

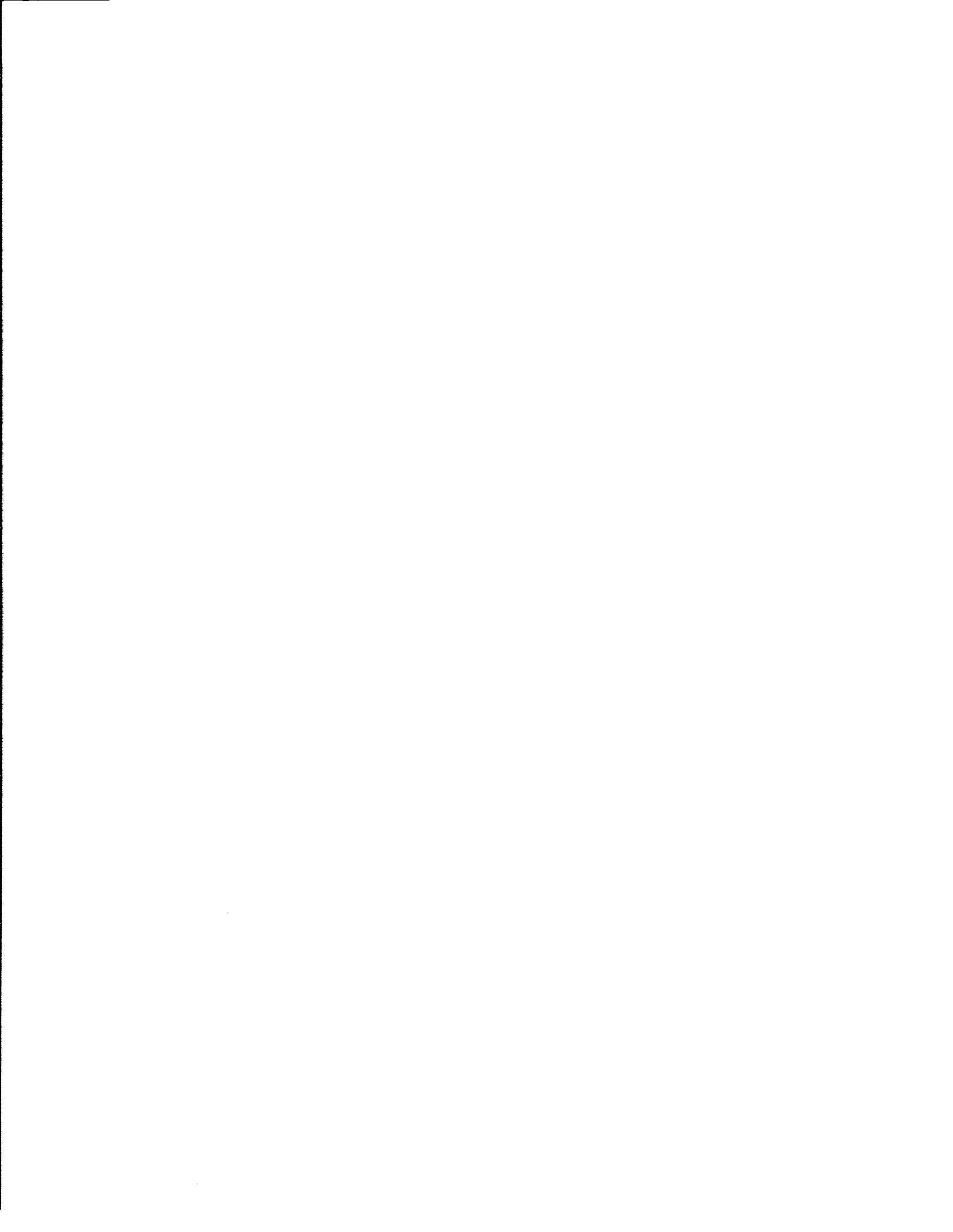
USDA United States
Department of
Agriculture

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 Lincoln County, Nevada, South 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 Thus, as older published interpretive information becomes outdated, new interpretive data must be generated and tailored to local conditions.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 **Map Unit Interpretation Record (MUIR)** database as needed. Map Unit Interpretation Records are the soil survey specific data and interpretations in the state soil survey 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 1990. Soil names and descriptions were approved in 1990. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1990. 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 Lincoln County 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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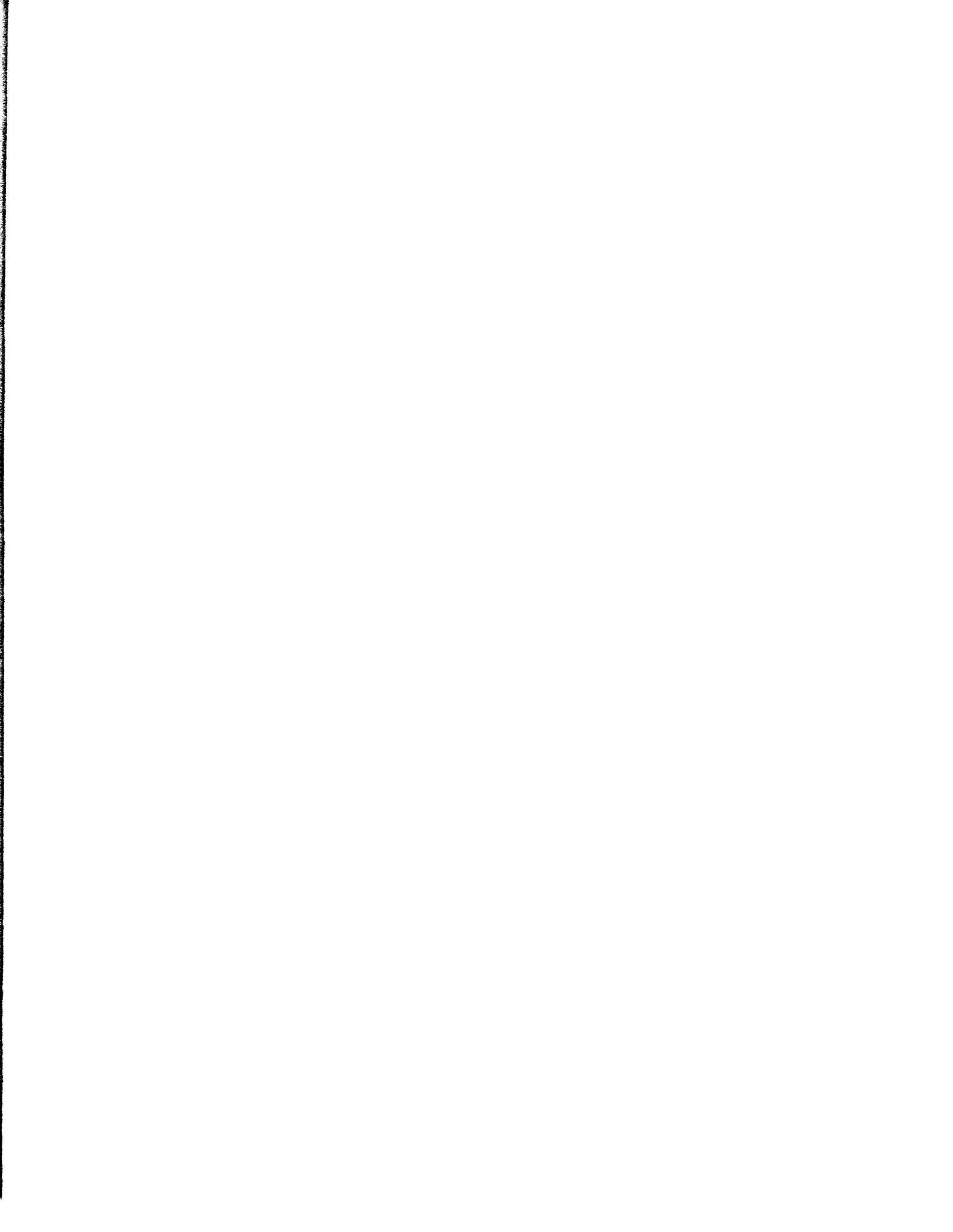
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Foreword

This soil survey contains information that can be used in land-planning programs in Lincoln County, Nevada, South 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 Lincoln County, Nevada, South Part

By Douglas J. Merkler, Natural Resources Conservation Service

Fieldwork by Douglas J. Merkler, Bruce E. Lindsay, Scott Neiber, and Randal Wilson,
Natural Resources Conservation Service

United States Department of Agriculture, Natural Resources Conservation Service,
in cooperation with the 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 (5). 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 is 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.

Descriptions, names, and delineations of soils in this soil survey do not fully agree with those on soil maps for adjacent survey areas. Differences are the result of better knowledge of soils, modifications in series concepts, intensity of mapping, or the extent of soils within the survey.

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, geology, and climate.

History

As far back as 10,000 years, the aborigines were eking out a meager existence from the harsh desert environment of southern Nevada. *Little is known of the aboriginal inhabitants of Lincoln County although Indian relics and petroglyphs are abundant. Probably several other Indian cultures besides the Piute (Paiute) existed, but they have never been studied in detail. In the Mormon Mountains, large circular pits that typically contain charcoal are common. These are reported to be pits in which Indians baked large quantities of the root of the agave, a relative of the century plant. Woven baskets have been found in caves containing rock paintings in the canyon of Meadow Valley Wash about 14 miles south of Caliente. Pottery fragments have been found in many places in the southwest quarter of the county, often beneath overhanging rocks or in caves. Chipped flint fragments are abundant in the forested part of the county. Petroglyphs, including animal pictures made by chipping through the surface stain of volcanic cliffs, are common in the southern two-thirds of the county. Most of these intaglio drawings are on the surfaces of a distinctive and widely distributed spheroidally weathered ignimbrite. Petroglyphs painted with red ochre are much rarer. These were seen on limestone in the Mormon Mountains, and in the Sheep and Spotted Ranges (7).*

In 1855, a Mormon company of 30 men from the Great Salt Lake became the first Americans to settle in southern Nevada. The group's leader, William Bringham, had been instructed by Brigham Young to protect immigrants and the U.S. mail from Indians. By 1864, Mormons were setting up other outposts such as Panaca, Overton, and Moapa.

By the mid-1860's, rich ore veins had been discovered in Nevada's southeast territory. The first major strike was in

Pioche. In 1890, another major find was made at Delamar.

The area surrounding present Caliente was first known as Dutch Flat and first settled in the 1870's with the establishment of the Jackman Ranch. When William Culverwell began the purchase of the ranch in 1874, the site became known as the Culverwell Ranch. When first laid out in 1901, the town was called Calientes for the hot springs in the area, Caliente is the Spanish word for hot. When the post office was established on August 3, 1901, the postal officials dropped the "s" from the name (3). Caliente can also boast to having a President visit their town. Caliente was pretty pre-occupied with itself in 1911, with new railroad work going on. When President William Howard Taft went through the town, the local newspaper, "The Prospector", contained only one paragraph about his visit. However, that paragraph is worth repeating almost a century later: "A stout gentleman named Taft went through Caliente Wednesday on a special train. It is reported that he gets a salary of \$75,000 a year for overseeing some kind of a job in Washington, a little place near Baltimore, Maryland."

Caliente and the surrounding area grew rapidly in the score of years following statehood in 1864. From that time until the present, the region has experienced a boom or bust economy.

Mining boomed in the survey area from the late 1870's to the turn of the century. Major mining districts were Tempiute, Hiko, Delamar, Pennsylvania, Cherokee, and Blue Nose. These communities virtually all disappeared by the early 1930's. Most mining in the Caliente area consists of gravel and perlite found in the Pahroc Range. Caliente Mining District, also called Chief, is eight miles north-northwest of the town for which it was named. Saw timber was cut for building materials, mine timbers, and charcoal throughout the higher mountains in the Tempiute, Delamar, and Clover Mountain ranges during the early part of the century (7).

Industry, Transportation, and Recreation

Agriculture in the survey area now consists predominantly of livestock production since the area is approximately 98 percent federally managed rangeland. Most crops are used in conjunction with livestock production, hay sales, and limited specialty crops such as sod and fruit, which are the two major farm products for external markets. Grain is limited except as livestock feed and most is fed locally. Agriculture, governmental service (city, county, state, federal, etc.), Union Pacific Railroad, and service industries provide the major employment. Wood product use is now limited to Christmas tree and firewood cutting and pine nut gathering.

There are no communities located within the survey area. Caliente is in the adjacent Meadow Valley Area, Nevada-Utah soil survey. Caliente is the central community for all commerce within this survey area.

Primary highway access to Lincoln County is U.S. 93, southbound toward Las Vegas, Nevada 319 and U.S. 93 to Ely in the north. The available railroads are Union Pacific and Amtrak passenger service. Airport travel is at Lincoln County Airport, 14 miles north of Caliente.

Public lands in the area are administered by the Bureau of Land Management and the Nevada Division of State

Parks, Conservation and Natural Resources. The Bureau of Land Management in the Lincoln County, Nevada, South Part area administers woodland and rangeland. There is no developed recreation available, but undeveloped recreation includes camping, hiking, sightseeing, photography, trout fishing, and hunting. The Nevada Division of State Parks, Conservation and Natural Resources, administers Beaver Dam, Kershaw-Ryan, and Cathedral Gorge State Parks (7).

Physiography, Drainage, and Geology

Carrie Jansen Smith, Soil Conservationist, Soil Conservation Service, helped write this section.

This survey area is bordered on the west by Nellis Test Range and the National Desert Wildlife Area in Nye County, on the east by Washington County Utah and Mojave County Arizona. A small portion of the south part of Lincoln County is included in the Virgin River Soil Survey.

The survey area is entirely within the Basin and Range Physiographic Province (4). It has typical basin and range topography: relatively narrow north-south trending mountain ranges separated by wider alluvium-filled basins. Most of the basins have closed, internal surface drainage, but Meadow Valley Wash and the often dry White River drain the survey area to the Colorado River.

The elevation of the survey area ranges from about 2,000 feet in the southeastern valleys to over 8,500 feet in the North Pahranaagat Range. The elevation of both the mountains and basins generally are lower in the southern half of the survey area than in the northern half, but the average relief does not vary greatly. The crests of the major ranges are generally 3,000 to 4,000 feet higher than the adjacent basins.

Average precipitation throughout the area is low, and most surface runoff infiltrates into the soils before it reaches the basin floors. The eastern part of the survey area has been plagued by damaging floods; Lower Meadow Valley Wash in particular has had severe flooding. Major flooding is caused by winter storms with low intensity rainfall over wide areas, often continuing for several days, and by summer storms with high intensity rainfall usually of short duration over small areas. Flash flooding can occur in any area at any time of year, but is most probable during the late summer and fall in the southern part of the survey area.

Surface water resources in the area are limited. Ground water is scarce and is being rapidly developed. Throughout the area springs and wells, both free flowing and pumped, are important sources of water.

The present drinking water supply for all residences in the survey area comes from pumped ground water. Irrigation water is obtained from both ground water and surface water sources. Water for livestock and wildlife on rangelands is provided from springs, wells, and catchments.

The two major drainages in the central portion of the survey area are Meadow Valley Wash and Clover Creek. Stream flow is extremely variable both in time and location. The Meadow Valley Wash provides a source of surface irrigation water for pastureland, hayland, and orchard acreage. In general the flow is constant from Caliente to just south of Elgin and then intermittent surface and

underground flow throughout the remainder of the survey area. The Clover Valley drainage area is supplied from runoff from the Clover Mountains, however, the principal flow of Clover Creek results from several large springs including Big Spring and Little Spring. Surface irrigation of wet meadow/native pastures occurs in the Barclay area. Clover Creek also has intermittent surface and underground flow between Barclay and Caliente where it joins with Meadow Valley Wash.

Geology of the survey area consists of Quaternary-age unconsolidated alluvial and playa deposits in the basins and mountain ranges consisting of volcanic, sedimentary, metamorphic, and igneous intrusive rocks (6). Tertiary-age volcanic rocks and sedimentary rocks ranging in age from pre-Cambrian to Paleozoic are the most widespread, with smaller areas of intruded Tertiary-age igneous rocks such as granites and diorites in some areas (7). There are a few small areas of Cambrian-age quartzites in the Desert and Sheep Ranges in the southwestern part of the survey area. Faults are common in the mountain ranges, particularly in the Pahranaagat and Desert Ranges in the central and western part of the survey area.

Climate

Table 1 gives data on ranges and average temperature and precipitation for the survey area as recorded at Caliente, Elgin, and Pahranaagat Wildlife Refuge. The time period of record is shown at the top of each table. Table 2 shows probable dates of the first freeze in fall and the last freeze in the spring. Table 3 provides data on length of the growing season.

Climate in the survey area is varied, being affected by latitude, elevation, and terrain. Temperatures are warmer and growing seasons longer in the southern portion of the area. With increasing elevation there is a corresponding cooling of air temperatures, increase in precipitation and generally a shortening of the frost-free period. Locally, terrain features impact climate by influencing air drainage, shading or sheltering, and by causing "rain shadow" effects. Generally, the high mountainous parts of the survey are cool and moist, with significant snow accumulations in winter and common summer showers. Valleys tend to be hot or warm and dry.

Local variability within the survey area may be illustrated by observing some of the climatic means and extremes for various climate stations. Caliente, near the northern edge of the survey area, at 4,402 feet elevation, has an average annual temperature of 53.0 degrees (period 1961-1990) and average precipitation of 9.57 inches (same period). In January, the coldest month of most years, the average temperature is 31.8 degrees (1961-1990) while July temperatures average 75.8 degrees. Extreme temperatures range from a low of -29 degrees recorded January 21, 1937 to a maximum of 109 degrees recorded June 22, 1954, July 5, 1985, and again July 6, 1985. Caliente has 106 days in which the average snow depth for 1961-1990 is .1 inch or more. On January 23, 1982, an unusual snowfall deposited 40.5 inches of snow.

At the Pahranaagat Wildlife Refuge in the southwest part of the survey area, elevation 3,400 feet, the period 1961-1990 shows an average temperature of 58.2 degrees and average precipitation of 6.66 inches. January average temperature is 38.5 degrees and July average is 80.0

degrees. Temperature extremes at Pahrnagat Wildlife Refuge are -1 degree on December 22, 1990 and 112 degrees on July 5, 1985. The 1961-1990 average days with .1 inch or more snow depth is 7 days. The maximum recorded snowfall is the 1961-1990 period at 3.5 inches on February 4, 1989.

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 of 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.

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, gravelly sandy loam, 2 to 4 percent slopes is a phase of the Koyen 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. Logring-Eaglepass-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. Geta-Arizo association is an example.

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

1000--Weiser-Tencee-Arizo association

Composition

Major Components

Weiser very cobbly sandy loam, 2 to 4 percent slopes--55 percent

Tencee very cobbly sandy loam, 2 to 4 percent slopes--15 percent

Arizo very gravelly loamy sand, 2 to 4 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Riverwash very gravelly loamy sand, 2 to 4 percent slopes--10 percent

Inclusion 2: Typic Torriorthents, loamy-skeletal, mixed (calcareous), thermic very gravelly sandy loam, 15 to 50 percent slopes--4 percent

Inclusion 3: Paleorthids, 2 to 8 percent slopes--1 percent

Map Unit Setting

Landscape position: Fan piedmonts

Weiser--Landform: Fan remnants

Tencee--Landform: Fan remnants; position on slope: Upper

Arizo--Landform: Drainageways

Inclusion 1--Landform: Drainageways

Inclusion 2--Landform: Fan remnants; geomorphic position: backslope

Inclusion 3--Landform: Fan remnants

Major Component Description

Weiser Series

Elevation: 2,500 to 3,500 feet

Precipitation: About 6 inches

Air temperature: About 63 degrees

Frost-free season: About 250 days

Surface rock fragments: 23 percent cobbles; 20 percent gravel

Surface layer texture: Very cobbly sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from limestone and dolomite

Tencee Series

Elevation: 2,800 to 3,800 feet

Precipitation: About 6 inches

Air temperature: About 62 degrees

Frost-free season: About 250 days

Surface rock fragments: 25 percent cobbles; 20 percent gravel

Surface layer texture: Very cobbly sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Arizo Series

Elevation: 2,500 to 3,500 feet
Precipitation: About 6 inches
Air temperature: About 63 degrees
Frost-free season: About 250 days
Surface rock fragments: 3 percent cobbles; 45 percent gravel
Surface layer texture: Very gravelly loamy sand
Drainage class: Excessively drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Weiser: Big galleta, white bursage
 Tencee: Big galleta, white bursage
 Arizo: Big galleta, white bursage
 Inclusion 1: None
 Inclusion 2: Big galleta, white bursage
 Inclusion 3: None

Ecological Site

Weiser: 030XB019NV
 Tencee: 030XB019NV
 Arizo: 030XB028NV
 Inclusion 1: None
 Inclusion 2: 030XB005NV
 Inclusion 3: None

1001--Weiser-Tencee association**Composition****Major Components**

Weiser very gravelly sandy loam, 2 to 8 percent slopes--45 percent
 Tencee very gravelly sandy loam, 2 to 8 percent slopes--40 percent

Contrasting Inclusions

Inclusion 1: Typic Torriorthents, loamy-skeletal, carbonatic, thermic very gravelly sandy loam, 2 to 8 percent slopes--8 percent
 Inclusion 2: Arizo extremely gravelly loamy sand, 2 to 8 percent slopes--5 percent
 Inclusion 3: Paleorthids, 2 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Weiser--Landform: Fan remnants
 Tencee--Landform: Fan remnants; position on slope: Upper
 Inclusion 1--Landform: Inset fans
 Inclusion 2--Landform: Drainageways
 Inclusion 3--Landform: Fan remnants

Major Component Description**Weiser Series**

Elevation: 2,500 to 3,500 feet
Precipitation: About 6 inches
Air temperature: About 63 degrees
Frost-free season: About 250 days
Surface rock fragments: 5 percent cobbles; 50 percent gravel
Surface layer texture: Very gravelly sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from limestone and dolomite

Tencee Series

Elevation: 2,800 to 3,800 feet
Precipitation: About 6 inches
Air temperature: About 62 degrees
Frost-free season: About 250 days
Surface rock fragments: 10 percent cobbles; 40 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Weiser: Big galleta, white bursage
 Tencee: Big galleta, white bursage
 Inclusion 1: Big galleta, white bursage
 Inclusion 2: Big galleta, white bursage
 Inclusion 3: None

Ecological Site

Weiser: 030XB019NV
 Tencee: 030XB019NV
 Inclusion 1: 030XB005NV
 Inclusion 2: 030XB028NV
 Inclusion 3: None

1010--Tencee-Weiser association**Composition****Major Components**

Tencee very cobbly sandy loam, 2 to 8 percent slopes--70 percent
 Weiser very cobbly sandy loam, 2 to 8 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Arizo very cobbly sandy loam, 2 to 4 percent slopes--8 percent
 Inclusion 2: Riverwash very gravelly loamy sand, 2 to 4 percent slopes--4 percent
 Inclusion 3: Paleorthids, 2 to 8 percent slopes--3 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Tencee--Landform: Fan remnants; position on slope: Upper
 Weiser--Landform: Fan remnants
 Inclusion 1--Landform: Drainageways
 Inclusion 2--Landform: Drainageways
 Inclusion 3--Landform: Fan remnants; geomorphic position: summit

Major Component Description**Tencee Series**

Elevation: 2,800 to 3,800 feet
Precipitation: About 6 inches
Air temperature: About 62 degrees
Frost-free season: About 250 days

Surface rock fragments: 25 percent cobbles; 20 percent gravel

Surface layer texture: Very cobbly sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Weiser Series

Elevation: 2,500 to 3,500 feet

Precipitation: About 6 inches

Air temperature: About 63 degrees

Frost-free season: About 250 days

Surface rock fragments: 23 percent cobbles; 20 percent gravel

Surface layer texture: Very cobbly sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from limestone and dolomite

Dominant Present Vegetation

Tencee: Big galleta, white bursage

Weiser: Big galleta, white bursage

Inclusion 1: Big galleta, white bursage

Inclusion 2: None

Inclusion 3: None

Ecological Site

Tencee: 030XB019NV

Weiser: 030XB019NV

Inclusion 1: 030XB028NV

Inclusion 2: None

Inclusion 3: None

1016--Tencee association

Composition

Major Components

Tencee very gravelly sandy loam, 15 to 30 percent slopes--50 percent

Tencee very gravelly sandy loam, 4 to 8 percent slopes--35 percent

Contrasting Inclusions

Inclusion 1: Arizo very gravelly loamy sand, 2 to 8 percent slopes--5 percent

Inclusion 2: Weiser very gravelly sandy loam, 2 to 8 percent slopes--5 percent

Inclusion 3: Typic Paleorthids, sandy-skeletal, mixed, thermic very gravelly sandy loam, 50 to 75 percent slopes--3 percent

Inclusion 4: Riverwash very gravelly loamy sand, 2 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts

Tencee--Landform: Fan remnants; geomorphic position: backslope

Tencee--Landform: Fan remnants; geomorphic position: summit

Inclusion 1--Landform: Drainageways

Inclusion 2--Landform: Inset fans

Inclusion 3--Landform: Fan remnants; geomorphic position: backslope

Inclusion 4--Landform: Drainageways

Major Component Description

Tencee Series

Elevation: 2,600 to 3,800 feet

Precipitation: About 6 inches

Air temperature: About 62 degrees

Frost-free season: About 250 days

Surface rock fragments: 10 percent cobbles; 40 percent gravel

Surface layer texture: Very gravelly sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Tencee Series

Elevation: 2,800 to 3,800 feet

Precipitation: About 6 inches

Air temperature: About 62 degrees

Frost-free season: About 250 days

Surface rock fragments: 10 percent cobbles; 40 percent gravel

Surface layer texture: Very gravelly sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Tencee: Big galleta, white bursage

Tencee: Big galleta, white bursage

Inclusion 1: Big galleta, white bursage

Inclusion 2: Big galleta, white bursage

Inclusion 3: Big galleta, white bursage

Inclusion 4: None

Ecological Site

Tencee: 030XB017NV

Tencee: 030XB019NV

Inclusion 1: 030XB028NV

Inclusion 2: 030XB005NV

Inclusion 3: 030XB017NV

Inclusion 4: None

1017--Tencee-Bard-Arizo association

Composition

Major Components

Tencee very gravelly sandy loam, 8 to 15 percent slopes--60 percent

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

Arizo very gravelly loamy sand, 2 to 4 percent slopes--10 percent

Contrasting Inclusions

Inclusion 1: Weiser very gravelly sandy loam, 2 to 8 percent slopes--5 percent

Inclusion 2: Riverwash very gravelly loamy sand, 2 to 4 percent slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts

Tencee--Landform: Fan remnants; geomorphic position: backslope

Bard--Landform: Fan remnants

Arizo--Landform: Drainageways

Inclusion 1--Landform: Inset fans

Inclusion 2--Landform: Drainageways

Major Component Description**Tencee Series**

Elevation: 2,500 to 2,800 feet

Precipitation: About 6 inches

Air temperature: About 64 degrees

Frost-free season: About 230 days

Surface rock fragments: 10 percent cobbles; 40 percent gravel

Surface layer texture: Very gravelly sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Bard Series

Elevation: 2,500 to 2,800 feet

Precipitation: About 6 inches

Air temperature: About 64 degrees

Frost-free season: About 230 days

Surface rock fragments: 30 percent gravel

Surface layer texture: Gravelly fine sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Arizo Series

Elevation: 2,500 to 3,000 feet

Precipitation: About 6 inches

Air temperature: About 65 degrees

Frost-free season: About 230 days

Surface rock fragments: 3 percent cobbles; 45 percent gravel

Surface layer texture: Very gravelly loamy sand

Drainage class: Excessively drained

Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Tencee: Big galleta, white bursage

Bard: Big galleta, white bursage

Arizo: Big galleta, white bursage

Inclusion 1: Big galleta, white bursage

Inclusion 2: None

Ecological Site

Tencee: 030XB019NV

Bard: 030XB019NV

Arizo: 030XB028NV

Inclusion 1: 030XB005NV

Inclusion 2: None

1020--Kurstan-Tencee association**Composition****Major Components**

Kurstan gravelly sandy loam, 8 to 15 percent slopes--55 percent

Tencee very gravelly sandy loam, 8 to 15 percent slopes--30 percent

Contrasting Inclusions

Inclusion 1: Typic Torriorthents, coarse-loamy, mixed (calcareous), thermic very gravelly sandy loam, 30 to 50 percent slopes--8 percent

Inclusion 2: Typic Calciorthids, coarse-loamy, mixed, thermic very gravelly sandy loam, 2 to 8 percent slopes--4 percent

Inclusion 3: Arizo very gravelly loamy sand, 2 to 4 percent slopes--3 percent

Map Unit Setting

Landscape position: Fan piedmonts

Kurstan--Landform: Fan remnants

Tencee--Landform: Fan remnants; position on slope: Upper

Inclusion 1--Landform: Fan remnants; geomorphic position: backslope

Inclusion 2--Landform: Inset fans

Inclusion 3--Landform: Drainageways

Major Component Description**Kurstan Series**

Elevation: 2,600 to 2,800 feet

Precipitation: About 4 inches

Air temperature: About 62 degrees

Frost-free season: About 220 days

Surface rock fragments: 2 percent cobbles; 30 percent gravel

Surface layer texture: Gravelly sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Tencee Series

Elevation: 2,600 to 2,800 feet

Precipitation: About 5 inches

Air temperature: About 62 degrees

Frost-free season: About 230 days

Surface rock fragments: 10 percent cobbles; 40 percent gravel

Surface layer texture: Very gravelly sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Kurstan: Big galleta, white bursage

Tencee: Big galleta, white bursage

Inclusion 1: Big galleta, white bursage

Inclusion 2: Big galleta, white bursage

Inclusion 3: Big galleta, white bursage

Ecological Site

Kurstan: 030XB019NV
 Tencee: 030XB019NV
 Inclusion 1: 030XB017NV
 Inclusion 2: 030XB005NV
 Inclusion 3: 030XB028NV

1021--Kurstan-Knob Hill association**Composition****Major Components**

Kurstan gravelly sandy loam, 2 to 8 percent slopes--65 percent
 Knob Hill loamy sand, 2 to 4 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Tencee very gravelly sandy loam, 8 to 15 percent slopes--7 percent
 Inclusion 2: Arizo very gravelly loamy sand, 2 to 4 percent slopes--2 percent
 Inclusion 3: Riverwash very gravelly loamy sand, 0 to 4 percent slopes--1 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Kurstan--Landform: Fan remnants
 Knob Hill--Landform: Inset fans
 Inclusion 1--Landform: Fan remnants; position on slope: Upper
 Inclusion 2--Landform: Drainageways
 Inclusion 3--Landform: Drainageways

Major Component Description**Kurstan Series**

Elevation: 2,600 to 3,000 feet
Precipitation: About 4 inches
Air temperature: About 62 degrees
Frost-free season: About 220 days
Surface rock fragments: 2 percent cobbles; 30 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Knob Hill Series

Elevation: 2,500 to 3,000 feet
Precipitation: About 5 inches
Air temperature: About 62 degrees
Frost-free season: About 230 days
Surface rock fragments: 8 percent gravel
Surface layer texture: Loamy sand
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Kurstan: Big galleta, white bursage
 Knob Hill: Big galleta
 Inclusion 1: Big galleta, white bursage
 Inclusion 2: Big galleta, white bursage
 Inclusion 3: None

Ecological Site

Kurstan: 030XB019NV
 Knob Hill: 030XB019NV
 Inclusion 1: 030XB019NV
 Inclusion 2: 030XB028NV
 Inclusion 3: None

1030--Arizo-Bluepoint association**Composition****Major Components**

Arizo very gravelly loamy sand, 0 to 4 percent slopes--35 percent
 Arizo very cobbly loamy sand, 0 to 4 percent slopes--25 percent
 Bluepoint loamy fine sand, 4 to 8 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Typic Calciorthids, sandy-skeletal, carbonatic, thermic gravelly sandy loam, 2 to 4 percent slopes--8 percent
 Inclusion 2: Typic Calciorthids, sandy, mixed, thermic loamy sand, 2 to 4 percent slopes--4 percent
 Inclusion 3: Typic Torriorthents, coarse-loamy, mixed (calcareous), thermic fine sand, 2 to 4 percent slopes--2 percent
 Inclusion 4: Riverwash very gravelly loamy sand, 2 to 8 percent slopes--1 percent

Map Unit Setting

Landscape position: Semi-bolsons
 Arizo--Landform: Stream terraces
 Arizo--Landform: Channels
 Bluepoint--Landform: Dunes
 Inclusion 1--Landform: Alluvial fans
 Inclusion 2--Landform: Alluvial fans
 Inclusion 3--Landform: Dunes
 Inclusion 4--Landform: Drainageways

Major Component Description**Arizo Series**

Elevation: 2,500 to 3,800 feet
Precipitation: About 6 inches
Air temperature: About 62 degrees
Frost-free season: About 200 days
Surface rock fragments: 3 percent cobbles; 45 percent gravel
Surface layer texture: Very gravelly loamy sand
Drainage class: Excessively drained
Dominant parent material: Alluvium derived from mixed rocks

Arizo Series

Elevation: 2,500 to 3,800 feet
Precipitation: About 6 inches
Air temperature: About 62 degrees
Frost-free season: About 200 days
Surface layer texture: Very cobbly loamy sand
Drainage class: Excessively drained
Dominant parent material: Alluvium derived from mixed rocks

Bluepoint Series

Elevation: 2,500 to 3,800 feet
Precipitation: About 5 inches
Air temperature: About 62 degrees
Frost-free season: About 200 days
Surface rock fragments: 3 percent gravel
Surface layer texture: Loamy fine sand
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Arizo: Big galleta, white bursage
 Arizo: Big galleta, white bursage
 Bluepoint: Indian ricegrass, cattle saltbush
 Inclusion 1: Indian ricegrass, big galleta, white bursage
 Inclusion 2: Indian ricegrass, big galleta, white bursage
 Inclusion 3: Fourwing saltbush, mesquite
 Inclusion 4: None

Ecological Site

Arizo: 030XB019NV
 Arizo: 030XB028NV
 Bluepoint: 030XY046NV
 Inclusion 1: 030XB005NV
 Inclusion 2: 030XB005NV
 Inclusion 3: 030XB020NV
 Inclusion 4: None

1031--Arizo association**Composition****Major Components**

Arizo very cobbly loamy sand, 2 to 4 percent slopes--45 percent
 Arizo very gravelly loamy sand, 2 to 4 percent slopes--40 percent

Contrasting Inclusions

Inclusion 1: Typic Torriorthents, loamy-skeletal, mixed (calcareous), thermic very gravelly sandy loam, 2 to 15 percent slopes--5 percent
 Inclusion 2: Typic Torripsamments, mixed, thermic fine sand, 2 to 8 percent slopes--5 percent
 Inclusion 3: Riverwash very gravelly loamy sand, 2 to 8 percent slopes--5 percent

Map Unit Setting

Landscape position: Semi-bolsons
 Arizo--Landform: Channels
 Arizo--Landform: Stream terraces
 Inclusion 1--Landform: Alluvial fans
 Inclusion 2--Landform: Dunes
 Inclusion 3--Landform: Drainageways

Major Component Description**Arizo Series**

Elevation: 2,500 to 3,800 feet
Precipitation: About 6 inches
Air temperature: About 62 degrees
Frost-free season: About 200 days

Surface rock fragments: 30 percent cobbles; 25 percent gravel
Surface layer texture: Very cobbly loamy sand
Drainage class: Excessively drained
Dominant parent material: Alluvium derived from mixed rocks

Arizo Series

Elevation: 2,500 to 3,800 feet
Precipitation: About 6 inches
Air temperature: About 62 degrees
Frost-free season: About 200 days
Surface rock fragments: 3 percent cobbles; 45 percent gravel
Surface layer texture: Very gravelly loamy sand
Drainage class: Excessively drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Arizo: Big galleta, white bursage
 Arizo: Indian ricegrass, big galleta, white bursage
 Inclusion 1: Indian ricegrass, big galleta, white bursage
 Inclusion 2: Indian ricegrass, big galleta, white bursage
 Inclusion 3: None

Ecological Site

Arizo: 030XB028NV
 Arizo: 030XB019NV
 Inclusion 1: 030XB005NV
 Inclusion 2: 030XB005NV
 Inclusion 3: None

1040--Akela-Rock outcrop association**Composition****Major Components**

Akela very cobbly sandy loam, 15 to 30 percent slopes--75 percent
 Rock outcrop unweathered bedrock, 15 to 30 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Lithic Torriorthents, sandy-skeletal, mixed, thermic extremely cobbly sandy loam, 2 to 15 percent slopes--4 percent
 Inclusion 2: Riverwash very gravelly loamy sand, 2 to 8 percent slopes--1 percent

Map Unit Setting

Landscape position: Mountains
 Akela--Landform: Mountains
 Rock outcrop--Landform: Mountains; geomorphic position: summit
 Inclusion 1--Landform: Drainageways
 Inclusion 2--Landform: Drainageways

Major Component Description**Akela Series**

Elevation: 2,500 to 4,000 feet
Precipitation: About 6 inches
Air temperature: About 62 degrees
Frost-free season: About 200 days

Surface rock fragments: 30 percent cobbles; 20 percent gravel

Surface layer texture: Very cobbly sandy loam

Drainage class: Well drained

Dominant parent material: Residuum derived from volcanic rocks

Rock outcrop Miscellaneous Area

Elevation: 2,500 to 4,000 feet

Surface layer texture: Unweathered bedrock

Dominant parent material: Residuum derived from volcanic rocks

Dominant Present Vegetation

Akela: Big galleta, white bursage

Rock outcrop: None

Inclusion 1: Big galleta, white bursage

Inclusion 2: None

Ecological Site

Akela: 030XB001NV

Rock outcrop: None

Inclusion 1: 030XB028NV

Inclusion 2: None

1041--Akela-Rochpah-Rock outcrop association

Composition

Major Components

Akela very stony sandy loam, 15 to 50 percent slopes--45 percent

Rochpah very gravelly sandy loam, 15 to 30 percent slopes--30 percent

Rock outcrop--10 percent

Contrasting Inclusions

Inclusion 1: Arizo very gravelly loamy sand, 2 to 4 percent slopes--8 percent

Inclusion 2: Typic Camborthids, coarse-loamy, mixed, thermic gravelly sandy loam, 2 to 8 percent slopes--7 percent

Map Unit Setting

Landscape position: Mountains

Akela--Landform: Mountains; geomorphic position: backslope; aspect: south

Rochpah--Landform: Mountains; aspect: north

Rock outcrop--Landform: Mountains

Inclusion 1--Landform: Drainageways

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

Major Component Description

Akela Series

Elevation: 3,800 to 4,500 feet

Precipitation: About 5 inches

Air temperature: About 59 degrees

Frost-free season: About 200 days

Surface rock fragments: 25 percent gravel

Surface layer texture: Very stony sandy loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from volcanic rocks

Rochpah Series

Elevation: 3,800 to 5,000 feet

Precipitation: About 6 inches

Air temperature: About 56 degrees

Frost-free season: About 180 days

Surface rock fragments: 10 percent cobbles; 40 percent gravel

Surface layer texture: Very gravelly sandy loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Rock outcrop Miscellaneous Area

Elevation: 3,800 to 5,000 feet

Dominant parent material: Residuum derived from volcanic rocks

Dominant Present Vegetation

Akela: Indian ricegrass, desert needlegrass, shadscale

Rochpah: Indian ricegrass, blackbrush

Inclusion 1: Big galleta, white bursage

Inclusion 2: Big galleta

Ecological Site

Akela: 030XB010NV

Rochpah: 029XY013NV

Rock outcrop: None

Inclusion 1: 030XB028NV

Inclusion 2: 030XB034NV

1052--Knob Hill-Arizo association

Composition

Major Components

Knob Hill very gravelly sandy loam, 2 to 4 percent slopes--80 percent

Arizo very cobbly loamy sand, 2 to 8 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Typic Torriorthents, loamy-skeletal, mixed (calcareous), thermic very gravelly sandy loam, 2 to 4 percent slopes--4 percent

Inclusion 2: Riverwash very gravelly loamy sand, 2 to 8 percent slopes--1 percent

Map Unit Setting

Landscape position: Fan piedmonts

Knob Hill--Landform: Inset fans

Arizo--Landform: Drainageways

Inclusion 1--Landform: Drainageways

Inclusion 2--Landform: Drainageways

Major Component Description

Knob Hill Series

Elevation: 2,500 to 3,500 feet

Precipitation: About 5 inches

Air temperature: About 63 degrees

Frost-free season: About 230 days

Surface rock fragments: 3 percent cobbles; 40 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from mixed rocks

Arizo Series

Elevation: 2,500 to 3,500 feet
Precipitation: About 6 inches
Air temperature: About 63 degrees
Frost-free season: About 230 days
Surface rock fragments: 30 percent cobbles; 25 percent gravel
Surface layer texture: Very cobbly loamy sand
Drainage class: Excessively drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Knob Hill: Indian ricegrass, big galleta, white bursage
 Arizo: Big galleta, white bursage
 Inclusion 1: Big galleta, white bursage
 Inclusion 2: None

Ecological Site

Knob Hill: 030XB005NV
 Arizo: 030XB028NV
 Inclusion 1: 030XB005NV
 Inclusion 2: None

1060--St. Thomas-Chinkle-Rock outcrop association**Composition****Major Components**

St. Thomas extremely stony fine sandy loam, 15 to 50 percent slopes--40 percent
 Chinkle very gravelly very fine sandy loam, 8 to 15 percent slopes--25 percent
 Rock outcrop unweathered bedrock, 8 to 50 percent slopes--20 percent
Contrasting Inclusions
 Inclusion 1: Lithic Haplargids, loamy-skeletal, carbonatic, thermic very gravelly sandy loam, 15 to 50 percent slopes--6 percent
 Inclusion 2: Lithic Calciorthids, loamy-skeletal, mixed, thermic very cobbly sandy loam, 15 to 50 percent slopes--5 percent
 Inclusion 3: Arizo very gravelly loamy sand, 2 to 15 percent slopes--3 percent
 Inclusion 4: Riverwash very gravelly loamy sand, 2 to 15 percent slopes--1 percent

Map Unit Setting

Landscape position: Mountains
 St. Thomas--Landform: Mountains
 Chinkle--Landform: Mountains
 Rock outcrop--Landform: Mountains
 Inclusion 1--Landform: Mountains; geomorphic position: backslope; aspect: north

Inclusion 2--Landform: Mountains
 Inclusion 3--Landform: Drainageways
 Inclusion 4--Landform: Drainageways

Major Component Description**St. Thomas Series**

Elevation: 2,500 to 3,500 feet
Precipitation: About 5 inches
Air temperature: About 65 degrees
Frost-free season: About 240 days
Surface rock fragments: 25 percent stones and boulders; 10 percent cobbles; 25 percent gravel
Surface layer texture: Extremely stony fine sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Chinkle Series

Elevation: 3,000 to 4,000 feet
Precipitation: About 5 inches
Air temperature: About 62 degrees
Frost-free season: About 200 days
Surface rock fragments: 5 percent cobbles; 35 percent gravel
Surface layer texture: Very gravelly very fine sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from sedimentary rocks

Rock outcrop Miscellaneous Area

Elevation: 2,500 to 4,000 feet
Surface layer texture: Unweathered bedrock
Dominant parent material: Residuum derived from sedimentary rocks

Dominant Present Vegetation

St. Thomas: Big galleta, white bursage
 Chinkle: Big galleta, white bursage
 Inclusion 1: Big galleta, blackbrush
 Inclusion 2: Big galleta, white bursage
 Inclusion 3: Big galleta, white bursage
 Inclusion 4: None

Ecological Site

St. Thomas: 030XB001NV
 Chinkle: 030XB001NV
 Rock outcrop: None
 Inclusion 1: 030XB029NV
 Inclusion 2: 030XB001NV
 Inclusion 3: 030XB028NV
 Inclusion 4: None

1061--St. Thomas-Zeheme-Rock outcrop association**Composition****Major Components**

St. Thomas very gravelly sandy loam, 30 to 50 percent slopes--50 percent
 Zeheme very gravelly fine sandy loam, 30 to 50 percent slopes--20 percent

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

Contrasting Inclusions

Inclusion 1: Typic Calciorthids, loamy-skeletal, mixed, thermic very gravelly sandy loam, 4 to 15 percent slopes--6 percent

Inclusion 2: Typic Torriorthents, sandy-skeletal, mixed, thermic very gravelly sandy loam, 2 to 4 percent slopes--3 percent

Inclusion 3: Riverwash very gravelly loamy sand, 2 to 4 percent slopes--1 percent

Map Unit Setting

Landscape position: Mountains and intermontane basins

St. Thomas--Landform: Mountains

Zeheme--Landform: Mountains; aspect: north

Rock outcrop--Landform: Mountains

Inclusion 1--Landform: Alluvial fans

Inclusion 2--Landform: Drainageways

Inclusion 3--Landform: Drainageways

Major Component Description

St. Thomas Series

Elevation: 2,500 to 3,800 feet

Precipitation: About 5 inches

Air temperature: About 65 degrees

Frost-free season: About 240 days

Surface rock fragments: 8 percent cobbles; 36 percent gravel

Surface layer texture: Very gravelly sandy loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Zeheme Series

Elevation: 3,000 to 4,200 feet

Precipitation: About 8 inches

Air temperature: About 60 degrees

Frost-free season: About 200 days

Surface rock fragments: 15 percent cobbles; 40 percent gravel

Surface layer texture: Very gravelly fine sandy loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Rock outcrop Miscellaneous Area

Elevation: 2,500 to 4,200 feet

Surface layer texture: Unweathered bedrock

Dominant parent material: Residuum derived from limestone and dolomite

Dominant Present Vegetation

St. Thomas: Big galleta, white bursage

Zeheme: Big galleta, blackbrush, desert needlegrass

Inclusion 1: Indian ricegrass, big galleta, white bursage

Inclusion 2: Big galleta, white bursage

Inclusion 3: None

Ecological Site

St. Thomas: 030XB001NV

Zeheme: 030XB030NV

Rock outcrop: None

Inclusion 1: 030XB005NV

Inclusion 2: 030XB028NV

Inclusion 3: None

1062--Zeheme-Chinkle-Shankba association

Composition

Major Components

Zeheme cobbly loam, 15 to 50 percent slopes--35 percent

Chinkle very gravelly very fine sandy loam, 15 to 50 percent slopes--35 percent

Shankba very gravelly fine sandy loam, 15 to 30 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Rock outcrop--8 percent

Inclusion 2: Typic Calciorthids, loamy-skeletal, mixed, thermic gravelly sandy loam, 4 to 15 percent slopes--4 percent

Inclusion 3: Typic Torriorthents, loamy-skeletal, mixed (calcareous), thermic gravelly sandy loam, 0 to 4 percent slopes--2 percent

Inclusion 4: Riverwash very gravelly loamy sand, 0 to 4 percent slopes--1 percent

Map Unit Setting

Landscape position: Mountains

Zeheme--Landform: Mountains; position on slope: Upper

Chinkle--Landform: Mountains

Shankba--Landform: Mountains; position on slope: Upper; aspect: north

Inclusion 1--Landform: Mountains

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

Inclusion 3--Landform: Drainageways

Inclusion 4--Landform: Drainageways

Major Component Description

Zeheme Series

Elevation: 3,000 to 4,200 feet

Precipitation: About 8 inches

Air temperature: About 60 degrees

Frost-free season: About 200 days

Surface rock fragments: 10 percent cobbles; 10 percent gravel

Surface layer texture: Cobbly loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Chinkle Series

Elevation: 3,000 to 4,000 feet

Precipitation: About 5 inches

Air temperature: About 62 degrees

Frost-free season: About 200 days

Surface rock fragments: 5 percent cobbles; 35 percent gravel

Surface layer texture: Very gravelly very fine sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from sedimentary rocks

Shankba Series

Elevation: 3,100 to 4,000 feet
Precipitation: About 8 inches
Air temperature: About 60 degrees
Frost-free season: About 190 days
Surface rock fragments: 5 percent cobbles; 45 percent gravel
Surface layer texture: Very gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from sedimentary rocks

Dominant Present Vegetation

Zeheme: Big galleta, blackbrush, desert needlegrass
 Chinkle: Big galleta, white bursage
 Shankba: Big galleta, blackbrush
 Inclusion 1: None
 Inclusion 2: Nevada ephedra, big galleta, bush muhly
 Inclusion 3: Big galleta, white bursage
 Inclusion 4: None

Ecological Site

Zeheme: 030XB030NV
 Chinkle: 030XB001NV
 Shankba: 030XB029NV
 Inclusion 1: None
 Inclusion 2: 030XB039NV
 Inclusion 3: 030XB028NV
 Inclusion 4: None

1063--Zeheme-Kanesprings-Rock outcrop association**Composition****Major Components**

Zeheme cobbly loam, 30 to 75 percent slopes--45 percent
 Kanesprings very gravelly sandy loam, 15 to 30 percent slopes--30 percent
 Rock outcrop unweathered bedrock, 15 to 75 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Mormount very gravelly sandy loam, 2 to 4 percent slopes--6 percent
 Inclusion 2: Arizo very gravelly loamy sand, 2 to 4 percent slopes--2 percent
 Inclusion 3: Riverwash very gravelly loamy sand, 2 to 4 percent slopes--2 percent

Map Unit Setting

Landscape position: Mountains and intermontane basins
 Zeheme--Landform: Mountains
 Kanesprings--Landform: Mountains
 Rock outcrop--Landform: Mountains
 Inclusion 1--Landform: Fan remnants

Inclusion 2--Landform: Drainageways
 Inclusion 3--Landform: Drainageways

Major Component Description**Zeheme Series**

Elevation: 3,800 to 4,200 feet
Precipitation: About 8 inches
Air temperature: About 60 degrees
Frost-free season: About 200 days
Surface rock fragments: 10 percent cobbles; 10 percent gravel
Surface layer texture: Cobbly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Kanesprings Series

Elevation: 3,800 to 4,200 feet
Precipitation: About 8 inches
Air temperature: About 58 degrees
Frost-free season: About 210 days
Surface rock fragments: 2 percent cobbles; 40 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Rock outcrop Miscellaneous Area

Elevation: 3,800 to 4,200 feet
Surface layer texture: Unweathered bedrock
Dominant parent material: Residuum derived from mixed rocks

Dominant Present Vegetation

Zeheme: Big galleta, blackbrush, desert needlegrass
 Kanesprings: Big galleta, blackbrush
 Inclusion 1: Big galleta, blackbrush
 Inclusion 2: Big galleta, white bursage
 Inclusion 3: None

Ecological Site

Zeheme: 030XB030NV
 Kanesprings: 030XB029NV
 Rock outcrop: None
 Inclusion 1: 030XB029NV
 Inclusion 2: 030XB028NV
 Inclusion 3: None

1064--Zeheme-Kanackey-Rock outcrop association**Composition****Major Components**

Zeheme extremely stony fine sandy loam, 30 to 50 percent slopes--35 percent
 Kanackey very gravelly loam, 15 to 30 percent slopes--30 percent
 Rock outcrop unweathered bedrock, 15 to 50 percent slopes--20 percent

Contrasting Inclusions

- Inclusion 1: Typic Torriorthents, loamy-skeletal, mixed (calcareous), thermic gravelly sandy loam, 8 to 30 percent slopes--10 percent
 Inclusion 2: Arizo very gravelly loamy sand, 4 to 8 percent slopes--4 percent
 Inclusion 3: Riverwash very gravelly loamy sand, 4 to 8 percent slopes--1 percent

Map Unit Setting

- Landscape position:* Mountains
 Zeheme--Landform: Mountains
 Kanackey--Landform: Mountains
 Rock outcrop--Landform: Mountains
 Inclusion 1--Landform: Mountains; position on slope: Lower
 Inclusion 2--Landform: Drainageways
 Inclusion 3--Landform: Drainageways

Major Component Description**Zeheme Series**

- Elevation:* 3,300 to 4,200 feet
Precipitation: About 8 inches
Air temperature: About 60 degrees
Frost-free season: About 200 days
Surface rock fragments: 40 percent cobbles; 20 percent gravel
Surface layer texture: Extremely stony fine sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Kanackey Series

- Elevation:* 3,300 to 4,200 feet
Precipitation: About 6 inches
Air temperature: About 62 degrees
Frost-free season: About 215 days
Surface rock fragments: 20 percent cobbles; 25 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum derived from quartzite

Rock outcrop Miscellaneous Area

- Elevation:* 3,300 to 4,200 feet
Surface layer texture: Unweathered bedrock
Dominant parent material: Residuum derived from mixed rocks

Dominant Present Vegetation

- Zeheme: Big galleta, blackbrush, desert needlegrass
 Kanackey: Big galleta, blackbrush
 Inclusion 1: Big galleta, white bursage
 Inclusion 2: Big galleta, white bursage
 Inclusion 3: None

Ecological Site

- Zeheme: 030XB030NV
 Kanackey: 030XB029NV
 Rock outcrop: None
 Inclusion 1: 030XB007NV
 Inclusion 2: 030XB028NV

Inclusion 3: None

1065--Zeheme-Rock outcrop association**Composition****Major Components**

- Zeheme extremely stony fine sandy loam, 30 to 50 percent slopes--55 percent
 Rock outcrop unweathered bedrock, 30 to 50 percent slopes--35 percent

Contrasting Inclusions

- Inclusion 1: St. Thomas very cobbly sandy loam, 30 to 50 percent slopes--4 percent
 Inclusion 2: Canutio sandy loam, 2 to 8 percent slopes--3 percent
 Inclusion 3: Arizo very gravelly loamy sand, 2 to 8 percent slopes--2 percent
 Inclusion 4: Riverwash very gravelly loamy sand, 2 to 8 percent slopes--1 percent

Map Unit Setting

- Landscape position:* Mountains and intermontane basins
 Zeheme--Landform: Mountains
 Rock outcrop--Landform: Mountains
 Inclusion 1--Landform: Mountains; aspect: south
 Inclusion 2--Landform: Alluvial fans
 Inclusion 3--Landform: Drainageways
 Inclusion 4--Landform: Drainageways

Major Component Description**Zeheme Series**

- Elevation:* 3,000 to 4,200 feet
Precipitation: About 8 inches
Air temperature: About 60 degrees
Frost-free season: About 200 days
Surface rock fragments: 40 percent cobbles; 20 percent gravel
Surface layer texture: Extremely stony fine sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Rock outcrop Miscellaneous Area

- Elevation:* 3,000 to 4,200 feet
Surface layer texture: Unweathered bedrock
Dominant parent material: Residuum derived from limestone and dolomite

Dominant Present Vegetation

- Zeheme: Big galleta, blackbrush, desert needlegrass
 Inclusion 1: Big galleta, white bursage
 Inclusion 2: Nevada ephedra, big galleta, bush muhly
 Inclusion 3: Big galleta, white bursage
 Inclusion 4: None

Ecological Site

- Zeheme: 030XB030NV
 Rock outcrop: None
 Inclusion 1: 030XB001NV
 Inclusion 2: 030XB039NV
 Inclusion 3: 030XB028NV

Inclusion 4: None

1066--Zeheme-Boxspring-Rock outcrop association

Composition

Major Components

Zeheme cobbly loam, 30 to 75 percent slopes--35 percent
 Boxspring extremely gravelly loam, 30 to 50 percent slopes--30 percent
 Rock outcrop unweathered bedrock, 30 to 75 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Arizo very gravelly loamy sand, 2 to 8 percent slopes--4 percent
 Inclusion 2: Canutio gravelly sandy loam, 2 to 8 percent slopes--4 percent
 Inclusion 3: Petrocalcic Ustollic Paleargids, fine-loamy, mixed, thermic very cobbly sandy loam, 2 to 8 percent slopes--4 percent
 Inclusion 4: Lithic Ustic Torriorthents, loamy-skeletal, mixed (calcareous), mesic very gravelly loam, 50 to 75 percent slopes--3 percent

Map Unit Setting

Landscape position: Mountains and adjacent fan piedmonts

Zeheme--Landform: Mountains; aspect: south
 Boxspring--Landform: Mountains; aspect: north
 Rock outcrop--Landform: Mountains
 Inclusion 1--Landform: Drainageways
 Inclusion 2--Landform: Inset fans
 Inclusion 3--Landform: Mountains
 Inclusion 4--Landform: Mountains; position on slope: Upper; aspect: north

Major Component Description

Zeheme Series

Elevation: 3,000 to 4,200 feet
Precipitation: About 8 inches
Air temperature: About 60 degrees
Frost-free season: About 200 days
Surface rock fragments: 10 percent cobbles; 10 percent gravel
Surface layer texture: Cobbly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Boxspring Series

Elevation: 4,200 to 5,700 feet
Precipitation: About 8 inches
Air temperature: About 56 degrees
Frost-free season: About 180 days
Surface rock fragments: 15 percent cobbles; 50 percent gravel
Surface layer texture: Extremely gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Rock outcrop Miscellaneous Area

Elevation: 3,000 to 5,700 feet

Surface layer texture: Unweathered bedrock

Dominant parent material: Residuum derived from limestone and dolomite

Dominant Present Vegetation

Zeheme: Big galleta, blackbrush, desert needlegrass
 Boxspring: Blackbrush, desert needlegrass
 Inclusion 1: Big galleta, white bursage
 Inclusion 2: Nevada ephedra, big galleta, bush muhly
 Inclusion 3: Big galleta, blackbrush
 Inclusion 4: Indian ricegrass, big sagebrush, needleandthread

Ecological Site

Zeheme: 030XB030NV
 Boxspring: 029XY077NV
 Rock outcrop: None
 Inclusion 1: 030XB028NV
 Inclusion 2: 030XB039NV
 Inclusion 3: 030XB039NV
 Inclusion 4: 029XY075NV

1070--Bellehelen-Brier association

Composition

Major Components

Bellehelen very stony loam, 15 to 75 percent slopes--45 percent
 Brier very gravelly sandy loam, 15 to 75 percent slopes--40 percent

Contrasting Inclusions

Inclusion 1: Typic Torriorthents, sandy-skeletal, mixed, mesic very gravelly sandy loam--8 percent
 Inclusion 2: Rock outcrop--7 percent

Map Unit Setting

Landscape position: Mountains

Bellehelen--Landform: Mountains; aspect: north
 Brier--Landform: Mountains; aspect: south
 Inclusion 1--Landform: Drainageways
 Inclusion 2--Landform: Mountain peaks

Major Component Description

Bellehelen Series

Elevation: 6,200 to 7,500 feet
Precipitation: About 14 inches
Air temperature: About 47 degrees
Frost-free season: About 105 days
Surface rock fragments: 5 percent stones and boulders; 10 percent cobbles; 35 percent gravel
Surface layer texture: Very stony loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Brier Series

Elevation: 6,000 to 7,500 feet
Precipitation: About 12 inches
Air temperature: About 47 degrees

Frost-free season: About 110 days
Surface rock fragments: 10 percent cobbles; 25 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Dominant Present Vegetation

Bellehelen: Indian ricegrass, Indian ricegrass, Utah juniper, black sagebrush, black sagebrush
 Brier: Utah juniper, muttongrass, singleleaf pinyon

Ecological Site

Bellehelen: 029XY071NV
 Brier: 029XY065NV
 Inclusion 1: 029XY065NV
 Inclusion 2: None

1080--Kaspal-Canutio association

Composition

Major Components

Kaspal very gravelly sandy loam, 2 to 8 percent slopes--70 percent
 Canutio very gravelly sandy loam, 4 to 8 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Arizo very gravelly loamy sand, 2 to 4 percent slopes--8 percent
 Inclusion 2: Riverwash very gravelly loamy sand, 2 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Kaspal--Landform: Fan remnants
 Canutio--Landform: Fan aprons
 Inclusion 1--Landform: Drainageways
 Inclusion 2--Landform: Drainageways

Major Component Description

Kaspal Series

Elevation: 3,200 to 3,600 feet
Precipitation: About 8 inches
Air temperature: About 58 degrees
Frost-free season: About 210 days
Surface rock fragments: 5 percent cobbles; 40 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Canutio Series

Elevation: 3,000 to 3,400 feet
Precipitation: About 6 inches
Air temperature: About 60 degrees
Frost-free season: About 210 days
Surface rock fragments: 7 percent cobbles; 45 percent gravel
Surface layer texture: Very gravelly sandy loam

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

Dominant Present Vegetation

Kaspal: Big galleta, blackbrush
 Canutio: Nevada ephedra, big galleta, bush muhly
 Inclusion 1: Big galleta, white bursage
 Inclusion 2: None

Ecological Site

Kaspal: 030XB029NV
 Canutio: 030XB039NV
 Inclusion 1: 030XB028NV
 Inclusion 2: None

1090--Logring-Rock outcrop association

Composition

Major Components

Logring very gravelly loam, 15 to 50 percent slopes--65 percent
 Rock outcrop unweathered bedrock, 15 to 50 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Kyler very cobbly loam, 30 to 50 percent slopes--5 percent
 Inclusion 2: Eaglepass extremely cobbly sandy loam, 50 to 75 percent slopes--4 percent
 Inclusion 3: Typic Argixerolls, fine, montmorillonitic, mesic gravelly loam, 30 to 50 percent slopes--3 percent
 Inclusion 4: Xerollic Calciorhids, loamy-skeletal, mixed, mesic gravelly sandy loam, 8 to 30 percent slopes--3 percent

Map Unit Setting

Landscape position: Mountains
 Logring--Landform: Mountains
 Rock outcrop--Landform: Mountains
 Inclusion 1--Landform: Mountains; position on slope: Lower; aspect: south
 Inclusion 2--Landform: Mountains
 Inclusion 3--Landform: Mountains
 Inclusion 4--Landform: Mountains; geomorphic position: toeslope

Major Component Description

Logring Series

Elevation: 6,500 to 8,000 feet
Precipitation: About 10 inches
Air temperature: About 55 degrees
Frost-free season: About 115 days
Surface rock fragments: 10 percent cobbles; 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Rock outcrop Miscellaneous Area

Elevation: 6,500 to 8,000 feet

Surface layer texture: Unweathered bedrock
Dominant parent material: Residuum derived from limestone and dolomite

Dominant Present Vegetation

Logring: Utah juniper, black sagebrush, muttongrass, singleleaf pinyon
 Rock outcrop: None
 Inclusion 1: Indian ricegrass, black sagebrush, needleandthread
 Inclusion 2: Black sagebrush, littleleaf mountainmahogany, needleandthread
 Inclusion 3: Utah juniper, Wyoming big sagebrush, muttongrass, singleleaf pinyon
 Inclusion 4: Utah juniper, Wyoming big sagebrush, muttongrass, singleleaf pinyon

Ecological Site

Logring: 029XY069NV
 Rock outcrop: None
 Inclusion 1: 029XY014NV
 Inclusion 2: 029XY040NV
 Inclusion 3: 029XY065NV
 Inclusion 4: 029XY065NV

1091--Logring-Eaglepass-Rock outcrop complex

Composition

Major Components

Logring very gravelly loam, 15 to 50 percent slopes--50 percent
 Eaglepass extremely stony loam, 30 to 75 percent slopes--25 percent
 Rock outcrop unweathered bedrock, 30 to 75 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Brier very cobbly loam, 30 to 50 percent slopes--6 percent
 Inclusion 2: Xerollic Calciorthids, loamy-skeletal, carbonatic, mesic gravelly sandy loam, 4 to 15 percent slopes--4 percent

Map Unit Setting

Landscape position: Mountains
 Logring--Landform: Mountains
 Eaglepass--Landform: Mountains
 Rock outcrop--Landform: Mountains
 Inclusion 1--Landform: Mountains
 Inclusion 2--Landform: Mountains

Major Component Description

Logring Series

Elevation: 6,500 to 8,000 feet
Precipitation: About 10 inches
Air temperature: About 50 degrees
Frost-free season: About 100 days
Surface rock fragments: 15 percent cobbles; 40 percent gravel
Surface layer texture: Very gravelly loam

Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Eaglepass Series

Elevation: 5,900 to 7,200 feet
Precipitation: About 8 inches
Air temperature: About 52 degrees
Frost-free season: About 110 days
Surface rock fragments: 45 percent gravel
Surface layer texture: Extremely stony loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Rock outcrop Miscellaneous Area

Elevation: 5,900 to 8,000 feet
Surface layer texture: Unweathered bedrock
Dominant parent material: Residuum derived from limestone and dolomite

Dominant Present Vegetation

Logring: Utah juniper, black sagebrush, muttongrass, singleleaf pinyon
 Eaglepass: Black sagebrush, littleleaf mountainmahogany, needleandthread
 Inclusion 1: Utah juniper, Wyoming big sagebrush, muttongrass, singleleaf pinyon
 Inclusion 2: Indian ricegrass, Wyoming big sagebrush, needleandthread

Ecological Site

Logring: 029XY069NV
 Eaglepass: 029XY040NV
 Rock outcrop: None
 Inclusion 1: 029XY065NV
 Inclusion 2: 029XY006NV

1100--Geta-Arizo association

Composition

Major Components

Geta very fine sandy loam, 0 to 2 percent slopes--50 percent
 Geta fine sand, 0 to 2 percent slopes--30 percent
 Arizo very gravelly loamy sand, 0 to 2 percent slopes--10 percent

Contrasting Inclusions

Inclusion 1: Typic Torriorthents, sandy, mixed, thermic loamy sand, 0 to 2 percent slopes--8 percent
 Inclusion 2: Riverwash very gravelly loamy sand, 0 to 2 percent slopes--2 percent

Map Unit Setting

Landscape position: Piedmont slopes
 Geta--Landform: Fan skirts
 Geta--Landform: Fan skirts; position on slope: Lower
 Arizo--Landform: Drainageways
 Inclusion 1--Landform: Sand sheets
 Inclusion 2--Landform: Drainageways

Major Component Description**Geta Series**

Elevation: 3,000 to 3,600 feet
 Precipitation: About 8 inches
 Air temperature: About 58 degrees
 Frost-free season: About 190 days
 Surface rock fragments: 10 percent gravel
 Surface layer texture: Very fine sandy loam
 Drainage class: Well drained
 Dominant parent material: Alluvium derived from mixed rocks

Geta Series

Elevation: 3,000 to 3,600 feet
 Precipitation: About 8 inches
 Air temperature: About 58 degrees
 Frost-free season: About 190 days
 Surface rock fragments: 10 percent gravel
 Surface layer texture: Fine sand
 Drainage class: Well drained
 Dominant parent material: Alluvium derived from mixed rocks

Arizo Series

Elevation: 3,000 to 3,600 feet
 Precipitation: About 6 inches
 Air temperature: About 58 degrees
 Frost-free season: About 200 days
 Surface rock fragments: 3 percent cobbles; 45 percent gravel
 Surface layer texture: Very gravelly loamy sand
 Drainage class: Excessively drained
 Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Geta: Big galleta
 Geta: Big galleta, fourwing saltbush
 Arizo: Big galleta, white bursage
 Inclusion 1: Big galleta, fourwing saltbush
 Inclusion 2: None

Ecological Site

Geta: 030XB034NV
 Geta: 030XB032NV
 Arizo: 030XB028NV
 Inclusion 1: 030XB032NV
 Inclusion 2: None

1101--Geta gravelly sandy loam, 2 to 4 percent slopes**Composition****Major Components**

Geta gravelly sandy loam, 2 to 4 percent slopes--85 percent

Contrasting Inclusions

Inclusion 1: Typic Haplargids, fine-loamy, mixed, thermic gravelly sandy loam, 0 to 2 percent slopes--5 percent

Inclusion 2: Typic Torripsamments, mixed, thermic fine sand, 2 to 4 percent slopes--5 percent
 Inclusion 3: Arizo very gravelly loamy sand, 0 to 2 percent slopes--4 percent
 Inclusion 4: Riverwash very gravelly loamy sand, 0 to 2 percent slopes--1 percent

Map Unit Setting

Landscape position: Piedmont slopes
 Geta--Landform: Fan skirts
 Inclusion 1--Landform: Fan remnants
 Inclusion 2--Landform: Dunes
 Inclusion 3--Landform: Drainageways
 Inclusion 4--Landform: Drainageways

Major Component Description**Geta Series**

Elevation: 3,000 to 3,800 feet
 Precipitation: About 8 inches
 Air temperature: About 58 degrees
 Frost-free season: About 190 days
 Surface rock fragments: 25 percent gravel
 Surface layer texture: Gravelly sandy loam
 Drainage class: Well drained
 Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Geta: Big galleta
 Inclusion 1: Nevada ephedra, big galleta, bush muhly
 Inclusion 2: Big galleta, fourwing saltbush
 Inclusion 3: Big galleta, white bursage
 Inclusion 4: None

Ecological Site

Geta: 030XB034NV
 Inclusion 1: 030XB039NV
 Inclusion 2: 030XB032NV
 Inclusion 3: 030XB028NV
 Inclusion 4: None

1102--Geta-Bluepoint-Arizo association**Composition****Major Components**

Geta very fine sandy loam, 0 to 2 percent slopes--35 percent
 Bluepoint loamy fine sand, 0 to 2 percent slopes--30 percent
 Arizo very gravelly loamy sand, 0 to 2 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Aquic Torriorthents, coarse-loamy, mixed (calcareous), thermic fine sandy loam, 0 to 2 percent slopes--5 percent
 Inclusion 2: Typic Torriorthents, sandy, mixed, thermic gravelly loamy sand, 4 to 8 percent slopes--5 percent
 Inclusion 3: Riverwash very gravelly loamy sand, 0 to 2 percent slopes--5 percent

Map Unit Setting

Landscape position: Semi-bolsons
Geta--Landform: Stream terraces
Bluepoint--Landform: Dunes
Arizo--Landform: Drainageways
Inclusion 1--Landform: Stream terraces; position on slope:
 Lower
Inclusion 2--Landform: Dunes
Inclusion 3--Landform: Drainageways

Major Component Description**Geta Series**

Elevation: 3,000 to 3,800 feet
Precipitation: About 8 inches
Air temperature: About 58 degrees
Frost-free season: About 190 days
Surface rock fragments: 10 percent gravel
Surface layer texture: Very fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Bluepoint Series

Elevation: 3,000 to 3,800 feet
Precipitation: About 5 inches
Air temperature: About 58 degrees
Frost-free season: About 190 days
Surface rock fragments: 3 percent gravel
Surface layer texture: Loamy fine sand
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from mixed rocks

Arizo Series

Elevation: 3,000 to 3,800 feet
Precipitation: About 6 inches
Air temperature: About 58 degrees
Frost-free season: About 200 days
Surface rock fragments: 3 percent cobbles; 45 percent gravel
Surface layer texture: Very gravelly loamy sand
Drainage class: Excessively drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Geta: Big galleta, fourwing saltbush
Bluepoint: Indian ricegrass, cattle saltbush
Arizo: Big galleta, white bursage
Inclusion 1: Alkali sacaton, desertwillow, mesquite
Inclusion 2: Indian ricegrass, mesquite, shadscale
Inclusion 3: None

Ecological Site

Geta: 030XB032NV
Bluepoint: 030XY046NV
Arizo: 030XB028NV
Inclusion 1: 030XB021NV
Inclusion 2: 030XY045NV
Inclusion 3: None

1110--Kanesprings-Kanackey-Rock outcrop association**Composition****Major Components**

Kanesprings very cobbly sandy loam, 15 to 30 percent slopes--45 percent
 Kanackey very gravelly loam, 15 to 50 percent slopes--25 percent
 Rock outcrop unweathered bedrock, 15 to 50 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Gabbvally very gravelly sandy loam, 30 to 50 percent slopes--5 percent
Inclusion 2: Typic Torriorthents, loamy-skeletal, mixed (calcareous), thermic gravelly sandy loam, 2 to 8 percent slopes--5 percent
Inclusion 3: Arizo very gravelly loamy sand, 2 to 4 percent slopes--3 percent
Inclusion 4: Riverwash very gravelly loamy sand, 0 to 4 percent slopes--2 percent

Map Unit Setting

Landscape position: Mountains
Kanesprings--Landform: Mountains
Kanackey--Landform: Mountains
Rock outcrop--Landform: Mountains
Inclusion 1--Landform: Mountains; position on slope:
 Upper; aspect: north
Inclusion 2--Landform: Mountains; geomorphic position:
 toeslope
Inclusion 3--Landform: Drainageways
Inclusion 4--Landform: Drainageways

Major Component Description**Kanesprings Series**

Elevation: 3,800 to 4,200 feet
Precipitation: About 8 inches
Air temperature: About 58 degrees
Frost-free season: About 200 days
Surface rock fragments: 25 percent cobbles; 15 percent gravel
Surface layer texture: Very cobbly sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Kanackey Series

Elevation: 3,800 to 4,200 feet
Precipitation: About 6 inches
Air temperature: About 58 degrees
Frost-free season: About 200 days
Surface rock fragments: 10 percent cobbles; 30 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum derived from quartzite

Rock outcrop Miscellaneous Area

Elevation: 3,800 to 4,200 feet
Surface layer texture: Unweathered bedrock

Dominant parent material: Residuum derived from mixed rocks

Dominant Present Vegetation

Kanesprings: Big galleta, blackbrush
 Kanackey: Big galleta, blackbrush
 Inclusion 1: Indian ricegrass, big sagebrush, needleandthread
 Inclusion 2: Big galleta, blackbrush
 Inclusion 3: Big galleta, white bursage
 Inclusion 4: None

Ecological Site

Kanesprings: 030XB029NV
 Kanackey: 030XB029NV
 Rock outcrop: None
 Inclusion 1: 029XY075NV
 Inclusion 2: 030XB029NV
 Inclusion 3: 030XB028NV
 Inclusion 4: None

1113--Kanesprings-Gabbvally association

Composition

Major Components

Kanesprings very cobbly sandy loam, 15 to 30 percent slopes--45 percent
 Gabbvally very stony loam, 15 to 30 percent slopes--40 percent

