0-5	---
black greasewood	SAVE4	---	30-50	---	---
bud sagebrush	ARSP5	---	---	---	5-15
fourwing saltbush	ATCA2	15-25	2-5	10-20	---
hairy horsebrush	TECO2	25-35	---	---	---
littleleaf horsebrush	TEGL	2-5	---	---	---
shadscale	ATCO	---	2-5	---	15-30
spiny hopsage	GRSP	---	---	2-5	---
winterfat	EULA5	---	---	2-8	---

Range site number	027XY023NV	027XY016NV	027XY009NV	027XY018NV
Potential production (lb/acre):				
Favorable years	700	500	700	400
Normal years	500	300	450	250
Unfavorable years	300	150	250	100

510--JUVA LOAM, 0 TO 2 PERCENT SLOPES

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		JUVA	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	10-20	10-20	---	10-20
Sandberg bluegrass	POSE	5-10	5-10	---	5-10
alkali sacaton	SPAI	---	---	2-10	---
basin wildrye	ELCI2	---	---	30-45	---
bottlebrush squirreltail	SIHY	2-8	2-8	---	2-8
Bailey greasewood	SAVEB	20-30	20-30	---	20-30
Torrey quailbush	ATTO	---	---	30-50	---
basin big sagebrush	ARTRT	---	---	2-8	---
black greasewood	SAVE4	---	---	2-10	---
bud sagebrush	ARSP5	5-15	5-15	---	5-15
fourwing saltbush	ATCA2	---	---	2-5	---
shadscale	ATCO	15-30	15-30	---	15-30
Range site number		027XY018NV	027XY018NV	027XY041NV	027XY018NV
Potential production (lb/acre):					
Favorable years		400	400	1500	400
Normal years		250	250	1000	250
Unfavorable years		100	100	600	100

550--KUMIVA-LABKEY-CHUMALL ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		KUMIVA	LABKEY	CHUMALL	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORRY	5-10	10-20	---	10-15	5-10	---
Sandberg bluegrass	POSE	---	5-10	---	---	---	---
bottlebrush squirreltail	SIHY	5-10	2-8	---	5-10	5-10	---
inland saltgrass	DISPS2	---	---	2-10	2-5	---	---
Bailey greasewood	SAVEB	---	20-30	---	T-5	---	---
Nevada ephedra	EPNE	5-10	---	---	---	5-10	---
black greasewood	SAVE4	---	---	60-70	20-30	---	---
bud sagebrush	ARSP5	---	5-15	---	2-5	---	---
burrobrush	HYMEN3	5-10	---	---	---	5-10	---
fourwing saltbush	ATCA2	5-10	---	---	---	5-10	---
littleleaf horsebrush	TEGL	10-20	---	---	---	10-20	---
rubber rabbitbrush	CHNA2	10-20	---	---	---	10-20	---
seepweed	SUAE	---	---	2-8	---	---	---
shadscale	ATCO	---	15-30	2-10	20-35	---	---
spiny hopsage	GRSP	10-20	---	---	---	10-20	---

Range site number	027XY022NV	027XY018NV	027XY025NV	027XY024NV	027XY022NV	none
Potential production (lb/acre):						
Favorable years	400	400	500	500	400	
Normal years	200	250	350	350	200	
Unfavorable years	50	100	200	150	50	

551--KUMIVA-KUMIVA, OCCASIONALLY FLOODED ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		KUMIVA	KUMIVA	Inclusion 1	Inclusion 2
Indian ricegrass	ORRY	40-50	5-10	15-30	15-30
Sandberg bluegrass	POSE	---	---	2-15	2-15
bottlebrush squirreltail	SIHY	2-5	5-10	2-8	2-8
needleandthread	STCO4	5-15	---	---	---
globemallow	SPHAE	2-5	---	---	---
Nevada ephedra	EPNE	---	5-10	---	---
bud sagebrush	ARSP5	5-15	---	15-25	15-25
burrobrush	HYMEN3	---	5-10	---	---
fourwing saltbush	ATCA2	---	5-10	---	---
littleleaf horsebrush	TEGL	---	10-20	---	---
rubber rabbitbrush	CHNA2	---	10-20	---	---
shadscale	ATCO	---	---	20-35	20-35
spiny hopsage	GRSP	---	10-20	---	---
winterfat	EULA5	25-30	---	5-10	5-10

Range site number	027XY014NV	027XY022NV	027XY013NV	027XY013NV
Potential production (lb/acre):				
Favorable years	700	400	600	600
Normal years	500	200	450	450
Unfavorable years	350	50	250	250

553--KUMIVA SANDY LOAM, 0 TO 2 PERCENT SLOPES, OCCASIONALLY FLOODED

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		KUMIVA	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	5-10	5-10	15-30	10-20	10-20
Sandberg bluegrass	POSE	---	---	2-15	5-10	5-10
bottlebrush squirreltail	SIHY	5-10	5-10	2-8	2-8	2-8
Bailey greasewood	SAVEB	---	---	---	20-30	20-30
Nevada ephedra	EPNE	5-10	5-10	---	---	---
bud sagebrush	ARSP5	---	---	15-25	5-15	5-15
burrobrush	HYMEN3	5-10	5-10	---	---	---
fourwing saltbush	ATCA2	5-10	5-10	---	---	---
littleleaf horsebrush	TEGL	10-20	10-20	---	---	---
rubber rabbitbrush	CHNA2	10-20	10-20	---	---	---
shadscale	ATCO	---	---	20-35	15-30	15-30
spiny hopsage	GRSP	10-20	10-20	---	---	---
winterfat	EULA5	---	---	5-10	---	---
Range site number		027XY022NV	027XY022NV	027XY013NV	027XY018NV	027XY018NV
Potential production (lb/acre):						
Favorable years		400	400	600	400	400
Normal years		200	200	450	250	250
Unfavorable years		50	50	250	100	100

559--PHLISS-PHLISS, ERODED-MAJUBA ASSOCIATION

(An X indicates that the named plant is in the potential native woodland understory and the percentage is highly variable. Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		PHLISS	PHLISS	MAJUBA	Inclusion 1	Inclusion 2
Canby bluegrass	POCA	---	---	---	---	---
Indian ricegrass	ORRY	---	---	---	---	15-25
Sandberg bluegrass	POSE	---	X	2-8	---	---
Thurber needlegrass	STTH2	5-15	X	20-35	---	---
basin wildrye	ELCI2	2-5	---	---	---	5-15
bluebunch wheatgrass	AGSP	40-60	---	---	---	---
bluegrass	POA++	2-8	---	---	---	---
desert needlegrass	STSP3	---	---	2-5	---	---
arrowleaf balsamroot	BASA3	2-5	---	---	---	---
tapertip hawksbeard	CRAC2	2-5	---	---	---	---
Lahontan sagebrush	ARARL*	---	---	30-35	---	---
Wyoming big sagebrush	ARTRW	---	X	---	---	---
basin big sagebrush	ARTRT	---	---	---	---	20-30
big sagebrush	ARTR2	15-25	---	---	---	---
mountain big sagebrush	ARVA2	---	X	---	---	---
rabbitbrush	CHRY9	---	---	---	---	2-5
spiny hopsage	GRSP	---	---	2-5	---	10-20
Utah juniper	JUOS	---	X	---	---	---

Range site number	024XY028NV	027XY075NV	027XY079NV	none	027XY029NV
Potential production (lb/acre):					
Favorable years	1000	500	500		800
Normal years	700	350	350		500
Unfavorable years	500	200	200		300

560--PHLISS EXTREMELY CHANNERY LOAM, 15 TO 50 PERCENT SLOPES

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		PHLISS	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORRY	5-15	---	10-20	15-25	15-25
Sandberg bluegrass	POSE	2-8	---	2-10	---	---
Thurber needlegrass	STTH2	25-35	---	---	---	---
basin wildrye	ELCI2	---	---	---	---	5-15
desert needlegrass	STSP3	---	---	5-15	2-10	---
Bailey greasewood	SAVEB	---	---	10-20	---	---
Lahontan sagebrush	ARARL*	---	---	35-50	---	---
Nevada ephedra	EPNE	2-5	---	2-8	2-5	---
Wyoming big sagebrush	ARTRW	25-35	---	---	---	---
basin big sagebrush	ARTRT	---	---	---	---	20-30
bud sagebrush	ARSP5	---	---	---	2-8	---
rabbitbrush	CHRY9	---	---	---	---	2-5
shadscale	ATCO	---	---	2-5	30-40	---
spiny hopsage	GRSP	2-8	---	2-5	---	10-20
winterfat	EULA5	---	---	---	2-8	---
Range site number		027XY007NV	none	027XY070NV	027XY027NV	027XY029NV
Potential production (lb/acre):						
Favorable years		700		400	200	800
Normal years		500		250	100	500
Unfavorable years		300		100	50	300

562--SONDOA SILT LOAM, STRONGLY SALINE-SODIC

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		SONDOA	Inclusion 1	Inclusion 2	Inclusion 3
basin wildrye	ELCI2	---	15-20	30-45	55-65
bottlebrush squirreltail	SIHY	---	2-10	---	---
creeping wildrye	ELTR3	---	---	---	5-15
inland saltgrass	DISPS2	2-10	2-8	---	---
other perennial grasses	PPGG	---	---	2-15	---
western wheatgrass	AGSM	---	---	---	5-15
Torrey quailbush	ATTO	---	---	30-40	---
basin big sagebrush	ARTR	---	---	2-10	10-15
black greasewood	SAVE4	60-70	50-65	5-10	2-8
seepweed	SUAED	2-8	---	---	---
shadscale	ATCO	2-10	---	---	---
Range site number		027XY025NV	024XY008NV	024XY015NV	024XY006NV
Potential production (lb/acre):					
Favorable years		500	700	1500	1500
Normal years		350	450	1200	1100
Unfavorable years		200	300	800	600

563--SONDOA-SWINGLER-ISOLDE ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		SONDOA	SWINGLER	ISOLDE	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Baltic rush	JUBA	---	---	---	5-10	---	---	---
Indian ricegrass	ORHY	---	---	20-30	---	---	40-50	10-15
alkali sacaton	SPAI	---	---	---	30-45	---	---	---
basin wildrye	ELCI2	---	---	---	2-5	---	2-5	---
bottlebrush squirreltail	SIHY	---	---	---	---	---	---	5-10
inland saltgrass	DISPS2	2-10	2-10	2-5	10-15	---	---	2-5
needleandthread	STCO4	---	---	---	---	---	10-20	---
western wheatgrass	AGSM	---	---	---	2-5	---	---	---
Bailey greasewood	SAVEB	---	---	---	---	---	---	T-5
black greasewood	SAVE4	60-70	60-70	30-50	---	---	10-15	20-30
bud sagebrush	ARSP5	---	---	---	---	---	---	2-5
fourwing saltbush	ATCA2	---	---	2-5	---	---	2-5	---
seepweed	SUAED	2-8	2-8	---	---	---	---	---
shadscale	ATCO	2-10	2-10	2-5	---	---	---	20-35
spiny hopsage	GRSP	---	---	---	---	---	2-5	---
winterfat	EULAS	---	---	---	---	---	5-10	---

Range site number	027XY025NV	027XY025NV	027XY016NV	027XY005NV	none	027XY012NV	027XY024NV
Potential production (lb/acre):							
Favorable years	500	500	500	3000		600	500
Normal years	350	350	300	2200		400	350
Unfavorable years	200	200	150	1000		200	150

650--LABKEY GRAVELLY SANDY LOAM, 2 TO 8 PERCENT SLOPES

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		LABKEY	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	10-20	10-20	50-70	10-20	5-10
Sandberg bluegrass	POSE	5-10	5-10	---	5-10	---
bottlebrush squirreltail	SIHY	2-8	2-8	---	2-8	5-10
needleandthread	STCO4	---	---	5-15	---	---
Bailey greasewood	SAVEB	20-30	20-30	---	20-30	---
Nevada dalea	PSPO	---	---	0-5	---	---
Nevada ephedra	EPNE	---	---	---	---	5-10
bud sagebrush	ARSP5	5-15	5-15	---	5-15	---
burrobrush	HYMEN3	---	---	---	---	5-10
fourwing saltbush	ATCA2	---	---	10-20	---	5-10
littleleaf horsebrush	TEGL	---	---	---	---	10-20
rubber rabbitbrush	CHNA2	---	---	---	---	10-20
shadscale	ATCO	15-30	15-30	---	15-30	---
spiny hopsage	GRSP	---	---	2-5	---	10-20
winterfat	EULA5	---	---	2-8	---	---
Range site number		027XY018NV	027XY018NV	027XY009NV	027XY018NV	027XY022NV
Potential production (lb/acre):						
Favorable years		400	400	700	400	400
Normal years		250	250	450	250	200
Unfavorable years		100	100	250	100	50

651--LABKEY-MAZUMA-HAWSLEY ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		LABKEY	MAZUMA	HAWSLEY	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	OREY	10-20	10-15	50-70	20-30	10-20	---	---
Sandberg bluegrass	POSE	5-10	---	---	---	5-10	---	---
Thurber needlegrass	STRE2	---	---	---	---	---	2-5	---
bottlebrush squirreltail	SIHY	2-8	5-10	---	---	2-8	---	---
desert needlegrass	STSP3	---	---	---	---	---	40-50	---
inland saltgrass	DISPS2	---	2-5	---	2-5	---	---	---
needleandthread	STCO4	---	---	5-15	---	---	---	---
Bailey greasewood	SAVEB	20-30	T-5	---	---	20-30	---	---
Nevada dalea	PSPO	---	---	0-5	---	---	---	---
Wyoming big sagebrush	ARTRM	---	---	---	---	---	25-35	---
black greasewood	SAVE4	---	20-30	---	30-50	---	---	---
bud sagebrush	ARSP5	5-15	2-5	---	---	5-15	---	---
fourwing saltbush	ATCA2	---	---	10-20	2-5	---	---	---
green ephedra	EPVI	---	---	---	---	---	2-8	---
shadscale	ATCO	15-30	20-35	---	2-5	15-30	---	---
spiny hopsage	GRSP	---	---	2-5	---	---	2-5	---
winterfat	EULA5	---	---	2-8	---	---	---	---