Contrasting Inclusions

Inclusion 1: Wyva very gravelly loam, 30 to 50 percent slopes--7 percent
 Inclusion 2: Akela very stony sandy loam, 15 to 30 percent slopes--6 percent
 Inclusion 3: Xeric Torriorthents, sandy-skeletal, mixed, mesic gravelly sandy loam, 2 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Mountains

Kanesprings--Landform: Mountains; position on slope: Lower

Gabbvally--Landform: Mountains; position on slope: Upper

Inclusion 1--Landform: Mountains; position on slope: Upper; aspect: north

Inclusion 2--Landform: Mountains; position on slope: Lower; aspect: south

Inclusion 3--Landform: Drainageways

Major Component Description

Kanesprings Series

Elevation: 3,800 to 5,200 feet

Precipitation: About 8 inches

Air temperature: About 58 degrees

Frost-free season: About 180 days

Surface rock fragments: 25 percent cobbles; 22 percent gravel

Surface layer texture: Very cobbly sandy loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Gabbvally Series

Elevation: 5,000 to 6,800 feet

Precipitation: About 10 inches

Air temperature: About 53 degrees

Frost-free season: About 130 days

Surface rock fragments: 10 percent cobbles; 40 percent gravel

Surface layer texture: Very stony loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from volcanic rocks

Dominant Present Vegetation

Kanesprings: Big galleta, blackbrush
 Gabbvally: Indian ricegrass, Wyoming big sagebrush, needleandthread
 Inclusion 1: Indian ricegrass, big sagebrush, needleandthread
 Inclusion 2: Indian ricegrass, desert needlegrass, shadscale
 Inclusion 3: Indian ricegrass, big sagebrush, desert peachbrush

Ecological Site

Kanesprings: 030XB029NV
 Gabbvally: 029XY010NV
 Inclusion 1: 029XY075NV
 Inclusion 2: 030XB010NV
 Inclusion 3: 029XY009NV

1160--Silent-Koyen association

Composition

Major Components

Silent gravelly sandy loam, 2 to 8 percent slopes--60 percent

Koyen gravelly fine sandy loam, 0 to 2 percent slopes--30 percent

Contrasting Inclusions

Inclusion 1: Tybo gravelly sandy loam, 2 to 4 percent slopes--5 percent

Inclusion 2: Riverwash very gravelly loamy sand, 0 to 2 percent slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts

Silent--Landform: Fan remnants

Koyen--Landform: Inset fans

Inclusion 1--Landform: Fan remnants

Inclusion 2--Landform: Drainageways

Major Component Description

Silent Series

Elevation: 4,900 to 5,300 feet

Precipitation: About 7 inches

Air temperature: About 52 degrees

Frost-free season: About 140 days

Surface rock fragments: 1 percent cobbles; 40 percent gravel

Surface layer texture: Gravelly sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Koyen Series

Elevation: 4,900 to 5,000 feet

Precipitation: About 6 inches

Air temperature: About 53 degrees

Frost-free season: About 140 days

Surface rock fragments: 25 percent gravel

Surface layer texture: Gravelly fine sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from volcanic rocks

Dominant Present Vegetation

Silent: Indian ricegrass, bud sagebrush, shadscale

Koyen: Indian ricegrass, Nevada ephedra, desert needlegrass, spiny hopsage

Inclusion 1: Indian ricegrass, Nevada ephedra, desert needlegrass, spiny hopsage

Inclusion 2: None

Ecological Site

Silent: 029XY017NV

Koyen: 029XY079NV

Inclusion 1: 029XY079NV

Inclusion 2: None

1170--Alko-Arizo association

Composition

Major Components

Alko gravelly sandy loam, 0 to 4 percent slopes--45 percent

Alko gravelly sandy loam, 4 to 8 percent slopes--25 percent

Arizo very stony loamy sand, 0 to 4 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Riverwash very gravelly loamy sand, 0 to 4 percent slopes--6 percent

Inclusion 2: Typic Torriorthents, loamy-skeletal, mixed (calcareous), thermic gravelly sandy loam, 8 to 30 percent slopes--5 percent

Inclusion 3: Entic Durorthids, sandy-skeletal, mixed, thermic very gravelly sandy loam, 4 to 8 percent slopes--3 percent

Inclusion 4: Typic Durargids, loamy-skeletal, mixed, thermic gravelly sandy loam, 0 to 4 percent slopes--1 percent

Map Unit Setting

Landscape position: Fan piedmonts

Alko--Landform: Fan remnants; geomorphic position: summit

Alko--Landform: Fan remnants; geomorphic position: backslope; shape of slope: concave; aspect: north

Arizo--Landform: Drainageways

Inclusion 1--Landform: Drainageways

Inclusion 2--Landform: Fan remnants; geomorphic position: backslope

Inclusion 3--Landform: Fan remnants; geomorphic position: backslope; position on slope: Lower
Inclusion 4--Landform: Fan remnants; geomorphic position: summit; position on slope: Upper

Major Component Description

Alko Series

Elevation: 2,500 to 3,800 feet

Precipitation: About 6 inches

Air temperature: About 65 degrees

Frost-free season: About 200 days

Surface rock fragments: 5 percent cobbles; 15 percent gravel

Surface layer texture: Gravelly sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Alko Series

Elevation: 2,500 to 3,800 feet

Precipitation: About 6 inches

Air temperature: About 65 degrees

Frost-free season: About 200 days

Surface rock fragments: 5 percent cobbles; 15 percent gravel

Surface layer texture: Gravelly sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Arizo Series

Elevation: 2,500 to 3,800 feet

Precipitation: About 6 inches

Air temperature: About 65 degrees

Frost-free season: About 200 days

Surface rock fragments: 25 percent cobbles; 30 percent gravel

Surface layer texture: Very stony loamy sand

Drainage class: Excessively drained

Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Alko: Indian ricegrass, bud sagebrush, shadscale, white bursage

Alko: Indian ricegrass, big galleta, shadscale, spiny menodora

Arizo: Big galleta, white bursage

Inclusion 1: None

Inclusion 2: Indian ricegrass, big galleta, white bursage

Inclusion 3: Indian ricegrass, bud sagebrush, shadscale, white bursage

Inclusion 4: Indian ricegrass, big galleta, white bursage

Ecological Site

Alko: 030XB006NV

Alko: 030XB031NV

Arizo: 030XB028NV

Inclusion 1: None

Inclusion 2: 030XB005NV

Inclusion 3: 030XB006NV

Inclusion 4: 030XB005NV

1172--Alko-Geta association**Composition****Major Components**

Alko loamy coarse sand, 2 to 15 percent slopes--65 percent

Geta gravelly sandy loam, 2 to 8 percent slopes--30 percent

Contrasting Inclusions

Inclusion 1: Typic Torriorthents, loamy-skeletal, mixed (calcareous), thermic gravelly sandy loam, 15 to 30 percent slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts

Alko--Landform: Fan remnants; geomorphic position: summit

Geta--Landform: Inset fans

Inclusion 1--Landform: Fan remnants; geomorphic position: backslope; aspect: south

Major Component Description**Alko Series**

Elevation: 3,100 to 4,200 feet

Precipitation: About 6 inches

Air temperature: About 59 degrees

Frost-free season: About 190 days

Surface rock fragments: 10 percent gravel

Surface layer texture: Loamy coarse sand

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Geta Series

Elevation: 3,600 to 4,200 feet

Precipitation: About 8 inches

Air temperature: About 58 degrees

Frost-free season: About 190 days

Surface rock fragments: 25 percent gravel

Surface layer texture: Gravelly sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Alko: Indian ricegrass, big galleta, spiny hopsage, spiny menodora

Geta: Big galleta, spiny hopsage

Inclusion 1: Big galleta, white bursage

Ecological Site

Alko: 030XB041NV

Geta: 030XB036NV

Inclusion 1: 030XB017NV

1180--Acoma-Decan-Cath association**Composition****Major Components**

Acoma gravelly sandy loam, 2 to 15 percent slopes--40 percent

Decan gravelly clay loam, 2 to 15 percent slopes--30 percent

Cath coarse sandy loam, 2 to 4 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Aridic Haplustolls, coarse-loamy, mixed, mesic gravelly sandy loam, 2 to 4 percent slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts

Acoma--Landform: Fan remnants

Decan--Landform: Fan remnants; position on slope: Upper

Cath--Landform: Inset fans

Inclusion 1--Landform: Drainageways

Major Component Description**Acoma Series**

Elevation: 5,000 to 5,800 feet

Precipitation: About 12 inches

Air temperature: About 48 degrees

Frost-free season: About 110 days

Surface rock fragments: 20 percent gravel

Surface layer texture: Gravelly sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Decan Series

Elevation: 6,000 to 6,600 feet

Precipitation: About 14 inches

Air temperature: About 47 degrees

Frost-free season: About 110 days

Surface rock fragments: 2 percent cobbles; 15 percent gravel

Surface layer texture: Gravelly clay loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Cath Series

Elevation: 5,500 to 6,000 feet

Precipitation: About 11 inches

Air temperature: About 51 degrees

Frost-free season: About 110 days

Surface rock fragments: 10 percent gravel

Surface layer texture: Coarse sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Acoma: Utah juniper, Wyoming big sagebrush, muttongrass, singleleaf pinyon

Decan: Utah juniper, Wyoming big sagebrush, muttongrass, singleleaf pinyon

Cath: Indian ricegrass, Wyoming big sagebrush, needleandthread

Inclusion 1: Indian ricegrass, big sagebrush, desert peachbrush

Ecological Site

Acoma: 029XY065NV

Decan: 029XY065NV

Cath: 029XY006NV

Inclusion 1: 029XY009NV

1190--Minu-Shroe-Acoma association**Composition****Major Components**

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

Shroe gravelly loam, 2 to 30 percent slopes--30 percent

Acoma gravelly sandy loam, 2 to 8 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Lithic Haplargids, fine-loamy, mixed, mesic gravelly sandy loam, 15 to 30 percent slopes--8 percent

Inclusion 2: Xerollic Camborthids, loamy-skeletal, mixed, mesic sandy loam, 4 to 8 percent slopes--2 percent

Map Unit Setting*Landscape position:* Fan piedmonts

Minu--Landform: Fan remnants; geomorphic position: summit

Shroe--Landform: Fan remnants; geomorphic position: backslope

Acoma--Landform: Fan remnants

Inclusion 1--Landform: Fan remnants; geomorphic position: backslope

Inclusion 2--Landform: Inset fans

Major Component Description**Minu Series***Elevation:* 5,000 to 6,500 feet*Precipitation:* About 12 inches*Air temperature:* About 48 degrees*Frost-free season:* About 110 days*Surface rock fragments:* 30 percent gravel*Surface layer texture:* Gravelly sandy loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks**Shroe Series***Elevation:* 5,000 to 6,500 feet*Precipitation:* About 12 inches*Air temperature:* About 47 degrees*Frost-free season:* About 110 days*Surface rock fragments:* 5 percent cobbles; 20 percent gravel*Surface layer texture:* Gravelly loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks**Acoma Series***Elevation:* 5,000 to 5,500 feet*Precipitation:* About 12 inches*Air temperature:* About 48 degrees*Frost-free season:* About 110 days*Surface rock fragments:* 20 percent gravel*Surface layer texture:* Gravelly sandy loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks**Dominant Present Vegetation**

Minu: Utah juniper, black sagebrush, muttongrass, singleleaf pinyon

Shroe: Indian ricegrass, Utah juniper, Wyoming big sagebrush, desert bitterbrush, green ephedra

Acoma: Indian ricegrass, Utah juniper, Wyoming big sagebrush, desert bitterbrush, green ephedra

Inclusion 1: Indian ricegrass, Utah juniper, Wyoming big sagebrush, desert bitterbrush, green ephedra

Inclusion 2: Indian ricegrass, Wyoming big sagebrush, needleandthread

Ecological Site

Minu: 029XY069NV

Shroe: 029XY070NV

Acoma: 029XY070NV

Inclusion 1: 029XY070NV

Inclusion 2: 029XY006NV

1210--Brier-Acoma-Bellehelen association**Composition****Major Components**

Brier very stony loam, 30 to 75 percent slopes--60 percent

Acoma gravelly sandy loam, 2 to 15 percent slopes--15 percent

Bellehelen very stony loam, 15 to 30 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Xeric Torriorthents, loamy-skeletal, mixed, nonacid, mesic gravelly sandy loam, 2 to 4 percent slopes--5 percent

Inclusion 2: Rock outcrop--5 percent

Map Unit Setting*Landscape position:* Mountains and intermontane basins

Brier--Landform: Mountains

Acoma--Landform: Fan remnants

Bellehelen--Landform: Mountains

Inclusion 1--Landform: Drainageways

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

Major Component Description**Brier Series***Elevation:* 6,000 to 7,500 feet*Precipitation:* About 12 inches*Air temperature:* About 47 degrees*Frost-free season:* About 110 days*Surface rock fragments:* 10 percent stones and boulders; 10 percent cobbles; 20 percent gravel*Surface layer texture:* Very stony loam*Drainage class:* Well drained*Dominant parent material:* Residuum and colluvium derived from volcanic rocks**Acoma Series***Elevation:* 5,000 to 5,800 feet*Precipitation:* About 12 inches

Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Bellehelen Series

Elevation: 6,200 to 7,500 feet
Precipitation: About 14 inches
Air temperature: About 47 degrees
Frost-free season: About 105 days
Surface rock fragments: 10 percent stones and boulders; 10 percent cobbles; 25 percent gravel
Surface layer texture: Very stony loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Dominant Present Vegetation

Brier: Utah juniper, Wyoming big sagebrush, muttongrass, singleleaf pinyon
 Acoma: Indian ricegrass, Utah juniper, Wyoming big sagebrush, desert bitterbrush, green ephedra
 Bellehelen: Indian ricegrass, Utah juniper, black sagebrush, galleta
 Inclusion 1: Indian ricegrass, Utah juniper, Wyoming big sagebrush, desert bitterbrush, green ephedra
 Inclusion 2: None

Ecological Site

Brier: 029XY065NV
 Acoma: 029XY070NV
 Bellehelen: 029XY071NV
 Inclusion 1: 029XY070NV
 Inclusion 2: None

1211--Brier-Rock outcrop association

Composition

Major Components
 Brier extremely bouldery sandy loam, 15 to 75 percent slopes--60 percent
 Rock outcrop unweathered bedrock, 15 to 75 percent slopes--30 percent
Contrasting Inclusions
 Inclusion 1: Wyva very stony sandy loam, 30 to 50 percent slopes--6 percent
 Inclusion 2: Aridic Haploxerolls, coarse-loamy, mixed, mesic very gravelly sandy loam, 2 to 8 percent slopes--4 percent

Map Unit Setting

Landscape position: Mountains
 Brier--Landform: Mountains
 Rock outcrop--Landform: Mountains
 Inclusion 1--Landform: Mountains; position on slope: Lower; aspect: south
 Inclusion 2--Landform: Mountains

Major Component Description

Brier Series

Elevation: 5,500 to 6,800 feet
Precipitation: About 12 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent cobbles; 40 percent gravel
Surface layer texture: Extremely bouldery sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Rock outcrop Miscellaneous Area

Elevation: 5,500 to 6,800 feet
Surface layer texture: Unweathered bedrock
Dominant parent material: Residuum derived from volcanic rocks

Dominant Present Vegetation

Brier: Utah juniper, mountain big sagebrush, muttongrass, singleleaf pinyon
 Inclusion 1: Indian ricegrass, big sagebrush, needleandthread
 Inclusion 2: Mountain big sagebrush, needlegrass

Ecological Site

Brier: 029XY095NV
 Rock outcrop: None
 Inclusion 1: 029XY075NV
 Inclusion 2: 029XY050NV

1220--Lien-Veet association

Composition

Major Components

Lien very gravelly sandy loam, 2 to 15 percent slopes--60 percent
 Veet gravelly sandy loam, 2 to 4 percent slopes--35 percent

Contrasting Inclusions

Inclusion 1: Riverwash very gravelly loamy sand, 2 to 4 percent slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Lien--Landform: Fan remnants
 Veet--Landform: Inset fans
 Inclusion 1--Landform: Drainageways

Major Component Description

Lien Series

Elevation: 5,600 to 6,300 feet
Precipitation: About 9 inches
Air temperature: About 48 degrees
Frost-free season: About 110 days
Surface rock fragments: 2 percent cobbles; 35 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Veet Series

Elevation: 5,600 to 6,300 feet

Precipitation: About 8 inches

Air temperature: About 49 degrees

Frost-free season: About 110 days

Surface rock fragments: 7 percent cobbles; 25 percent gravel

Surface layer texture: Gravelly sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Lien: Utah juniper, black sagebrush, muttongrass, singleleaf pinyon

Veet: Indian ricegrass, Wyoming big sagebrush, fourwing saltbush

Inclusion 1: None

Ecological Site

Lien: 029XY069NV

Veet: 028BY005NV

Inclusion 1: None

1230--Pahranagat association

Composition

Major Components

Pahranagat silty clay loam, drained, 0 to 2 percent slopes--50 percent

Pahranagat silt loam, 0 to 2 percent slopes--40 percent

Contrasting Inclusions

Inclusion 1: Fluvaquentic Haplaquolls, fine, montmorillonitic (calcareous), mesic silt loam, 0 to 2 percent slopes--5 percent

Inclusion 2: Aquic Natrargids, fine, montmorillonitic, mesic silt loam, 0 to 2 percent slopes--5 percent

Map Unit Setting

Landscape position: Semi-bolsons

Pahranagat--Landform: Flood plains

Pahranagat--Landform: Stream terraces

Inclusion 1--Landform: Flood plains

Inclusion 2--Landform: Flood plains

Major Component Description

Pahranagat Series

Elevation: 5,000 to 5,200 feet

Precipitation: About 11 inches

Air temperature: About 54 degrees

Frost-free season: About 170 days

Surface layer texture: Silty clay loam

Drainage class: Somewhat poorly drained

Dominant parent material: Alluvium derived from mixed rocks

Pahranagat Series

Elevation: 5,000 to 5,200 feet

Precipitation: About 11 inches

Air temperature: About 54 degrees

Frost-free season: About 170 days

Surface layer texture: Silt loam

Drainage class: Poorly drained

Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Pahranagat: Basin big sagebrush, basin wildrye

Pahranagat: Baltic rush, alkali sacaton, inland saltgrass

Inclusion 1: Baltic rush, alkali sacaton, inland saltgrass

Inclusion 2: Alkali sacaton, basin wildrye, black greasewood

Ecological Site

Pahranagat: 029XY003NV

Pahranagat: 029XY002NV

Inclusion 1: 029XY002NV

Inclusion 2: 029XY004NV

1250--Patter-Heist association

Composition

Major Components

Patter loam, 0 to 4 percent slopes--50 percent

Heist fine sandy loam, 0 to 8 percent slopes--45 percent

Contrasting Inclusions

Inclusion 1: Veet gravelly sandy loam, 2 to 4 percent slopes--5 percent

Map Unit Setting

Landscape position: Semi-bolsons

Patter--Landform: Flood plains

Heist--Landform: Stream terraces

Inclusion 1--Landform: Washes

Major Component Description

Patter Series

Elevation: 5,200 to 6,000 feet

Precipitation: About 10 inches

Air temperature: About 47 degrees

Frost-free season: About 120 days

Surface rock fragments: 10 percent gravel

Surface layer texture: Loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Heist Series

Elevation: 5,200 to 6,000 feet

Precipitation: About 10 inches

Air temperature: About 48 degrees

Frost-free season: About 120 days

Surface rock fragments: 5 percent gravel

Surface layer texture: Fine sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Patter: Indian ricegrass, Wyoming big sagebrush, needleandthread

Heist: Indian ricegrass, Wyoming big sagebrush, needleandthread

Inclusion 1: Indian ricegrass, big sagebrush, desert peachbrush

Ecological Site

Patter: 029XY006NV

Heist: 029XY006NV

Inclusion 1: 029XY009NV

1260--Hollace-Gabbvally association**Composition****Major Components**

Hollace very gravelly loam, 8 to 30 percent slopes--50 percent

Gabbvally very stony loam, 15 to 50 percent slopes--35 percent

Contrasting Inclusions

Inclusion 1: Zauqa gravelly sandy loam, 30 to 50 percent slopes--9 percent

Inclusion 2: Rock outcrop--3 percent

Inclusion 3: Xeric Torriorthents, sandy-skeletal, mixed, mesic gravelly sandy loam, 4 to 8 percent slopes--2 percent

Inclusion 4: Riverwash very gravelly sandy loam, 4 to 8 percent slopes--1 percent

Map Unit Setting

Landscape position: Mountains

Hollace--Landform: Mountains; position on slope: Lower

Gabbvally--Landform: Mountains; position on slope: Upper

Inclusion 1--Landform: Mountains; position on slope:

Lower; aspect: south

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

Inclusion 3--Landform: Drainageways

Inclusion 4--Landform: Drainageways

Major Component Description**Hollace Series**

Elevation: 4,200 to 5,200 feet

Precipitation: About 8 inches

Air temperature: About 52 degrees

Frost-free season: About 160 days

Surface rock fragments: 10 percent cobbles; 35 percent gravel

Surface layer texture: Very gravelly loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Gabbvally Series

Elevation: 5,000 to 6,800 feet

Precipitation: About 10 inches

Air temperature: About 53 degrees

Frost-free season: About 130 days

Surface rock fragments: 10 percent cobbles; 40 percent gravel

Surface layer texture: Very stony loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from volcanic rocks

Dominant Present Vegetation

Hollace: Blackbrush, desert needlegrass

Gabbvally: Indian ricegrass, Wyoming big sagebrush, needleandthread

Inclusion 1: Blackbrush, desert needlegrass

Inclusion 2: None

Inclusion 3: Indian ricegrass, big sagebrush, desert peachbrush

Inclusion 4: None

Ecological Site

Hollace: 029XY077NV

Gabbvally: 029XY010NV

Inclusion 1: 029XY077NV

Inclusion 2: None

Inclusion 3: 029XY009NV

Inclusion 4: None

1261--Hollace-Rochpah-Wyva association**Composition****Major Components**

Hollace very gravelly loam, 8 to 30 percent slopes--30 percent

Rochpah very gravelly sandy loam, 30 to 50 percent slopes--30 percent

Wyva very stony sandy loam, 30 to 50 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Rock outcrop--10 percent

Inclusion 2: Lithic Haplargids, loamy-skeletal, mixed, mesic very gravelly sandy loam, 15 to 50 percent slopes--3 percent

Inclusion 3: Xeric Torriorthents, sandy-skeletal, mixed, mesic gravelly sandy loam, 4 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Mountains

Hollace--Landform: Mountains

Rochpah--Landform: Mountains

Wyva--Landform: Mountains; aspect: north

Inclusion 1--Landform: Mountains

Inclusion 2--Landform: Mountains; position on slope: Lower

Inclusion 3--Landform: Drainageways

Major Component Description**Hollace Series**

Elevation: 4,200 to 5,200 feet

Precipitation: About 8 inches

Air temperature: About 52 degrees

Frost-free season: About 160 days

Surface rock fragments: 10 percent cobbles; 35 percent gravel

Surface layer texture: Very gravelly loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Rochpah Series

Elevation: 4,200 to 5,200 feet
Precipitation: About 8 inches
Air temperature: About 54 degrees
Frost-free season: About 160 days
Surface rock fragments: 10 percent cobbles; 40 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Wyva Series

Elevation: 4,600 to 5,200 feet
Precipitation: About 11 inches
Air temperature: About 54 degrees
Frost-free season: About 160 days
Surface rock fragments: 35 percent cobbles; 13 percent gravel
Surface layer texture: Very stony sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Dominant Present Vegetation

Hollace: Blackbrush, desert needlegrass
 Rochpah: Indian ricegrass, blackbrush
 Wyva: Indian ricegrass, big sagebrush, needleandthread
 Inclusion 1: None
 Inclusion 2: Blackbrush, desert needlegrass
 Inclusion 3: Indian ricegrass, big sagebrush, desert peachbrush

Ecological Site

Hollace: 029XY077NV
 Rochpah: 029XY013NV
 Wyva: 029XY075NV
 Inclusion 1: None
 Inclusion 2: 029XY077NV
 Inclusion 3: 029XY009NV

1262--Hollace-Winklo-Wyva association

Composition

Major Components

Hollace very gravelly sandy loam, 15 to 30 percent slopes--50 percent
 Winklo very gravelly sandy loam, 30 to 50 percent slopes--25 percent
 Wyva very stony sandy loam, 30 to 50 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Xeric Torriorthents, sandy-skeletal, mixed, mesic gravelly sandy loam, 4 to 8 percent slopes--4 percent
 Inclusion 2: Rock outcrop--3 percent

Inclusion 3: Riverwash very gravelly sandy loam, 4 to 8 percent slopes--3 percent

Map Unit Setting

Landscape position: Mountains
 Hollace--Landform: Mountains
 Winklo--Landform: Mountains; aspect: south
 Wyva--Landform: Mountains; aspect: north
 Inclusion 1--Landform: Drainageways
 Inclusion 2--Landform: Mountains
 Inclusion 3--Landform: Drainageways

Major Component Description

Hollace Series

Elevation: 4,200 to 5,200 feet
Precipitation: About 8 inches
Air temperature: About 52 degrees
Frost-free season: About 160 days
Surface rock fragments: 5 percent cobbles; 40 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Winklo Series

Elevation: 4,200 to 5,200 feet
Precipitation: About 8 inches
Air temperature: About 54 degrees
Frost-free season: About 170 days
Surface rock fragments: 5 percent cobbles; 35 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from volcanic rocks

Wyva Series

Elevation: 4,800 to 5,600 feet
Precipitation: About 11 inches
Air temperature: About 54 degrees
Frost-free season: About 160 days
Surface rock fragments: 35 percent cobbles; 13 percent gravel
Surface layer texture: Very stony sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Dominant Present Vegetation

Hollace: Blackbrush, desert needlegrass
 Winklo: Blackbrush, desert needlegrass
 Wyva: Indian ricegrass, big sagebrush, needleandthread
 Inclusion 1: Indian ricegrass, big sagebrush, desert peachbrush
 Inclusion 2: None
 Inclusion 3: None

Ecological Site

Hollace: 029XY077NV
 Winklo: 029XY077NV

Wyva: 029XY075NV
 Inclusion 1: 029XY009NV
 Inclusion 2: None
 Inclusion 3: None

1270--Laross-Rock outcrop association

Composition

Major Components

Laross cobbly loam, 30 to 75 percent slopes--70 percent
 Rock outcrop unweathered bedrock, 30 to 75 percent
 slopes--20 percent

Contrasting Inclusions

Inclusion 1: Aridic Haplustolls, loamy-skeletal, mixed,
 mesic gravelly sandy loam, 15 to 30 percent slopes--5
 percent
 Inclusion 2: Typic Ustifluvents, sandy-skeletal, mixed,
 mesic very gravelly loamy sand, 2 to 15 percent
 slopes--5 percent

Map Unit Setting

Landscape position: Mountains
Laross--Landform: Mountains
Rock outcrop--Landform: Mountains
Inclusion 1--Landform: Mountains
Inclusion 2--Landform: Washes

Major Component Description

Laross Series

Elevation: 6,200 to 7,200 feet
Precipitation: About 16 inches
Air temperature: About 50 degrees
Frost-free season: About 100 days
Surface rock fragments: 20 percent cobbles; 10 percent
 gravel
Surface layer texture: Cobbly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium
 derived from tuffaceous rocks

Rock outcrop Miscellaneous Area

Elevation: 6,200 to 7,200 feet
Surface layer texture: Unweathered bedrock
Dominant parent material: Residuum derived from
 tuffaceous rocks

Dominant Present Vegetation

Laross: Utah serviceberry, mountain big sagebrush,
 singleleaf pinyon, turbinella oak
 Rock outcrop: None
 Inclusion 1: Utah serviceberry, mountain big sagebrush,
 muttongrass
 Inclusion 2: Mountain big sagebrush, muttongrass,
 ponderosa pine

Ecological Site

Laross: 029XY100NV
 Rock outcrop: None
 Inclusion 1: 029XY098NV
 Inclusion 2: 029XY097NV

1300--Mormount-Arizo association

Composition

Major Components

Mormount gravelly very fine sandy loam, 8 to 15 percent
 slopes--70 percent
 Arizo very gravelly loamy sand, 4 to 8 percent slopes--15
 percent

Contrasting Inclusions

Inclusion 1: Aymate sandy loam, 2 to 8 percent slopes--7
 percent
 Inclusion 2: Canutio gravelly sandy loam, 2 to 8 percent
 slopes--4 percent
 Inclusion 3: Ustochreptic Paleorthids, loamy-skeletal,
 carbonatic, thermic gravelly sandy loam, 4 to 15
 percent slopes--3 percent
 Inclusion 4: Riverwash very gravelly loamy sand, 2 to 4
 percent slopes--1 percent

Map Unit Setting

Landscape position: Fan piedmonts
Mormount--Landform: Fan remnants
Arizo--Landform: Drainageways
Inclusion 1--Landform: Fan remnants; position on slope:
 Lower
Inclusion 2--Landform: Inset fans
Inclusion 3--Landform: Fan remnants
Inclusion 4--Landform: Drainageways

Major Component Description

Mormount Series

Elevation: 3,500 to 4,500 feet
Precipitation: About 8 inches
Air temperature: About 58 degrees
Frost-free season: About 210 days
Surface rock fragments: 2 percent cobbles; 23 percent
 gravel
Surface layer texture: Gravelly very fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed
 rocks

Arizo Series

Elevation: 2,500 to 4,300 feet
Precipitation: About 6 inches
Air temperature: About 60 degrees
Frost-free season: About 210 days
Surface rock fragments: 3 percent cobbles; 45 percent
 gravel
Surface layer texture: Very gravelly loamy sand
Drainage class: Excessively drained
Dominant parent material: Alluvium derived from mixed
 rocks

Dominant Present Vegetation

Mormount: Big galleta, blackbrush
 Arizo: Big galleta, white bursage
 Inclusion 1: Big galleta, bush muhly
 Inclusion 2: Nevada ephedra, big galleta, bush muhly

Inclusion 3: Big galleta, blackbrush
Inclusion 4: None

Ecological Site

Mormount: 030XB029NV
Arizo: 030XB028NV
Inclusion 1: 030XB043NV
Inclusion 2: 030XB039NV
Inclusion 3: 030XB029NV
Inclusion 4: None

1302--Mormount very gravelly sandy loam, 2 to 8 percent slopes

Composition

Major Components

Mormount very gravelly sandy loam, 2 to 8 percent slopes--85 percent

Contrasting Inclusions

Inclusion 1: Ustic Torriorthents, loamy-skeletal, mixed (calcareous), thermic very gravelly sandy loam, 2 to 4 percent slopes--8 percent
Inclusion 2: Cave very gravelly fine sandy loam, 2 to 4 percent slopes--5 percent
Inclusion 3: Ustic Torriorthents, sandy-skeletal, mixed, thermic gravelly sandy loam, 2 to 4 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
Mormount--Landform: Fan remnants
Inclusion 1--Landform: Inset fans
Inclusion 2--Landform: Fan remnants; geomorphic position: summit; position on slope: Upper
Inclusion 3--Landform: Drainageways

Major Component Description

Mormount Series

Elevation: 3,500 to 4,000 feet
Precipitation: About 8 inches
Air temperature: About 58 degrees
Frost-free season: About 210 days
Surface rock fragments: 7 percent cobbles; 41 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Mormount: Big galleta, blackbrush
Inclusion 1: Big galleta, blackbrush
Inclusion 2: Big galleta, blackbrush
Inclusion 3: Big galleta, white bursage

Ecological Site

Mormount: 030XB029NV
Inclusion 1: 030XB029NV
Inclusion 2: 030XB029NV
Inclusion 3: 030XB028NV

1303--Mormount-Canutio association

Composition

Major Components

Mormount gravelly very fine sandy loam, 2 to 15 percent slopes--70 percent
Canutio very gravelly sandy loam, 0 to 4 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Arizo very gravelly loamy sand, 2 to 4 percent slopes--5 percent
Inclusion 2: Ustochreptic Calciorthids, coarse-loamy, mixed, thermic very gravelly sandy loam, 8 to 15 percent slopes--4 percent
Inclusion 3: Aymate sandy loam, 2 to 8 percent slopes--4 percent
Inclusion 4: Riverwash very gravelly loamy sand, 2 to 4 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
Mormount--Landform: Fan remnants
Canutio--Landform: Inset fans
Inclusion 1--Landform: Drainageways
Inclusion 2--Landform: Fan remnants; geomorphic position: backslope
Inclusion 3--Landform: Fan remnants; geomorphic position: summit; position on slope: Lower
Inclusion 4--Landform: Drainageways

Major Component Description

Mormount Series

Elevation: 3,500 to 4,500 feet
Precipitation: About 8 inches
Air temperature: About 58 degrees
Frost-free season: About 210 days
Surface rock fragments: 3 percent cobbles; 23 percent gravel
Surface layer texture: Gravelly very fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Canutio Series

Elevation: 3,500 to 4,500 feet
Precipitation: About 6 inches
Air temperature: About 60 degrees
Frost-free season: About 210 days
Surface rock fragments: 7 percent cobbles; 45 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Mormount: Big galleta, blackbrush
Canutio: Nevada ephedra, big galleta, bush muhly
Inclusion 1: Big galleta, white bursage
Inclusion 2: Big galleta, blackbrush
Inclusion 3: Big galleta, bush muhly
Inclusion 4: None

Ecological Site

Mormount: 030XB029NV
 Canutio: 030XB039NV
 Inclusion 1: 030XB028NV
 Inclusion 2: 030XB029NV
 Inclusion 3: 030XB043NV
 Inclusion 4: None

1340--Aymate-Canutio association**Composition****Major Components**

Aymate gravelly sandy loam, 2 to 4 percent slopes--65 percent
 Canutio gravelly sandy loam, 2 to 4 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Arizo very gravelly loamy sand, 0 to 2 percent slopes--7 percent
 Inclusion 2: Ustochreptic Paleorthids, loamy-skeletal, mixed, thermic gravelly sandy loam, 4 to 8 percent slopes--4 percent
 Inclusion 3: Mormount very gravelly sandy loam, 2 to 4 percent slopes--4 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Aymate--Landform: Fan remnants
 Canutio--Landform: Inset fans
 Inclusion 1--Landform: Drainageways
 Inclusion 2--Landform: Fan remnants; geomorphic position: backslope
 Inclusion 3--Landform: Fan remnants; geomorphic position: summit; position on slope: Upper

Major Component Description**Aymate Series**

Elevation: 2,800 to 3,400 feet
Precipitation: About 8 inches
Air temperature: About 61 degrees
Frost-free season: About 240 days
Surface rock fragments: 2 percent cobbles; 22 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Canutio Series

Elevation: 2,700 to 3,400 feet
Precipitation: About 6 inches
Air temperature: About 60 degrees
Frost-free season: About 240 days
Surface rock fragments: 3 percent cobbles; 22 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Aymate: Big galleta, bush muhly
 Canutio: Nevada ephedra, big galleta, bush muhly
 Inclusion 1: Big galleta, white bursage
 Inclusion 2: Nevada ephedra, big galleta, bush muhly
 Inclusion 3: Big galleta, blackbrush

Ecological Site

Aymate: 030XB043NV
 Canutio: 030XB039NV
 Inclusion 1: 030XB028NV
 Inclusion 2: 030XB039NV
 Inclusion 3: 030XB029NV

1341--Aymate sandy loam, 0 to 2 percent slopes**Composition****Major Components**

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

Contrasting Inclusions

Inclusion 1: Geta very fine sandy loam, 0 to 8 percent slopes--8 percent
 Inclusion 2: Arizo very gravelly loamy sand, 0 to 2 percent slopes--5 percent
 Inclusion 3: Riverwash very gravelly loamy sand, 0 to 2 percent slopes--2 percent

Map Unit Setting

Landscape position: Piedmont slopes
 Aymate--Landform: Fan remnants
 Inclusion 1--Landform: Fan skirts
 Inclusion 2--Landform: Drainageways
 Inclusion 3--Landform: Drainageways

Major Component Description**Aymate Series**

Elevation: 2,600 to 3,400 feet
Precipitation: About 8 inches
Air temperature: About 61 degrees
Frost-free season: About 230 days
Surface rock fragments: 10 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Aymate: Indian ricegrass, big galleta, fourwing saltbush
 Inclusion 1: Nevada ephedra, big galleta, bush muhly
 Inclusion 2: Big galleta, white bursage
 Inclusion 3: None

Ecological Site

Aymate: 030XB035NV
 Inclusion 1: 030XB039NV
 Inclusion 2: 030XB028NV
 Inclusion 3: None

1342--Aymate-Mormount-Arizo association**Composition****Major Components**

Aymate gravelly sandy loam, 2 to 8 percent slopes--45 percent
 Mormount gravelly very fine sandy loam, 2 to 4 percent slopes--25 percent
 Arizo very gravelly loamy sand, 2 to 4 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Canutio gravelly sandy loam, 2 to 4 percent slopes--10 percent
 Inclusion 2: Ustochreptic Paleorthids, loamy-skeletal, mixed, thermic gravelly sandy loam, 4 to 8 percent slopes--3 percent
 Inclusion 3: Riverwash very gravelly loamy sand, 2 to 4 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Aymate--Landform: Fan remnants
 Mormount--Landform: Fan remnants; position on slope: Upper
 Arizo--Landform: Drainageways
 Inclusion 1--Landform: Inset fans
 Inclusion 2--Landform: Fan remnants; geomorphic position: backslope
 Inclusion 3--Landform: Drainageways

Major Component Description**Aymate Series**

Elevation: 2,800 to 3,400 feet
Precipitation: About 8 inches
Air temperature: About 61 degrees
Frost-free season: About 220 days
Surface rock fragments: 25 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Mormount Series

Elevation: 3,500 to 4,200 feet
Precipitation: About 8 inches
Air temperature: About 58 degrees
Frost-free season: About 210 days
Surface rock fragments: 3 percent cobbles; 23 percent gravel
Surface layer texture: Gravelly very fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Arizo Series

Elevation: 2,500 to 4,200 feet
Precipitation: About 6 inches
Air temperature: About 60 degrees
Frost-free season: About 220 days

Surface rock fragments: 3 percent cobbles; 45 percent gravel

Surface layer texture: Very gravelly loamy sand

Drainage class: Excessively drained

Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Aymate: Big galleta, bush muhly
 Mormount: Big galleta, blackbrush
 Arizo: Big galleta, white bursage
 Inclusion 1: Nevada ephedra, big galleta, bush muhly
 Inclusion 2: Big galleta, blackbrush
 Inclusion 3: None

Ecological Site

Aymate: 030XB043NV
 Mormount: 030XB029NV
 Arizo: 030XB028NV
 Inclusion 1: 030XB039NV
 Inclusion 2: 030XB029NV
 Inclusion 3: None

1350--Bard gravelly fine sandy loam, 2 to 8 percent slopes**Composition****Major Components**

Bard gravelly fine sandy loam, 2 to 8 percent slopes--90 percent

Contrasting Inclusions

Inclusion 1: Naye gravelly fine sandy loam, 2 to 8 percent slopes--10 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Bard--Landform: Fan remnants
 Inclusion 1--Landform: Fan remnants; geomorphic position: summit; shape of slope: concave

Major Component Description**Bard Series**

Elevation: 2,500 to 2,800 feet
Precipitation: About 6 inches
Air temperature: About 64 degrees
Frost-free season: About 230 days
Surface rock fragments: 30 percent gravel
Surface layer texture: Gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Bard: Indian ricegrass, big galleta, white bursage
 Inclusion 1: Indian ricegrass, big galleta, white bursage

Ecological Site

Bard: 030XB005NV
 Inclusion 1: 030XB005NV

1360--Canutio-Arizo association**Composition****Major Components**

Canutio gravelly sandy loam, 2 to 4 percent slopes--65 percent

Arizo very gravelly loamy sand, 2 to 4 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Ustic Torriorthents, loamy-skeletal, mixed (calcareous), thermic gravelly sandy loam, 2 to 4 percent slopes--8 percent

Inclusion 2: Riverwash very gravelly loamy sand, 2 to 4 percent slopes--5 percent

Inclusion 3: Geta very fine sandy loam, 2 to 4 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts

Canutio--Landform: Fan remnants

Arizo--Landform: Drainageways

Inclusion 1--Landform: Alluvial fans

Inclusion 2--Landform: Drainageways

Inclusion 3--Landform: Inset fans

Major Component Description**Canutio Series**

Elevation: 2,500 to 3,600 feet

Precipitation: About 6 inches

Air temperature: About 60 degrees

Frost-free season: About 240 days

Surface rock fragments: 3 percent cobbles; 22 percent gravel

Surface layer texture: Gravelly sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Arizo Series

Elevation: 2,500 to 3,600 feet

Precipitation: About 6 inches

Air temperature: About 60 degrees

Frost-free season: About 240 days

Surface rock fragments: 3 percent cobbles; 45 percent gravel

Surface layer texture: Very gravelly loamy sand

Drainage class: Excessively drained

Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Canutio: Nevada ephedra, big galleta, bush muhly

Arizo: Big galleta, white bursage

Inclusion 1: Big galleta, blackbrush

Inclusion 2: None

Inclusion 3: Nevada ephedra, big galleta, bush muhly

Ecological Site

Canutio: 030XB039NV

Arizo: 030XB028NV

Inclusion 1: 030XB029NV

Inclusion 2: None

Inclusion 3: 030XB039NV

1370--Mormon Mesa association**Composition****Major Components**

Mormon Mesa fine sandy loam, 0 to 2 percent slopes--70 percent

Mormon Mesa gravelly fine sandy loam, 8 to 15 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Typic Torriorthents, loamy-skeletal, carbonatic, thermic gravelly sandy loam, 0 to 8 percent slopes--5 percent

Inclusion 2: Typic Paleorthids, coarse-loamy, carbonatic, thermic very gravelly sandy loam, 2 to 4 percent slopes--4 percent

Inclusion 3: Typic Paleorthids, loamy-skeletal, carbonatic, thermic gravelly sandy loam, 15 to 50 percent slopes--4 percent

Inclusion 4: Riverwash very gravelly loamy sand, 0 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts

Mormon Mesa--Landform: Fan remnants

Mormon Mesa--Landform: Fan remnants

Inclusion 1--Landform: Drainageways

Inclusion 2--Landform: Inset fans

Inclusion 3--Landform: Fan remnants; geomorphic position: backslope

Inclusion 4--Landform: Drainageways

Major Component Description**Mormon Mesa Series**

Elevation: 2,100 to 3,000 feet

Precipitation: About 5 inches

Air temperature: About 65 degrees

Frost-free season: About 230 days

Surface rock fragments: 3 percent cobbles; 9 percent gravel

Surface layer texture: Fine sandy loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from lacustrine sediments

Mormon Mesa Series

Elevation: 2,100 to 3,000 feet

Precipitation: About 5 inches

Air temperature: About 65 degrees

Frost-free season: About 230 days

Surface rock fragments: 3 percent cobbles; 23 percent gravel

Surface layer texture: Gravelly fine sandy loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from lacustrine sediments

Dominant Present Vegetation

Mormon Mesa: Indian ricegrass, big galleta, white bursage

Mormon Mesa: Indian ricegrass, big galleta, white bursage

Inclusion 1: Big galleta, white bursage

Inclusion 2: Indian ricegrass, big galleta, white bursage

Inclusion 3: Indian ricegrass, big galleta, white bursage

Inclusion 4: None

Ecological Site

Mormon Mesa: 030XB005NV
 Mormon Mesa: 030XB005NV
 Inclusion 1: 030XB028NV
 Inclusion 2: 030XB005NV
 Inclusion 3: 030XB005NV
 Inclusion 4: None

1371--Mormon Mesa-Naye-Dalian association**Composition****Major Components**

Mormon Mesa gravelly fine sandy loam, 4 to 8 percent slopes--45 percent
 Naye gravelly fine sandy loam, 4 to 8 percent slopes--25 percent
 Dalian very gravelly fine sandy loam, 4 to 8 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Ustochreptic Paleorthids, loamy, carbonatic, thermic, shallow gravelly sandy loam, 4 to 8 percent slopes--6 percent
 Inclusion 2: Typic Calciorthids, loamy-skeletal, carbonatic, thermic very gravelly sandy loam, 2 to 8 percent slopes--5 percent
 Inclusion 3: Arizo very gravelly sandy loam, 2 to 8 percent slopes--3 percent
 Inclusion 4: Riverwash very gravelly loamy sand, 2 to 8 percent slopes--1 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Mormon Mesa--Landform: Fan remnants
 Naye--Landform: Fan remnants; position on slope: Lower
 Dalian--Landform: Inset fans
 Inclusion 1--Landform: Fan remnants; geomorphic position: summit; position on slope: Upper
 Inclusion 2--Landform: Fan remnants; geomorphic position: backslope; position on slope: Lower
 Inclusion 3--Landform: Drainageways
 Inclusion 4--Landform: Drainageways

Major Component Description**Mormon Mesa Series**

Elevation: 2,100 to 3,000 feet
Precipitation: About 5 inches
Air temperature: About 65 degrees
Frost-free season: About 230 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from lacustrine sediments

Naye Series

Elevation: 2,000 to 2,800 feet
Precipitation: About 5 inches
Air temperature: About 65 degrees
Frost-free season: About 230 days
Surface rock fragments: 7 percent cobbles; 21 percent gravel
Surface layer texture: Gravelly fine sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from limestone and dolomite

Dalian Series

Elevation: 2,200 to 3,000 feet
Precipitation: About 6 inches
Air temperature: About 63 degrees
Frost-free season: About 230 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Mormon Mesa: Indian ricegrass, big galleta, white bursage
 Naye: Indian ricegrass, big galleta, white bursage
 Dalian: Indian ricegrass, big galleta, white bursage
 Inclusion 1: Big galleta, blackbrush, desert needlegrass
 Inclusion 2: Indian ricegrass, big galleta, white bursage
 Inclusion 3: Big galleta, white bursage
 Inclusion 4: None

Ecological Site

Mormon Mesa: 030XB005NV
 Naye: 030XB005NV
 Dalian: 030XB005NV
 Inclusion 1: 030XB030NV
 Inclusion 2: 030XB005NV
 Inclusion 3: 030XB028NV
 Inclusion 4: None

1372--Mormon Mesa-Tonopah-Arada association**Composition****Major Components**

Mormon Mesa gravelly fine sandy loam, 0 to 4 percent slopes--50 percent
 Tonopah very gravelly sandy loam, 2 to 8 percent slopes--25 percent
 Arada fine sand, 2 to 8 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Dalian very gravelly fine sandy loam, 2 to 4 percent slopes--6 percent
 Inclusion 2: Arizo very gravelly loamy sand, 0 to 2 percent slopes--4 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Mormon Mesa--Landform: Fan remnants
 Tonopah--Landform: Fan remnants; shape of slope: concave
 Arada--Landform: Sand sheets
 Inclusion 1--Landform: Inset fans
 Inclusion 2--Landform: Washes

Major Component Description**Mormon Mesa Series**

Elevation: 2,100 to 3,000 feet

Precipitation: About 5 inches
Air temperature: About 65 degrees
Frost-free season: About 230 days
Surface rock fragments: 3 percent cobbles; 23 percent gravel
Surface layer texture: Gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from lacustrine sediments

Tonopah Series

Elevation: 2,900 to 3,000 feet
Precipitation: About 6 inches
Air temperature: About 65 degrees
Frost-free season: About 230 days
Surface rock fragments: 45 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Excessively drained
Dominant parent material: Alluvium derived from mixed rocks

Arada Series

Elevation: 2,500 to 3,000 feet
Precipitation: About 5 inches
Air temperature: About 65 degrees
Frost-free season: About 230 days
Surface layer texture: Fine sand
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Mormon Mesa: Indian ricegrass, big galleta, white bursage
 Tonopah: Indian ricegrass, big galleta, white bursage
 Arada: Indian ricegrass, big galleta, white bursage
 Inclusion 1: Indian ricegrass, big galleta, white bursage
 Inclusion 2: Big galleta, white bursage

Ecological Site

Mormon Mesa: 030XB005NV
 Tonopah: 030XB005NV
 Arada: 030XB005NV
 Inclusion 1: 030XB005NV
 Inclusion 2: 030XB028NV

1380--Bracken gravelly fine sandy loam, 2 to 8 percent slopes

Composition

Major Components

Bracken gravelly fine sandy loam, 2 to 8 percent slopes--85 percent

Contrasting Inclusions

Inclusion 1: Typic Gypsiorthids, coarse-loamy, gypsic, thermic gravelly loam, 8 to 30 percent slopes--6 percent
 Inclusion 2: Badland, 30 to 75 percent slopes--4 percent
 Inclusion 3: Typic Torriorthents, coarse-loamy, mixed (calcareous), thermic gravelly sandy loam, 2 to 8 percent slopes--3 percent

Inclusion 4: Riverwash very gravelly loamy sand, 2 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Hills and intermontane basins
 Bracken--Landform: Pediments; geomorphic position: summit
 Inclusion 1--Landform: Pediments; geomorphic position: backslope
 Inclusion 2--Landform: Hills; geomorphic position: backslope
 Inclusion 3--Landform: Drainageways
 Inclusion 4--Landform: Drainageways

Major Component Description

Bracken Series

Elevation: 2,200 to 2,800 feet
Precipitation: About 5 inches
Air temperature: About 65 degrees
Frost-free season: About 230 days
Surface rock fragments: 2 percent cobbles; 24 percent gravel
Surface layer texture: Gravelly fine sandy loam
Drainage class: Somewhat excessively drained
Dominant parent material: Residuum and colluvium derived from gypsiferous sediments

Dominant Present Vegetation

Bracken: Fremont dalea, desert pepperweed, sandpaper plant
 Inclusion 1: Big galleta, white bursage
 Inclusion 2: None
 Inclusion 3: Big galleta, white bursage
 Inclusion 4: None

Ecological Site

Bracken: 030XB003NV
 Inclusion 1: 030XB019NV
 Inclusion 2: None
 Inclusion 3: 030XB028NV
 Inclusion 4: None

1390--Shankba-Chinkle-Kanackey association

Composition

Major Components

Shankba very gravelly fine sandy loam, 15 to 50 percent slopes--40 percent
 Chinkle very gravelly very fine sandy loam, 15 to 50 percent slopes--30 percent
 Kanackey very gravelly loam, 15 to 30 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Typic Calciorthids, loamy-skeletal, mixed, thermic gravelly sandy loam, 4 to 15 percent slopes--7 percent
 Inclusion 2: Typic Haplargids, fine-loamy, mixed, thermic gravelly sandy loam, 4 to 15 percent slopes--4 percent

Inclusion 3: Typic Haplargids, fine-loamy, mixed, mesic very gravelly sandy loam, 0 to 4 percent slopes--2 percent
 Inclusion 4: Rock outcrop--2 percent

Map Unit Setting

Landscape position: Mountains
 Shankba--Landform: Mountains; position on slope: Upper
 Chinkle--Landform: Mountains; position on slope: Lower
 Kanackey--Landform: Mountains
 Inclusion 1--Landform: Alluvial fans
 Inclusion 2--Landform: Mountains; shape of slope: concave
 Inclusion 3--Landform: Inset fans
 Inclusion 4--Landform: Mountains

Major Component Description

Shankba Series

Elevation: 3,300 to 4,000 feet
Precipitation: About 8 inches
Air temperature: About 60 degrees
Frost-free season: About 190 days
Surface rock fragments: 5 percent cobbles; 45 percent gravel
Surface layer texture: Very gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from sedimentary rocks

Chinkle Series

Elevation: 2,800 to 3,800 feet
Precipitation: About 5 inches
Air temperature: About 62 degrees
Frost-free season: About 200 days
Surface rock fragments: 10 percent cobbles; 50 percent gravel
Surface layer texture: Very gravelly very fine sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from sedimentary rocks

Kanackey Series

Elevation: 3,300 to 4,000 feet
Precipitation: About 6 inches
Air temperature: About 60 degrees
Frost-free season: About 195 days
Surface rock fragments: 10 percent cobbles; 30 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum derived from quartzite

Dominant Present Vegetation

Shankba: Big galleta, blackbrush
 Chinkle: Big galleta, white bursage
 Kanackey: Big galleta, blackbrush
 Inclusion 1: Indian ricegrass, big galleta, white bursage
 Inclusion 2: Indian ricegrass, big galleta, white bursage
 Inclusion 3: Nevada ephedra, big galleta, bush muhly
 Inclusion 4: None

Ecological Site

Shankba: 030XB029NV
 Chinkle: 030XB001NV
 Kanackey: 030XB029NV
 Inclusion 1: 030XB005NV
 Inclusion 2: 030XB005NV
 Inclusion 3: 030XB039NV
 Inclusion 4: None

1400--Cave-Canutio association

Composition

Major Components

Cave very gravelly sandy loam, 2 to 15 percent slopes--60 percent
 Canutio very gravelly sandy loam, 2 to 8 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Arizo very gravelly loamy sand, 0 to 2 percent slopes--8 percent
 Inclusion 2: Lithic Torriorthents, loamy-skeletal, mixed (calcareous), thermic very gravelly fine sandy loam, 8 to 30 percent slopes--5 percent
 Inclusion 3: Typic Torriorthents, coarse-loamy, mixed (calcareous), thermic very gravelly sandy loam, 0 to 4 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Cave--Landform: Fan remnants
 Canutio--Landform: Inset fans
 Inclusion 1--Landform: Drainageways
 Inclusion 2--Landform: Pediments; geomorphic position: backslope
 Inclusion 3--Landform: Inset fans

Major Component Description

Cave Series

Elevation: 2,500 to 3,600 feet
Precipitation: About 6 inches
Air temperature: About 58 degrees
Frost-free season: About 240 days
Surface rock fragments: 2 percent cobbles; 38 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Canutio Series

Elevation: 2,500 to 3,600 feet
Precipitation: About 6 inches
Air temperature: About 60 degrees
Frost-free season: About 240 days
Surface rock fragments: 7 percent cobbles; 45 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Cave: Big galleta, blackbrush
 Canutio: Nevada ephedra, big galleta, bush muhly
 Inclusion 1: Big galleta, white bursage
 Inclusion 2: Big galleta, blackbrush
 Inclusion 3: Nevada ephedra, big galleta, bush muhly

Ecological Site

Cave: 030XB029NV
 Canutio: 030XB039NV
 Inclusion 1: 030XB028NV
 Inclusion 2: 030XB029NV
 Inclusion 3: 030XB039NV

1401--Cave-Arizo association**Composition****Major Components**

Cave very gravelly sandy loam, 4 to 15 percent slopes--70 percent
 Arizo very gravelly loamy sand, 4 to 8 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Lithic Torriorthents, loamy-skeletal, mixed (calcareous), thermic very cobbly sandy loam, 8 to 30 percent slopes--5 percent
 Inclusion 2: Typic Calciorthids, loamy-skeletal, carbonatic, thermic gravelly sandy loam, 4 to 15 percent slopes--3 percent
 Inclusion 3: Typic Torriorthents, coarse-loamy, mixed (calcareous), thermic gravelly sandy loam, 15 to 30 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Cave--Landform: Fan remnants
 Arizo--Landform: Drainageways
 Inclusion 1--Landform: Pediments; geomorphic position: backslope
 Inclusion 2--Landform: Fan remnants; position on slope: Lower
 Inclusion 3--Landform: Fan remnants; geomorphic position: backslope

Major Component Description**Cave Series**

Elevation: 2,800 to 4,000 feet
Precipitation: About 6 inches
Air temperature: About 58 degrees
Frost-free season: About 215 days
Surface rock fragments: 2 percent cobbles; 38 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Arizo Series

Elevation: 2,500 to 4,000 feet
Precipitation: About 6 inches
Air temperature: About 58 degrees

Frost-free season: About 220 days

Surface rock fragments: 3 percent cobbles; 45 percent gravel

Surface layer texture: Very gravelly loamy sand

Drainage class: Excessively drained

Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Cave: Big galleta, blackbrush
 Arizo: Big galleta, white bursage
 Inclusion 1: Big galleta, blackbrush
 Inclusion 2: Nevada ephedra, big galleta, bush muhly
 Inclusion 3: Nevada ephedra, big galleta, bush muhly

Ecological Site

Cave: 030XB029NV
 Arizo: 030XB028NV
 Inclusion 1: 030XB029NV
 Inclusion 2: 030XB039NV
 Inclusion 3: 030XB039NV

1403--Cave-Tencee association**Composition****Major Components**

Cave very gravelly sandy loam, 15 to 30 percent slopes--45 percent
 Tencee very gravelly sandy loam, 4 to 15 percent slopes--40 percent

Contrasting Inclusions

Inclusion 1: Arizo very gravelly loamy sand, 2 to 4 percent slopes--7 percent
 Inclusion 2: Typic Paleorthids, loamy-skeletal, mixed, thermic gravelly sandy loam, 30 to 50 percent slopes--4 percent
 Inclusion 3: Typic Torriorthents, loamy-skeletal, mixed (calcareous), thermic gravelly sandy loam, 30 to 50 percent slopes--3 percent
 Inclusion 4: Badland, 30 to 75 percent slopes--1 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Cave--Landform: Fan remnants; geomorphic position: backslope
 Tencee--Landform: Fan remnants
 Inclusion 1--Landform: Drainageways
 Inclusion 2--Landform: Fan remnants; geomorphic position: backslope; aspect: north
 Inclusion 3--Landform: Fan remnants; geomorphic position: backslope; aspect: south
 Inclusion 4--Landform: Pediments; geomorphic position: backslope

Major Component Description**Cave Series**

Elevation: 2,800 to 3,800 feet
Precipitation: About 6 inches
Air temperature: About 58 degrees
Frost-free season: About 215 days

Surface rock fragments: 2 percent cobbles; 38 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Tencee Series

Elevation: 2,800 to 3,800 feet
Precipitation: About 5 inches
Air temperature: About 58 degrees
Frost-free season: About 220 days
Surface rock fragments: 10 percent cobbles; 40 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Cave: Big galleta, blackbrush
 Tencee: Big galleta, white bursage
 Inclusion 1: Big galleta, white bursage
 Inclusion 2: Big galleta, blackbrush
 Inclusion 3: Big galleta, white bursage
 Inclusion 4: None

Ecological Site

Cave: 030XB029NV
 Tencee: 030XB019NV
 Inclusion 1: 030XB028NV
 Inclusion 2: 030XB029NV
 Inclusion 3: 030XB017NV
 Inclusion 4: None

1404--Cave-Mormount-Canutio association

Composition

Major Components

Cave very gravelly sandy loam, 8 to 15 percent slopes--50 percent
 Mormount gravelly sandy loam, 4 to 8 percent slopes--25 percent
 Canutio very gravelly sandy loam, 2 to 4 percent slopes--10 percent

Contrasting Inclusions

Inclusion 1: Typic Paleorthids, loamy-skeletal, mixed, thermic gravelly sandy loam, 15 to 30 percent slopes--7 percent
 Inclusion 2: Arizo very gravelly loamy sand, 2 to 4 percent slopes--4 percent
 Inclusion 3: Typic Paleorthids, loamy, mixed, thermic, shallow gravelly sandy loam, 4 to 15 percent slopes--4 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Cave--Landform: Fan remnants
 Mormount--Landform: Fan remnants; position on slope: Upper

Canutio--Landform: Inset fans
 Inclusion 1--Landform: Fan remnants; geomorphic position: backslope; position on slope: Lower
 Inclusion 2--Landform: Drainageways
 Inclusion 3--Landform: Fan remnants; geomorphic position: backslope

Major Component Description

Cave Series

Elevation: 3,500 to 4,500 feet
Precipitation: About 6 inches
Air temperature: About 58 degrees
Frost-free season: About 215 days
Surface rock fragments: 2 percent cobbles; 38 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Mormount Series

Elevation: 3,500 to 4,500 feet
Precipitation: About 8 inches
Air temperature: About 58 degrees
Frost-free season: About 210 days
Surface rock fragments: 3 percent cobbles; 24 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Canutio Series

Elevation: 3,500 to 4,500 feet
Precipitation: About 6 inches
Air temperature: About 60 degrees
Frost-free season: About 210 days
Surface rock fragments: 7 percent cobbles; 45 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Cave: Big galleta, blackbrush
 Mormount: Big galleta, blackbrush
 Canutio: Nevada ephedra, big galleta, bush muhly
 Inclusion 1: Big galleta, blackbrush
 Inclusion 2: Big galleta, white bursage
 Inclusion 3: Big galleta, white bursage

Ecological Site

Cave: 030XB029NV
 Mormount: 030XB029NV
 Canutio: 030XB039NV
 Inclusion 1: 030XB029NV
 Inclusion 2: 030XB028NV
 Inclusion 3: 030XB019NV

1405--Cave-Zeheme association**Composition****Major Components**

Cave very gravelly fine sandy loam, 4 to 15 percent slopes--45 percent
 Zeheme extremely stony fine sandy loam, 30 to 50 percent slopes--40 percent

Contrasting Inclusions

Inclusion 1: Typic Paleorthids, coarse-loamy, mixed, thermic very gravelly sandy loam, 2 to 8 percent slopes--7 percent
 Inclusion 2: Typic Torriorthents, loamy-skeletal, mixed (calcareous), thermic very gravelly sandy loam, 2 to 8 percent slopes--6 percent
 Inclusion 3: Mormount very gravelly sandy loam, 4 to 8 percent slopes--1 percent
 Inclusion 4: Arizo very gravelly loamy sand, 2 to 4 percent slopes--1 percent

Map Unit Setting

Landscape position: Fan piedmonts
Cave--Landform: Fan remnants
Zeheme--Landform: Hills
 Inclusion 1--Landform: Fan remnants; position on slope: Lower
 Inclusion 2--Landform: Inset fans
 Inclusion 3--Landform: Fan remnants; position on slope: Upper
 Inclusion 4--Landform: Drainageways

Major Component Description**Cave Series**

Elevation: 2,800 to 4,000 feet
Precipitation: About 6 inches
Air temperature: About 58 degrees
Frost-free season: About 215 days
Surface rock fragments: 3 percent cobbles; 44 percent gravel
Surface layer texture: Very gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Zeheme Series

Elevation: 3,000 to 4,300 feet
Precipitation: About 8 inches
Air temperature: About 59 degrees
Frost-free season: About 200 days
Surface rock fragments: 40 percent cobbles; 20 percent gravel
Surface layer texture: Extremely stony fine sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Dominant Present Vegetation

Cave: Big galleta, blackbrush
 Zeheme: Big galleta, blackbrush, desert needlegrass
 Inclusion 1: Big galleta, blackbrush
 Inclusion 2: Big galleta, blackbrush
 Inclusion 3: Big galleta, blackbrush
 Inclusion 4: Big galleta, white bursage

Ecological Site

Cave: 030XB029NV
 Zeheme: 030XB030NV
 Inclusion 1: 030XB029NV
 Inclusion 2: 030XB029NV
 Inclusion 3: 030XB029NV
 Inclusion 4: 030XB028NV

1406--Cave very gravelly sandy loam, 4 to 30 percent slopes**Composition****Major Components**

Cave very gravelly sandy loam, 4 to 30 percent slopes--85 percent

Contrasting Inclusions

Inclusion 1: Typic Paleorthids, coarse-loamy, mixed, thermic very gravelly sandy loam, 2 to 8 percent slopes--7 percent
 Inclusion 2: Typic Torriorthents, loamy-skeletal, mixed (calcareous), thermic very gravelly sandy loam, 2 to 8 percent slopes--5 percent
 Inclusion 3: Mormount very gravelly sandy loam, 4 to 8 percent slopes--2 percent
 Inclusion 4: Arizo very gravelly loamy sand, 2 to 4 percent slopes--1 percent

Map Unit Setting

Landscape position: Fan piedmonts
Cave--Landform: Fan remnants
 Inclusion 1--Landform: Fan remnants; geomorphic position: summit; position on slope: Lower
 Inclusion 2--Landform: Inset fans
 Inclusion 3--Landform: Fan remnants; geomorphic position: summit; position on slope: Upper
 Inclusion 4--Landform: Drainageways

Major Component Description**Cave Series**

Elevation: 2,800 to 4,000 feet
Precipitation: About 6 inches
Air temperature: About 58 degrees
Frost-free season: About 200 days
Surface rock fragments: 2 percent cobbles; 38 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Cave: Big galleta, blackbrush
 Inclusion 1: Big galleta, blackbrush
 Inclusion 2: Big galleta, blackbrush
 Inclusion 3: Big galleta, blackbrush
 Inclusion 4: Big galleta, white bursage

Ecological Site

Cave: 030XB029NV
 Inclusion 1: 030XB029NV
 Inclusion 2: 030XB029NV

Inclusion 3: 030XB029NV
Inclusion 4: 030XB028NV

1420--Kanackey-Rock outcrop association

Composition

Major Components

Kanackey very gravelly loam, 30 to 50 percent slopes--70 percent

Rock outcrop unweathered bedrock, 30 to 50 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Ustollic Haplargids, loamy-skeletal, mixed, thermic gravelly sandy loam, 30 to 50 percent slopes--8 percent

Inclusion 2: Lithic Ustic Torriorthents, loamy-skeletal, mixed (calcareous), thermic very gravelly sandy loam, 50 to 75 percent slopes--4 percent

Inclusion 3: Typic Torriorthents, loamy, mixed (calcareous), thermic gravelly sandy loam, 15 to 30 percent slopes--3 percent

Map Unit Setting

Landscape position: Mountains

Kanackey--Landform: Mountains

Rock outcrop--Landform: Mountains

Inclusion 1--Landform: Mountains

Inclusion 2--Landform: Mountains; aspect: north

Inclusion 3--Landform: Mountains; position on slope: Lower; aspect: south

Major Component Description

Kanackey Series

Elevation: 3,300 to 4,200 feet

Precipitation: About 6 inches

Air temperature: About 60 degrees

Frost-free season: About 200 days

Surface rock fragments: 10 percent cobbles; 30 percent gravel

Surface layer texture: Very gravelly loam

Drainage class: Well drained

Dominant parent material: Residuum derived from quartzite

Rock outcrop Miscellaneous Area

Elevation: 3,300 to 4,200 feet

Surface layer texture: Unweathered bedrock

Dominant parent material: Residuum derived from quartzite

Dominant Present Vegetation

Kanackey: Big galleta, blackbrush

Rock outcrop: None

Inclusion 1: Big galleta, blackbrush

Inclusion 2: Big galleta, blackbrush

Inclusion 3: Big galleta, white bursage

Ecological Site

Kanackey: 030XB029NV

Rock outcrop: None

Inclusion 1: 030XB029NV

Inclusion 2: 030XB029NV
Inclusion 3: 030XB001NV

1430--Typic Torriorthents-Badland association

Composition

Major Components

Typic Torriorthents very gravelly sandy loam, 30 to 75 percent slopes--45 percent

Badland variable, 15 to 75 percent slopes--40 percent

Contrasting Inclusions

Inclusion 1: Typic Torriorthents, loamy-skeletal, mixed (calcareous), thermic very gravelly sandy loam, 15 to 30 percent slopes--7 percent

Inclusion 2: Typic Torriorthents, loamy, gypsic, thermic, shallow sandy loam, 8 to 30 percent slopes--4 percent

Inclusion 3: Typic Calciorthids, sandy-skeletal, mixed, thermic gravelly sandy loam, 0 to 4 percent slopes--2 percent

Inclusion 4: Arizo very gravelly loamy sand, 2 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts

Typic Torriorthents--Landform: Pediments; geomorphic position: backslope

Badland--Landform: Pediments; geomorphic position: backslope

Inclusion 1--Landform: Inset fans

Inclusion 2--Landform: Pediments; geomorphic position: backslope

Inclusion 3--Landform: Inset fans

Inclusion 4--Landform: Drainageways

Major Component Description

Typic Torriorthents Soils

Elevation: 2,000 to 2,800 feet

Precipitation: About 5 inches

Air temperature: About 62 degrees

Frost-free season: About 230 days

Surface rock fragments: 10 percent cobbles; 30 percent gravel

Surface layer texture: Very gravelly sandy loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from lacustrine sediments

Badland Miscellaneous Area

Elevation: 2,000 to 2,800 feet

Surface layer texture: Variable

Dominant parent material: Residuum and colluvium derived from lacustrine sediments

Dominant Present Vegetation

Typic Torriorthents: Big galleta, white bursage

Inclusion 1: Big galleta, white bursage

Inclusion 2: Big galleta, white bursage

Inclusion 3: Big galleta, white bursage

Inclusion 4: Big galleta, white bursage

Ecological Site

Typic Torriorthents: 030XB017NV

Badland: None

Inclusion 1: 030XB001NV

Inclusion 2: 030XB001NV

Inclusion 3: 030XB001NV

Inclusion 4: 030XB028NV

1460--Pintwater-Rochpah association**Composition****Major Components**

Pintwater extremely stony fine sandy loam, 30 to 50 percent slopes--45 percent

Rochpah very gravelly sandy loam, 15 to 30 percent slopes--40 percent

Contrasting Inclusions

Inclusion 1: Typic Calciorthids, loamy-skeletal, mixed, mesic gravelly sandy loam, 4 to 15 percent slopes--5 percent

Inclusion 2: Typic Torriorthents, sandy-skeletal, mixed, mesic gravelly sandy loam, 4 to 15 percent slopes--4 percent

Inclusion 3: Gabbvally very gravelly fine sandy loam, 30 to 75 percent slopes--3 percent

Inclusion 4: Rock outcrop--3 percent

Map Unit Setting

Landscape position: Mountains and intermontane basins

Pintwater--Landform: Mountains

Rochpah--Landform: Mountains

Inclusion 1--Landform: Alluvial fans

Inclusion 2--Landform: Alluvial fans

Inclusion 3--Landform: Mountains; aspect: north

Inclusion 4--Landform: Mountains

Major Component Description**Pintwater Series**

Elevation: 4,000 to 5,000 feet

Precipitation: About 8 inches

Air temperature: About 53 degrees

Frost-free season: About 130 days

Surface rock fragments: 10 percent stones and boulders; 10 percent cobbles; 30 percent gravel

Surface layer texture: Extremely stony fine sandy loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from volcanic rocks

Rochpah Series

Elevation: 4,500 to 5,200 feet

Precipitation: About 8 inches

Air temperature: About 54 degrees

Frost-free season: About 150 days

Surface rock fragments: 10 percent cobbles; 30 percent gravel

Surface layer texture: Very gravelly sandy loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Dominant Present Vegetation

Pintwater: Desert needlegrass, green ephedra

Rochpah: Indian ricegrass, blackbrush

Inclusion 1: Indian ricegrass, Nevada ephedra, desert needlegrass, spiny hopsage

Inclusion 2: Indian ricegrass, bud sagebrush, shadscale

Inclusion 3: Indian ricegrass, Wyoming big sagebrush, needleandthread

Inclusion 4: None

Ecological Site

Pintwater: 029XY085NV

Rochpah: 029XY013NV

Inclusion 1: 029XY079NV

Inclusion 2: 029XY017NV

Inclusion 3: 029XY010NV

Inclusion 4: None

1470--Tybo-Keefa-Koyen association**Composition****Major Components**

Tybo gravelly fine sandy loam, 2 to 4 percent slopes--30 percent

Keefa gravelly very fine sandy loam, 0 to 2 percent slopes--30 percent

Koyen gravelly fine sandy loam, 0 to 2 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Typic Durorthids, coarse-loamy, mixed, mesic gravelly sandy loam, 2 to 4 percent slopes--10 percent

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

Inclusion 3: Typic Durorthids, loamy, mixed, mesic, shallow gravelly sandy loam, 2 to 4 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts

Tybo--Landform: Fan remnants

Keefa--Landform: Inset fans; position on slope: Lower

Koyen--Landform: Inset fans

Inclusion 1--Landform: Fan remnants

Inclusion 2--Landform: Drainageways

Inclusion 3--Landform: Fan remnants

Major Component Description**Tybo Series**

Elevation: 4,800 to 5,500 feet

Precipitation: About 8 inches

Air temperature: About 52 degrees

Frost-free season: About 140 days

Surface rock fragments: 18 percent gravel

Surface layer texture: Gravelly fine sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Keefa Series

Elevation: 4,600 to 5,300 feet

Precipitation: About 8 inches
Air temperature: About 53 degrees
Frost-free season: About 140 days
Surface rock fragments: 25 percent gravel
Surface layer texture: Gravelly very fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Koyen Series

Elevation: 4,800 to 5,500 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 140 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from volcanic rocks

Dominant Present Vegetation

Tybo: Indian ricegrass, Nevada ephedra, desert needlegrass, spiny hopsage
 Keefa: Indian ricegrass, bud sagebrush, shadscale
 Koyen: Indian ricegrass, Nevada ephedra, desert needlegrass, spiny hopsage
 Inclusion 1: Indian ricegrass, Nevada ephedra, desert needlegrass, spiny hopsage
 Inclusion 2: None
 Inclusion 3: Indian ricegrass, Nevada ephedra, desert needlegrass, spiny hopsage

Ecological Site

Tybo: 029XY079NV
 Keefa: 029XY017NV
 Koyen: 029XY079NV
 Inclusion 1: 029XY079NV
 Inclusion 2: None
 Inclusion 3: 029XY079NV

1471--Tybo-Koyen association**Composition**

Major Components
 Tybo gravelly fine sandy loam, 2 to 4 percent slopes--60 percent
 Koyen gravelly sandy loam, 2 to 4 percent slopes--25 percent
Contrasting Inclusions
 Inclusion 1: Geer sandy loam, 0 to 2 percent slopes--8 percent
 Inclusion 2: Delamar gravelly sandy loam, 2 to 4 percent slopes--3 percent
 Inclusion 3: Leo sandy loam, 2 to 4 percent slopes--2 percent
 Inclusion 4: Riverwash very gravelly loamy sand, 2 to 4 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Tybo--Landform: Fan remnants
 Koyen--Landform: Inset fans

Inclusion 1--Landform: Fan skirts
 Inclusion 2--Landform: Fan remnants; position on slope: Upper
 Inclusion 3--Landform: Inset fans
 Inclusion 4--Landform: Drainageways

Major Component Description**Tybo Series**

Elevation: 4,700 to 5,500 feet
Precipitation: About 8 inches
Air temperature: About 52 degrees
Frost-free season: About 140 days
Surface rock fragments: 18 percent gravel
Surface layer texture: Gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Koyen Series

Elevation: 4,700 to 5,500 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 140 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from volcanic rocks

Dominant Present Vegetation

Tybo: Indian ricegrass, Nevada ephedra, desert needlegrass, spiny hopsage
 Koyen: Indian ricegrass, Nevada ephedra, desert needlegrass, spiny hopsage
 Inclusion 1: Indian ricegrass, winterfat
 Inclusion 2: Indian ricegrass, Nevada ephedra, desert needlegrass, spiny hopsage
 Inclusion 3: Indian ricegrass, Nevada ephedra, desert needlegrass, spiny hopsage
 Inclusion 4: None

Ecological Site

Tybo: 029XY079NV
 Koyen: 029XY079NV
 Inclusion 1: 029XY042NV
 Inclusion 2: 029XY079NV
 Inclusion 3: 029XY079NV
 Inclusion 4: None

1472--Tybo-Geer association**Composition****Major Components**

Tybo gravelly fine sandy loam, 0 to 2 percent slopes--55 percent
 Geer fine sandy loam, 0 to 2 percent slopes--35 percent
Contrasting Inclusions
 Inclusion 1: Koyen gravelly sandy loam, 0 to 2 percent slopes--6 percent
 Inclusion 2: Penoyer very fine sandy loam, 0 to 2 percent slopes--2 percent

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

Map Unit Setting

Landscape position: Fan piedmonts

Tybo--Landform: Fan remnants

Geer--Landform: Inset fans

Inclusion 1--Landform: Inset fans; position on slope: Upper

Inclusion 2--Landform: Inset fans; position on slope: Lower

Inclusion 3--Landform: Drainageways

Major Component Description

Tybo Series

Elevation: 4,700 to 5,200 feet

Precipitation: About 8 inches

Air temperature: About 52 degrees

Frost-free season: About 140 days

Surface rock fragments: 18 percent gravel

Surface layer texture: Gravelly fine sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Geer Series

Elevation: 4,700 to 5,200 feet

Precipitation: About 7 inches

Air temperature: About 52 degrees

Frost-free season: About 140 days

Surface rock fragments: 5 percent gravel

Surface layer texture: Fine sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Tybo: Indian ricegrass, Nevada ephedra, desert needlegrass, spiny hopsage

Geer: Indian ricegrass, winterfat

Inclusion 1: Indian ricegrass, Nevada ephedra, desert needlegrass, spiny hopsage

Inclusion 2: Indian ricegrass, winterfat

Inclusion 3: None

Ecological Site

Tybo: 029XY079NV

Geer: 029XY042NV

Inclusion 1: 029XY079NV

Inclusion 2: 029XY020NV

Inclusion 3: None

1473--Tybo-Leo association

Composition

Major Components

Tybo gravelly fine sandy loam, 2 to 4 percent slopes--60 percent

Leo very gravelly sandy loam, 2 to 4 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Koyen gravelly sandy loam, 2 to 4 percent slopes--8 percent

Inclusion 2: Riverwash very gravelly loamy sand, 2 to 4 percent slopes--4 percent

Inclusion 3: Delamar gravelly sandy loam, 2 to 4 percent slopes--3 percent

Map Unit Setting

Landscape position: Fan piedmonts

Tybo--Landform: Fan remnants

Leo--Landform: Inset fans

Inclusion 1--Landform: Inset fans; position on slope: Lower

Inclusion 2--Landform: Drainageways

Inclusion 3--Landform: Fan remnants; position on slope: Upper

Major Component Description

Tybo Series

Elevation: 4,800 to 5,200 feet

Precipitation: About 8 inches

Air temperature: About 52 degrees

Frost-free season: About 140 days

Surface rock fragments: 18 percent gravel

Surface layer texture: Gravelly fine sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Leo Series

Elevation: 4,800 to 5,200 feet

Precipitation: About 8 inches

Air temperature: About 53 degrees

Frost-free season: About 140 days

Surface rock fragments: 48 percent gravel

Surface layer texture: Very gravelly sandy loam

Drainage class: Excessively drained

Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Tybo: Indian ricegrass, Nevada ephedra, desert needlegrass, spiny hopsage

Leo: Indian ricegrass, Nevada ephedra, desert needlegrass, spiny hopsage

Inclusion 1: Indian ricegrass, Nevada ephedra, desert needlegrass, spiny hopsage

Inclusion 2: None

Inclusion 3: Indian ricegrass, Nevada ephedra, desert needlegrass, spiny hopsage

Ecological Site

Tybo: 029XY079NV

Leo: 029XY079NV

Inclusion 1: 029XY079NV

Inclusion 2: None

Inclusion 3: 029XY079NV

1474--Tybo-Delamar association

Composition

Major Components

Tybo gravelly fine sandy loam, 2 to 8 percent slopes--70 percent

Delamar sandy loam, 2 to 4 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Koyen gravelly sandy loam, 0 to 4 percent slopes--8 percent

Inclusion 2: Riverwash very gravelly loamy sand, 0 to 4 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts

Tybo--Landform: Fan remnants; position on slope: Lower

Delamar--Landform: Fan remnants; position on slope:

Upper

Inclusion 1--Landform: Inset fans

Inclusion 2--Landform: Drainageways

Major Component Description

Tybo Series

Elevation: 4,800 to 5,500 feet

Precipitation: About 8 inches

Air temperature: About 52 degrees

Frost-free season: About 140 days

Surface rock fragments: 18 percent gravel

Surface layer texture: Gravelly fine sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Delamar Series

Elevation: 4,600 to 5,200 feet

Precipitation: About 8 inches

Air temperature: About 53 degrees

Frost-free season: About 140 days

Surface rock fragments: 5 percent gravel

Surface layer texture: Sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Tybo: Indian ricegrass, spiny hopsage, spiny menodora

Delamar: Indian ricegrass, spiny hopsage, spiny menodora

Inclusion 1: Indian ricegrass, Nevada ephedra, desert needlegrass, spiny hopsage

Inclusion 2: None

Ecological Site

Tybo: 029XY031NV

Delamar: 029XY031NV

Inclusion 1: 029XY079NV

Inclusion 2: None

1490--Keefa-Penoyer association

Composition

Major Components

Keefa sandy loam, 0 to 2 percent slopes--70 percent

Penoyer silt loam, 0 to 2 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Duric Haplargids, fine-loamy, mixed, mesic very fine sandy loam, 2 to 4 percent slopes--6 percent

Inclusion 2: Typic Torriorthents, coarse-silty, mixed (calcareous), mesic very fine sandy loam, 0 to 2 percent slopes--5 percent

Inclusion 3: Typic Torriorthents, coarse-loamy, mixed (calcareous), mesic very gravelly sandy loam, 0 to 2 percent slopes--4 percent

Map Unit Setting

Landscape position: Bolsons

Keefa--Landform: Fan skirts

Penoyer--Landform: Alluvial flats

Inclusion 1--Landform: Alluvial flats

Inclusion 2--Landform: Fan skirts; position on slope: Lower

Inclusion 3--Landform: Inset fans

Major Component Description

Keefa Series

Elevation: 4,800 to 5,200 feet

Precipitation: About 8 inches

Air temperature: About 53 degrees

Frost-free season: About 140 days

Surface rock fragments: 7 percent gravel

Surface layer texture: Sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Penoyer Series

Elevation: 4,800 to 5,200 feet

Precipitation: About 8 inches

Air temperature: About 53 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

Keefa: Indian ricegrass, bud sagebrush, shadscale

Penoyer: Indian ricegrass, winterfat

Inclusion 1: Indian ricegrass, bud sagebrush, shadscale

Inclusion 2: Indian ricegrass, bud sagebrush, shadscale

Inclusion 3: Indian ricegrass, fourwing saltbush, winterfat

Ecological Site

Keefa: 029XY017NV

Penoyer: 029XY020NV

Inclusion 1: 029XY017NV

Inclusion 2: 029XY017NV

Inclusion 3: 029XY046NV

1491--Keefa, warm-Penoyer association

Composition

Major Components

Keefa sandy loam, 0 to 2 percent slopes--70 percent

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

Contrasting Inclusions

Inclusion 1: Typic Torriorthents, coarse-silty, mixed (calcareous), mesic very fine sandy loam, 0 to 2 percent slopes--10 percent

Map Unit Setting

Landscape position: Bolsons
Keefa--Landform: Fan skirts
Penoyer--Landform: Alluvial flats
Inclusion 1--Landform: Fan skirts; position on slope: Lower

Major Component Description**Keefa Series**

Elevation: 4,400 to 4,600 feet
Precipitation: About 8 inches
Air temperature: About 53 degrees
Frost-free season: About 140 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Penoyer Series

Elevation: 4,400 to 4,600 feet
Precipitation: About 8 inches
Air temperature: About 53 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

Keefa: Indian ricegrass, shadscale, white bursage
 Penoyer: Indian ricegrass, winterfat
 Inclusion 1: Indian ricegrass, bud sagebrush, shadscale

Ecological Site

Keefa: 029XY039NV
 Penoyer: 029XY020NV
 Inclusion 1: 029XY017NV

1510--Koyen gravelly sandy loam, 2 to 4 percent slopes**Composition****Major Components**

Koyen gravelly sandy loam, 2 to 4 percent slopes--90 percent

Contrasting Inclusions

Inclusion 1: Typic Camborthids, coarse-loamy, mixed, mesic gravelly sandy loam, 0 to 2 percent slopes--5 percent
 Inclusion 2: Typic Torriorthents, coarse-loamy, mixed (calcareous), mesic gravelly sandy loam, 0 to 2 percent slopes--5 percent

Map Unit Setting

Landscape position: Piedmont slopes
Koyen--Landform: Fan skirts
Inclusion 1--Landform: Fan skirts; position on slope: Lower
Inclusion 2--Landform: Drainageways

Major Component Description**Koyen Series**

Elevation: 4,800 to 5,200 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 140 days
Surface rock fragments: 15 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from volcanic rocks

Dominant Present Vegetation

Koyen: Indian ricegrass, Nevada ephedra, desert needlegrass, spiny hopsage
 Inclusion 1: Indian ricegrass, winterfat
 Inclusion 2: Indian ricegrass, fourwing saltbush, winterfat

Ecological Site

Koyen: 029XY079NV
 Inclusion 1: 029XY042NV
 Inclusion 2: 029XY046NV

1512--Koyen-Penoyer association**Composition****Major Components**

Koyen gravelly fine sandy loam, 2 to 4 percent slopes--45 percent
 Penoyer silt loam, 0 to 2 percent slopes--40 percent

Contrasting Inclusions

Inclusion 1: Tybo gravelly sandy loam, 2 to 4 percent slopes--9 percent
 Inclusion 2: Riverwash very gravelly loamy sand, 0 to 4 percent slopes--6 percent

Map Unit Setting

Landscape position: Piedmont slopes
Koyen--Landform: Fan skirts; position on slope: Upper
Penoyer--Landform: Fan skirts; position on slope: Lower
Inclusion 1--Landform: Fan remnants
Inclusion 2--Landform: Drainageways

Major Component Description**Koyen Series**

Elevation: 5,200 to 5,500 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 140 days
Surface rock fragments: 25 percent gravel
Surface layer texture: Gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from volcanic rocks

Penoyer Series

Elevation: 4,800 to 5,200 feet
Precipitation: About 8 inches
Air temperature: About 53 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

Koyen: Indian ricegrass, fourwing saltbush, winterfat

Penoyer: Indian ricegrass, winterfat

Inclusion 1: Indian ricegrass, Nevada ephedra, desert needlegrass, spiny hopsage

Inclusion 2: None

Ecological Site

Koyen: 029XY046NV

Penoyer: 029XY020NV

Inclusion 1: 029XY079NV

Inclusion 2: None

1520--Geer-Penoyer association

Composition

Major Components

Geer fine sandy loam, 0 to 2 percent slopes--65 percent

Penoyer silt loam, 0 to 2 percent slopes--30 percent

Contrasting Inclusions

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

Map Unit Setting

Landscape position: Bolsons

Geer--Landform: Fan skirts

Penoyer--Landform: Alluvial flats

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

Major Component Description

Geer Series

Elevation: 4,300 to 4,600 feet

Precipitation: About 7 inches

Air temperature: About 53 degrees

Frost-free season: About 140 days

Surface rock fragments: 5 percent gravel

Surface layer texture: Fine sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Penoyer Series

Elevation: 3,500 to 4,500 feet

Precipitation: About 8 inches

Air temperature: About 53 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

Geer: Indian ricegrass, winterfat

Penoyer: Indian ricegrass, winterfat

Inclusion 1: Indian ricegrass, Nevada ephedra, desert needlegrass, spiny hopsage

Ecological Site

Geer: 029XY042NV

Penoyer: 029XY020NV

Inclusion 1: 029XY079NV

1530--Delamar-Leo association

Composition

Major Components

Delamar gravelly sandy loam, 2 to 4 percent slopes--60 percent

Leo gravelly sandy loam, 2 to 4 percent slopes--30 percent

Contrasting Inclusions

Inclusion 1: Riverwash very gravelly loamy sand, 0 to 4 percent slopes--5 percent

Inclusion 2: Tybo gravelly sandy loam, 2 to 4 percent slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts

Delamar--Landform: Fan remnants

Leo--Landform: Inset fans

Inclusion 1--Landform: Drainageways

Inclusion 2--Landform: Fan remnants; position on slope: Lower

Major Component Description

Delamar Series

Elevation: 4,600 to 5,300 feet

Precipitation: About 8 inches

Air temperature: About 53 degrees

Frost-free season: About 140 days

Surface rock fragments: 30 percent gravel

Surface layer texture: Gravelly sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Leo Series

Elevation: 4,500 to 5,300 feet

Precipitation: About 8 inches

Air temperature: About 53 degrees

Frost-free season: About 140 days

Surface rock fragments: 25 percent gravel

Surface layer texture: Gravelly sandy loam

Drainage class: Excessively drained

Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Delamar: Indian ricegrass, Nevada ephedra, desert needlegrass, spiny hopsage

Leo: Indian ricegrass, Nevada ephedra, desert needlegrass, spiny hopsage

Inclusion 1: None

Inclusion 2: Indian ricegrass, Nevada ephedra, desert needlegrass, spiny hopsage

Ecological Site

Delamar: 029XY079NV

Leo: 029XY079NV

Inclusion 1: None
Inclusion 2: 029XY079NV

1531--Delamar-Veet association

Composition

Major Components

Delamar gravelly sandy loam, 2 to 4 percent slopes--70 percent

Veet very gravelly sandy loam, 2 to 4 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Xerollic Durargids, fine-loamy, mixed, mesic very gravelly sandy loam, 4 to 15 percent slopes--6 percent

Inclusion 2: Typic Torriorthents, coarse-loamy, mixed (calcareous), mesic very gravelly sandy loam, 0 to 2 percent slopes--5 percent

Inclusion 3: Handpah very gravelly sandy loam, 2 to 4 percent slopes--4 percent

Map Unit Setting

Landscape position: Fan piedmonts

Delamar--Landform: Fan remnants; geomorphic position: summit

Veet--Landform: Inset fans; position on slope: Lower
Inclusion 1--Landform: Fan remnants; geomorphic position: backslope

Inclusion 2--Landform: Inset fans

Inclusion 3--Landform: Fan remnants; position on slope: Upper

Major Component Description

Delamar Series

Elevation: 4,600 to 5,300 feet

Precipitation: About 8 inches

Air temperature: About 53 degrees

Frost-free season: About 140 days

Surface rock fragments: 2 percent cobbles; 29 percent gravel

Surface layer texture: Gravelly sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Veet Series

Elevation: 4,400 to 5,300 feet

Precipitation: About 8 inches

Air temperature: About 53 degrees

Frost-free season: About 135 days

Surface rock fragments: 7 percent cobbles; 41 percent gravel

Surface layer texture: Very gravelly sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Delamar: Indian ricegrass, Nevada ephedra, desert needlegrass, spiny hopsage

Veet: Indian ricegrass, Wyoming big sagebrush, desert needlegrass

Inclusion 1: Indian ricegrass, Wyoming big sagebrush, needleandthread

Inclusion 2: Indian ricegrass, Nevada ephedra, desert needlegrass, spiny hopsage

Inclusion 3: Indian ricegrass, Wyoming big sagebrush, needleandthread

Ecological Site

Delamar: 029XY079NV

Veet: 029XY049NV

Inclusion 1: 029XY006NV

Inclusion 2: 029XY079NV

Inclusion 3: 029XY006NV

1533--Delamar-Tybo-Koyen association

Composition

Major Components

Delamar sandy loam, 2 to 8 percent slopes--45 percent
Tybo gravelly fine sandy loam, 2 to 4 percent slopes--25 percent

Koyen gravelly sandy loam, 2 to 4 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Xerollic Camborthids, coarse-loamy, mixed, mesic very gravelly sandy loam, 2 to 4 percent slopes--7 percent

Inclusion 2: Typic Torriorthents, sandy, mixed, mesic gravelly loamy sand, 2 to 4 percent slopes--7 percent

Inclusion 3: Riverwash very gravelly loamy sand, 2 to 4 percent slopes--1 percent

Map Unit Setting

Landscape position: Fan piedmonts

Delamar--Landform: Fan remnants

Tybo--Landform: Fan remnants; position on slope: Lower

Koyen--Landform: Inset fans

Inclusion 1--Landform: Inset fans; position on slope: Upper

Inclusion 2--Landform: Drainageways

Inclusion 3--Landform: Drainageways

Major Component Description

Delamar Series

Elevation: 4,600 to 5,400 feet

Precipitation: About 8 inches

Air temperature: About 53 degrees

Frost-free season: About 140 days

Surface rock fragments: 5 percent gravel

Surface layer texture: Sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Tybo Series

Elevation: 4,300 to 5,000 feet

Precipitation: About 8 inches

Air temperature: About 53 degrees

Frost-free season: About 140 days

Surface rock fragments: 18 percent gravel

Surface layer texture: Gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Koyen Series

Elevation: 4,300 to 5,400 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 140 days
Surface rock fragments: 25 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from volcanic rocks

Dominant Present Vegetation

Delamar: Indian ricegrass, Nevada ephedra, desert needlegrass, spiny hopsage
 Tybo: Indian ricegrass, Nevada ephedra, desert needlegrass, spiny hopsage
 Koyen: Indian ricegrass, Nevada ephedra, desert needlegrass, spiny hopsage
 Inclusion 1: Indian ricegrass, Wyoming big sagebrush, needleandthread
 Inclusion 2: Indian ricegrass, fourwing saltbush, hollyleaf bursage
 Inclusion 3: None

Ecological Site

Delamar: 029XY079NV
 Tybo: 029XY079NV
 Koyen: 029XY079NV
 Inclusion 1: 029XY006NV
 Inclusion 2: 029XY072NV
 Inclusion 3: None

1534--Delamar-Koyen association**Composition****Major Components**

Delamar gravelly sandy loam, 0 to 2 percent slopes--70 percent
 Koyen gravelly sandy loam, 0 to 2 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Geer sandy loam, 0 to 2 percent slopes--8 percent
 Inclusion 2: Tybo gravelly sandy loam, 0 to 2 percent slopes--5 percent
 Inclusion 3: Typic Torriorthents, sandy, mixed, mesic gravelly loamy sand, 0 to 2 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Delamar--Landform: Fan remnants
 Koyen--Landform: Inset fans
 Inclusion 1--Landform: Inset fans; position on slope: Lower
 Inclusion 2--Landform: Fan remnants; position on slope: Lower
 Inclusion 3--Landform: Drainageways

Major Component Description**Delamar Series**

Elevation: 4,600 to 5,400 feet
Precipitation: About 8 inches
Air temperature: About 53 degrees
Frost-free season: About 140 days
Surface rock fragments: 2 percent cobbles; 29 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Koyen Series

Elevation: 4,600 to 5,400 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 140 days
Surface rock fragments: 25 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from volcanic rocks

Dominant Present Vegetation

Delamar: Indian ricegrass, Nevada ephedra, desert needlegrass, spiny hopsage
 Koyen: Indian ricegrass, Nevada ephedra, desert needlegrass, spiny hopsage
 Inclusion 1: Indian ricegrass, winterfat
 Inclusion 2: Indian ricegrass, Nevada ephedra, desert needlegrass, spiny hopsage
 Inclusion 3: Indian ricegrass, fourwing saltbush, hollyleaf bursage

Ecological Site

Delamar: 029XY079NV
 Koyen: 029XY079NV
 Inclusion 1: 029XY042NV
 Inclusion 2: 029XY079NV
 Inclusion 3: 029XY072NV

1535--Delamar gravelly sandy loam, 2 to 8 percent slopes**Composition****Major Components**

Delamar gravelly sandy loam, 2 to 8 percent slopes--85 percent

Contrasting Inclusions

Inclusion 1: Koyen gravelly sandy loam, 0 to 2 percent slopes--9 percent
 Inclusion 2: Typic Torriorthents, sandy-skeletal, mixed, mesic very gravelly loamy sand, 0 to 2 percent slopes--6 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Delamar--Landform: Fan remnants
 Inclusion 1--Landform: Inset fans
 Inclusion 2--Landform: Drainageways

Major Component Description**Delamar Series**

Elevation: 4,600 to 5,300 feet
Precipitation: About 8 inches
Air temperature: About 53 degrees
Frost-free season: About 140 days
Surface rock fragments: 30 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Delamar: Indian ricegrass, spiny hopsage, spiny menodora
 Inclusion 1: Indian ricegrass, spiny hopsage, spiny menodora
 Inclusion 2: Indian ricegrass, fourwing saltbush, hollyleaf bursage

Ecological Site

Delamar: 029XY031NV
 Inclusion 1: 029XY031NV
 Inclusion 2: 029XY072NV

1540--Oleman-Leo association**Composition****Major Components**

Oleman very gravelly fine sandy loam, 4 to 15 percent slopes--75 percent
 Leo very gravelly sandy loam, 2 to 8 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Ustochreptic Calciorthids, coarse-loamy, mixed, mesic gravelly sandy loam, 2 to 4 percent slopes--5 percent
 Inclusion 2: Riverwash very gravelly loamy sand, 2 to 8 percent slopes--2 percent
 Inclusion 3: Typic Torriorthents, sandy-skeletal, mixed, mesic gravelly sandy loam, 2 to 8 percent slopes--3 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Oleman--Landform: Fan remnants
 Leo--Landform: Inset fans
 Inclusion 1--Landform: Fan remnants; position on slope: Lower
 Inclusion 2--Landform: Drainageways
 Inclusion 3--Landform: Drainageways

Major Component Description**Oleman Series**

Elevation: 4,200 to 5,200 feet
Precipitation: About 9 inches
Air temperature: About 53 degrees
Frost-free season: About 140 days
Surface rock fragments: 6 percent cobbles; 30 percent

gravel

Surface layer texture: Very gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Leo Series

Elevation: 4,200 to 5,200 feet
Precipitation: About 8 inches
Air temperature: About 53 degrees
Frost-free season: About 140 days
Surface rock fragments: 48 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Excessively drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Oleman: Blackbrush, desert needlegrass
 Leo: Indian ricegrass, Nevada ephedra, desert needlegrass, spiny hopsage
 Inclusion 1: Blackbrush, desert needlegrass
 Inclusion 2: None
 Inclusion 3: Indian ricegrass, big sagebrush, desert peachbrush

Ecological Site

Oleman: 029XY077NV
 Leo: 029XY079NV
 Inclusion 1: 029XY077NV
 Inclusion 2: None
 Inclusion 3: 029XY009NV

1541--Oleman-Cave association**Composition****Major Components**

Oleman gravelly sandy loam, 4 to 8 percent slopes--55 percent
 Cave very gravelly sandy loam, 4 to 15 percent slopes--30 percent

Contrasting Inclusions

Inclusion 1: Ustic Torriorthents, loamy-skeletal, mixed (calcareous), mesic very gravelly sandy loam, 2 to 4 percent slopes--8 percent
 Inclusion 2: Ustollic Haplargids, fine-loamy, mixed, mesic gravelly sandy loam, 4 to 8 percent slopes--5 percent
 Inclusion 3: Ustic Torriorthents, sandy-skeletal, mixed, mesic gravelly sandy loam, 2 to 4 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Oleman--Landform: Fan remnants
 Cave--Landform: Fan remnants; geomorphic position: backslope; aspect: south
 Inclusion 1--Landform: Inset fans
 Inclusion 2--Landform: Fan remnants; geomorphic position: backslope; position on slope: Upper
 Inclusion 3--Landform: Drainageways

Major Component Description**Oleman Series***Elevation:* 4,200 to 4,800 feet*Precipitation:* About 9 inches*Air temperature:* About 55 degrees*Frost-free season:* About 150 days*Surface rock fragments:* 30 percent gravel*Surface layer texture:* Gravelly sandy loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks**Cave Series***Elevation:* 4,200 to 4,800 feet*Precipitation:* About 6 inches*Air temperature:* About 55 degrees*Frost-free season:* About 180 days*Surface rock fragments:* 3 percent cobbles; 44 percent gravel*Surface layer texture:* Very gravelly sandy loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks**Dominant Present Vegetation**

Oleman: Blackbrush, desert needlegrass

Cave: Big galleta, blackbrush

Inclusion 1: Blackbrush, desert needlegrass

Inclusion 2: Blackbrush, desert needlegrass

Inclusion 3: Indian ricegrass, big sagebrush, desert peachbrush

Ecological Site

Oleman: 029XY077NV

Cave: 030XB029NV

Inclusion 1: 029XY077NV

Inclusion 2: 029XY077NV

Inclusion 3: 029XY009NV

1542--Oleman gravelly sandy loam, 4 to 15 percent slopes**Composition****Major Components**

Oleman gravelly sandy loam, 4 to 15 percent slopes--85 percent

Contrasting Inclusions

Inclusion 1: Typic Torriorthents, coarse-loamy, mixed (calcareous), thermic very gravelly sandy loam, 2 to 4 percent slopes--6 percent

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

Inclusion 3: Typic Torriorthents, sandy-skeletal, mixed, thermic gravelly loamy sand, 2 to 4 percent slopes--3 percent

Inclusion 4: Riverwash very gravelly loamy sand, 2 to 4 percent slopes--1 percent

Map Unit Setting*Landscape position:* Fan piedmonts

Oleman--Landform: Fan remnants

Inclusion 1--Landform: Inset fans

Inclusion 2--Landform: Fan remnants

Inclusion 3--Landform: Drainageways

Inclusion 4--Landform: Drainageways

Major Component Description**Oleman Series***Elevation:* 4,200 to 5,300 feet*Precipitation:* About 9 inches*Air temperature:* About 53 degrees*Frost-free season:* About 140 days*Surface rock fragments:* 10 percent cobbles; 30 percent gravel*Surface layer texture:* Gravelly sandy loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks**Dominant Present Vegetation**

Oleman: Blackbrush, desert needlegrass

Inclusion 1: Big galleta, blackbrush

Inclusion 2: Blackbrush, desert needlegrass

Inclusion 3: Big galleta, white bursage

Inclusion 4: None

Ecological Site

Oleman: 029XY077NV

Inclusion 1: 030XB029NV

Inclusion 2: 029XY077NV

Inclusion 3: 030XB028NV

Inclusion 4: None

1550--Pahroc-Leo association**Composition****Major Components**

Pahroc very gravelly very fine sandy loam, 4 to 15 percent slopes--50 percent

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

Contrasting Inclusions

Inclusion 1: Xerollic Durorthids, loamy-skeletal, mixed, mesic gravelly sandy loam, 15 to 30 percent slopes--8 percent

Inclusion 2: Typic Torriorthents, loamy-skeletal, mixed (calcareous), mesic very gravelly sandy loam, 2 to 8 percent slopes--3 percent

Inclusion 3: Xeric Torriorthents, sandy-skeletal, mixed, mesic gravelly sandy loam, 2 to 8 percent slopes--2 percent

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

Map Unit Setting*Landscape position:* Fan piedmonts

Pahroc--Landform: Fan remnants

Leo--Landform: Inset fans

Inclusion 1--Landform: Fan remnants; geomorphic position: backslope

Inclusion 2--Landform: Inset fans; position on slope: Lower

Inclusion 3--Landform: Inset fans; position on slope: Upper
Inclusion 4--Landform: Drainageways

Major Component Description

Pahroc Series

Elevation: 5,200 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 53 degrees
Frost-free season: About 160 days
Surface rock fragments: 5 percent cobbles; 35 percent gravel
Surface layer texture: Very gravelly very fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Leo Series

Elevation: 5,200 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 53 degrees
Frost-free season: About 140 days
Surface rock fragments: 48 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Excessively drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Pahroc: Indian ricegrass, blackbrush, desert needlegrass
Leo: Indian ricegrass, Nevada ephedra, desert needlegrass, spiny hopsage
Inclusion 1: Blackbrush, desert needlegrass
Inclusion 2: Indian ricegrass, fourwing saltbush, winterfat
Inclusion 3: Indian ricegrass, big sagebrush, desert peachbrush
Inclusion 4: None

Ecological Site

Pahroc: 029XY019NV
Leo: 029XY079NV
Inclusion 1: 029XY077NV
Inclusion 2: 029XY046NV
Inclusion 3: 029XY009NV
Inclusion 4: None

1551--Pahroc very gravelly very fine sandy loam, 4 to 15 percent slopes

Composition

Major Components

Pahroc very gravelly very fine sandy loam, 4 to 15 percent slopes--85 percent

Contrasting Inclusions

Inclusion 1: Xerollic Calciorthis, sandy-skeletal, mixed, mesic gravelly sandy loam, 2 to 4 percent slopes--8 percent
Inclusion 2: Xerollic Durorthis, loamy-skeletal, mixed, mesic gravelly sandy loam, 2 to 8 percent slopes--4 percent
Inclusion 3: Riverwash very gravelly loamy sand, 2 to 4 percent slopes--3 percent

Map Unit Setting

Landscape position: Fan piedmonts
Pahroc--Landform: Fan remnants
Inclusion 1--Landform: Inset fans
Inclusion 2--Landform: Fan remnants
Inclusion 3--Landform: Drainageways

Major Component Description

Pahroc Series

Elevation: 4,200 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 53 degrees
Frost-free season: About 160 days
Surface rock fragments: 3 percent cobbles; 45 percent gravel
Surface layer texture: Very gravelly very fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Pahroc: Indian ricegrass, blackbrush, desert needlegrass
Inclusion 1: Blackbrush, desert needlegrass
Inclusion 2: Blackbrush, desert needlegrass
Inclusion 3: None

Ecological Site

Pahroc: 029XY019NV
Inclusion 1: 029XY077NV
Inclusion 2: 029XY077NV
Inclusion 3: None

1570--Kyler-Eaglepass-Rock outcrop association

Composition

Major Components

Kyler extremely cobbly loam, 30 to 50 percent slopes--50 percent
Eaglepass extremely stony loam, 30 to 75 percent slopes--20 percent
Rock outcrop unweathered bedrock, 30 to 75 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Xerollic Paleorthis, loamy-skeletal, carbonatic, mesic gravelly sandy loam, 4 to 8 percent slopes--5 percent
Inclusion 2: Xeric Torriorthis, sandy-skeletal, mixed, mesic gravelly sandy loam, 2 to 8 percent slopes--3 percent
Inclusion 3: Riverwash very gravelly loamy sand, 4 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Mountains
Kyler--Landform: Mountains
Eaglepass--Landform: Mountains; position on slope: Upper; aspect: north
Rock outcrop--Landform: Mountains; geomorphic position: summit
Inclusion 1--Landform: Mountains

Inclusion 2--Landform: Drainageways
Inclusion 3--Landform: Drainageways

Major Component Description

Kyler Series

Elevation: 5,600 to 6,500 feet
Precipitation: About 8 inches
Air temperature: About 50 degrees
Frost-free season: About 130 days
Surface rock fragments: 30 percent cobbles; 35 percent gravel
Surface layer texture: Extremely cobbly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Eaglepass Series

Elevation: 5,900 to 6,800 feet
Precipitation: About 8 inches
Air temperature: About 50 degrees
Frost-free season: About 130 days
Surface rock fragments: 17 percent stones and boulders; 45 percent gravel
Surface layer texture: Extremely stony loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Rock outcrop Miscellaneous Area

Elevation: 5,600 to 6,800 feet
Surface layer texture: Unweathered bedrock
Dominant parent material: Residuum derived from limestone and dolomite

Dominant Present Vegetation

Kyler: Indian ricegrass, black sagebrush
Eaglepass: Black sagebrush, littleleaf mountainmahogany, needleandthread
Inclusion 1: Indian ricegrass, black sagebrush
Inclusion 2: Indian ricegrass, big sagebrush, desert peachbrush
Inclusion 3: None

Ecological Site

Kyler: 029XY008NV
Eaglepass: 029XY040NV
Rock outcrop: None
Inclusion 1: 029XY008NV
Inclusion 2: 029XY009NV
Inclusion 3: None

1571--Kyler-Logring-Rock outcrop association

Composition

Major Components

Kyler extremely cobbly loam, 15 to 50 percent slopes--40 percent

Logring very gravelly loam, 15 to 75 percent slopes--30 percent
Rock outcrop unweathered bedrock, 15 to 75 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Typic Torriorthents, sandy-skeletal, mixed, mesic gravelly sandy loam, 2 to 8 percent slopes--10 percent

Map Unit Setting

Landscape position: Mountains
Kyler--Landform: Mountains
Logring--Landform: Mountains; aspect: north
Rock outcrop--Landform: Mountains
Inclusion 1--Landform: Drainageways

Major Component Description

Kyler Series

Elevation: 6,500 to 7,800 feet
Precipitation: About 8 inches
Air temperature: About 50 degrees
Frost-free season: About 115 days
Surface rock fragments: 30 percent cobbles; 35 percent gravel
Surface layer texture: Extremely cobbly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Logring Series

Elevation: 6,500 to 7,800 feet
Precipitation: About 10 inches
Air temperature: About 50 degrees
Frost-free season: About 115 days
Surface rock fragments: 15 percent cobbles; 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Rock outcrop Miscellaneous Area

Elevation: 6,500 to 7,800 feet
Surface layer texture: Unweathered bedrock
Dominant parent material: Residuum derived from limestone and dolomite

Dominant Present Vegetation

Kyler: Indian ricegrass, black sagebrush, needleandthread
Logring: Utah juniper, black sagebrush, muttongrass, singleleaf pinyon
Rock outcrop: None
Inclusion 1: Indian ricegrass, big sagebrush, desert peachbrush

Ecological Site

Kyler: 029XY014NV
Logring: 029XY069NV
Rock outcrop: None
Inclusion 1: 029XY009NV

1590--Winklo-Wyva association**Composition****Major Components**

Winklo very cobbly loam, 30 to 50 percent slopes--50 percent

Wyva very cobbly sandy loam, 30 to 50 percent slopes--35 percent

Contrasting Inclusions

Inclusion 1: Rock outcrop--5 percent

Inclusion 2: Ustollic Haplargids, fine, montmorillonitic, mesic gravelly sandy loam, 8 to 15 percent slopes--4 percent

Inclusion 3: Xerollic Camborthids, loamy-skeletal, mixed, mesic gravelly sandy loam, 2 to 4 percent slopes--3 percent

Inclusion 4: Lithic Ustic Torriorthents, loamy-skeletal, mixed (calcareous), mesic very gravelly sandy loam, 50 to 75 percent slopes--3 percent

Map Unit Setting

Landscape position: Mountains

Winklo--Landform: Mountains; aspect: south

Wyva--Landform: Mountains; aspect: north

Inclusion 1--Landform: Mountains

Inclusion 2--Landform: Mountains

Inclusion 3--Landform: Drainageways

Inclusion 4--Landform: Mountains; aspect: south

Major Component Description**Winklo Series**

Elevation: 4,200 to 5,600 feet

Precipitation: About 8 inches

Air temperature: About 52 degrees

Frost-free season: About 160 days

Surface rock fragments: 18 percent cobbles; 30 percent gravel

Surface layer texture: Very cobbly loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from volcanic rocks

Wyva Series

Elevation: 4,200 to 5,600 feet

Precipitation: About 11 inches

Air temperature: About 52 degrees

Frost-free season: About 150 days

Surface rock fragments: 30 percent cobbles; 25 percent gravel

Surface layer texture: Very cobbly sandy loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from volcanic rocks

Dominant Present Vegetation

Winklo: Blackbrush, desert needlegrass

Wyva: Indian ricegrass, big sagebrush, needleandthread

Inclusion 1: None

Inclusion 2: Blackbrush, desert needlegrass

Inclusion 3: Indian ricegrass, big sagebrush, desert peachbrush

Inclusion 4: Blackbrush, desert needlegrass

Ecological Site

Winklo: 029XY077NV

Wyva: 029XY075NV

Inclusion 1: None

Inclusion 2: 029XY077NV

Inclusion 3: 029XY009NV

Inclusion 4: 029XY077NV

1591--Winklo-Rochpah-Rock outcrop association**Composition****Major Components**

Winklo very gravelly sandy loam, 30 to 50 percent slopes--50 percent

Rochpah very gravelly sandy loam, 30 to 50 percent slopes--20 percent

Rock outcrop unweathered bedrock, 30 to 50 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Gabbvally very gravelly sandy loam, 30 to 50 percent slopes--6 percent

Inclusion 2: Kanespings very cobbly sandy loam, 30 to 50 percent slopes--6 percent

Inclusion 3: Arizo very gravelly loamy sand, 2 to 8 percent slopes--2 percent

Inclusion 4: Riverwash very gravelly loamy sand, 2 to 8 percent slopes--1 percent

Map Unit Setting

Landscape position: Mountains

Winklo--Landform: Mountains; aspect: north

Rochpah--Landform: Mountains; aspect: south

Rock outcrop--Landform: Mountains

Inclusion 1--Landform: Mountains; position on slope: Upper; aspect: north

Inclusion 2--Landform: Mountains; position on slope: Lower; aspect: south

Inclusion 3--Landform: Drainageways

Inclusion 4--Landform: Drainageways

Major Component Description**Winklo Series**

Elevation: 4,000 to 5,200 feet

Precipitation: About 8 inches

Air temperature: About 54 degrees

Frost-free season: About 160 days

Surface rock fragments: 5 percent cobbles; 35 percent gravel

Surface layer texture: Very gravelly sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from volcanic rocks

Rochpah Series

Elevation: 4,000 to 5,200 feet

Precipitation: About 8 inches

Air temperature: About 54 degrees

Frost-free season: About 160 days

Surface rock fragments: 10 percent cobbles; 40 percent gravel

Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Rock outcrop Miscellaneous Area

Elevation: 4,000 to 5,200 feet
Surface layer texture: Unweathered bedrock
Dominant parent material: Residuum derived from volcanic rocks

Dominant Present Vegetation

Winklo: Blackbrush, desert needlegrass
 Rochpah: Indian ricegrass, blackbrush
 Rock outcrop: None
 Inclusion 1: Indian ricegrass, Wyoming big sagebrush, needleandthread
 Inclusion 2: Big galleta, blackbrush
 Inclusion 3: Big galleta, white bursage
 Inclusion 4: None

Ecological Site

Winklo: 029XY077NV
 Rochpah: 029XY013NV
 Rock outcrop: None
 Inclusion 1: 029XY010NV
 Inclusion 2: 030XB029NV
 Inclusion 3: 030XB028NV
 Inclusion 4: None

1650--Handpah-Veet association

Composition

Major Components

Handpah very gravelly sandy loam, 2 to 8 percent slopes--70 percent
 Veet gravelly sandy loam, 2 to 4 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Typic Torriorthents, sandy-skeletal, mixed, mesic very gravelly sandy loam, 2 to 4 percent slopes--10 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Handpah--Landform: Fan remnants
 Veet--Landform: Inset fans
 Inclusion 1--Landform: Drainageways

Major Component Description

Handpah Series

Elevation: 4,600 to 5,300 feet
Precipitation: About 8 inches
Air temperature: About 53 degrees
Frost-free season: About 140 days
Surface rock fragments: 40 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Veet Series

Elevation: 4,600 to 5,300 feet
Precipitation: About 8 inches
Air temperature: About 53 degrees
Frost-free season: About 135 days
Surface rock fragments: 25 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Handpah: Indian ricegrass, Wyoming big sagebrush, needleandthread
 Veet: Indian ricegrass, Wyoming big sagebrush, desert needlegrass
 Inclusion 1: Indian ricegrass, Wyoming big sagebrush, needleandthread

Ecological Site

Handpah: 029XY006NV
 Veet: 029XY049NV
 Inclusion 1: 029XY006NV

1660--Dewrust-Veet association

Composition

Major Components

Dewrust very gravelly sandy loam, 4 to 8 percent slopes--70 percent
 Veet gravelly sandy loam, 2 to 4 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Oleman gravelly sandy loam, 2 to 4 percent slopes--8 percent
 Inclusion 2: Ustic Torriorthents, sandy-skeletal, mixed, mesic gravelly sandy loam, 2 to 4 percent slopes--5 percent
 Inclusion 3: Riverwash very gravelly loamy sand, 2 to 4 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Dewrust--Landform: Fan remnants
 Veet--Landform: Inset fans
 Inclusion 1--Landform: Fan remnants; position on slope: Lower
 Inclusion 2--Landform: Fan remnants; geomorphic position: backslope
 Inclusion 3--Landform: Drainageways

Major Component Description

Dewrust Series

Elevation: 4,500 to 5,200 feet
Precipitation: About 9 inches
Air temperature: About 53 degrees
Frost-free season: About 140 days
Surface rock fragments: 5 percent cobbles; 35 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Veet Series

Elevation: 4,400 to 5,200 feet

Precipitation: About 8 inches

Air temperature: About 53 degrees

Frost-free season: About 135 days

Surface rock fragments: 7 percent cobbles; 25 percent gravel

Surface layer texture: Gravelly sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Dewrust: Blackbrush, desert needlegrass

Veet: Indian ricegrass, big sagebrush, desert peachbrush

Inclusion 1: Blackbrush, desert needlegrass

Inclusion 2: Blackbrush, desert needlegrass

Inclusion 3: None

Ecological Site

Dewrust: 029XY077NV

Veet: 029XY009NV

Inclusion 1: 029XY077NV

Inclusion 2: 029XY077NV

Inclusion 3: None

1680--Rochpah-Hollace-Gabbvally association

Composition

Major Components

Rochpah very gravelly sandy loam, 30 to 50 percent slopes--50 percent

Hollace very gravelly sandy loam, 15 to 30 percent slopes--25 percent

Gabbvally very gravelly sandy loam, 30 to 50 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Akela very gravelly sandy loam, 50 to 75 percent slopes--8 percent

Inclusion 2: Typic Torriorthents, sandy-skeletal, mixed, mesic very gravelly sandy loam, 2 to 4 percent slopes--2 percent

Map Unit Setting

Landscape position: Mountains

Rochpah--Landform: Mountains

Hollace--Landform: Mountains

Gabbvally--Landform: Mountains; aspect: north

Inclusion 1--Landform: Mountains; aspect: south

Inclusion 2--Landform: Drainageways

Major Component Description

Rochpah Series

Elevation: 4,000 to 5,200 feet

Precipitation: About 8 inches

Air temperature: About 54 degrees

Frost-free season: About 150 days

Surface rock fragments: 10 percent cobbles; 40 percent gravel

Surface layer texture: Very gravelly sandy loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Hollace Series

Elevation: 4,000 to 5,200 feet

Precipitation: About 8 inches

Air temperature: About 54 degrees

Frost-free season: About 160 days

Surface rock fragments: 5 percent cobbles; 40 percent gravel

Surface layer texture: Very gravelly sandy loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Gabbvally Series

Elevation: 5,000 to 5,200 feet

Precipitation: About 10 inches

Air temperature: About 50 degrees

Frost-free season: About 130 days

Surface rock fragments: 5 percent cobbles; 45 percent gravel

Surface layer texture: Very gravelly sandy loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from volcanic rocks

Dominant Present Vegetation

Rochpah: Indian ricegrass, blackbrush

Hollace: Blackbrush, desert needlegrass

Gabbvally: Indian ricegrass, Wyoming big sagebrush, needleandthread

Inclusion 1: Indian ricegrass, Wyoming big sagebrush, needleandthread

Inclusion 2: Indian ricegrass, Nevada ephedra, desert needlegrass, spiny hopsage

Ecological Site

Rochpah: 029XY013NV

Hollace: 029XY077NV

Gabbvally: 029XY010NV

Inclusion 1: 029XY010NV

Inclusion 2: 029XY079NV

1681--Rochpah-Veet association

Composition

Major Components

Rochpah very gravelly sandy loam, 15 to 50 percent slopes--70 percent

Veet gravelly sandy loam, 2 to 4 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Ustollic Haplargids, fine-loamy, mixed, mesic gravelly fine sandy loam, 4 to 8 percent slopes--5 percent

Inclusion 2: Xeric Torriorthents, sandy-skeletal, mixed, mesic gravelly sandy loam, 2 to 4 percent slopes--4 percent

Inclusion 3: Winklo gravelly sandy loam, 30 to 50 percent slopes--4 percent

Inclusion 4: Riverwash very gravelly loamy sand, 2 to 4 percent slopes--2 percent

Map Unit Setting

Landscape position: Mountains and intermontane basins

Rochpah--Landform: Mountains

Veet--Landform: Inset fans

Inclusion 1--Landform: Alluvial fans

Inclusion 2--Landform: Drainageways

Inclusion 3--Landform: Mountains

Inclusion 4--Landform: Drainageways

Major Component Description

Rochpah Series

Elevation: 4,500 to 5,200 feet

Precipitation: About 8 inches

Air temperature: About 54 degrees

Frost-free season: About 150 days

Surface rock fragments: 10 percent cobbles; 40 percent gravel

Surface layer texture: Very gravelly sandy loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Veet Series

Elevation: 4,400 to 5,200 feet

Precipitation: About 8 inches

Air temperature: About 53 degrees

Frost-free season: About 135 days

Surface rock fragments: 7 percent cobbles; 25 percent gravel

Surface layer texture: Gravelly sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Rochpah: Indian ricegrass, blackbrush

Veet: Indian ricegrass, Wyoming big sagebrush, desert needlegrass

Inclusion 1: Indian ricegrass, Wyoming big sagebrush, needleandthread

Inclusion 2: Indian ricegrass, big sagebrush, desert peachbrush

Inclusion 3: Blackbrush, desert needlegrass

Inclusion 4: None

Ecological Site

Rochpah: 029XY013NV

Veet: 029XY049NV

Inclusion 1: 029XY006NV

Inclusion 2: 029XY009NV

Inclusion 3: 029XY077NV

Inclusion 4: None

1683--Rochpah-Rock outcrop-Leo association

Composition

Major Components

Rochpah very gravelly sandy loam, 4 to 15 percent slopes--45 percent

Rock outcrop unweathered bedrock, 4 to 15 percent slopes--30 percent

Leo very gravelly sandy loam, 2 to 4 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Riverwash very gravelly loamy sand, 0 to 4 percent slopes--5 percent

Map Unit Setting

Landscape position: Hills and intermontane basins

Rochpah--Landform: Hills

Rock outcrop--Landform: Hills; geomorphic position: backslope

Leo--Landform: Inset fans; position on slope: Lower

Inclusion 1--Landform: Drainageways

Major Component Description

Rochpah Series

Elevation: 4,500 to 5,200 feet

Precipitation: About 8 inches

Air temperature: About 54 degrees

Frost-free season: About 150 days

Surface rock fragments: 10 percent cobbles; 40 percent gravel

Surface layer texture: Very gravelly sandy loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Rock outcrop Miscellaneous Area

Elevation: 4,200 to 5,200 feet

Surface layer texture: Unweathered bedrock

Dominant parent material: Residuum derived from mixed rocks

Leo Series

Elevation: 4,200 to 4,700 feet

Precipitation: About 8 inches

Air temperature: About 53 degrees

Frost-free season: About 140 days

Surface rock fragments: 48 percent gravel

Surface layer texture: Very gravelly sandy loam

Drainage class: Excessively drained

Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Rochpah: Indian ricegrass, blackbrush

Rock outcrop: None

Leo: Indian ricegrass, Nevada ephedra, desert needlegrass, spiny hopsage

Inclusion 1: None

Ecological Site

Rochpah: 029XY013NV
 Leo: 029XY079NV
 Rock outcrop: None
 Inclusion 1: None

1690--Jolan-Geer association**Composition****Major Components**

Jolan very fine sandy loam, 2 to 4 percent slopes--70 percent
 Geer fine sandy loam, 2 to 4 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Penoyer very fine sandy loam, 0 to 2 percent slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Jolan--Landform: Fan remnants
 Geer--Landform: Inset fans
 Inclusion 1--Landform: Inset fans; position on slope: Lower

Major Component Description**Jolan Series**

Elevation: 4,500 to 5,500 feet
Precipitation: About 8 inches
Air temperature: About 50 degrees
Frost-free season: About 130 days
Surface layer texture: Very fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Geer Series

Elevation: 4,500 to 5,500 feet
Precipitation: About 7 inches
Air temperature: About 51 degrees
Frost-free season: About 140 days
Surface rock fragments: 5 percent gravel
Surface layer texture: Fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Jolan: Indian ricegrass, winterfat
 Geer: Indian ricegrass, winterfat
 Inclusion 1: Indian ricegrass, winterfat

Ecological Site

Jolan: 029XY042NV
 Geer: 029XY042NV
 Inclusion 1: 029XY020NV

1700--Sieroclipf-Veet association**Composition****Major Components**

Sieroclipf gravelly sandy loam, 2 to 8 percent slopes--75 percent
 Veet very gravelly sandy loam, 2 to 4 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Xerollic Camborthids, loamy-skeletal, carbonatic, mesic gravelly sandy loam, 8 to 15 percent slopes--6 percent
 Inclusion 2: Xerollic Paleargids, loamy-skeletal, carbonatic, mesic gravelly sandy loam, 8 to 15 percent slopes--4 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Sieroclipf--Landform: Fan remnants
 Veet--Landform: Inset fans
 Inclusion 1--Landform: Fan remnants; geomorphic position: backslope
 Inclusion 2--Landform: Fan remnants; geomorphic position: backslope

Major Component Description**Sieroclipf Series**

Elevation: 5,000 to 6,000 feet
Precipitation: About 10 inches
Air temperature: About 53 degrees
Frost-free season: About 120 days
Surface rock fragments: 30 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from lacustrine sediments

Veet Series

Elevation: 5,000 to 6,000 feet
Precipitation: About 8 inches
Air temperature: About 53 degrees
Frost-free season: About 135 days
Surface rock fragments: 7 percent cobbles; 41 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Sieroclipf: Indian ricegrass, black sagebrush
 Veet: Indian ricegrass, Wyoming big sagebrush, desert needlegrass
 Inclusion 1: Indian ricegrass, black sagebrush
 Inclusion 2: Indian ricegrass, black sagebrush

Ecological Site

Sieroclipf: 029XY008NV
 Veet: 029XY049NV
 Inclusion 1: 029XY008NV
 Inclusion 2: 029XY008NV

1710--Cliffdown gravelly sandy loam, 4 to 8 percent slopes**Composition****Major Components**

Cliffdown gravelly sandy loam, 4 to 8 percent slopes--90 percent

Contrasting Inclusions

Inclusion 1: Leo sandy loam, 4 to 8 percent slopes--6 percent

Inclusion 2: Typic Durorthids, loamy-skeletal, mixed, mesic very gravelly sandy loam, 4 to 8 percent slopes--4 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Cliffdown--Landform: Fan remnants
 Inclusion 1--Landform: Inset fans
 Inclusion 2--Landform: Inset fans

Major Component Description**Cliffdown Series**

Elevation: 5,100 to 6,000 feet
Precipitation: About 6 inches
Air temperature: About 53 degrees
Frost-free season: About 140 days
Surface rock fragments: 20 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Cliffdown: Indian ricegrass, winterfat
 Inclusion 1: Indian ricegrass, Nevada ephedra, desert needlegrass, spiny hopsage
 Inclusion 2: Indian ricegrass, winterfat

Ecological Site

Cliffdown: 029XY042NV
 Inclusion 1: 029XY079NV
 Inclusion 2: 029XY020NV

1730--Cath-Veet association**Composition****Major Components**

Cath coarse sandy loam, 2 to 4 percent slopes--80 percent
 Veet gravelly sandy loam, 2 to 4 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Xerollic Camborthids, coarse-loamy, mixed, mesic very gravelly sandy loam, 2 to 4 percent slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Cath--Landform: Fan remnants
 Veet--Landform: Inset fans
 Inclusion 1--Landform: Inset fans

Major Component Description**Cath Series**

Elevation: 5,500 to 6,000 feet
Precipitation: About 11 inches
Air temperature: About 52 degrees
Frost-free season: About 100 days
Surface rock fragments: 10 percent gravel
Surface layer texture: Coarse sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Veet Series

Elevation: 5,500 to 6,800 feet
Precipitation: About 8 inches
Air temperature: About 47 degrees
Frost-free season: About 100 days
Surface rock fragments: 7 percent cobbles; 25 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Cath: Indian ricegrass, Wyoming big sagebrush, needleandthread
 Veet: Indian ricegrass, Wyoming big sagebrush, desert needlegrass
 Inclusion 1: Indian ricegrass, Wyoming big sagebrush, needleandthread

Ecological Site

Cath: 029XY006NV
 Veet: 029XY049NV
 Inclusion 1: 029XY006NV

1740--Slaw-Playas association**Composition****Major Components**

Slaw silt loam, 0 to 2 percent slopes--65 percent
 Playas silty clay loam, 0 to 1 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Typic Torriorthents, coarse-silty, mixed (calcareous), mesic very fine sandy loam, 4 to 8 percent slopes--8 percent

Inclusion 2: Typic Torriorthents, fine-silty, mixed (calcareous), mesic silt loam, 0 to 2 percent slopes--7 percent

Map Unit Setting

Landscape position: Bolsons
Slaw--Landform: Alluvial flats
Playas--Landform: Alluvial flats
Inclusion 1--Landform: Dunes
Inclusion 2--Landform: Alluvial flats; position on slope: Upper

Major Component Description

Slaw Series

Elevation: 3,500 to 5,100 feet
Precipitation: About 6 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

Playas Miscellaneous Area

Elevation: 3,500 to 5,100 feet
Surface layer texture: Silty clay loam
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Slaw: Black greasewood, inland saltgrass
Inclusion 1: Indian ricegrass, black greasewood, shadscale
Inclusion 2: Indian ricegrass, bud sagebrush, shadscale

Ecological Site

Slaw: 029XY076NV
Playas: None
Inclusion 1: 029XY024NV
Inclusion 2: 029XY017NV

1741--Slaw silt loam, 0 to 2 percent slopes

Composition

Major Components
 Slaw silt loam, 0 to 2 percent slopes--90 percent
Contrasting Inclusions
 Inclusion 1: Typic Torriorthents, coarse-loamy, mixed (calcareous), mesic very fine sandy loam, 0 to 2 percent slopes--10 percent

Map Unit Setting

Landscape position: Bolsons
Slaw--Landform: Alluvial flats
Inclusion 1--Landform: Alluvial flats; position on slope: Upper

Major Component Description

Slaw Series

Elevation: 3,500 to 5,100 feet
Precipitation: About 6 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: Shadscale
Inclusion 1: Indian ricegrass, bud sagebrush, shadscale

Ecological Site

Slaw: 029XY059NV
Inclusion 1: 029XY017NV

1750--Chanybuck-Brier-Rock outcrop association

Composition

Major Components

Chanybuck extremely bouldery sandy loam, 30 to 75 percent slopes--55 percent
 Brier extremely bouldery sandy loam, 30 to 50 percent slopes--20 percent
 Rock outcrop unweathered bedrock, 30 to 75 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Aridic Haploxerolls, loamy-skeletal, mixed, frigid gravelly sandy loam, 30 to 75 percent slopes--6 percent
Inclusion 2: Typic Haploxerolls, coarse-loamy, mixed, mesic extremely bouldery loam, 4 to 8 percent slopes--4 percent

Map Unit Setting

Landscape position: Mountains
Chanybuck--Landform: Mountains; geomorphic position: summit
Brier--Landform: Mountains; aspect: south
Rock outcrop--Landform: Mountains; geomorphic position: backslope
Inclusion 1--Landform: Mountains; position on slope: Upper; shape of slope: concave
Inclusion 2--Landform: Mountains

Major Component Description

Chanybuck Series

Elevation: 6,500 to 7,700 feet
Precipitation: About 18 inches
Air temperature: About 44 degrees
Frost-free season: About 90 days
Surface rock fragments: 35 percent stones and boulders; 5 percent cobbles; 40 percent gravel
Surface layer texture: Extremely bouldery sandy loam
Drainage class: Well drained
Dominant parent material: Colluvium derived from volcanic rocks

Brier Series

Elevation: 5,500 to 6,800 feet
Precipitation: About 12 inches

Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent cobbles; 40 percent gravel
Surface layer texture: Extremely bouldery sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Rock outcrop Miscellaneous Area

Elevation: 5,500 to 7,700 feet
Surface layer texture: Unweathered bedrock
Dominant parent material: Residuum derived from volcanic rocks

Dominant Present Vegetation

Chanybuck: Utah serviceberry, muttongrass, singleleaf pinyon, white fir
 Brier: Utah juniper, mountain big sagebrush, muttongrass, singleleaf pinyon
 Rock outcrop: None
 Inclusion 1: Indian ricegrass, big sagebrush, needleandthread
 Inclusion 2: Mountain big sagebrush, needlegrass

Ecological Site

Chanybuck: 029XY096NV
 Brier: 029XY095NV
 Rock outcrop: None
 Inclusion 1: 029XY029NV
 Inclusion 2: 029XY050NV

1761--Wyva-Rock outcrop association

Composition

Major Components

Wyva very cobbly sandy loam, 15 to 50 percent slopes--70 percent
 Rock outcrop unweathered bedrock, 15 to 50 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Ustollic Haplargids, fine-loamy, mixed, mesic very gravelly sandy loam, 4 to 15 percent slopes--8 percent
 Inclusion 2: Xeric Torriorthents, sandy-skeletal, mixed, mesic gravelly sandy loam, 4 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Mountains
 Wyva--Landform: Mountains
 Rock outcrop--Landform: Mountains
 Inclusion 1--Landform: Mountains; geomorphic position: toeslope
 Inclusion 2--Landform: Drainageways

Major Component Description

Wyva Series

Elevation: 5,000 to 6,300 feet
Precipitation: About 11 inches
Air temperature: About 54 degrees

Frost-free season: About 135 days
Surface rock fragments: 30 percent cobbles; 25 percent gravel
Surface layer texture: Very cobbly sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Rock outcrop Miscellaneous Area

Elevation: 5,000 to 6,300 feet
Surface layer texture: Unweathered bedrock
Dominant parent material: Residuum derived from volcanic rocks

Dominant Present Vegetation

Wyva: Indian ricegrass, big sagebrush, needleandthread
 Rock outcrop: None
 Inclusion 1: Indian ricegrass, big sagebrush, needleandthread
 Inclusion 2: Indian ricegrass, big sagebrush, desert peachbrush

Ecological Site

Wyva: 029XY075NV
 Rock outcrop: None
 Inclusion 1: 029XY075NV
 Inclusion 2: 029XY009NV

1762--Wyva-Slidymtn association

Composition

Major Components

Wyva very stony sandy loam, 30 to 50 percent slopes--50 percent
 Slidymtn very gravelly sandy loam, 15 to 50 percent slopes--45 percent

Contrasting Inclusions

Inclusion 1: Cath gravelly sandy loam, 2 to 15 percent slopes--5 percent

Map Unit Setting

Landscape position: Mountains
 Wyva--Landform: Mountains
 Slidymtn--Landform: Mountains; aspect: north
 Inclusion 1--Landform: Inset fans; position on slope: Upper

Major Component Description

Wyva Series

Elevation: 4,600 to 5,200 feet
Precipitation: About 11 inches
Air temperature: About 54 degrees
Frost-free season: About 135 days
Surface rock fragments: 35 percent cobbles; 13 percent gravel
Surface layer texture: Very stony sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Slidymtn Series

Elevation: 5,200 to 6,500 feet

Precipitation: About 12 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent cobbles; 25 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Dominant Present Vegetation

Wyva: Indian ricegrass, big sagebrush, needleandthread
 Slidymtn: Gambel oak, Utah juniper, Utah serviceberry, mountain big sagebrush, singleleaf pinyon
 Inclusion 1: Indian ricegrass, Wyoming big sagebrush, needleandthread

Ecological Site

Wyva: 029XY075NV
 Slidymtn: 029XY084NV
 Inclusion 1: 029XY006NV

Frost-free season: About 130 days
Surface layer texture: Loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Veet: Indian ricegrass, Wyoming big sagebrush, desert needlegrass
 Mosida: Basin big sagebrush, basin wildrye, wheatgrass
 Inclusion 1: Indian ricegrass, big sagebrush, needleandthread
 Inclusion 2: Nevada bluegrass, rush

Ecological Site

Veet: 029XY049NV
 Mosida: 029XY025NV
 Inclusion 1: 029XY029NV
 Inclusion 2: 029XY001NV

1810--Boxspring-Rock outcrop association

1770--Veet-Mosida association

Composition

Major Components
 Veet very gravelly sandy loam, 2 to 8 percent slopes--55 percent
 Mosida loam, 2 to 4 percent slopes--35 percent
Contrasting Inclusions
 Inclusion 1: Aridic Haploxerolls, coarse-loamy, mixed, mesic very fine sandy loam, 2 to 4 percent slopes--8 percent
 Inclusion 2: Typic Haplaquolls, fine-loamy, mixed (calcareous), mesic silt loam, 2 to 4 percent slopes--2 percent

Map Unit Setting

Landscape position: Semi-bolsons
 Veet--Landform: Inset fans
 Mosida--Landform: Stream terraces
 Inclusion 1--Landform: Drainageways
 Inclusion 2--Landform: Drainageways

Major Component Description

Veet Series
Elevation: 4,500 to 5,000 feet
Precipitation: About 8 inches
Air temperature: About 53 degrees
Frost-free season: About 135 days
Surface rock fragments: 7 percent cobbles; 25 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Mosida Series

Elevation: 4,500 to 5,000 feet
Precipitation: About 10 inches
Air temperature: About 49 degrees

Composition

Major Components
 Boxspring extremely gravelly loam, 15 to 50 percent slopes--65 percent
 Rock outcrop unweathered bedrock, 15 to 50 percent slopes--20 percent
Contrasting Inclusions
 Inclusion 1: Lithic Ustic Torriorthents, loamy-skeletal, carbonatic, mesic very cobbly loam, 30 to 50 percent slopes--7 percent
 Inclusion 2: St. Thomas very gravelly sandy loam, 30 to 50 percent slopes--4 percent
 Inclusion 3: Zauqa gravelly sandy loam, 30 to 50 percent slopes--2 percent
 Inclusion 4: Ustic Torriorthents, loamy-skeletal, carbonatic, mesic gravelly sandy loam, 15 to 30 percent slopes--2 percent

Map Unit Setting

Landscape position: Mountains
 Boxspring--Landform: Mountains
 Rock outcrop--Landform: Mountains
 Inclusion 1--Landform: Mountains; position on slope: Upper; aspect: north
 Inclusion 2--Landform: Mountains; position on slope: Lower; aspect: south
 Inclusion 3--Landform: Mountains
 Inclusion 4--Landform: Mountains; geomorphic position: toeslope

Major Component Description

Boxspring Series
Elevation: 4,200 to 5,700 feet
Precipitation: About 8 inches
Air temperature: About 54 degrees
Frost-free season: About 160 days
Surface rock fragments: 15 percent cobbles; 50 percent gravel
Surface layer texture: Extremely gravelly loam

Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Rock outcrop Miscellaneous Area

Elevation: 4,200 to 5,700 feet
Surface layer texture: Unweathered bedrock
Dominant parent material: Residuum derived from limestone and dolomite

Dominant Present Vegetation

Boxspring: Blackbrush, desert needlegrass
 Rock outcrop: None
 Inclusion 1: Indian ricegrass, big sagebrush, needleandthread
 Inclusion 2: Big galleta, blackbrush
 Inclusion 3: Blackbrush, desert needlegrass
 Inclusion 4: Blackbrush, desert needlegrass

Ecological Site

Boxspring: 029XY077NV
 Rock outcrop: None
 Inclusion 1: 029XY075NV
 Inclusion 2: 030XB029NV
 Inclusion 3: 029XY077NV
 Inclusion 4: 029XY077NV

1811--Boxspring-Theriot-Rock outcrop association

Composition

Major Components

Boxspring extremely gravelly loam, 30 to 50 percent slopes--45 percent
 Theriot very stony loam, 15 to 75 percent slopes--25 percent
 Rock outcrop unweathered bedrock, 15 to 75 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Kyler extremely cobbly loam, 15 to 50 percent slopes--8 percent
 Inclusion 2: Typic Calciorthids, loamy-skeletal, mixed, mesic gravelly sandy loam, 2 to 15 percent slopes--7 percent

Map Unit Setting

Landscape position: Mountains
 Boxspring--Landform: Mountains; aspect: north
 Theriot--Landform: Mountains; aspect: south
 Rock outcrop--Landform: Mountains
 Inclusion 1--Landform: Mountains; position on slope: Upper; aspect: north
 Inclusion 2--Landform: Mountains; geomorphic position: toeslope

Major Component Description

Boxspring Series

Elevation: 4,200 to 5,700 feet
Precipitation: About 8 inches
Air temperature: About 54 degrees
Frost-free season: About 160 days

Surface rock fragments: 13 percent cobbles; 50 percent gravel

Surface layer texture: Extremely gravelly loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Theriot Series

Elevation: 4,200 to 5,700 feet

Precipitation: About 8 inches

Air temperature: About 56 degrees

Frost-free season: About 150 days

Surface rock fragments: 5 percent stones and boulders; 30 percent cobbles; 20 percent gravel

Surface layer texture: Very stony loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Rock outcrop Miscellaneous Area

Elevation: 4,200 to 5,700 feet

Surface layer texture: Unweathered bedrock

Dominant parent material: Residuum derived from limestone and dolomite

Dominant Present Vegetation

Boxspring: Blackbrush, desert needlegrass
 Theriot: Desert needlegrass, shadscale
 Rock outcrop: None
 Inclusion 1: Indian ricegrass, black sagebrush, needleandthread
 Inclusion 2: Desert needlegrass, shadscale

Ecological Site

Boxspring: 029XY077NV
 Theriot: 029XY064NV
 Rock outcrop: None
 Inclusion 1: 029XY014NV
 Inclusion 2: 029XY064NV

1821--Turba-Acti association

Composition

Major Components

Turba very gravelly sandy loam, 30 to 50 percent slopes--65 percent
 Acti very gravelly loam, 30 to 50 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Lithic Haplustolls, loamy-skeletal, mixed, frigid very gravelly loam, 50 to 75 percent slopes--8 percent
 Inclusion 2: Aridic Argiustolls, fine, montmorillonitic, mesic gravelly loam, 8 to 15 percent slopes--4 percent
 Inclusion 3: Rock outcrop--3 percent

Map Unit Setting

Landscape position: Mountains
 Turba--Landform: Mountains
 Acti--Landform: Mountains; aspect: north
 Inclusion 1--Landform: Mountains
 Inclusion 2--Landform: Mountains

Inclusion 3--Landform: Mountains

Major Component Description

Turba Series

Elevation: 6,000 to 7,000 feet
Precipitation: About 15 inches
Air temperature: About 49 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent cobbles; 40 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Acti Series

Elevation: 4,800 to 6,800 feet
Precipitation: About 15 inches
Air temperature: About 50 degrees
Frost-free season: About 120 days
Surface rock fragments: 15 percent cobbles; 40 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Dominant Present Vegetation

Turba: Utah juniper, Utah serviceberry, singleleaf pinyon, turbinella oak
 Acti: Utah juniper, Utah serviceberry, singleleaf pinyon, turbinella oak
 Inclusion 1: Utah juniper, Utah serviceberry, singleleaf pinyon, turbinella oak
 Inclusion 2: Utah juniper, Utah serviceberry, singleleaf pinyon, turbinella oak
 Inclusion 3: None

Ecological Site

Turba: 029XY078NV
 Acti: 029XY078NV
 Inclusion 1: 029XY078NV
 Inclusion 2: 029XY078NV
 Inclusion 3: None

1830--Zaqua-Winklo association

Composition

Major Components

Zaqua very gravelly sandy loam, 30 to 50 percent slopes--60 percent
 Winklo very gravelly sandy loam, 30 to 50 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Rock outcrop--6 percent
 Inclusion 2: Ustollic Haplargids, fine-loamy, mixed, mesic gravelly sandy loam, 8 to 15 percent slopes--4 percent
 Inclusion 3: Wyva very gravelly sandy loam, 30 to 50 percent slopes--3 percent
 Inclusion 4: Ustollic Camborthids, loamy-skeletal, mixed,

mesic very gravelly sandy loam, 4 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Mountains
 Zaqua--Landform: Mountains
 Winklo--Landform: Mountains; shape of slope: concave
 Inclusion 1--Landform: Mountains
 Inclusion 2--Landform: Mountains
 Inclusion 3--Landform: Mountains; aspect: north
 Inclusion 4--Landform: Inset fans

Major Component Description

Zaqua Series

Elevation: 3,600 to 5,000 feet
Precipitation: About 8 inches
Air temperature: About 54 degrees
Frost-free season: About 175 days
Surface rock fragments: 15 percent cobbles; 35 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Winklo Series

Elevation: 3,600 to 5,000 feet
Precipitation: About 8 inches
Air temperature: About 54 degrees
Frost-free season: About 170 days
Surface rock fragments: 5 percent cobbles; 35 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from volcanic rocks

Dominant Present Vegetation

Zaqua: Blackbrush, desert needlegrass
 Winklo: Blackbrush, desert needlegrass
 Inclusion 1: None
 Inclusion 2: Blackbrush, desert needlegrass
 Inclusion 3: Indian ricegrass, big sagebrush, needleandthread
 Inclusion 4: Indian ricegrass, big sagebrush, desert peachbrush

Ecological Site

Zaqua: 029XY077NV
 Winklo: 029XY077NV
 Inclusion 1: None
 Inclusion 2: 029XY077NV
 Inclusion 3: 029XY075NV
 Inclusion 4: 029XY009NV

1831--Zaqua-Boxspring association

Composition

Major Components

Zaqua very gravelly sandy loam, 30 to 50 percent slopes--65 percent

Boxspring extremely gravelly loam, 15 to 50 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Winklo gravelly sandy loam, 30 to 50 percent slopes--6 percent

Inclusion 2: Rock outcrop--5 percent

Inclusion 3: Ustollic Haplargids, fine-loamy, mixed, mesic gravelly sandy loam, 4 to 15 percent slopes--3 percent

Inclusion 4: Wyva very gravelly sandy loam, 30 to 50 percent slopes--1 percent

Map Unit Setting

Landscape position: Mountains

Zaqua--Landform: Mountains

Boxspring--Landform: Mountains

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

Inclusion 2--Landform: Mountains

Inclusion 3--Landform: Mountains

Inclusion 4--Landform: Mountains; aspect: north

Major Component Description

Zaqua Series

Elevation: 4,200 to 5,000 feet

Precipitation: About 8 inches

Air temperature: About 54 degrees

Frost-free season: About 175 days

Surface rock fragments: 15 percent cobbles; 35 percent gravel

Surface layer texture: Very gravelly sandy loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Boxspring Series

Elevation: 4,200 to 5,000 feet

Precipitation: About 8 inches

Air temperature: About 54 degrees

Frost-free season: About 160 days

Surface rock fragments: 13 percent cobbles; 50 percent gravel

Surface layer texture: Extremely gravelly loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Dominant Present Vegetation

Zaqua: Blackbrush, desert needlegrass

Boxspring: Blackbrush, desert needlegrass

Inclusion 1: Blackbrush, desert needlegrass

Inclusion 2: None

Inclusion 3: Blackbrush, desert needlegrass

Inclusion 4: Indian ricegrass, big sagebrush

Ecological Site

Zaqua: 029XY077NV

Boxspring: 029XY077NV

Inclusion 1: 029XY077NV

Inclusion 2: None

Inclusion 3: 029XY077NV

Inclusion 4: 029XY075NV

1832--Zaqua-Winklo-Kanesprings association

Composition

Major Components

Zaqua very gravelly sandy loam, 30 to 50 percent slopes--45 percent

Winklo very gravelly sandy loam, 30 to 50 percent slopes--20 percent

Kanesprings very gravelly sandy loam, 30 to 50 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Wyva very gravelly sandy loam, 30 to 50 percent slopes--7 percent

Inclusion 2: Rock outcrop--5 percent

Inclusion 3: Ustic Torriorthents, sandy-skeletal, mixed, mesic gravelly sandy loam, 15 to 30 percent slopes--2 percent

Inclusion 4: Riverwash very gravelly sandy loam, 15 to 30 percent slopes--1 percent

Map Unit Setting

Landscape position: Mountains

Zaqua--Landform: Mountains

Winklo--Landform: Mountains; shape of slope: concave

Kanesprings--Landform: Mountains; aspect: south

Inclusion 1--Landform: Mountains; position on slope: Upper

Inclusion 2--Landform: Mountains

Inclusion 3--Landform: Drainageways

Inclusion 4--Landform: Drainageways

Major Component Description

Zaqua Series

Elevation: 3,600 to 5,000 feet

Precipitation: About 8 inches

Air temperature: About 54 degrees

Frost-free season: About 175 days

Surface rock fragments: 15 percent cobbles; 35 percent gravel

Surface layer texture: Very gravelly sandy loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Winklo Series