Range site number	027XY018NV	027XY024NV	027XY009NV	027XY016NV	027XY018NV	026XY022NV	none
Potential production (lb/acre):							
Favorable years	400	500	700	500	400	600	
Normal years	250	350	450	300	250	450	
Unfavorable years	100	150	250	150	100	300	

652--LABKEY-HAWSLEY-GRANSHAW ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		LABKEY	HAWSLEY	GRANSHAW	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	10-20	50-70	15-30	15-30	5-10	40-50
Sandberg bluegrass	POSE	5-10	---	2-15	2-15	---	---
bottlebrush squirreltail	SIHY	2-8	---	2-8	2-8	5-10	2-5
needleandthread	STCO4	---	5-15	---	---	---	5-15
globemallow	SPHAE	---	---	---	---	---	2-5
Bailey greasewood	SAVEB	20-30	---	---	---	---	---
Nevada dalea	PSPO	---	0-5	---	---	---	---
Nevada ephedra	EPNE	---	---	---	---	5-10	---
bud sagebrush	ARSP5	5-15	---	15-25	15-25	---	5-15
burrobrush	HYMEN3	---	---	---	---	5-10	---
fourwing saltbush	ATCA2	---	10-20	---	---	5-10	---
littleleaf horsebrush	TEGL	---	---	---	---	10-20	---
rubber rabbitbrush	CHNA2	---	---	---	---	10-20	---
shadscale	ATCO	15-30	---	20-35	20-35	---	---
spiny hopsage	GRSP	---	2-5	---	---	10-20	---
winterfat	EULA5	---	2-8	5-10	5-10	---	25-30

Range site number	027XY018NV	027XY009NV	027XY013NV	027XY013NV	027XY022NV	027XY014NV
Potential production (lb/acre):						
Favorable years	400	700	600	600	400	700
Normal years	250	450	450	450	200	500
Unfavorable years	100	250	250	250	50	350

653--LABKEY-MAZUMA ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		LABKEY	MAZUMA	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	10-20	15-30	20-30	---	50-70	40-50
Sandberg bluegrass	POSE	5-10	2-15	---	---	---	---
bottlebrush squirreltail	SIHY	2-8	2-8	---	---	---	2-5
inland saltgrass	DISPS2	---	---	2-5	2-10	---	---
needleandthread	STCO4	---	---	---	---	5-15	5-15
globemallow	SPHAE	---	---	---	---	---	2-5
Bailey greasewood	SAVEB	20-30	---	---	---	---	---
Nevada dalea	PSPO	---	---	---	---	0-5	---
black greasewood	SAVE4	---	---	30-50	60-70	---	---
bud sagebrush	ARSP5	5-15	15-25	---	---	---	5-15
fourwing saltbush	ATCA2	---	---	2-5	---	10-20	---
seepweed	SUAED	---	---	---	2-8	---	---
shadscale	ATCO	15-30	20-35	2-5	2-10	---	---
spiny hopsage	GRSP	---	---	---	---	2-5	---
winterfat	EULA5	---	5-10	---	---	2-8	25-30
Range site number		027XY018NV	027XY013NV	027XY016NV	027XY025NV	027XY009NV	027XY014NV
Potential production (lb/acre):							
Favorable years		400	600	500	500	700	700
Normal years		250	450	300	350	450	500
Unfavorable years		100	250	150	200	250	350

700--MAZUMA-TROCKEN ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		MAZUMA	TROCKEN	Inclusion 1	Inclusion 3
Indian ricegrass	ORHY	15-30	15-30	5-10	40-50
Sandberg bluegrass	POSE	2-15	2-15	---	---
bottlebrush squirreltail	SIHY	2-8	2-8	5-10	2-5
needleandthread	STCO4	---	---	---	5-15
globemallow	SPHAE	---	---	---	2-5
Nevada ephedra	EPNE	---	---	5-10	---
bud sagebrush	ARSP5	15-25	15-25	---	5-15
burrobrush	HYMEN3	---	---	5-10	---
fourwing saltbush	ATCA2	---	---	5-10	---
littleleaf horsebrush	TEGL	---	---	10-20	---
rubber rabbitbrush	CHNA2	---	---	10-20	---
shadscale	ATCO	20-35	20-35	---	---
spiny hopsage	GRSP	---	---	10-20	---
winterfat	EULA5	5-10	5-10	---	25-30
Range site number		027XY013NV	027XY013NV	027XY022NV	027XY014NV
Potential production (lb/acre):					
Favorable years		600	600	400	700
Normal years		450	450	200	500
Unfavorable years		250	250	50	350

701--MAZUMA VERY FINE SANDY LOAM, 2 TO 8 PERCENT SLOPES

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		MAZUMA	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	15-30	---	40-50	10-20	5-10
Sandberg bluegrass	POSE	2-15	---	---	5-10	---
basin wildrye	ELCI2	---	---	2-5	---	---
bottlebrush squirreltail	SIRY	2-8	---	---	2-8	5-10
inland saltgrass	DISPS2	---	2-10	---	---	---
needleandthread	STCO4	---	---	10-20	---	---
Bailey greasewood	SAVE	---	---	---	20-30	---
Nevada ephedra	EPNE	---	---	---	---	5-10
black greasewood	SAVE4	---	60-70	10-15	---	---
bud sagebrush	AKSP5	15-25	---	---	5-15	---
burrobrush	HYMEN3	---	---	---	---	5-10
fourwing saltbush	ATCA2	---	---	2-5	---	5-10
littleleaf horsebrush	TEGL	---	---	---	---	10-20
rubber rabbitbrush	CHNA2	---	---	---	---	10-20
seepweed	SUAED	---	2-8	---	---	---
shadscale	ATCO	20-35	2-10	---	15-30	---
spiny hopsage	GRSP	---	---	2-5	---	10-20
winterfat	EULA5	5-10	---	5-10	---	---
Range site number		027XY013NV	027XY025NV	027XY012NV	027XY018NV	027XY022NV
Potential production (lb/acre):						
Favorable years		600	500	600	400	400
Normal years		450	350	400	250	200
Unfavorable years		250	200	200	100	50

702--MAZUMA-SWINGLER-TOULON ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		MAZUMA	SWINGLER	TOULON	Inclusion 1	Inclusion 2
Indian ricegrass	ORRY	10-15	10-15	10-20	5-10	---
Sandberg bluegrass	POSE	---	---	5-10	---	---
bottlebrush squirreltail	SIHY	5-10	5-10	2-8	5-10	---
inland saltgrass	DISPS2	2-5	2-5	---	---	---
Bailey greasewood	SAVEB	T-5	T-5	20-30	---	---
Nevada ephedra	EPNE	---	---	---	5-10	---
black greasewood	SAVE4	20-30	20-30	---	---	---
bud sagebrush	ARSP5	2-5	2-5	5-15	---	---
burrobrush	HYMEN3	---	---	---	5-10	---
fourwing saltbush	ATCA2	---	---	---	5-10	---
littleleaf horsebrush	TEGL	---	---	---	10-20	---
rubber rabbitbrush	CHNA2	---	---	---	10-20	---
shadscale	ATCO	20-35	20-35	15-30	---	---
spiny hopsage	GRSP	---	---	---	10-20	---
Range site number		027XY024NV	027XY024NV	027XY018NV	027XY022NV	none
Potential production (lb/acre):						
Favorable years		500	500	400	400	
Normal years		350	350	250	200	
Unfavorable years		150	150	100	50	

703--MAZUMA-HARDHAT-HAWSLEY ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		MAZUMA	HARDHAT	HAWSLEY	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORRY	10-20	10-20	50-70	---	5-10	---
Sandberg bluegrass	POSE	5-10	5-10	---	---	---	---
bottlebrush squirreltail	SIEY	2-8	2-8	---	---	5-10	---
inland saltgrass	DISPS2	---	---	---	2-10	---	---
needleandthread	STCO4	---	---	5-15	---	---	---
Bailey greasewood	SAVEB	20-30	20-30	---	---	---	---
Nevada dalea	PSPO	---	---	0-5	---	---	---
Nevada ephedra	EPNE	---	---	---	---	5-10	---
black greasewood	SAVE4	---	---	---	60-70	---	---
bud sagebrush	ARSP5	5-15	5-15	---	---	---	---
burrobrush	HYMEN3	---	---	---	---	5-10	---
fourwing saltbush	ATCA2	---	---	10-20	---	5-10	---
littleleaf horsebrush	TEGL	---	---	---	---	10-20	---
rubber rabbitbrush	CHNA2	---	---	---	---	10-20	---
seepweed	SUAED	---	---	---	2-8	---	---
shadscale	ATCO	15-30	15-30	---	2-10	---	---
spiny hopsage	GRSP	---	---	2-5	---	10-20	---
winterfat	EULA5	---	---	2-8	---	---	---

Range site number	027XY018NV	027XY018NV	027XY009NV	027XY025NV	027XY022NV	none
Potential production (lb/acre):						
Favorable years	400	400	700	500	400	
Normal years	250	250	450	350	200	
Unfavorable years	100	100	250	200	50	

704--MAZUMA FINE SANDY LOAM, STRONGLY SALINE-SODIC, 0 TO 2 PERCENT SLOPES

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions		
		Soil name or Inclusion number--		
		MAZUMA	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	---	5-10	10-15
bottlebrush squirreltail	SIHY	---	5-10	5-10
inland saltgrass	DISPS2	2-10	---	2-5
Bailey greasewood	SAVEB	---	---	T-5
Nevada ephedra	EPNE	---	5-10	---
black greasewood	SAVE4	60-70	---	20-30
bud sagebrush	AKSP5	---	---	2-5
burrobrush	HYMEN3	---	5-10	---
fourwing saltbush	ATCA2	---	5-10	---
littleleaf horsebrush	TEGL	---	10-20	---
rubber rabbitbrush	CHNA2	---	10-20	---
seepweed	SUAED	2-8	---	---
shadscale	ATCO	2-10	---	20-35
spiny hopsage	GRSP	---	10-20	---
Range site number		027XY025NV	027XY022NV	027XY024NV
Potential production (lb/acre):				
Favorable years		500	400	500
Normal years		350	200	350
Unfavorable years		200	50	150

705--MAZUMA-MAZUMA, STRONGLY SALINE-SODIC ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		MAZUMA	MAZUMA	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	10-20	10-15	15-30	10-20	---	15-25
Sandberg bluegrass	POSE	5-10	---	2-15	5-10	---	---
basin wildrye	ELCI2	---	---	---	---	---	5-15
bottlebrush squirreltail	SIEY	2-8	5-10	2-8	2-8	---	---
inland saltgrass	DISPS2	---	2-5	---	---	---	---
Bailey greasewood	SAVEB	20-30	T-5	---	20-30	---	---
basin big sagebrush	ARTRT	---	---	---	---	---	20-30
black greasewood	SAVE4	---	20-30	---	---	---	---
bud sagebrush	ARSP5	5-15	2-5	15-25	5-15	---	---
rabbitbrush	CHRS9	---	---	---	---	---	2-5
shadscale	ATCO	15-30	20-35	20-35	15-30	---	---
spiny hopsage	GRSP	---	---	---	---	---	10-20
winterfat	EULA5	---	---	5-10	---	---	---
Range site number		027XY018NV	027XY024NV	027XY013NV	027XY018NV	none	027XY029NV
Potential production (lb/acre):							
Favorable years		400	500	600	400		800
Normal years		250	350	450	250		500
Unfavorable years		100	150	250	100		300

706--MAZUMA SILT LOAM, MODERATELY SALINE-SODIC, 0 TO 2 PERCENT SLOPES

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		MAZUMA	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	10-15	2-5	40-50	5-10	15-30
Sandberg bluegrass	POSE	---	---	---	---	2-15
basin wildrye	ELCI2	---	5-20	---	---	---
bottlebrush squirreltail	SIBY	5-10	2-5	2-5	5-10	2-8
inland saltgrass	DISPS2	2-5	---	---	---	---
needleandthread	STCO4	---	---	5-15	---	---
globemallow	SPHAE	---	1-2	2-5	---	---
thelypody	THELY	---	2-4	---	---	---
Bailey greasewood	SAVEB	T-5	---	---	---	---
Nevada ephedra	EPNE	---	---	---	5-10	---
Wyoming big sagebrush	ARTRM	---	---	---	---	---
basin big sagebrush	ARTRT	---	---	---	---	---
big sagebrush	ARTR2	---	10-25	---	---	---
black greasewood	SAVE4	20-30	20-30	---	---	---
bud sagebrush	ARSP5	2-5	---	5-15	---	15-25
burrobrush	HYMEN3	---	---	---	5-10	---
fourwing saltbush	ATCA2	---	---	---	5-10	---
littleleaf horsebrush	TEGL	---	---	---	10-20	---
rubber rabbitbrush	CENA2	---	---	---	10-20	---
shadscale	ATCO	20-35	---	---	---	20-35
spiny hopsage	GRSP	---	5-15	---	10-20	---
winterfat	EULA5	---	---	25-30	---	5-10

Range site number	027XY024NV	024XY022NV	027XY014NV	027XY022NV	027XY013NV
Potential production (lb/acre):					
Favorable years	500	800	700	400	600
Normal years	350	600	500	200	450
Unfavorable years	150	350	350	50	250