Elevation: 3,600 to 5,000 feet

Precipitation: About 8 inches

Air temperature: About 54 degrees

Frost-free season: About 170 days

Surface rock fragments: 5 percent cobbles; 35 percent gravel

Surface layer texture: Very gravelly sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from volcanic rocks

Kanesprings Series

Elevation: 3,600 to 5,000 feet

Precipitation: About 8 inches

Air temperature: About 57 degrees

Frost-free season: About 180 days

Surface rock fragments: 2 percent cobbles; 40 percent gravel

Surface layer texture: Very gravelly sandy loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Dominant Present Vegetation

Zaqua: Blackbrush, desert needlegrass

Winklo: Blackbrush, desert needlegrass

Kanesprings: Big galleta, blackbrush

Inclusion 1: Indian ricegrass, big sagebrush, needleandthread

Inclusion 2: None

Inclusion 3: Indian ricegrass, big sagebrush, desert peachbrush

Inclusion 4: None

Ecological Site

Zaqua: 029XY077NV

Winklo: 029XY077NV

Kanesprings: 030XB029NV

Inclusion 1: 029XY075NV

Inclusion 2: None

Inclusion 3: 029XY009NV

Inclusion 4: None

1833--Zaqua-Rock outcrop association

Composition

Major Components

Zaqua very gravelly sandy loam, 30 to 50 percent slopes--55 percent

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

Contrasting Inclusions

Inclusion 1: Ustollic Paleorthids, loamy-skeletal, mixed, mesic gravelly sandy loam, 30 to 50 percent slopes--8 percent

Inclusion 2: Motoqua very cobbly loam, 30 to 50 percent slopes--7 percent

Map Unit Setting

Landscape position: Mountains

Zaqua--Landform: Mountains; geomorphic position: backslope

Rock outcrop--Landform: Mountains

Inclusion 1--Landform: Canyons; geomorphic position: backslope; shape of slope: convex

Inclusion 2--Landform: Canyons; geomorphic position: backslope; aspect: north

Major Component Description

Zaqua Series

Elevation: 3,500 to 5,000 feet

Precipitation: About 8 inches

Air temperature: About 54 degrees

Frost-free season: About 175 days

Surface rock fragments: 15 percent cobbles; 35 percent gravel

Surface layer texture: Very gravelly sandy loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Rock outcrop Miscellaneous Area

Elevation: 3,500 to 5,000 feet

Surface layer texture: Unweathered bedrock

Dominant parent material: Residuum derived from tuffaceous rocks

Dominant Present Vegetation

Zaqua: Blackbrush, desert needlegrass

Rock outcrop: None

Inclusion 1: Blackbrush, desert needlegrass

Inclusion 2: Utah juniper, muttongrass

Ecological Site

Zaqua: 029XY077NV

Rock outcrop: None

Inclusion 1: 029XY077NV

Inclusion 2: 029XY089NV

1850--Rapado-Oleman association

Composition

Major Components

Rapado very gravelly sandy loam, 8 to 30 percent slopes--55 percent

Oleman gravelly sandy loam, 2 to 8 percent slopes--30 percent

Contrasting Inclusions

Inclusion 1: Ustollic Camborthids, loamy-skeletal, mixed, mesic very gravelly sandy loam, 2 to 4 percent slopes--7 percent

Inclusion 2: Ustollic Haplargids, fine-loamy, mixed, mesic gravelly sandy loam, 4 to 8 percent slopes--5 percent

Inclusion 3: Ustic Torriorthents, sandy-skeletal, mixed, mesic gravelly sandy loam, 2 to 4 percent slopes--2 percent

Inclusion 4: Riverwash very gravelly loamy sand, 2 to 4 percent slopes--1 percent

Map Unit Setting

Landscape position: Fan piedmonts

Rapado--Landform: Fan remnants; geomorphic position: backslope

Oleman--Landform: Fan remnants; geomorphic position: summit

Inclusion 1--Landform: Inset fans

Inclusion 2--Landform: Fan remnants; geomorphic position: backslope; position on slope: Lower

Inclusion 3--Landform: Drainageways

Inclusion 4--Landform: Drainageways

Major Component Description

Rapado Series

Elevation: 4,200 to 5,000 feet

Precipitation: About 8 inches

Air temperature: About 53 degrees

Frost-free season: About 130 days

Surface rock fragments: 5 percent cobbles; 35 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Oleman Series

Elevation: 4,200 to 5,000 feet
Precipitation: About 9 inches
Air temperature: About 55 degrees
Frost-free season: About 130 days
Surface rock fragments: 30 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Rapado: Blackbrush, desert needlegrass
 Oleman: Blackbrush, desert needlegrass
 Inclusion 1: Blackbrush, desert needlegrass
 Inclusion 2: Blackbrush
 Inclusion 3: Indian ricegrass, big sagebrush, desert peachbrush
 Inclusion 4: None

Ecological Site

Rapado: 029XY077NV
 Oleman: 029XY077NV
 Inclusion 1: 029XY077NV
 Inclusion 2: 029XY077NV
 Inclusion 3: 029XY009NV
 Inclusion 4: None

1851--Rapado-Veet association**Composition****Major Components**

Rapado very gravelly fine sandy loam, 4 to 8 percent slopes--70 percent
 Veet very gravelly sandy loam, 2 to 4 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Oleman gravelly sandy loam, 2 to 4 percent slopes--8 percent
 Inclusion 2: Typic Paleorthids, sandy-skeletal, mixed, mesic gravelly sandy loam, 15 to 50 percent slopes--6 percent
 Inclusion 3: Riverwash very gravelly loamy sand, 2 to 4 percent slopes--1 percent

Map Unit Setting

Landscape position: Fan piedmonts
 Rapado--Landform: Fan remnants; geomorphic position: summit
 Veet--Landform: Inset fans
 Inclusion 1--Landform: Fan remnants; position on slope: Upper
 Inclusion 2--Landform: Fan remnants; geomorphic position: backslope

Inclusion 3--Landform: Drainageways

Major Component Description**Rapado Series**

Elevation: 4,400 to 5,000 feet
Precipitation: About 8 inches
Air temperature: About 53 degrees
Frost-free season: About 130 days
Surface rock fragments: 45 percent gravel
Surface layer texture: Very gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Veet Series

Elevation: 4,400 to 5,000 feet
Precipitation: About 8 inches
Air temperature: About 53 degrees
Frost-free season: About 135 days
Surface rock fragments: 7 percent cobbles; 41 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Rapado: Blackbrush, desert needlegrass
 Veet: Indian ricegrass, big sagebrush, desert peachbrush
 Inclusion 1: Blackbrush, desert needlegrass
 Inclusion 2: Blackbrush, desert needlegrass
 Inclusion 3: None

Ecological Site

Rapado: 029XY077NV
 Veet: 029XY009NV
 Inclusion 1: 029XY077NV
 Inclusion 2: 029XY077NV
 Inclusion 3: None

1870--Faleria-Laross association**Composition****Major Components**

Faleria gravelly sandy loam, 30 to 75 percent slopes--65 percent
 Laross cobbly loam, 30 to 75 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Lithic Haplustolls, loamy-skeletal, mixed, frigid very gravelly sandy loam, 50 to 75 percent slopes--5 percent
 Inclusion 2: Typic Argiborolls, fine-loamy, mixed, frigid cobbly loam, 15 to 30 percent slopes--5 percent
 Inclusion 3: Typic Haploborolls, loamy-skeletal, mixed, frigid gravelly sandy loam, 50 to 75 percent slopes--3 percent
 Inclusion 4: Rock outcrop--2 percent

Map Unit Setting

Landscape position: Mountains
 Faleria--Landform: Mountains

Laross--Landform: Mountains
 Inclusion 1--Landform: Mountains; aspect: south
 Inclusion 2--Landform: Mountains; geomorphic position:
 toeslope; aspect: north
 Inclusion 3--Landform: Mountains; aspect: north
 Inclusion 4--Landform: Mountains

Major Component Description

Faleria Series

Elevation: 6,200 to 7,600 feet
Precipitation: About 18 inches
Air temperature: About 43 degrees
Frost-free season: About 90 days
Surface rock fragments: 10 percent cobbles; 20 percent gravel
Surface layer texture: Gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Laross Series

Elevation: 6,200 to 7,200 feet
Precipitation: About 16 inches
Air temperature: About 50 degrees
Frost-free season: About 100 days
Surface rock fragments: 20 percent cobbles; 10 percent gravel
Surface layer texture: Cobbly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Dominant Present Vegetation

Faleria: Gambel oak, Utah serviceberry, greenleaf manzanita, muttongrass, ponderosa pine
 Laross: Utah serviceberry, mountain big sagebrush, singleleaf pinyon, turbinella oak
 Inclusion 1: Utah juniper, Utah serviceberry, singleleaf pinyon, turbinella oak
 Inclusion 2: Gambel oak, Utah serviceberry, greenleaf manzanita, muttongrass, ponderosa pine
 Inclusion 3: Utah juniper, black sagebrush, muttongrass, singleleaf pinyon
 Inclusion 4: None

Ecological Site

Faleria: 029XY086NV
 Laross: 029XY100NV
 Inclusion 1: 029XY078NV
 Inclusion 2: 029XY086NV
 Inclusion 3: 029XY083NV
 Inclusion 4: None

1880--Tejabe-Pintwater-Rock outcrop association

Composition

Major Components

Tejabe very stony sandy loam, 30 to 75 percent slopes--55 percent

Pintwater extremely stony fine sandy loam, 30 to 50 percent slopes--20 percent
 Rock outcrop unweathered bedrock, 30 to 75 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Lithic Xerollic Haplargids, loamy-skeletal, mixed, mesic very gravelly sandy loam, 30 to 50 percent slopes--7 percent
 Inclusion 2: Lithic Argixerolls, loamy-skeletal, mixed, mesic very gravelly loam, 30 to 50 percent slopes--3 percent

Map Unit Setting

Landscape position: Mountains
 Tejabe--Landform: Mountains
 Pintwater--Landform: Mountains
 Rock outcrop--Landform: Mountains; geomorphic position: backslope
 Inclusion 1--Landform: Mountains; position on slope: Lower; aspect: north
 Inclusion 2--Landform: Mountains; position on slope: Upper

Major Component Description

Tejabe Series

Elevation: 4,800 to 6,200 feet
Precipitation: About 10 inches
Air temperature: About 51 degrees
Frost-free season: About 120 days
Surface rock fragments: 10 percent stones and boulders; 6 percent cobbles; 20 percent gravel
Surface layer texture: Very stony sandy loam
Drainage class: Well drained
Dominant parent material: Residuum derived from tuffaceous rocks

Pintwater Series

Elevation: 4,000 to 5,000 feet
Precipitation: About 8 inches
Air temperature: About 53 degrees
Frost-free season: About 130 days
Surface rock fragments: 20 percent cobbles; 50 percent gravel
Surface layer texture: Extremely stony fine sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Rock outcrop Miscellaneous Area

Elevation: 4,000 to 6,200 feet
Surface layer texture: Unweathered bedrock
Dominant parent material: Residuum derived from volcanic rocks

Dominant Present Vegetation

Tejabe: Big sagebrush, desert needlegrass
 Pintwater: Desert needlegrass, green ephedra
 Rock outcrop: None
 Inclusion 1: Black sagebrush, desert needlegrass
 Inclusion 2: Utah juniper, Wyoming big sagebrush, muttongrass, singleleaf pinyon

Ecological Site

Tejabe: 029XY073NV

Pintwater: 029XY085NV
 Rock outcrop: None
 Inclusion 1: 029XY045NV
 Inclusion 2: 029XY065NV

1890--Welring-Rock outcrop association

Composition

Major Components

Welring very gravelly loam, 30 to 50 percent slopes--65 percent
 Rock outcrop unweathered bedrock, 30 to 50 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Lithic Ustollic Haplargids, loamy-skeletal, mixed, mesic cobbly loam, 30 to 50 percent slopes--7 percent
 Inclusion 2: Boxspring very cobbly loam, 30 to 50 percent slopes--5 percent
 Inclusion 3: Aridic Argiustolls, loamy-skeletal, mixed, mesic very gravelly loam, 15 to 30 percent slopes--2 percent
 Inclusion 4: Riverwash very gravelly loam, 8 to 15 percent slopes--1 percent

Map Unit Setting

Landscape position: Mountains
 Welring--Landform: Mountains
 Rock outcrop--Landform: Mountains
 Inclusion 1--Landform: Mountains
 Inclusion 2--Landform: Mountains; position on slope: Lower; aspect: north
 Inclusion 3--Landform: Mountains
 Inclusion 4--Landform: Drainageways

Major Component Description

Welring Series

Elevation: 5,200 to 7,400 feet
Precipitation: About 14 inches
Air temperature: About 52 degrees
Frost-free season: About 130 days
Surface rock fragments: 35 percent cobbles; 15 percent gravel
Surface layer texture: Very gravelly loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from limestone and dolomite

Rock outcrop Miscellaneous Area

Elevation: 5,200 to 7,400 feet
Surface layer texture: Unweathered bedrock
Dominant parent material: Residuum derived from limestone and dolomite

Dominant Present Vegetation

Welring: Utah juniper, Utah serviceberry, mountain big sagebrush, singleleaf pinyon
 Rock outcrop: None
 Inclusion 1: Indian ricegrass, big sagebrush, needleandthread
 Inclusion 2: Blackbrush, desert needlegrass
 Inclusion 3: Utah juniper, Wyoming big sagebrush, muttongrass, singleleaf pinyon

Inclusion 4: None

Ecological Site

Welring: 029XY067NV
 Rock outcrop: None
 Inclusion 1: 029XY075NV
 Inclusion 2: 029XY077NV
 Inclusion 3: 029XY065NV
 Inclusion 4: None

1900--Glendale-Bluepoint association

Composition

Major Components

Glendale loam, 0 to 2 percent slopes--70 percent
 Bluepoint loamy fine sand, 2 to 15 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Arizo gravelly loamy sand, 0 to 4 percent slopes--6 percent
 Inclusion 2: Arizo very gravelly loamy sand, 0 to 4 percent slopes--2 percent
 Inclusion 3: Riverwash very gravelly loamy sand, 0 to 4 percent slopes--2 percent

Map Unit Setting

Landscape position: Semi-bolsons
 Glendale--Landform: Stream terraces
 Bluepoint--Landform: Dunes
 Inclusion 1--Landform: Inset fans
 Inclusion 2--Landform: Drainageways
 Inclusion 3--Landform: Drainageways

Major Component Description

Glendale Series

Elevation: 2,800 to 3,400 feet
Precipitation: About 8 inches
Air temperature: About 63 degrees
Frost-free season: About 230 days
Surface layer texture: Loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from mixed rocks

Bluepoint Series

Elevation: 2,800 to 3,400 feet
Precipitation: About 5 inches
Air temperature: About 65 degrees
Frost-free season: About 230 days
Surface rock fragments: 3 percent gravel
Surface layer texture: Loamy fine sand
Drainage class: Somewhat excessively drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Glendale: Indian ricegrass, cattle saltbush
 Bluepoint: Indian ricegrass, cattle saltbush
 Inclusion 1: Indian ricegrass, big galleta, white bursage
 Inclusion 2: Big galleta, white bursage
 Inclusion 3: None

Ecological Site

Glendale: 030XY046NV
 Bluepoint: 030XY046NV
 Inclusion 1: 030XB005NV
 Inclusion 2: 030XB028NV
 Inclusion 3: None

1910--Land silt loam, 0 to 2 percent slopes**Composition****Major Components**

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

Contrasting Inclusions

Inclusion 1: Glendale loam, 0 to 2 percent slopes--6 percent
 Inclusion 2: Arizo very gravelly loamy sand, 0 to 4 percent slopes--4 percent

Map Unit Setting

Landscape position: Semi-bolsons
Land--Landform: Stream terraces
 Inclusion 1--*Landform:* Stream terraces
 Inclusion 2--*Landform:* Drainageways

Major Component Description**Land Series**

Elevation: 2,000 to 2,400 feet
Precipitation: About 5 inches
Air temperature: About 66 degrees
Frost-free season: About 240 days
Surface layer texture: Silt loam
Drainage class: Somewhat poorly drained
Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Land: Alkali sacaton, big saltbush
 Inclusion 1: Indian ricegrass, cattle saltbush
 Inclusion 2: Big galleta, white bursage

Ecological Site

Land: 030XY024NV
 Inclusion 1: 030XY046NV
 Inclusion 2: 030XB028NV

1920--Motoqua-Rock outcrop association**Composition****Major Components**

Motoqua very gravelly sandy loam, 8 to 30 percent slopes--70 percent
 Rock outcrop unweathered bedrock, 8 to 30 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Aridic Argiustolls, fine, montmorillonitic, mesic very cobbly loam, 4 to 8 percent slopes--8 percent
 Inclusion 2: Lithic Ustollic Haplargids, loamy-skeletal, mixed, mesic cobbly loam, 8 to 15 percent slopes--7 percent

Map Unit Setting

Landscape position: Mountains
 Motoqua--*Landform:* Mountains
 Rock outcrop--*Landform:* Mountains
 Inclusion 1--*Landform:* Mountains; shape of slope: concave
 Inclusion 2--*Landform:* Mountains; position on slope: Lower; aspect: south

Major Component Description**Motoqua Series**

Elevation: 4,500 to 5,600 feet
Precipitation: About 14 inches
Air temperature: About 50 degrees
Frost-free season: About 130 days
Surface rock fragments: 10 percent cobbles; 35 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Residuum derived from volcanic rocks

Rock outcrop Miscellaneous Area

Elevation: 4,500 to 5,600 feet
Surface layer texture: Unweathered bedrock
Dominant parent material: Residuum derived from volcanic rocks

Dominant Present Vegetation

Motoqua: Utah juniper, muttongrass, turbinella oak
 Rock outcrop: None
 Inclusion 1: Utah juniper
 Inclusion 2: Utah juniper, muttongrass, turbinella oak

Ecological Site

Motoqua: 029XY089NV
 Rock outcrop: None
 Inclusion 1: 029XY089NV
 Inclusion 2: 029XY089NV

1921--Motoqua-Thunderbird association**Composition****Major Components**

Motoqua very gravelly sandy loam, 30 to 50 percent slopes--50 percent
 Thunderbird cobbly loam, 30 to 50 percent slopes--35 percent

Contrasting Inclusions

Inclusion 1: Rock outcrop--5 percent
 Inclusion 2: Winklo gravelly sandy loam, 15 to 30 percent slopes--4 percent
 Inclusion 3: Turba very gravelly sandy loam, 30 to 50 percent slopes--3 percent
 Inclusion 4: Ustic Torriorthents, sandy-skeletal, mixed, mesic gravelly sandy loam, 0 to 2 percent slopes--3 percent

Map Unit Setting

Landscape position: Mountains
 Motoqua--*Landform:* Mountains

Thunderbird--Landform: Mountains; shape of slope:
concave
Inclusion 1--Landform: Mountains
Inclusion 2--Landform: Mountains; position on slope:
Lower; aspect: south
Inclusion 3--Landform: Mountains; position on slope:
Upper; aspect: north
Inclusion 4--Landform: Drainageways

Major Component Description

Motoqua Series

Elevation: 4,500 to 6,000 feet
Precipitation: About 14 inches
Air temperature: About 52 degrees
Frost-free season: About 130 days
Surface rock fragments: 10 percent cobbles; 35 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Residuum derived from volcanic rocks

Thunderbird Series

Elevation: 4,500 to 6,000 feet
Precipitation: About 14 inches
Air temperature: About 52 degrees
Frost-free season: About 130 days
Surface rock fragments: 10 percent cobbles; 5 percent gravel
Surface layer texture: Cobbly loam
Drainage class: Well drained
Dominant parent material: Alluvium derived from volcanic rocks

Dominant Present Vegetation

Motoqua: Utah juniper, muttongrass, turbinella oak
Thunderbird: Utah juniper, Utah serviceberry, singleleaf pinyon, turbinella oak
Inclusion 1: None
Inclusion 2: Blackbrush, desert needlegrass
Inclusion 3: Utah juniper, Utah serviceberry, singleleaf pinyon, turbinella oak
Inclusion 4: Utah juniper, Utah serviceberry, singleleaf pinyon, turbinella oak

Ecological Site

Motoqua: 029XY089NV
Thunderbird: 029XY078NV
Inclusion 1: None
Inclusion 2: 029XY077NV
Inclusion 3: 029XY078NV
Inclusion 4: 029XY078NV

1941--Slidymtn-Capsus association

Composition

Major Components

Slidymtn very gravelly sandy loam, 15 to 50 percent slopes--50 percent
Capsus very cobbly sandy clay loam, 15 to 30 percent slopes--35 percent

Contrasting Inclusions

Inclusion 1: Ustollic Haplargids, fine-loamy, mixed, mesic cobbly loam, 4 to 15 percent slopes--9 percent
Inclusion 2: Riverwash very gravelly loamy sand, 2 to 8 percent slopes--6 percent

Map Unit Setting

Landscape position: Mountains
Slidymtn--Landform: Mountains
Capsus--Landform: Mountains
Inclusion 1--Landform: Mountains; geomorphic position: toeslope
Inclusion 2--Landform: Drainageways

Major Component Description

Slidymtn Series

Elevation: 5,200 to 6,800 feet
Precipitation: About 12 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent cobbles; 30 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Capsus Series

Elevation: 5,200 to 6,800 feet
Precipitation: About 12 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface rock fragments: 30 percent cobbles; 25 percent gravel
Surface layer texture: Very cobbly sandy clay loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Dominant Present Vegetation

Slidymtn: Gambel oak, Utah juniper, Utah serviceberry, mountain big sagebrush, singleleaf pinyon
Capsus: Gambel oak, Utah juniper, Utah serviceberry, mountain big sagebrush, singleleaf pinyon
Inclusion 1: Utah juniper, Wyoming big sagebrush, muttongrass, singleleaf pinyon
Inclusion 2: None

Ecological Site

Slidymtn: 029XY084NV
Capsus: 029XY084NV
Inclusion 1: 029XY065NV
Inclusion 2: None

1950--Ursine-Lomoine association

Composition

Major Components

Ursine gravelly loam, moderately steep, 15 to 30 percent slopes--40 percent

Lomoiné very gravelly sandy loam, 15 to 30 percent slopes--25 percent

Ursine very gravelly loam, 8 to 15 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Rock outcrop--8 percent

Inclusion 2: Xerollic Paleargids, loamy-skeletal, mixed, mesic gravelly sandy loam, 15 to 30 percent slopes--5 percent

Inclusion 3: Riverwash very gravelly loamy sand, 2 to 8 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts

Ursine--Landform: Fan remnants; geomorphic position: backslope

Lomoiné--Landform: Fan remnants; geomorphic position: backslope

Ursine--Landform: Fan remnants; geomorphic position: summit

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

Inclusion 2--Landform: Fan remnants; geomorphic position: backslope

Inclusion 3--Landform: Drainageways

Major Component Description

Ursine Series

Elevation: 5,400 to 6,000 feet

Precipitation: About 9 inches

Air temperature: About 52 degrees

Frost-free season: About 130 days

Surface rock fragments: 2 percent cobbles; 25 percent gravel

Surface layer texture: Gravelly loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Lomoiné Series

Elevation: 5,400 to 6,000 feet

Precipitation: About 8 inches

Air temperature: About 53 degrees

Frost-free season: About 110 days

Surface rock fragments: 5 percent cobbles; 45 percent gravel

Surface layer texture: Very gravelly sandy loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from volcanic rocks

Ursine Series

Elevation: 5,400 to 6,000 feet

Precipitation: About 9 inches

Air temperature: About 52 degrees

Frost-free season: About 130 days

Surface rock fragments: 2 percent cobbles; 25 percent gravel

Surface layer texture: Very gravelly loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Ursine: Indian ricegrass, black sagebrush

Lomoiné: Indian ricegrass, Stansbury cliffrose, Utah juniper, black sagebrush

Ursine: Indian ricegrass, black sagebrush

Inclusion 1: None

Inclusion 2: Utah juniper, Wyoming big sagebrush, muttongrass, singleleaf pinyon

Inclusion 3: None

Ecological Site

Ursine: 029XY008NV

Lomoiné: 029XY015NV

Ursine: 029XY008NV

Inclusion 1: None

Inclusion 2: 029XY065NV

Inclusion 3: None

1951--Ursine association

Composition

Major Components

Ursine very gravelly loam, 8 to 15 percent slopes--70 percent

Ursine very gravelly loam, moderately steep, 15 to 30 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Xeric Torriorthents, loamy-skeletal, mixed (calcareous), mesic gravelly sandy loam, 8 to 15 percent slopes--7 percent

Inclusion 2: Xerollic Haplargids, fine-loamy, mixed, mesic gravelly loam, 4 to 8 percent slopes--6 percent

Inclusion 3: Xerollic Camborthids, coarse-loamy, mixed, mesic gravelly fine sand, 2 to 4 percent slopes--2 percent

Map Unit Setting

Landscape position: Fan piedmonts

Ursine--Landform: Fan remnants; geomorphic position: summit

Ursine--Landform: Fan remnants; geomorphic position: backslope

Inclusion 1--Landform: Fan remnants; geomorphic position: backslope

Inclusion 2--Landform: Fan remnants; geomorphic position: toeslope

Inclusion 3--Landform: Inset fans

Major Component Description

Ursine Series

Elevation: 4,800 to 6,000 feet

Precipitation: About 9 inches

Air temperature: About 52 degrees

Frost-free season: About 130 days

Surface rock fragments: 2 percent cobbles; 45 percent gravel

Surface layer texture: Very gravelly loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Ursine Series*Elevation:* 4,800 to 6,000 feet*Precipitation:* About 9 inches*Air temperature:* About 52 degrees*Frost-free season:* About 130 days*Surface rock fragments:* 2 percent cobbles; 45 percent gravel*Surface layer texture:* Very gravelly loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks**Dominant Present Vegetation**

Ursine: Indian ricegrass, black sagebrush

Ursine: Indian ricegrass, black sagebrush, needleandthread

Inclusion 1: Indian ricegrass, black sagebrush, needleandthread

Inclusion 2: Indian ricegrass, Utah juniper, Wyoming big sagebrush, desert bitterbrush, green ephedra

Inclusion 3: Indian ricegrass, Wyoming big sagebrush, needleandthread

Ecological Site

Ursine: 029XY008NV

Ursine: 029XY014NV

Inclusion 1: 029XY014NV

Inclusion 2: 029XY070NV

Inclusion 3: 029XY006NV

1952--Ursine-Geer association**Composition****Major Components**

Ursine very gravelly loam, moderately steep, 15 to 30 percent slopes--55 percent

Ursine very gravelly loam, 8 to 15 percent slopes--20 percent

Geer fine sandy loam, 0 to 4 percent slopes--20 percent

Contrasting Inclusions

Inclusion 1: Riverwash very gravelly loamy sand, 0 to 4 percent slopes--5 percent

Map Unit Setting*Landscape position:* Fan piedmonts

Ursine--Landform: Fan remnants; geomorphic position: backslope

Ursine--Landform: Fan remnants; geomorphic position: summit

Geer--Landform: Inset fans

Inclusion 1--Landform: Drainageways

Major Component Description**Ursine Series***Elevation:* 4,800 to 6,000 feet*Precipitation:* About 9 inches*Air temperature:* About 52 degrees*Frost-free season:* About 130 days*Surface rock fragments:* 2 percent cobbles; 45 percent gravel*Surface layer texture:* Very gravelly loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks**Ursine Series***Elevation:* 4,800 to 6,000 feet*Precipitation:* About 9 inches*Air temperature:* About 52 degrees*Frost-free season:* About 130 days*Surface rock fragments:* 2 percent cobbles; 45 percent gravel*Surface layer texture:* Very gravelly loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks**Geer Series***Elevation:* 4,800 to 6,000 feet*Precipitation:* About 7 inches*Air temperature:* About 53 degrees*Frost-free season:* About 130 days*Surface rock fragments:* 5 percent gravel*Surface layer texture:* Fine sandy loam*Drainage class:* Well drained*Dominant parent material:* Alluvium derived from mixed rocks**Dominant Present Vegetation**

Ursine: Indian ricegrass, black sagebrush, needleandthread

Ursine: Indian ricegrass, black sagebrush

Geer: Indian ricegrass, winterfat

Inclusion 1: None

Ecological Site

Ursine: 029XY014NV

Ursine: 029XY008NV

Geer: 029XY042NV

Inclusion 1: None

1960--Crystal Springs gravelly sandy loam, 2 to 8 percent slopes**Composition****Major Components**

Crystal Springs gravelly sandy loam, 2 to 8 percent slopes--90 percent

Contrasting Inclusions

Inclusion 1: Tybo gravelly sandy loam, 2 to 8 percent slopes--5 percent

Inclusion 2: Xeric Torriorthents, coarse-loamy, mixed (calcareous), mesic gravelly fine sandy loam, 2 to 4 percent slopes--4 percent

Inclusion 3: Riverwash very gravelly loamy sand, 2 to 4 percent slopes--1 percent

Map Unit Setting*Landscape position:* Fan piedmonts

Crystal Springs--Landform: Fan remnants

Inclusion 1--Landform: Fan remnants

Inclusion 2--Landform: Drainageways

Inclusion 3--Landform: Drainageways

Major Component Description

Crystal Springs Series

Elevation: 3,900 to 4,500 feet

Precipitation: About 6 inches

Air temperature: About 56 degrees

Frost-free season: About 155 days

Surface rock fragments: 15 percent gravel

Surface layer texture: Gravelly sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from limestone and dolomite

Dominant Present Vegetation

Crystal Springs: Indian ricegrass, fourwing saltbush, spiny menodora

Inclusion 1: Indian ricegrass, spiny hopsage, spiny menodora

Inclusion 2: Basin wildrye, fourwing saltbush

Inclusion 3: None

Ecological Site

Crystal Springs: 029XY080NV

Inclusion 1: 029XY031NV

Inclusion 2: 029XY048NV

Inclusion 3: None

1980--Longjim-Arizo association

Composition

Major Components

Longjim very gravelly fine sandy loam, 2 to 8 percent slopes--80 percent

Arizo very cobbly loamy sand, 2 to 4 percent slopes--15 percent

Contrasting Inclusions

Inclusion 1: Riverwash very gravelly loamy sand, 2 to 4 percent slopes--5 percent

Map Unit Setting

Landscape position: Fan piedmonts

Longjim--Landform: Fan remnants

Arizo--Landform: Drainageways

Inclusion 1--Landform: Drainageways

Major Component Description

Longjim Series

Elevation: 3,300 to 4,500 feet

Precipitation: About 6 inches

Air temperature: About 62 degrees

Frost-free season: About 210 days

Surface rock fragments: 5 percent cobbles; 50 percent gravel

Surface layer texture: Very gravelly fine sandy loam

Drainage class: Well drained

Dominant parent material: Alluvium derived from mixed rocks

Arizo Series

Elevation: 3,300 to 4,500 feet

Precipitation: About 6 inches

Air temperature: About 62 degrees

Frost-free season: About 210 days

Surface rock fragments: 30 percent cobbles; 25 percent gravel

Surface layer texture: Very cobbly loamy sand

Drainage class: Excessively drained

Dominant parent material: Alluvium derived from mixed rocks

Dominant Present Vegetation

Longjim: Big galleta, blackbrush

Arizo: Big galleta, white bursage

Inclusion 1: None

Ecological Site

Longjim: 030XB029NV

Arizo: 030XB028NV

Inclusion 1: None

1990--Gabbvally-Rock outcrop association

Composition

Major Components

Gabbvally very stony loam, 15 to 50 percent slopes--70 percent

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

Contrasting Inclusions

Inclusion 1: Lithic Xeric Torriorthents, loamy-skeletal, mixed (calcareous), mesic very gravelly sandy loam, 50 to 75 percent slopes--5 percent

Inclusion 2: Lithic Xerollic Haplargids, loamy-skeletal, mixed, mesic very gravelly sandy loam, 15 to 50 percent slopes--5 percent

Inclusion 3: Xerollic Camborthids, coarse-loamy, mixed, mesic gravelly sandy loam, 2 to 4 percent slopes--3 percent

Inclusion 4: Riverwash very gravelly loamy sand, 2 to 4 percent slopes--2 percent

Map Unit Setting

Landscape position: Mountains

Gabbvally--Landform: Mountains

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

Inclusion 1--Landform: Mountains

Inclusion 2--Landform: Mountains

Inclusion 3--Landform: Drainageways

Inclusion 4--Landform: Drainageways

Major Component Description

Gabbvally Series

Elevation: 5,000 to 6,800 feet

Precipitation: About 10 inches

Air temperature: About 53 degrees

Frost-free season: About 130 days

Surface rock fragments: 3 percent stones and boulders; 10 percent cobbles; 40 percent gravel

Surface layer texture: Very stony loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from volcanic rocks

Rock outcrop Miscellaneous Area

Elevation: 5,000 to 6,800 feet

Surface layer texture: Unweathered bedrock

Dominant parent material: Residuum derived from volcanic rocks

Dominant Present Vegetation

Gabbvally: Indian ricegrass, Wyoming big sagebrush, needleandthread

Rock outcrop: None

Inclusion 1: Indian ricegrass, Wyoming big sagebrush, needleandthread

Inclusion 2: Indian ricegrass, black sagebrush

Inclusion 3: Indian ricegrass, big sagebrush, desert peachbrush

Inclusion 4: None

Ecological Site

Gabbvally: 029XY010NV

Rock outcrop: None

Inclusion 1: 029XY010NV

Inclusion 2: 029XY008NV

Inclusion 3: 029XY009NV

Inclusion 4: None

1991--Gabbvally-Hollace association

Composition

Major Components

Gabbvally very stony loam, 8 to 15 percent slopes--60 percent

Hollace very gravelly loam, 8 to 30 percent slopes--25 percent

Contrasting Inclusions

Inclusion 1: Wyva very gravelly sandy loam, 30 to 50 percent slopes--8 percent

Inclusion 2: Lithic Ustic Torriorthents, loamy-skeletal, mixed, mesic cobbly loam, 59 to 75 percent slopes--4 percent

Inclusion 3: Xeric Torriorthents, sandy-skeletal, mixed, mesic gravelly sandy loam, 4 to 8 percent slopes--3 percent

Map Unit Setting

Landscape position: Mountains

Gabbvally--Landform: Mountains; position on slope: Upper

Hollace--Landform: Mountains; position on slope: Lower

Inclusion 1--Landform: Mountains; aspect: north

Inclusion 2--Landform: Mountains; aspect: north

Inclusion 3--Landform: Drainageways

Major Component Description

Gabbvally Series

Elevation: 5,000 to 6,800 feet

Precipitation: About 10 inches

Air temperature: About 53 degrees

Frost-free season: About 130 days

Surface rock fragments: 10 percent cobbles; 40 percent gravel

Surface layer texture: Very stony loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from volcanic rocks

Hollace Series

Elevation: 4,200 to 5,600 feet

Precipitation: About 8 inches

Air temperature: About 55 degrees

Frost-free season: About 160 days

Surface rock fragments: 10 percent cobbles; 35 percent gravel

Surface layer texture: Very gravelly loam

Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from tuffaceous rocks

Dominant Present Vegetation

Gabbvally: Indian ricegrass, Wyoming big sagebrush, needleandthread

Hollace: Blackbrush, desert needlegrass

Inclusion 1: Indian ricegrass, big sagebrush, needleandthread

Inclusion 2: Indian ricegrass, Wyoming big sagebrush, needleandthread

Inclusion 3: Indian ricegrass, big sagebrush, desert peachbrush

Ecological Site

Gabbvally: 029XY010NV

Hollace: 029XY077NV

Inclusion 1: 029XY075NV

Inclusion 2: 029XY010NV

Inclusion 3: 029XY009NV

1992--Gabbvally-Brier-Rock outcrop association

Composition

Major Components

Gabbvally very stony loam, 15 to 50 percent slopes--40 percent

Brier very stony loam, 15 to 75 percent slopes--30 percent

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

Contrasting Inclusions

Inclusion 1: Lithic Haploxerolls, loamy-skeletal, mixed, mesic very gravelly sandy loam, 30 to 50 percent slopes--9 percent

Inclusion 2: Xeric Torriorthents, loamy-skeletal, mixed (calcareous), mesic very cobbly loamy sand, 15 to 50 percent slopes--6 percent

Map Unit Setting

Landscape position: Mountains

Gabbvally--Landform: Mountains; geomorphic position: backslope

Brier--Landform: Mountains; geomorphic position: backslope; aspect: north

Rock outcrop--Landform: Mountains
 Inclusion 1--Landform: Mountains; aspect: north
 Inclusion 2--Landform: Drainageways

Major Component Description

Gabbvally Series

Elevation: 5,000 to 6,800 feet
Precipitation: About 10 inches
Air temperature: About 50 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent cobbles; 40 percent gravel
Surface layer texture: Very stony loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Brier Series

Elevation: 5,500 to 6,800 feet
Precipitation: About 12 inches
Air temperature: About 47 degrees
Frost-free season: About 110 days
Surface rock fragments: 10 percent cobbles; 20 percent gravel
Surface layer texture: Very stony loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Rock outcrop Miscellaneous Area

Elevation: 5,000 to 6,800 feet
Surface layer texture: Unweathered bedrock
Dominant parent material: Residuum derived from volcanic rocks

Dominant Present Vegetation

Gabbvally: Indian ricegrass, Wyoming big sagebrush, needleandthread
 Brier: Utah juniper, Wyoming big sagebrush, muttongrass, singleleaf pinyon
 Inclusion 1: Utah juniper, Wyoming big sagebrush, muttongrass, singleleaf pinyon
 Inclusion 2: Indian ricegrass, big sagebrush, desert peachbrush

Ecological Site

Gabbvally: 029XY010NV
 Brier: 029XY065NV
 Rock outcrop: None
 Inclusion 1: 029XY065NV
 Inclusion 2: 029XY009NV

2000--Playas

Composition

Major Components

Playas silty clay loam, 0 to 1 percent slopes--100 percent

Map Unit Setting

Landscape position: Bolsons
 Playas--Landform: Playas

Major Component Description

Playas Miscellaneous Area

Elevation: 3,400 to 5,000 feet
Surface layer texture: Silty clay loam
Dominant parent material: Alluvium derived from mixed rocks

Ecological Site

Playas: None

2010--Stewval-Gabbvally association

Composition

Major Components

Stewval very gravelly fine sandy loam, 8 to 50 percent slopes--55 percent
 Gabbvally very stony loam, 30 to 50 percent slopes--30 percent

Contrasting Inclusions

Inclusion 1: Cath gravelly loam, 2 to 15 percent slopes--6 percent
 Inclusion 2: Lithic Xeric Torriorthents, loamy-skeletal, mixed (calcareous), mesic gravelly sandy loam, 8 to 75 percent slopes--4 percent
 Inclusion 3: Rock outcrop--3 percent
 Inclusion 4: Riverwash very gravelly loamy sand, 2 to 4 percent slopes--2 percent

Map Unit Setting

Landscape position: Mountains
 Stewval--Landform: Mountains
 Gabbvally--Landform: Mountains; shape of slope: concave
 Inclusion 1--Landform: Inset fans
 Inclusion 2--Landform: Mountains
 Inclusion 3--Landform: Mountains; geomorphic position: summit
 Inclusion 4--Landform: Drainageways

Major Component Description

Stewval Series

Elevation: 5,500 to 7,000 feet
Precipitation: About 8 inches
Air temperature: About 53 degrees
Frost-free season: About 120 days
Surface rock fragments: 5 percent cobbles; 50 percent gravel
Surface layer texture: Very gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Gabbvally Series

Elevation: 5,500 to 7,000 feet
Precipitation: About 10 inches
Air temperature: About 53 degrees
Frost-free season: About 130 days
Surface rock fragments: 10 percent cobbles; 40 percent gravel
Surface layer texture: Very stony loam
Drainage class: Well drained

Dominant parent material: Residuum and colluvium derived from volcanic rocks

Dominant Present Vegetation

Stewval: Indian ricegrass, black sagebrush
 Gabbvally: Indian ricegrass, Wyoming big sagebrush, needleandthread
 Inclusion 1: Indian ricegrass, big sagebrush, needleandthread
 Inclusion 2: Indian ricegrass, black sagebrush, needleandthread
 Inclusion 3: None
 Inclusion 4: None

Ecological Site

Stewval: 029XY008NV
 Gabbvally: 029XY010NV
 Inclusion 1: 029XY029NV
 Inclusion 2: 029XY014NV
 Inclusion 3: None
 Inclusion 4: None

2011--Stewval-Lomoine-Rock outcrop association

Composition

Major Components

Stewval very gravelly fine sandy loam, 8 to 50 percent slopes--45 percent
 Lomoine very gravelly sandy loam, 8 to 50 percent slopes--30 percent
 Rock outcrop--10 percent
Contrasting Inclusions
 Inclusion 1: Cath very gravelly sandy loam, 2 to 4 percent slopes--9 percent
 Inclusion 2: Riverwash very gravelly loamy sand, 0 to 4 percent slopes--6 percent

Map Unit Setting

Landscape position: Mountains and intermontane basins
 Stewval--Landform: Mountains
 Lomoine--Landform: Mountains
 Rock outcrop--Landform: Mountains; geomorphic position: summit
 Inclusion 1--Landform: Fan remnants
 Inclusion 2--Landform: Drainageways

Major Component Description

Stewval Series

Elevation: 5,500 to 7,000 feet
Precipitation: About 8 inches
Air temperature: About 53 degrees
Frost-free season: About 120 days
Surface rock fragments: 5 percent cobbles; 50 percent gravel
Surface layer texture: Very gravelly fine sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Lomoine Series

Elevation: 5,500 to 7,000 feet
Precipitation: About 8 inches
Air temperature: About 53 degrees
Frost-free season: About 110 days
Surface rock fragments: 5 percent cobbles; 50 percent gravel
Surface layer texture: Very gravelly sandy loam
Drainage class: Well drained
Dominant parent material: Residuum and colluvium derived from volcanic rocks

Rock outcrop Miscellaneous Area

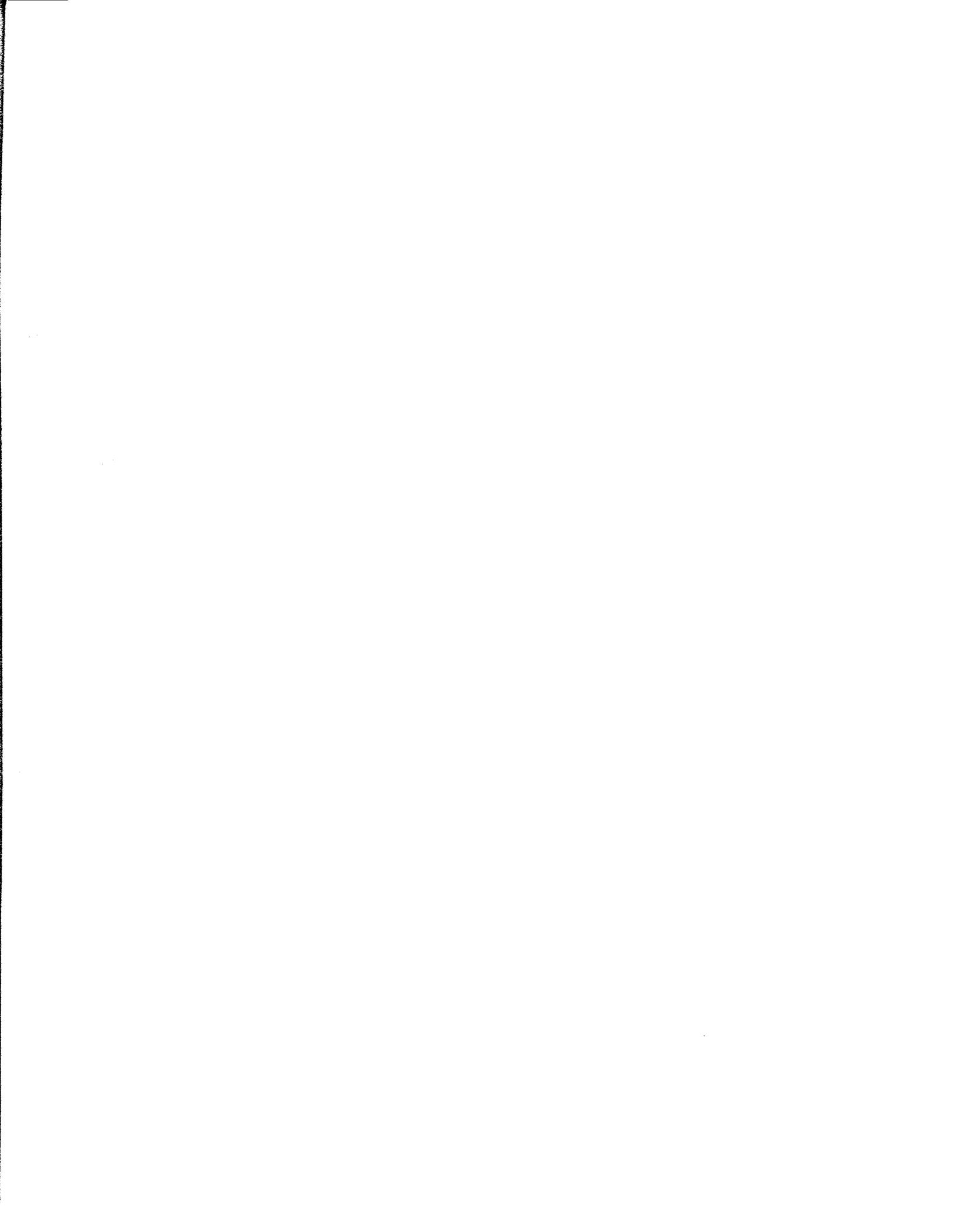
Elevation: 5,500 to 7,000 feet
Dominant parent material: Residuum derived from volcanic rocks

Dominant Present Vegetation

Stewval: Indian ricegrass, black sagebrush
 Lomoine: Indian ricegrass, Stansbury cliffrose, Utah juniper, black sagebrush
 Rock outcrop: None
 Inclusion 1: Indian ricegrass, Wyoming big sagebrush, needleandthread
 Inclusion 2: None

Ecological Site

Stewval: 029XY008NV
 Lomoine: 029XY015NV
 Rock outcrop: None
 Inclusion 1: 029XY006NV
 Inclusion 2: None



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 94,401 acres, or nearly 3.5 percent of the survey area, would meet the requirements for prime farmland if an adequate and dependable supply of irrigation water were available and the soils were reclaimed to reduce salinity and alkalinity.

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 would be prime farmland where irrigated with an adequate and dependable water supply, and the soils are reclaimed to reduce salinity and alkalinity:

- 1250 Patter-Heist association
- 1490 Keefa-Penoyer association
- 1491 Keefa, warm-Penoyer association
- 1510 Koyen gravelly sandy loam, 2 to 4 percent slopes
- 1512 Koyen-Penoyer association
- 1520 Geer-Penoyer association

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 *typic* subgroup. Other subgroups are *intergrades* or *extragrades*. The *typic* 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 *Typic* identifies the subgroup that typifies the great group. The adjective *Lithic* identifies the subgroup that is shallow to hard bedrock.

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, mesic, Lithic 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. The Bellehelen series is an example of a soil series in the family of loamy-skeletal, mixed, mesic Lithic Argixerolls.

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"(10). Many of the technical terms used in the descriptions are defined in "Soil Taxonomy"(9). 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".

Acoma Series

The Acoma series consists of very deep, well drained soils that formed in alluvium from mixed rocks. The Acoma soils are on fan remnants. Slopes are 2 to 15 percent. The mean annual precipitation is about 12 inches and the mean annual temperature is about 48 degrees F.

Taxonomic class: Fine, montmorillonitic, mesic Xerollic Paleargids

Typical pedon: Acoma gravelly sandy loam, 2 to 15 percent slopes, woodland, in a delineation of map unit 1180. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 20 percent pebbles.

- A--0 to 5 inches; yellowish brown (10YR 5/4) gravelly sandy loam, dark yellowish brown (10YR 3/4) moist; weak thick platy structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine through medium tubular pores; 16 percent pebbles; neutral (pH 7.0); abrupt smooth boundary.
- Bt1--5 to 13 inches; dark yellowish brown (10YR 4/4) gravelly clay loam, dark brown (7.5YR 3/4) moist; moderate fine and medium angular blocky structure; hard, firm, very sticky and very plastic; common very fine through medium and many coarse roots; common fine and medium tubular pores; common thin clay films lining pores; 18 percent pebbles; neutral (pH 7.2); clear smooth boundary.
- Bt2--13 to 19 inches; brown (7.5YR 4/4) gravelly clay, dark brown (7.5YR 4/4) moist; moderate fine angular blocky structure; hard, firm, very sticky and very plastic; common very fine through coarse roots; common fine and medium tubular pores; many thin clay films on faces of peds; 20 percent pebbles; neutral (pH 7.2); clear smooth boundary.
- Bt3--19 to 30 inches; brown (7.5YR 5/4) gravelly clay, dark brown (7.5YR 4/4) moist; moderate medium prismatic structure parting to strong fine angular blocky; very hard, firm, very sticky and very plastic; common medium and few coarse roots occurring as exped; few fine tubular pores; common thick pressure faces; common moderately thick clay films on faces of peds; 16 percent pebbles; slightly alkaline (pH 7.6); clear smooth boundary.
- Bk--30 to 50 inches; light brown (7.5YR 6/4) very gravelly sandy clay loam, brown (7.5YR 4/4) moist; massive; slightly hard, friable, very sticky and plastic; few fine roots; few fine interstitial pores; weakly cemented in upper part; many thick lime coating surrounding rock fragments; lime segregated in many fine filaments and threads; 40 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); clear smooth boundary. (18 to 22 inches thick)
- C--50 to 60 inches; light brown (7.5YR 6/4) extremely gravelly sandy clay loam, brown (7.5YR 5/4) moist; massive; slightly hard becoming hard in lower part, friable, sticky and plastic; few fine roots; few very fine interstitial pores; 70 percent pebbles; few thin discontinuous lenses of extremely gravelly loamy coarse sand; strongly effervescent; moderately alkaline (pH 8.2).

Type location: Lincoln County, Nevada; in Fife Flat approximately 0.75 mile east of Fife Flat Reservoir; about 1,400 feet east and 1,200 feet north of the southwest corner of section 25, T. 5 S., R. 68 E.; (37 degrees, 28 minutes, and 49 seconds north latitude, 114 degrees, 20 minutes, and 12 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist in winter and spring, dry in summer and fall except for 10 to 20 days cumulative between July and October due to convection storms.

Soil temperature: 47 to 50 degrees F.

Control section:

Clay content--35 to 45 percent.
Rock fragments--15 to 35 percent pebbles.

A horizon:

Hue--10YR or 7.5YR.
Value--4 or 5 dry.
Chroma--3 or 4.

Bt horizons:

Hue--10YR or 7.5YR.
Value--4 through 6 dry, 3 or 4 moist.
Chroma--3 or 4.
Clay content--27 to 45 percent.
Rock fragments--10 to 35 percent.
Structure--Angular blocky, prismatic, or massive.
Consistence--Hard or very hard, sticky or very sticky, plastic or very plastic.
Reaction--Neutral or slightly alkaline.

Bk horizon:

Value--5 through 7 dry, 4 or 5 moist.
Chroma--2 through 4.
Clay content--20 to 30 percent.
Rock fragments--35 to 75 percent.
Consistence--Slightly hard or hard, sticky or very sticky.
Reaction--Slightly alkaline or moderately alkaline.
Effervescence--Slightly effervescent to violently effervescent.
Other features--Some pedons may have discontinuous silica plates.

C horizon:

Value--5 or 6 dry, 3 through 5 moist.
Chroma--2 through 4.
Clay content--20 to 30 percent.
Texture--Sandy clay loam.
Rock fragments--35 to 80 percent pebbles.
Consistence--Soft or slightly hard becoming hard in lower part, slightly sticky or sticky.
Reaction--Mildly alkaline or moderately alkaline.
Effervescence--Slightly effervescent to strongly effervescent.

Acti Series

The Acti series consists of shallow, well drained soils that formed in residuum and colluvium from tuffaceous rocks. The Acti soils are on mountains. Slopes are 30 to 50 percent. The mean annual precipitation is about 15 inches and the mean annual temperature is about 52 degrees F.

Taxonomic class: Clayey-skeletal, montmorillonitic, mesic Lithic Argiustolls

Typical pedon: Acti very gravelly loam, 30 to 50 percent slopes, woodland, in a delineation of map unit 1821. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 15 percent cobbles and 40 percent pebbles.

Oi--1/2 to 0 inches; pinyon needles and oak leaf litter.

A--0 to 2 inches; dark reddish brown (5YR 3/2) very gravelly loam, dark reddish brown (5YR 2.5/2) moist; moderate very fine granular structure; soft, very friable, slightly sticky and nonplastic; many very fine and fine roots; many very fine and fine interstitial pores; 10 percent cobbles, 45 percent pebbles; slightly alkaline (pH 7.4); clear smooth boundary.

Bt1--2 to 4 inches; dark reddish brown (5YR 3/2) very gravelly clay loam, dark reddish brown (5YR 3/2) moist; strong fine and medium subangular blocky structure; slightly hard, firm, sticky and very plastic; many very fine and fine and common medium and coarse roots; common very fine and fine interstitial and few fine tubular pores; many moderately thick clay films lining pores and on faces of peds; 5 percent cobbles, 40 percent pebbles; slightly alkaline (pH 7.4); clear smooth boundary.

Bt2--4 to 8 inches; dark reddish brown (5YR 3/3) very gravelly clay, dark reddish brown (5YR 3/3) moist; strong medium prismatic structure; very hard, very firm, very sticky and very plastic; few fine and medium expd roots; common very fine and fine interstitial and common fine tubular pores; few moderately thick clay films lining pores and many pressure faces; 10 percent cobbles, 40 percent pebbles; slightly alkaline (pH 7.4); clear wavy boundary.

Bt3--8 to 18 inches; reddish brown (5YR 4/3) very cobbly clay, dark reddish brown (5YR 3/3) moist; strong fine and medium subangular blocky structure; very hard, very firm, very sticky and very plastic; few very fine and fine expd roots; common very fine and fine interstitial and common fine tubular pores; few moderately thick clay films lining pores and many pressure faces; 30 percent cobbles, 20 percent pebbles; slightly alkaline (pH 7.4); abrupt wavy boundary.

R--18 inches; fractured andesitic ash flow tuff.

Type location: Lincoln County, Nevada; approximately 2,000 feet south and 500 feet east of the northwest corner of section 35, T. 6 S., R. 70 E.; (37 degrees, 23 minutes, and 7 seconds north latitude, 114 degrees, 8 minutes, and 23 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually moist, moist in some part of the moisture control section from early July through early October and during the winter and early spring months.

Soil temperature: 47 to 54 degrees F.

Depth to bedrock: 14 to 20 inches.

Reaction: Neutral or mildly alkaline.

Control section:

Clay content--Averages 35 to 60 percent.

Rock fragments--35 to 60 percent.

A horizon:

Hue--2.5YR or 7.5YR.

Value--2 or 3 dry.

Chroma--1 or 2.

Bt1 and Bt2 horizons:

Hue--5YR or 7.5YR.

Value--3 or 4 dry, or moist

Chroma--2 or 3.

Texture--Very gravelly clay, very cobbly clay, very gravelly clay loam.

Clay content--35 to 60 percent.

Rock fragments--35 to 60 percent.

Structure--Prismatic or subangular blocky.

Consistence--Slightly hard to very hard.

Bt3 horizon:

Hue--5YR to 7.5YR.

Value--3 or 4 dry, or moist.

Chroma--2 or 3.

Texture--Very gravelly clay, very cobbly clay.

Clay content--40 to 60 percent.

Rock fragments--35 to 60 percent.

Akela Series

The Akela series consists of shallow, well drained soils that formed in residuum and colluvium from volcanic rocks. The Akela soils are on mountains. Slopes are 15 to 50 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 65 degrees F.

Taxonomic class: Loamy-skeletal, mixed (calcareous), thermic Lithic Torriorthents

Typical pedon: Akela very cobbly sandy loam, 15 to 30 percent slopes, rangeland, in a delineation of map unit 1040. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 30 percent cobbles and 20 percent pebbles.

A--0 to 3 inches; pale brown (10YR 6/3) very cobbly sandy loam, dark yellowish brown (10YR 4/4) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; few very fine roots; common very fine interstitial and few very fine tubular pores; 25 percent cobbles, 20 percent pebbles; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Bk--3 to 12 inches; pale brown (10YR 6/3) very gravelly fine sandy loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common very fine and fine tubular pores; common thin lime coats on undersides and sides of rock fragments; 15 percent cobbles, 40 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.

R--12 inches; hard rhyolitic tuff, with lime in fractures.

Type location: Lincoln County, Nevada; approximately 8 miles northeast of U.S. Highway 93 along the Kane Springs Wash Road; about 3,800 feet east and 4,600 feet north of the northeast corner of section 1, T. 11 S., R. 63 E.; (37 degrees, 2 minutes, and 24 seconds north latitude, 114 degrees, 51 minutes, and 26 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist in some part of the moisture control section in early spring and for brief periods in the summer, 10 to 20 days cumulative, from July through October due to convection storms.

Soil temperature: 59 to 72 degrees F.

Depth to bedrock: 10 to 20 inches.

Reaction: Mildly alkaline or moderately alkaline.

Control section:

Clay content--5 to 12 percent.

Rock fragments--35 to 80 percent, mainly pebbles.

A horizon:

Hue--5YR, 7.5YR, or 10YR.

Value--5 or 6 dry, 3 through 5 moist.

Chroma--2 through 6.

Effervescence--Strongly effervescent or violently effervescent.

Other features--Organic matter content is 0.5 to 1.0 percent.

Bk horizon:

Hue--5YR, 7.5YR, or 10YR.

Value--5 through 7 dry, 4 through 6 moist.

Chroma--2 through 4.

Structure--Massive or weak fine and medium subangular blocky.

Consistence--Nonsticky or slightly sticky.

Secondary lime accumulation--Common lime coats on undersides and sides of rock fragments.

Alko Series

The Alko series consists of shallow over a duripan, well drained soils that formed in alluvium from mixed rocks. The Alko soils are on fan remnants. Slopes are 0 to 15 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 65 degrees F.

Taxonomic class: Loamy, mixed, thermic, shallow Typic Durorthids

Typical pedon: Alko gravelly sandy loam, 4 to 8 percent slopes, rangeland, in a delineation of map unit 1170. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 5 percent cobbles and 15 percent pebbles.

A--0 to 3 inches; light yellowish brown (10YR 6/4) gravelly sandy loam, brown (10YR 5/3) moist; strong thick platy structure; slightly hard, friable, nonsticky and slightly plastic; few very fine roots; common very fine and few fine vesicular pores; 5 percent cobbles, 25 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Bw--3 to 4 inches; light yellowish brown (10YR 6/4) gravelly sandy loam, brown (10YR 5/3) moist; moderate fine and medium subangular blocky

structure; soft, very friable, slightly sticky and slightly plastic; common very fine roots; common very fine and fine tubular pores; 5 percent cobbles, 20 percent pebbles; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Bk--4 to 11 inches; very pale brown (10YR 7/3) gravelly sandy loam, pale brown (10YR 6/3) moist; massive; soft, very friable, nonsticky and nonplastic; many fine and medium and common coarse roots; common very fine and tubular pores; common thin lime coats on undersides of rock fragments; 5 percent cobbles, 25 percent pebbles; violently effervescent; moderately alkaline (pH 8.2); abrupt wavy boundary.

Bqkm--11 to 33 inches; white (10YR 8/1) continuous indurated duripan, light gray (10YR 7/2) moist; massive; extremely hard, extremely firm; violently effervescent; very strongly alkaline (pH 9.2); clear wavy boundary.

2Bk--33 to 60 inches; light gray (10YR 7/2) stratified gravelly loamy coarse sand and sandy loam, pale brown (10YR 6/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; very few fine roots; many very fine and fine interstitial pores; 20 percent pebbles; common moderately thick lime coats on undersides and vertical faces of rock fragments; discontinuous weak lime cementation; violently effervescent; strongly alkaline (pH 8.6).

Type location: Lincoln County, Nevada; approximately 8 miles north of the Kane Springs Wash Road and U.S. Highway 93 intersection along Kane Springs Wash Road; about 750 feet west and 2,100 feet south of the projected northeast corner of section 36, T. 10 S., R. 63 E.; (37 degrees, 2 minutes, and 10 seconds north latitude, 114 degrees, 52 minutes, and 20 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry. Moist in some part of the moisture control section for 10 to 20 days cumulative during the period June through October.

Soil temperature: 59 to 66 degrees F.

Depth to duripan: 10 to 20 inches.

Reaction: Moderately alkaline or strongly alkaline above the duripan, strongly alkaline or very strongly alkaline below the duripan.

Other features: Some pedons are slightly influenced from gypsum.

Control section:

Clay content--8 to 18 percent

Rock fragments--0 to 35 percent.

A horizon:

Hue--10YR or 7.5YR.

Value--6 through 8 dry, 4 through 7 moist.

Chroma--2 through 4.

Effervescence--Strongly effervescent or violently effervescent.

Bk horizon:

Hue--10YR or 7.5YR.

Value--6 through 8 dry, 4 through 7 moist.
 Chroma--2 through 4.
 Texture--Dominantly sandy loam or coarse sandy loam, some pedons contain thin strata of loam or other textures.
 Structure--Massive or granular.
 Secondary lime accumulation--Some pedons have common thin lime coats on undersides of rock fragments.
 Effervescence--Strongly effervescent or violently effervescent,
 SAR--Less than 2 percent exchangeable sodium in the lower part of the Bk.

Arada Series

The Arada series consists of very deep, somewhat excessively drained soils that formed in alluvium from mixed rocks. The Arada soils are on sand sheets. Slopes are 2 to 8 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 64 degrees F.

Taxonomic class: Sandy, mixed, thermic Typic Calciorthids

Typical pedon: Arada fine sand, 2 to 8 percent slopes, rangeland, in a delineation of map unit 1372. (Colors are for dry soil unless otherwise noted.)

- A--0 to 8 inches; light brown (7.5YR 6/4) fine sand, strong brown (7.5YR 5/6) moist; single grain; loose; few very fine roots; many very fine interstitial pores; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.
- C1--8 to 28 inches; pink (7.5YR 7/4) fine sand, reddish yellow (7.5YR 6/6) moist; single grain; loose; common very fine roots; many very fine interstitial pores; violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary.
- C2--28 to 38 inches; pink (7.5YR 7/4) gravelly loamy fine sand, brown (7.5YR 5/4) moist; single grain; loose; few very fine and fine roots; many very fine interstitial pores; 5 percent pebbles; violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary.
- 2Bk1--38 to 48 inches; pink (7.5YR 7/4) gravelly loamy fine sand, pink (7.5YR 7/4) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; many very fine interstitial pores; common medium soft lime masses and common thin lime coats on rock fragments; 20 percent pebbles; violently effervescent; strongly alkaline (pH 8.8); abrupt wavy boundary.
- 2Bk2--48 to 60 inches; pinkish white (7.5YR 8/2) extremely gravelly loamy coarse sand, light brown (7.5YR 6/4) moist; massive; hard, firm, nonsticky and nonplastic; few very fine roots; few very fine tubular, and common very fine interstitial pores; weakly lime cemented masses throughout; many moderately thick lime coats completely coating rock fragments; 70 percent pebbles; violently effervescent; strongly alkaline (pH 8.8).

Type location: Lincoln County, Nevada; adjacent to the Utah state line near Terry Benches; approximately 1,200 feet north and 1100 feet east of the southwest corner of section 34, T. 10 S., R. 71 E.; (37 degrees, 1 minute, 14 seconds north latitude, 114 degrees, 3 minutes, 4 seconds west longitude.

Range in Characteristics:

Soil moisture: Usually dry, moist in some part for short periods during winter and early spring and for 10 to 20 days cumulative between July and October following convection storms.

Soil temperature: 63 to 68 degrees F.

Depth to 2Bk horizons: 24 to 39 inches.

Control section:

Clay content--0 to 10 percent.

Rock fragments--Averages 5 to 15 percent.

A horizon:

Hue--5YR or 7.5YR

Chroma--4 through 6.

C horizons:

Hue--5YR or 7.5YR

Value--6 or 7 dry, 5 or 6 moist

Chroma--4 through 6

Texture of the fine earth--Averages fine sand, but includes strata of loamy fine sand.

Structure--Single grain or is massive

Consistence--Loose or soft

Effervescence--Strongly effervescent or violently effervescent

2Bk1 horizon:

Hue--7.5YR or 10YR

Value--6 through 8 dry, 5 through 7 moist

Chroma--2 through 4.

Texture of the fine earth--Sandy loam, coarse sandy loam, and loamy fine sand.

Rock fragments--15 to 35 percent pebbles.

Structure--Weak subangular blocky or massive

Consistence--Soft or slightly hard.

Calcium carbonate equivalent--20 to 40 percent by weight

Other features--Some pedons have few to many thin lime coats on vertical and undersides of rock fragments

2Bk2 horizon:

Hue--7.5YR or 10YR

Value--6 through 8 dry, 5 through 7 moist

Chroma--1 through 4.

Texture--Stratified extremely gravelly fine sandy loam, extremely gravelly sandy loam or extremely gravelly loamy coarse sand.

Rock fragments--60 to 85 percent, dominantly pebbles

Consistence--Hard to extremely hard

Calcium carbonate equivalent--20 to 40 percent by weight

Other features--Some pedons are weakly to strongly lime cemented below depths of 30 to 58 inches

Arizo Series

The Arizo series consists of very deep, excessively drained soils that formed in alluvium from mixed rocks. The Arizo soils are on drainageways and stream terraces. Slopes are 0 to 8 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 65 degrees F.

Taxonomic class: Sandy-skeletal, mixed, thermic Typic Torriorthents

Typical pedon: Arizo very cobbly loamy sand, 2 to 4 percent slopes, desert wildlife habitat, in a delineation of map unit 1031. (Colors are for dry soil unless otherwise noted). The surface is covered with 30 percent cobbles and 25 percent pebbles.

A--0 to 1 inch; light brownish gray (10YR 6/2) very cobbly 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 fine interstitial pores; 30 percent cobbles, 25 percent pebbles; slightly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

C1--1 to 14 inches; pale brown (10YR 6/3) extremely gravelly loamy sand, yellowish brown (10YR 5/4) moist; single grain; loose, nonsticky and nonplastic; common very fine and fine roots; many very fine and fine interstitial pores; 2 percent cobbles, 60 percent pebbles; moderately alkaline (pH 8.2); clear smooth boundary.

C2--14 to 22 inches; pale brown (10YR 6/3) cobbly loamy sand, yellowish brown (10YR 5/4) moist; single grain; loose, nonsticky and nonplastic; common very fine and fine and few medium roots; many very fine and fine interstitial pores; 15 percent cobbles, 35 percent pebbles; slightly effervescent; moderately alkaline (pH 8.0); gradual smooth boundary.

C3--22 to 60 inches; light yellowish brown (10YR 6/4) extremely gravelly coarse sand, yellowish brown (10YR 5/4) moist; single grain; loose, nonsticky and nonplastic; few very fine roots; many very fine and fine interstitial pores; 5 percent cobbles, 65 percent pebbles; slightly effervescent; moderately alkaline (pH 8.2).

Type location: Lincoln County, Nevada; approximately 1/2 mile northwest of Kane Springs Wash Road in Kane Springs Wash; about 800 feet west and 2300 feet south of the northeast corner of section 11, T. 11 S., R. 63 E.; (37 degrees, 00 minutes, 26 seconds north latitude, 114 degrees, 53 minutes, and 27 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry. Moist for short periods throughout the moisture control section, December through March. Moist above and periodically in upper

part of moisture control section, 10 to 20 days cumulative, July through October.

Soil temperature: 59 to 72 degrees F.

Control section:

Rock fragments--35 to 85 percent, mostly pebbles.

Reaction--Slightly alkaline to strongly alkaline.

Effervescence--Effervescent in some or all parts, with thin lime coats on undersides of rock fragments in some pedons.

A horizon:

Hue--10YR or 7.5YR.

Value--5 through 8 dry, 3 through 6 moist.

Chroma--2 through 6.

C horizon:

Hue--10YR or 7.5YR

Value--5 through 8 dry, 3 through 6 moist

Chroma--2 through 6

Structure--Single grained or massive.

Texture of the fine earth--Averages coarse sand or loamy sand.

Aymate Series

The Aymate series consists of moderately deep over a petrocalcic horizon, well drained soils that formed in alluvium from mixed rocks. The Aymate soils are on fan remnants. Slopes are 0 to 8 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 63 degrees F.

Taxonomic class: Fine-loamy, mixed, thermic Petrocalcic Ustalfic Paleargids

Typical pedon: Aymate gravelly sandy loam, 2 to 4 percent slopes, rangeland, in a delineation of map unit 1340. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 2 percent cobbles and 22 percent pebbles.

A--0 to 3 inches; brown (7.5YR 5/4) gravelly sandy loam, dark brown (7.5YR 4/4) moist; moderate thin platy structure; soft, very friable, nonsticky and slightly plastic; many very fine roots; many very fine and fine interstitial pores; 22 percent pebbles; slightly effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.

AB--3 to 13 inches; reddish brown (5YR 5/4) sandy loam, reddish brown (5YR 4/4) moist; weak coarse subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine and fine interstitial and few very fine tubular pores; 5 percent pebbles; slightly effervescent; moderately alkaline (pH 8.0); clear smooth boundary.

Btk1--13 to 19 inches; reddish brown (5YR 5/4) gravelly clay loam, yellowish red (5YR 4/6) moist; moderate very fine and fine subangular blocky structure; slightly hard, friable, very sticky and very plastic; common very

fine and few fine roots; common very fine and fine tubular pores; common moderately thick clay films on faces of peds and lining pores; common thin lime coats on undersides of rock fragments; common fine lime filaments and threads; 1 percent cobbles, 15 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Btk2--19 to 28 inches; reddish brown (5YR 4/4) gravelly sandy clay loam, yellowish red (5YR 4/6) moist; strong fine and medium subangular blocky structure; hard, friable, sticky and plastic; few very fine and fine roots; common very fine and fine tubular pores; many moderately thick clay films on faces of peds, lining pores and bridges between sand grains; many thin lime coats and pendants on vertical and undersides of rock fragments; common fine lime filaments, threads, and seams; 2 percent cobbles, 28 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); gradual smooth boundary.

Bk--28 to 35 inches; pink (5YR 7/3) gravelly coarse sandy loam, light reddish brown (5YR 6/3) moist; massive; slightly hard, very friable, slightly sticky and nonplastic; few very fine roots; many very fine and fine interstitial and common very fine tubular pores; many moderately thick lime coats and pendants on vertical and undersides of rock fragments; many large soft lime masses, filaments, and seams; common discontinuous weakly to strongly lime cemented masses and lenses; 2 percent cobbles, 30 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

Bkqm--35 inches; white (10YR 8/1) indurated petrocalcic horizon, light gray (10YR 7/2) moist.

Type location: Lincoln County, Nevada; approximately 1 mile east of Tule Desert Well; about 1,250 feet east and 225 feet north of the southwest corner of section 5, T. 10 S., R. 69 E.; (37 degrees, 5 minutes, 26 seconds north latitude, 114 degrees, 18 minutes, 12 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist in late summer and for short periods in winter and spring. (Ustic-Aridic)

Soil temperature: 59 to 64 degrees F.

Depth to petrocalcic horizon: 20 to 40 inches.

Reaction: Moderately alkaline or strongly alkaline.

Control section:

Clay content--Averages 18 to 30 percent.

Rock fragments--15 to 35 percent, predominantly pebbles.

A horizon:

Hue--10YR or 7.5YR.

Value--5 through 7 dry, 4 or 5 moist.

Chroma--2 through 4.

Btk horizons:

Hue--5YR or 7.5YR.

Value--4 through 6 dry, 4 or 5 moist.

Chroma--2 through 6.

Texture--Gravelly clay loam, gravelly sandy clay loam, or gravelly loam.

Structure--Moderate to strong subangular blocky.

Other features--Rock fragments commonly contain thin to thick lime coats and pendants on vertical sides and undersides of rock fragments.

Bk horizon:

Hue--5YR or 10YR

Value--6 or 7 dry, 3 through 6 moist

Chroma--3 or 4 .

Texture--Very gravelly coarse sandy loam, gravelly coarse sandy loam, or gravelly sandy loam.

Bkqm horizon:

Cementation--Strongly lime cemented or indurated petrocalcic horizon with discontinuous accessory silica cementation.

Thickness--3 to 6 feet observed.

Other features--Very gravelly or extremely gravelly matrix.

Bard Series

The Bard series consists of shallow over a petrocalcic well drained soils that formed in alluvium derived from mixed rocks. The Bard soils are on fan remnants. Slopes are 2 to 8 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 64 degrees F.

Taxonomic class: Loamy, carbonatic, thermic, shallow Typic Paleorthids

Typical pedon: Bard gravelly fine sandy loam, 2 to 8 percent slopes, rangeland, in a delineation of map unit 1350. (Colors are for dry soil unless otherwise noted). The surface is partially covered with 30 percent indurated pan fragments.

A1--0 to 3 inches; light brown (7.5YR 6/4) gravelly fine sandy loam, brown (7.5YR 4/4) moist; moderate thin platy structure; soft, very friable, nonsticky and nonplastic; common very fine roots; many very fine vesicular pores; 25 percent pebbles and indurated pan fragments; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

A2--3 to 9 inches; pink (7.5YR 7/4) fine sandy loam, brown (7.5YR 5/4) moist; weak medium subangular blocky structure; slightly hard, very friable, nonsticky and slightly plastic; common very fine and fine roots; common very fine and fine tubular pores; 5 percent indurated pan fragments; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Bk1--9 to 17 inches; pink (7.5YR 7/4) sandy loam, brown (7.5YR 5/4) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; common very fine and fine and few medium roots; common very fine and fine tubular pores; common fine threads of soft lime; 10 percent indurated

pan fragments; violently effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.