707--MAZUMA-COLDENT ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		MAZUMA	COLDENT	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORRY	10-20	10-20	50-70	---	15-25	10-15
Sandberg bluegrass	POSE	5-10	5-10	---	---	---	---
basin wildrye	ELCI2	---	---	---	---	5-15	---
bottlebrush squirreltail	SIHY	2-8	2-8	---	2-10	---	5-10
inland saltgrass	DISPS2	---	---	---	---	---	2-5
needleandthread	STCO4	---	---	5-15	---	---	---
Bailey greasewood	SAVEB	20-30	20-30	---	---	---	T-5
Nevada dalea	PSPO	---	---	0-5	---	---	---
basin big sagebrush	ARTRT	---	---	---	---	20-30	---
black greasewood	SAVE4	---	---	---	---	---	20-30
bud sagebrush	ARSP5	5-15	5-15	---	---	---	2-5
fourwing saltbush	ATCA2	---	---	10-20	---	---	---
rabbitbrush	CHRY59	---	---	---	---	2-5	---
shadscale	ATCO	15-30	15-30	---	70-90	---	20-35
spiny hopsage	GRSP	---	---	2-5	---	10-20	---
winterfat	EULA5	---	---	2-8	---	---	---

Range site number	027XY018NV	027XY018NV	027XY009NV	024XY067NV	027XY029NV	027XY024NV
Potential production (lb/acre):						
Favorable years	400	400	700	300	800	500
Normal years	250	250	450	200	500	350
Unfavorable years	100	100	250	75	300	150

708--MAZUMA-RAGTOWN ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		MAZUMA	RAGTOWN	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	10-15	---	10-15	20-30	---
bottlebrush squirreltail	SIRY	5-10	---	5-10	---	---
inland saltgrass	DISPS2	2-5	2-10	2-5	2-5	---
Bailey greasewood	SAVEB	T-5	---	T-5	---	---
black greasewood	SAVE4	20-30	60-70	20-30	30-50	---
bud sagebrush	ARSP5	2-5	---	2-5	---	---
fourwing saltbush	ATCA2	---	---	---	2-5	---
seepweed	SUAED	---	2-8	---	---	---
shadscale	ATCO	20-35	2-10	20-35	2-5	---
Range site number		027XY024NV	027XY025NV	027XY024NV	027XY016NV	none
Potential production (lb/acre):						
Favorable years		500	500	500	500	
Normal years		350	350	350	300	
Unfavorable years		150	200	150	150	

750--PICKUP-ROCK OUTCROP ASSOCIATION, MODERATELY SLOPING

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		PICKUP	ROCK OUTCROP	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	---	---	5-15	10-20
Sandberg bluegrass	POSE	2-8	---	2-8	2-10
Thurber needlegrass	STTH2	20-35	---	25-35	---
desert needlegrass	STSP3	2-5	---	---	5-15
Bailey greasewood	SAVEB	---	---	---	10-20
Lahontan sagebrush	ARARL*	30-35	---	---	35-50
Nevada ephedra	EPNE	---	---	2-5	2-8
Wyoming big sagebrush	ARTRW	---	---	25-35	---
shadscale	ATCO	---	---	---	2-5
spiny hopsage	GRSP	2-5	---	2-8	2-5
Range site number		027XY079NV	none	027XY007NV	027XY070NV
Potential production (lb/acre):					
Favorable years		500		700	400
Normal years		350		500	250
Unfavorable years		200		300	100

751--PICKUP-GRUMBLEN-ROCK OUTCROP ASSOCIATION

(An X indicates that the named plant is in the potential native woodland understory and the percentage is highly variable. Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		PICKUP	GRUMBLEN	ROCK OUTCROP	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	---	10-20	---	---	5-15	---	15-25
Sandberg bluegrass	POSE	2-8	2-10	---	2-8	2-8	X	---
Thurber needlegrass	STTH2	20-35	---	---	20-35	25-35	X	---
basin wildrye	ELCI2	---	---	---	---	---	---	5-15
desert needlegrass	STSP3	2-5	5-15	---	2-5	---	---	---
Bailey greasewood	SAVEB	---	10-20	---	---	---	---	---
Lahontan sagebrush	ARARL*	30-35	35-50	---	30-35	---	---	---
Nevada ephedra	EPNE	---	2-8	---	---	2-5	---	---
Wyoming big sagebrush	ARTRW	---	---	---	---	25-35	X	---
basin big sagebrush	ARTRT	---	---	---	---	---	---	20-30
mountain big sagebrush	ARVA2	---	---	---	---	---	X	---
rabbitbrush	CHRY59	---	---	---	---	---	---	2-5
shadscale	ATCO	---	2-5	---	---	---	---	---
spiny hopsage	GRSP	2-5	2-5	---	2-5	2-8	---	10-20
Utah juniper	JUOS	---	---	---	---	---	X	---

Range site number	027XY079NV	027XY070NV	none	027XY079NV	027XY007NV	027XY075NV	027XY029NV
Potential production (lb/acre):							
Favorable years	500	400		500	700	500	800
Normal years	350	250		350	500	350	500
Unfavorable years	200	100		200	300	200	300

752--PICKUP-OLD CAMP-THEON ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		PICKUP	OLD CAMP	THEON	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORBY	---	5-15	5-15	20-25	15-30	---	---
Sandberg bluegrass	POSE	2-8	2-8	---	2-5	2-15	---	2-8
Thurber needlegrass	STTH2	20-35	25-35	---	---	---	---	---
bottlebrush squirreltail	SIHY	---	---	2-5	2-5	2-8	---	---
desert needlegrass	STSP3	2-5	---	2-8	---	---	---	30-40
needleandthread	STCO4	---	---	---	5-15	---	---	---
Bailey greasewood	SAVEB	---	---	15-30	---	---	---	---
Lahontan sagebrush	ARARL*	30-35	---	---	---	---	---	25-35
Nevada ephedra	EPNE	---	2-5	---	2-5	---	---	---
Wyoming big sagebrush	ARTRW	---	25-35	---	20-30	---	---	---
bud sagebrush	ARSP5	---	---	2-8	---	15-25	---	---
shadscale	ATCO	---	---	15-35	---	20-35	---	---
spiny hopsage	GRSP	2-5	2-8	---	10-25	---	---	2-8
winterfat	EULA5	---	---	---	2-5	5-10	---	---
Range site number		027XY079NV	027XY007NV	027XY019NV	027XY008NV	027XY013NV	none	027XY020NV
Potential production (lb/acre):								
Favorable years		500	700	300	700	600		450
Normal years		350	500	175	500	450		300
Unfavorable years		200	300	50	300	250		150

753--PICKUP-ROCK OUTCROP ASSOCIATION, VERY STEEP

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		PICKUP	ROCK OUTCROP	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORFY	---	---	5-15	15-25	10-20	---
Sandberg bluegrass	POSE	2-8	---	2-8	---	2-10	2-8
Thurber needlegrass	STTH2	20-35	---	25-35	---	---	20-35
basin wildrye	ELCI2	---	---	---	5-15	---	---
desert needlegrass	STSP3	2-5	---	---	---	5-15	2-5
Bailey greasewood	SAVEB	---	---	---	---	10-20	---
Lahontan sagebrush	ARARL*	30-35	---	---	---	35-50	30-35
Nevada ephedra	EPNE	---	---	2-5	---	2-8	---
Wyoming big sagebrush	ARTRW	---	---	25-35	---	---	---
basin big sagebrush	ARTRT	---	---	---	20-30	---	---
rabbitbrush	CHRYSS9	---	---	---	---	2-5	---
shadscale	ATCO	---	---	---	---	2-5	---
spiny hopsage	GRSP	2-5	---	2-8	10-20	2-5	2-5
Range site number		027XY079NV	none	027XY007NV	027XY029NV	027XY070NV	027XY079NV
Potential production (lb/acre):							
Favorable years		500		700	800	400	500
Normal years		350		500	500	250	350
Unfavorable years		200		300	300	100	200

800--OLD CAMP-DORPER-POKERGAP ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		OLD CAMP	DORPER	POKERGAP	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	5-15	15-30	20-25	5-15	5-15	5-15	15-25
Sandberg bluegrass	POSE	2-8	2-15	2-5	---	---	---	---
Thurber needlegrass	STH2	25-35	---	---	---	---	---	---
basin wildrye	ELCI2	---	---	---	---	---	---	5-15
bottlebrush squirreltail	SIBY	---	2-8	2-5	2-5	---	---	---
desert needlegrass	STSP3	---	---	---	2-8	40-60	5-30	---
needleandthread	STCO4	---	---	5-15	---	---	---	---
globemallow	SPHAE	---	---	---	---	1-3	---	---
Anderson wolfberry	LYAN	---	---	---	---	2-5	---	---
Bailey greasewood	SAVEE	---	---	---	15-30	---	2-10	---
Nevada ephedra	EPNE	2-5	---	2-5	---	2-5	2-5	---
Wyoming big sagebrush	ARTRW	25-35	---	20-30	---	---	---	---
basin big sagebrush	ARTRT	---	---	---	---	---	---	20-30
black sagebrush	ARARN	---	---	---	---	---	30-35	---
bud sagebrush	ARSP5	---	15-25	---	2-8	---	---	---
rabbithrush	CHRY99	---	---	---	---	---	---	2-5
shadscale	ATCO	---	20-35	---	15-35	20-35	---	---
spiny hopsage	GRSP	2-8	---	10-25	---	2-8	---	10-20
winterfat	EULA5	---	5-10	2-5	---	---	---	---
Range site number		027KY007NV	027KY013NV	027KY008NV	027KY019NV	027KY017NV	027KY061NV	027KY029NV
Potential production (lb/acre):								
Favorable years		700	600	700	300	400	400	800
Normal years		500	450	500	175	200	200	500
Unfavorable years		300	250	300	50	100	100	300

801--OLD CAMP-SUMYA-PICKUP ASSOCIATION

(An X indicates that the named plant is in the potential native woodland understory and the percentage is highly variable.
Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		OLD CAMP	SUMYA	PICKUP	Inclusion 1	Inclusion 2	Inclusion 3
Canby bluegrass	POCA	---	---	---	---	---	---
Indian ricegrass	ORHY	5-15	---	---	---	---	15-25
Sandberg bluegrass	POSE	2-8	X	2-8	---	---	---
Thurber needlegrass	STTH2	25-35	X	20-35	---	30-40	---
basin wildrye	ELCI2	---	---	---	---	---	5-15
bluegrass	POA++	---	---	---	---	2-8	---
desert needlegrass	STSP3	---	---	2-5	---	---	---
Lahontan sagebrush	ARARL*	---	---	30-35	---	---	---
Nevada ephedra	EPNE	2-5	---	---	---	---	---
Wyoming big sagebrush	ARTRW	25-35	X	---	---	---	---
basin big sagebrush	ARTRT	---	---	---	---	---	20-30
big sagebrush	ARTR2	---	---	---	---	20-30	---
mountain big sagebrush	ARVA2	---	X	---	---	---	---
rabbitbrush	CHRY9	---	---	---	---	---	2-5
spiny hopsage	GRSP	2-8	---	2-5	---	---	10-20
Utah juniper	JUOS	---	X	---	---	---	---

Range site number	027XY007NV	027XY075NV	027XY079NV	none	027XY054NV	027XY029NV
Potential production (lb/acre):						
Favorable years	700	500	500		900	800
Normal years	500	350	350		700	500
Unfavorable years	300	200	200		500	300

810--PERWASO, OCCASIONALLY FLOODED-PERWASO SILT LOAMS

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		PERWASO	PERWASO	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORRY	---	---	10-20	---	---
Sandberg bluegrass	POSE	---	---	5-10	---	---
basin wildrye	ELCI2	30-45	---	---	30-45	30-45
bottlebrush squirreltail	SIBY	---	---	2-8	---	---
inland saltgrass	DISPS2	---	2-10	---	---	---
other perennial grasses	PPGG	2-15	---	---	2-15	2-15
Bailey greasewood	SAVEB	---	---	20-30	---	---
Torrey quailbush	ATTO	30-40	---	---	30-40	30-40
basin big sagebrush	ARTRT	2-10	---	---	2-10	2-10
black greasewood	SAVE4	5-10	60-70	---	5-10	5-10
bud sagebrush	ARSP5	---	---	5-15	---	---
seepweed	SUAED	---	2-8	---	---	---
shadscale	ATCO	---	2-10	15-30	---	---

Range site number	024XY015NV	027XY025NV	027XY018NV	024XY015NV	024XY015NV
Potential production (lb/acre):					
Favorable years	1500	500	400	1500	1500
Normal years	1200	350	250	1200	1200
Unfavorable years	800	200	100	800	800

850--PLAYAS

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions
		Soil name or Inclusion number--
		PLAYAS

Range site number

none

Potential production (lb/acre):
 Favorable years
 Normal years
 Unfavorable years

852--PUETT-DORPER ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		PUETT	DORPER	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	5-15	10-20	5-10	5-15	---	40-50
Sandberg bluegrass	POSE	---	5-10	---	---	---	---
bottlebrush squirreltail	SIBY	---	2-8	5-10	---	---	2-5
desert needlegrass	STSP3	5-30	---	---	5-30	---	---
needleandthread	STCO4	---	---	---	---	---	5-15
globemallow	SPRAE	---	---	---	---	---	2-5
Bailey greasewood	SAVEB	2-10	20-30	---	2-10	---	---
Nevada ephedra	EPNE	2-5	---	5-10	2-5	---	---
black sagebrush	ARARN	30-35	---	---	30-35	---	---
bud sagebrush	ARSP5	---	5-15	---	---	---	5-15
burrobrush	HYMEN3	---	---	5-10	---	---	---
fourwing saltbush	ATCA2	---	---	5-10	---	---	---
littleleaf horsebrush	TEGL	---	---	10-20	---	---	---
rubber rabbitbrush	CHNA2	---	---	10-20	---	---	---
shadscale	ATCO	---	15-30	---	---	---	---
spiny hopsage	GRSP	---	---	10-20	---	---	---
winterfat	EULAS	---	---	---	---	---	25-30

Range site number	027XY061NV	027XY018NV	027XY022NV	027XY061NV	none	027XY014NV
Potential production (lb/acre):						
Favorable years	400	400	400	400		700
Normal years	200	250	200	200		500
Unfavorable years	100	100	50	100		350

960--REDNIK-JUNGO-ABOTEN ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		REDNIK	JUNGO	ABOTEN	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	15-25	10-20	15-30	10-20	15-25	5-15
Sandberg bluegrass	POSE	---	2-10	2-15	5-10	---	---
basin wildrye	ELCI2	---	---	---	---	5-15	---
bottlebrush squirreltail	SIHY	---	---	2-8	2-8	---	---
desert needlegrass	STSP3	2-10	5-15	---	---	---	40-60
globemallow	SPEAE	---	---	---	---	---	1-3
Anderson wolfberry	LYAN	---	---	---	---	---	2-5
Bailey greasewood	SAVEB	---	10-20	---	20-30	---	---
Lahontan sagebrush	ARARL*	---	35-50	---	---	---	---
Nevada ephedra	EPNE	2-5	2-8	---	---	---	2-5
basin big sagebrush	ARTRT	---	---	---	---	20-30	---
bud sagebrush	ARSP5	2-8	---	15-25	5-15	---	---
rabbithrush	CHRS9	---	---	---	---	2-5	---
shadscale	ATCO	30-40	2-5	20-35	15-30	---	20-35
spiny hopsage	GRSP	---	2-5	---	---	10-20	2-8
winterfat	EULA5	2-8	---	5-10	---	---	---

Range site number	027XY027NV	027XY070NV	027XY013NV	027XY018NV	027XY029NV	027XY017NV
Potential production (lb/acre):						
Favorable years	200	400	600	400	800	400
Normal years	100	250	450	250	500	200
Unfavorable years	50	100	250	100	300	100

970--SAY-EAGLEROCK-NINEMILE ASSOCIATION

(An X indicates that the named plant is in the potential native woodland understory and the percentage is highly variable. Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		SAY	EAGLEROCK	NINEMILE	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Idaho fescue	FEID	---	---	25-35	---	---	15-25	20-40
Indian ricegrass	ORRY	---	---	---	2-10	X	---	---
Sandberg bluegrass	POSE	---	---	---	---	X	---	---
Thurber needlegrass	STTH2	40-50	40-50	---	40-50	X	---	2-8
Webber needlegrass	STWE	---	---	---	---	---	2-5	---
basin wildrye	ELCI2	5-15	---	---	---	X	---	2-15
bluebunch wheatgrass	AGSP	---	---	---	---	---	2-5	20-40
bluegrass	POA++	2-5	2-5	5-15	---	---	5-10	---
needlegrass	STIPA	---	---	5-10	---	---	---	---
arrowleaf balsamroot	BASA3	---	---	---	---	---	---	1-5
goldenweed	HAPLO2	---	---	---	---	---	2-5	---
helianthella	HELIA	---	---	---	---	---	---	1-2
tapertip hawksbeard	CRAC2	---	---	---	---	---	---	1-5
white stoneseed	LIRU4	---	---	---	---	---	---	1-2
Wyoming big sagebrush	ARTRW	---	---	---	---	X	---	---
big sagebrush	ARTR2	15-25	---	---	15-25	---	---	---
black sagebrush	ARARN	---	---	---	---	---	---	---
green ephedra	EPVI	---	2-5	---	---	---	---	---
low sagebrush	ARAR8	---	---	20-30	---	---	---	---
mountain big sagebrush	ARVA2	---	15-25	---	---	X	---	15-25
sagebrush	ARTEM	---	---	---	---	---	35-40	---
spiny hopsage	GRSP	---	---	---	2-5	---	---	---
Utah juniper	JUOS	---	---	---	---	X	---	---

Range site number	027XY058NV	027XY073NV	027XY046NV	027XY072NV	027XY075NV	024XY016NV	024XY021NV
Potential production (lb/acre):							
Favorable years	1200	1100	600	800	500	350	1400
Normal years	1000	900	400	600	350	250	1000
Unfavorable years	700	700	250	400	200	150	700

980--SELBIT-ROCK OUTCROP COMPLEX

(An X indicates that the named plant is in the potential native woodland understory and the percentage is highly variable.
Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		SELBIT	ROCK OUTCROP	Inclusion 2	Inclusion 3
Indian ricegrass	ORRY	---	---	X	---
Nevada bluegrass	PONE3	---	---	---	2-8
Sandberg bluegrass	POSE	---	---	X	---
Thurber needlegrass	STH2	5-10	---	X	---
basin wildrye	ELCI2	---	---	---	65-75
bluebunch wheatgrass	AGSP	50-60	---	---	---
bottlebrush squirreltail	SIHY	---	---	X	---
desert needlegrass	STSP3	---	---	X	---
arrowleaf balsamroot	BASA3	1-2	---	---	---
tapertip hawksbeard	CRAC2	1-2	---	---	---
Lahontan sagebrush	ARARL*	---	---	X	---
Nevada ephedra	EPNE	---	---	X	---
antelope bitterbrush	PUTR2	5-10	---	---	---
basin big sagebrush	ARTRT	---	---	---	5-10
mountain big sagebrush	ARVA2	15-25	---	---	---
rubber rabbitbrush	CHNA2	---	---	---	1-3
spiny hopsage	GRSP	---	---	X	---
Utah juniper	JUOS	---	---	X	---

Range site number	023XY042NV	none	023XY045NV	023XY009NV
Potential production (lb/acre):				
Favorable years	1000		350	5500
Normal years	800		250	4500
Unfavorable years	600		100	2500

981--SELBIT-ROCK OUTCROP-UPSEL ASSOCIATION

(An X indicates that the named plant is in the potential native woodland understory and the percentage is highly variable. Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		SELBIT	ROCK OUTCROP	UPSEL	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Canby bluegrass	POCA	---	---	---	---	2-5	---	---
Idaho fescue	FEID	---	---	30-40	---	---	---	---
Indian ricegrass	ORHY	---	---	---	X	---	---	---
Nevada bluegrass	PONE3	---	---	---	---	---	---	2-8
Sandberg bluegrass	POSE	---	---	---	X	---	---	---
Thurber needlegrass	STTH2	5-10	---	---	X	15-20	10-20	---
basin wildrye	ELCI2	---	---	---	---	5-10	2-10	65-75
bluebunch wheatgrass	AGSP	50-60	---	15-30	---	30-40	40-60	---
bluegrass	POA++	---	---	2-8	---	---	---	---
bottlebrush squirreltail	SIHY	---	---	---	X	---	---	---
desert needlegrass	STSP3	---	---	---	X	---	---	---
arrowleaf balsamroot	BASA3	1-2	---	2-5	---	---	---	---
tapertip hawksbeard	CRAC2	1-2	---	2-5	---	---	---	---
Lahontan sagebrush	ARARL*	---	---	---	X	---	---	---
Nevada ephedra	EPNE	---	---	---	X	---	---	---
Wyoming big sagebrush	ARTRW	---	---	---	---	---	10-20	---
antelope bitterbrush	PUTR2	5-10	---	2-5	---	2-10	2-5	---
basin big sagebrush	ARTRT	---	---	---	---	---	---	5-10
big sagebrush	ARTR2	---	---	---	---	15-25	15-25	---
mountain big sagebrush	ARVA2	15-25	---	15-20	---	---	10-20	---
rubber rabbitbrush	CHNA2	---	---	---	---	---	---	1-3
snowberry	SYMPH	---	---	2-5	---	---	---	---
spiny hopsage	GRSP	---	---	---	X	---	---	---
Utah juniper	JUOS	---	---	---	X	---	---	---

Range site number	023XY042NV	none	023XY043NV	023XY045NV	023XY020NV	023XY039NV	023XY009NV
Potential production (lb/acre):							
Favorable years	1000		1300	350	1100	900	5500
Normal years	800		700	250	900	700	4500
Unfavorable years	600		400	100	600	500	2500

990--SHAWAVE-GRANSHAW-LABKEY ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		SHAWAVE	GRANSHAW	LABKEY	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	20-25	15-30	10-20	5-10	10-20	50-70	---
Sandberg bluegrass	POSE	2-5	2-15	5-10	---	5-10	---	---
bottlebrush squirreltail	SIHY	2-5	2-8	2-8	5-10	2-8	---	---
needleandthread	STCO4	5-15	---	---	---	---	5-15	---
Bailey greasewood	SAVEB	---	---	20-30	---	20-30	---	---
Nevada dalea	PSPO	---	---	---	---	---	0-5	---
Nevada ephedra	EPNE	2-5	---	---	5-10	---	---	---
Wyoming big sagebrush	ARTRW	20-30	---	---	---	---	---	---
bud sagebrush	ARSP5	---	15-25	5-15	---	5-15	---	---
burrobrush	HYMEN3	---	---	---	5-10	---	---	---
fourwing saltbush	ATCA2	---	---	---	5-10	---	10-20	---
littleleaf horsebrush	TEGL	---	---	---	10-20	---	---	---
rubber rabbitbrush	CHNA2	---	---	---	10-20	---	---	---
shadscale	ATCO	---	20-35	15-30	---	15-30	---	---
spiny hopsage	GRSP	10-25	---	---	10-20	---	2-5	---
winterfat	EULA5	2-5	5-10	---	---	---	2-8	---
Range site number		027XY008NV	027XY013NV	027XY018NV	027XY022NV	027XY018NV	027XY009NV	none
Potential production (lb/acre):								
Favorable years		700	600	400	400	400	700	
Normal years		500	450	250	200	250	450	
Unfavorable years		300	250	100	50	100	250	

991--SHAWAVE-SLIPBACK-GRANSHAW ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		SHAWAVE	SLIPBACK	GRANSHAW	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORRY	20-25	20-25	15-30	15-25	20-25	40-50	10-20
Sandberg bluegrass	POSE	2-5	2-5	2-15	---	2-5	---	5-10
basin wildrye	ELCI2	---	---	---	5-15	---	---	---
bottlebrush squirreltail	SIHY	2-5	2-5	2-8	---	2-5	2-5	2-8
needleandthread	STCO4	5-15	5-15	---	---	5-15	5-15	---
globemallow	SPHA8	---	---	---	---	---	2-5	---
Bailey greasewood	SAVEB	---	---	---	---	---	---	20-30
Nevada ephedra	EPNE	2-5	2-5	---	---	2-5	---	---
Wyoming big sagebrush	ARTRW	20-30	20-30	---	---	20-30	---	---
basin big sagebrush	ARTRT	---	---	---	20-30	---	---	---
bud sagebrush	ARSP5	---	---	15-25	---	---	5-15	5-15
rabbitbrush	CHRY9	---	---	---	2-5	---	---	---
shadscale	ATCO	---	---	20-35	---	---	---	15-30
spiny hopsage	GRSP	10-25	10-25	---	10-20	10-25	---	---
winterfat	EULA5	2-5	2-5	5-10	---	2-5	25-30	---
Range site number		027XY008NV	027XY008NV	027XY013NV	027XY029NV	027XY008NV	027XY014NV	027XY018NV
Potential production (lb/acre):								
Favorable years		700	700	600	800	700	700	400
Normal years		500	500	450	500	500	500	250
Unfavorable years		300	300	250	300	300	350	100

992--SHAWAVE-DEADYON-SLIPBACK ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		SHAWAVE	DEADYON	SLIPBACK	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORRY	20-25	20-25	20-25	---	15-25	15-30	5-15
Sandberg bluegrass	POSE	2-5	2-5	2-5	2-8	---	---	2-8
Thurber needlegrass	STB2	---	---	---	20-35	---	---	25-35
basin wildrye	ELCI2	---	---	---	---	5-15	---	---
bottlebrush squirreltail	SIHY	2-5	2-5	2-5	---	---	---	---
desert needlegrass	STSP3	---	---	---	2-5	---	---	---
needleandthread	STCO4	5-15	5-15	5-15	---	---	5-10	---
thickspike wheatgrass	AGDA	---	---	---	---	---	---	---
western wheatgrass	AGSM	---	---	---	---	---	---	---
wheatgrass	AGROP2	---	---	---	---	---	5-15	---
Lahontan sagebrush	ARARL*	---	---	---	30-35	---	---	---
Nevada ephedra	EPNE	2-5	2-5	2-5	---	---	---	2-5
Wyoming big sagebrush	ARTRW	20-30	20-30	20-30	---	---	---	25-35
basin big sagebrush	ARTRT	---	---	---	---	20-30	15-25	---
fourwing saltbush	ATCA2	---	---	---	---	---	2-8	---
rabbitbrush	CHRS9	---	---	---	---	2-5	---	---
spiny hopsage	GRSP	10-25	10-25	10-25	2-5	10-20	5-10	2-8
winterfat	EULAS	2-5	2-5	2-5	---	---	---	---

Range site number	027XY008NV	027XY008NV	027XY008NV	027XY079NV	027XY029NV	027XY045NV	027XY007NV
Potential production (lb/acre):							
Favorable years	700	700	700	500	800	800	700
Normal years	500	500	500	350	500	600	500
Unfavorable years	300	300	300	200	300	400	300

993--SHAWAVE-BIGA-DEADYON ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		SHAWAVE	BIGA	DEADYON	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	20-25	15-30	20-25	15-25	20-25	40-50	20-25
Sandberg bluegrass	POSE	2-5	2-15	2-5	---	2-5	---	2-5
basin wildrye	ELCI2	---	---	---	5-15	---	---	---
bottlebrush squirreltail	SINY	2-5	2-8	2-5	---	2-5	2-5	2-5
needleandthread	STCO4	5-15	---	5-15	---	5-15	5-15	5-15
globemallow	SPHAE	---	---	---	---	---	2-5	---
Nevada ephedra	EPNE	2-5	---	2-5	---	2-5	---	2-5
Wyoming big sagebrush	ARTRW	20-30	---	20-30	---	20-30	---	20-30
basin big sagebrush	ARTRT	---	---	---	20-30	---	---	---
bud sagebrush	ARSP5	---	15-25	---	---	---	5-15	---
rabbitbrush	CHRSY9	---	---	---	2-5	---	---	---
shadscale	ATCO	---	20-35	---	---	---	---	---
spiny hopsage	GRSP	10-25	---	10-25	10-20	10-25	---	10-25
winterfat	EULAS	2-5	5-10	2-5	---	2-5	25-30	2-5
Range site number		027XY008NV	027XY013NV	027XY008NV	027XY029NV	027XY008NV	027XY014NV	027XY008NV
Potential production (lb/acre):								
Favorable years		700	600	700	800	700	700	700
Normal years		500	450	500	500	500	500	500
Unfavorable years		300	250	300	300	300	350	300