Bk2--17 to 19 inches; white (7.5YR 8/0) fine sandy loam, pinkish gray (7.5YR 7/2) moist; massive; slightly hard, friable, nonsticky and nonplastic; few very fine and fine roots; common very fine and fine interstitial and tubular pores; many medium seams and soft masses of lime; 5 percent indurated pan fragments; violently effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary.

Bkm--19 inches; white (7.5YR 8/0) indurated petrocalcic horizon, pinkish white (7.5YR 8/2) moist; massive; extremely hard, extremely firm; violently effervescent.

Type location: Lincoln County, Nevada; approximately 8 miles north of Mesquite, Nevada; about 2,600 feet west and 1,200 feet north of the projected southeast corner of section 10, T. 12 S., R. 70 E.; 36 degrees, 54 minutes, 14 seconds north latitude, 114 degrees, 9 minutes, 19 seconds west longitude.

Range in Characteristics:

Soil Moisture: Usually dry, moist in some parts for short periods during winter and early spring and for very brief intermittent periods in summer and fall, 10 to 20 days cumulative following summer convection storms.

Soil temperature: 64 to 66 degrees F.

Depth to petrocalcic horizon: 14 to 20 inches.

Reaction--Moderately alkaline to very strongly alkaline.

Control section:

Clay Content--8 to 15 percent

Rock fragments--Less than 15 percent.

A horizon:

Hue--7.5YR or 10YR.

Value--6 through 8 dry, 4 or 5 moist.

Chroma--2 through 4.

Bk horizons:

Hue--5YR or 7.5YR.

Value--6 through 8 dry, 5 through 7 moist.

Chroma--0 through 4.

Structure--Massive or subangular blocky.

Consistence--Nonsticky or slightly sticky, nonplastic through plastic wet.

Secondary lime accumulation--Up to 75 percent soft lime masses, seams and filaments; 0 to 35 percent hard lime nodules.

Bkm horizon:

Value--7 or 8 dry or moist.

Chroma--0 through 4.

Other features--Some pedons may have thin, discontinuous silica lamellae in upper 1/2 inch of pan.

Bellehelen Series

The Bellehelen series consists of very shallow and shallow, well drained soils that formed in residuum and colluvium from volcanic rocks. The Bellehelen soils are on mountains. Slopes are 15 to 75 percent. The mean annual precipitation is about 14 inches and the mean annual temperature is about 47 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic Lithic Argixerolls

Typical pedon: Bellehelen very stony loam, 15 to 75 percent slopes, woodland, in a delineation of map unit 1070. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 5 percent stones, 10 percent cobbles, and 35 percent pebbles.

A--0 to 5 inches; brown (10YR 5/3) very stony loam, very dark brown (10YR 2/2) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common fine and medium roots; common very fine and fine interstitial and tubular and few medium tubular pores; 10 percent stones, 10 percent cobbles, 25 percent pebbles; neutral (pH 7.0); clear wavy boundary.

Bt--5 to 10 inches; yellowish brown (10YR 5/4) very gravelly loam, dark brown (10YR 3/3) moist; strong fine and medium subangular blocky structure; slightly hard, friable, sticky and plastic; many very fine through medium and few coarse roots; common fine and medium tubular pores; common thin clay films on faces of peds; 10 percent cobbles, 40 percent pebbles; neutral (pH 7.0); abrupt irregular boundary.

R--10 inches; fractured andesitic tuff.

Type location: Lincoln County, Nevada; in Timpahute Mountain Range approximately 1 mile northeast of Tunnel Spring; about 4,500 feet north and 2,500 feet west of the southeast corner of section 20, T. 3 S., R. 58 E.; (37 degrees, 40 minutes, 35 seconds north latitude, 115 degrees, 29 minutes, 24 seconds west longitude.

Range in Characteristics:

Soil moisture: Moist in winter and spring, dry summer and fall except for 10 to 20 days cumulative between July to October due to convection storms.

Soil temperature: 47 to 53 degrees F.

Mollic epipedon thickness: 7 to 10 inches (some pedons must be mixed to 7 inches to qualify as mollic).

Depth to bedrock: 7 to 14 inches.

Reaction: Neutral to mildly alkaline.

Control section:

Clay content--Averages 18 to 35 percent.

Rock fragments--35 to 60 percent.

A horizon:

Value--4 or 5 dry, 2 or 3 moist.
Chroma--2 or 3.

Bt horizon:

Value--5 or 6 dry, 3 or 4 moist.
Chroma--3 or 4.
Texture (less than 2 mm)--Loam, sandy clay loam, or clay loam, and may include subhorizons with greater than 35 percent clay.

Bluepoint Series

The Bluepoint series consists of very deep, somewhat excessively drained soils that formed in alluvium from mixed rocks. The Bluepoint soils are on dunes. Slopes are 0 to 15 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 65 degrees F.

Taxonomic class: Mixed, thermic Typic Torripsamments

Typical pedon: Bluepoint loamy fine sand, 4 to 8 percent slopes, rangeland, in a delineation of map unit 1030. (Colors are for dry soil unless otherwise noted.)

A--0 to 3 inches; pale brown (10YR 6/3) loamy fine sand, brown (10YR 5/3) moist; weak thin platy structure; soft, very friable, nonsticky and nonplastic; common very fine and fine and few medium roots; many very fine interstitial pores; strongly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

C1--3 to 42 inches; pale brown (10YR 6/3) stratified loamy fine sand, brown (10YR 5/3) moist; single grain; loose, nonsticky and nonplastic; common very fine and fine and few medium roots; many very fine interstitial pores; strongly effervescent; moderately alkaline (pH 8.0); gradual smooth boundary.

C2--42 to 60 inches; very pale brown (10YR 7/3) stratified loamy fine sand and fine sand, pale brown (10YR 6/3) moist; weak medium platy structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; many very fine interstitial pores; strongly effervescent; moderately alkaline (pH 8.4).

Type location: Lincoln County, Nevada; about 2,500 feet south and 100 feet west of the northeast corner of section 3, T. 9 S., R. 67 E.; (37 degrees, 11 minutes, 44 seconds north latitude, 114 degrees, 28 minutes, 28 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry. Moist for short periods throughout the moisture control section December through March. Moist above and periodically in upper part of moisture control section 10 to 20 days cumulative, July to October.

Soil temperature: 65 to 70 degrees F.

Soil color: Darker values and lower chroma reflect lithochromic colors.

Control section:

Clay content--2 to 10 percent.
Rock fragments--Average less than 15 percent.

A & C Horizons:

Hue--5YR, 7.5YR, or 10YR.
Value--4 through 7 dry, 3 through 6 moist.
Chroma--3 through 6.
Reaction--Slightly alkaline to strongly alkaline.
Structure--Single grain, massive or platy.
Texture--Commonly loamy fine sand or loamy sand, includes sand or fine sand, containing more than 10 percent silt plus clay.
Consistence--Loose to slightly hard dry, loose and very friable moist.
Other features--Calcareous in some part or all of control section. Few gypsum or lime segregations in some pedons.

Boxspring Series

The Boxspring series consists of shallow, well drained soils that formed in residuum and colluvium derived from limestone and dolomite. The Boxspring soils are on mountains. Slopes are 15 to 50 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 54 degrees F.

Taxonomic class: Loamy-skeletal, carbonatic, mesic Lithic Ustic Torriorthents

Typical pedon: Boxspring extremely gravelly loam, 15 to 50 percent slopes, rangeland, in a delineation of map unit 1810. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 15 percent cobbles and 50 percent pebbles.

A--0 to 3 inches; pale brown (10YR 6/3) extremely gravelly loam, dark brown (10YR 3/3) moist; weak thin platy structure that parts to moderate very fine subangular blocky; soft, very friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine interstitial and few very fine tubular pores; 15 percent cobbles, 50 percent pebbles; violently effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.

C1--3 to 11 inches; light yellowish brown (10YR 6/4) very gravelly loam, brown (10YR 4/3) moist; weak very fine and fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; few very fine interstitial and few very fine tubular pores; 5 percent cobbles, 40 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear wavy boundary.

C2--11 to 16 inches; very pale brown (10YR 7/3) extremely gravelly loam, brown (10YR 5/3) moist; massive; soft, very friable, slightly sticky and plastic; few very fine and fine roots; few very fine interstitial pores; 20 percent cobbles, 50 percent pebbles;

violently effervescent; strongly alkaline (pH 8.6); abrupt wavy boundary.

R--16 inches; fractured limestone bedrock.

Type location: Lincoln County, Nevada; approximately 1 mile west of Blue Nose Peak; about 1,750 feet west and 2,000 feet north of the projected southeast corner of section 24, T. 8 S., R. 68 E.; (37 degrees, 14 minutes, 13 seconds north latitude, 114 degrees, 19 minutes, 44 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist for short periods in winter and early spring and intermittently moist for 10 to 20 days during the period July through October due to summer convection storms.

Soil temperature: 55 to 58 degrees F.

Depth to bedrock: 14 to 20 inches.

Calcium carbonate equivalent: Averages 40 to 60 percent, in the less than 20 millimeter fraction.

Control section:

Clay content--10 to 18 percent.

Rock fragments--35 to 70 percent, dominantly pebbles and cobbles.

A horizon:

Value--5 through 7 dry, 3 through 5 moist.

C horizon:

Value--5 through 7 dry, 4 or 5 moist.

Chroma--3 or 4.

Clay content--10 to 18 percent.

Texture--Very gravelly or very cobbly loam, or extremely gravelly or extremely cobbly loam.

Structure--Weak fine or very fine subangular blocky or massive.

Consistence--Soft or slightly hard.

Reaction--Moderately alkaline to strongly alkaline

A--0 to 2 inches; pale brown (10YR 6/3) gravelly fine sandy loam, brown (10YR 4/3) moist; moderate thick platy structure; slightly hard, very friable, nonsticky and nonplastic; common very fine roots; few very fine interstitial and many very fine vesicular pores; 2 percent cobbles; 24 percent pebbles; strongly effervescent; moderately alkaline (pH 8.0); abrupt wavy boundary.

Cy1--2 to 4 inches; very pale brown (10YR 7/3) very fine sandy loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; few very fine vesicular and interstitial pores; 10 percent pebbles; 30 percent cemented crystals of gypsum in a weakly gypsum cemented matrix; strongly effervescent; moderately alkaline (pH 8.2); gradual smooth boundary.

Cy2--4 to 60 inches; very pale brown (10YR 7/3) sandy loam, pale brown (10YR 6/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; common very fine and fine roots occurring in fractures; many very fine interstitial and many very fine and common fine vesicular pores; 10 percent pebbles; 35 percent crystals of gypsum in a weakly gypsum cemented matrix; slightly effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.

Cr--60 inches; very pale brown (10YR 7/3) weakly consolidated gypsiferous sediments, pale brown (10YR 6/3) moist; massive; hard, firm, nonsticky and nonplastic; slightly effervescent; slightly alkaline (pH 7.8).

Type location: Lincoln County, Nevada; approximately 12 miles north of Mesquite; about 1,000 feet east and 250 feet south of the projected northwest corner of section 29, T. 11 S., R. 70 E.; (36 degrees, 57 minutes, 30 seconds north latitude, 114 degrees, 11 minutes, 48 seconds west longitude).

Range in Characteristics:

Soil moisture: Usually dry, moist for short periods in winter and spring, moist for 10 to 20 days intermittent in summer.

Soil temperature: 65 to 72 degrees F.

Depth to paralithic contact: 40 to 60 inches, or greater.

Effervescence: Slightly effervescent to violently effervescent.

A horizon:

Value--6 through 8 dry, 4 through 7 moist.

Chroma--3 through 6.

C horizons:

Hue--10YR, 7.5YR, 5YR, or 2.5YR.

Value--7 or 8 dry, 5 through 7 moist.

Chroma--3 through 6.

Texture--Commonly sandy loam, fine sandy loam or coarse sandy loam, some pedons have thin strata of loamy sand or loamy coarse sand.

Bracken Series

The Bracken series consists of deep, somewhat excessively drained soils that formed in residuum and colluvium from gypsiferous sediments. The Bracken soils are on pediments. Slopes are 2 to 8 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 65 degrees F.

Taxonomic class: Coarse-loamy, gypsic, thermic Typic Gypsiorthids

Typical pedon: Bracken gravelly fine sandy loam, 2 to 8 percent slopes, rangeland, in a delineation of map unit 1380. (Colors are for dry soils unless otherwise noted.) The surface is partially covered with 5 percent cobbles and 25 percent pebbles.

Consistence--Soft through hard, very friable or friable, nonsticky or slightly sticky, nonplastic or slightly plastic.

Rock fragments--10 to 35 percent, mostly pebbles.

Gypsum content--50 to 95 percent, about half in crystals 2 to 20 millimeter in size.

Reaction--Slightly alkaline or moderately alkaline.

Other features--Some pedons may be weakly cemented with common strongly gypsum cemented lenses.

Brier Series

The Brier series consists of shallow, well drained soils that formed in residuum and colluvium from volcanic rocks. The Brier soils are on mountains. Slopes are 15 to 75 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 Lithic Argixerolls

Typical pedon: Brier very gravelly sandy loam, 15 to 75 percent slopes, woodland, in a delineation of map unit 1070. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 10 percent cobbles and 40 percent pebbles.

A--0 to 3 inches; dark grayish brown (10YR 4/2) very gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; common fine tubular and interstitial pores; 10 percent cobbles, 35 percent pebbles; neutral (pH 7.0); clear wavy boundary.

Bt1--3 to 7 inches; brown (10YR 4/3) very cobbly clay loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; very hard, firm, sticky and plastic; many very fine through medium roots; common fine and medium tubular pores; common thin clay films on faces of peds; 30 percent cobbles, 20 percent pebbles; neutral (pH 7.0); clear wavy boundary.

Bt2--7 to 15 inches; dark yellowish brown (10YR 4/4) very gravelly sandy clay loam, dark yellowish brown (10YR 3/4) moist; strong fine and medium subangular blocky structure; very hard, firm, sticky and plastic; common fine and medium and few coarse roots; common fine and medium and few coarse tubular pores; many moderately thick clay films on faces of peds and coating sand grains; 10 percent cobbles, 35 percent pebbles; neutral (pH 7.0); clear wavy boundary.

R--15 inches; mafic tuff.

Type location: Lincoln County, Nevada; in the Mount Irish Range approximately 2 miles west and 6 miles north of Crescent Spring, about 500 feet east and 1,000 feet south of the northwest corner of section 14, T. 3 S., R. 58 E.; (37 degrees, 41 minutes, 25 seconds north

latitude, 115 degrees, 26 minutes, and 35 seconds west longitude.)

Range in Characteristics:

Soil moisture: Moist in the winter and early spring months, and dry in summer and fall except for 10 to 20 days cumulative between July and October due to convection storms.

Soil temperature: 49 to 53 degrees F.

Mollic epipedon: 7 to 12 inches, includes the upper part of the Bt horizon.

Depth to bedrock: 14 to 20 inches.

Reaction: Neutral or mildly alkaline.

Control section:

Percent clay--Averages 18 to 35 percent.

Rock fragments--35 to 60 percent, mostly cobbles.

A horizon:

Value--4 or 5 dry, 2 or 3 moist.

Chroma--2 or 3 moist or dry.

Bt horizon:

Value--5 or 6 dry, 3 or 4 moist.

Chroma--3 or 4, moist or dry.

Texture--Averages loam, clay loam, or sandy clay loam, some subhorizons have greater than 35 percent clay.

Canutio Series

The Canutio series consists of very deep, well drained soils that formed in alluvium from mixed rocks. The Canutio soils are on alluvial fans, fan remnants and inset fans. Slopes are 0 to 8 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 60 degrees F.

Taxonomic class: Loamy-skeletal, mixed (calcareous), thermic Typic Torriorthents

Typical pedon: Canutio gravelly sandy loam, 2 to 4 percent slopes, rangeland, in a delineation of map unit 1360. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 3 percent cobbles and 22 percent pebbles.

A1--0 to 2 inches; pale brown (10YR 6/3) gravelly sandy loam, brown (10YR 4/3) moist; moderate medium platy structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine roots; common very fine and fine interstitial and common very fine tubular pores; 30 percent pebbles; slightly effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.

A2--2 to 9 inches; pale brown (10YR 6/3) gravelly sandy loam, dark yellowish brown (10YR 4/4) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and

fine and common medium and coarse roots; many very fine interstitial and common fine and medium tubular pores; common thin lime coats randomly oriented on rock fragments; 15 percent pebbles; strongly effervescent; moderately alkaline (pH 8.0); clear wavy boundary.

2C1--9 to 18 inches; light yellowish brown (10YR 6/4) very gravelly coarse sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, slightly sticky and slightly plastic; many very fine and fine and few medium roots; common very fine and fine interstitial and few very fine tubular pores; common thin lime coats randomly oriented on rock fragments; 15 percent cobbles, 40 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear wavy boundary.

2C2--18 to 60 inches; pale brown (10YR 6/3) stratified very gravelly loamy coarse sand and gravelly sandy loam; brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine and fine and common medium roots; common very fine and fine interstitial and few very fine tubular pores; common thin lime coats randomly oriented on rock fragments; 10 percent cobbles, 45 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); gradual wavy boundary.

Type location: Lincoln County, Nevada; approximately 900 feet southeast of Kane Springs Wash Road and 20 miles northeast of U.S. Highway 93; about 2,500 feet east and 2,000 feet south of the projected northwest corner of section 28, T. 9 S., R. 65 E.; (37 degrees, 8 minutes, 21 seconds north latitude, 114 degrees, 43 minutes, 15 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist in some part for short periods during the winter and early spring and for short intermittent periods, 10 to 20 days cumulative following summer convection storms in the period July through October.

Soil temperature: 60 to 64 degrees F.

Calcium carbonate equivalent: Averages less than 10 percent.

Control section:

Clay content--8 to 18 percent.

Rock fragments--Average 35 to 60 percent.

A horizons:

Hue--10YR or 7.5YR.

Value--6 or 7 dry, 4 through 6 moist.

Chroma--2 through 4.

C horizons:

Hue--10YR or 7.5YR.

Value--6 or 7 dry.

Chroma--2 through 4.

Other features--Rock fragments commonly have common to many very thin or thin lime coats randomly oriented.

Capsus Series

The Capsus series consists of shallow, well drained soils that formed in residuum and colluvium from volcanic rocks. The Capsus soils are on mountains. Slopes are 15 to 30 percent. The mean annual precipitation is about 12 inches and the mean annual temperature is about 50 degrees F.

Taxonomic class: Clayey, montmorillonitic, mesic Lithic Argiustolls

Typical pedon: Capsus very cobbly sandy clay loam, 15 to 30 percent slopes, woodland, in a delineation of map unit 1941. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 30 percent cobbles and 25 percent pebbles.

A--0 to 2 inches; grayish brown (10YR 5/2) very cobbly sandy clay loam, very dark grayish brown (10YR 3/2) moist; moderate very fine and fine granular structure; soft, very friable, sticky and plastic; common very fine roots; many very fine and fine interstitial pores; 20 percent cobbles, 25 percent pebbles; neutral (pH 7.0); clear smooth boundary.

Bt1--2 to 7 inches; dark brown (10YR 3/3) gravelly clay loam, dark brown (10YR 3/3) moist; moderate medium prismatic structure parting to moderate fine and medium angular blocky; very hard, firm, very sticky and very plastic; common very fine and fine roots commonly occurring as exped; common very fine and few fine tubular pores; common thin clay films lining pores and many pressure faces on peds; 5 percent cobbles, 15 percent pebbles; neutral (pH 7.2); clear smooth boundary.

Bt2--7 to 16 inches; brown (10YR 4/3) gravelly clay, dark brown (10YR 3/3) moist; moderate medium prismatic structure parting to strong fine and medium angular blocky; very hard, firm, very sticky and very plastic; common very fine and few fine and medium roots commonly occurring as exped; common very fine tubular pores; many moderately thick clay films lining pores and many pressure faces on peds; 10 percent cobbles, 20 percent pebbles; neutral (pH 7.2); abrupt wavy boundary.

R--16 inches; fractured andesite.

Type location: Lincoln County, Nevada; approximately 5 miles southeast of Delamar ghost town; about 2,250 feet south and 700 feet west of the projected northeast corner of section 10, T. 6 S., R. 65 E.; (37 degrees, 26 minutes, 25 seconds north latitude, 114 degrees, 41 minutes, 27 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist in late summer and for short periods in winter and early spring. (Ustic-aridic)

Soil temperature: 47 to 52 degrees F.

Depth to bedrock: 14 to 20 inches.

Reaction: Neutral to mildly alkaline.

Control section:

Clay content--35 to 60 percent.
Rock fragments--15 to 35 percent.

A horizon:

Hue--10YR or 7.5YR.
Value--4 or 5 dry, 2 or 3 moist.
Chroma--2 or 3.

Bt horizons:

Hue--5YR, 7.5YR, or 10YR.
Value--3 through 5 dry, 2 or 3 moist.
Chroma--2 or 3.
Texture--Gravelly clay loam or gravelly clay.
Structure--Subangular blocky or angular blocky commonly within prismatic.

Cath Series

The Cath series consists of very deep, well drained soils that formed in alluvium from mixed rocks. The Cath soils are on fan remnants and inset fans. Slopes are 2 to 4 percent. The mean annual precipitation is about 11 inches and the mean annual temperature is about 52 degrees F.

Taxonomic class: Fine-loamy, mixed, mesic Durixerollic Haplargids

Typical pedon: Cath coarse sandy loam, 2 to 4 percent slopes, rangeland, in a delineation of map unit 1730. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 10 percent pebbles.

A--0 to 4 inches; brown (10YR 5/3) coarse sandy loam, dark brown (10YR 3/3) moist; weak thin platy structure; soft, very friable, nonsticky and slightly plastic; common very fine roots; many very fine and fine vesicular pores; 12 percent pebbles; slightly alkaline (pH 7.8); clear smooth boundary.

Bt--4 to 13 inches; brown (7.5YR 5/4) sandy clay loam, dark brown (7.5YR 4/4) moist; moderate fine subangular blocky structure; slightly hard, friable, sticky and plastic; many very fine and fine roots; common very fine and fine tubular pores; common moderately thick clay films on faces of peds and lining pores; 8 percent pebbles; slightly alkaline (pH 7.8); clear smooth boundary.

Btk--13 to 21 inches; light brown (7.5YR 6/4) sandy clay loam, brown (7.5YR 5/4) moist; moderate fine and medium subangular blocky structure; hard, friable, sticky and plastic; few very fine and fine roots; common very fine and fine tubular pores; common thin clay films on faces of peds and lining pores; many thick lime coats on vertical and undersides of rock fragments; many medium lime filaments and seams; weak lime cementation; 10 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); gradual smooth boundary.

2Btqk--21 to 32 inches; light brown (7.5YR 6/4) very gravelly sandy clay loam, brown (7.5YR 5/4) moist; strong fine and medium subangular blocky structure;

slightly hard, friable, sticky and plastic; few very fine roots; common very fine tubular pores; few thin clay films on faces of peds; many thick lime and silica coats on undersides of rock fragments; common thin lime filaments and seams; weak lime and silica cementation; 35 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

2Bqk--32 to 60 inches; pinkish gray (7.5YR 6/2) stratified very gravelly coarse sandy loam and very gravelly sandy loam, brown (7.5YR 4/2) moist; massive; hard, firm, nonsticky and nonplastic; few very fine roots; many very fine and fine interstitial pores; common thin lime coats on undersides of rock fragments; weak lime and silica cementation; 40 percent pebbles; slightly effervescent; moderately alkaline (pH 8.4).

Type location: Lincoln County, Nevada; in Delamar Valley along the power line road; approximately 1,900 feet west and 1,300 feet north of the southeast corner of section 15, T. 4 S., R. 64 E.; (37 degrees, 35 minutes, 47 seconds north latitude, 114 degrees, 47 minutes, 38 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist in winter and spring, dry in summer except for 10 to 20 days between July and October due to convection storms.

Depth to weak cementation: 20 to 30 inches.

Control section:

Clay content--25 to 35 percent.
Rock fragments--0 to 25 percent.

A horizon:

Hue--10YR or 7.5YR.
Value--5 or 6 dry, 3 or 4 moist.
Chroma--2 through 4.
Reaction--Neutral to moderately alkaline.

Bt horizon:

Hue--7.5YR, 10YR or 5YR.
Value--5 or 6 dry, 3 through 5 moist.
Chroma--4 or 5.
Texture--Clay loam or sandy clay loam
Clay content--25 to 35 percent.
Rock fragments--0 to 25 percent.
Structure--Weak or moderate medium to coarse prismatic or fine or medium subangular blocky.
Consistence--Hard or slightly hard.
Reaction--Slightly alkaline or moderately alkaline.

Btk horizon:

Hue 7.5YR, 10YR or 5YR
Value--5 or 6 dry, 3 through 5 moist
Chroma--4 or 5
Texture--Clay loam or sandy clay loam
Clay content--25 to 35 percent.
Reaction--Moderately alkaline to strongly alkaline.
Rock fragments--5 to 25 percent.
Structure--Weak or moderate medium to coarse prismatic, or subangular blocky.

Consistence--Hard or slightly hard dry, very friable to friable, sticky to very sticky, plastic to very plastic.

2Btqk horizon:

Hue 10YR, 5YR or 7.5YR
 Value--5 through 7 dry, 3 through 5 moist.
 Chroma--2 through 4
 Clay content--30 to 40 percent.
 Structure--Massive or subangular blocky.
 Texture--Very gravelly sandy clay loam or very gravelly loam.
 Rock fragments--35 to 60 percent pebbles.
 Consistence--Soft, slightly hard dry, very friable or friable moist.
 Reaction--Moderately alkaline or strongly alkaline.

2Bqk horizon:

Hue--10YR, 5YR or 7.5YR.
 Value--5 through 8 dry, 4 through 6 moist.
 Chroma--1 through 4.
 Texture--Stratified very gravelly loamy coarse sand to very gravelly loam.
 Clay content--Averages 5 to 10 percent.
 Rock fragments--Average 35 to 60 percent.
 Consistence--Hard or very hard.

Cave Series

The Cave series consists of very shallow and shallow over a petrocalcic horizon, well drained soils that formed in alluvium from mixed rocks. The Cave soils are on fan remnants. Slopes are 2 to 30 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 58 degrees F.

Taxonomic class: Loamy, mixed, thermic, shallow Typic Paleorthids

Typical pedon: Cave very gravelly sandy loam, 2 to 15 percent slopes, rangeland, in a delineation of map unit 1400. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 2 percent cobbles and 38 percent pebbles.

A--0 to 3 inches; pale brown (10YR 6/3) very gravelly sandy loam, dark yellowish brown (10YR 4/4) moist; moderate thin platy structure; soft, very friable, slightly sticky and slightly plastic; few very fine roots; many very fine and fine vesicular and many very fine interstitial pores; 35 percent pebbles; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Bk--3 to 14 inches; very pale brown (10YR 7/3) gravelly sandy loam, yellowish brown (10YR 5/4) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine and few medium roots; many very fine and fine interstitial and few very fine tubular pores; many thin to thick lime coats and pendants on vertical and undersides of rock fragments; 30 percent pebbles;

violently effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.

2Bkm--14 to 22 inches; white (10YR 8/2) indurated petrocalcic horizon with a very gravelly matrix.

2Bk--22 to 60 inches; very pale brown (10YR 7/3) very gravelly sandy loam, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; many very fine and fine interstitial pores; many thin to thick lime coating and pendants on vertical and undersides of rock fragments; weakly lime cemented matrix alternating with lenses of strongly cemented material; 5 percent cobbles, 40 percent pebbles; violently effervescent; moderately alkaline (pH 8.4).

Type location: Lincoln County, Nevada; approximately 4 miles east of the Meadow Valley Wash; about 2,100 feet west and 1,450 feet north of the southeast corner of section 18, T. 9 S., R. 68 E.; (37 degrees, 9 minutes, 7 seconds north latitude, 114 degrees, 25 minutes, 23 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, but are moist for short periods during the winter and early spring months and for short intermittent periods following summer convection storms, 10 to 20 days cumulative during the period July through October.

Soil temperature: 59 to 65 degrees F.

Depth to hardpan: 4 to 20 inches.

Control section:

Clay content--10 to 20 percent.

Rock fragments--Average 15 to 35 percent, predominantly pebbles.

A horizon:

Hue--10YR or 7.5YR.

Value--5 through 7 dry, 4 or 5 moist.

Chroma--3 or 4.

Other features--Organic matter is less than 1 percent.

Bk horizons:

Hue--10YR or 7.5YR.

Value--5 through 8 dry, 4 through 8 moist.

Chroma--2 through 4.

Texture--Gravelly sandy loam or gravelly loam.

Structure--Massive or weak fine subangular blocky.

Consistence--Soft or slightly hard, friable or very friable.

Chanybuck Series

The Chanybuck series consists of very shallow, well drained soils that formed in residuum and colluvium from pyroclastic material. The Chanybuck soils are on mountains. Slopes are 30 to 75 percent. The mean annual precipitation is about 18 inches and the mean annual temperature is about 44 degrees F.

Taxonomic class: Ashy-skeletal, frigid Lithic Haploxerolls

Typical pedon: Chanybuck extremely bouldery sandy loam, 30 to 75 percent slopes, woodland, in a delineation of map unit 1750. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 35 percent boulders, 5 percent cobbles, and 40 percent pebbles with a half inch of decomposed pine and white fir needles.

A--0 to 4 inches; dark grayish brown (10YR 4/2) extremely bouldery sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine and medium granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine and few medium roots; many very fine and fine interstitial pores; 35 percent boulders, 40 percent pebbles; neutral (pH 7.0); clear smooth boundary.

Bw--4 to 7 inches; dark brown (10YR 3/3) very gravelly sandy loam, very dark gray (10YR 3/1) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and nonplastic; common very fine and fine and few medium roots; many very fine and fine interstitial and common fine tubular pores; common very fine sand lining pores; 40 percent pebbles; neutral (pH 7.0); abrupt wavy boundary.

R--7 inches; ignimbrite bedrock with a thin weathering rind.

Type location: Lincoln County, Nevada; in the South Pahroc Range approximately 5.25 miles south of U.S. Highway 93; in an unsectioned area about 2.75 miles southeast of the northwest corner of T. 5 S., R. 62 E.; (37 degrees, 31 minutes, 23 seconds north latitude, 115 degrees, 2 minutes, 45 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually moist, moist in winter and spring, dry in late summer and fall.

Soil temperature: 44 to 47 degrees F.

Depth to bedrock: 5 to 10 inches.

Control section:

Clay content--10 to 18 percent.

Rock fragments--60 to 85 percent, predominantly boulders and pebbles.

Other features--These horizons average 10 to 20 percent by weight volcanic glass within the very fine sand fraction.

A horizon:

Value--4 or 5 dry, 3 or 4 moist.

Chroma--2 or 3

Bw horizon:

Value--3 or 4.

Chroma--1 through 3.

Texture of the fine earth--Sandy loam or fine sandy loam.

Consistence--Slightly hard or soft.

Chinkle Series

The Chinkle series consists of very shallow and shallow, well drained soils that formed in residuum and colluvium from sedimentary rocks. The Chinkle soils are on mountains. Slopes are 8 to 50 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 62 degrees F.

Taxonomic class: Loamy, mixed (calcareous), thermic, shallow Typic Torriorthents

Typical pedon: Chinkle very gravelly very fine sandy loam, 15 to 50 percent slopes, rangeland, in delineation of map unit 1062. (Colors are for dry soil unless otherwise noted.) The soil surface is partly covered with 45 percent pebbles and 10 percent cobbles.

A1--0 to 2 inches; reddish brown (5YR 5/4) very gravelly very fine sandy loam, dark reddish brown (5YR 3/4) moist; moderate, thin platy structure; slightly hard, very friable, nonsticky and nonplastic; common very fine roots; common fine vesicular and very fine interstitial pores; 35 percent pebbles and 5 percent cobbles; strongly effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.

A2--2 to 6 inches; reddish brown (5YR 5/4) gravelly fine sandy loam, dark reddish brown (5YR 3/4) moist; weak thin platy structure parting to moderate fine granular; slightly hard, very friable, nonsticky and slightly plastic; common very fine and fine roots; many very fine interstitial pores; 25 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Bk--6 to 13 inches; reddish brown (5YR 5/4) gravelly loam, dark reddish brown (5YR 3/4) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and plastic; common very fine, fine and few medium roots; common very fine tubular and interstitial pores; 25 percent pebbles and 5 percent cobbles; few very thin lime coats on undersides of rock fragments; few fine threads of soft lime; violently effervescent; moderately alkaline (pH 8.4); clear irregular boundary.

Cr--13 to 25 inches; reddish brown (2.5YR 5/4) highly fractured somewhat weathered very fine grained sandstone; few very fine, fine and medium roots along fractures; 50 percent of the rock material is weathered and fragments are easily broken with two hands; few thin lime coats in fractures; abrupt irregular boundary.

R--25 inches; slightly fractured very fine grained red sandstone.

Type location: Lincoln County, Nevada; approximately 17 miles north-north west of Mesquite; about 2,500 feet north and 1,000 feet west of the southeast corner of section 16, T. 10 S., R. 70 E.; (37 degrees, 4 minutes, 3 seconds north latitude, 114 degrees, 10 minutes, 00 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist in some part for short periods during winter and early spring and for very brief intermittent periods in summer and fall, 10 to 20 days cumulative following summer convection storms.

Soil temperature: 62 to 71 degrees F.

Depth to paralithic horizon: 8 to 14 inches

Depth to hard bedrock: 20 to 30 inches

Profile reaction: Moderately alkaline to strongly alkaline.

Control section:

Percent clay--8 to 18 percent.

Rock fragments--15 to 35 percent, dominantly pebbles.

A horizon:

Hue--5YR through 10YR.

Value--5 through 7 dry, 3 through 5 moist.

Chroma--2 through 4.

Bk horizon:

Hue--2.5YR through 10YR.

Value--5 through 7 dry, 3 through 5 moist.

Chroma--3 through 6.

Texture--Gravelly fine sandy loam, gravelly very fine sandy loam or gravelly loam

Structure--Massive or subangular blocky.

Other features--Occurrence of free lime ranges from few to many very thin lime coats on undersides of rock fragments. These lime coats and threads total less than 5 percent by volume of the horizon. In some pedons this horizon lacks segregated threads or seams of soft lime.

Cr horizon:

Hue--2.5YR through 10YR.

Other features--This horizon contains 30 to 60 percent weathered bedrock material. Occurrence of free lime ranges from few very thin to many thin coats along bedrock fractures.

Cliffdown Series

The Cliffdown series consists of very deep, somewhat excessively drained soils that formed in alluvium from mixed rocks. The Cliffdown soils are on fan remnants. Slopes are 4 to 8 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy-skeletal, mixed (calcareous), mesic Typic Torriorthents

Typical pedon: Cliffdown gravelly sandy loam, 4 to 8 percent slopes, rangeland, in a delineation of map unit 1710. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 20 percent pebbles.

A--0 to 2 inches; pale brown (10YR 6/3) gravelly sandy loam, brown (10YR 4/3) moist; weak thin platy structure; soft, very friable, slightly sticky and nonplastic; few very fine roots; many very fine and fine interstitial and few very fine vesicular pores; 20 percent pebbles; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

C1--2 to 10 inches; pale brown (10YR 6/3) gravelly fine sandy loam, brown (10YR 5/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine and fine roots; many very fine and fine interstitial and few very fine tubular pores; 30 percent pebbles; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

2C2--10 to 22 inches; light yellowish brown (10YR 6/4) very gravelly fine sandy loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; many very fine and fine interstitial and few very fine tubular pores; 40 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

2C3--22 to 28 inches; light yellowish brown (10YR 6/4) very gravelly fine sandy loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, nonsticky and nonplastic; moderate very fine and fine roots; many very fine and fine interstitial pores; 45 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

2C4--28 to 60 inches; light yellowish brown (10YR 6/4) very gravelly fine sandy loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; many very fine and fine interstitial pores; 50 percent pebbles; violently effervescent; moderately alkaline (pH 8.4).

Type location: Lincoln County, Nevada; in Dry Lake Valley approximately 3,900 feet east and 3,100 feet south of the northwest corner of section 6, T. 3 S., R. 65 E.; (37 degrees, 42 minutes, 56 seconds north latitude, 114 degrees, 44 minutes, 10 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist in some part for short periods during winter and early spring and for 10 to 20 days cumulative between July to October following convection storms.

Soil temperature: 53 to 59 degrees F.

Effervescence: Slightly effervescent to strongly effervescent increasing to violently effervescent with depth.

Reaction: Moderately alkaline or strongly alkaline.

Control section:

Clay content--5 to 15 percent.

Rock fragments--Averages 35 to 50 percent.

A horizon:

Hue--10YR or 7.5YR.

Value--6 or 7 dry, 3 through 5 moist.

Chroma--2 through 4.

C horizons:

Texture--Stratified gravelly sandy loam to very gravelly fine sandy loam.

Other features--Some pedons have A horizon with 1/2 unit of value darker than C horizon. Some pedons contain weak Bk horizons. Some pedons have few thin lime coats on pebbles

Crystal Springs Series

The Crystal Springs series consists of shallow over a petrocalcic, well drained soils that formed in alluvium derived from limestone and dolomite. The Crystal Springs soils are on fan remnants. Slopes are 2 to 8 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 56 degrees F.

Taxonomic class: Loamy, carbonatic, mesic, shallow
Typic Paleorthids

Typical pedon: Crystal Springs gravelly sandy loam, 2 to 8 percent slopes, rangeland, in a delineation of map unit 1960. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 15 percent pebbles.

A--0 to 3 inches; pale brown (10YR 6/3) gravelly sandy loam, yellowish brown (10YR 5/4) moist; moderate medium and thick platy structure; slightly hard, very friable, nonsticky and nonplastic; few very fine roots; common very fine vesicular and fine interstitial pores; 15 percent pebbles; violently effervescent; strongly alkaline (pH 8.5); clear smooth boundary.

Bkq1--3 to 10 inches; pale brown (10YR 6/3) gravelly fine sandy loam, yellowish brown (10YR 5/4) moist; moderate fine and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine through medium roots; common very fine and fine interstitial pores; many thick lime and silica pendants on undersides of rock fragments; 15 percent pebbles; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

Bkq2--10 to 15 inches; pale brown (10YR 6/3) gravelly fine sandy loam, yellowish brown (10YR 5/4) moist; weak medium and coarse subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine through medium roots; few very fine interstitial pores; many thick lime and silica pendants on undersides of rock fragments; 5 percent cobbles, 25 percent pebbles; violently effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary.

Bkqm--15 inches; pale brown (10YR 6/3) indurated petrocalcic horizon, yellowish brown (10YR 5/4) moist; extremely hard, extremely firm; very thin (less than 1 millimeter) continuous indurated silica lamellae capping strongly lime-silica cemented material; violently effervescent.

Type location: Lincoln County, Nevada; in Sixmile Flat approximately 3 miles north of U.S. Highway 93; about

1,450 feet west and 1,900 feet south of the northeast corner of section 16, T. 4 S., R. 61 E.; (37 degrees, 36 minutes, 6 seconds north latitude, 115 degrees, 8 minutes, 26 seconds west longitude.)

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 59 degrees F.

Depth to petrocalcic horizon: 14 to 20 inches.

Control section:

Clay content--5 to 18 percent.

Rock fragments--15 to 35 percent pebbles and cobbles, predominantly pebbles.

Calcium carbonate equivalent--Greater than 40 percent by weight.

A horizon:

Hue--10YR or 7.5YR.

Value--6 through 8 dry, 4 through 6 moist.

Chroma--2 through 4.

Bkq horizons:

Hue--10YR or 7.5YR.

Value--6 through 8 dry, 4 through 6 moist.

Chroma--2 through 4.

Consistence--Soft to slightly hard to very hard, very friable to very firm.

Other features--The Bkq2 horizon may be weakly cemented in some pedons.

Bkqm horizon:

Hue--10YR or 7.5YR.

Value--6 through 8 dry, 3 through 7 moist.

Chroma--1 through 4.

Dalian Series

The Dalian series consists of very deep, well drained soils that formed in alluvium derived from mixed rocks. The Dalian soils are on inset fans. Slopes are 4 to 8 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 63 degrees F.

Taxonomic class: Loamy-skeletal, carbonatic, thermic
Typic Torriorthents

Typical pedon: Dalian very gravelly fine sandy loam, 4 to 8 percent slopes, rangeland, in a delineation of map unit 1371. (Colors are for dry soils unless otherwise noted.) The surface is partially covered with 40 percent pebbles.

A--0 to 3 inches; yellowish brown (10YR 5/4) very gravelly fine sandy loam, dark yellowish brown (10YR 4/4)

moist; weak thin platy structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common very fine and fine tubular and few fine vesicular pores; 40 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Ck1--3 to 10 inches; pale brown (10YR 6/3) very gravelly sandy loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine and fine and common medium and few coarse roots; common very fine tubular pores; common thin discontinuous lime coats on undersides of rock fragments; 50 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Ck2--10 to 20 inches; pale brown (10YR 6/3) very gravelly sandy loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine and fine and few medium roots; common very fine tubular and few fine interstitial pores; common thin lime coats on undersides of rock fragments; 50 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Ck3--20 to 60 inches; light yellowish brown (10YR 6/4) very gravelly sandy loam, dark yellowish brown (10YR 4/4) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine and fine and few medium and coarse roots; common very fine tubular and few fine interstitial pores; common thin lime coats on undersides of rock fragments; 55 percent pebbles; violently effervescent; moderately alkaline (pH 8.4).

Type location: About 350 feet north and 2,600 feet west of the projected southeast corner of section 2, T. 12 S., R. 69 E.; (36 degrees, 55 minutes, 01 second north latitude, 114 degrees, 14 minutes, 39 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, but are intermittently moist in winter and early spring.

Soil temperature: 59 to 66 degrees F.

Control section:

Clay content--3 to 12 percent.

Rock fragments--35 to 60 percent.

Calcium carbonate equivalent--40 to 60 percent by weight in the less than 20 millimeter fraction.

A horizon:

Hue--10YR or 7.5YR.

Value--5 through 7 dry, 3 through 5 moist.

Chroma--2 through 4.

Ck horizons:

Structure--Massive or single grain.

Consistence--Loose through slightly hard, loose or very friable, nonsticky or slightly sticky.

Other features--Thin or thick randomly oriented lime coats on rock fragments.

Decan Series

The Decan series consists of moderately deep, well drained soils that formed in alluvium from mixed rocks. The Decan soils are on fan remnants. Slopes are 2 to 15 percent. The mean annual precipitation is about 14 inches and the mean annual temperature is about 49 degrees F.

Taxonomic class: Fine, montmorillonitic, mesic Aridic Durixerolls

Typical pedon: Decan gravelly clay loam, 2 to 15 percent slopes, woodland, in a delineation of map unit 1180. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 2 percent cobbles and 15 percent pebbles.

A--0 to 3 inches; brown (10YR 4/3) gravelly clay loam, dark brown (10YR 3/3) moist; moderate thick platy structure; soft, friable, sticky and slightly plastic; many very fine roots; many very fine tubular and interstitial pores; 2 percent cobbles, 15 percent pebbles; neutral (pH 7.0); clear wavy boundary.

Bt1--3 to 10 inches; brown (7.5YR 4/2) gravelly clay, dark brown (7.5YR 3/2) moist; strong medium subangular blocky structure parting to strong very fine angular blocky; hard, firm, very sticky and very plastic; many fine and medium and common coarse roots; common fine and medium tubular pores; many thin clay films on faces of peds; 20 percent pebbles; neutral (pH 7.0); clear smooth boundary.

Bt2--10 to 17 inches; brown (7.5YR 4/4) gravelly clay, dark brown (7.5YR 4/4) moist; strong fine prismatic structure parting to strong fine angular blocky; very hard, firm, very sticky and very plastic; common fine and medium and few coarse roots; common fine and medium tubular pores; common pressure faces on faces of peds; common moderately thick clay films on faces of peds; 30 percent pebbles; neutral (pH 7.0); clear wavy boundary.

Btk--17 to 23 inches; pink (7.5YR 7/4) gravelly loam, brown (7.5YR 5/4) moist; weak medium and coarse subangular blocky structure; hard, firm, sticky and plastic; common medium and coarse roots; few fine tubular pores; common thin clay films lining pores and on faces of peds; discontinuous weakly cemented lime masses; 15 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

Bqkm--23 inches; white (10YR 8/1) indurated duripan with thin (1 to 2 millimeter) continuous silica laminar cap; massive; extremely hard, extremely firm; violently effervescent; moderately alkaline (pH 8.4).

Type location: Lincoln County, Nevada; approximately 1.5 miles northwest of Fife Flat Reservoir; about 8,100 feet northwest of the southwest corner of section 24, T. 5 S., R. 68 E.; (37 degrees, 29 minutes, 58 seconds north latitude, 114 degrees, 22 minutes, 3 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, but are moist in winter and spring and for 10 to 20 days cumulative during the period July through October due to summer convection storms.

Soil temperature: 47 to 53 degrees F.

Mollic epipedon thickness: 7 to 12 inches.

Depth to duripan: 20 to 40 inches.

Control section:

Clay content--Average 35 to 45 percent.

Rock fragments--Averages 10 to 30 percent, predominantly pebbles.

A horizons:

Value--4 or 5 dry, 2 or 3 moist.

Chroma--2 or 3.

Reaction--Slightly acid or neutral.

Bt1 horizon:

Hue--10YR or 7.5YR.

Value--4 or 5 dry, 3 or 4 moist.

Chroma--2 or 3.

Clay content--40 to 50 percent

Rock fragments--10 to 35 percent.

Structure--Moderate or strong, medium or fine prismatic, subangular blocky, or angular blocky.

Consistence--Hard or very hard.

Reaction--Slightly acid or neutral.

Bt2 horizon:

Hue--10YR or 7.5YR.

Value--4 or 5 dry, 3 or 4 moist.

Chroma--2 through 4.

Clay content--40 to 50 percent

Rock fragments--10 to 35 percent.

Structure--Moderate or strong, medium or fine prismatic or angular blocky.

Consistence--Hard or very hard.

Reaction--Slightly acid or neutral.

Btk horizon:

Hue--10YR or 7.5YR

Value--6 through 8 dry, 5 or 6 moist.

Chroma--4 or 5.

Texture--Clay loam and loam

Clay content--25 to 35 percent

Structure--Prismatic or subangular blocky.

Consistence--Slightly hard or hard, friable or firm.

Rock fragments--5 to 15 percent pebbles.

Reaction--Mildly alkaline to strongly alkaline.

Effervescence--Noneffervescent to slightly effervescent with common or many violently effervescent fine and medium lime masses.

Bqkm horizon:

Hue--10YR or 7.5YR

Value--6 through 8 dry, 5 through 7 moist.

Chroma--1 through 6.

Cementation--1 to 10 millimeters thick continuously indurated silica cap, with strongly silica cemented

material with common to many discontinuous silica laminae below.

Delamar Series

The Delamar series consists of moderately deep over indurated duripan, well drained soils that formed in alluvium from mixed rocks. The Delamar soils are on fan remnants. Slopes are 0 to 8 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 53 degrees F.

Taxonomic class: Fine-loamy, mixed, mesic Typic Durargids

Typical pedon: Delamar sandy loam, 2 to 8 percent slopes, rangeland, in a delineation of map unit 1534. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 5 percent pebbles.

A1--0 to 2 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; weak medium and thick platy structure; soft, very friable, nonsticky and nonplastic; few very fine roots; few fine tubular and common fine vesicular pores; slightly effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary.

A2--2 to 5 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; weak very fine subangular blocky structure; soft, friable, nonsticky and nonplastic; few fine and very fine roots; many very fine and fine interstitial pores; 10 percent pebbles; strongly effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary.

Bt1--5 to 9 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few medium and common fine roots; few fine tubular and common very fine interstitial pores; few thin clay films on faces of peds and bridging sand grains; 10 percent pebbles; strongly effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

Bt2--9 to 15 inches; yellowish brown (10YR 5/4) clay loam, dark yellowish brown (10YR 4/4) moist; weak and moderate medium subangular blocky structure; hard, firm, sticky and slightly plastic; common fine roots; common fine tubular pores; common thin clay films on faces of peds and few thin clay films bridging mineral grains; 10 percent pebbles; strongly effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

Btk--15 to 21 inches; light yellowish brown (10YR 6/4) gravelly clay loam, brown (10YR 4/3) moist; strong fine and medium subangular blocky structure; hard, firm, sticky and plastic; few fine roots; few fine tubular pores; common thin clay films on faces of peds and few thin clay films bridging mineral grains; common thin lime coats and pendants on vertical and undersides of rock fragments; common medium irregular segregated soft lime masses; 20 percent pebbles; strongly effervescent; strongly alkaline (pH 8.6); clear wavy boundary.

2Bqk--21 to 30 inches; light gray (10YR 7/2) gravelly sandy loam, pale brown (10YR 6/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; few very fine roots; many very fine and fine interstitial pores; common thin lenses and masses of silica and lime material; 20 percent pebbles; strongly effervescent; strongly alkaline (pH 8.7); abrupt wavy boundary.

2Bqkm--30 to 60 inches; light gray (10YR 7/2) indurated silica and lime cemented duripan, with lenses of strongly cemented material, pale brown (10YR 6/3) moist; thin (2 to 5 millimeter) pale brown (10YR 6/3) indurated laminar cap; strong medium and thick platy structure; brown (10YR 5/3) loamy sand strata alternating between plates, dark yellowish brown (10YR 3/4) moist; strongly effervescent; strongly alkaline (pH 8.7).

Type location: Lincoln County, Nevada; approximately 6 miles south of U.S. Highway 93; about 1,600 feet east and 700 feet south of the northwest corner of section 9, T. 5 S., R. 64 E.; (37 degrees, 32 minutes, 03 seconds north latitude, 114 degrees, 49 minutes, 28 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist in some part for short periods during the winter and early spring months and for short intermittent periods 10 to 20 days cumulative following summer convection storms during the period July through October.

Soil temperature: 54 to 59 degrees.

Depth to duripan: 20 to 40 inches.

Other features: The duripan commonly has platy structure but is massive in some pedons.

Control section:

Clay content--20 to 32 percent.

Rock fragments--Averages 10 to 25 percent, with lenses of 20 to 35 percent occurring in some pedons.

A horizon:

Value--5 or 6 dry, 3 or 4 moist.

Chroma--3 or 4 dry or moist.

Bt horizons:

Hue--7.5YR or 10YR

Value--5 or 6 dry, 3 or 4 moist.

Chroma--3 or 4 dry or moist.

Texture--Sandy loam, gravelly sandy loam, loam, gravelly loam, sandy clay loam, gravelly sandy clay loam, clay loam or gravelly clay loam.

Clay content--Averages 18 to 30 percent.

Rock fragments--5 to 25 percent.

Btk horizon:

Hue--7.5YR or 10YR

Value--5 or 6 dry, 3 or 4 moist.

Chroma--3 or 4 dry or moist.

Texture--Clay loam or gravelly clay loam, gravelly sandy clay loam, sandy clay loam.

Clay content--24 to 35 percent.

Rock fragments--10 to 30 percent.

Secondary lime accumulation--Common to many, fine and medium lime filaments, seams and soft masses.

Other features--Few to many, very thin to thin lime coats and pendants on vertical and undersides of rock fragments.

Bqk horizons:

Hue--7.5YR or 10YR

Value--6 or 7 dry, 5 or 6 moist.

Chroma--2 through 4 dry or moist.

Texture--Gravelly sandy loam, gravelly coarse sandy loam, gravelly loamy coarse sand or gravelly coarse sand.

Rock fragments--Averages 15 to 25 percent.

Cementation--Common or many, thin to thick lenses and masses of silica and lime cemented material.

Dewrust Series

The Dewrust series consists of moderately deep over a duripan, well drained soils that formed in alluvium from mixed rocks. The Dewrust soils are on fan remnants. Slopes are 4 to 8 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 56 degrees F.

Taxonomic class: Fine, montmorillonitic, mesic Xerollic Durargids

Typical pedon: Dewrust very gravelly sandy loam, 4 to 8 percent slopes, rangeland, in a delineation of map unit 1660. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 5 percent cobbles and 35 percent pebbles.

A1--0 to 3 inches; yellowish brown (10YR 5/4) very gravelly sandy loam, dark brown (7.5YR 3/4) moist; strong thin and medium platy structure; soft, very friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine tubular pores; 5 percent cobbles, 35 percent pebbles; neutral (pH 7.0); clear smooth boundary.

A2--3 to 6 inches; brown (10YR 5/3) gravelly loam, dark brown (7.5YR 3/4) moist; weak thin platy structure; soft, very friable, slightly sticky and slightly plastic; many very fine through medium and few coarse roots; common very fine and fine and few medium tubular pores; 5 percent cobbles, 25 percent pebbles; slightly alkaline (pH 7.6); abrupt wavy boundary.

Bt1--6 to 11 inches; brown (7.5YR 4/4) gravelly clay loam, dark brown (7.5YR 3/4) moist; strong coarse prismatic structure; slightly hard, friable, sticky and plastic; few very fine through medium roots; few very fine tubular pores; few thin clay films lining pores; 5 percent cobbles, 10 percent pebbles; slightly alkaline (pH 7.6); abrupt wavy boundary.

Bt2--11 to 17 inches; brown (7.5YR 4/4) gravelly clay loam, dark brown (7.5YR 3/4) moist; strong coarse

prismatic structure; hard, firm, very sticky and very plastic; few very fine and fine roots; few fine tubular pores; common thick clay films on faces of peds; 25 percent pebbles; slightly alkaline (pH 7.6); abrupt wavy boundary.

Bt3--17 to 23 inches; brown (7.5YR 4/4) gravelly clay, dark brown (7.5YR 3/4) moist; moderate very coarse prismatic structure; hard, firm, very sticky and very plastic; few very fine and fine roots; few fine tubular pores; common thin clay films lining pores; thick continuous pressure faces; 20 percent pebbles; slightly alkaline (pH 7.8); clear wavy boundary.

Btk--23 to 30 inches; strong brown (7.5YR 5/6) very gravelly clay, dark brown (7.5YR 4/4) moist; moderate fine and medium subangular blocky structure; hard, firm, very sticky and very plastic; few very fine and fine roots; common fine tubular pores; common thin clay films lining pores; thick continuous pressure faces; strongly effervescent few thin lime coats and pendants on undersides of rock fragments; 15 percent cobbles, 35 percent pebbles; slightly alkaline (pH 7.6); abrupt wavy boundary.

Bqkm--30 inches; white (10YR 8/2) indurated duripan, very pale brown (10YR 7/3) moist; massive; extremely hard, extremely firm, brittle; continuous 4 to 6 millimeter thick horizontal silica laminae; violently effervescent; very strongly alkaline (pH 9.2).

Type location: Lincoln County, Nevada; approximately 3 miles west of Elgin; about 450 feet south and 950 feet east of the northwest corner of section 15, T. 7 S., R. 66 E.; (37 degrees, 20 minutes, 47 seconds north latitude, 114 degrees, 35 minutes, 29 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist in winter and spring. dry in summer and fall except for 10 to 20 days cumulative between July and October due to convection storms.

Soil temperature: 55 to 58 degrees F.

Depth to lime accumulation: 18 to 30 inches.

Depth to duripan: 20 to 40 inches

Control section:

Clay content--Averages 35 to 50 percent.

Rock fragments--Averages 15 to 25 percent.

A horizon:

Hue--10YR or 7.5YR.

Value--5 or 6 dry.

Chroma--3 or 4.

Reaction--Neutral or slightly alkaline.

Bt1 horizon:

Hue--10YR or 7.5YR.

Value--3 or 4 moist.

Chroma--3 or 4 moist.

Clay content--27 to 35 percent, there is less than 15 percent increase in a vertical depth of 1 inch.

Texture--Clay loam or gravelly clay loam.

Rock fragments--10 to 20 percent.

Reaction--Slightly alkaline or moderately alkaline.

Bt2 and Bt3 horizons:

Hue--10YR or 7.5YR.

Value--4 or 5 dry.

Clay content--35 to 60 percent.

Texture--Clay, gravelly clay, gravelly clay loam.

Rock fragments--10 to 20 percent, mainly pebbles and cobbles

Structure--Coarse or very coarse prismatic.

Reaction--Slightly alkaline or moderately alkaline.

Other features--Many continuous pressure faces.

Btk horizons:

Hue--10YR or 7.5YR

Value--4 or 5 dry.

Chroma--5 or 6 dry, 3 or 4 moist.

Clay content--50 to 60 percent.

Texture--Gravelly clay or very gravelly clay.

Rock fragments--25 to 50 percent, mainly pebbles and cobbles.

Structure--Subangular blocky or prismatic.

Consistence--Hard or very hard.

Reaction--Slightly alkaline or moderately alkaline

Secondary lime accumulation--Thin to thick lime coats on undersides of rock fragments throughout the Btk.

Eaglepass Series

The Eaglepass series consists of very shallow, well drained soils that formed in residuum and colluvium from limestone and dolomite. The Eaglepass soils are on mountains. Slopes are 30 to 75 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 50 degrees F.

Taxonomic class: Loamy-skeletal, carbonatic, mesic Lithic Xeric Torriorthents

Typical pedon: Eaglepass extremely stony loam, 30 to 75 percent slopes, rangeland, in a delineation of map unit 1570. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 17 percent stones and 45 percent pebbles.

A--0 to 2 inches; brown (10YR 5/3) extremely stony loam, dark brown (10YR 4/3) moist; weak fine granular structure; soft, very friable, nonsticky and slightly plastic; many very fine roots; many very fine and fine interstitial pores; 20 percent stones, 45 percent pebbles; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

C1--2 to 4 inches; pale brown (10YR 6/3) extremely stony loam, dark brown (10YR 4/3) moist; weak fine and medium subangular blocky structure; soft, very friable, nonsticky and slightly plastic; many very fine and fine roots; many very fine and fine interstitial pores; 20 percent stones, 40 percent pebbles; violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

C2--4 to 6 inches; pale brown (10YR 6/3) extremely stony loam, brown (10YR 4/3) moist; massive; soft, very

friable, nonsticky and slightly plastic; many very fine and fine and few medium roots; many very fine and fine interstitial pores; 25 percent stones, 40 percent pebbles; violently effervescent; strongly alkaline (pH 8.8); abrupt wavy boundary.

R--6 inches; slightly fractured limestone bedrock.

Type location: Lincoln County, Nevada; in the Burnt Springs Range; about 2,250 feet west of the northeast corner of section 7, T. 4 S., R. 65 E.; (37 degrees, 37 minutes, 8 seconds north latitude, 114 degrees, 44 minutes, 24 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist in winter and spring months, dry in summer and fall except for 10 to 20 days cumulative between July to October due to convection storms.

Soil temperature: 50 to 53 degrees F.

Depth to bedrock: 4 to 6 inches.

Control section:

Clay content--8 to 18 percent.

Rock fragments--60 to 75 percent, includes pebbles, cobbles and stones.

Reaction--Moderately alkaline or strongly alkaline.

Effervescence--Calcareous in all parts, violently effervescent.

Calcium carbonate equivalent--Less than 20 millimeter fraction contains more than 40 percent .

A horizon:

Value--5 through 7 dry, 3 through 5 moist.

Chroma--3 or 4.

C horizon:

Value--6 or 7 dry, 4 or 5 moist.

Chroma--3 or 4.

Texture of the fine earth--Loam, fine sandy loam or sandy loam.

Other features--Lime pendants and coats are on rock fragments in some pedons.

Faleria Series

The Faleria series consists of deep, well drained soils that formed in residuum and colluvium from volcanic rocks and ash. The Faleria soils are on mountains. Slopes are 30 to 75 percent. The mean annual precipitation is about 18 inches and the mean annual temperature is about 43 degrees F.

Taxonomic class: Ashy-skeletal, Vitrandic Eutroboralfs

Typical pedon: Faleria gravelly sandy loam, 30 to 75 percent slopes, rangeland, in a delineation of map unit 1870. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 10 percent cobbles and 20 percent pebbles.

Oi--1 to 0 inch; ponderosa needles with about 1/4 inch partially decomposed pine needles; neutral (pH 6.8); abrupt wavy boundary.

A1--0 to 2 inches; grayish brown (10YR 5/2) gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; moderate thin platy structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; many very fine and fine interstitial and few fine tubular pores; 5 percent cobbles, 15 percent pebbles; neutral (pH 6.8); clear smooth boundary.

A2--2 to 7 inches; grayish brown (10YR 5/2) gravelly loam, very dark grayish brown (10YR 3/2) moist; moderate fine and medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine and fine and common medium roots; many very fine and fine interstitial and common fine tubular pores; 20 percent pebbles; neutral (pH 7.2); clear smooth boundary.

Bt1--7 to 13 inches; pale brown (10YR 6/3) very gravelly sandy loam, dark brown (10YR 3/3) moist; strong fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common fine and medium and few coarse roots; many very fine and fine interstitial and common fine tubular pores; few colloid stains on mineral grains; 5 percent cobbles, 35 percent pebbles; neutral (pH 7.0); clear wavy boundary.

Bt2--13 to 26 inches; pale brown (10YR 6/3) very gravelly sandy loam, dark brown (10YR 3/3) moist; strong fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine and fine interstitial and fine tubular pores; few colloid stains on mineral grains; 5 percent cobbles, 45 percent pebbles; neutral (pH 7.0); clear wavy boundary.

Bt3--26 to 33 inches; pale brown (10YR 6/3) very cobbly sandy loam, brown (7.5YR 5/4) moist; strong fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many fine and medium and common coarse roots; many very fine interstitial and common fine tubular pores; common colloid and bridges holding mineral grains together and common moderately thick clay films on faces of peds and lining pores; 35 percent cobbles, 20 percent pebbles; neutral (pH 6.8); clear wavy boundary.

Bt4--33 to 39 inches; pink (5YR 7/3) very gravelly sandy loam, reddish brown (5YR 4/3) moist; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine through medium roots; many very fine and fine interstitial pores; common colloid and bridges holding mineral grains together and common thin clay films on faces of peds and lining pores; 10 percent cobbles, 30 percent pebbles; neutral (pH 6.8); clear wavy boundary.

Bt5--39 to 47 inches; pink (5YR 7/3) very gravelly sandy loam, reddish brown (5YR 4/4) moist; massive; soft, very friable, slightly sticky and nonplastic; few medium and common very fine and fine roots; many very fine and fine interstitial pores; common colloid and bridges holding mineral grains together; 10 percent cobbles, 45 percent pebbles; neutral (pH 6.8); abrupt wavy boundary.

R--47 inches; hard rhyolitic tuff with an irregular 1 inch weathering rind.

Type location: Lincoln County, Nevada; approximately 3/4 mile east of Ella Mountain lookout in the Clover Mountains; about 6,500 feet west and 1,400 feet south of the southwest corner of section 31, T. 5 S., R. 68 E.; (37 degrees, 27 minutes, 32 seconds north latitude, 114 degrees, 27 minutes, 15 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually moist, moist in some part of the moisture control section from early July through October and during winter and early spring months.

Soil temperature: 44 to 47 degrees F.

Depth to bedrock: 40 to 60 inches.

Other features--Strong influence from volcanic ash and glass with a bulk density ranging from 0.90 to 1.10 gram/cubic centimeter.

Control section:

Clay content--18 to 27 percent.

Rock fragments--35 to 60 percent.

A horizon:

Value--4 or 5 dry, 3 or 4 moist.

Chroma--2 or 3.

Bt1, Bt2 and Bt3 horizons:

Hue--10YR or 7.5YR.

Value--5 or 6 dry, 3 through 5 moist.

Chroma--3 or 4.

Clay content--18 to 27 percent.

Texture--Very gravelly sandy loam, very gravelly sandy clay loam or very gravelly loam.

Rock fragments--35 to 60 percent.

Structure--Strong or moderate subangular blocky.

Other features--These horizons average 40 to 60 percent by weight volcanic glass within the very fine sand fraction.

Bt4 and Bt5 horizons:

Value--6 or 7 dry, 4 or 5 moist.

Chroma--3 or 4.

Clay content--10 to 20 percent.

Rock fragments--35 to 60 percent.

Structure--Subangular blocky or massive.

Consistence--Slightly hard or soft

Gabbvally Series

The Gabbvally series consists of shallow and very shallow, well drained soils that formed in residuum and colluvium from volcanic rocks. The Gabbvally soils are on mountains. Slopes are 8 to 50 percent. The mean annual precipitation is about 10 inches and the mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic Lithic Xerollic Haplargids

Typical pedon: Gabbvally very stony loam, 15 to 50 percent slopes, rangeland, in a delineation of map unit 2010. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 3 percent stones, 10 percent cobbles, and 40 percent pebbles.

A--0 to 2 inches; brown (10YR 5/3) very stony loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many fine roots; common very fine interstitial pores; 3 percent stones, 10 percent cobbles, 30 percent pebbles; neutral (pH 7.2); clear smooth boundary.

Bt1--2 to 4 inches; yellowish brown (10YR 5/4) very gravelly loam, dark yellowish brown (10YR 4/4) moist; moderate fine subangular blocky structure; slightly hard, very friable, sticky and slightly plastic; many very fine and fine and common medium roots; common very fine interstitial and few fine tubular pores; common moderately thick clay films on faces of peds; 5 percent cobbles, 35 percent pebbles; slightly alkaline (pH 7.4); clear smooth boundary.

Bt2--4 to 9 inches; yellowish brown (10YR 5/4) very gravelly sandy clay loam, dark yellowish brown (10YR 4/4) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, sticky and plastic; common very fine and fine medium roots; common fine interstitial and few fine tubular pores; common thin and few moderately thick clay films on faces of peds; 5 percent cobbles, 40 percent pebbles; slightly alkaline (pH 7.4); abrupt wavy boundary.

R--9 inches; rhyolitic ash flow tuffs.

Type location: Lincoln County, Nevada; approximately 6 miles east of Caliente in English Canyon; about 3.75 miles west and 2,600 feet south of the northwest corner of section 18, T. 4 S., R. 68 E.; (37 degrees, 36 minutes, 01 second north latitude, 114 degrees, 29 minutes, 38 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist in winter and spring months, dry in summer and fall except for 10 to 20 days between July and October due to convection storms.

Soil temperature: 53 to 59 degrees F.

Depth to bedrock: 6 to 14 inches.

Reaction: Neutral or slightly alkaline.

Control section:

Clay content--15 to 25 percent.

Rock fragments--35 to 50 percent, predominantly pebbles.

A horizon:

Value--5 or 6 dry, 3 or 4 moist.

Chroma--3 or 4 dry or moist.

Bt horizon:

Clay content--18 to 27 percent.
 Value--5 or 6 dry, 3 through 5 moist.
 Chroma--3 or 4 dry or moist.
 Texture--Sandy clay loam, loam, sandy loam.
 Rock fragments--35 to 50 percent.
 Structure--Subangular blocky or angular blocky

slightly plastic; few very fine and fine roots; many very fine interstitial pores; 10 percent pebbles; strongly effervescent; strongly alkaline (pH 8.6).

Type location: Lincoln County, Nevada; approximately 1,000 feet east and 600 feet south of the northwest corner of section 18, T. 6 S., R. 64 E.; (37 degrees, 25 minutes, 58 seconds north latitude, 114 degrees, 51 minutes, 45 seconds west longitude.)

Geer Series

The Geer series consists of very deep, well drained soils that formed in alluvium from mixed rocks. The Geer soils are on inset fans and fan skirts. Slopes are 0 to 4 percent. The mean annual precipitation is about 7 inches and the mean annual temperature is about 53 degrees F.

Taxonomic class: Coarse-loamy, mixed (calcareous), mesic Typic Torriorthents

Typical pedon: Geer fine sandy loam, 0 to 2 percent slopes, rangeland, in a delineation of map unit 1520. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 5 percent pebbles.

- A1--0 to 2 inches; light brownish gray (10YR 6/2) fine sandy loam, brown (10YR 4/3) moist; weak thick platy structure; soft, very friable, nonsticky and slightly plastic; few very fine and fine roots; few very fine vesicular and many very fine interstitial pores; 3 percent pebbles; strongly effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.
- A2--2 to 6 inches; light brownish gray (10YR 6/2) fine sandy loam, brown (10YR 4/3) moist; moderate thick platy structure; slightly hard, friable, nonsticky and nonplastic; few very fine and fine roots; few very fine tubular pores; 3 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.
- C1--6 to 13 inches; light brownish gray (10YR 6/2) fine sandy loam, dark grayish brown (10YR 4/2) moist; massive; slightly hard, very friable, nonsticky and nonplastic; common very fine and fine roots; common very fine tubular and interstitial pores; 5 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear wavy boundary.
- C2--13 to 23 inches; light brownish gray (10YR 6/2) fine sandy loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, nonsticky and slightly plastic; common very fine and fine roots; many very fine interstitial pores; 5 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear wavy boundary.
- C3--23 to 38 inches; pale brown (10YR 6/3) very fine sandy loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, slightly sticky and plastic; common very fine and fine roots; many very fine interstitial pores; 5 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear wavy boundary.
- C4--38 to 60 inches; pale brown (10YR 6/3) stratified fine sandy loam and very fine sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and

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 summer convection storms.

Soil temperature: 53 to 59 degrees F.

Control section:

Clay content--Averages less than 18 percent.

Other features: Averages 15 to 30 percent fine sand or coarser. Mineralogy has minor influence of volcanic ash, glass, and other pyroclastic material. Gravelly layers are in some pedons below 40 inches.

A horizons:

Value--5 through 7 dry, 4 or 5 moist.

Chroma--2 through 4.

Effervescence--Slightly effervescent or strongly effervescent.

C horizons:

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 through 4.

Reaction--Moderately alkaline to strongly alkaline.

Effervescence--Strongly effervescent or violently effervescent.

*Other features--*Some fine or medium lime segregations are in strata below 20 inches in some pedons. Few or common faint high chroma iron mottles are below 40 inches in some cultivated areas.

Geta Series

The Geta series consists of very deep, well drained soils that formed in alluvium from mixed rocks. The Geta soils are on inset fans, stream terraces and fan skirts. Slopes are 0 to 8 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 58 degrees F.

Taxonomic class: Coarse-loamy, mixed, thermic Ustochreptic Camborthids

Typical pedon: Geta very fine sandy loam, 0 to 2 percent slopes, rangeland, in a delineation of map unit 1100. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 10 percent pebbles.

A1--0 to 1 inch; light brown (7.5YR 6/4) very fine sandy loam, brown (7.5YR 4/4) moist; weak thin and medium platy structure; soft, very friable, slightly sticky and slightly plastic; many very fine roots; many very fine and fine interstitial pores; 10 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

A2--1 to 6 inches; light brown (7.5YR 6/4) very fine sandy loam, brown (7.5YR 4/4) moist; moderate fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine and fine interstitial and common very fine tubular pores; 10 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Bw--6 to 15 inches; light brown (7.5YR 6/4) very fine sandy loam, brown (7.5YR 4/4) moist; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine interstitial and common very fine and fine tubular pores; few thin lime coats on undersides of rock fragments; 10 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Bk1--15 to 20 inches; light brown (7.5YR 6/4) very fine sandy loam, brown (7.5YR 4/4) moist; massive; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine interstitial and few very fine and fine tubular pores; common moderately thick lime coats on undersides and sides of rock fragments; 10 percent pebbles; violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

Bk2--20 to 60 inches; light brown (7.5YR 6/4) gravelly very fine sandy loam, brown (7.5YR 5/4) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; few very fine and fine roots; many very fine interstitial and few very fine and fine tubular pores; common moderately thick lime coats on undersides and sides of rock fragments; 15 percent pebbles; violently effervescent; strongly alkaline (pH 8.8).

Type location: Lincoln County, Nevada; approximately 3 miles south of Tule Desert Well; about 1,250 feet west and 925 feet south of the northeast corner of section 24, T. 10 S., R. 68 E.; (37 degrees, 3 minutes, 30 seconds north latitude, 114 degrees, 19 minutes, 46 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist in late summer and for short periods in winter and spring.

Soil temperature: 59 to 64 degrees F.

Control section:

Clay content--5 to 18 percent.

Rock fragments--Average 15 to 35 percent, predominantly 2 to 5 millimeter pebbles.

Other features--Has more than 15 percent fine sand or coarser.

A horizon:

Hue--10YR or 7.5YR.

Value--6 or 7 dry, 4 through 6 moist.

Chroma--2 through 4.

Bw horizon:

Hue--10YR or 7.5YR.

Value--5 through 7 dry, 4 through 6 moist.

Chroma--2 through 4.

Texture of the fine earth--Very fine sandy loam, fine sandy loam, or sandy loam.

Clay content--5 to 18 percent.

Rock fragments--5 to 15 percent.

Reaction--Slightly alkaline to moderately alkaline.

Bk horizons:

Hue--10YR or 7.5YR.

Value--6 or 7 dry, 4 through 6 moist.

Chroma--2 through 4.

Texture of the fine earth--Very fine sandy loam, fine sandy loam, or sandy loam.

Clay content--5 to 18 percent.

Rock fragments--15 to 35 percent; thin subhorizons in the upper part have 5 to 15 percent pebbles in most pedons.

Reaction--Moderately alkaline to strongly alkaline.

Secondary lime accumulation--Horizons commonly have common or many moderately thick or thick lime coats on undersides of rock fragments.

Other features--Some pedons contain lenses of very gravelly textures.

Glendale Series

The Glendale series consists of very deep, well drained soils that formed in alluvium from mixed rocks. The Glendale soils are on stream terraces. Slopes are 0 to 2 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 63 degrees F.