994--SHAWAVE-BIGA-PUETT ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		SHAWAVE	BIGA	PUETT	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	20-25	15-30	5-15	15-25	20-25	---	---
Sandberg bluegrass	POSE	2-5	2-15	---	---	2-5	---	---
basin wildrye	ELCI2	---	---	---	5-15	---	---	---
bottlebrush squirreltail	SIHY	2-5	2-8	---	---	2-5	---	---
desert needlegrass	STSP3	---	---	5-30	---	---	---	---
needleandthread	STCO4	5-15	---	---	---	5-15	---	---
Bailey greasewood	SAVEB	---	---	2-10	---	---	---	---
Nevada ephedra	EPNE	2-5	---	2-5	---	2-5	---	---
Wyoming big sagebrush	ARTRW	20-30	---	---	---	20-30	---	---
basin big sagebrush	ARTRT	---	---	---	20-30	---	---	---
black sagebrush	ARARN	---	---	30-35	---	---	---	---
bud sagebrush	ARSP5	---	15-25	---	---	---	---	---
rabbitbrush	CHRY9	---	---	---	2-5	---	---	---
shadscale	ATCO	---	20-35	---	---	---	---	---
spiny hopsage	GRSP	10-25	---	---	10-20	10-25	---	---
winterfat	EULA5	2-5	5-10	---	---	2-5	---	---
Range site number		027XY008NV	027XY013NV	027XY061NV	027XY029NV	027XY008NV	none	none
Potential production (lb/acre):								
Favorable years		700	600	400	800	700		
Normal years		500	450	200	500	500		
Unfavorable years		300	250	100	300	300		

996--SLAW-SLAW, OCCASIONALLY FLOODED SILT LOAMS

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		SLAW	SLAW	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	---	---	10-20	---
Sandberg bluegrass	POSE	---	---	5-10	---
basin wildrye	ELCI2	---	30-45	---	30-45
bottlebrush squirreltail	SIHY	---	---	2-8	---
inland saltgrass	DISPS2	2-10	---	---	---
other perennial grasses	PPGG	---	2-15	---	2-15
Bailey greasewood	SAVEB	---	---	20-30	---
Torrey quailbush	ATTO	---	30-40	---	30-40
basin big sagebrush	ARTRT	---	2-10	---	2-10
black greasewood	SAVE4	60-70	5-10	---	5-10
bud sagebrush	ARSP5	---	---	5-15	---
seepweed	SUAED	2-8	---	---	---
shadscale	ATCO	2-10	---	15-30	---
Range site number		027XY025NV	024XY015NV	027XY018NV	024XY015NV
Potential production (lb/acre):					
Favorable years		500	1500	400	1500
Normal years		350	1200	250	1200
Unfavorable years		200	800	100	800

1020--SOAR, MODERATELY STEEP-ARCLAY-SOAR ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		SOAR	ARCLAY	SOAR	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	---	---	---	2-10	5-15	5-15	15-25
Sandberg bluegrass	POSE	---	2-8	---	---	2-8	---	---
Thurber needlegrass	STHE2	---	20-35	---	40-50	25-35	---	---
basin wildrye	ELCI2	---	---	---	---	---	---	5-15
desert needlegrass	STSP3	50-60	2-5	50-60	---	---	40-60	---
globemallow	SPHAE	---	---	---	---	---	1-3	---
Anderson wolfberry	LYAN	---	---	---	---	---	2-5	---
Lahontan sagebrush	ARARL*	25-30	30-35	25-30	---	---	---	---
Nevada ephedra	EPNE	---	---	---	---	2-5	2-5	---
Wyoming big sagebrush	ARTRM	---	---	---	---	25-35	---	---
basin big sagebrush	ARTRT	---	---	---	---	---	---	20-30
big sagebrush	ARTR2	---	---	---	15-25	---	---	---
mountain big sagebrush	ARVA2	---	---	---	---	---	---	---
rabbitbrush	CHRSY9	---	---	---	---	---	---	2-5
shadscale	ATCO	---	---	---	---	---	20-35	---
spiny hopsage	GRSP	2-8	2-5	2-8	2-5	2-8	2-8	10-20
winterfat	EULA5	2-8	---	2-8	---	---	---	---

Range site number	027XY068NV	027XY079NV	027XY068NV	027XY072NV	027XY007NV	027XY017NV	027XY029NV
Potential production (lb/acre):							
Favorable years	900	500	900	800	700	400	800
Normal years	600	350	600	600	500	200	500
Unfavorable years	350	200	350	400	300	100	300

1021--SOAR-ARCLAY ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		SOAR	ARCLAY	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	---	---	2-10	5-15	5-10	---
Sandberg bluegrass	POSE	---	2-8	---	---	---	---
Thurber needlegrass	STTH2	---	20-35	40-50	---	---	---
bottlebrush squirreltail	SIEY	---	---	---	---	5-10	---
desert needlegrass	STSP3	50-60	2-5	---	40-60	---	---
globemallow	SPHAE	---	---	---	1-3	---	---
Anderson wolfberry	LYAN	---	---	---	2-5	---	---
Lahontan sagebrush	ARARL*	25-30	30-35	---	---	---	---
Nevada ephedra	EPNE	---	---	---	2-5	5-10	---
Wyoming big sagebrush	ARTRW	---	---	---	---	---	---
big sagebrush	ARTR2	---	---	15-25	---	---	---
burrobrush	HYMEN3	---	---	---	---	5-10	---
fourwing saltbush	ATCA2	---	---	---	---	5-10	---
littleleaf horsebrush	TEGL	---	---	---	---	10-20	---
mountain big sagebrush	ARVA2	---	---	---	---	---	---
rubber rabbitbrush	CHVA2	---	---	---	---	10-20	---
shadscale	ATCO	---	---	---	20-35	---	---
spiny hopsage	GRSP	2-8	2-5	2-5	2-8	10-20	---
winterfat	EULA5	2-8	---	---	---	---	---

Range site number	027XY068NV	027XY079NV	027XY072NV	027XY017NV	027XY022NV	none
Potential production (lb/acre):						
Favorable years	900	500	800	400	400	
Normal years	600	350	600	200	200	
Unfavorable years	350	200	400	100	50	

1022--SOAR-ARCLAY-ROCK OUTCROP ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		SOAR	ARCLAY	ROCK OUTCROP	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	OREY	---	---	---	2-10	5-15	15-25
Sandberg bluegrass	POSE	---	2-8	---	---	---	---
Thurber needlegrass	STH2	---	20-35	---	40-50	---	---
basin wildrye	ELCI2	---	---	---	---	---	5-15
desert needlegrass	STSP3	50-60	2-5	---	---	40-60	---
globemallow	SPHAE	---	---	---	---	1-3	---
Anderson wolfberry	LYAN	---	---	---	---	2-5	---
Lahontan sagebrush	ARARL*	25-30	30-35	---	---	---	---
Nevada ephedra	EPNE	---	---	---	---	2-5	---
Wyoming big sagebrush	ARTRW	---	---	---	---	---	---
basin big sagebrush	ARTRT	---	---	---	---	---	20-30
big sagebrush	ARTR2	---	---	---	15-25	---	---
mountain big sagebrush	ARVA2	---	---	---	---	---	---
rabbithrush	CHRY9	---	---	---	---	---	2-5
shadscale	ATCO	---	---	---	---	20-35	---
spiny hopsage	GRSP	2-8	2-5	---	2-5	2-8	10-20
winterfat	EULA5	2-8	---	---	---	---	---
Range site number		027XY068NV	027XY079NV	none	027XY072NV	027XY017NV	027XY029NV
Potential production (lb/acre):							
Favorable years		900	500		800	400	800
Normal years		600	350		600	200	500
Unfavorable years		350	200		400	100	300

1030--POKERGAP VERY GRAVELLY VERY FINE SANDY LOAM, 2 TO 8 PERCENT SLOPES

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		POKERGAP	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	20-25	10-20	---	15-25
Sandberg bluegrass	POSE	2-5	5-10	2-8	---
Thurber needlegrass	STTE2	---	---	20-35	---
basin wildrye	ELCI2	---	---	---	5-15
bottlebrush squirreltail	SIHY	2-5	2-8	---	---
desert needlegrass	STSP3	---	---	2-5	---
needleandthread	STCO4	5-15	---	---	---
Bailey greasewood	SAVEB	---	20-30	---	---
Lahontan sagebrush	ARARL*	---	---	30-35	---
Nevada ephedra	EPNE	2-5	---	---	---
Wyoming big sagebrush	ARTRW	20-30	---	---	---
basin big sagebrush	ARTRT	---	---	---	20-30
bud sagebrush	ARSP5	---	5-15	---	---
rabbitbrush	CHRY59	---	---	---	2-5
shadscale	ATCO	---	15-30	---	---
spiny hopsage	GRSP	10-25	---	2-5	10-20
winterfat	EULAS	2-5	---	---	---
Range site number		027XY008NV	027XY018NV	027XY079NV	027XY029NV
Potential production (lb/acre):					
Favorable years		700	400	500	800
Normal years		500	250	350	500
Unfavorable years		300	100	200	300

1031--POKERGAP-DORPER ASSOCIATION, VERY GRAVELLY

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		POKERGAP	DORPER	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	20-25	15-30	15-25	20-25	20-25	---
Sandberg bluegrass	POSE	2-5	2-15	---	2-5	2-5	2-8
Thurber needlegrass	STTH2	---	---	---	---	---	20-35
basin wildrye	ELCI2	---	---	5-15	---	---	---
bottlebrush squirreltail	SIEY	2-5	2-8	---	2-5	2-5	---
desert needlegrass	STSP3	---	---	---	---	---	2-5
needleandthread	STCO4	5-15	---	---	5-15	5-15	---
Lahontan sagebrush	ARARL*	---	---	---	---	---	30-35
Nevada ephedra	EPNE	2-5	---	---	2-5	2-5	---
Wyoming big sagebrush	ARTRN	20-30	---	---	20-30	20-30	---
basin big sagebrush	ARTRT	---	---	20-30	---	---	---
bud sagebrush	ARSP5	---	15-25	---	---	---	---
rabbitbrush	CHYS9	---	---	2-5	---	---	---
shadscale	ATCO	---	20-35	---	---	---	---
spiny hopsage	GRSP	10-25	---	10-20	10-25	10-25	2-5
winterfat	EULA5	2-5	5-10	---	2-5	2-5	---

Range site number	027XY008NV	027XY013NV	027XY029NV	027XY008NV	027XY008NV	027XY079NV
Potential production (lb/acre):						
Favorable years	700	600	800	700	700	500
Normal years	500	450	500	500	500	350
Unfavorable years	300	250	300	300	300	200

1032--POKERGAP-DORPER ASSOCIATION, STONY

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		POKERGAP	DORPER	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	20-25	15-30	15-25	---	15-25	---
Sandberg bluegrass	POSE	2-5	2-15	---	---	---	2-8
Thurber needlegrass	STTH2	---	---	---	---	---	20-35
basin wildrye	ELCI2	---	---	5-15	---	---	---
bottlebrush squirreltail	SIHY	2-5	2-8	---	---	---	---
desert needlegrass	STSP3	---	---	---	---	2-10	2-5
needleandthread	STCO4	5-15	---	---	---	---	---
Lahontan sagebrush	ARARL*	---	---	---	---	---	30-35
Nevada ephedra	EPNE	2-5	---	---	---	2-5	---
Wyoming big sagebrush	ARTRW	20-30	---	---	---	---	---
basin big sagebrush	ARTRT	---	---	20-30	---	---	---
bud sagebrush	ARSP5	---	15-25	---	---	2-8	---
rabbitbrush	CHRY9	---	---	2-5	---	---	---
shadscale	ATCO	---	20-35	---	---	30-40	---
spiny hopsage	GRSP	10-25	---	10-20	---	---	2-5
winterfat	EULA5	2-5	5-10	---	---	2-8	---

Range site number	027XY008NV	027XY013NV	027XY029NV	none	027XY027NV	027XY079NV
Potential production (lb/acre):						
Favorable years	700	600	800		200	500
Normal years	500	450	500		100	350
Unfavorable years	300	250	300		50	200

1033--POKERGAP-JERVAL-DORPER ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		POKERGAP	JERVAL	DORPER	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORRY	20-25	15-30	15-30	---	---	---	15-30
Sandberg bluegrass	POSE	2-5	2-15	2-15	2-8	2-8	---	2-15
Thurber needlegrass	STTH2	---	---	---	20-35	20-35	---	---
basin wildrye	ELCI2	---	---	---	---	---	55-65	---
bottlebrush squirreltail	SIHY	2-5	2-8	2-8	---	---	---	2-8
creeping wildrye	ELTR3	---	---	---	---	---	5-15	---
desert needlegrass	STSP3	---	---	---	2-5	2-5	---	---
needleandthread	STCO4	5-15	---	---	---	---	---	---
western wheatgrass	AGSM	---	---	---	---	---	5-15	---
Lahontan sagebrush	ARARL*	---	---	---	30-35	30-35	---	---
Nevada ephedra	EPNE	2-5	---	---	---	---	---	---
Wyoming big sagebrush	ARTRW	20-30	---	---	---	---	---	---
basin big sagebrush	ARTRT	---	---	---	---	---	10-15	---
black greasewood	SAVE4	---	---	---	---	---	2-8	---
bud sagebrush	ARSP5	---	15-25	15-25	---	---	---	15-25
shadscale	ATCO	---	20-35	20-35	---	---	---	20-35
spiny hopsage	GRSP	10-25	---	---	2-5	2-5	---	---
winterfat	EULA5	2-5	5-10	5-10	---	---	---	5-10
Range site number		027XY008NV	027XY013NV	027XY013NV	027XY079NV	027XY079NV	024XY006NV	027XY013NV
Potential production (lb/acre):								
Favorable years		700	600	600	500	500	1500	600
Normal years		500	450	450	350	350	1100	450
Unfavorable years		300	250	250	200	200	600	250

1034--POKERGAP STONY VERY FINE SANDY LOAM, 4 TO 15 PERCENT SLOPES

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		POKERGAP	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	OREY	20-25	5-15	15-25	15-30	20-25
Sandberg bluegrass	POSE	2-5	2-8	---	2-15	2-5
Thurber needlegrass	STH2	---	25-35	---	---	---
basin wildrye	ELCI2	---	---	5-15	---	---
bottlebrush squirreltail	SIEY	2-5	---	---	2-8	2-5
needleandthread	STCO4	5-15	---	---	---	5-15
Nevada ephedra	EPNE	2-5	2-5	---	---	2-5
Wyoming big sagebrush	ARTRW	20-30	25-35	---	---	20-30
basin big sagebrush	ARTRT	---	---	20-30	---	---
bud sagebrush	ARSP5	---	---	---	15-25	---
rabbitbrush	CHRSY9	---	---	2-5	---	---
shadscale	ATCO	---	---	---	20-35	---
spiny hopsage	GRSP	10-25	2-8	10-20	---	10-25
winterfat	EULA5	2-5	---	---	5-10	2-5

Range site number	027XY008NV	027XY007NV	027XY029NV	027XY013NV	027XY008NV
Potential production (lb/acre):					
Favorable years	700	700	800	600	700
Normal years	500	500	500	450	500
Unfavorable years	300	300	300	250	300

1035--POKERGAP-JERVAL ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		POKERGAP	JERVAL	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	20-25	15-30	5-15	5-15	---	---
Sandberg bluegrass	POSE	2-5	2-15	2-8	---	2-8	---
Thurber needlegrass	STTH2	---	---	15-25	---	20-35	---
basin wildrye	ELCI2	---	---	---	---	---	55-65
bottlebrush squirreltail	SIHY	2-5	2-8	2-5	5-10	---	---
creeping wildrye	ELTR3	---	---	---	---	---	5-15
desert needlegrass	STSP3	---	---	---	---	2-5	---
needleandthread	STCO4	5-15	---	---	---	---	---
western wheatgrass	AGSM	---	---	---	---	---	5-15
globemallow	SPHAE	---	---	1-2	---	---	---
Lahontan sagebrush	ARARL*	---	---	---	---	30-35	---
Nevada ephedra	EPNE	2-5	---	---	---	---	---
Wyoming big sagebrush	ARTRW	20-30	---	20-35	---	---	---
basin big sagebrush	ARTRT	---	---	---	---	---	10-15
black greasewood	SAVE4	---	---	---	---	---	2-8
bud sagebrush	ARSP5	---	15-25	---	20-30	---	---
shadscale	ATCO	---	20-35	---	30-40	---	---
spiny hopsage	GRSP	10-25	---	5-20	2-5	2-5	---
winterfat	EULA5	2-5	5-10	---	2-5	---	---

Range site number	027XY008NV	027XY013NV	024XY020NV	024XY002NV	027XY079NV	024XY006NV
Potential production (lb/acre):						
Favorable years	700	600	700	750	500	1500
Normal years	500	450	450	450	350	1100
Unfavorable years	300	250	300	300	200	600

1040--SOJUR EXTREMELY CHANNERY SILT LOAM, 15 TO 50 PERCENT SLOPES

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		SOJUR	Inclusion 1	Inclusion 3	Inclusion 4
Indian ricegrass	ORBY	15-25	---	5-15	10-20
Sandberg bluegrass	POSE	---	---	2-8	2-10
Thurber needlegrass	STTH2	---	---	25-35	---
desert needlegrass	STSP3	2-10	---	---	5-15
Bailey greasewood	SAVEB	---	---	---	10-20
Lahontan sagebrush	ARARL*	---	---	---	35-50
Nevada ephedra	EPNE	2-5	---	2-5	2-8
Wyoming big sagebrush	ARTRW	---	---	25-35	---
bud sagebrush	ARSP5	2-8	---	---	---
shadscale	ATCO	30-40	---	---	2-5
spiny hopsage	GRSP	---	---	2-8	2-5
winterfat	EULA5	2-8	---	---	---
Range site number		027XY027NV	none	027XY007NV	027XY070NV
Potential production (lb/acre):					
Favorable years		200		700	400
Normal years		100		500	250
Unfavorable years		50		300	100

1041--SOJUR-BOOMSTICK-RUBBLE LAND ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		SOJUR	BOOMSTICK	RUBBLE LAND	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	15-25	---	---	---	10-20	5-10	5-15
Sandberg bluegrass	POSE	---	2-8	---	---	5-10	---	2-8
Thurber needlegrass	STTH2	---	20-35	---	---	---	---	25-35
bottlebrush squirreltail	SIHY	---	---	---	---	2-8	5-10	---
desert needlegrass	STSP3	2-10	2-5	---	---	---	---	---
Bailey greasewood	SAVEB	---	---	---	---	20-30	---	---
Lahontan sagebrush	ARARL*	---	30-35	---	---	---	---	---
Nevada ephedra	EPNE	2-5	---	---	---	---	5-10	2-5
Wyoming big sagebrush	ARTRW	---	---	---	---	---	---	25-35
bud sagebrush	ARSP5	2-8	---	---	---	5-15	---	---
burrobrush	HYMEN3	---	---	---	---	---	5-10	---
fourwing saltbush	ATCA2	---	---	---	---	---	5-10	---
littleleaf horsebrush	TEGL	---	---	---	---	---	10-20	---
rubber rabbitbrush	CBNA2	---	---	---	---	---	10-20	---
shadscale	ATCO	30-40	---	---	---	15-30	---	---
spiny hopsage	GRSP	---	2-5	---	---	---	10-20	2-8
winterfat	EULA5	2-8	---	---	---	---	---	---
Range site number		027XY027NV	027XY079NV	none	none	027XY018NV	027XY022NV	027XY007NV
Potential production (lb/acre):								
Favorable years		200	500			400	400	700
Normal years		100	350			250	200	500
Unfavorable years		50	200			100	50	300

1042--SOJUR-PHELISS ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		SOJUR	PHELISS	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	15-25	5-15	15-30	20-25	15-25	---
Sandberg bluegrass	POSE	---	2-8	2-15	2-5	---	---
Thurber needlegrass	STTH2	---	25-35	---	---	---	---
basin wildrye	ELCI2	---	---	---	---	5-15	---
bottlebrush squirreltail	SIHY	---	---	2-8	2-5	---	---
desert needlegrass	STSP3	2-10	---	---	---	---	---
needleandthread	STCO4	---	---	---	5-15	---	---
Nevada ephedra	EPNE	2-5	2-5	---	2-5	---	---
Wyoming big sagebrush	ARTRW	---	25-35	---	20-30	---	---
basin big sagebrush	ARTRT	---	---	---	---	20-30	---
bud sagebrush	ARSP5	2-8	---	15-25	---	---	---
rabbitbrush	CHRYSS	---	---	---	---	2-5	---
shadscale	ATCO	30-40	---	20-35	---	---	---
spiny hopsage	GRSP	---	2-8	---	10-25	10-20	---
winterfat	EULA5	2-8	---	5-10	2-5	---	---

Range site number	027XY027NV	027XY007NV	027XY013NV	027XY008NV	027XY029NV	none
Potential production (lb/acre):						
Favorable years	200	700	600	700	800	
Normal years	100	500	450	500	500	
Unfavorable years	50	300	250	300	300	

1050--THEON-SINGATSE ASSOCIATION, COBBLY

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		THEON	SINGATSE	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	5-15	15-25	5-10	---	5-15	10-20
Sandberg bluegrass	POSE	---	---	---	---	---	2-10
bottlebrush squirreltail	SIEY	2-5	---	5-10	---	2-5	---
desert needlegrass	STSP3	2-8	2-10	---	---	2-8	5-15
Bailey greasewood	SAVEB	15-30	---	---	---	15-30	10-20
Lahontan sagebrush	ARARL*	---	---	---	---	---	25-50
Nevada ephedra	EPNE	---	2-5	5-10	---	---	2-8
bud sagebrush	ARSP5	2-8	2-8	---	---	2-8	---
burrobrush	HYMEN3	---	---	5-10	---	---	---
fourwing saltbush	ATCA2	---	---	5-10	---	---	---
littleleaf horsebrush	TEGL	---	---	10-20	---	---	---
rubber rabbitbrush	CHNA2	---	---	10-20	---	---	---
shadscale	ATCO	15-35	30-40	---	---	15-35	2-5
spiny hopsage	GRSP	---	---	10-20	---	---	2-5
winterfat	EULAS	---	2-8	---	---	---	---

Range site number	027XY019NV	027XY027NV	027XY022NV	none	027XY019NV	027XY070NV
Potential production (lb/acre):						
Favorable years	300	200	400		300	400
Normal years	175	100	200		175	250
Unfavorable years	50	50	50		50	100

1051--THEON-SINGATSE ASSOCIATION, GRAVELLY

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		THEON	SINGATSE	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	5-15	15-25	10-20	---	5-10
Sandberg bluegrass	POSE	---	---	2-10	---	---
bottlebrush squirreltail	SIHY	2-5	---	---	---	5-10
desert needlegrass	STSP3	2-8	2-10	5-15	---	---
Bailey greasewood	SAVEB	15-30	---	10-20	---	---
Lahontan sagebrush	ARARL*	---	---	35-50	---	---
Nevada ephedra	EPNE	---	2-5	2-8	---	5-10
bud sagebrush	ARSP5	2-8	2-8	---	---	---
burrobrush	HYMEN3	---	---	---	---	5-10
fourwing saltbush	ATCA2	---	---	---	---	5-10
littleleaf horsebrush	TEGL	---	---	---	---	10-20
rubber rabbitbrush	CENA2	---	---	---	---	10-20
shadscale	ATCO	15-35	30-40	2-5	---	---
spiny hopsage	GRSP	---	---	2-5	---	10-20
winterfat	EULA5	---	2-8	---	---	---
Range site number		027XY019NV	027XY027NV	027XY070NV	none	027XY022NV
Potential production (lb/acre):						
Favorable years		300	200	400		400
Normal years		175	100	250		200
Unfavorable years		50	50	100		50

1052--THEON-GRUMBLEN-RUBBLE LAND ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		THEON	GRUMBLEN	RUBBLE LAND	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	OREY	5-15	10-20	---	15-25	---	5-15	---
Sandberg bluegrass	POSE	---	2-10	---	---	2-8	---	---
Thurber needlegrass	STH2	---	---	---	---	20-35	---	---
basin wildrye	ELCI2	---	---	---	5-15	---	---	---
bottlebrush squirreltail	SIHY	2-5	---	---	---	---	---	---
desert needlegrass	STSP3	2-8	5-15	---	---	2-5	40-60	---
globemallow	SPHAE	---	---	---	---	---	1-3	---
Anderson wolfberry	LYAN	---	---	---	---	---	2-5	---
Bailey greasewood	SAVEB	15-30	10-20	---	---	---	---	---
Lahontan sagebrush	ARARL*	---	35-50	---	---	30-35	---	---
Nevada ephedra	EPNE	---	2-8	---	---	---	2-5	---
basin big sagebrush	ARTRT	---	---	---	20-30	---	---	---
bud sagebrush	ARSP5	2-8	---	---	---	---	---	---
rabbitbrush	CHRS9	---	---	---	2-5	---	---	---
shadscale	ATCO	15-35	2-5	---	---	---	20-35	---
spiny hopsage	GRSP	---	2-5	---	10-20	2-5	2-8	---
Range site number		027XY019NV	027XY070NV	none	027XY029NV	027XY079NV	027XY017NV	none
Potential production (lb/acre):								
Favorable years		300	400		800	500	400	
Normal years		175	250		500	350	200	
Unfavorable years		50	100		300	200	100	

1053--THEON-ROCK OUTCROP ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		THEON	ROCK OUTCROP	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	5-15	---	15-25	10-20
Sandberg bluegrass	POSE	---	---	---	2-10
bottlebrush squirreltail	SIHY	2-5	---	---	---
desert needlegrass	STSP3	2-8	---	2-10	5-15
Bailey greasewood	SAVEB	15-30	---	---	10-20
Lahontan sagebrush	ARARL*	---	---	---	35-50
Nevada ephedra	EPNE	---	---	2-5	2-8
bud sagebrush	ARSP5	2-8	---	2-8	---
shadscale	ATCO	15-35	---	30-40	2-5
spiny hopsage	GRSP	---	---	---	2-5
winterfat	EULA5	---	---	2-8	---
Range site number		027XY019NV	none	027XY027NV	027XY070NV
Potential production (lb/acre):					
Favorable years		300		200	400
Normal years		175		100	250
Unfavorable years		50		50	100

1054--THEON-OLD CAMP ASSOCIATION, GRAVELLY

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		THEON	OLD CAMP	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	5-15	5-15	5-15	10-20	15-25	---
Sandberg bluegrass	POSE	---	2-8	---	5-10	---	---
Thurber needlegrass	STH2	---	25-35	---	---	---	---
basin wildrye	ELCI2	---	---	---	---	5-15	---
bottlebrush squirreltail	SIHY	2-5	---	---	2-8	---	---
desert needlegrass	STSP3	2-8	---	40-60	---	---	---
globemallow	SPEAE	---	---	1-3	---	---	---
Anderson wolfberry	LYAN	---	---	2-5	---	---	---
Bailey greasewood	SAVEB	15-30	---	---	20-30	---	---
Nevada ephedra	EPNE	---	2-5	2-5	---	---	---
Wyoming big sagebrush	ARTRW	---	25-35	---	---	---	---
basin big sagebrush	ARTRT	---	---	---	---	20-30	---
bud sagebrush	ARSP5	2-8	---	---	5-15	---	---
rabbitbrush	CHRY59	---	---	---	---	2-5	---
shadscale	ATCO	15-35	---	20-35	15-30	---	---
spiny hopsage	GRSP	---	2-8	2-8	---	10-20	---