Taxonomic class: Fine-silty, mixed (calcareous), thermic Typic Torrifluvents

Typical pedon: Glendale loam, 0 to 2 percent slopes, rangeland, in a delineation of map unit 1900. (Colors are for dry soil unless otherwise noted.)

A--0 to 6 inches; pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; strong thin platy structure; soft, very friable, slightly sticky and slightly plastic; many very fine roots; few very fine vesicular and many very fine and fine interstitial pores; strongly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

C--6 to 60 inches; very pale brown (10YR 7/4) stratified very fine sandy loam and silty clay loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, slightly sticky and plastic; common very fine through medium roots; common very fine and fine tubular pores; violently effervescent; strongly alkaline (pH 8.4).

Type location: Lincoln County, Nevada; approximately 1,000 feet west of Hoya railroad station in Meadow Valley Wash; about 400 feet east and 300 feet south of the northwest corner of section 1, T. 12 S., R. 65 E.; (36 degrees, 55 minutes, 37 seconds north latitude, 114 degrees, 39 minutes, 42 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, but are moist for short periods in winter and spring and 10 to 20 days cumulative following summer convection storms during July through October.

Soil temperature: 59 to 72 degrees F.

Organic matter: Less than 1 percent that decreases irregularly with depth.

Control section:

Clay content--18 to 30 percent.

A horizon:

Hue--7.5YR or 10YR.

Value--5 through 7 dry, 4 or 5 moist.

Chroma--2 through 4.

C horizon:

Hue--7.5YR or 10YR.

Value--5 through 7 dry, 4 or 5 moist.

Chroma--2 through 4.

Texture--Stratified very fine sandy loam, loam, silt loam, clay loam, and silty clay loam.

Consistence--Soft through very hard, very friable or friable.

Reaction--Moderately alkaline or strongly alkaline.

Effervescence--Strongly effervescent or violently effervescent.

Handpah Series

The Handpah series consists of shallow over a duripan, well drained soils that formed in alluvium from mixed rocks. The Handpah soils are on fan remnants. Slopes are 2 to 8 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy, mixed, mesic, shallow Xerollic Durargids

Typical pedon: Handpah very gravelly sandy loam, 2 to 8 percent slopes, rangeland, in a delineation of map unit 1650. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 40 percent pebbles.

A1--0 to 2 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; moderate thin platy structure; soft, very friable, slightly sticky and slightly plastic; many medium and coarse and few very fine roots; many very fine and fine vesicular pores; 40

percent pebbles; slightly alkaline (pH 7.8); abrupt smooth boundary.

A2--2 to 4 inches; pale brown (10YR 6/3) gravelly loam, brown (10YR 4/3) moist; weak fine and medium subangular blocky structure parting to moderate thin platy; soft, very friable, sticky and plastic; many very fine and fine roots; many very fine and fine interstitial and few medium tubular pores; 30 percent pebbles; slightly alkaline (pH 7.8); clear smooth boundary.

Bt1--4 to 9 inches; brown (7.5YR 5/4) clay loam, dark brown (7.5YR 4/4) moist; strong medium prismatic structure; hard, friable, sticky and plastic; many very fine through medium sized and common fine impeded roots; common fine interstitial and common very fine and fine tubular pores; many thick clay films on faces of peds and lining pores; 5 percent pebbles; slightly effervescent; moderately alkaline (pH 8.0); clear smooth boundary.

Bt2--9 to 17 inches; brown (7.5YR 5/4) gravelly clay loam, dark brown (7.5YR 4/4) moist; strong fine subangular blocky structure; slightly hard, friable, sticky and plastic; common fine and medium roots; common fine interstitial and common very fine and fine tubular pores; common thin clay films on faces of peds and lining pores; 30 percent pebbles; slightly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Bqk--17 to 19 inches; brown (7.5YR 5/4) gravelly sandy loam, dark brown (7.5YR 4/4) moist; massive; hard, firm, nonsticky and nonplastic; common fine and medium roots; common fine interstitial and common very fine and fine tubular pores; common moderately thick silica and lime coats on undersides of rock fragments; 30 percent pebbles; strongly effervescent; continuous brittle matrix; moderately alkaline (pH 8.4); abrupt smooth boundary.

Bqkm1--19 to 29 inches; indurated duripan with 5 to 10 millimeter continuous silica laminar cap; massive; extremely hard, extremely firm; violently effervescent; strongly alkaline (pH 8.6).

Bqkm2--29 to 60 inches; continuous strongly cemented duripan; massive; very hard, brittle; violently effervescent.

Type location: Lincoln County, Nevada; approximately 3.5 miles south of Pahroc Summit Pass; about 4 1/4 miles, 2,250 feet south of the northeast corner of section 25, T. 4 S., R. 61 E.; (37 degrees, 34 minutes, 19 seconds north latitude, 115 degrees, 00 minutes, 12 seconds west longitude.)

Range in Characteristics:

Soil moisture: Moist in winter and spring, mostly dry in summer and fall except for 10 to 20 days cumulative between July and October due to convection storms.

Soil temperature: 53 to 54 degrees F.

Depth to hardpan: 14 to 20 inches.

Control section:

Clay content--Averages 25 to 35 percent.

Rock fragments--Averages 15 to 30 percent.

A horizon:

Value--6 or 7 dry, 4 or 5 moist.
 Chroma--2 through 4.
 Reaction--Slightly alkaline or moderately alkaline.
 Effervescence--Noneffervescent to slightly effervescent.

Bt horizon:

Value--5 or 6 dry, 4 or 5 moist.
 Chroma--3 or 4.
 Texture--Averages loam, clay loam, or sandy clay loam, but all pedons have thin clay loam or clay layers.
 Reaction--Mildly alkaline to strongly alkaline.
 Effervescence--Noneffervescent to slightly effervescent some pedons may be strongly effervescent in lower part.

Bqkm horizon:

Thickness--Some pedons have weakly cemented layers within the strongly cemented mass.
 Other features--The duripan is fractured in some pedons.

Heist Series

The Heist series consists of very deep, well drained soils that formed in alluvium from mixed rocks. The Heist soils are on stream terraces. Slopes are 0 to 8 percent. The mean annual precipitation is about 10 inches and the mean annual temperature is about 48 degrees F.

Taxonomic class: Coarse-loamy, mixed (calcareous), mesic Xeric Torriorthents

Typical pedon: Heist fine sandy loam, 0 to 8 percent slopes, rangeland, in a delineation of map unit 1250. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 10 percent pebbles.

A--0 to 9 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine through medium and common coarse roots; common very fine through medium tubular pores; 10 percent pebbles; slightly effervescent; mildly alkaline (pH 8.0); clear wavy boundary.

Ck--9 to 43 inches; light brown (7.5YR 6/4) gravelly sandy loam, brown (7.5YR 4/4) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine and few medium roots; common very fine and fine interstitial and common fine tubular pores; few fine lime filaments; 5 percent cobbles, 20 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear wavy boundary.

C--43 to 60 inches; pinkish gray (7.5YR 6/2) stratified fine sandy loam and sandy loam, brown (7.5YR 4/4) moist; massive; soft, very friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine

and fine interstitial pores; 10 percent pebbles; slightly effervescent; moderately alkaline (pH 8.2).

Type location: Lincoln County, Nevada; in Oak Well Canyon approximately 600 feet west of Panaca Flat Crossroads; about 1,600 feet northeast of the southwest corner of section 27, T. 4 S., R. 69 E.; (37 degrees, 33 minutes, 58 seconds north latitude, 114 degrees, 15 minutes, 25 seconds west longitude.)

Range in Characteristics:

Soil moisture: Moist in winter and spring months, dry in summer and fall except for 10 to 20 days cumulative between July and October due to convection storms.

Soil temperature: 48 to 52 degrees F.

Control section:

Clay content--Averages 10 to 18 percent.

Rock fragments--Averages 5 to 35 percent, mostly pebbles.

A horizon:

Hue--10YR or 7.5YR.

Value--5 or 6 dry, 3 or 4 moist.

Chroma--2 through 4.

Reaction--Slightly alkaline or moderately alkaline.

Effervescence--Noneffervescent or slightly effervescent.

Other features--The value of 5 dry and 3 moist occur only in the upper 4 inches.

Ck horizon:

Hue--10YR or 7.5YR.

Value--6 or 7 dry, 4 through 6 moist.

Chroma--2 through 4.

Consistence--Soft to very hard, very friable and friable, nonsticky to slightly sticky.

Reaction--Slightly alkaline or moderately alkaline.

Effervescence--Slightly effervescent or strongly effervescent.

C horizon:

Hue--10YR or 7.5YR.

Value--6 or 7 dry, 4 through 6 moist.

Chroma--2 through 4.

Texture of the fine earth--Stratified fine sandy loam through sand.

Rock fragments--5 to 50 percent, mostly pebbles.

Structure--Massive or single grain.

Consistence--Loose or soft, loose or very friable, nonsticky or slightly sticky, nonplastic or slightly plastic.

Reaction--Slightly alkaline to strongly alkaline.

Effervescence--Slightly effervescent or strongly effervescent.

Hollace Series

The Hollace series consists of shallow over a petrocalcic, well drained soils that formed in residuum and colluvium

from tuffaceous rocks. The Hollace soils are on mountains. Slopes are 8 to 30 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 58 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic, shallow Petrocalcic Ustollic Paleargids

Typical pedon: Hollace very gravelly loam, 8 to 30 percent slopes, rangeland, in a delineation of map unit 1260. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 10 percent cobbles and 35 percent pebbles.

A--0 to 2 inches; grayish brown (10YR 5/2) very gravelly loam, very dark grayish brown (10YR 3/2) moist; strong fine granular structure; soft, very friable, sticky and plastic; common very fine roots; many fine and medium interstitial pores; 10 percent cobbles, 35 percent pebbles; slightly alkaline (pH 7.8); clear smooth boundary.

Bt--2 to 8 inches; brown (7.5YR 5/4) very cobbly clay loam, dark brown (7.5YR 3/4) moist; moderate fine subangular blocky structure; slightly hard, friable, sticky and plastic; common very fine and fine roots; common fine and medium tubular pores; common very thin clay films lining pores; common thin lime coats on undersides of rock fragments; 30 percent cobbles, 15 percent pebbles; slightly effervescent; slightly alkaline (pH 7.8); clear smooth boundary.

Btk1--8 to 14 inches; light brown (7.5YR 6/4) very cobbly clay loam, brown (7.5YR 4/4) moist; strong medium subangular blocky structure; hard, firm, very sticky and very plastic; few very fine and fine and few medium roots commonly occurring as exped; common very fine and fine tubular pores; common thin clay films lining pores and common pressure faces on peds; many thin lime coats and pendants on vertical and undersides of rock fragments; 30 percent cobbles, 15 percent pebbles; strongly effervescent; moderately alkaline (pH 8.0); gradual smooth boundary.

Btk2--14 to 17 inches; light brown (7.5YR 6/4) very cobbly clay loam, brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; hard, firm, very sticky and very plastic; few very fine and fine and common medium roots commonly occurring as exped; common very fine and fine tubular pores; common thin clay films lining pores and common pressure faces on peds; many moderately thick lime coats on vertical and undersides of rock fragments; 30 percent cobbles, 15 percent pebbles with half occurring as pan fragments; strongly effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.

Bkqm--17 to 21 inches; white (10YR 8/2) strongly cemented petrocalcic horizon with discontinuous accessory silica lenses, very pale brown (10YR 7/3) moist; strong medium platy structure; very hard; violently effervescent.

R--21 inches; fractured andesitic bedrock.

Type location: Lincoln County, Nevada; in the southern Delamar Mountains approximately 1,000 feet east and

2,275 feet north of the projected southwest corner of section 7, T. 9 S., R. 64 E.; (37 degrees, 10 minutes, 48 seconds north latitude, 114 degrees, 51 minutes, 53 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist in late summer and for short periods in winter and spring.

Soil temperature: 52 to 58 degrees F.

Depth to petrocalcic horizon: 14 to 20 inches.

Depth to bedrock: 18 to 25 inches.

Reaction--Slightly alkaline or moderately alkaline.

Control section:

Clay content--Averages 22 to 33 percent.

Rock fragments--35 to 55 percent, predominantly cobbles.

A horizon:

Value--5 or 6 dry, 3 or 4 moist.

Chroma--2 or 3.

Effervescence--Noneffervescent or slightly effervescent.

Bt horizon:

Hue--7.5YR or 5YR.

Value--5 or 6 dry, 3 or 4 moist.

Chroma--2 through 4.

Clay content--18 to 30 percent.

Texture--Loam or clay loam.

Btk horizons:

Hue--7.5YR or 5YR.

Value--5 or 6 dry, 3 or 4 moist.

Chroma--2 through 4.

Texture--Clay loam or sandy clay loam.

Clay content--27 to 35 percent.

Effervescence--Strongly effervescent or violently effervescent.

Other features--This horizon commonly has fractured petrocalcic material in the lower part.

Bkqm horizon:

Horizon commonly has 10 percent discontinuous accessory silica lenses throughout.

Jolan Series

The Jolan series consists of moderately deep over a duripan, well drained soils that formed in alluvium from mixed rocks. The Jolan soils are on fan remnants. Slopes are 2 to 4 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 50 degrees F.

Taxonomic class: Coarse-loamy, mixed, mesic Typic Durorthids

Typical pedon: Jolan very fine sandy loam, 2 to 4 percent slopes, rangeland, in a delineation of map unit 1690.

(Colors are for dry soil unless otherwise noted.)

- A--0 to 6 inches; pale brown (10YR 6/3) very fine sandy loam, brown (10YR 4/3) moist; moderate thin platy structure; soft, very friable, slightly sticky and slightly plastic; many very fine roots; many very fine and fine interstitial and common very fine vesicular pores; strongly effervescent; moderately alkaline (pH 8.0); clear smooth boundary.
- Bk1--6 to 15 inches; pale brown (10YR 6/3) fine sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine tubular pores; many thin lime coats on vertical and undersides of rock fragments; 10 percent pebbles; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.
- Bk2--15 to 24 inches; light yellowish brown (10YR 6/4) fine sandy loam, dark yellowish brown (10YR 4/4) moist; massive; soft, very friable, slightly sticky and slightly plastic; common very fine roots; common very fine tubular and few very fine interstitial pores; many thick lime coats and pendants on vertical and undersides of rock fragments; 10 percent pebbles consisting mostly of pan fragments; violently effervescent; moderately alkaline (pH 8.2); abrupt wavy boundary.
- Bqkm--24 inches; white (10YR 8/1) indurated duripan, light gray (10YR 7/2) moist; thin and medium platy structure; extremely hard, extremely firm; violently effervescent.

Type location: Lincoln County, Nevada; in Delamar Valley approximately 1.5 miles southwest of Knoll Pond Reservoir; about 500 feet west and 2,000 feet south of the projected northeast corner of section 3, T. 5 S., R. 63 E.; (37 degrees, 32 minutes, 36 seconds north latitude, 114 degrees, 54 minutes, 13 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, but are moist in some part in winter and spring and 10 to 20 days from June through September from convection storms.

Soil temperature: 54 to 57 degrees F.

Depth to indurated duripan: 20 to 30 inches.

Reaction: Moderately alkaline to very strongly alkaline.

Control section:

Clay content--10 to 18 percent.

Rock fragments--0 to 35 percent.

A horizon:

Value--6 or 7 dry, 3 through 5 moist.

Chroma--2 or 3.

Bk horizons:

Value--5 through 7 dry, 4 or 5 moist.

Chroma--2 through 4.

Texture--Fine sandy loam or very fine sandy loam.

Structure--Massive, weak subangular blocky or coarse prismatic.

Consistence--Soft or slightly hard, nonsticky or slightly sticky, nonplastic or slightly plastic.

Other features--Few very thin through many thick lime coats and pendants on rock fragments.

Bqkm horizon:

Value--4 through 8, dry or moist.

Chroma--1 through 3.

Structure--Massive or platy.

Consistence--Extremely hard or very hard, extremely firm or very firm.

Other features--Strongly cemented to indurated with 1 to 15 millimeters thick laminar lime and silica cap.

Kanackey Series

The Kanackey series consists of very shallow and shallow, well drained soils that formed in residuum from quartzite. The Kanackey soils are on mountains. Slopes are 15 to 50 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 62 degrees F.

Taxonomic class: Clayey-skeletal, montmorillonitic, thermic Lithic Haplargids

Typical pedon: Kanackey very gravelly loam, 15 to 30 percent slopes, rangeland, in a delineation of map unit 1064. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 20 percent cobbles and 25 percent pebbles.

A--0 to 2 inches; light brownish gray (10YR 6/2) very gravelly loam, dark grayish brown (10YR 4/2) moist; weak thin platy structure; soft, very friable, sticky and plastic; few very fine roots; many very fine and fine vesicular pores; 10 percent cobbles, 30 percent pebbles; slightly effervescent; moderately alkaline (pH 7.9); abrupt smooth boundary.

Bt1--2 to 5 inches; reddish brown (5YR 5/3) very cobbly clay, reddish brown (5YR 4/4) moist; weak fine subangular blocky structure; hard, firm, very sticky and very plastic; common very fine and fine roots; common very fine tubular pores; common thin clay films on faces of peds; 35 percent cobbles, 10 percent pebbles; slightly alkaline (pH 7.8); clear smooth boundary.

Bt2--5 to 11 inches; reddish brown (5YR 4/4) extremely cobbly clay, dark reddish brown (5YR 3/4) moist; strong medium subangular blocky structure; hard, firm, very sticky and very plastic; few very fine through medium roots occurring as exped; common very fine and few medium tubular pores; many thick clay films on faces of peds; 45 percent cobbles, 20 percent pebbles; slightly alkaline (pH 7.8); abrupt wavy boundary.

R--11 inches; fractured rhyolitic tuff bedrock.

Type location: Lincoln County, Nevada; approximately 18 miles northeast of U.S. 93 and 1.5 miles southwest of the Kane Springs Road in Kane Springs Valley; (37 degrees, 6 minutes, 32 seconds north latitude, 114 degrees, 43 minutes, 33 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist in some part for short periods during the winter and early spring months and for 10 to 20 days following summer convection storms.

Soil temperature: 59 to 64 degrees F.

Depth to bedrock: 8 to 14 inches.

Control section:

Clay content--Averages 35 to 50 percent.

Rock fragments--50 to 65 percent.

A horizon:

Value--6 or 7 dry, 5 or 6 moist.

Chroma--2 through 4 dry or moist.

Reaction--Moderately alkaline or strongly alkaline.

Bt horizons:

Hue--5YR or 7.5YR.

Value--4 through 6 dry, 2 through 4 moist.

Chroma--2 through 4 dry or moist.

Texture--Clay, sandy clay.

Clay content--40 to 60 percent, weighted average.

Rock fragments--35 to 55 in upper part; 50 to 75 in lower part, mostly cobbles.

Effervescence--Noneffervescent or slightly effervescent.

Reaction--Mildly alkaline or moderately alkaline.

Kanesprings Series

The Kanesprings series consists of shallow over a duripan, well drained soils that formed in residuum and colluvium from tuffaceous rocks. The Kanesprings soils are on mountains. Slopes are 15 to 50 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 58 degrees F.

Taxonomic class: Loamy, mixed, thermic, shallow Typic Durargids

Typical pedon: Kanesprings very cobbly sandy loam, 15 to 30 percent slopes, rangeland, in a delineation of map unit 1113. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 25 percent cobbles and 15 percent pebbles.

A--0 to 3 inches; pale brown (10YR 6/3) very cobbly sandy loam, brown (10YR 4/3) moist; moderate thin platy structure; soft, very friable, slightly sticky and slightly plastic; common fine roots; many very fine and fine interstitial pores; 25 percent cobbles, 15 percent pebbles; slightly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Btk1--3 to 8 inches; light brown (7.5YR 6/4) gravelly loam, brown (7.5YR 5/4) moist; moderate fine subangular blocky structure; soft, very friable, sticky and plastic; common very fine and few medium roots; common very fine tubular pores; few thin clay films lining pores; few thin lime and silica coats on undersides of rock fragments; 2 percent cobbles, 20 percent pebbles;

strongly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Btk2--8 to 18 inches; brown (7.5YR 5/4) gravelly clay loam, dark brown (7.5YR 4/4) moist; strong medium subangular blocky structure; slightly hard, friable, sticky and plastic; common very fine and fine and few medium roots; common very fine and fine tubular pores; common thin clay films on faces of peds and lining pores; many thin lime and silica coats and pendants on vertical and undersides of rock fragments; 5 percent cobbles, 25 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

Bqkm--18 to 27 inches; massive indurated duripan.

R--27 inches; hard basalt.

Type location: Lincoln County, Nevada; in the Kane Springs Wash area approximately 4 miles southeast of Kane Springs; about 900 feet north and 1,675 feet west of the projected southeast corner of section 1, T. 9 S., R. 64 E.; (37 degrees, 11minutes, 27 seconds north latitude, 114 degrees, 45 minutes, 42 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist for short periods during the winter and spring dry from summer to mid fall.

Soil temperature: 60 to 65 degrees F.

Depth to duripan: 14 to 20 inches.

Depth to bedrock: 18 to 30 inches.

Reaction: Moderately alkaline or strongly alkaline.

Control section:

Clay content--Averages 18 to 35 percent.

Rock fragments--Averages 24 to 35 percent.

A horizon:

Value--5 or 6 dry, 3 or 4 moist.

Chroma--2 or 3.

Btk1 horizon:

Hue--7.5YR or 10YR.

Value--5 or 6 dry, 4 or 5 moist.

Chroma--2 through 4 dry or moist.

Texture--Gravelly clay loam or gravelly loam.

Clay content--20 to 30 percent.

Rock fragments--20 to 35 percent.

Other features--Common or many thin or moderately thick lime and silica coats and pendants on vertical and undersides of rock fragments.

Effervescence--Strongly effervescent or violently effervescent.

Btk2 horizon:

Hue--7.5YR or 10YR.

Value--5 or 6 dry, 4 or 5 moist.

Texture--Gravelly clay loam, gravelly sandy clay loam.

Clay content--27 to 40 percent.

Rock fragments--20 to 35 percent.

Bqkm horizon:

Thickness of duripan ranges from 8 to 12 inches.

Other features--Common or many thin or moderately thick lime and silica coats and pendants on vertical and undersides of rock fragments.

Effervescence--Strongly effervescent or violently effervescent.

Kaspal Series

The Kaspal series consists of deep over a petrocalcic, well drained soils that formed in alluvium from mixed rocks. The Kaspal soils are on fan remnants. Slopes are 2 to 8 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 58 degrees F.

Taxonomic class: Fine, montmorillonitic, thermic Typic Haplargids

Typical pedon: Kaspal very gravelly sandy loam, 2 to 8 percent slopes, rangeland, in a delineation of map unit 1080. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 5 percent cobbles and 40 percent pebbles.

A--0 to 2 inches; light brown (7.5YR 6/4) very gravelly sandy loam, brown (7.5YR 4/4) moist; moderate thin platy structure; soft, very friable, slightly sticky and slightly plastic; many very fine roots; many fine interstitial pores; 5 percent cobbles, 40 percent pebbles; slightly effervescent; slightly alkaline (pH 7.8); abrupt wavy boundary.

Btk1--2 to 11 inches; brown (7.5YR 5/4) cobbly clay loam, dark brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; hard, friable, sticky and plastic; many very fine and fine roots; common fine tubular pores; common moderately thick clay films lining pores and on faces of peds; common fine and medium lime filaments; 20 percent cobbles, 10 percent pebbles; strongly effervescent; moderately alkaline (pH 8.0); clear wavy boundary.

Btk2--11 to 34 inches; reddish brown (5YR 5/4) clay, reddish brown (5YR 4/4) moist; strong medium prismatic structure parting to strong fine and medium subangular blocky; hard, very firm, very sticky and very plastic; many fine and medium roots; common fine and few medium tubular pores; common pressure faces; few thin clay films lining pores; many fine and medium lime masses; 5 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear wavy boundary.

2Bk--34 to 47 inches; light brown (7.5YR 6/4) extremely cobbly clay loam, strong brown (7.5YR 5/6) moist; massive; hard, friable, sticky and plastic; few fine and medium roots; few medium tubular pores; many thick lime coats and pendants on the sides and undersides of rock fragments; weakly lime cemented matrix; 45 percent cobbles, 30 percent pebbles; violently effervescent; strongly alkaline (pH 8.8); abrupt wavy boundary.

Bkm--47 inches; Petrocalcic horizon.

Type location: Lincoln County, Nevada; approximately 21 miles east of U.S. Highway 93 and 3.5 miles northwest of the Kane Springs Wash Road in Kane Springs Valley; about 2,000 feet east and 1,000 feet north of the projected southwest corner of section 7, T. 9 S., R. 65 E.; (37 degrees, 10 minutes, 35 seconds north latitude, 114 degrees, 45 minutes, 17 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist in some part for short periods in the winter and spring and for 10 to 20 days cumulative, between July and October following convection storms.

Soil temperature: 59 to 64 degrees F.

Depth to petrocalcic horizon: 40 to 60 inches.

Depth to calcic horizon: 30 to 40 inches.

Control section:

Clay content--35 to 55 percent.

Rock fragments--5 to 30 percent.

A horizon:

Hue--7.5YR or 10YR.

Value--5 through 7 dry, 3 or 4 moist.

Chroma--3 or 4.

Reaction--Slightly alkaline to moderately alkaline.

Effervescence--Noneffervescent to slightly effervescent.

Btk1 horizon:

Hue--5YR or 7.5YR.

Value--5 or 6 dry.

Chroma--3 through 6.

Clay content--Average 27 to 35 percent.

Rock fragments--5 to 30 percent.

Structure--Prismatic or subangular blocky.

Consistence--Hard or very hard, friable or firm.

Reaction--Moderately alkaline or strongly alkaline.

Effervescence--Strongly effervescent or violently effervescent.

Btk2 horizon:

Hue--5YR or 7.5YR

Value--5 or 6 dry

Chroma--3 through 6

Texture--Clay or gravelly clay

Clay content--Average 35 to 55 percent.

Reaction--Moderately alkaline or strongly alkaline.

Rock fragments--5 to 25 percent.

Bk horizon:

Hue--5YR, 7.5YR, or 10YR.

Value--6 through 8 dry, 5 through 7 moist.

Chroma--3 or 4 dry, 5 or 6 moist.

Clay content--30 to 40 percent.

Rock fragments--40 to 75 percent predominantly cobbles.

Consistence--Slightly hard or hard, very friable or friable.

Reaction--Moderately alkaline or strongly alkaline.

Keefa Series

The Keefa series consists of very deep, well drained soils that formed in alluvium from mixed rocks. Keefa soils are on inset fans and fan skirts. Slopes are 0 to 2 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 53 degrees F.

Taxonomic class: Coarse-loamy, mixed, mesic Duric Camborthids

Typical pedon: Keefa gravelly very fine sandy loam, 0 to 2 percent slopes, rangeland, in a delineation of map unit 1470. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 25 percent pebbles.

A1--0 to 4 inches; pale brown (10YR 6/3) gravelly very fine sandy loam, brown (10YR 4/3) moist; strong thick platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; many very fine and fine vesicular pores; 25 percent pebbles; violently effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.

A2--4 to 8 inches; pale brown (10YR 6/3) gravelly very fine sandy loam, brown (10YR 4/3) moist; moderate medium platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine and fine roots; common very fine and fine vesicular pores; 25 percent pebbles; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Bw--8 to 15 inches; pale brown (10YR 6/3) gravelly sandy loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine and few medium roots; common very fine tubular and interstitial pores; 25 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Bk--15 to 26 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 fine and few medium roots; common very fine and fine tubular and interstitial pores; common very thin and few thin lime coats on undersides of rock fragments; 20 percent pebbles; violently effervescent; strongly alkaline (pH 9.0); clear wavy boundary.

Bqk--26 to 50 inches; very pale brown (10YR 7/3) gravelly sandy loam, dark yellowish brown (10YR 4/4) moist; massive; hard and brittle, firm, nonsticky and nonplastic; few very fine roots; common very fine interstitial pores; many thin silica and lime coats on undersides of rock fragments; discontinuous strongly cemented silica and lime laminar cap; 25 percent pebbles; violently effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary.

C--50 to 60 inches; pale brown (10YR 6/3) stratified very gravelly loamy sand and gravelly sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine and fine interstitial pores; 35 percent pebbles; strongly effervescent; strongly alkaline (pH 8.5).

Type location: Lincoln County, Nevada; approximately 2,200 feet north of Delamar Lake; about 2,500 feet east and 2,000 feet south of the projected northwest corner of section 17, T. 7 S., R. 63 E.; (37 degrees, 20 minutes, 35 seconds north latitude, 114 degrees, 56 minutes, 53 seconds west longitude.)

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 59 degrees F.

Depth to duric layer: 20 to 36 inches.

Effervescence: Strongly effervescent or violently effervescent in all parts. A and Bw horizons are affected by recharge of carbonates as dust.

Control section:

Clay content--8 to 15 percent.

Rock fragments--10 to 25 percent.

A horizon:

Value--6 or 7 dry, 4 or 5 moist.

Chroma--3 or 4.

Bw horizon:

Value--6 or 7 dry, 4 or 5 moist.

Chroma--3 through 6.

Texture--Sandy loam or coarse sandy loam.

Rock fragments--0 to 25 percent, one half or more are less than 5 millimeter diameter.

Structure--Moderate or strong subangular blocky.

Consistence--Friable or very friable, nonsticky to slightly sticky, nonplastic to slightly plastic

Reaction--Moderately alkaline or strongly alkaline.

Bk horizon:

Value--6 through 8 dry, 4 or 5 moist.

Chroma--2 through 6.

Texture--Sandy loam or coarse sandy loam.

Rock fragments--0 to 30 percent, one-half or more are less than 5 millimeter in diameter.

Structure--Massive or subangular blocky.

Consistence--Soft to slightly hard, nonsticky to slightly sticky, nonplastic to slightly plastic.

Reaction--Moderately alkaline or strongly alkaline.

Bqk horizon:

Value--5 through 7 dry, 4 or 5 moist.

Chroma--3 through 6.

Texture--Sandy loam, coarse sandy loam; subhorizons of loamy sand are in some pedons.

Rock fragments--15 to 35 percent, one-half or more are less than 5 millimeter diameter.

Reaction--Strongly alkaline or very strongly alkaline.

Other features--Discontinuous lenses of weakly or strongly silica-lime cemented material are in some pedons.

C horizon:

Value--6 or 7 dry, 4 or 5 moist.
 Chroma--3 through 6.
 Texture--Stratified sandy loam to loamy coarse sand.
 Rock fragments--15 to 35 percent.
 Reaction--Moderately alkaline or strongly alkaline.

Knob Hill Series

The Knob Hill series consists of very deep, somewhat excessively drained soils that formed in alluvium from mixed rocks. The Knob Hill soils are on inset fans. Slopes are 2 to 4 percent. The mean annual precipitation is 5 inches and the mean annual temperature is about 63 degrees F.

Taxonomic class: Sandy, mixed, thermic Typic Calciorthids

Typical pedon: Knob Hill loamy sand, 2 to 4 percent slopes, desert wildlife habitat, in a delineation of map unit 1021. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 8 percent pebbles.

A--0 to 2 inches; pale brown (10YR 6/3) loamy sand, brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; few very fine roots; many very fine interstitial pores; 10 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.

Bw--2 to 22 inches; pale brown (10YR 6/3) gravelly loamy sand, yellowish brown (10YR 5/4) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine and fine and common medium roots; many very fine and fine interstitial pores; 25 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); gradual smooth boundary.

Bk1--22 to 52 inches; white (10YR 8/2) stratified loamy sand and gravelly sandy loam, light brownish gray (10YR 6/2) moist; massive; hard, firm, nonsticky and nonplastic; common very fine and few medium roots; common very fine interstitial and common fine tubular pores; many thick lime coats on vertical and undersides of rock fragments; 20 percent pebbles; violently effervescent; strongly alkaline (pH 8.6); gradual smooth boundary.

Bk2--52 to 60 inches; light gray (10YR 7/2) stratified very gravelly loamy sand, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine roots; many very fine interstitial pores; many thick lime coats on vertical and undersides of rock fragments; 5 percent cobbles, 30 percent pebbles; violently effervescent; moderately alkaline (pH 8.4).

Type location: Lincoln County, Nevada; approximately 60 feet west of old U.S. Highway 93; about 800 feet south and 1,300 feet west of the northeast corner of section 28, T. 11 S., R. 63 E.; (36 degrees, 58 minutes, 4

seconds north latitude, 114 degrees, 55 minutes, 42 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry. Moist for short periods throughout the moisture control section December through March. Moist periodically in upper part of moisture control section, 10 to 20 days cumulative, June through September.

Soil temperature: 63 to 70 degrees F.

Depth to calcic horizon: 16 to 24 inches

Reaction: Moderately alkaline or strongly alkaline

Control section:

Clay content--3 to 10 percent average.

Rock fragments--Averages 20 to 35 percent, mostly pebbles.

A horizon:

Hue 7.5YR or 10YR
 Chroma--2 through 4

Bw horizon:

Hue--7.5YR or 10YR.
 Value--6 or 7 dry, 4 or 5 moist.
 Chroma--2 through 4.
 Texture--Gravelly loamy sand, stratified loamy sand and gravelly sandy loam.
 Rock fragments--20 to 25 percent.

Bk1 horizons:

Hue--7.5YR or 10YR
 Value--7 or 8 dry, 5 or 6 moist.
 Chroma--1 through 3.
 Consistence--Slightly hard or hard, friable or firm.
 Other features--Many thick lime coats on undersides to completely coating rock fragment; 8 percent weakly lime cemented concretions.

Bk2 horizon:

Hue--7.5YR or 10YR.
 Value--6 or 7 dry.
 Chroma--2 through 4.
 Texture--Stratified loamy fine sand to very gravelly loamy sand.
 Rock fragments--10 to 40 percent.
 Other features--Few to many thick lime coats on vertical and undersides of rock fragments.

Koyen Series

The Koyen series consists of very deep, well drained soils that formed in alluvium derived from volcanic rocks. The Koyen soils are on inset fans and fan skirts. Slopes are 0 to 4 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 Camborthids

Typical pedon: Koyen gravelly sandy loam, 2 to 4 percent slopes, rangeland, in a delineation of map unit 1510. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 15 percent pebbles.

A--0 to 3 inches; pale brown (10YR 6/3) gravelly sandy loam, brown (10YR 4/3) moist; moderate thin platy structure; soft, very friable, nonsticky and slightly plastic; many very fine roots; many very fine vesicular pores; 15 percent pebbles; moderately alkaline (pH 8.2); clear smooth boundary.

Bw--3 to 15 inches; light yellowish brown (10YR 6/4) stratified gravelly sandy loam, dark yellowish brown (10YR 4/4) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; common very fine and fine interstitial and few very fine tubular pores; 18 percent pebbles; moderately alkaline (pH 8.2); clear smooth boundary.

Bk1--15 to 32 inches; light yellowish brown (10YR 6/4) stratified gravelly sandy loam, dark yellowish brown (10YR 4/4) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; many very fine and fine interstitial pores; common thin lime coats on undersides of rock fragments; 18 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Bk2--32 to 60 inches; light yellowish brown (10YR 6/4) very gravelly loamy sand, dark yellowish brown (10YR 4/4) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; many very fine and fine interstitial pores; common thin lime coats on undersides of rock fragments; 1 percent cobbles, 40 percent pebbles; violently effervescent; strongly alkaline (pH 8.6).

Type location: Lincoln County, Nevada; in Delamar Valley along Powerline Road approximately 10 miles southwest of U.S. Highway 93; about 700 feet east and 900 feet south of the northwest corner of section 29, T. 5 S., R. 64 E.; (37 degrees, 29 minutes, 25 seconds north latitude, 114 degrees, 50 minutes, 46 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist in some part for short periods during winters and early spring months and for 10 to 20 days cumulative between July and October due to convection storms.

Soil temperature: 53 to 59 degrees F.

Depth to Bk horizon: 14 to 21 inches.

Reaction: Moderately alkaline or strongly alkaline, being most alkaline in Bk horizon.

Control section:

Clay content--10 to 18 percent.

Rock fragments--Average 10 to 25 percent but any one horizon can contain up to 40 percent pebbles.

A horizon:

Hue--10YR or 2.5Y.

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 through 4.

Bw horizon:

Hue--10YR or 2.5Y.

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 through 4.

Texture--Stratified sandy loam, some pedons have strata of fine sandy loam, loam, or loamy sand.

Structure--Appears massive but parts to very weak or weak coarse or medium subangular blocky.

Effervescence--Noneffervescent, except in lower part.

Bk horizon:

Value--6 through 8 dry, 4 through 6 moist.

Chroma--2 through 4.

Effervescence--Strongly effervescent or violently effervescent.

Structure--Subangular blocky or massive.

Kurstan Series

The Kurstan series consists of very deep, well drained soils that formed in alluvium from mixed rocks. The Kurstan soils are on fan remnants. Slopes are 2 to 15 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 58 degrees F.

Taxonomic class: Coarse-loamy, mixed, thermic Duric Calciorthids

Typical pedon: Kurstan gravelly sandy loam, 2 to 8 percent slopes, rangeland, in a delineation of map unit 1021. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 2 percent cobbles and 30 percent pebbles.

A1--0 to 2 inches; pale brown (10YR 6/3) gravelly sandy loam, dark yellowish brown (10YR 4/4) moist; moderate thin platy structure; soft, very friable, nonsticky and nonplastic; few very fine roots; many fine and medium vesicular and common very fine and fine tubular pores; 30 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.

A2--2 to 9 inches; very pale brown (10YR 7/3) gravelly sandy loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine and common fine and medium roots; many very fine interstitial and common very fine tubular pores; 15 percent pebbles; strongly effervescent; strongly alkaline (pH 8.8); clear wavy boundary.

Bk1--9 to 19 inches; very pale brown (10YR 8/3) gravelly sandy loam, pale brown (10YR 6/3) moist; weak fine subangular blocky structure; hard, friable, slightly sticky and nonplastic; many very fine and few medium roots; common very fine tubular pores; brittle matrix with discontinuous pockets of irregular shaped strongly lime cemented masses; common fine and medium lime filaments and seams; many thin lime coats and pendants completely coating rock fragments; 25 percent pebbles and 5 percent cobbles; violently

effervescent; strongly alkaline (pH 9.0); gradual smooth boundary.

Bk2--19 to 30 inches; very pale brown (10YR 8/3) gravelly sandy loam, light yellowish brown (10YR 6/4) moist; weak fine and medium subangular blocky structure; hard, friable, slightly sticky and nonplastic; common very fine and few medium roots; common fine and medium tubular pores; brittle matrix with discontinuous pockets of irregular shaped strongly lime cemented masses; many fine and medium lime filaments and seams; common medium soft lime masses; many thin lime coats and pendants completely coating rock fragments; 25 percent pebbles and 5 percent cobbles; violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

Bqk1--30 to 39 inches; very pale brown (10YR 7/3) gravelly sandy loam, light yellowish brown (10YR 6/4) moist; massive; slightly hard, firm, nonsticky and nonplastic; few very fine and fine roots; many very fine interstitial and few fine tubular pores; 20 percent discontinuous pockets of irregular shaped strongly lime and silica cemented durinodes and platelike masses; many fine and medium lime seams and soft masses; many thin lime and silica coats and pendants completely coating rock fragments; 20 percent pebbles; strongly effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

Bqk2--39 to 60 inches; very pale brown (10YR 7/3) gravelly sandy loam, yellowish brown (10YR 5/4) moist; massive; hard, firm, nonsticky and nonplastic; many very fine interstitial and few fine tubular pores; brittle matrix with 25 percent discontinuous pockets of irregular shaped strongly lime and silica cemented durinodes and lenses; many fine and medium lime seams and soft masses; many thin lime and silica coats and pendants completely coating rock fragments; 20 percent pebbles; strongly effervescent; strongly alkaline (pH 8.6).

Type location: Lincoln County, Nevada; approximately 2.0 miles south of Kane Springs Wash Road and along old U.S. Highway 93; about 800 feet east and 1,100 feet south of the northwest corner of section 34, T. 11 S., R. 63 E.; (36 degrees, 57 minutes, 10 seconds north latitude, 114 degrees, 55 minutes, 17 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist in some part for short periods during the winter and early spring months and for 10 to 20 days cumulative following summer convection storms in the period July through September.

Soil temperature: 59 to 64 degrees F.

Depth to calcic horizon: 5 to 14 inches.

Depth to Bqk horizon: 25 to 40 inches.

Control section:

Clay content--8 to 18 percent.

Rock fragments--15 to 35 percent.

A horizons:

Value--6 or 7 dry, 4 through 6 moist.

Chroma--3 or 4.

Bk horizons:

Value--7 or 8 dry, 5 or 6 moist.

Chroma--2 through 4.

Rock fragments--15 to 35 percent.

Calcium carbonate equivalent (less than 20 mm fraction)--20 to 35 percent.

Consistence--Slightly hard or hard, dry.

Bqk horizons:

Value--6 or 7 dry, 5 or 6 moist.

Chroma--2 through 4.

Rock fragments--15 to 35 percent.

Calcium carbonate equivalent (less than 20 mm fraction)--20 to 35 percent.

Consistence--Slightly hard or hard, dry.

Cementation--Continuously or discontinuously brittle with 20 to 30 percent durinodes and discontinuous pockets of strongly lime and silica cemented material.

Kyler Series

The Kyler series consists of shallow and very shallow, well drained soils that formed in residuum and colluvium from limestone and dolomite. The Kyler soils are on mountains. Slopes are 15 to 50 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 50 degrees F.

Taxonomic class: Loamy-skeletal, carbonatic, mesic Lithic Xeric Torriorthents

Typical pedon: Kyler extremely cobbly loam, 30 to 50 percent slopes, rangeland, in a delineation of map unit 1570. (Colors are for dry soils unless otherwise noted.) The surface is partially covered with 30 percent cobbles and 35 percent pebbles.

A--0 to 3 inches; pale brown (10YR 6/3) extremely cobbly loam, brown (10YR 4/3) moist; moderate thin platy structure; soft, very friable, sticky and plastic; many very fine roots; many very fine and fine interstitial pores; 30 percent cobbles, 35 percent pebbles; violently effervescent; moderately alkaline (pH 7.9); clear smooth boundary.

C--3 to 11 inches; light yellowish brown (10YR 6/4) very gravelly loam, dark yellowish brown (10YR 4/4) moist; moderate fine subangular blocky structure; soft, very friable, sticky and plastic; many very fine and fine and few medium roots; common very fine and fine tubular pores; 12 percent cobbles, 35 percent pebbles; violently effervescent; moderately alkaline (pH 8.0); abrupt wavy boundary.

R--11 inches; gray (10YR 5/1) limestone bedrock.

Type location: Lincoln County, Nevada; approximately 1/4 mile south of U.S. Highway 93; about 2,500 feet west and 1,000 feet north of the projected southeast corner of section 7, T. 4 S., R. 65 E.; (37 degrees, 36 minutes, 38 seconds north latitude, 114 degrees, 44 minutes, 25 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist in winter and spring months, dry in summer and fall except for 10 to 20 days cumulative between July and October due to convection storms.

Soil temperature: 53 to 59 degrees F.

Depth to bedrock: 6 to 14 inches.

Reaction: Moderately alkaline or strongly alkaline.

Calcium carbonate equivalent: Greater than 40 percent.

Effervescence: Strongly effervescent or violently effervescent.

Control section:

Clay content--7 to 18 percent.

Rock fragments--35 to 60 percent.

A horizon:

Value--6 or 7 dry, 3 through 5 moist.

Chroma--2 or 3.

C horizon:

Hue--10YR or 7.5YR.

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 through 4 moist.

Texture (less than 2mm fraction)--Loam, including strata of fine sandy loam, very fine sandy loam or silt loam.

Structure--Massive or subangular blocky.

Consistence--Slightly sticky or sticky, slightly plastic or plastic.

Rock fragments--Average 35 to 60 percent.

Subhorizons have up to 70 percent rock fragments in some pedons. Some thin lime coats on rock fragments.

structure; slightly hard, very friable, sticky and plastic; many very fine and fine roots; many very fine tubular pores; strongly effervescent; strongly alkaline (pH 9.0); clear smooth boundary.

Cz1--3 to 8 inches; brown (10YR 5/3) silt loam, dark brown (10YR 4/3) moist; common fine and medium distinct yellowish brown (10YR 5/4) and very dark brown (10YR 2/2) mottles; weak fine subangular blocky structure; slightly hard, very friable, sticky and plastic; many very fine and common fine roots; many very fine tubular pores; many fine salt crystals; strongly effervescent; strongly alkaline (pH 9.0); clear smooth boundary.

Cz2--8 to 20 inches; very pale brown (10YR 7/3) silty clay loam, brown (10YR 4/3) moist; common fine and medium distinct yellowish brown (10YR 5/4) and very dark brown (10YR 2/2) mottles; weak fine subangular blocky structure; slightly hard, very friable, very sticky and very plastic; common very fine and fine roots; many very fine tubular pores; many fine salt crystals; violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

Cz3--20 to 36 inches; light yellowish brown (10YR 6/4) silt loam, yellowish brown (10YR 5/4) moist; common fine and medium distinct yellowish brown (10YR 5/4) and very dark brown (10YR 2/2) mottles; weak fine subangular blocky structure; slightly hard, very friable, sticky and plastic; common very fine roots; common very fine tubular pores; many fine salt crystals; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

A1b--36 to 42 inches; brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; massive; slightly hard, very friable, sticky and plastic; common very fine roots; common very fine interstitial pores; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

A2b--42 to 60 inches; brown (10YR 5/3) silt loam, dark yellowish brown (10YR 3/4) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; common very fine roots; common very fine interstitial pores; violently effervescent; moderately alkaline (pH 8.4).

Type location: Lincoln County, Nevada; north of Rox on an old farmstead approximately 1,300 feet east and 1,000 feet south of the northwest corner of section 13, T. 12 S., R. 65 E.; (36 degrees, 53 minutes, 55 seconds north latitude, 114 degrees, 39 minutes, 49 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry. Moist for short period in winter and spring and for 10 to 20 days from June through September due to summer convection storms.

Soil temperature: 65 to 72 degrees F.

Depth to Cz horizon: Commonly 1 to 8 inches but may range up to 28 inches.

Effervescence: Calcareous throughout, segregated lime common in lower profile.

Land Series

The Land series consists of very deep, somewhat poorly drained soils that formed in alluvium derived from mixed rocks. The Land soils are on stream terraces. Slopes are 0 to 2 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 66 degrees F.

Taxonomic class: Fine-silty, mixed, thermic Typic Salorthids

Typical pedon: Land silt loam, rangeland, in a delineation of map unit 1910. (Colors are for dry soil unless otherwise noted.)

A--0 to 3 inches; light brownish gray (10YR 6/2) silt loam, yellowish brown (10YR 5/4) moist; weak thin platy

Gypsum: Commonly present in coating, filaments and crystals.

Reaction: Moderately alkaline to very strongly alkaline.

Other features: Vertical polygonal cracks 5 to 8 inches apart, commonly present. Buried A horizons are present in some pedons.

Control section:

Clay content--18 to 35 percent.

Percent sand: Less than 15 percent fine or coarser sand.

A horizon:

Hue--10YR or 7.5YR.

Value--5 through 7 dry, 4 or 5 moist.

Chroma--2 through 4.

Cz horizon:

Hue--10YR or 7.5YR.

Value--6 through 8 dry, 4 or 5 moist.

Chroma--1 through 4 dry, 2 through 4 moist.

Texture--Averages silty clay loam or silt loam. Thin strata of coarser and finer textures are common.

Salt content--2 to 15 percent of salts more soluble than gypsum in some part.

Thickness--8 to 33 inches.

Laross Series

The Laross series consists of deep, well drained soils that formed in residuum and colluvium from tuffaceous rocks. The Laross soils are on mountains. Slopes are 30 to 75 percent. The mean annual precipitation is about 16 inches and the mean annual temperature is about 50 degrees F.

Taxonomic class: Ashy-skeletal, mesic Vitrandic Haplustolls

Typical pedon: Laross cobbly loam, 30 to 75 percent slopes, woodland, in a delineation of map unit 1870. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 20 percent cobbles and 10 percent pebbles.

A1--0 to 3 inches; dark grayish brown (10YR 4/2) cobbly loam, dark brown (10YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; many very fine and fine interstitial and common fine tubular pores; 20 percent cobbles, 10 percent pebbles; neutral (pH 7.2); clear smooth boundary.

A2--3 to 8 inches; dark grayish brown (10YR 4/2) gravelly loam, dark brown (10YR 3/3) moist; moderate fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine and common medium roots; many very fine and fine interstitial and common fine tubular pores; 5 percent cobbles, 20 percent pebbles; neutral (pH 7.2); gradual smooth boundary.

2Bw1--8 to 13 inches; pale brown (10YR 6/3) extremely

gravelly loam, brown (10YR 4/3) moist; moderate fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many fine and medium and common coarse roots; common fine and medium interstitial and common medium tubular pores; 20 percent cobbles, 45 percent pebbles; neutral (pH 7.0); clear wavy boundary.

2Bw2--13 to 19 inches; light gray (10YR 7/2) extremely cobbly loam, brown (10YR 5/3) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots; common fine and medium interstitial and common medium tubular pores; 30 percent cobbles, 35 percent pebbles; neutral (pH 7.0); clear wavy boundary.

2C--19 to 52 inches; light gray (10YR 7/2) extremely cobbly sandy loam, pale brown (10YR 6/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; common very fine and fine and few medium roots; many very fine and fine interstitial and few fine tubular pores; 40 percent cobbles, 30 percent pebbles; neutral (pH 7.0).

R--52 inches; volcanic tuff.

Type location: Lincoln County, Nevada; approximately 1,600 feet southeast of the Ella Mountain Lookout; about 1.75 miles southwest of the southwest corner of section 31, T. 5 S., R. 68 E.; (37 degrees, 27 minutes, 23 seconds north latitude, 114 degrees, 27 minutes, 44 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually moist, moist in some part of the moisture control section from early July to early October and during the winter and early spring months.

Soil temperature: 47 to 52 degrees F.

Thickness of mollic epipedon: 7 to 10 inches

Depth to bedrock: 40 to 60 inches.

Control section:

Clay content--10 to 18 percent.

Rock fragments--35 to 60 percent, dominantly pebbles and cobbles.

Other features: Strong influence from volcanic glass with a bulk density of 0.90 to 1.2 gram/cubic centimeter.

A horizons:

Value--4 or 5 dry, 3 or 4 moist.

Chroma--2 or 3.

2Bw horizons:

Value--6 or 7 dry, 4 through 6 moist.

Chroma--2 or 3.

Texture--Loam or sandy loam.

Rock fragments--35 to 75 percent pebbles and cobbles.

Structure--Weak or moderate subangular blocky.

Consistence--Slightly hard or soft.

Other features--The Bw horizons average 30 to 50 percent volcanic glass by weight within the very fine sand fraction.

2C horizon:

Value--6 or 7 moist or dry.

Chroma--2 or 3.

Texture--Loam or sandy loam.

Rock fragments--60 to 85 percent pebbles and cobbles.

rock fragments; 50 percent pebbles; strongly effervescent; strongly alkaline (pH 8.6).

Type location: Lincoln County, Nevada; approximately 4 miles southwest of Delamar ghost town; about 2,250 feet west and 1,600 feet north of the southeast corner of section 8, T. 6 S., R. 64 E.; (37 degrees, 26 minutes, 21 seconds north latitude, 114 degrees, 50 minutes, 17 seconds west longitude.)

Leo Series

The Leo series consists of very deep, excessively drained soils that formed in alluvium from mixed rock sources. The Leo soils are on inset fans. Slopes are 2 to 8 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 53 degrees F.

Taxonomic class: Sandy-skeletal, mixed, mesic Typic Torriorthents

Typical pedon: Leo gravelly sandy loam, 2 to 4 percent slopes, rangeland, in a delineation of map unit 1530. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 25 percent pebbles.

A--0 to 5 inches; pale brown (10YR 6/3) gravelly sandy loam, dark grayish brown (10YR 4/2) moist; moderate thick platy structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; many very fine interstitial and common very fine vesicular pores; 25 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

C1--5 to 15 inches; light brownish gray (10YR 6/2) gravelly fine sandy loam; brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine and few medium roots; common very fine tubular pores; 5 percent cobbles, 25 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); clear wavy boundary.

C2--15 to 28 inches; light brownish gray (10YR 6/2) very gravelly loamy fine sand, dark grayish brown (10YR 4/2) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine and few medium roots; common very fine and fine interstitial and few very fine tubular pores; few very thin randomly oriented lime and silica coating on rock fragments; 5 percent cobbles, 40 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

C3--28 to 40 inches; grayish brown (10YR 5/2) stratified very gravelly coarse sand and extremely gravelly coarse sand, dark grayish brown (10YR 4/2) moist; single grain; loose, nonsticky and nonplastic; common very fine and fine roots; many very fine interstitial pores; few very thin randomly oriented lime and silica coating on rock fragments; 5 percent cobbles, 60 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear wavy boundary.

C4--40 to 60 inches; grayish brown (10YR 5/2) very gravelly coarse sand, brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; few very fine and fine roots; many very fine interstitial pores; few very thin randomly oriented lime and silica coating on

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 59 degrees F.

Soil reaction: Moderately alkaline or strongly alkaline.

Control section:

Clay content--0 to 5 percent.

Rock fragments--35 to 55 percent, dominantly pebbles. Individual strata range from 10 to 100 percent rock fragments in some pedons.

A horizon:

Value--5 through 7 dry; 4 or 5 moist.

Chroma--2 or 3.

Effervescence--Noneffervescent to strongly effervescent.

C horizon:

Value--5 through 7 dry, 4 or 5 moist.

Chroma--2 or 3.

Texture--Stratified; includes strata of fine sandy loam or sandy loam as well as sand, loamy sand and gravel in some pedons.

Rock fragments--35 to 65 percent, dominantly pebbles, with individual strata ranging from 10 to 100 percent.

Effervescence--Slightly effervescent to strongly effervescent.

Other features--Weak from pyroclastic materials. Some pedons have randomly oriented silica and lime coating on rock fragments.

Structure--Massive or single grained.

Lien Series

The Lien series consists of shallow and very shallow over a duripan, well drained soils that formed in alluvium from mixed rocks. The Lien soils are on fan remnants. Slopes are 2 to 15 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 48 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic, shallow Xerollic Durorthids

Typical pedon: Lien very gravelly sandy loam, 2 to 15 percent slopes, pinyon-juniper woodland, in a

delineation of map unit 1220. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 2 percent cobbles and 35 percent pebbles.

A--0 to 4 inch; pale brown (10YR 6/3) very gravelly sandy 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; many very fine and fine vesicular and common fine tubular pores; 5 percent cobbles, 35 percent pebbles; slightly effervescent; moderately alkaline (pH 8.0); clear wavy boundary.

Bk--4 to 12 inches; yellowish brown (10YR 5/4) extremely gravelly loam, dark yellowish brown (10YR 4/4) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine and fine and common medium and few coarse roots; common fine tubular and common very fine interstitial pores; common strongly cemented discontinuous lime plates; 70 percent pebbles (mostly pan fragments); strongly effervescent; moderately alkaline (pH 8.2); clear wavy boundary.

Bqk--12 to 14 inches; pale brown (10YR 6/3) very gravelly sandy loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, very friable, slightly sticky and nonplastic; few very fine and fine roots; many very fine interstitial and few very fine tubular pores; weakly silica and lime cemented; 50 percent pebbles (mostly pan fragments); violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

2Bqkm--14 to 24 inches; white (10YR 8/2) indurated duripan, with a 1 millimeter silica cap, light gray (10YR 7/2) massive; extremely hard, extremely firm; many thick overlapping strongly silica cemented plates; violently effervescent; strongly alkaline (pH 8.5) abrupt smooth boundary.

3Bqkm--24 to 60 inches; light yellowish brown (10YR 6/4) weakly to strongly cemented duripan, yellowish brown (10YR 5/4) moist; massive, hard, firm, slightly sticky and nonplastic; few fine and medium interstitial pores; 5 percent pebbles; 15 percent lime and silica cemented lenses occurring as plates; violently effervescent; strongly alkaline (pH 8.6).

Type location: Lincoln County, Nevada; in Wild Horse Valley approximately 1,000 feet west and 1,000 feet north of the southeast corner of section 28, T. 2 S., R. 58 E.; (37 degrees, 44 minutes, 22 seconds north latitude, 115 degrees, 27 minutes, 59 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry; moist in winter and spring, dry summer and fall.

Soil temperature: 47 to 52 degrees F.

Depth to indurated duripan: 6 to 14 inches.

Reaction: Moderately alkaline to very strongly alkaline.

Control section:

Clay--8 to 24 percent.

Rock fragments--50 to 70 percent mainly pebbles.

A horizon:

Value--3 or 4 moist.

Chroma--2 through 4.

Bk horizon:

Value--3 or 4 moist.

Chroma--2 through 4.

Texture--Very gravelly fine sandy loam, very gravelly sandy loam, or extremely gravelly loam.

Structure--Weak medium or fine subangular blocky or it is massive.

Consistence--Nonsticky to slightly sticky.

Bqkm horizon:

Value--7 or 8 dry, 6 or 7 moist.

Chroma--1 through 3.

Structure--Platy or it is massive.

Other features--Laminar opal sheets and coatings comprise 20 to 40 percent with higher chroma than the lime cemented portions.

3Bqkm horizon:

Chroma--3 or 4.

Consistence--Very hard to hard.

Logring Series

The Logring series consists of shallow and very shallow, well drained soils that formed in residuum and colluvium from limestone and dolomite. The Logring soils are on mountains. Slopes are 15 to 75 percent. The mean annual precipitation is about 10 inches and the mean annual temperature is about 55 degrees F.

Taxonomic class: Loamy-skeletal, carbonatic, mesic Lithic Xeric Torriorthents

Typical pedon: Logring very gravelly loam, 15 to 50 percent slopes, woodland, in a delineation of map unit 1090. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 10 percent cobbles and 40 percent pebbles.

A--0 to 3 inches; brown (10YR 5/3) very gravelly loam, dark brown (10YR 3/3) moist; weak medium platy structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; few fine vesicular and many fine and medium interstitial pores; 10 percent cobbles, 40 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Bw--3 to 9 inches; brown (10YR 5/3) very cobbly loam, dark brown (10YR 4/3) moist; strong fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many medium and coarse and common very fine and fine roots; many very fine and fine interstitial and common fine and medium tubular pores; 35 percent cobbles, 20 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear wavy boundary.

Bk--9 to 12 inches; pale brown (10YR 6/3) very cobbly loam, brown (10YR 5/3) moist; massive; soft, very friable, slightly sticky and slightly plastic; common fine and medium and few coarse roots; many very fine and fine interstitial pores; moderately thick lime coating on sides and pendants on undersides of rock fragments; 30 percent cobbles, 25 percent pebbles; violently effervescent; strongly alkaline (pH 8.6); abrupt wavy boundary.

R--12 inches; limestone bedrock.

Type location: Southern Lincoln County, Nevada; in Pahrnanagat Range approximately 1 mile south of Badger Mountain; about 700 feet south and 1,100 feet east of the northwest corner of section 14, T. 7 S., R. 59 E.; (37 degrees, 20 minutes, 44 seconds north latitude, 115 degrees, 19 minutes, 58 seconds west longitude.)

Range in Characteristics:

Soil moisture: Moist in winter and spring months, dry summer and fall except for 10 to 20 days cumulative between July and October due to convection storms.

Soil temperature: 47 to 50 degrees F.

Organic carbon: 1.0 to 1.5 percent in upper 18 cm

Depth to bedrock: 7 to 14 inches.

Reaction: Moderately alkaline or strongly alkaline.

Effervescence: Strongly effervescent or violently effervescent throughout.

Control section:

Clay content--8 to 18 percent.

Rock fragments--35 to 60 percent.

Calcium carbonate equivalent--40 to 60 percent. 15 to 40 percent finely divided lime in upper 18 centimeters.

A horizon:

Value--4 or 5 dry, 2 or 3 moist.

Chroma--2 through 4.

Bw horizon:

Value--5 or 6 dry, 3 through 5 moist.

Chroma--2 through 4.

Texture--Loam, fine sandy loam, or sandy loam.

Bk horizon:

Chroma--3 or 4.

Texture--Very cobbly loam, very cobbly fine sandy loam, or extremely cobbly loam.

Lomoiné Series

The Lomoiné series consists of shallow and very shallow, well drained soils that formed in residuum and colluvium from volcanic rocks. The Lomoiné soils are on mountains. Slopes are 8 to 50 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy-skeletal, mixed (calcareous), mesic Lithic Xeric Torriorthents

Typical pedon: Lomoiné very gravelly sandy loam, 15 to 30 percent slopes, rangeland, in a delineation of map unit 1950. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 5 percent cobbles and 45 percent pebbles.

A--0 to 2 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine roots; common fine tubular and interstitial and few medium interstitial pores; 5 percent cobbles, 50 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

C--2 to 6 inches; pale brown (10YR 6/3) very gravelly sandy loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, slightly sticky and slightly plastic; common fine and few medium roots; common fine tubular and few fine interstitial pores; 5 percent cobbles, 30 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.

R--6 inches; rhyolitic tuff.

Type location: Lincoln County, Nevada; approximately 2.5 miles north of Coyote Summit and 0.75 mile east of State Highway 375 on a dirt road; about 50 feet north and 50 feet west of the southeast corner of section 9, T. 4 S., R. 56 E.; (37 degrees, 36 minutes, 25 seconds north latitude, 115 degrees, 40 minutes, 39 seconds west longitude.)

Range in Characteristics:

Soil moisture: Moist in winter and spring months, dry in summer and fall except for 10 to 20 days cumulative between July and October due to convection storms.

Soil temperature: 53 to 59 degrees F.

Depth to bedrock: 4 to 14 inches.

Effervescence: Calcareous, usually slightly effervescent or strongly effervescent in all parts.

Calcium carbonate equivalent: Less than 5 percent.

Control section:

Clay content--8 to 15 percent.

Rock fragments--35 to 60 percent with a high percentage of 2 to 5 millimeters pebbles.

Soil reaction: Mildly alkaline or moderately alkaline.

A horizon:

Value--5 or 6 dry, 3 or 4 moist.

Chroma--2 or 3.

C horizon:

Value--5 or 6 dry, 3 through 5 moist.

Chroma--2 through 4.

Texture (less than 2 millimeters)--Coarse sandy loam or sandy loam.

Rock fragments--35 to 60 percent rock fragments with numerous fine (less than 5 millimeters) pebbles.

Longjim Series

The Longjim series consists of shallow over a duripan, well drained soils that formed in alluvium from mixed rocks. The Longjim soils are on fan remnants. Slopes are 2 to 8 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 62 degrees F.

Taxonomic class: Loamy-skeletal, mixed, thermic, shallow Typic Durorthids

Typical pedon: Longjim very gravelly fine sandy loam, 2 to 8 percent slopes, rangeland, in a delineation of map unit 1980. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 5 percent cobbles and 50 percent pebbles.

A1--0 to 2 inches; pale brown (10YR 6/3) very gravelly fine sandy loam, dark yellowish brown (10YR 4/4) moist; strong thin and medium platy structure; slightly hard, very friable, nonsticky and slightly plastic; few very fine roots; many very fine through medium vesicular pores; 2 percent cobbles, 45 percent pebbles; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

A2--2 to 4 inches; pale brown (10YR 6/3) gravelly sandy loam, dark yellowish brown (10YR 4/4) moist; strong medium and thick platy structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and fine roots; many very fine and fine vesicular pores; 15 percent pebbles; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Bw--4 to 8 inches; pale brown (10YR 6/3) gravelly sandy loam, yellowish brown (10YR 5/4) moist; moderate fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common fine roots; common fine tubular and interstitial pores; 2 percent cobbles, 25 percent pebbles; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

Bk--8 to 16 inches; pink (7.5YR 7/4) very gravelly sandy loam, brown (7.5YR 5/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; common fine roots; few very fine interstitial and common fine tubular pores; many moderately thick lime coats and pendants on undersides and sides of rock fragments; 15 percent cobbles, 35 percent pebbles; violently effervescent; strongly alkaline (pH 8.6); abrupt wavy boundary.

Bqkm--16 inches; light gray (10YR 6/1) indurated duripan, light gray (10YR 7/2) moist; massive; extremely hard, extremely firm; 1 to 2 millimeter indurated cap; violently effervescent.

Type location: Lincoln County, Nevada; approximately 2,000 feet east and 300 feet north of the southwest corner of section 21, T. 4 S., R. 60 E.; (37 degrees, 34 minutes, 41 seconds north latitude, 115 degrees, 15 minutes, 21 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry. Moist for short periods of time in the late winter.

Soil temperature: 62 to 67 degrees F.

Depth to duripan: 14 to 20 inches.

Control section:

Rock fragments--35 to 70 percent, mostly pebbles.
Clay content--5 to 10 percent.

A horizon:

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 through 4.

Bw and Bk horizons:

Hue--10YR or 7.5YR.

Value--6 through 8 dry, 4 through 6 moist.

Chroma--3 or 4.

Texture of the fine earth--Fine sandy loam, sandy loam or coarse sandy loam.

Consistence--Soft or slightly hard.

Bqkm horizons:

Value--6 through 8 dry.

Cementation--Continuous cap or common continuous silica laminae in upper 6 inches. Commonly layered, with weakly and strongly cemented layers and indurated plates.

Minu Series

The Minu series consists of shallow over a strongly cemented duripan, well drained soils that formed in alluvium from mixed rocks. The Minu soils are on fan remnants. Slopes are 2 to 4 percent. The mean annual precipitation is about 12 inches and the mean annual temperature is about 48 degrees F.

Taxonomic class: Loamy, mixed, mesic, shallow Haploxerollic Durargids

Typical pedon: Minu gravelly sandy loam, 2 to 4 percent slopes, woodland, in a delineation of map unit 1190. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 30 percent pebbles.

A--0 to 4 inches; brown (10YR 5/3) gravelly sandy loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and medium roots; many very fine and fine interstitial and tubular pores; 30 percent pebbles; slightly alkaline (pH 7.7); clear smooth boundary.

Bt1--4 to 8 inches; brown (7.5YR 4/4) gravelly clay loam, dark brown (7.5YR 3/4) moist; common medium and coarse subangular blocky structure; hard, firm, sticky and plastic; common very fine through medium roots; common medium tubular and many very fine and fine interstitial and tubular pores; many thin clay films lining

pores and staining sand grains; 20 percent pebbles; moderately alkaline (pH 8.0); clear smooth boundary.

Bt2--8 to 12 inches; brown (7.5YR 4/4) gravelly sandy clay loam, dark brown (7.5YR 4/4) moist; strong medium and coarse subangular blocky structure; hard, firm, sticky and very plastic; common medium and coarse roots; common fine tubular pores; many thin clay films lining pores and staining sand grains; 15 percent pebbles; slightly effervescent; moderately alkaline (pH 8.0); abrupt irregular boundary.

Btk--12 to 14 inches; light brown (7.5YR 6/4) gravelly sandy clay loam, brown (7.5YR 5/4) moist; massive; slightly hard, friable, slightly sticky and plastic; few medium roots; common fine tubular pores; 25 percent pebbles; common thin clay films lining pores and staining sand grains; many moderately thick lime coats on undersides of rock fragments; violently effervescent; moderately alkaline (pH 8.0); abrupt irregular boundary.

Bqkm--14 to 19 inches; white (10YR 8/2) strongly cemented gravelly duripan with discontinuous overlapping plates; pale brown (10YR 6/3) strong thick platy structure; very hard, very firm; violently effervescent; strongly alkaline (pH 8.8); gradual irregular boundary.

2C--19 to 60 inches; pale brown (10YR 6/3) extremely gravelly loamy coarse sand, dark yellowish brown (10YR 4/4) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine and fine interstitial pores; 65 percent pebbles; slightly effervescent; strongly alkaline (pH 8.8).

Type location: Lincoln County, Nevada; in Barnes Canyon approximately 1,800 feet southeast of the southwest corner of section 31, T. 4 S., R. 68 E.; (37 degrees, 32 minutes, 44 seconds north latitude, 114 degrees, 25 minutes, 22 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist in winter and spring months, and moist 10 to 20 days cumulative during the months of July through October due to summer convection storms.

Soil temperature: 47 to 53 degrees F.

Depth to duripan: 12 to 18 inches.

Control section:

Clay content--Averages 20 to 35 percent.

Rock fragments--Averages 25 to 35 percent, mostly pebbles.

A horizon:

Value--5 or 6 dry, 3 or 4 moist.

Chroma--2 or 3.

Reaction--Neutral to moderately alkaline.

Bt horizons:

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.

Reaction--Neutral to moderately alkaline.

Other features--Mollic colors do not exceed 7 inches in depth.

Btk horizon:

Hue--10YR or 7.5YR.

Value--6 or 7 dry, 4 or 5 moist.

Chroma--3 or 4.

Texture--Clay loam or sandy clay loam.

Structure--Massive or subangular blocky.

Reaction--Slightly alkaline to strongly alkaline.

Effervescence--Strongly effervescent or violently effervescent.

Bqkm horizon:

Value--7 or 8 dry, 5 or 6 moist.

Chroma--1 through 3.

Structure--Massive or platy.

Reaction--Moderately alkaline or strongly alkaline.

2C horizon:

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 through 4.

Structure--Massive or single grain.

Reaction--Moderately alkaline to very strongly alkaline.

Effervescence--Slightly effervescent to violently effervescent.

Other features--Some pedons have weakly lime and silica cemented lenses.

Mormon Mesa Series

The Mormon Mesa series consists of shallow over a petrocalcic, well drained soils that formed in residuum and colluvium from Tertiary lacustrine sediments. The Mormon Mesa soils are on fan remnants. Slopes are 0 to 15 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 65 degrees F.

Taxonomic class: Loamy, carbonatic, thermic, shallow Typic Paleorthids

Typical pedon: Mormon Mesa gravelly fine sandy loam, 4 to 8 percent slopes, rangeland, in a delineation of map unit 1371. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 20 percent pebbles.

A--0 to 2 inches; light brown (7.5YR 6/4) gravelly fine sandy loam, brown (7.5YR 4/4) moist; weak thin platy structure; soft, very friable, nonsticky and nonplastic; common very fine roots; many very fine and fine interstitial pores; 20 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.

Bk1--2 to 11 inches; light brown (7.5YR 6/4) fine sandy loam, brown (7.5YR 5/4) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and slightly plastic; common very fine and fine roots; many very fine and fine interstitial and few fine tubular pores; few fine lime seams and filaments; 5

percent pebbles; violently effervescent; strongly alkaline (pH 8.5); clear smooth boundary.

Bk2--11 to 18 inches; pink (7.5YR 7/4) fine sandy loam, brown (7.5YR 5/4) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine and fine interstitial and common fine tubular pores; common fine lime seams and filaments; 14 percent pebbles; violently effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary.

Bkm--18 inches; white (7.5YR 8/0) indurated petrocalcic horizon, pinkish white (7.5YR 8/2) moist; massive; violently effervescent.

Type location: Lincoln County, Nevada; approximately 12 miles northwest of Mesquite, Nevada; about 1,850 feet north and 750 feet east of the projected southwest corner of section 12, T. 13 S., R. 69 E.; (36 degrees, 54 minutes, 27 seconds north latitude, 114 degrees, 15 minutes, 48 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist for short periods during the winter and early spring months and for short intermittent periods following summer convection storms 10 to 20 days cumulative, during the period July through October.

Soil temperature: 59 to 72 degrees F.

Depth to petrocalcic horizon: 10 to 20 inches.

Control section:

Clay content--5 to 18 percent.

Rock fragments--0 to 15 percent, predominantly pebble or cobble size pan fragments, with 15 to 35 percent in any given subhorizon.

Profile reaction: Moderately alkaline or strongly alkaline.

Calcium carbonate equivalent: 40 to 50 percent by weight.

A horizon:

Hue--5YR or 7.5YR.

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 through 4.

Bk horizon:

Hue--5YR or 7.5YR.

Value--6 through 8 dry, 4 through 6 moist.

Chroma--2 through 4.

Clay content--5 to 8 percent.

Texture of the fine earth--Gravelly fine sandy loam or sandy loam.

Rock fragments--0 to 35 percent, predominantly pebble or cobble size pan fragments.

Structure--Massive or subangular blocky structure.

Consistence--Soft or slightly hard, friable or very friable, nonsticky or slightly sticky.

Secondary lime accumulation--Common or many lime coats and pendants on vertical and undersides of rock fragments. Common very thin or thin lime filaments and seams.

Bkm horizon:

Hue--7.5YR or 10YR.

Value--7 or 8 dry, 6 through 8 moist.

Chroma--0 through 4.

Thickness--Ranges from 4 feet to more than 20 feet.

Mormount Series

The Mormount series consists of shallow to a petrocalcic, well drained soils that formed in alluvium from limestone and dolomite. The Mormount soils are on fan remnants. Slopes are 2 to 15 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 58 degrees F.

Taxonomic class: Loamy, mixed, thermic, shallow Petrocalcic Ustollic Paleargids

Typical pedon: Mormount gravelly very fine sandy loam, 8 to 15 percent slopes, in a delineation of map unit 1300. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 2 percent cobbles and 23 percent pebbles.

A--0 to 3 inches; brown (7.5YR 5/4) gravelly very fine sandy loam, dark brown (7.5YR 4/4) moist; weak thin platy structure; soft, very friable, nonsticky and slightly plastic; many very fine roots; many very fine interstitial and few very fine tubular pores; 1 percent cobbles, 20 percent pebbles; slightly effervescent; moderately alkaline (pH 8.2); abrupt wavy boundary.

Btk1--3 to 9 inches; light brown (7.5YR 6/4) gravelly very fine sandy loam, brown (7.5YR 5/4) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and few medium roots; many very fine and fine and few medium tubular pores; common thin clay films on faces of peds and lining pores; many thin lime coats on undersides of rock fragments; 20 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); gradual smooth boundary.

Btk2--9 to 15 inches; light brown (7.5YR 6/4) gravelly very fine sandy loam, brown (7.5YR 5/4) moist; moderate fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine and few medium roots; common very fine and fine and few medium tubular pores; common thin clay films on faces of peds and lining pores; many thin lime coats and pendants on vertical and undersides of rock fragments; common fine irregularly shaped lime filaments and seams; 5 percent cobbles, 25 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Btk3--15 to 19 inches; light brown (7.5YR 6/4) gravelly sandy clay loam, brown (7.5YR 5/4) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, sticky and plastic; common very fine and fine and few medium roots; common very fine and few fine and medium tubular pores; many thin clay films on faces of peds, lining pores, and bridging mineral grains; many thick lime coats and pendants on vertical and undersides of rock fragments; many medium irregularly shaped lime filaments and seams; 10 percent cobbles,

20 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.
Bkm--19 to 60 inches; white (10YR 8/2) indurated petrocalcic horizon.

Type location: Lincoln County, Nevada; approximately 5 miles northwest of Davidson Peak; about 350 feet west and 750 feet south of the projected northeast corner of section 26, T. 11 S., R. 68 E.; (36 degrees, 57 minutes, 21 seconds north latitude, 114 degrees, 20 minutes, 43 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist in late summer and for short periods in winter and spring.

Soil temperature: 59 to 64 degrees F.

Depth to petrocalcic horizon: Ranges from 14 to 20 inches.

Control section:

Clay content--Averages 18 to 27 percent.

Rock fragments--15 to 35 percent predominantly pebble size pan fragments.

A horizon:

Value--5 or 6 dry, 3 through 5 moist.

Chroma--3 or 4 dry or moist.

Btk horizons:

Hue--10YR or 7.5YR.

Value--5 or 6 dry, 4 or 5 moist.

Chroma--3 or 4 dry, or moist.

Texture--Gravelly very fine sandy loam, gravelly loam, gravelly sandy clay loam and gravelly clay loam.

Other features--Common thin to thick lime coats and pendants on vertical and undersides of rock fragments; Lower horizons commonly contain lime occurring as irregularly shaped filaments and seams.

Bkm horizon:

Cementation--Strongly lime cemented or indurated petrocalcic hardpan with strongly cemented layers below the indurated cap in some pedons.

Rock fragments--Gravelly or very gravelly hardpan matrix.

Other features--Petrocalcic horizon ranges from 3 to 20 feet thick.

Mosida Series

The Mosida series consist of very deep, well drained soils that formed in alluvium from mixed rocks. Mosida soils are on stream terraces. Slopes are 2 to 4 percent. The mean annual precipitation is about 10 inches and the mean annual temperature is 49 degrees F.

Taxonomic class: Coarse-loamy, mixed, mesic Torrifuventic Haploxerolls.

Typical pedon: Mosida loam, 2 to 4 percent slopes, pasture, in a delineation of map unit 1770. (Colors are for dry soil unless otherwise noted.)

A--0 to 8 inches; brown (10YR 5/3) loam, very dark grayish brown (10YR 3/2) moist; moderate thick platy structure; soft, very friable, slightly sticky, slightly plastic; many very fine and fine roots; common fine vesicular pores; slightly effervescent; slightly alkaline (pH 7.4); clear smooth boundary.

C1--8 to 45 inches; pale brown (10YR 6/3) stratified fine sandy loam and loam, very dark grayish brown (10YR 3/2) moist; weak thick platy structure; slightly hard, friable, nonsticky and slightly plastic; common very fine and fine roots; few fine tubular pores; slightly effervescent; mildly alkaline (pH 7.4); clear smooth boundary.

C2--45 to 60 inches; yellowish brown (10YR 5/4) silt loam, very dark grayish brown (10YR 3/2) moist; massive; slightly hard, friable, nonsticky and slightly plastic; few very fine roots; few fine tubular pores; slightly effervescent; mildly alkaline (pH 7.6).

Type location: Lincoln County, Nevada; approximately 2 miles south of Caliente, along Meadow Valley Wash in a pasture; about 3,200 feet south and 850 feet west of the northeast corner of section 13 T. 4. S., R. 66 E.; (37 degrees, 35 minutes, 54 seconds north latitude, 114 degrees, 32 minutes, 18 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist in winter and spring, dry summer and fall.

Soil temperature: 47 to 54 degrees.

Control section:

Clay content--12 to 18 percent.

A horizon:

Value--4 or 5 dry.

Chroma--2 or 3.

Reaction--Neutral or slightly alkaline.

C horizon:

Value--5 or 6 dry, 3 or 4 moist.

Chroma--2 through 4

Texture--Fine sandy loam, loam or silt loam.

Structure--Subangular blocky, granular or massive, nonsticky to slightly sticky and nonplastic to slightly plastic wet.

Reaction--Slightly alkaline or moderately alkaline.

Motoqua Series

The Motoqua series consists of very shallow and shallow, well drained soils that formed in residuum from volcanic rocks. The Motoqua soils are on mountains. Slopes are 8 to 50 percent. The mean annual precipitation is about 14 inches and the mean annual temperature is about 50 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic Lithic Argiustolls

Typical pedon: Motoqua very gravelly sandy loam, 8 to 30 percent slopes, woodland, in a delineation of map unit 1920. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 10 percent cobbles and 35 percent pebbles.

A--0 to 3 inches; dark grayish brown (10YR 4/2) very gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine roots; many very fine and fine interstitial pores; 10 percent cobbles, 30 percent pebbles; neutral (pH 7.2); clear wavy boundary.

Bt1--3 to 7 inches; brown (10YR 5/3) very gravelly sandy clay loam, dark brown (10YR 3/3) moist; weak medium prismatic structure parting to moderate fine subangular blocky structure; hard, friable, slightly sticky and slightly plastic; many very fine through medium roots; many fine interstitial and common fine tubular pores; few thin clay films coating faces of peds and pores; 5 percent cobbles, 30 percent pebbles; neutral (pH 7.0); clear wavy boundary.

Bt2--7 to 12 inches; dark brown (7.5YR 4/4) very gravelly sandy clay loam, dark brown (7.5YR 4/4) moist; strong fine and medium prismatic structure; hard, firm, slightly sticky and slightly plastic; few fine and common medium and coarse roots; common fine and medium tubular pores; many moderately thick clay films coating faces of peds and pores; 40 percent pebbles; neutral (pH 7.0); clear wavy boundary.

R--12 inches; andesitic tuff.

Type location: Lincoln County, Nevada; approximately 30 miles southeast of Acoma, Nevada, off Halfwaycamp Road on the Utah Stateline; about 5,000 feet east and 900 feet north of the southwest corner of section 9, T. 7 S., R. 71 E.; (37 degrees, 21 minutes, 00 seconds north latitude, 114 degrees, 3 minutes, 6 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually moist winter and spring, late summer and fall.

Soil temperature: 47 to 57 degrees F.

Mollic epipedon thickness: 7 to 17 inches.

Depth to bedrock: 8 to 20 inches.

Reaction: Slightly acid to mildly alkaline.

Control section:

Clay content--20 to 35

Rock fragments--35 to 80 percent, cobbles or pebbles.

A horizon:

Hue--5YR, 7.5YR or 10YR.

Value--4 or 5 dry, 2 or 3 moist.

Chroma--2 through 5

Bt horizons:

Hue--5YR, 7.5YR or 10YR

Value--3 through 6 dry, 3 or 4 moist.

Structure--Weak to strong, medium or coarse prismatic that parts to moderate or strong, very fine to medium subangular blocky.

Consistence--Slightly hard or hard, very friable through firm, slightly sticky or sticky, slightly plastic or plastic.

Other features--Some pedons have a discontinuous 1/4 to 1/2 inch weathering rind above the bedrock.

Naye Series

The Naye series consists of moderately deep, over a petrocalcic, well drained soils that formed in alluvium from limestone and dolomite. The Naye soils are on fan remnants. Slopes are 4 to 8 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 65 degrees F.

Taxonomic class: Loamy-skeletal, carbonatic, thermic Typic Paleorthids

Typical pedon: Naye gravelly fine sandy loam, 4 to 8 percent slopes, rangeland, in a delineation of map unit 1371. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 7 percent cobbles and 21 percent pebbles.

A--0 to 2 inches; pale brown (10YR 6/3) gravelly fine sandy loam, brown (10YR 4/3) moist; moderate thick platy structure; soft, very friable, nonsticky and slightly plastic; many very fine and common fine roots; common very fine vesicular and interstitial pores; 15 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.

Bw--2 to 8 inches; light brown (7.5YR 6/4) gravelly very fine sandy loam, brown (7.5YR 4/4) moist; moderate fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine tubular pores; 15 percent pebbles; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Bk1--8 to 14 inches; light brown (7.5YR 6/4) very gravelly fine sandy loam, brown (7.5YR 4/4) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine tubular pores; many medium lime pendants on undersides of rock fragments; lime segregated in few fine filaments; 5 percent cobbles, 30 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear wavy boundary.

Bk2--14 to 22 inches; reddish yellow (7.5YR 6/6) very gravelly fine sandy loam, strong brown (7.5YR 4/6) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine tubular pores; many medium lime pendants on undersides of rock fragments; lime segregated in common fine filaments; 10 percent

cobbles, 35 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); abrupt irregular boundary.
Bk3--22 to 26 inches; pinkish white (7.5YR 8/2) very gravelly sandy loam, brown (7.5YR 5/4) moist; massive; hard, firm, slightly sticky and slightly plastic; few very fine and fine roots; common very fine tubular pores; many medium lime pendants on undersides of rock fragments; 80 percent weakly lime cemented matrix; 10 percent cobbles, 30 percent pebbles; violently effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary.
Bkm--26 inches; white (10YR 8/1) indurated petrocalcic horizon, pink (7.5YR 7/4) moist; extremely hard, extremely firm.

Type location: Lincoln County, Nevada; east of the East Mormon Mountains and approximately 12 miles northeast of Interstate 15; about 1,000 feet west and 750 feet south of the projected northeast corner of section 10, T. 12 S., R. 69 E.; (36 degrees, 54 minutes, 53 seconds north latitude, 114 degrees, 15 minutes, 28 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry. Moist for short periods in the winter and spring and for 10 to 20 days cumulative between July and October, following convection storms.

Soil temperature: 64 to 71 degrees F.

Depth to petrocalcic: 20 to 40 inches.

Calcium carbonate equivalent: 40 to 80 percent.

Control section:

Clay content--5 to 18 percent.

Rock fragments--35 to 60 percent.

A horizon:

Hue--7.5YR or 10YR.

Value--4 or 5 moist.

Chroma--3 through 6.

Bw horizon:

Hue--7.5YR or 10YR.

Value--4 or 5 moist.

Chroma--2 through 6.

Structure--Fine, medium and coarse subangular blocky structure.

Bk horizon:

Hue--10YR or 7.5YR.

Value--6 through 8 dry, 4 or 5 moist.

Chroma--2 through 6.

Structure--Weak or moderate fine and medium subangular blocky or massive.

Consistence--Slightly hard or hard, friable or firm, nonsticky or slightly sticky, nonplastic or slightly plastic.

Reaction--Moderately alkaline or strongly alkaline.

Bkm horizon:

Hue--10YR or 7.5YR.

Value--6 through 8 dry, 4 through 7 moist.

Chroma--1 through 4

Other features--The Bkm horizon ranges from 4 to 24 inches in thickness.

Oleman Series

The Oleman series consists of shallow over a duripan, well drained soils that formed in alluvium derived from mixed rocks. The Oleman soils are on fan remnants. Slopes are 2 to 15 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 55 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic, shallow Xerollic Durargids

Typical pedon: Oleman very gravelly fine sandy loam, 4 to 15 percent slopes, rangeland in a delineation of map unit 1540. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 10 percent cobbles and 30 percent pebbles.

A--0 to 2 inches; pale brown (10YR 6/3) very gravelly fine sandy loam, brown (10YR 4/3) moist; moderate medium platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; many very fine vesicular pores; 5 percent cobbles, 40 percent pebbles; slightly effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.

Btqk1--2 to 5 inches; yellowish brown (10YR 5/4) very gravelly clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium prismatic structure parting to strong fine and medium subangular blocky; soft, very friable, sticky and plastic; common very fine and fine roots; many very fine interstitial pores; common moderately thick clay films lining pores and on faces of peds; common thin silica and lime coats on undersides of rock fragments, few silica and lime pendants; 10 percent cobbles, 45 percent pebbles; slightly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Btqk2--5 to 9 inches; brown (7.5YR 5/4) very gravelly clay loam, dark brown (7.5YR 4/4) moist; moderate fine prismatic structure parting to strong fine subangular blocky; hard, friable, very sticky and very plastic; common very fine and fine roots; common very fine and fine interstitial and common fine tubular pores; many moderately thick clay films lining pores and on faces of peds; common very thin silica and lime coats on underside of rock fragments, few silica and lime pendants; 10 percent cobbles, 40 percent pebbles; strongly effervescent; slightly alkaline (pH 7.9); clear smooth boundary.

Btqk3--9 to 14 inches; light yellowish brown (10YR 6/4) very gravelly loam; dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, very friable, sticky and plastic; common very fine and fine roots; common very fine and fine tubular pores; few faint clay films lining pores and on faces of peds; many thin silica and lime pendants on

undersides of rock fragments; 10 percent cobbles, 40 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.

Bqkm--14 to 24 inches; white (10YR 8/1) indurated duripan with silica lamellae overlapping each other in the upper three inches of the pan; light gray (10YR 7/2) moist; massive; extremely hard, extremely firm; few very fine and fine roots in fractures; clear wavy boundary.

2Bqk--24 to 60 inches; light gray (10YR 7/2) stratified extremely gravelly loamy sand and extremely cobbly sand; yellowish brown (10YR 5/4) moist; massive; very hard, very firm, nonsticky and nonplastic; few very fine and fine roots in soft areas; many very fine and fine interstitial pores; about 60 percent strongly cemented silica and lime masses; many thin silica and lime pendants on undersides of rock fragments; many thin silica and lime coats on tops and sides of rock fragments; 25 percent cobbles, 45 percent pebbles; violently effervescent; moderately alkaline (pH 8.4).

Type location: Lincoln County, Nevada; approximately 2 and 1/2 miles southwest of the ghost town of Delamar; 2,000 feet east and 790 feet south from the northwest corner of section 15, T. 6 S., R. 64 E.; (37 degrees, 25 minutes, 57 seconds north latitude, 114 degrees, 48 minutes, 18 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist in the winter and spring dry in summer and fall except for 10 to 20 days cumulative between July and October due to convection storms.

Soil temperature: 55 to 58 degrees F.

Depth to duripan: 14 to 20 inches.

Reaction: Slightly alkaline to strongly alkaline.

Control section:

Clay content--Averages 25 to 35 percent.

Rock fragments--35 to 60 percent.

A horizon:

Value--5 or 6 dry.

Chroma--2 or 3.

Btqk horizons:

Hue--10YR to 7.5YR.

Value--5 or 6 dry, 3 or 4 moist.

Chroma--4 through 6 moist.

Rock fragments--30 to 50 percent pebbles, 5 to 10 percent cobbles.

Structure--Prismatic or subangular blocky.

Consistence--Soft to hard, dry; friable or very friable, moist.

Bqkm horizon:

Indurated duripan with gravelly or very gravelly matrix.

2Bqk horizon:

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 through 4 dry.

Clay content--5 to 10 percent.

Rock fragments--45 to 75 percent.

Cementation--40 to 60 percent strongly cemented silica and lime masses.

Other features--Many thin to thick silica and lime coats and pendants completely coating rock fragments.

Pahranagat Series

The Pahranagat series consists of very deep, somewhat poorly or poorly drained soils that formed in alluvium derived from mixed rocks. The Pahranagat soils are on floodplains and stream terraces. Slopes are 0 to 2 percent. The mean annual precipitation is about 11 inches and the mean annual temperature is about 54 degrees F.

Taxonomic class: Fine-silty, mixed (calcareous), mesic Fluvaquentic Haplaquolls

Typical pedon: Pahranagat silt loam, 0 to 2 percent slopes, cultivated, in a delineation of map unit 1230. (Colors are for dry soil unless otherwise noted.)

Ap--0 to 4 inches; brown (10YR 4/3) silt loam, dark brown (10YR 3/3) moist; strong very fine and fine subangular blocky structure; slightly hard, very friable, slightly sticky and plastic; many very fine and fine and few medium roots; common very fine and fine and few medium and coarse tubular pores; slightly effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.

Ag--4 to 16 inches; grayish brown (10YR 5/2) silty clay loam, very dark brown (10YR 2/2) moist; few fine distinct dark brown (7.5YR 3/4) mottles; strong fine subangular blocky structure; slightly hard, friable, sticky and very plastic; common very fine through coarse roots; common very fine through coarse tubular pores; common medium dark gray (10YR 4/1) and black (10YR 2/1) worm casts; strongly effervescent; moderately alkaline (pH 8.2); clear wavy boundary.

Cg--16 to 25 inches; light gray (10YR 7/2) very fine sandy loam, dark grayish brown (10YR 4/2) moist; few fine brown (7.5YR 4/4) mottles; massive; slightly hard, very friable, slightly sticky and slightly plastic; common fine and medium roots; common medium and coarse tubular pores; common medium dark gray (10YR 4/1) and black (10YR 2/1) worm casts; strongly effervescent; moderately alkaline (pH 8.4); clear wavy boundary.

Agb--25 to 35 inches; light brownish gray (10YR 6/2) silty clay, very dark brown (10YR 2/2) moist; few fine distinct brown (7.5YR 4/4) mottles; strong fine subangular blocky structure; hard, firm, very sticky and very plastic; common medium roots; few medium and coarse tubular pores; violently effervescent; strongly alkaline (pH 8.6); clear wavy boundary.

Cg1--35 to 45 inches; light gray (10YR 7/2) silty clay loam, dark grayish brown (10YR 4/2) moist; many medium distinct olive brown (2.5Y 4/4) and few fine distinct brown (7.5YR 4/4) mottles; massive; hard, firm, sticky and very plastic; few medium roots; few medium tubular pores; violently effervescent; strongly alkaline (pH 8.6); clear wavy boundary.

Cg2--45 to 60 inches; light brownish gray (2.5Y 6/2) silty clay loam, dark grayish brown (2.5Y 4/2) moist;

common fine prominent brown (7.5YR 4/4) mottles; massive; hard, firm, sticky and very plastic; few medium roots; few medium tubular pores; violently effervescent; strongly alkaline (pH 8.6).

Type location: Lincoln County, Nevada; approximately 4,200 feet west of Barclay; about 1,400 feet west and 2,300 feet south of the northeast corner of section 16, T. 5 S., R. 69 E.; (37 degrees, 30 minutes, 51 seconds north latitude, 114 degrees, 16 minutes, 27 seconds west longitude.)

Range in Characteristics:

Soil moisture: Saturated for at least one or more months during most years.

Soil temperature: 53 to 59 degrees F.

Mollic epipedon thickness: 10 to 20 inches.

Reaction: Moderately alkaline or strongly alkaline.

Effervescence: Slightly effervescent to violently effervescent.

Control section:

Clay content--Averages between 18 to 35 percent.

Other features--Averages less than 15 percent fine and coarser sand when mixed. One or more buried Ag horizons range in thickness from 1 to 10 inches.

Ag horizon:

Hue--10YR or 2.5Y.

Value--4 or 5 dry, 2 or 3 moist.

Chroma--1 or 2.

Other features--This horizon averages about 3 to 8 percent organic matter and ranges from 1.5 to 20 percent. Some pedons have 4 inches or less of lightly colored overwash on the surface.

C horizons:

Hue--10YR through 5Y.

Value--5 through 7 dry, 3 through 5 moist.

Chroma--1 or 2.

Texture--Stratified very fine sandy loam, loam, silt loam, silty clay loam and silty clay.

A--0 to 2 inches; light brownish gray (10YR 6/2) very gravelly very fine sandy loam, brown (10YR 4/3) moist; moderate medium platy structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine and fine roots; many very fine and fine vesicular pores; 5 percent cobbles, 35 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

Bk1--2 to 7 inches; light yellowish brown (10YR 6/4) very gravelly fine sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and plastic; common very fine and fine and few medium roots; common very fine interstitial pores; many thin and few moderately thick lime coats and pendants on undersides of rock fragments; 5 percent cobbles, 45 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); gradual smooth boundary.

Bk2--7 to 15 inches; white (10YR 8/2) very gravelly fine sandy loam, pale brown (10YR 6/3) moist; weak moderate subangular blocky structure; slightly hard, friable, slightly sticky and plastic; common very fine and fine roots; few very fine tubular pores; many thin and few moderately thick lime coats and pendants on undersides of rock fragments; 5 percent cobbles, 40 percent pebbles; violently effervescent; strongly alkaline (pH 8.6); abrupt wavy boundary.

Bqkm--15 to 28 inches; white (10YR 8/2) indurated duripan, brown (10YR 4/3) moist; massive; extremely hard, extremely firm; few very fine and fine roots in fractures; thin continuous laminar cap; violently effervescent; strongly alkaline (pH 8.6); abrupt wavy boundary.

2Bqk--28 to 60 inches; pale brown (10YR 6/3) extremely gravelly loamy sand, brown (10YR 4/3) moist; massive; soft, friable, nonsticky and nonplastic; many very fine interstitial pores; many thin lime and silica coats on undersides of rock fragments; 30 percent strongly lime and silica cemented lenses; 5 percent cobbles, 75 percent pebbles; strongly effervescent; strongly alkaline (pH 8.6).

Type location: Lincoln County, Nevada; approximately 1,200 feet east and 1,000 feet north of the southwest corner of section 15, T. 6 S., R. 64 E.; (37 degrees, 25 minutes, 23 seconds north latitude, 114 degrees, 48 minutes, 28 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist for short periods in winter and early spring and intermittently moist for 10 to 20 days cumulative due to convection storms in July through October.

Soil temperature: 53 to 59 degrees F.

Depth to duripan: 10 to 20 inches.

Control section:

Clay content--8 to 18 percent.

Rock fragments--35 to 60 percent, mostly pebbles, but up to 10 percent cobbles.

Profile reaction--Moderately alkaline or strongly alkaline.

Pahroc Series

The Pahroc series consists of shallow, over a duripan, well drained soils that formed in alluvium derived from mixed rocks. The Pahroc soils are on fan remnants. Slopes are 4 to 15 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 55 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic, shallow Typic Durorthids

Typical pedon: Pahroc very gravelly very fine sandy loam, 4 to 15 percent slopes, rangeland, in a delineation of map unit 1550. (Colors are for dry soil unless otherwise noted.) The surface is covered with 5 percent cobbles and 35 percent pebbles.

A horizon:

Hue--10YR or 7.5YR.
Value--6 or 7 dry, 4 through 6 moist.
Chroma--2 or 3.

Bk horizons:

Hue--10YR or 7.5YR.
Value--6 through 8 dry, 4 through 7 moist.
Chroma--1 through 4.
Texture--Loam or fine sandy loam.

2Bqk horizon:

Hue--10YR or 7.5YR.
Value--6 through 8 dry, 4 through 7 moist.
Chroma--1 through 3.
Texture--Coarse sandy loam, loamy coarse sand, loamy sand.
Rock fragments--35 to 80 percent.
Other features--Horizon is weakly cemented with lenses of strongly silica and lime cemented material.

Patter Series

The Patter series consists of very deep, well drained soils that formed in alluvium from lacustrine sediments. The Patter soils are on flood plains. Slopes are 0 to 4 percent. The mean annual precipitation is about 10 inches and the mean annual temperature is about 47 degrees F.

Taxonomic class: Coarse-loamy, mixed, mesic Durixerollic Camborthids

Typical pedon: Patter loam, 0 to 4 percent slopes, rangeland, in a delineation of map unit 1250. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 10 percent pebbles.

A1--0 to 3 inches; pale brown (10YR 6/3) loam, dark yellowish brown (10YR 3/4) moist; moderate thick platy structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; many very fine vesicular and few fine tubular pores; 5 percent pebbles; moderately alkaline (pH 8.0); abrupt smooth boundary.

A2--3 to 7 inches; pale brown (10YR 6/3) loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; soft, very friable, sticky and slightly plastic; many very fine and fine and common medium roots; many fine tubular and common medium tubular pores; 5 percent pebbles; slightly effervescent; moderately alkaline (pH 8.0); clear wavy boundary.

Bw--7 to 14 inches; pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine and fine interstitial and common very fine through medium tubular pores; 5 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Bqk1--14 to 27 inches; pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; massive; slightly hard, firm, sticky

and slightly plastic; few very fine and fine roots; common very fine through medium tubular pores; common medium durinodes; common thin lime coats on undersides of rock fragments; few fine white (10YR 8/2) soft powdery lime masses; 10 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); gradual smooth boundary.

Bqk2--27 to 42 inches; pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; massive; slightly hard, firm, slightly sticky and slightly plastic; few very fine and fine roots; common very fine through medium tubular pores; many medium durinodes; common thin lime and silica coats on undersides of rock fragments; 10 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

C--42 to 60 inches; pale brown (10YR 6/3) silt loam, brown (10YR 4/3) moist; massive; soft, very friable, slightly sticky and plastic; few very fine roots; common very fine through medium tubular pores; 5 percent pebbles; violently effervescent; moderately alkaline (pH 8.4).

Type location: Lincoln County, Nevada; in Panaca Flat approximately 3 miles west of Acoma; about 2,400 feet northwest of the southeast corner of section 35, T. 4 S., R. 69 E.; (37 degrees, 33 minutes, 16 seconds north latitude, 114 degrees, 13 minutes, 49 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist in winter and spring months, dry in summer and fall except for 10 to 20 days cumulative between July and October due to convection storms.

Soil temperature: 49 to 53 degrees F.

Depth to secondary lime and silica cementation: 10 to 20 inches.

Control section:

Clay content--10 to 18 percent.

Rock fragments--5 to 15 percent.

A horizon:

Value--3 or 4 moist.
Chroma--2 through 4.

Bw horizon:

Hue--10YR or 7.5YR.
Value--6 or 7 dry, 4 or 5 moist.
Chroma--2 or 3 dry, 3 or 4 moist.
Texture--Very fine sandy loam, loam, or silt loam with 15 percent or more fine sand or coarser.
Reaction--Moderately alkaline or strongly alkaline.

Bqk horizons:

Hue--10YR or 7.5YR.
Value--6 or 7 dry, 4 or 5 moist.
Chroma--2 or 3 dry, 3 or 4 moist.
Texture--Very fine sandy loam, loam, or silt loam with 15 percent or more fine sand or coarser.
Consistence--Very friable and firm, nonsticky to sticky.
Reaction--Moderately alkaline or strongly alkaline.

Other features--Cylindrical durinodes comprise 20 to 50 percent of some horizons between 10 and 40 inches of the surface.

C horizon:

Hue--10YR or 7.5YR.
Value--6 or 7 dry, 4 or 5 moist.
Chroma--2 or 3 dry, 3 or 4 moist.
Consistence--Slightly hard and soft; slightly plastic and plastic

Penoyer Series

The Penoyer series consists of very deep, well drained soils that formed in alluvium from mixed rocks. The Penoyer soils are on alluvial flats and fan skirts. Slopes are 0 to 2 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 53 degrees F.

Taxonomic class: Coarse-silty, mixed (calcareous), mesic Typic Torriorthents

Typical pedon: Penoyer silt loam, 0 to 2 percent slopes, rangeland, in a delineation of map unit 1520. (Colors are for dry soil unless otherwise noted.)

A--0 to 4 inches; pale brown (10YR 6/3) silt loam, brown (10YR 5/3) moist; moderate thick platy structure; hard, friable, slightly sticky and slightly plastic; few fine and medium roots; many fine vesicular pores; strongly effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

C1--4 to 17 inches; pale brown (10YR 6/3) silt loam, brown (10YR 5/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few fine and medium roots; common fine and medium vesicular and few fine tubular pores; strongly effervescent; strongly alkaline (pH 8.8); gradual smooth boundary.

C2--17 to 41 inches; pale brown (10YR 6/3) silt loam, brown (10YR 5/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few fine and medium roots; common fine and medium vesicular pores; strongly effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

C3--41 to 60 inches; pale brown (10YR 6/3) silt loam, brown (10YR 5/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; few fine and very fine tubular pores; strongly effervescent; strongly alkaline (pH 8.8).

Type location: Lincoln County, Nevada; approximately 20 miles west of Caliente, Nevada, 3.1 miles west of the junction of Delamar Road and U.S. Highway 93; about 500 feet south and 3,350 feet east of the northwest corner of section 7, T. 4 S., R. 64 E.; (37 degrees, 37 minutes, 14 seconds north latitude, 114 degrees, 50 minutes, 55 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist in some part for short periods during winter and early spring months for 10 to 20 day cumulative between July and October due to convection storms.

Soil temperature: 53 to 59 degrees F.

Effervescence: Strongly effervescent or violently effervescent.

Reaction: Moderately alkaline to very strongly alkaline.

Control section:

Percent clay--10 to 18.

A horizon:

Hue--10YR or 7.5YR
Value--6 or 7 dry, 3 through 5 moist.
Chroma--2 through 4.

C horizon:

Hue--7.5YR or 10YR.
Value--6 or 7 dry, 3 through 5 moist.
Chroma--2 through 4.
Structure--Platy or massive
Texture--Silt loam, but strata of very fine sandy loam, loam or silty clay loam are in some pedons.

Pintwater Series

The Pintwater series consists of shallow, well drained soils that formed in residuum and colluvium from volcanic rocks. The Pintwater soils are on mountains. Slopes are 30 to 50 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy-skeletal, mixed (calcareous), mesic Lithic Torriorthents

Typical pedon: Pintwater extremely stony fine sandy loam, 30 to 50 percent slopes, rangeland, in a delineation of map unit 1460. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 15 percent stones, 10 percent cobbles, and 30 percent pebbles.

A--0 to 2 inches; pale brown (10YR 6/3) extremely stony fine sandy loam, brown (10YR 4/3) moist; moderate thick platy structure; slightly hard, very friable, nonsticky and nonplastic; common very fine and fine roots; many very fine vesicular pores; 15 percent stones, 10 percent cobbles, 30 percent pebbles; strongly effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.

Bqk1--2 to 7 inches; light yellowish brown (10YR 6/4) very gravelly sandy loam, dark yellowish brown (10YR 4/4) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and plastic; many fine and common very fine and few medium roots; common very fine interstitial and tubular pores; many thin lime and silica coats and pendants on undersides of rock fragments; 10 percent cobbles, 45

percent pebbles; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Bqk2--7 to 14 inches; pale brown (10YR 6/3) extremely cobbly fine sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine and few medium roots; common very fine interstitial pores; many thin and medium lime and silica coats and pendants on undersides of rock fragments; 30 percent cobbles, 35 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.

R--14 inches; ignimbrite bedrock.

Type location: Lincoln County, Nevada; approximately 2,000 feet east and 2,400 feet south of the northwest corner of section 12, T. 7 S., R. 62 E.; (37 degrees, 21 minutes, 20 seconds north latitude, 114 degrees, 59 minutes, 10 seconds west longitude.)

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.

Reaction: Moderately alkaline or strongly alkaline.

Depth to bedrock: 10 to 20 inches.

Control section:

Clay content--10 to 18 percent.

Rock fragments--35 to 70 percent.

A horizon:

Value--6 or 7 dry, 4 through 6 moist.

Chroma--2 or 3.

Effervescence--Slightly effervescent to strongly effervescent.

Bqk horizon:

Value--6 through 8 dry, 4 through 6 moist.

Chroma--2 through 4.

Texture--Fine sandy loam or sandy loam.

Rock fragments--45 to 70 percent, includes stones, cobbles, and pebbles.

Secondary lime accumulation--Lime occurs as pendants or coats on undersides of rock fragments or as soft masses and filaments.

Effervescence--Strongly effervescent or violently effervescent.

Other features--Accessory silica pendants or coats are in some pedons.

Rapado Series

The Rapado series consists of moderately deep, over a petrocalcic, well drained soils that formed in alluvium from mixed rocks. The Rapado soils are on fan remnants. Slopes are 4 to 30 percent. The mean annual precipitation

is about 8 inches and the mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic Petrocalcic Ustollic Paleargids

Typical pedon: Rapado very gravelly sandy loam, 8 to 30 percent slopes, rangeland, in a delineation of map unit 1850. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 5 percent cobbles and 35 percent pebbles.

A--0 to 3 inches; brown (10YR 5/3) very gravelly sandy loam, dark brown (10YR 3/3) moist; moderate thin platy structure; soft, very friable, slightly sticky and slightly plastic; many very fine roots; many very fine vesicular pores; 5 percent cobbles, 40 percent pebbles; slightly alkaline (pH 7.8); clear smooth boundary.

Btk1--3 to 11 inches; brown (7.5YR 5/4) very gravelly sandy clay loam, dark brown (7.5YR 4/4) moist; strong fine subangular blocky structure; hard, firm, sticky and plastic; common very fine and fine and few medium roots; common very fine and fine tubular pores; common moderately thick clay films on faces of peds and lining pores; common very thin lime coats on undersides of rock fragments; 35 percent pebbles; slightly effervescent; slightly alkaline (pH 7.8); clear smooth boundary.

Btk2--11 to 24 inches; brown (7.5YR 5/4) very gravelly sandy clay loam, dark brown (7.5YR 4/4) moist; moderate fine and medium subangular blocky structure; hard, firm, sticky and plastic; common very fine and fine and few medium roots; common very fine and fine tubular pores; common thin clay films lining pores; common very thin lime coats on undersides of rock fragments; many fine lime filaments, seams, and soft masses; 48 percent pebbles; strongly effervescent; moderately alkaline (pH 8.0); clear smooth boundary.

Bk--24 to 32 inches; light yellowish brown (10YR 6/4) extremely gravelly coarse sandy loam, dark yellowish brown (10YR 4/4) moist; massive; soft, very friable, slightly sticky and nonplastic; few very fine roots; many very fine interstitial and common very fine tubular pores; many thin to thick lime coats and pendants on vertical and undersides of rock fragments; 5 percent cobbles, 55 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.

Bkqm1--32 to 39 inches; white (10YR 8/1) indurated petrocalcic horizon with alternating lenses of strongly lime and accessory silica cemented material; strong thick platy structure; 2 to 4 millimeter discontinuous laminar cap; gradual wavy boundary.

Bkqm2--39 to 60 inches; white (10YR 8/1) strongly lime and accessory silica cemented petrocalcic horizon with common lenses of very gravelly loamy coarse sand to extremely gravelly coarse sand, light gray (10YR 7/2) moist; massive.

Type location: Lincoln County, Nevada; approximately 2.5 miles southeast of Garden Springs; about 1,250 feet east and 500 feet south of the projected northwest corner of section 24, T. 8 S., R. 69 E.; (37 degrees, 14

minutes, 43 seconds north latitude, 114 degrees, 13 minutes, 40 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist in late summer and for short periods in winter and spring.

Soil temperature: 52 to 58 degrees F.

Depth to petrocalcic horizon: 20 to 40 inches.

Control section:

Clay content--27 to 35 percent.

Rock fragments--35 to 55 percent, mainly pebbles.

A horizon:

Value--5 or 6 dry, 3 or 4 moist.

Chroma--3 or 4.

Btk horizons:

Hue--5YR or 7.5YR.

Value--5 or 6 dry, 4 or 5 moist.

Chroma--3 or 4.

Texture--Very gravelly sandy clay loam, very gravelly clay loam.

Structure--Subangular blocky or prismatic.

Reaction--Slightly alkaline or moderately alkaline.

Secondary lime accumulation--Common to many lime filaments and seams and soft masses occur in the lower part of the profile in most pedons.

Bk horizon:

Hue--10YR or 7.5YR.

Value--6 or 7 dry, 4 through 6 moist.

Chroma--3 or 4.

Texture--Extremely gravelly coarse sandy loam or extremely gravelly sandy loam.

Clay content--5 to 15 percent.

Rock fragments--60 to 70 percent, mainly pebbles.

Other features--Common or many thin to thick lime coats and pendants on vertical and undersides of rock fragments.

Bkqm horizons:

Cementation--Indurated or strongly lime and accessory silica cemented petrocalcic horizon.

Thickness: 3 to 20 feet thick.

Structure--Horizontal fractures (platy fragments) alternating with massive.

Other features--Few or common lenses of very gravelly or extremely gravelly material throughout hardpan.

Rochpah Series

The Rochpah series consists of shallow, well drained soils that formed in residuum and colluvium from tuffaceous rocks. The Rochpah soils are on mountains and rock pediments. Slopes are 4 to 50 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 54 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic Lithic Calciorthids

Typical pedon: Rochpah very gravelly sandy loam, 15 to 30 percent slopes, rangeland, in a delineation of map unit 1460. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 10 percent cobbles and 30 percent pebbles.

A--0 to 4 inches; light brownish gray (10YR 6/2) very gravelly sandy loam, dark brown (10YR 4/3) moist; moderate thin platy structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine and fine interstitial pores; 10 percent cobbles, 30 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Bk1--4 to 9 inches; light brownish gray (10YR 6/2) very gravelly sandy loam, dark brown (10YR 4/3) moist; massive; soft, very friable, slightly sticky and slightly plastic; common very fine and fine and few medium roots; many very fine interstitial and common very fine tubular pores; many thin lime coats on undersides of rock fragments; 5 percent cobbles, 30 percent pebbles; violently effervescent; strongly alkaline (pH 8.6); clear wavy boundary.

Bk2--9 to 19 inches; very pale brown (10YR 7/3) very cobbly sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and fine and few medium roots; many very fine interstitial and few fine tubular pores; many thick lime coats and pendants on undersides and sides of rock fragments; 30 percent cobbles, 15 percent pebbles; violently effervescent; strongly alkaline (pH 8.8); abrupt smooth boundary.

R--19 inches; hard volcanic tuff bedrock.

Type location: Lincoln County, Nevada; approximately 0.5 mile southeast of Southeast Reservoirs in southern Delamar Valley; about 1,250 feet west and 1,000 feet south of the projected northeast corner of section 33, T. 7 S., R. 63 E.; (37 degrees, 18 minutes, 01 second north latitude, 114 degrees, 55 minutes, 27 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist for short periods during winter and early spring, and in some part for 10 to 20 days cumulative following summer convection storms during July through October.

Soil temperature: 55 to 59 degrees F.

Depth to bedrock: 14 to 20 inches.

Control section:

Clay content--5 to 18 percent.

Rock fragments--35 to 60 percent, including 0 to 30 percent cobbles.

A horizon:

Value--5 or 6 dry, 3 or 4 moist.

Chroma--2 or 3.

Bk horizons:

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 through 4.

Texture--Very gravelly sandy loam, very cobbly sandy loam, or very gravelly coarse sandy loam.
 Reaction--Moderately alkaline or strongly alkaline.
 Calcium carbonate equivalent--15 to 30 percent.

Shankba Series

The Shankba series consists of shallow, well drained soils that formed in residuum and colluvium from sedimentary rocks. The Shankba soils are on mountains. Slopes are 15 to 50 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 60 degrees F.

Taxonomic class: Loamy-skeletal, mixed (calcareous), thermic, shallow Typic Torriorthents

Typical pedon: Shankba very gravelly fine sandy loam, 15 to 30 percent slopes, rangeland, in a delineation of map unit 1390. (Colors are for dry soil unless otherwise noted.) The soil surface is covered with 45 percent pebbles and 5 percent cobbles.

A1--0 to 2 inches; brown (7.5YR 5/4) very gravelly fine sandy loam, dark brown (7.5YR 3/4) moist; moderate thin platy structure; soft very friable, nonsticky and nonplastic; common very fine roots; many very fine vesicular pores; 35 percent pebbles; violently effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.

A2--2 to 5 inches; brown (7.5YR 5/4) gravelly fine sandy loam, dark brown (7.5YR 3/4) moist; weak thin platy structure parting to moderate fine granular; slightly hard, very friable, nonsticky and nonplastic; common very fine and fine roots; many very fine and few fine interstitial pores; 20 percent pebbles; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Bk1--5 to 12 inches; brown (7.5YR 5/4) very gravelly fine sandy loam, dark brown (7.5YR 3/4) moist; moderate medium subangular blocky structure; slightly hard, very friable, nonsticky and slightly plastic; common very fine and fine roots; common very fine and few fine tubular pores; 40 percent pebbles; common very thin lime coats on undersides of rock fragments; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Bk2--12 to 18 inches; brown (7.5YR 5/4) very gravelly very fine sandy loam, dark brown (7.5YR 3/4) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine and few fine tubular pores; 40 percent pebbles; few very thin lime coating on sides and common thin lime coats on undersides of rock fragments; few fine threads and concretions of lime; violently effervescent; moderately alkaline (pH 8.4); abrupt irregular boundary.

Cr--18 to 23 inches; highly weathered siltstone; partially weathered calcium carbonate impregnated rock material in the upper 3 inches of the paralithic.

R--23 inches; siltstone.

Type location: Lincoln County, Nevada; approximately 22 miles north-northwest of Mesquite about 1,000 feet south and 200 feet west of the northeast corner of section 11, T. 10 S., R. 69 E.; (37 degrees, 5 minutes, 14 seconds north latitude and 114 degrees, 14 minutes, 13 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist in some part for short periods during winter and early spring and for very brief intermittent periods in summer and fall, 10 to 20 days cumulative following summer convection storms.

Soil temperature: 61 to 67 degrees F.

Depth to paralithic contact: 14 to 20 inches.

Depth to hard bedrock: 20 to 26 inches.

Depth to Bk horizon: 3 to 8 inches.

Control section:

Percent clay--8 to 18 percent.

Rock fragments--35 to 55 percent, mainly pebbles.

A horizon:

Hue--2.5YR through 7.5YR

Value--5 or 6 dry, 3 through 5 moist.

Chroma--3 or 4.

Reaction--Mildly alkaline or moderately alkaline.

Bk horizon:

Hue--2.5YR, 5YR or 7.5YR.

Value--5 through 7 dry, 3 through 5 moist.

Chroma--3 through 4.

Structure--Subangular block or granular.

Texture--Fine sandy loam, very fine sandy loam or loam.

Reaction--Moderately alkaline or strongly alkaline.

Other features--Common thin lime coats on undersides of rock fragments but may include few to common fine threads and few fine concretions of lime.

Cr horizon:

Texture--Slightly to moderately fractured silty very fine sandstone, siltstone and shale, and includes up to 50 percent weathered bedrock material.

Secondary lime accumulation--Common thin coats in fractures but lime often impregnates the weathering rind of fractured bedrock in the upper three inches of this horizon. Lime may permeate from 0 to 60 percent of the lithic contact surface.

Shroe Series

The Shroe series consists of very deep, well drained soils that formed in alluvium from volcanic rocks over lacustrine sediments. The Shroe soils are on fan remnants. Slopes are 2 to 30 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: Shroe gravelly loam, 2 to 30 percent slopes, woodland, in a delineation of map unit 1190. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 5 percent cobbles and 20 percent pebbles.

A1--0 to 5 inches; brown (10YR 5/3) gravelly loam, dark brown (10YR 3/3) moist; moderate thick platy structure; soft, very friable, nonsticky and slightly plastic; many very fine and fine roots; many very fine and fine vesicular pores; 5 percent cobbles, 20 percent pebbles; neutral (pH 7.0); abrupt smooth boundary.

Bt1--5 to 13 inches; brown (7.5YR 4/2) very gravelly clay loam, dark brown (7.5YR 3/2) moist; strong medium subangular blocky structure; hard, firm, very sticky and plastic; many very fine and fine and common medium roots; common very fine and fine interstitial and tubular pores; common thin clay films on faces of peds; 40 percent pebbles; neutral (pH 7.2); clear smooth boundary.

Bt2--13 to 36 inches; brown (7.5YR 5/4) very gravelly sandy clay loam, dark brown (7.5YR 4/4) moist; moderate medium prismatic parting to moderate fine angular blocky structure; hard, firm, very sticky and plastic; common very fine through medium and few coarse roots; common very fine and fine interstitial and tubular pores; common thin clay films on faces of peds; 50 percent pebbles; slightly alkaline (pH 7.3); clear smooth boundary.

2C--36 to 60 inches; light brown (7.5YR 6/4) loam, strong brown (7.5YR 5/6) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine interstitial and tubular pores; 5 percent pebbles; slightly alkaline (pH 7.3)

Type location: Lincoln County, Nevada; in Barnes Canyon approximately 1 mile south of the southwest corner of section 31, T. 4 S., R. 68 E.; (37 degrees, 32 minutes, 9 seconds north latitude, 114 degrees, 25 minutes, 38 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist in winter and early spring and for 10 to 20 days cumulative during July through October due to convection storms.

Soil temperature: 47 to 50 degrees F.

Thickness of mollic epipedon: 7 to 13 inches.

Thickness of argillic horizon: 20 to 36 inches.

Control section:

Clay content--27 to 35 percent.

Rock fragments--35 to 50 percent

Bt1 horizon:

Hue--10YR or 7.5YR.

Value--3 or 4

Chroma--2 through 4 dry, 2 or 3 moist.

Clay content--35 to 45.

Texture of the fine earth--Sandy clay, clay loam, or clay.

Rock fragments--35 to 50 percent.

Structure--Moderate to strong, medium or fine subangular blocky.

Consistence--Slightly hard or hard.

Reaction--Slightly acid or neutral.

Bt2 horizon:

Hue--7.5YR or 5YR.

Value--4 or 5 dry, 3 or 4 moist.

Chroma--3 or 4.

Clay content--20 to 35 percent.

Texture of the fine earth--Sandy clay loam or clay loam.

Rock fragments--35 to 50 percent.

Structure--Weak to moderate, medium or coarse prismatic, parting to moderate angular blocky.

2C horizon:

Other features--Thin lime coats may occur on undersides of rock fragments in some pedons.

Sierocliiff Series

The Sierocliiff series consists of moderately deep, over a petrocalcic, well drained soils that formed in alluvium from limestone and dolomite on fan remnants. Slopes are 2 to 8 percent. The mean annual precipitation is 10 inches and the mean annual temperature is 53 degrees F.

Taxonomic class: Loamy-skeletal, carbonatic, mesic Xerollic Paleorthids

Typical pedon: Sierocliiff gravelly sandy loam, 2 to 8 percent slopes, rangeland, in a delineation of map unit 1700. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 30 percent pebbles.

A--0 to 3 inches; light brownish gray (10YR 6/2) gravelly sandy loam, brown (10YR 4/3) moist; moderate thin platy structure; soft, very friable, slightly sticky and slightly plastic; many very fine roots; many fine and medium vesicular pores; 30 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Bk--3 to 11 inches; light yellowish brown (10YR 6/4) gravelly loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and plastic; many very fine and fine and few medium roots; many very fine interstitial and common very fine tubular pores; common thin lime coats on undersides of rock fragments; 15 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Bkq1--11 to 18 inches; very pale brown (10YR 7/4) very gravelly sandy loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common very fine and fine tubular pores; many thick lime and silica coats and pendants on vertical and undersides of rock fragments; lime segregated in many medium sized seams and soft masses; 50 percent pebbles; violently

effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Bkq2--18 to 26 inches; light gray (10YR 7/2) extremely gravelly sandy loam, brown (10YR 5/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; common very fine tubular pores; many thick lime and silica coats and pendants completely coating rock fragments; discontinuous weakly lime cemented matrix; 60 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

Bkqm--26 to 60 inches; white (10YR 8/2) indurated petrocalcic horizon with alternating layers that are lime cemented with minor amounts of silica light gray (10YR 7/2); extremely hard, extremely firm; violently effervescent; moderately alkaline (pH 8.4).

Type location: Lincoln County, Nevada; approximately 1,320 feet east and 2,200 feet north of the southwest corner of section 29, T. 3 S., R. 67 E.; (37 degrees, 39 minutes, 26 seconds north latitude, 114 degrees, 43 minutes, 40 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist in winter and spring dry in summer and fall except for 10 to 20 days cumulative between July and October.

Soil temperature: 48 to 57 degrees F.

Average summer soil temperature: 66 to 71 degrees F.

Depth to petrocalcic horizon: 20 to 30 inches.

Reaction: Moderately alkaline to very strongly alkaline.

Calcium carbonate equivalent: Ranges from 60 to 80 percent.

Control section:

Clay content--10 to 18 percent, 4 to 10 percent consists of carbonate clay.

A horizon:

Value--5 or 6 dry, 3 or 4 moist.

Chroma--2 or 3.

Other features--Average organic carbon content to a depth of 15 inches is 1.0 to 1.3 percent.

Bk horizons:

Hue--10YR or 7.5YR

Value--6 or 7 dry, 4 or 5 moist.

Chroma--3 or 4

Texture--Loam, fine sandy loam, sandy loam

Structure--Weak subangular blocky or massive

Consistence--Slightly hard or soft, slightly sticky or sticky, slightly plastic or plastic

Rock fragments--5 to 30 percent

Bkq horizons:

Hue--7.5YR or 10YR

Value--6 or 7 dry, 3 through 5 moist.

Chroma--2 through 4.

Texture--Loam, fine sandy loam, sandy loam or sandy clay loam

Rock fragments--50 to 70 percent mainly pebble and pan fragments.

Structure--Usually massive, but has weak fine, medium, or coarse prismatic or subangular blocky structure.

Consistence--Soft or slightly hard, friable or very friable, nonsticky to sticky, nonplastic to plastic.

Other features--Higher color values, both moist and dry, are only in the lower part.

Bkqm horizons:

Value--7 or 8 dry, 6 or 7 moist.

Chroma--Typically 1 through 3 but some subhorizons have chroma of 4 moist.

Structure--Platy or massive.

Consistence--Normally extremely firm but can be very hard and very firm in some subhorizons.

Other features--10 to 30 inches thick and is made up of indurated and strongly cemented subhorizons.

Silent Series

The Silent series consists of shallow, over a duripan, well drained soils that formed in alluvium derived from mixed rocks. The Silent soils are on fan remnants. Slopes are 2 to 8 percent. The mean annual precipitation is about 7 inches and the mean annual temperature is about 52 degrees F.

Taxonomic class: Loamy, mixed, mesic, shallow Typic Durargids

Typical pedon: Silent gravelly sandy loam, 2 to 8 percent slopes, rangeland, in a delineation of map unit 1160. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 1 percent cobbles and 40 percent pebbles.

A--0 to 2 inches; pale brown (10YR 6/3) gravelly sandy loam, dark yellowish brown (10YR 4/4) moist; moderate thick platy structure; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; common few vesicular and medium tubular pores; 30 percent pebbles; slightly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

Bt--2 to 4 inches; brown (7.5YR 4/4) sandy clay loam, dark brown (7.5YR 3/4) moist; moderate medium subangular blocky structure; slightly hard, very friable, sticky and slightly plastic; common very fine and fine roots; few fine tubular pores; common moderately thick clay films lining pores and few thin clay films on faces of peds; 10 percent pebbles; slightly effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.

Btk--4 to 12 inches; strong brown (7.5YR 5/6) gravelly clay loam, strong brown (7.5YR 4/6) moist; moderate medium subangular blocky structure; slightly hard, very friable, sticky and slightly plastic; few very fine and fine roots; few fine and medium tubular pores; common moderately thick clay films lining pores and on faces of peds; common moderately thick lime coats on undersides of rock fragments; 30 percent pebbles; strongly effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.

Bqkm--12 inches; very pale brown (10YR 7/3) indurated duripan.

Type location: Lincoln County, Nevada; approximately 2.5 miles south of Rachel, Nevada; about 1,700 feet north and 1,800 feet west of the southeast corner of section 12, T. 4 S., R. 55 E.; (37 degrees, 36 minutes, 38 seconds north latitude, 115 degrees, 44 minutes, 20 seconds west longitude.)

Range in Characteristics:

Soil moisture: usually dry, but are moist in winter and early spring and intermittently for 10 to 20 days cumulative due to convection storms during the period July through October.

Soil temperature: 53 to 59 degrees F.

Depth to duripan: 10 to 20 inches.

Reaction: Moderately alkaline to very strongly alkaline.

Control section:

Clay content--Averages 25 to 35 percent.

Rock fragments--Average 10 to 35 percent.

A horizon:

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 through 4.

Bt horizon:

Hue--7.5YR or 10YR.

Value--4 through 6 dry, 3 through 5 moist.

Chroma--3 or 4.

Texture--Clay loam or sandy clay loam having less than 35 percent clay content.

Structure--Prismatic or subangular blocky.

Consistence--Very friable or friable, slightly sticky or sticky.

Btk horizon:

Hue--7.5YR or 10YR.

Value--5 through 7 dry, 4 through 7 moist.

Chroma--2 through 6.

Texture--Clay loam, gravelly clay loam, or gravelly sandy clay loam.

Structure--Subangular blocky or massive.

Consistence--Very friable or friable, slightly sticky or sticky, slightly plastic or plastic.

Other features--Contains considerable amounts of segregated lime and may be weakly cemented in spots.

Slaw Series

The Slaw series consists of very deep, well drained soils that formed in alluvium from mixed rocks. The Slaw 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 54 degrees F.

Taxonomic class: Fine-silty, mixed (calcareous), mesic Typic Torrifluvents

Typical pedon: Slaw silt loam, 0 to 2 percent slopes, rangeland, in a delineation of map unit 1740. (Colors are for dry soil unless otherwise noted.)

A--0 to 4 inches; very pale brown (10YR 7/3) silt loam, brown (10YR 5/3) moist; strong thin platy structure; soft, very friable, sticky and plastic; common very fine roots; many very fine and fine vesicular pores; strongly effervescent; strongly alkaline (pH 9.0); abrupt smooth boundary.

C1--4 to 10 inches; light yellowish brown (10YR 6/4) silty clay loam, yellowish brown (10YR 5/4) moist; moderate thin and medium platy structure; slightly hard, friable, sticky and plastic; many very fine and fine roots; common very fine tubular pores; violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

C2--10 to 29 inches; pale brown (10YR 6/3) finely stratified silty clay loam, brown (10YR 5/3) moist; moderate thin and medium platy structure; soft, very friable, sticky and plastic; common very fine and fine and few medium roots; common very fine tubular pores; violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

C3--29 to 48 inches; light yellowish brown (2.5Y 6/4) stratified silty clay loam, light olive brown (2.5Y 5/4) moist; moderate medium and coarse prismatic structure; slightly hard, friable, very sticky and very plastic; common very fine and few fine and medium roots; few very fine tubular pores; common thin silt lenses between ped cracks; violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

C4--48 to 60 inches; light gray (2.5Y 7/2) silty clay, light yellowish brown (2.5Y 6/4) moist; many medium prominent relic mottles of light reddish brown (5YR 6/4); moderate medium and coarse prismatic structure; hard, firm, very sticky and very plastic; few very fine and fine roots; few very fine tubular pores; common thin silt lenses between ped cracks; violently effervescent; strongly alkaline (pH 8.8).

Type location: Lincoln County, Nevada; approximately 4 miles east of Mustang Reservoir; about 2,250 feet east and 1,000 feet south of the northwest corner of section 1, T. 3 S., R. 64 E.; (37 degrees, 43 minutes, 18 seconds north latitude, 114 degrees, 45 minutes, 36 seconds west longitude.)

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.

A horizon:

Value--6 or 7 dry, 4 through 6 moist.

Chroma--2 through 4.

Reaction--Strongly alkaline or very strongly alkaline.

Effervescence--Slightly effervescent to violently effervescent.

43 seconds north latitude, 114 degrees, 40 minutes, 20 seconds west longitude.)

C horizon:

Hue--10YR or 2.5Y
Value--6 through 8 dry, 4 through 6 moist.
Chroma--2 through 4.
Texture--Stratified very fine sandy loam to silty clay, but dominantly silt loam and silty clay loam.
Structure--Subangular blocky, prismatic, platy or is massive.
Reaction--Strongly alkaline or very strongly alkaline.
Relict mottles--Common in any subhorizon.

Range in Characteristics:

Soil moisture: Usually dry, moist in late summer and for short periods in winter and early spring (Ustic-aridic).
Soil temperature: 47 to 54 degrees F.
Mollic epipedon: 8 to 10 inches
Depth to bedrock: 14 to 20 inches.
Reaction: Neutral or mildly alkaline.
Control section:
Clay content--27 to 35 percent.
Rock fragments--35 to 60 percent.

Slidymtn Series

The Slidymtn series consists of shallow, well drained soils that formed in residuum and colluvium from volcanic rocks. The Slidymtn soils are on mountains. Slopes are 15 to 50 percent. The mean annual precipitation is about 12 inches and the mean annual temperature is about 50 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic Lithic Argiustolls

Typical pedon: Slidymtn very gravelly sandy loam, 15 to 50 percent slopes, woodland, in a delineation of map unit 1941. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 10 percent cobbles and 30 percent pebbles.

Oi--1/2 to 0 inches; pinyon and juniper duff.

A--0 to 3 inches; dark grayish brown (10YR 4/2) very gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; moderate very thin platy structure; soft, very friable, sticky and plastic; many very fine roots; many very fine and fine vesicular pores; 10 percent cobbles, 30 percent pebbles; neutral (pH 7.2); clear smooth boundary.

Bt1--3 to 8 inches; brown (7.5YR 5/2) very gravelly clay loam, dark brown (7.5YR 3/2) moist; strong medium subangular blocky structure; hard, firm, very sticky and very plastic; common very fine and fine, few medium and coarse roots; common fine tubular pores; many moderately thick clay films lining pores and on faces of peds; 10 percent cobbles, 30 percent pebbles; neutral (pH 7.2); clear smooth boundary.

Bt2--8 to 16 inches; brown (7.5YR 5/4) very gravelly sandy clay loam, dark brown (7.5YR 4/4) moist; strong medium subangular blocky structure; hard, friable, very sticky and plastic; common very fine and fine, few medium roots; common very fine and fine tubular pores; common thin clay films lining pores; 15 percent cobbles, 30 percent pebbles; slightly alkaline (pH 7.4); abrupt wavy boundary.

2R--16 inches; andesite bedrock.

Type location: Lincoln County, Nevada; approximately 3 miles northwest of Bishop Springs and 800 feet west and 650 feet south of the projected northeast corner of section 14, T. 6 S., R. 65 E.; (37 degrees, 25 minutes,

A horizon:

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, 2 or 3 moist.
Chroma--2 or 3.
Structure--Subangular blocky or angular blocky.

Bt2 horizon:

Hue--10YR or 7.5YR.
Value--4 or 5 dry.
Structure--Subangular blocky or angular blocky.
Consistence--Firm or friable moist.

St. Thomas Series

The St. Thomas series consists of very shallow and shallow, well drained soils that formed in residuum and colluvium from limestone and dolomite. The St. Thomas soils are on mountains. Slopes are 15 to 50 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 65 degrees F.

Taxonomic class: Loamy-skeletal, carbonatic, thermic Lithic Torriorthents

Typical pedon: St. Thomas extremely stony fine sandy loam, 15 to 50 percent slopes, rangeland, in a delineation of map unit 1060. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 25 percent stones, 10 percent cobbles, and 25 percent pebbles.

A--0 to 3 inches; pale brown (10YR 6/3) extremely stony fine sandy loam, brown (10YR 5/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine and few medium roots; common very fine tubular and few fine and medium interstitial pores; 25 percent stones, 10 percent cobbles, 25 percent pebbles; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Bk1--3 to 7 inches; pale brown (10YR 6/3) extremely gravelly fine sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, slightly sticky and slightly plastic; common very fine and fine and few medium and coarse roots; common very fine and few fine tubular pores; few thin lime coats on undersides of rock fragments; 20 percent cobbles, 45 percent pebbles; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Bk2--7 to 16 inches; pale brown (10YR 6/3) extremely gravelly fine sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, slightly sticky and slightly plastic; common very fine and fine and few medium and coarse roots; common very fine and few fine tubular pores; common thin lime coats on undersides of rock fragments; 20 percent cobbles, 55 percent pebbles; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

R--16 inches; limestone bedrock.

Type location: Lincoln County, Nevada; approximately 45 miles northwest of Glendale, Nevada; about 1,750 feet east and 600 feet north of the projected southwest corner of section 18, T. 10 S., R. 64 E.; (37 degrees, 4 minutes, 22 seconds north latitude, 114 degrees, 51 minutes, 47 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist in some part of the moisture control section for short periods during the winter and spring months and for 10 to 20 days, following summer convection storms.

Soil temperature: 59 to 68 degrees F.

Depth to bedrock: 4 to 20 inches

Control section:

Clay content--4 to 18 percent.

Rock fragments--50 to 85 percent, cobbles and pebbles.

Reaction--Moderately alkaline or strongly alkaline.

A horizon:

Hue--7.5YR or 10YR.

Value--6 through 8 dry, 4 through 7 moist.

Bk horizon:

Hue--7.5YR or 10YR.

Value--6 or 7 dry, 5 or 6 moist.

Texture--Loam, very fine sandy loam, or fine sandy loam.

Rock fragments--50 to 85 percent cobbles and pebbles.

Stewval Series

The Stewval series consists of very shallow and shallow, well drained soils that formed in residuum and colluvium from volcanic rocks. The Stewval soils formed on mountains. Slopes are 8 to 50 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic Lithic Xerollic Haplargids

Typical pedon: Stewval very gravelly fine sandy loam, 8 to 50 percent slopes, rangeland, in a delineation of map unit 2010. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 5 percent cobbles and 50 percent pebbles.

A--0 to 2 inches; pale brown (10YR 6/3) very gravelly fine sandy loam, brown (10YR 4/3) moist; moderate thin platy structure; soft, very friable, sticky and plastic; many very fine roots; many very fine interstitial and common very fine tubular pores; 5 percent cobbles, 50 percent pebbles; slightly effervescent; moderately alkaline (pH 8.2); clear wavy boundary.

Bt--2 to 10 inches; brown (7.5YR 5/4) very gravelly loam, dark brown (7.5YR 4/4) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, sticky and plastic; many very fine through medium roots; common fine tubular pores; common thin clay films on faces of peds; 45 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.

R--10 inches; fractured rhyolite; thin discontinuous lime coatings in cracks.

Type location: Lincoln County, Nevada; approximately 0.5 mile southeast of Porphyry Spring; about 1,200 feet north and 1,800 feet west of the projected southeast corner of section 3, T. 3 S., R. 65 E.; (37 degrees, 42 minutes, 45 seconds north latitude, 114 degrees, 41 minutes, 00 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist in winter and spring months, dry in summer and fall except for 10 to 20 days cumulative between July and October due to summer convection storms.

Soil temperature: 53 to 59 degrees F.

Depth to bedrock: 4 to 14 inches.

Effervescence: Slightly effervescent to violently effervescent.

Reaction: Mildly alkaline or moderately alkaline.

Control section:

Clay content--18 to 27 percent.

Rock fragments--35 to 70 percent pebbles, 0 to 10 percent cobbles, 0 to 15 percent stones.

A horizon:

Hue--10YR or 7.5YR.

Value--5 or 6 dry, 3 or 4 moist.

Chroma--2 or 3.

Bt horizon:

Hue--10YR or 7.5YR or 5YR.

Value--5 or 6 dry, 3 or 4 moist.

Chroma--2 through 4.

Texture (less than 2 mm)--Loam or clay loam.

Structure--Subangular blocky or granular.

Other features--Silica and lime pendants are in some pedons.

Tejabe Series

The Tejabe series consists of very shallow, well drained soils that formed in residuum from volcanic rocks. The Tejabe soils are on mountains. Slopes are 30 to 75 percent. The mean annual precipitation is about 10 inches and the mean annual temperature is about 51 degrees F.

Taxonomic class: Loamy-skeletal, mixed (nonacid), mesic Lithic Xeric Torriorthents

Typical pedon: Tejabe very stony sandy loam, 30 to 75 percent slopes, rangeland, in a delineation of map unit 1880. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 10 percent stones, 6 percent cobbles, and 20 percent pebbles

A1--0 to 2 inches; brown (10YR 5/3) very stony sandy loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine roots; common fine interstitial and few fine interstitial pores; 10 percent stones, 6 percent cobbles, 20 percent pebbles; neutral (pH 7.2); clear smooth boundary.

A2--2 to 6 inches; pale brown (10YR 6/3) very gravelly sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common fine and few medium roots; common fine tubular and few fine interstitial pores; 6 percent cobbles, 30 percent pebbles; neutral (pH 7.2); abrupt wavy boundary.

R--6 inches; ash flow tuff.

Type location: Lincoln County, Nevada; approximately 2 miles northeast of Pahroc Spring; about 200 feet south and 100 feet west of the southeast corner of section 12, T. 3 S., R. 62 E.; (37 degrees, 41 minutes, 38 seconds north latitude, 114 degrees, 58 minutes, 16 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist in winter and spring dry in summer and fall except for 10 to 20 days cumulative between July and October due to convection storms.

Soil temperature: 53 to 57 degrees F.

Depth to bedrock: 4 to 10 inches.

Control section:

Clay content--10 to 18 percent.

Rock fragments--35 to 55 percent.

A horizon:

Hue 10YR or 2.5Y

Value--5 or 6 dry, 3 or 4 moist.

Chroma--2 through 4, dry or moist.

Tencee Series

The Tencee series consists of shallow, over a petrocalcic well drained soils that formed in alluvium from mixed

rocks. The Tencee soils are on fan remnants. Slopes are 2 to 30 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 62 degrees .

Taxonomic class: Loamy-skeletal, carbonatic, thermic, shallow Typic Paleorthids

Typical pedon: Tencee very cobbly sandy loam, 2 to 8 percent slopes, rangeland, in a delineation of map unit 1010. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 25 percent cobbles and 20 percent pebbles.

A--0 to 3 inches; light brownish gray (10YR 6/2) very cobbly sandy loam, dark yellowish brown (10YR 4/4) moist; weak thin platy structure; soft, very friable, nonsticky and nonplastic; few very fine roots; many fine and medium vesicular pores; 25 percent cobbles, 20 percent pebbles; violently effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.

Bk--3 to 11 inches; pink (7.5YR 7/4) very gravelly sandy loam, dark brown (7.5YR 4/4) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine and few medium roots; many very fine interstitial pores; many moderately thick lime coats on undersides of rock fragments; 5 percent cobbles, 35 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

Bkm--11 inches; white (10YR 8/2) indurated petrocalcic horizon, very pale brown (10YR 7/3) moist; massive; extremely hard, very friable, nonsticky and nonplastic; violently effervescent.

Type location: Lincoln County, Nevada; approximately 250 feet east and 300 feet north of the southeast corner of section 18, T. 12 S., R. 62 E.; (36 degrees, 53 minutes, 53 seconds north latitude, 114 degrees, 58 minutes, 36 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry in all parts above the petrocalcic horizon more than 3/4 of the time the soil temperature is more than 41 degrees F. The driest periods occur between early October and late May.

Soil temperature: 59 to 72 degrees F.

Depth to petrocalcic horizon: 10 to 20 inches.

Effervescence: Strongly effervescent or violently effervescent.

Other features: Organic matter content averages less than 0.5 percent for the upper 15 inches.

Control section:

Calcium carbonate equivalent--Greater than 40 percent by weight in the less than 20 millimeter fraction.

A horizon:

Hue--5YR, 7.5YR, or 10YR.

Value--5 through 7 dry, 3 through 5 moist.

Chroma--2 through 4.

Bk horizon:

Hue--7.5YR or 10YR.

Value--5 through 9 dry, 4 through 7 moist.
 Chroma--2 through 4.
 Structure--Single grain or massive.

Bkm horizon:

Hue--5YR, 7.5YR, or 10YR.
 Value--7 through 9 dry, 6 through 8 moist.
 Chroma--1 through 4.
 Structure--Massive or platy.
 Other features--Continuously indurated except for scattered cracks and pockets.

Theriot Series

The Theriot series consists of very shallow and shallow, well drained soils that formed in residuum and colluvium from limestone and dolomite. The Theriot soils are on mountains. Slopes are 15 to 75 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 56 degrees F.

Taxonomic class: Loamy-skeletal, carbonatic, mesic
 Lithic Torriorthents

Typical pedon: Theriot very stony loam, 15 to 75 percent slopes, rangeland, in a delineation of map unit 1811. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 5 percent stones, 30 percent cobbles, and 20 percent pebbles.

A--0 to 3 inches; very pale brown (10YR 7/3) very stony loam, light yellowish brown (10YR 6/4) moist; moderate thin and medium platy structure; slightly hard, friable, slightly sticky and nonplastic; few very fine roots; many very fine and fine interstitial pores; 5 percent stones, 30 percent cobbles, 20 percent pebbles; violently effervescent; strongly alkaline (pH 8.7); clear wavy boundary.

C--3 to 11 inches; very pale brown (10YR 7/4) very cobbly sandy loam, brown (10YR 5/3) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; common very fine and medium roots; many very fine and fine interstitial and few fine tubular pores; 35 percent cobbles, 15 percent pebbles; violently effervescent; strongly alkaline (pH 8.8); abrupt wavy boundary.

R--11 inches; limestone bedrock.

Type location: Lincoln County, Nevada; in the Hiko Range approximately 4,400 feet east and 1,900 feet north of the southeast corner of section 24, T. 5 S., R. 60 E.; (37 degrees, 29 minutes, 54 seconds north latitude, 115 degrees, 10 minutes, 37 seconds west longitude.)

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 following convection storms.

Soil temperature: 53 to 59 degrees F.

Depth to bedrock: 4 to 20 inches.

Control section:

Clay content--10 to 20 percent

Rock fragments--50 to 80 percent; dominantly stones or cobbles, but is mostly pebble in some pedons.

Reaction: Moderately alkaline to very strongly alkaline.

A horizon:

Value--6 or 7 dry, 4 through 6 moist.

Chroma--2 through 4.

C horizon:

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 through 4.

Structure--Platy or subangular blocky or is massive.

Consistence--Soft or slightly hard, dry very friable or friable moist.

Texture of the fine earth--Loam, fine sandy loam or sandy loam.

Secondary lime accumulation--Thin to thick lime pendants on rock fragments are common in the lower part. Thin noncemented or cemented Bk horizons cap the bedrock in some pedons.

Calcium carbonate equivalent by weight: 40 to 60 percent

Thunderbird Series

The Thunderbird series consists of moderately deep, well drained soils that formed in alluvium from volcanic rocks. The Thunderbird soils are on mountains. Slopes are 30 to 50 percent. The mean annual precipitation is about 14 inches and the mean annual temperature is about 52 degrees F.

Taxonomic class: Fine, montmorillonitic, mesic Aridic
 Argiustolls

Typical pedon: Thunderbird cobbly loam, 30 to 50 percent slopes, woodland, in a map unit of 1921. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 10 percent cobbles and 5 percent pebbles.

A--0 to 3 inches; dark grayish brown (10YR 4/2) cobbly loam, very dark grayish brown (10YR 3/2) moist; moderate fine granular structure; soft, very friable, sticky and plastic; many very fine and common fine roots; many very fine and fine interstitial and common very fine tubular pores; 10 percent cobbles, 5 percent pebbles; neutral (pH 6.8); clear smooth boundary.

Bt1--3 to 10 inches; brown (10YR 4/3) cobbly clay loam, dark brown (10YR 3/3) moist; moderate medium angular blocky structure; hard, firm, sticky and plastic; common very fine and fine and few medium and coarse roots; common very fine and fine tubular pores; few thin clay films on faces of peds; 10 percent cobbles, 5 percent pebbles; neutral (pH 6.8); clear wavy boundary.

Bt2--10 to 19 inches; brown (7.5YR 5/4) clay, dark brown (7.5YR 4/4) moist; strong medium angular blocky structure; hard, firm, very sticky and very plastic; few very fine roots occurring as exped; common very fine and fine tubular pores; many moderately thick clay films lining pores and on faces of peds; 2 percent cobbles, 10 percent pebbles; neutral (pH 7.0); clear smooth boundary.

Btk--19 to 30 inches; brown (7.5YR 5/4) cobbly clay loam; dark brown (7.5YR 4/4) moist; strong medium angular blocky structure; hard, firm, very sticky and very plastic; few very fine roots occurring as exped; common very fine tubular pores; many thin clay films faces of peds; few thin lime coats on underside of rock fragments; 12 percent cobbles, 5 percent pebbles; neutral (pH 7.0); abrupt wavy boundary.

2R--30 inches; fractured andesite with clay seams between fractures.

Type location: Lincoln County, Nevada; approximately 0.25 mile north of Bishop Springs; about 2,350 feet east and 1,000 feet north of the southwest corner of section 18, T. 6 S., R. 66 E.; (37 degrees, 25 minutes, 15 seconds north latitude, 114 degrees, 38 minutes, 27 seconds west longitude.)

Range in Characteristics:

Soil moisture: Intermittently moist in the winter and early spring and in some part for short periods during the period July through September.

Soil temperature: 54 to 56 degrees.

Depth to bedrock: 20 to 40 inches.

Profile reaction: Neutral to moderately alkaline.

Control section:

Clay content--Averages 35 to 55 percent.

Rock fragments--Averages 5 to 25 percent, mostly cobbles and pebbles.

A horizon:

Value--4 or 5 dry, 2 or 3 moist.

Chroma--2 or 3.

Bt and Btk horizons:

Hue--10YR or 7.5YR.

Value--4 or 5 dry, 2 through 4 moist.

Chroma--2 through 4.

Structure--Strong or moderate angular blocky.

Texture--Clay loam and clay.

Calcium carbonate equivalent--Less than 15 percent as filaments, small accumulations, or disseminated.