Range site number	027XY019NV	027XY007NV	027XY017NV	027XY018NV	027XY029NV	none
Potential production (lb/acre):						
Favorable years	300	700	400	400	800	
Normal years	175	500	200	250	500	
Unfavorable years	50	300	100	100	300	

1055--THEON-OLD CAMP ASSOCIATION, COBBLY

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		THEON	OLD CAMP	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORRY	5-15	5-15	15-25	---	---
Sandberg bluegrass	POSE	---	2-8	---	---	2-8
Thurber needlegrass	STTH2	---	25-35	---	---	20-35
basin wildrye	ELCI2	---	---	5-15	---	---
bottlebrush squirreltail	SIHY	2-5	---	---	---	---
desert needlegrass	STSP3	2-8	---	---	---	2-5
Bailey greasewood	SAVEB	15-30	---	---	---	---
Lahontan sagebrush	ARARL*	---	---	---	---	30-35
Nevada ephedra	EPNE	---	2-5	---	---	---
Wyoming big sagebrush	ARTRW	---	25-35	---	---	---
basin big sagebrush	ARTRT	---	---	20-30	---	---
bud sagebrush	ARSP5	2-8	---	---	---	---
rabbitbrush	CHRY99	---	---	2-5	---	---
shadscale	ATCO	15-35	---	---	---	---
spiny hopsage	GRSP	---	2-8	10-20	---	2-5
Range site number		027XY019NV	027XY007NV	027XY029NV	none	027XY079NV
Potential production (lb/acre):						
Favorable years		300	700	800		500
Normal years		175	500	500		350
Unfavorable years		50	300	300		200

1056--THEON-PICKUP ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		THEON	PICKUP	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	5-15	---	---	5-15	15-25	15-30
Sandberg bluegrass	POSE	---	2-8	---	2-8	---	2-15
Thurber needlegrass	STTH2	---	20-35	---	25-35	---	---
bottlebrush squirreltail	SIEY	2-5	---	---	---	---	2-8
desert needlegrass	STSP3	2-8	2-5	---	---	2-10	---
Bailey greasewood	SAVEB	15-30	---	---	---	---	---
Lahontan sagebrush	ARARL*	---	30-35	---	---	---	---
Nevada ephedra	EPNE	---	---	---	2-5	2-5	---
Wyoming big sagebrush	ARTRW	---	---	---	25-35	---	---
bud sagebrush	ARSP5	2-8	---	---	---	2-8	15-25
shadscale	ATCO	15-35	---	---	---	30-40	20-35
spiny hopsage	GRSP	---	2-5	---	2-8	---	---
winterfat	EULAS	---	---	---	---	2-8	5-10

Range site number	027XY019NV	027XY079NV	none	027XY007NV	027XY027NV	027XY013NV
Potential production (lb/acre):						
Favorable years	300	500		700	200	600
Normal years	175	350		500	100	450
Unfavorable years	50	200		300	50	250

1080--TOULON-APPIAN-BLUEWING ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		TOULON	APPIAN	BLUEWING	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	10-20	10-15	5-10	2-5	---	40-50	---
Sandberg bluegrass	POSE	5-10	---	---	---	---	---	---
basin wildrye	ELCI2	---	---	---	5-20	---	---	---
bottlebrush squirreltail	SIHY	2-8	5-10	5-10	2-5	---	---	---
inland saltgrass	DISPS2	---	2-5	---	---	---	---	---
needleandthread	STCO4	---	---	---	---	---	10-20	---
globemallow	SPRAE	---	---	---	1-2	---	---	---
thelypody	THELY	---	---	---	2-4	---	---	---
Bailey greasewood	SAVEB	20-30	T-5	---	---	---	---	---
Nevada ephedra	EPNE	---	---	5-10	---	---	---	---
Wyoming big sagebrush	ARTRW	---	---	---	---	---	---	---
basin big sagebrush	ARTRT	---	---	---	---	---	---	---
big sagebrush	ARTR2	---	---	---	10-25	---	---	---
black greasewood	SAVE4	---	20-30	---	20-30	---	10-15	---
bud sagebrush	ARSP5	5-15	2-5	---	---	---	---	---
burrobrush	HYMEN3	---	---	5-10	---	---	---	---
fourwing saltbush	ATCA2	---	---	5-10	---	---	2-5	---
littleleaf horsebrush	TEGL	---	---	10-20	---	---	---	---
rubber rabbitbrush	CRNA2	---	---	10-20	---	---	---	---
shadscale	ATCO	15-30	20-35	---	---	---	---	---
spiny hopsage	GRSP	---	---	10-20	5-15	---	2-5	---
winterfat	EULAS	---	---	---	---	---	5-10	---
Range site number		027XY018NV	027XY024NV	027XY022NV	024KY022NV	none	027XY012NV	none
Potential production (lb/acre):								
Favorable years		400	500	400	800		600	
Normal years		250	350	200	600		400	
Unfavorable years		100	150	50	350		200	

1100--UNIONVILLE-ROCK OUTCROP COMPLEX

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		UNIONVILLE	ROCK OUTCROP	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	OREY	10-20	---	10-20	5-10	---
Sandberg bluegrass	POSE	5-10	---	5-10	---	---
bottlebrush squirreltail	SIHY	2-8	---	2-8	5-10	---
inland saltgrass	DISPS2	---	---	---	---	2-10
Bailey greasewood	SAVEB	20-30	---	20-30	---	---
Nevada ephedra	EPNE	---	---	---	5-10	---
black greasewood	SAVE4	---	---	---	---	60-70
bud sagebrush	ARSP5	5-15	---	5-15	---	---
burrobrush	HYMEN3	---	---	---	5-10	---
fourwing saltbush	ATCA2	---	---	---	5-10	---
littleleaf horsebrush	TEGL	---	---	---	10-20	---
rubber rabbitbrush	CHNA2	---	---	---	10-20	---
seepweed	SUAED	---	---	---	---	2-8
shadscale	ATCO	15-30	---	15-30	---	2-10
spiny hopsage	GRSP	---	---	---	10-20	---
Range site number		027XY018NV	none	027XY018NV	027XY022NV	027XY025NV
Potential production (lb/acre):						
Favorable years		400		400	400	500
Normal years		250		250	200	350
Unfavorable years		100		100	50	200

1150--SLOCAVE-ARCLAY-ROCK OUTCROP ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		SLOCAVE	ARCLAY	ROCK OUTCROP	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORRY	5-15	---	---	2-10	15-25	10-20	5-10
Sandberg bluegrass	POSE	---	2-8	---	---	---	5-10	---
Thurber needlegrass	STTE2	---	20-35	---	40-50	---	---	---
bottlebrush squirreltail	SIHY	---	---	---	---	---	2-8	5-10
desert needlegrass	STSP3	40-60	2-5	---	---	2-10	---	---
globemallow	SPHAE	1-3	---	---	---	---	---	---
Anderson wolfberry	LYAN	2-5	---	---	---	---	---	---
Bailey greasewood	SAVEB	---	---	---	---	---	20-30	---
Lahontan sagebrush	ARARL*	---	30-35	---	---	---	---	---
Nevada ephedra	EPNE	2-5	---	---	---	2-5	---	5-10
Wyoming big sagebrush	ARTRW	---	---	---	---	---	---	---
big sagebrush	ARTR2	---	---	---	15-25	---	---	---
bud sagebrush	ARSP5	---	---	---	---	2-8	5-15	---
burrobrush	HYMEN3	---	---	---	---	---	---	5-10
fourwing saltbush	ATCA2	---	---	---	---	---	---	5-10
littleleaf horsebrush	TEGL	---	---	---	---	---	---	10-20
mountain big sagebrush	ARVA2	---	---	---	---	---	---	---
rubber rabbitbrush	CRNA2	---	---	---	---	---	---	10-20
shadscale	ATCO	20-35	---	---	---	30-40	15-30	---
spiny hopsage	GRSP	2-8	2-5	---	2-5	---	---	10-20
winterfat	EULA5	---	---	---	---	2-8	---	---

Range site number	027XY017NV	027XY079NV	none	027XY072NV	027XY027NV	027XY018NV	027XY022NV
Potential production (lb/acre):							
Favorable years	400	500		800	200	400	400
Normal years	200	350		600	100	250	200
Unfavorable years	100	200		400	50	100	50

1151--SLOCAVE-VIUM ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		SLOCAVE	VIUM	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	5-15	15-25	5-15	5-10
bottlebrush squirreltail	SIHY	---	---	2-5	5-10
desert needlegrass	STSP3	40-60	2-10	2-8	---
globemallow	SPAE	1-3	---	---	---
Anderson wolfberry	LYAN	2-5	---	---	---
Bailey greasewood	SAVEB	---	---	15-30	---
Nevada ephedra	EPNE	2-5	2-5	---	5-10
bud sagebrush	ARSP5	---	2-8	2-8	---
burrobrush	HYMEN3	---	---	---	5-10
fourwing saltbush	ATCA2	---	---	---	5-10
littleleaf horsebrush	TEGL	---	---	---	10-20
rubber rabbitbrush	CHNA2	---	---	---	10-20
shadscale	ATCO	20-35	30-40	15-35	---
spiny hopsage	GRSP	2-8	---	---	10-20
winterfat	EULA5	---	2-8	---	---
Range site number		027XY017NV	027XY027NV	027XY019NV	027XY022NV
Potential production (lb/acre):					
Favorable years		400	200	300	400
Normal years		200	100	175	200
Unfavorable years		100	50	50	50

1190--WOOLSEY-BLUEWING ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions				
		Soil name or Inclusion number--				
		WOOLSEY	BLUEWING	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	10-20	10-20	---	10-20	50-70
Sandberg bluegrass	POSE	5-10	5-10	---	5-10	---
bottlebrush squirreltail	SIHY	2-8	2-8	---	2-8	---
inland saltgrass	DISPS2	---	---	2-10	---	---
needleandthread	STCO4	---	---	---	---	5-15
Bailey greasewood	SAVE	20-30	20-30	---	20-30	---
Nevada dalea	PSPO	---	---	---	---	0-5
black greasewood	SAVE4	---	---	60-70	---	---
bud sagebrush	ARSP5	5-15	5-15	---	5-15	---
fourwing saltbush	ATCA2	---	---	---	---	10-20
seepweed	SUAED	---	---	2-8	---	---
shadscale	ATCO	15-30	15-30	2-10	15-30	---
spiny hopsage	GRSP	---	---	---	---	2-5
winterfat	EULAS	---	---	---	---	2-8
Range site number		027XY018NV	027XY018NV	027XY025NV	027XY018NV	027XY009NV
Potential production (lb/acre):						
Favorable years		400	400	500	400	700
Normal years		250	250	350	250	450
Unfavorable years		100	100	200	100	250

1200--ACRELANE-SOAR-ARCLAY ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		ACRELANE	SOAR	ARCLAY	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	2-10	---	---	5-15	---	15-25
Sandberg bluegrass	POSE	---	---	2-8	---	---	---
Thurber needlegrass	STTE2	40-50	---	20-35	---	---	---
basin wildrye	ELCI2	---	---	---	---	---	5-15
desert needlegrass	STSP3	---	50-60	2-5	40-60	---	---
globemallow	SPHAE	---	---	---	1-3	---	---
Anderson wolfberry	LYAN	---	---	---	2-5	---	---
Lahontan sagebrush	ARARL*	---	25-30	30-35	---	---	---
Nevada ephedra	EPNE	---	---	---	2-5	---	---
Wyoming big sagebrush	ARTRW	---	---	---	---	---	---
basin big sagebrush	ARTRT	---	---	---	---	---	20-30
big sagebrush	ARTR2	15-25	---	---	---	---	---
mountain big sagebrush	ARVA2	---	---	---	---	---	---
rabbitbrush	CHRY9	---	---	---	---	---	2-5
shadscale	ATCO	---	---	---	20-35	---	---
spiny hopsage	GRSP	2-5	2-8	2-5	2-8	---	10-20
winterfat	EULAS	---	2-8	---	---	---	---
Range site number		027XY072NV	027XY068NV	027XY079NV	027XY017NV	none	027XY029NV
Potential production (lb/acre):							
Favorable years		800	900	500	400		800
Normal years		600	600	350	200		500
Unfavorable years		400	350	200	100		300

1201--ACRELANE-WEDEKIND-ARCLAY ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		ACRELANE	WEDEKIND	ARCLAY	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	2-10	2-10	---	20-25	---	---	---
Sandberg bluegrass	POSE	---	---	2-8	2-5	2-8	---	---
Thurber needlegrass	STTH2	40-50	40-50	20-35	---	20-35	---	---
bottlebrush squirreltail	SIHY	---	---	---	2-5	---	---	---
desert needlegrass	STSP3	---	---	2-5	---	2-5	50-60	---
needleandthread	STCO4	---	---	---	5-15	---	---	---
Lahontan sagebrush	ARARL*	---	---	30-35	---	30-35	25-30	---
Nevada ephedra	EPNE	---	---	---	2-5	---	---	---
Wyoming big sagebrush	ARTRW	---	---	---	20-30	---	---	---
big sagebrush	ARTR2	15-25	15-25	---	---	---	---	---
mountain big sagebrush	ARVA2	---	---	---	---	---	---	---
spiny hopsage	GRSP	2-5	2-5	2-5	10-25	2-5	2-8	---
winterfat	EULA5	---	---	---	2-5	---	2-8	---

Range site number	027XY072NV	027XY072NV	027XY079NV	027XY008NV	027XY079NV	027XY068NV	none
Potential production (lb/acre):							
Favorable years	800	800	500	700	500	900	
Normal years	600	600	350	500	350	600	
Unfavorable years	400	400	200	300	200	350	

1202--ACRELANE-ROCK OUTCROP COMPLEX

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		ACRELANE	ROCK OUTCROP	Inclusion 1	Inclusion 2
Indian ricegrass	ORHY	2-10	---	---	---
Sandberg bluegrass	POSE	---	---	2-8	---
Thurber needlegrass	STTH2	40-50	---	20-35	---
desert needlegrass	STSP3	---	---	2-5	50-60
Lahontan sagebrush	ARARL*	---	---	30-35	25-30
Wyoming big sagebrush	ARTRW	---	---	---	---
big sagebrush	ARTR2	15-25	---	---	---
mountain big sagebrush	ARVA2	---	---	---	---
spiny hopsage	GRSP	2-5	---	2-5	2-8
winterfat	EULA5	---	---	---	2-8
Range site number		027XY072NV	none	027XY079NV	027XY068NV
Potential production (lb/acre):					
Favorable years		800		500	900
Normal years		600		350	600
Unfavorable years		400		200	350

1203--ACRELANE-SHAWAVE-GRANSHAW ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions							
		Soil name or Inclusion number--							
		ACRELANE	SHAWAVE	GRANSHAW	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4	
Indian ricegrass	ORHY	2-10	20-25	15-30	15-30	---	15-25	20-25	
Sandberg bluegrass	POSE	---	2-5	2-15	2-15	---	---	2-5	
Thurber needlegrass	STTH2	40-50	---	---	---	---	---	---	
basin wildrye	ELCI2	---	---	---	---	---	5-15	---	
bottlebrush squirreltail	SIHY	---	2-5	2-8	2-8	---	---	2-5	
needleandthread	STCO4	---	5-15	---	---	---	---	5-15	
Nevada ephedra	EPNE	---	2-5	---	---	---	---	2-5	
Wyoming big sagebrush	ARTRW	---	20-30	---	---	---	---	20-30	
basin big sagebrush	ARTRT	---	---	---	---	---	20-30	---	
big sagebrush	ARTR2	15-25	---	---	---	---	---	---	
bud sagebrush	ARSP5	---	---	15-25	15-25	---	---	---	
mountain big sagebrush	ARVA2	---	---	---	---	---	---	---	
rabbitbrush	CHRY59	---	---	---	---	---	2-5	---	
shadscale	ATCO	---	---	20-35	20-35	---	---	---	
spiny hopsage	GRSP	2-5	10-25	---	---	---	10-20	10-25	
winterfat	EULA5	---	2-5	5-10	5-10	---	---	2-5	

Range site number	027XY072NV	027XY008NV	027XY013NV	027XY013NV	none	027XY029NV	027XY008NV
Potential production (lb/acre):							
Favorable years	800	700	600	600		800	700
Normal years	600	500	450	450		500	500
Unfavorable years	400	300	250	250		300	300

1204--ACRELANE-ARCLAY-EAGLEROCK ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		ACRELANE	ARCLAY	EAGLEROCK	Inclusion 1	Inclusion 2	Inclusion 3
Canby bluegrass	POCA	---	---	---	---	---	---
Cusick bluegrass	POCU3	---	---	---	---	---	---
Indian ricegrass	ORHY	2-10	---	---	---	5-15	15-25
Sandberg bluegrass	POSE	---	2-8	---	---	---	---
Thurber needlegrass	STTH2	40-50	20-35	40-50	---	---	---
basin wildrye bluegrass	ELCI2	---	---	---	---	---	5-15
desert needlegrass	POA++	---	---	2-5	---	---	---
globemallow	STSP3	---	2-5	---	---	40-60	---
Anderson wolfberry	SPEAE	---	---	---	---	1-3	---
Lahontan sagebrush	LYAN	---	---	---	---	2-5	---
Nevada ephedra	ARARL+	---	30-35	---	---	---	---
Wyoming big sagebrush	EPNE	---	---	---	---	2-5	---
basin big sagebrush	ARTRW	---	---	---	---	---	---
big sagebrush	ARTRT	---	---	---	---	---	20-30
green ephedra	ARTR2	15-25	---	---	---	---	---
mountain big sagebrush	EPVI	---	---	2-5	---	---	---
rabbitbrush	ARVA2	---	---	15-25	---	---	---
shadscale	CHRY9	---	---	---	---	---	2-5
spiny hopsage	ATCO	---	---	---	---	20-35	---
	GRSP	2-5	2-5	---	---	2-8	10-20
Range site number		027XY072NV	027XY079NV	027XY073NV	none	027XY017NV	027XY029NV
Potential production (lb/acre):							
Favorable years		800	500	1100		400	800
Normal years		600	350	900		200	500
Unfavorable years		400	200	700		100	300

1205--ACRELANE-ACRELANE, MODERATELY SLOPING ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		ACRELANE	ACRELANE	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	2-10	2-10	---	15-25	5-15	---
Sandberg bluegrass	POSE	---	---	---	---	---	2-8
Thurber needlegrass	STTH2	40-50	40-50	---	---	---	20-35
basin wildrye	ELCI2	---	---	---	5-15	---	---
desert needlegrass	STSP3	---	---	---	---	40-60	2-5
globemallow	SPHA2	---	---	---	---	1-3	---
Anderson wolfberry	LYAN	---	---	---	---	2-5	---
Lahontan sagebrush	ARARL*	---	---	---	---	---	30-35
Nevada ephedra	EPNE	---	---	---	---	2-5	---
Wyoming big sagebrush	ARTRW	---	---	---	---	---	---
basin big sagebrush	ARTRT	---	---	---	20-30	---	---
big sagebrush	ARTR2	15-25	15-25	---	---	---	---
mountain big sagebrush	ARVA2	---	---	---	---	---	---
rabbitbrush	CHRY9	---	---	---	2-5	---	---
shadscale	ATCO	---	---	---	---	20-35	---
spiny hopsage	GRSP	2-5	2-5	---	10-20	2-8	2-5
Range site number		027XY072NV	027XY072NV	none	027XY029NV	027XY017NV	027XY079NV
Potential production (lb/acre):							
Favorable years		800	800		800	400	500
Normal years		600	600		500	200	350
Unfavorable years		400	400		300	100	200

1210--WESFIL-SOJUR ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		WESFIL	SOJUR	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	10-20	15-25	---	5-15	---	15-25
Sandberg bluegrass	POSE	2-10	---	2-8	2-8	---	---
Thurber needlegrass	STTE2	---	---	20-35	25-35	---	---
basin wildrye	ELCI2	---	---	---	---	---	5-15
desert needlegrass	STSP3	5-15	2-10	2-5	---	---	---
Bailey greasewood	SAVEB	10-20	---	---	---	---	---
Lahontan sagebrush	ARARL*	35-50	---	30-35	---	---	---
Nevada ephedra	EPNE	2-8	2-5	---	2-5	---	---
Wyoming big sagebrush	ARTRW	---	---	---	25-35	---	---
basin big sagebrush	ARTRT	---	---	---	---	---	20-30
bud sagebrush	ARSP5	---	2-8	---	---	---	---
rabbitbrush	CHRY9	---	---	---	---	---	2-5
shadscale	ATCO	2-5	30-40	---	---	---	---
spiny hopsage	GRSP	2-5	---	2-5	2-8	---	10-20
winterfat	EULA5	---	2-8	---	---	---	---

Range site number	027XY070NV	027XY027NV	027XY079NV	027XY007NV	none	027XY029NV
Potential production (lb/acre):						
Favorable years	400	200	500	700		800
Normal years	250	100	350	500		500
Unfavorable years	100	50	200	300		300

1300--YIPOR SILT LOAM

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions			
		Soil name or Inclusion number--			
		YIPOR	Inclusion 1	Inclusion 2	Inclusion 3
Indian ricegrass	ORHY	20-30	5-10	15-30	50-70
Sandberg bluegrass	POSE	---	---	2-15	---
bottlebrush squirreltail	SIHY	5-10	5-10	2-8	---
needleandthread	STCO4	---	---	---	5-15
Nevada dalea	PSP0	---	---	---	0-5
Nevada ephedra	EPNE	---	5-10	---	---
bud sagebrush	ARSP5	---	---	15-25	---
burrobrush	HVMEN3	---	5-10	---	---
fourwing saltbush	ATCA2	---	5-10	---	10-20
littleleaf horsebrush	TEGL	---	10-20	---	---
rubber rabbitbrush	CRNA2	---	10-20	---	---
shadscale	ATCO	---	---	20-35	---
sickle saltbush	ATFA	50-60	---	---	---
spiny hopsage	GRSP	---	10-20	---	2-5
winterfat	EULA5	---	---	5-10	2-8

Range site number	024XY012NV	027XY022NV	027XY013NV	027XY009NV
Potential production (lb/acre):				
Favorable years	700	400	600	700
Normal years	400	200	450	450
Unfavorable years	200	50	250	250

1400--JERVAL-DORPER ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions					
		Soil name or Inclusion number--					
		JERVAL	DORPER	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORRY	15-30	15-30	20-25	40-50	20-25	10-20
Sandberg bluegrass	POSE	2-15	2-15	2-5	---	2-5	2-10
bottlebrush squirreltail	SIRY	2-8	2-8	2-5	2-5	2-5	---
desert needlegrass	STSP3	---	---	---	---	---	5-15
needleandthread	STCO4	---	---	5-15	5-15	5-15	---
globemallow	SPHAE	---	---	---	2-5	---	---
Bailey greasewood	SAVEB	---	---	---	---	---	10-20
Lahontan sagebrush	ARARL*	---	---	---	---	---	35-50
Nevada ephedra	EPNE	---	---	2-5	---	2-5	2-8
Wyoming big sagebrush	ARTRW	---	---	20-30	---	20-30	---
bud sagebrush	ARSP5	15-25	15-25	---	5-15	---	---
shadscale	ATCO	20-35	20-35	---	---	---	2-5
spiny hopsage	GRSP	---	---	10-25	---	10-25	2-5
winterfat	EULAS	5-10	5-10	2-5	25-30	2-5	---
Range site number		027XY013NV	027XY013NV	027XY008NV	027XY014NV	027XY008NV	027XY070NV
Potential production (lb/acre):							
Favorable years		600	600	700	700	700	400
Normal years		450	450	500	500	500	250
Unfavorable years		250	250	300	350	300	100

1401--JERVAL-ABOTEN-DORPER ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		JERVAL	ABOTEN	DORPER	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	15-30	15-30	10-20	15-30	10-20	15-25	40-50
Sandberg bluegrass	POSE	2-15	2-15	5-10	2-15	5-10	---	---
basin wildrye	ELCI2	---	---	---	---	---	5-15	---
bottlebrush squirreltail	SIHY	2-8	2-8	2-8	2-8	2-8	---	2-5
needleandthread	STCO4	---	---	---	---	---	---	5-15
globemallow	SPHAE	---	---	---	---	---	---	2-5
Bailey greasewood	SAVEB	---	---	20-30	---	20-30	---	---
basin big sagebrush	ARTRT	---	---	---	---	---	20-30	---
bud sagebrush	ARSP5	15-25	15-25	5-15	15-25	5-15	---	5-15
rabbitbrush	CHRY9	---	---	---	---	---	2-5	---
shadscale	ATCO	20-35	20-35	15-30	20-35	15-30	---	---
spiny hopsage	GRSP	---	---	---	---	---	10-20	---
winterfat	EULA5	5-10	5-10	---	5-10	---	---	25-30

Range site number	027XY013NV	027XY013NV	027XY018NV	027XY013NV	027XY018NV	027XY029NV	027XY014NV
Potential production (lb/acre):							
Favorable years	600	600	400	600	400	800	700
Normal years	450	450	250	450	250	500	500
Unfavorable years	250	250	100	250	100	300	350

1410--SLIPBACK-SHAWAVE-NODUR ASSOCIATION

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions						
		Soil name or Inclusion number--						
		SLIPBACK	SHAWAVE	NODUR	Inclusion 1	Inclusion 2	Inclusion 3	Inclusion 4
Indian ricegrass	ORHY	20-25	20-25	---	20-25	2-10	20-25	---
Sandberg bluegrass	POSE	2-5	2-5	2-8	2-5	---	2-5	2-8
Thurber needlegrass	STH2	---	---	20-35	---	40-50	---	20-35
bottlebrush squirreltail	SIHY	2-5	2-5	---	2-5	---	2-5	---
desert needlegrass	STSP3	---	---	2-5	---	---	---	2-5
needleandthread	STCO4	5-15	5-15	---	5-15	---	5-15	---
Lahontan sagebrush	ARARL*	---	---	30-35	---	---	---	30-35
Nevada ephedra	EPNE	2-5	2-5	---	2-5	---	2-5	---
Wyoming big sagebrush	ARTRW	20-30	20-30	---	20-30	---	20-30	---
big sagebrush	ARTR2	---	---	---	---	15-25	---	---
mountain big sagebrush	ARVA2	---	---	---	---	---	---	---
spiny hopsage	GRSP	10-25	10-25	2-5	10-25	2-5	10-25	2-5
winterfat	EULA5	2-5	2-5	---	2-5	---	2-5	---

Range site number	027XY008NV	027XY008NV	027XY079NV	027XY008NV	027XY072NV	027XY008NV	027XY079NV
Potential production (lb/acre):							
Favorable years	700	700	500	700	800	700	500
Normal years	500	500	350	500	600	500	350
Unfavorable years	300	300	200	300	400	300	200

1610--LOVELOCK SILT LOAM, 0 TO 2 PERCENT SLOPES

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions		
		Soil name or Inclusion number--		
		LOVELOCK	Inclusion 1	Inclusion 2
Saltic rush	JUBA	5-10	---	---
alkali sacaton	SPAI	30-45	---	---
basin wildrye	ELCI2	2-5	50-60	---
inland saltgrass	DISPS2	10-15	5-10	---
western wheatgrass	AGSM	2-5	---	---
black greasewood	SAVE4	---	5-15	---
Range site number		027XY005NV	027XY006NV	none
Potential production (lb/acre):				
Favorable years		3000	2000	
Normal years		2200	1500	
Unfavorable years		1000	800	

W--WATER

(Absence of an entry indicates that the named plant is not a key species in the potential native plant community)

Common plant name	Plant symbol	Percentage composition and production (dry weight) of plants on major soils and inclusions
		Soil name or Inclusion number--
		WATER

Range site number

none

Potential production (lb/acre):

Favorable years

Normal years

Unfavorable years

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