Tonopah Series

The Tonopah series consists of very deep, excessively drained soils formed in alluvium from mixed rocks. Tonopah soils are on fan remnants. Slopes are 2 to 8 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 65 degrees F.

Taxonomic class: Sandy-skeletal, mixed, thermic Typic Calciorthids

Typical pedon: Tonopah very gravelly sandy loam, 2 to 8 percent slopes, rangeland, in a delineation of map unit 1372. The surface is covered with 45 percent pebbles. (Colors are for dry soil unless otherwise noted.)

A1--0 to 5 inches; light brown (7.5YR 6/4) very gravelly sandy loam, brown (7.5YR 4/3) moist; weak medium platy structure; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; few very fine and fine interstitial pores; 45 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

A2--5 to 16 inches; light brown (7.5YR 6/4) extremely gravelly sand, brown (7.5YR 5/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few fine roots; many very fine and fine interstitial pores; 75 percent pebbles; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

Bk1--16 to 36 inches; light brown (7.5YR 6/4) extremely gravelly sand, brown (7.5YR 5/4) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; many very fine and fine interstitial pores; 75 percent pebbles; violently effervescent; many moderately thick lime coats on the undersides and sides of rock fragments; strongly alkaline (pH 8.7); gradual smooth boundary.

Bk2--36 to 60 inches; reddish yellow (7.5YR 7/6) extremely gravelly sand, light brown (7.5YR 6/4) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; many fine interstitial pores; 70 percent pebbles and 5 percent cobbles; violently effervescent; common thin lime coats on rock fragments with lenses and pockets of weak cemented material; strongly alkaline (pH 8.8).

Type location: Lincoln County, Nevada; adjacent to the Utah state line south of Terry Benches; approximately 1,900 feet north and 200 feet east of the southwest corner of section 34, T. 10 S., R. 71 E.; (37 degrees, 1 minute, 22 seconds north latitude, 114 degrees, 3 minutes, 15 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry. Moist in some part for short periods during winter and early spring and for 10 to 20 days cumulative between July and October.

Soil temperature: 63 to 71 degrees F.

Depth to calcic horizon: 18 to 30 inches.

Reaction--Moderately alkaline or strongly alkaline.

Other features--Weakly cemented layers or petrocalcic horizons are at depths below 40 inches in some pedons.

Control section:

Texture--Stratified, but averages sand or loamy sand.

Clay content--Averages 2 to 10 percent.

Rock fragments--Averages 50 to 85 percent, with pebbles 40 to 65 percent, cobbles 10 to 20 percent.

A horizon:

Hue--7.5YR or 10YR.
Value--5 through 7 dry, 4 through 6 moist.
Chroma--2 through 4.

Bk horizon:

Hue--7.5YR or 10YR.
Value--6 through 8 dry, 5 through 7 moist.
Chroma--2 through 6.
Calcium carbonate equivalent--10 to 40 percent.

Turba Series

The Turba series consist of shallow, well drained soils that formed in residuum and colluvium from volcanic rocks. The Turba soils are on mountains. Slopes are 30 to 50 percent. The mean annual precipitation is about 15 inches and the mean annual temperature is about 52 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic, shallow Typic Argiustolls

Typical pedon: Turba very gravelly sandy loam, 30 to 50 percent slopes, woodland, in a delineation of map unit 1821. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 10 percent cobbles and 40 percent pebbles.

Oi--1/2 to 0 inch; slightly decomposed pine needle and leaf litter.

A1--0 to 2 inches; brown (10YR 5/3) very gravelly sandy loam, dark brown (10YR 3/3) moist; moderate fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine and few medium roots; many very fine and fine interstitial pores; 10 percent cobbles, 40 percent pebbles; neutral (pH 6.8); clear smooth boundary.

A2--2 to 7 inches; dark grayish brown (10YR 4/2) gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; moderate fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine and few medium roots; common very fine interstitial and few very fine tubular pores; 2 percent cobbles, 25 percent pebbles; neutral (pH 6.8); clear smooth boundary.

Bt1--7 to 11 inches; brown (7.5YR 5/2) very gravelly sandy clay loam, dark brown (7.5YR 4/2) moist; strong fine and medium subangular blocky structure; hard, firm, very sticky and very plastic; common very fine and fine and few medium and coarse roots commonly occurring as exped; common very fine tubular pores; many thick clay films lining pores and many pressure faces on peds; 5 percent cobbles, 35 percent pebbles; neutral (pH 7.0); clear wavy boundary.

Bt2--11 to 16 inches; brown (7.5YR 5/4) very gravelly sandy clay loam, dark brown (7.5YR 4/4) moist; strong fine and medium angular blocky structure; hard, firm, very sticky and very plastic; common very fine and fine and few medium and coarse roots commonly occurring as exped; common very fine tubular pores; many thick clay films lining pores and many pressure faces on

peds; 5 percent cobbles, 45 percent pebbles; neutral (pH 7.0); abrupt wavy boundary.
Cr--16 inches; weathered andesitic tuffs.

Type location: Lincoln County, Nevada; approximately 1 mile northwest of Samscamp Spring; about 2,225 feet east and 625 feet south of the northwest corner of section 24, T. 7 S., R. 69 E.; (37 degrees, 19 minutes, 52 seconds north latitude, 114 degrees, 13 minutes, 20 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually moist, moist in some part of the moisture control section from early July through early October and during winter and early spring months.

Soil temperature: 47 to 54 degrees F.

Depth to paralithic contact: 14 to 20 inches.

Reaction: Slightly acid or neutral.

Control section:

Clay content--25 to 35 percent.

Rock fragments--35 to 60 percent, mainly pebbles and cobbles.

Other features--Volcanic ash ranges from 20 to 35 percent by weight in the very fine sand fraction and occurs as glass shards and aggregates

A horizon:

Hue--7.5YR or 10YR.
Value--4 or 5 dry, 2 or 3 moist.
Chroma--2 or 3.

Bt1 horizon:

Hue--7.5YR or 10YR.
Value--4 or 5 dry.
Chroma--2 or 3.
Structure--Strong or moderate fine and medium subangular blocky.
Consistence--Slightly hard or hard.

Bt2 horizon:

Hue--7.5YR or 5YR.
Value--4 or 5 dry, 3 or 4 moist.
Chroma--3 or 4.
Structure--Strong or moderate fine and medium prismatic or angular blocky.

Tybo Series

The Tybo series consists of shallow over duripan, well drained soils that formed in alluvium derived from mixed rocks. The Tybo soils are on fan remnants. Slopes are 0 to 8 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 56 degrees F.

Taxonomic class: Loamy, mixed, mesic, shallow Typic Durorthids

Typical pedon: Tybo gravelly fine sandy loam, 2 to 4 percent slopes, rangeland, in a delineation of map unit 1533. (Colors are for dry soil unless otherwise noted.)

The surface is partially covered with 18 percent pebbles.

A--0 to 4 inches; pale brown (10YR 6/3) gravelly fine sandy loam, brown (10YR 4/3) moist; strong medium platy structure; soft, very friable, slightly sticky and slightly plastic; few very fine roots; many fine and medium vesicular pores; 18 percent pebbles; strongly effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

Bk1--4 to 14 inches; light yellowish brown (10YR 6/4) gravelly sandy loam, dark yellowish brown (10YR 4/4) moist; massive; soft, very friable, slightly sticky and slightly plastic; common very fine and fine and few medium roots; many very fine interstitial and common very fine tubular pores; common thin lime coats on the undersides of rock fragments; 20 percent pebbles; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

Bk2--14 to 19 inches; light yellowish brown (10YR 6/4) gravelly sandy loam, dark yellowish brown (10YR 4/4) moist; massive; soft, very friable, slightly sticky and slightly plastic; common very fine and fine and few medium roots; many very fine interstitial and common very fine tubular pores; many thick lime coats and pendants on vertical and undersides of rock fragments; 25 percent pebbles; violently effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary.

Bqkm--19 inches; white (10YR 8/2), indurated duripan, very pale brown (10YR 7/4) moist; massive; extremely hard; extremely firm; violently effervescent; strongly alkaline (pH 8.6)

Type location: Lincoln County, Nevada; approximately 3 miles north of Cyanide Reservoir; about 4.5 miles east and 7,500 feet north of the projected southwest corner of T. 5 S., R. 63 E.; (37 degrees, 29 minutes, 3 seconds north latitude, 114 degrees, 53 minutes, 37 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, but are moist for short periods during the winter and early spring months and for 10 to 20 days cumulative following convection storms during July through October.

Soil temperature: 47 to 59 degrees F.

Depth to duripan: 8 to 20 inches.

Control section:

Clay content--8 to 18 percent.

Rock fragments--15 to 35 percent, mostly pebbles and pebble sized pan fragments.

A horizons:

Hue--10YR or 2.5Y.

Value--6 or 7 dry, 4 through 6 moist.

Chroma--1 through 4.

Bk horizons:

Hue--10YR or 2.5Y.

Value--6 or 7 dry, 4 or 5 moist.

Chroma--1 through 4.

Texture of the fine earth--Sandy loam, fine sandy loam, or very fine sandy loam.

Clay content--8 to 18 percent.

Structure--Subangular blocky or massive.

Consistence--Nonsticky or slightly sticky, nonplastic or slightly plastic

Bqkm horizon:

Hue--10YR or 2.5Y.

Value--6 through 8 dry, 4 though 7 moist.

Chroma--1 through 4.

Structure--Thick platy or massive.

Consistence--Indurated or strongly cemented with an indurated subhorizon.

Typic Torriorthents

The Typic Torriorthents soils consists of very deep, well drained soils that formed in residum and colluvium from lacustrine sediments. The Torriorthents are on pediments. Slopes are 30 to 75 percent. The mean annual precipitation is about 5 inches and the mean annual temperature is about 62 degrees F.

Taxonomic class: Typic Torriorthents

Typical pedon: Typic Torriorthents very gravelly sandy loam, 30 to 75 percent slopes, rangeland and wildlife habitat, in a delineation of map unit 1430. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with 10 percent cobbles and 30 percent pebbles.

A--0 to 3 inches; light brown (7.5YR 6/4) very gravelly sandy loam, brown (7.5YR 5/4) moist; weak thin platy structure parting to weak fine granular; soft, very friable, nonsticky and nonplastic; many very fine roots; many very fine interstitial pores; 10 percent cobbles; 30 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

C--3 to 60 inches; light brown (7.5YR 6/4) stratified fine sandy loam through silty clay loam; brown (7.5YR 5/4) massive; slightly hard, firm, slightly sticky and slightly plastic; few very fine and fine roots in fractured and weathered zones; common very fine tubular pores; common very fine seams of secondary carbonates; abrupt smooth boundary.

Type location: Lincoln County, Nevada; approximately 9.5 miles northwest of Mesquite in an unsectioned area; about 7.8 miles south and 1.9 miles east of the northwest corner of T. 11 S., R. 70 E.; (36 degrees, 54 minutes, 18 seconds north latitude, 114 degrees, 11 minutes, 00 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, but are moist in some part for short periods during winter and early spring and for brief periods in summer and fall, 10 to 20 days cumulative following summer convection storms.

Soil temperature: 66 to 71 degrees F.

Effervescence: Slightly effervescent to violently effervescent.

Reaction--: Moderately alkaline or strongly alkaline.

Control section:

Clay content--8 to 50 percent.

Rock fragments--5 to 50 percent pebbles.

Other features--Gypsum may occur as lenses within the C horizon.

Ursine Series

The Ursine series consists of shallow, over an indurated duripan, well drained soils that formed in alluvium derived from mixed rocks. The Ursine soils are on fan remnants. Slopes are 8 to 30 percent. The mean annual precipitation is about 9 inches and the mean annual temperature is about 52 degrees F.

Taxonomic class: Loamy-skeletal, carbonatic, mesic, shallow Xerollic Durorthids

Typical pedon: Ursine gravelly loam, 15 to 30 percent slopes, rangeland and wildlife habitat, in a delineation of map unit 1950. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 2 percent cobbles and 25 percent pebbles.

A--0 to 3 inches; pale brown (10YR 6/3) gravelly loam, brown (10YR 4/3) moist; moderate medium and thick platy structure; soft, very friable, sticky and plastic; few very fine roots; many very fine interstitial pores; 5 percent cobbles; 25 percent pebbles; slightly effervescent; moderately alkaline (pH 8.0); clear smooth boundary.

Bk1--3 to 10 inches; light yellowish brown (10YR 6/4) gravelly loam, dark yellowish brown (10YR 4/4) moist; moderate medium and coarse subangular blocky structure; slightly hard, very friable, sticky and plastic; common very fine and fine and many medium roots; few fine tubular and many very fine interstitial pores; common thin lime coats on undersides of rock fragments; 5 percent cobbles, 30 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Bk2--10 to 16 inches; very pale brown (10YR 7/3) very gravelly sandy loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, very friable, slightly sticky and plastic; common very fine through medium and few coarse roots; common very fine interstitial and few fine tubular pores; many thick lime coats on undersides and sides of rock fragments; 5 percent cobbles, 50 percent pebbles (mostly pan fragments); violently effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary.

Bqkm--16 inches; white (10YR 8/2) indurated duripan with 2 millimeter continuous laminar silica cap pale brown (10YR 6/3) moist; massive; extremely hard, extremely firm; violently effervescent.

Type location: Lincoln County, Nevada; approximately 1.25 miles southwest of Antelope Canyon; about 3.75

miles west and 900 feet north of the southwest corner of section 30, T. 3 S., R. 67 E.; (37 degrees, 39 minutes, 2 seconds north latitude, 114 degrees, 36 minutes, 15 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist in the winter and early spring months and for short intermittent periods, 10 to 20 days cumulative, between July through early October due to summer convection storms.

Soil temperature: 54 to 59 degrees F.

Depth to hardpan: 14 to 20 inches.

Control section:

Clay content--Averages 15 to 20 percent.

Rock fragments--35 to 50 percent, mostly pan fragments.

Calcium carbonate equivalent--40 to 60 percent.

A horizon:

Value--5 or 6 dry, 3 or 4 moist.

Chroma--2 through 4.

Bk horizons:

Hue--10YR or 7.5YR.

Value--6 through 8 dry, 4 through 7 moist.

Chroma--2 through 4.

Texture--Very gravelly loam, very gravelly very fine sandy loam, very gravelly fine sandy loam, very gravelly sandy loam or very gravelly coarse sandy loam.

Clay content--10 to 25.

Rock fragments--35 to 55 percent, dominated by pan fragments

Reaction--Moderately alkaline to strongly alkaline.

Structure--Massive or subangular blocky.

Consistence--Nonsticky to sticky, nonplastic through plastic.

Bqkm horizon:

Value--6 through 8 dry, 5 through 7 moist.

Chroma--1 through 3.

Texture--Stratified gravelly sandy loam, gravelly loamy sand or very gravelly coarse sandy loam.

Rock fragments--35 to 50 percent.

Other features--The silica laminar cap ranges from 1 to 5 mm thick, with strongly cemented lime and silica lenses decreasing with depth.

Veet Series

The Veet series consists of very deep, well drained soils that formed in alluvium from mixed rocks. The Veet soils are on inset fans. Slopes are 2 to 4 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 53 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic Xerollic Camborthids

Typical pedon: Veet gravelly sandy loam, 2 to 4 percent slopes, rangeland and wildlife habitat, in a delineation of map unit 1650. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 25 percent pebbles.

- A--0 to 3 inches; brown (10YR 5/3) gravelly sandy loam, dark brown (10YR 3/3) moist; moderate thin platy structure; soft, very friable, slightly sticky and slightly plastic; many very fine roots; many very fine and fine interstitial and few fine vesicular pores; 15 percent pebbles; slightly alkaline (pH 7.8); clear smooth boundary.
- Bw--3 to 11 inches; pale brown (10YR 6/3) gravelly sandy loam, brown (10YR 4/3) moist; moderate fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine and common medium roots; common very fine and fine tubular and common very fine interstitial pores; 30 percent pebbles; slightly alkaline (pH 7.8); clear smooth boundary.
- Bk1--11 to 19 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine and few medium roots; common very fine and fine tubular and few very fine interstitial pores; common thin lime coats on undersides of rock fragments; 40 percent pebbles; strongly effervescent; moderately alkaline (pH 8.0); clear smooth boundary.
- Bk2--19 to 60 inches; very pale brown (10YR 7/3) stratified very gravelly coarse sandy loam and very gravelly loam, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; common very fine roots; many very fine interstitial and common very fine tubular pores; many thin lime coats on undersides of rock fragments; 45 percent pebbles; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Type location: Lincoln County, Nevada; approximately 6 miles south of U.S. Highway 93 along the east slopes of the South Pahroc Range; about 350 feet north and 400 feet west of the southeast corner of section 12, T. 5 S., R. 62 E.; (37 degrees, 31 minutes, 22 seconds north latitude, 114 degrees, 58 minutes, 34 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist in winter and spring months, dry in summer and fall except for 10 to 20 days cumulative between July and October due to convection storms.

Soil temperature: 53 to 59 degrees F.

Depth to lime accumulation: 10 to 20 inches.

Control section:

Clay content--10 to 18 percent.

Rock fragments--35 to 65 percent.

A horizon:

Value--5 or 6 dry, 3 or 4 moist.

Chroma--2 or 3.

Reaction--Slightly alkaline to strongly alkaline.
Effervescence--Noneffervescent to slightly effervescent.

Bw horizon:

Value--5 or 6 dry, 3 or 4 moist.

Chroma--2 through 4.

Structure--Weak or moderate, fine or medium subangular blocky structure.

Consistence--Soft or slightly hard, nonsticky or slightly sticky nonplastic or slightly plastic.

Reaction--Slightly alkaline to moderately alkaline.

Effervescence--Noneffervescent or slightly effervescent.

Bk horizon:

Value--5 through 7 dry, 4 or 5 moist.

Chroma--2 through 4.

Structure--Massive and subangular blocky.

Texture--Stratified extremely gravelly sandy loam to very gravelly loamy coarse sand.

Consistence--Soft or slightly hard, nonsticky or slightly sticky nonplastic or slightly plastic.

Reaction--Moderately alkaline or strongly alkaline.

Effervescence--Strongly effervescent or violently effervescent.

Other features--Very thin lime coats on the undersides of rock fragments.

Weiser Series

The Weiser series consists of very deep, well drained soils that formed in alluvium from limestone and dolomite. The Weiser soils are on fan remnants. Slopes are 2 to 8 percent. The mean annual precipitation is about 6 inches and the mean annual temperature is about 63 degrees F.

Taxonomic class: Loamy-skeletal, carbonatic, thermic Typic Calciorthids

Typical pedon: Weiser very gravelly sandy loam, 2 to 8 percent slopes, rangeland and wildlife habitat, in a delineation of map unit 1001. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 5 percent cobbles and 50 percent pebbles.

A--0 to 6 inches; pale brown (10YR 6/3) very gravelly sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and slightly plastic; common very fine and few fine roots; common very fine interstitial and few fine tubular pores; 5 percent cobbles; 50 percent pebbles; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Bw--6 to 10 inches; pale brown (10YR 6/3) extremely gravelly sandy loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, nonsticky and slightly plastic; common very fine and fine roots; common very fine and fine interstitial and few fine tubular pores; 1 percent cobbles, 60 percent pebbles; violently

effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Bk1--10 to 22 inches; pale brown (10YR 6/3) extremely gravelly sandy loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, friable, nonsticky and slightly plastic; common very fine and fine and few medium roots; common very fine and fine and few medium interstitial pores; common thin lime coats on undersides of rock fragments; 5 percent cobbles, 60 percent pebbles; violently effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary.

Bk2--22 to 25 inches; pale brown (10YR 6/3) extremely gravelly sandy loam, yellowish brown (10YR 5/4) moist; massive; hard, friable, nonsticky and slightly plastic; few very fine roots; common very fine interstitial pores; common thick lime coats on undersides of rock fragments; 5 percent cobbles, 65 percent pebbles; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

C--25 to 60 inches; pale brown (10YR 6/3) extremely gravelly sandy loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, friable, nonsticky and slightly plastic; few very fine and fine roots; common very fine and fine and few medium and coarse interstitial pores; 75 percent pebbles; violently effervescent; strongly alkaline (pH 8.6).

Type location: Lincoln County, Nevada; approximately 8 miles north of the Kane Springs Wash Road/U.S. Highway 93 intersection along the Kane Springs Wash Road; about 2,200 feet south and 100 feet west of the northeast corner of section 13, T. 11 S., R. 63 E.; (36 degrees, 59 minutes, 32 seconds north latitude, 114 degrees, 52 minutes, 13 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, but are moist for short periods throughout the moisture control section from December through March. Moist above and periodically in the upper part of the moisture control section, 10 to 20 days cumulative, July through October.

Soil temperature: 63 to 69 degrees F.

Depth to calcic horizon: 5 to 15 inches.

Control section:

Clay content--5 to 18 percent.

Rock fragments--50 to 85 percent, with stones up to 15 percent and cobbles up to 25 percent.

Calcium carbonate equivalent--40 to 60 percent.

A horizon:

Value--6 or 7 dry, 4 or 5 moist.

Chroma--2 through 4.

Effervescence--Strongly effervescent to violently effervescent.

Bw and Bk horizons:

Value--6 through 8 dry, 5 or 6 moist.

Chroma--2 through 4.

Texture--Sandy loam or fine sandy loam.

Consistence--Slightly hard or hard, very friable through firm, nonplastic or slightly plastic.

Reaction--Moderately alkaline to strongly alkaline.

C horizon:

Hue--7.5YR or 10YR.

Value--6 or 7 dry.

Chroma--3 or 4.

Texture--Sandy loam or fine sandy loam; strata of loamy sand are in some pedons.

Consistence--Very friable or friable, nonplastic or slightly plastic.

Reaction--Moderately alkaline to strongly alkaline.

Welring Series

The Welring series consists of shallow, well drained soils formed in residuum and colluvium weathered from limestone and dolomite. Welring soils are on mountains. Slopes are 30 to 50 percent. The average annual precipitation is about 14 inches and the mean annual air temperature is about 52 degrees F.

Taxonomic class: Loamy-skeletal, carbonatic, mesic Lithic Ustic Torriorthents

Typical pedon: Welring very cobbly fine sandy loam, 30 to 50 percent slopes, woodland, in a delineation of map unit 1890. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 35 percent cobbles and 15 percent pebbles.

A--0 to 3 inches; brown (10YR 5/3) very cobbly fine sandy loam, dark brown (10YR 3/3) moist; weak thin platy structure; soft, very friable, slightly sticky and plastic; many very fine roots; many very fine interstitial and common very fine tubular pores; 35 percent cobbles, 15 percent pebbles; slightly alkaline (pH 7.6); clear smooth boundary.

Bw--3 to 8 inches; pale brown (10YR 6/3) gravelly fine sandy loam, brown (10YR 4/3) moist; moderate fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and fine roots; common very fine tubular pores; 30 percent pebbles; strongly effervescent; slightly alkaline (pH 7.8); clear smooth boundary.

C1--8 to 11 inches; yellowish brown (10YR 5/4) gravelly very fine sandy loam; brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; soft, very friable, slightly sticky and plastic; many very fine and fine and few medium roots; common very fine and fine tubular pores; disseminated lime; 5 percent cobbles, 25 percent pebbles; strongly effervescent; slightly alkaline (pH 7.8); clear smooth boundary.

C2--11 to 18 inches; yellowish brown (10YR 5/4) very gravelly fine sandy loam, brown (10YR 4/3) moist; moderate fine and medium subangular blocky structure; soft, very friable, slightly sticky and plastic; common very fine and fine and few medium roots; common disseminated lime; 10 percent cobbles, 45 percent pebbles; violently effervescent; moderately alkaline (pH 8.0); abrupt wavy boundary.

R--18 inches; fractured limestone with common thin to moderately thick lime coats and seams between fractures.

Type location: Lincoln County, Nevada; approximately 1/3 mile east of Horse Spring in the Mormon Mountains; about 275 feet west and 1,200 feet north of the projected southeast corner of section 7, T. 11 S., R. 68 E.; (36 degrees, 56 minutes, 28 seconds north latitude, 114 degrees, 26 minutes, 32 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist for short periods during the winter and early spring and in some part for short intermittent periods following summer convection storms, during the period July through October..

Soil temperature: 50 to 54 degrees F.

Depth to bedrock: 10 to 20 inches.

Profile reaction: Slightly alkaline or moderately alkaline.

Calcium carbonate equivalent: 40 to 80 percent in the mineralogy control section.

Control section:

Clay content--15 to 25 percent

Rock fragments--35 to 60 percent.

A horizon:

Hue of 10YR or 7.5YR.

Value--5 or 6 dry, 3 or 4 moist.

Chroma--3 or 4.

C horizons:

Hue--10YR or 7.5YR.

Value--5 or 6 dry, 4 or 5 moist.

Chroma--3 or 4.

Winklo Series

The Winklo series consists of moderately deep, well drained soils that formed in residuum and colluvium from volcanic rocks. The Winklo soils are on mountains. Slopes are 30 to 50 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 54 degrees F.

Taxonomic class: Fine, montmorillonitic, mesic Ustollic Haplargids

Typical pedon: Winklo very cobbly loam, 30 to 50 percent slopes, rangeland, in a delineation of map unit 1590. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 18 percent cobbles and 30 percent pebbles.

A--0 to 3 inches; brown (10YR 5/3) very cobbly loam, very dark grayish brown (10YR 3/2) moist; moderate thin platy structure; soft, very friable, sticky and plastic; many very fine roots; many very fine and fine interstitial

pores; 20 percent cobbles, 30 percent pebbles; slightly effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.

Bt--3 to 9 inches; brown (7.5YR 5/4) gravelly clay loam, dark brown (7.5YR 4/4) moist; strong medium prismatic structure; hard, friable, very sticky and very plastic; common very fine and fine and few medium roots; common very fine and fine tubular pores; many moderately thick clay films lining pores; 5 percent cobbles, 15 percent pebbles; slightly effervescent; slightly alkaline (pH 7.8); clear smooth boundary.

Btk1--9 to 16 inches; reddish brown (5YR 5/3) gravelly clay, reddish brown (5YR 4/3) moist; strong medium prismatic structure; hard, friable, very sticky and very plastic; common very fine and fine roots; common very fine and fine and few medium tubular pores; many moderately thick clay films lining pores and many pressure faces; many thin lime coats and pendants on sides and undersides of rock fragments; 5 percent cobbles, 20 percent pebbles; strongly effervescent; slightly alkaline (pH 7.8); clear smooth boundary.

Btk2--16 to 23 inches; reddish brown (5YR 5/4) gravelly clay, reddish brown (5YR 4/4) moist; strong fine and medium subangular blocky structure parting to moderate medium prismatic; very hard, firm, very sticky and very plastic; few very fine and fine roots occurring as exped; common very fine and fine and few medium tubular pores; many moderately thick clay films lining pores and many pressure faces on faces of peds; many thin lime coats and pendants on sides and undersides of rock fragments; 5 percent cobbles, 25 percent pebbles; strongly effervescent; slightly alkaline (pH 7.8); abrupt smooth boundary.

Cr--23 inches; white (10YR 8/1) weathered volcanic tuff.

Type location: Southeastern Lincoln County, Nevada; approximately 2400 feet northwest of Pony Reservoir; about 2000 feet west and 2900 feet south of the projected northeast corner of section 18, T. 8 S., R. 64 E.; (37 degrees, 15 minutes, 9 seconds north latitude, 114 degrees, 51 minutes, 16 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist in late summer and for short periods in winter spring.

Soil temperature: 54 to 58 degrees F.

Depth to paralithic contact: 20 to 40 inches.

Control section:

Clay content--Averages 35 to 45 percent.

Rock fragments--15 to 35 percent, predominantly pebbles.

A horizon:

Hue--10YR or 7.5YR.

Value--5 or 6 dry, 3 or 4 moist.

Chroma--2 or 3.

Bt horizons:

Hue--7.5YR or 5YR.

Value--5 or 6 dry, 3 or 4 moist.

Chroma--3 or 4.

Clay content--30 to 40 percent.
 Texture--Gravelly clay loam or gravelly sandy clay loam.
 Rock fragments--15 to 30 percent, predominantly pebbles.
 Structure--Subangular blocky or prismatic.
 Effervescence--Noneffervescent or slightly effervescent.

Btk horizons:

Hue--5YR or 7.5YR.
 Value--5 or 6 dry, 3 or 4 moist.
 Chroma--3 or 4.
 Clay content--40 to 55 percent.
 Texture--Gravelly clay loam or gravelly clay.
 Rock fragments--20 to 35 percent, predominantly pebbles.
 Structure--Subangular blocky or prismatic.
 Effervescence--Strongly effervescent to violently effervescent.
 Other features--Lime coats and pendants commonly occur on vertical and undersides of rock fragments.

Wyva Series

The Wyva series consists of shallow, well drained soils that formed in residuum and colluvium from volcanic rocks. The Wyva soils are on mountains. Slopes are 15 to 50 percent. The mean annual precipitation is about 11 inches and the mean annual temperature is about 54 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic Lithic Ustollic Haplargids

Typical pedon: Wyva very cobbly sandy loam, 15 to 50 percent slopes, rangeland, in a delineation of map unit 1761. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 30 percent cobbles and 25 percent pebbles.

A--0 to 2 inches; brown (10YR 5/3) very cobbly sandy loam, dark brown (10YR 3/3) moist; moderate fine granular structure; soft, very friable, slightly sticky and slightly plastic; many very fine roots; many very fine and fine interstitial pores; 30 percent cobbles, 25 percent pebbles; slightly alkaline (pH 7.6); abrupt smooth boundary.

Bt1--2 to 8 inches; brown (7.5YR 5/4) very cobbly loam, dark brown (7.5YR 3/4) moist; moderate fine subangular blocky structure; hard, friable, sticky and plastic; many very fine and fine roots; many very fine and fine tubular pores; common moderately thick clay films lining pores and on faces of peds; 30 percent cobbles, 20 percent pebbles; slightly alkaline (pH 7.6); clear smooth boundary.

Bt2--8 to 15 inches; brown (7.5YR 5/4) extremely cobbly clay loam, dark brown (7.5YR 4/4) moist; moderate fine and medium subangular blocky structure; hard, friable, very sticky and very plastic; common very fine and fine and few medium roots; common fine tubular pores;

many moderately thick clay films lining pores and on faces of peds; 50 percent cobbles, 20 percent pebbles; slightly alkaline (pH 7.6); abrupt wavy boundary.
 R--15 inches; rhyolite.

Type location: Lincoln County, Nevada; approximately 475 feet south and 5 feet west of the northeast corner of section 24, T. 4 S., R. 64 E.; (37 degrees, 35 minutes, 29 seconds north latitude, 114 degrees, 45 minutes, 02 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist in late summer and fall.

Soil temperature: 53 to 58 degrees F.

Depth to bedrock: 14 to 20 inches.

Control section:

Clay content--Averages 27 to 35 percent and contain less than 50 percent sand.

Rock fragments--Averages 35 to 65 percent.

A horizon:

Value--4 or 5 dry.
 Chroma--2 or 3 moist.

Bt1 horizon:

Hue--10YR or 7.5YR.
 Value--4 or 5 dry, 3 or 4 moist.
 Clay content--20 to 35 percent.
 Texture--Loam or clay loam.
 Rock fragments--35 to 55 percent, cobbles and pebbles.
 Structure--Moderate fine granular or subangular blocky.

Bt2 horizon:

Hue--10YR or 7.5YR.
 Chroma--3 or 4 moist.
 Clay content--27 to 35 percent.
 Rock fragments--40 to 75 percent.
 Structure--Moderate or strong subangular blocky.

Zaqua Series

The Zaqua series consists of shallow, well drained soils that formed in residuum and colluvium from tuffaceous rocks. The Zaqua soils are on mountains. Slopes are 30 to 50 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 54 degrees F.

Taxonomic class: Loamy-skeletal, mixed, mesic shallow Ustollic Haplargids

Typical pedon: Zaqua very gravelly sandy loam, 30 to 50 percent slopes, rangeland, in a delineation of map unit 1830. (Colors are for dry soil unless otherwise noted.) The surface is partially covered with 15 percent cobbles and 35 percent pebbles.

A--0 to 3 inches; grayish brown (10YR 5/2) very gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; moderate thin platy structure; soft, very friable, slightly sticky and slightly plastic; common very fine roots; many very fine and fine vesicular pores; 15 percent cobbles, 35 percent pebbles; slightly alkaline (pH 7.6); clear smooth boundary.

Bt1--3 to 9 inches; brown (7.5YR 5/4) very gravelly clay loam, dark brown (7.5YR 4/4) moist; moderate fine subangular blocky structure; hard, friable, very sticky and very plastic; common very fine and fine roots commonly occurring as exped; common very fine and fine tubular pores; many moderately thick clay films lining pores and common pressure faces on peds; 5 percent cobbles, 35 percent pebbles; neutral (pH 7.0); clear smooth boundary.

Bt2--9 to 17 inches; brown (7.5YR 5/4) very gravelly sandy clay loam, dark brown (7.5YR 4/4) moist; moderate fine and medium subangular blocky structure; hard, friable, sticky and very plastic; common very fine and fine roots commonly occurring as exped; common very fine tubular pores; common moderately thick clay films lining pores and common pressure faces on peds; 10 percent cobbles, 35 percent pebbles; neutral (pH 7.0); abrupt wavy boundary.

Cr--17 inches; weathered rhyolitic tuffs.

Type location: Lincoln County, Nevada; approximately 1.5 miles southeast of Samscamp Spring; about 750 feet north and 2,000 feet west of the projected southeast corner of section 36, T. 7 S., R. 69 E.; (37 degrees, 17 minutes, 29 seconds north latitude, 114 degrees, 13 minutes, 15 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, moist in late summer and for short periods in winter and spring.

Soil temperature: 54 to 58 degrees F.

Depth to paralithic contact: 14 to 20 inches.

Reaction: Neutral or mildly alkaline.

Effervescence: Noneffervescent to slightly effervescent.

Control section:

Clay content--27 to 35 percent.

Rock fragments--35 to 60 percent mainly pebbles.

A horizon:

Value--5 or 6 dry, 3 or 4 moist.

Chroma--2 or 3.

Bt horizons:

Hue--7.5YR or 5YR.

Value--5 or 6 dry, 3 or 4 moist.

Chroma--3 or 4.

Clay content--27 to 35 percent

Texture--Very gravelly sandy clay loam, very gravelly clay loam.

Other features--Few very thin lime coats on the undersides of rock fragments occur in some pedons.

Zeheme Series

The Zeheme series consists of very shallow and shallow, well drained soils that formed in residuum and colluvium from dolomite and limestone. The Zeheme soils are on mountains and hills. Slopes are 15 to 75 percent. The mean annual precipitation is about 8 inches and the mean annual temperature is about 60 degrees F.

Taxonomic class: Loamy-skeletal, carbonatic, thermic Lithic Calciorthids

Typical pedon: Zeheme very gravelly fine sandy loam, 30 to 50 percent slopes, rangeland, in a delineation of map unit 1061. (Colors are for dry soil unless otherwise noted.) The soil surface is partially covered with 15 percent cobbles and 40 percent pebbles.

A--0 to 3 inches; pale brown (10YR 6/3) very gravelly fine sandy loam, brown (10YR 4/3) moist; weak thin platy structure; soft, very friable, nonsticky and nonplastic; common very fine roots; many very fine vesicular and common very fine interstitial pores; 1 percent cobbles; 35 percent pebbles; strongly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Bk1--3 to 8 inches; light yellowish brown (10YR 6/4) very gravelly fine sandy loam, dark yellowish brown (10YR 4/4) moist; moderate fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine and few fine and medium roots; many very fine interstitial and common very fine and fine tubular pores; many thin lime coats and pendants on vertical and undersides of rock fragments; 2 percent cobbles; 35 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Bk2--8 to 13 inches; light yellowish brown (10YR 6/4) very gravelly fine sandy loam, dark yellowish brown (10YR 4/4) moist; massive; soft, very friable, slightly sticky and plastic; common very fine and fine roots; many very fine interstitial and common very fine tubular pores; many thick lime coats and pendants on vertical and undersides of rock fragments; 15 percent cobbles; 40 percent pebbles; violently effervescent; moderately alkaline (pH 8.4); abrupt irregular boundary.

2R--13 inches; gray (10YR 5/1) fractured limestone bedrock with many thin to thick lime coating between fractures.

Type location: Lincoln County, Nevada; approximately 300 yards north of Toquop Gap in the East Mormon Mountains; about 2,000 feet south and 1,750 feet west of the northeast corner of section 32, T. 10 S., R. 69 E.; (37 degrees, 1 minute and 35 seconds north latitude, 114 degrees, 17 minutes and 44 seconds west longitude.)

Range in Characteristics:

Soil moisture: Usually dry, but are moist in some parts for short periods during the winter and early spring months and for short intermittent periods following summer

convection storms, 10 to 20 days cumulative during the period June through September.

Soil temperature: 61 to 67 degrees F.

Depth to bedrock: 7 to 14 inches.

Calcium carbonate equivalent: Less than 20 mm range from 40 to 80 percent.

Control section:

Clay content--Averages 8 to 18 percent.

Rock fragments--35 to 60 percent, mostly pebbles.

A horizon:

Value--5 or 6 dry, 4 or 5 moist.

Chroma--3 or 4.

Bk horizons:

Hue--10YR or 7.5YR.

Value--5 or 6 dry, 4 or 5 moist.

Chroma--3 or 4.

Texture--Very gravelly fine sandy loam or very gravelly sandy loam.

Structure--Weak or moderate subangular blocky or massive.

Other features--Rock fragments commonly contain thin to very thick lime coats and pendants on vertical and undersides of rock fragments.

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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.
- Cobby 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 cobby soil material is 35 to 60 percent of these rock fragments, and extremely cobby 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 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."

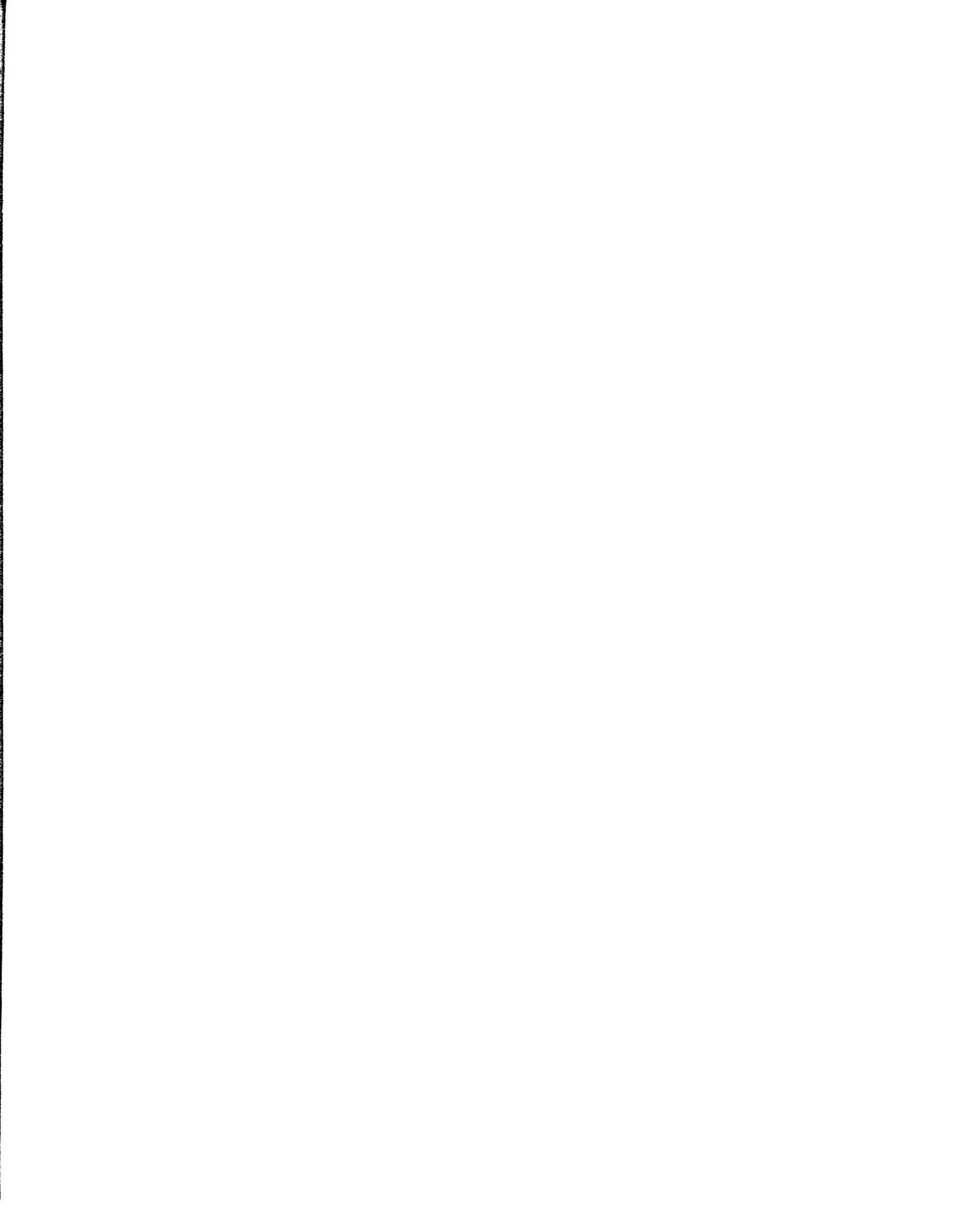
Thin layer (in tables). Otherwise suitable soil material too thin for the specified use.

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.
- Variegation.** 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.



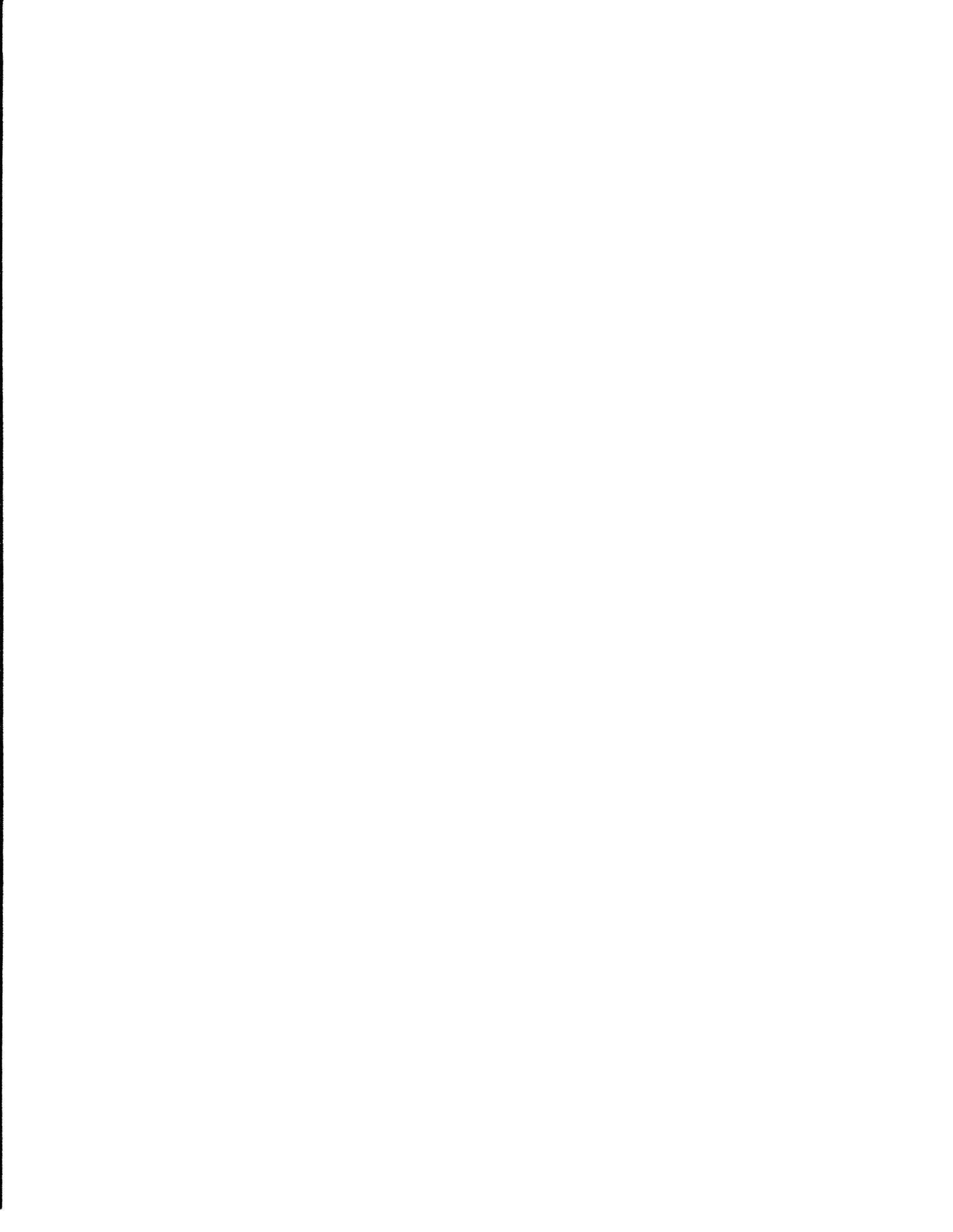
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Natural
Resources
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In cooperation with
United States
Department of the
Interior, Bureau of Land
Management, and
University of Nevada
Agricultural
Experiment Station

Soil Survey of Lincoln County, Nevada, South Part

Part II



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Part I

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Soil Survey of

Lincoln County, Nevada, South 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

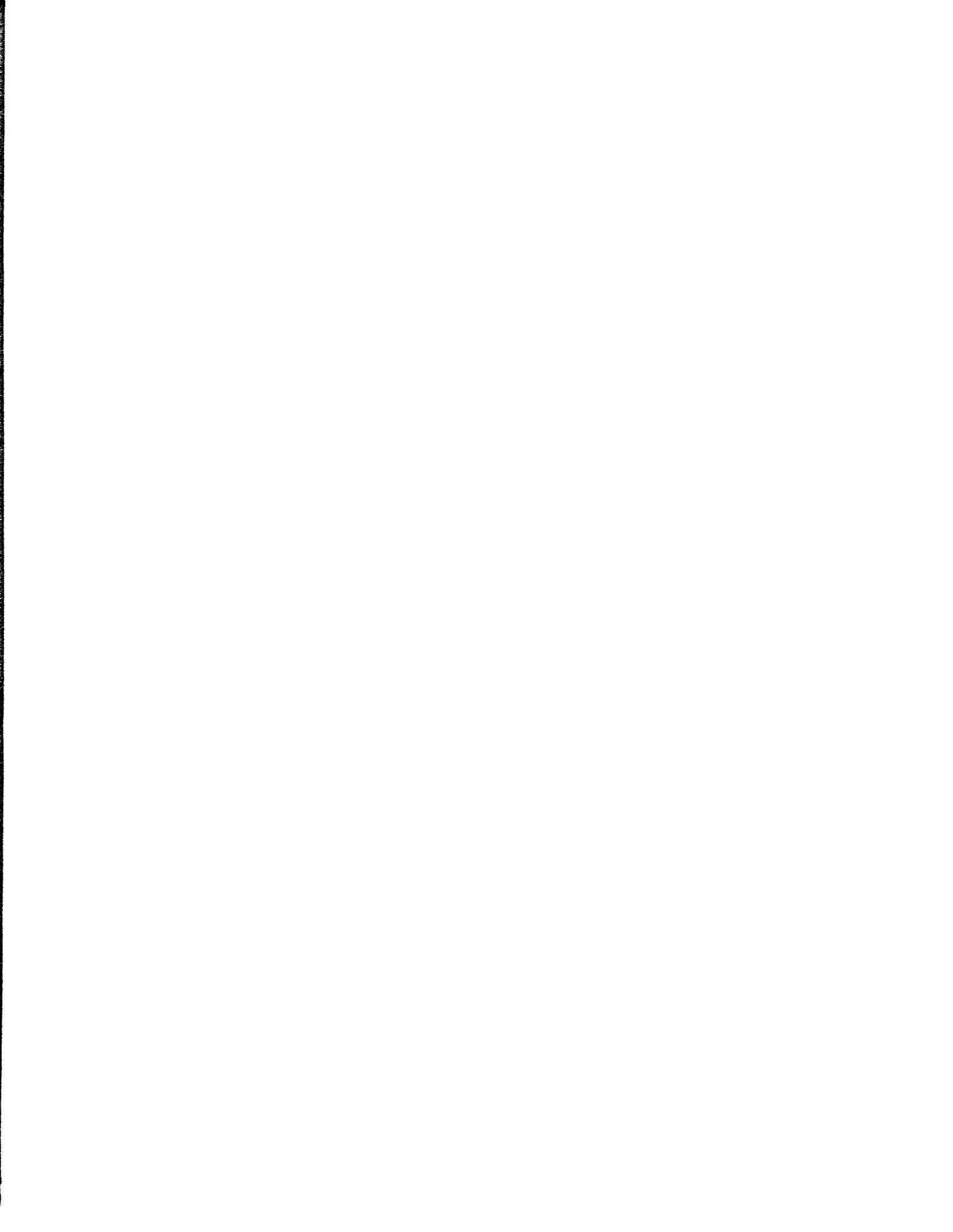
restrictive soil features affecting the suitability of the soils for these uses.

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.

Crop Yield Estimates

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" (8), 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 and Pasture."

Erosion Factors

Soil erodibility factors Kw and Kf 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 Kw and Kf 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 Kw and Kf

Factor Kw shows the erodibility of the whole soil, and factor Kf 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, Kw, Kf, 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 98 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.

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 Lincoln 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 has mostly ended, 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 the table "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 Lincoln County," 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 Lincoln County." 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 of Lincoln County

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.

Lincoln County is in the southern part of the Basin and Range Physiographic Province. The major plant associations in the northern part of the survey area typify the general zonation of vegetation common in the Central Great Basin. The southern part of the survey area has plant association typical of the Mojave desert. 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 Great Basin salt-desert shrub communities are shadscale, bud sagebrush, winterfat, and Douglas rabbitbrush. The common grasses include galleta, Indian ricegrass, bottlebrush squirreltail, Sandberg bluegrass, and desert needlegrass. Within the Mojave desert area, creosotebush, white bursage and shadscale are common shrubs. Common grasses are big galleta and Indian ricegrass.

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 often 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 the early spring, 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 early 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. 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 collared lizards, antelope kangaroo rats, loggerhead shrikes, and various 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 and burros 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, fourwing saltbush, and quailbush are important plants on these sites.

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, saltbush, 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 middle elevations (5500 to 7500 feet) in the survey area. The average annual precipitation at these elevations is between 8 and 10 inches.

Wyoming big sagebrush, and, to a lesser extent, black sagebrush are the dominant woody sagebrush plants at the lower elevations in the survey area. Perennial grasses are potentially the dominant herbaceous plants in the sagebrush-grass plant communities. Thurber needlegrass, Indian ricegrass, bottlebrush squirreltail, and mutongrass and galleta 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 higher elevations 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 upper elevations of the zone and grows on all aspects at the higher elevations. Black sagebrush is the dominant dwarf sagebrush at the mid and upper elevations in the survey area. Thurber needlegrass, muttongrass, Sandberg bluegrass, and galleta are the major perennial grasses associated with these higher-elevation sagebrush-grass communities. Antelope bitterbrush, turbinella oak, and Gambel oak are important shrubs 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 upper 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 widespread at higher-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 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 spike fescue, needlegrass, mountain brome, basin wildrye, and muttongrass. Mountain browse species, such as snowberry, and antelope bitterbrush, are common in the shrub overstory. Curlleaf mountainmahogany stands are at the highest elevations, on mountain summits and the upper side slopes. Areas of aspen woodland or mixed conifer 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 production. 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. 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.

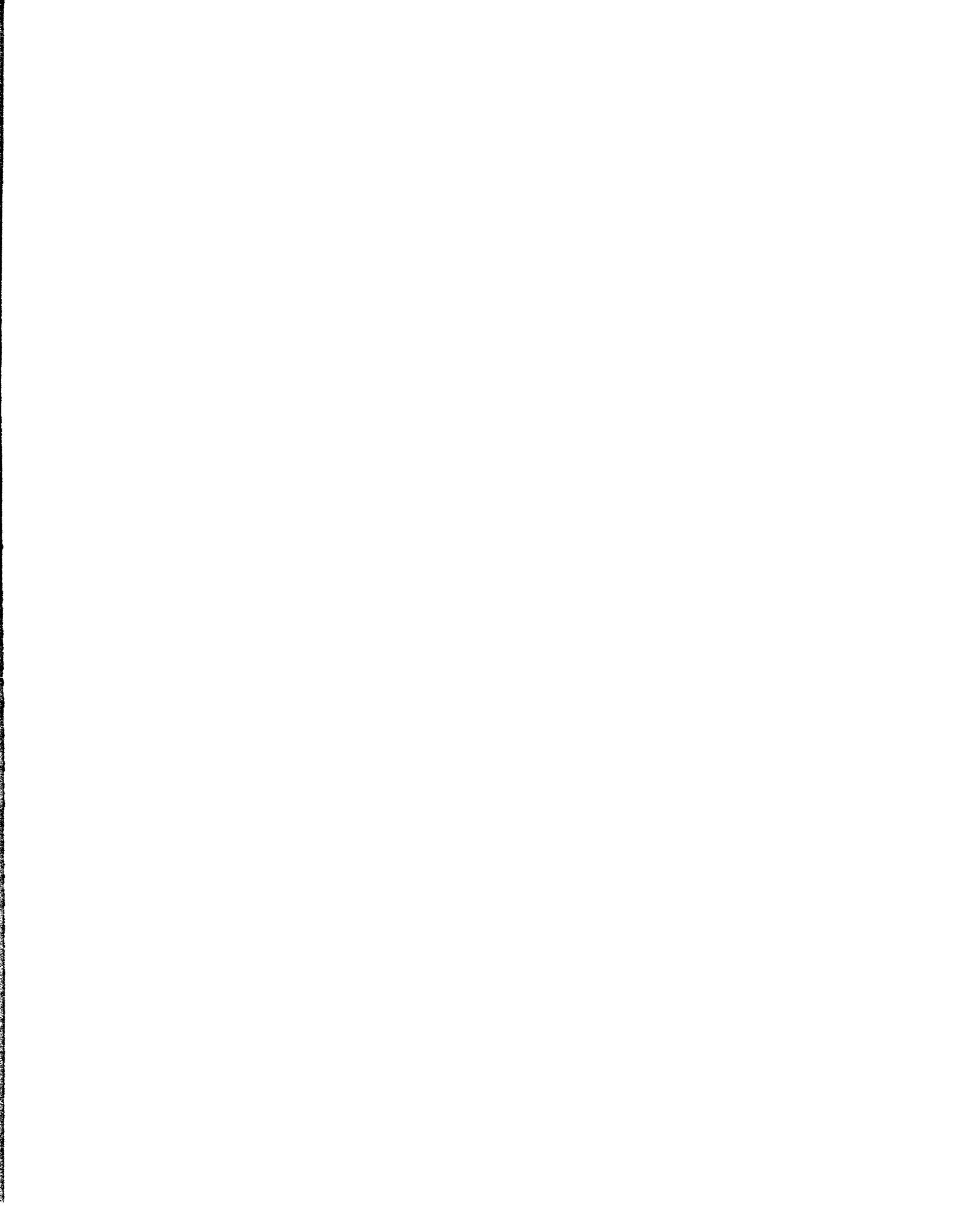
The degree of soil limitation is expressed as slight, moderate, or severe.

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 the table "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.

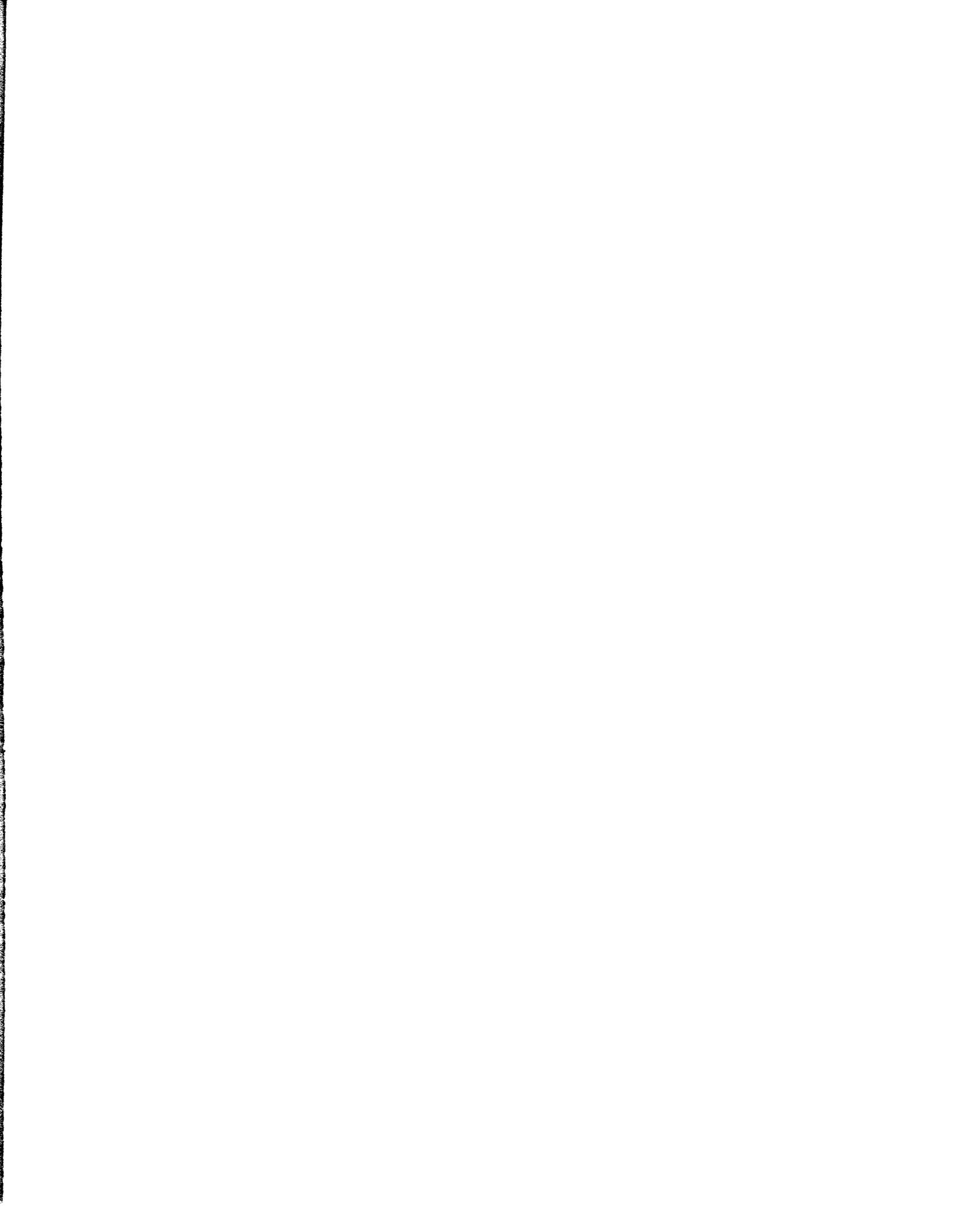
Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to control erosion and conserve moisture by intercepting runoff.

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

Tables 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 Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average 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.

The table "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. Table 19, "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.

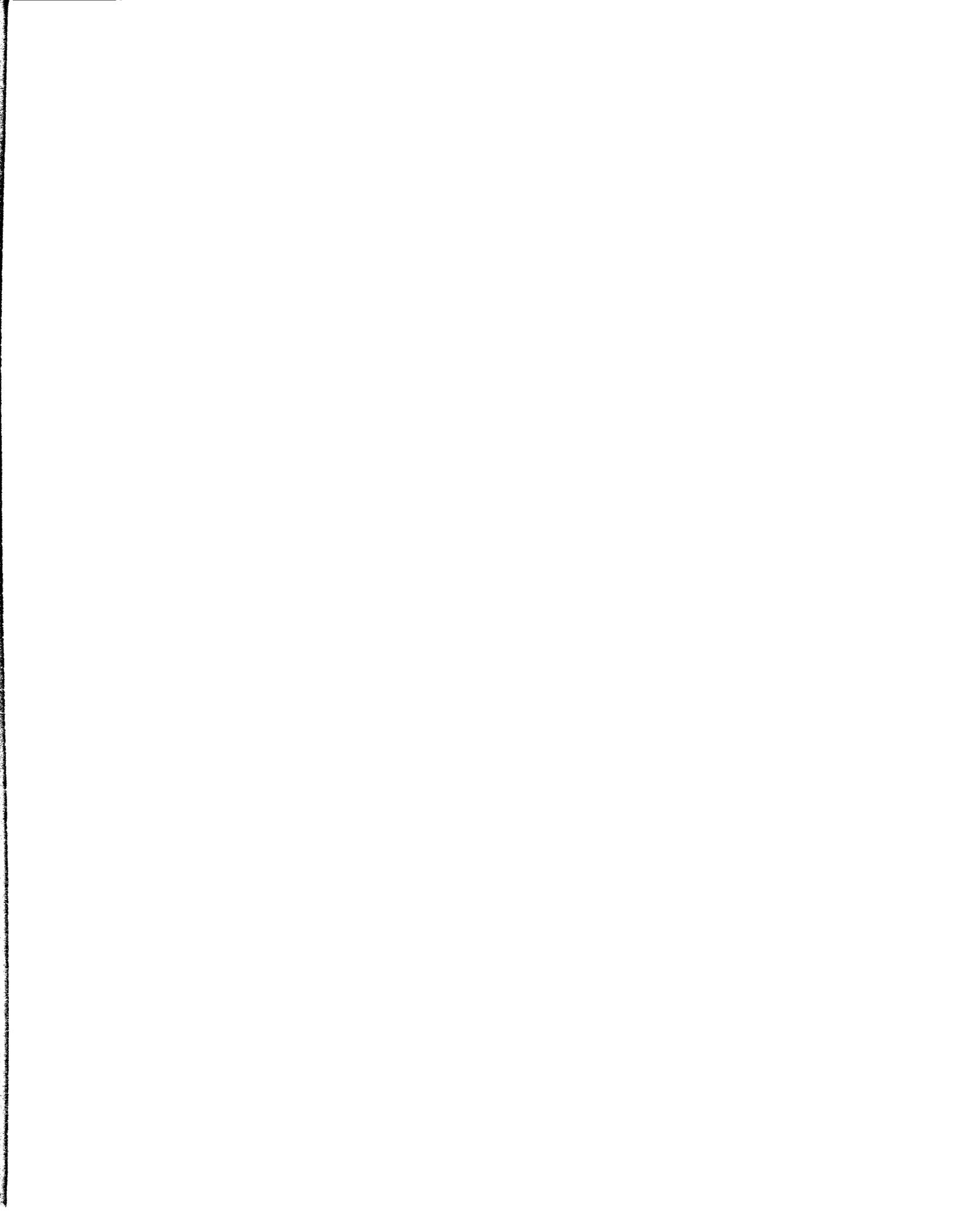
Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that dissolves or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. 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.

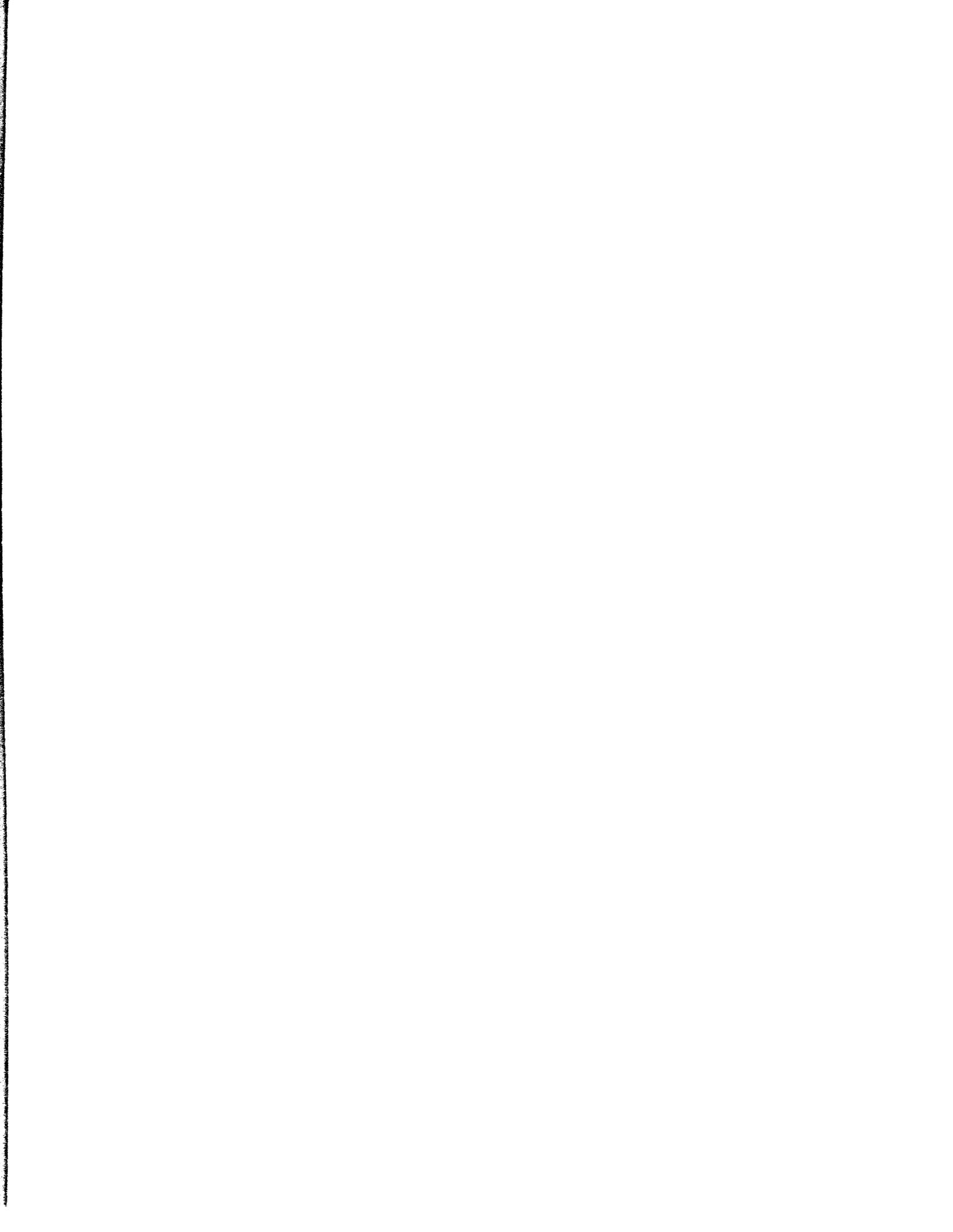
For uncoated steel, the risk of corrosion, expressed as *low*, *moderate*, or *high*, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

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, lowermost 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 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.

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 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.
- 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.



TABLES

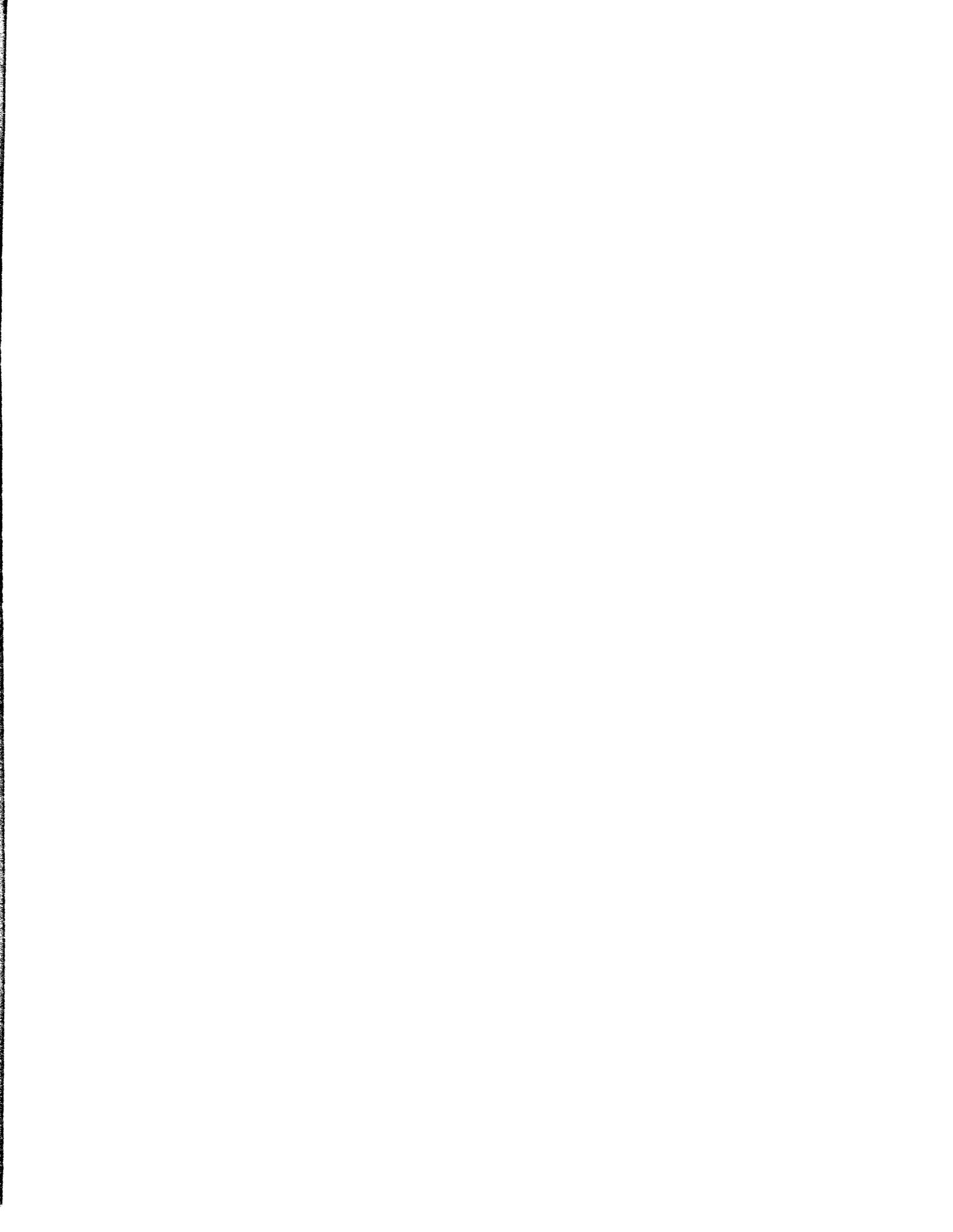


TABLE 1.--TEMPERATURE AND PRECIPITATION

(Recorded in the period 1928-1990 at Caliente, 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--- | 46.0 | 16.9 | 31.5 | 65 | -7 | 12 | 0.81 | 0.27 | 1.36 | 2 |
| February-- | 52.3 | 22.2 | 37.2 | 72 | -0 | 46 | 0.81 | 0.26 | 1.33 | 2 |
| March----- | 60.1 | 27.4 | 43.8 | 79 | 12 | 147 | 1.00 | 0.27 | 1.75 | 3 |
| April----- | 69.4 | 34.0 | 51.7 | 87 | 20 | 329 | 0.73 | 0.19 | 1.30 | 2 |
| May----- | 78.7 | 41.7 | 60.2 | 95 | 27 | 607 | 0.59 | 0.16 | 1.03 | 1 |
| June----- | 89.0 | 49.0 | 69.0 | 104 | 36 | 847 | 0.32 | 0.07 | 0.66 | 0 |
| July----- | 95.7 | 56.3 | 76.0 | 106 | 42 | 1,099 | 0.87 | 0.27 | 1.54 | 2 |
| August---- | 93.1 | 55.1 | 74.1 | 104 | 41 | 1,004 | 1.00 | 0.27 | 1.71 | 2 |
| September- | 85.5 | 45.6 | 65.5 | 99 | 31 | 715 | 0.64 | 0.18 | 1.28 | 1 |
| October--- | 73.5 | 35.0 | 54.2 | 90 | 20 | 418 | 0.78 | 0.23 | 1.45 | 1 |
| November-- | 58.9 | 24.9 | 41.9 | 77 | 9 | 107 | 0.76 | 0.20 | 1.35 | 1 |
| December-- | 48.5 | 18.9 | 33.7 | 65 | -4 | 15 | 0.70 | 0.28 | 1.31 | 2 |
| Yearly : | | | | | | | | | | |
| Average | 70.9 | 35.6 | 53.2 | ---- | ---- | ---- | --- | --- | --- | --- |
| Extreme | 109 | -31 | --- | 107 | -10 | ---- | --- | --- | --- | --- |
| Total | --- | --- | --- | ---- | ---- | 5,345 | 9.02 | 5.16 | 12.27 | 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 1951-1990 at Elgin, 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--- | 52.9 | 27.6 | 40.3 | 74 | 15 | 79 | 0.98 | 0.74 | 1.21 | 2 |
| February-- | 58.1 | 31.4 | 44.8 | 83 | 7 | 160 | 0.72 | 0.34 | 1.04 | 2 |
| March----- | 66.4 | 34.5 | 50.5 | 83 | 21 | 244 | 1.11 | 0.44 | 1.67 | 2 |
| April----- | 75.4 | 42.3 | 58.9 | 92 | 28 | 413 | 1.32 | 0.13 | 2.18 | 3 |
| May----- | 81.9 | 47.7 | 64.8 | 100 | 29 | 531 | 0.47 | 0.14 | 0.74 | 1 |
| June----- | 94.5 | 55.8 | 75.2 | 104 | 39 | 967 | 0.21 | 0.10 | 0.42 | 0 |
| July----- | 99.0 | 60.2 | 79.6 | 111 | 40 | 1,070 | 0.91 | 0.57 | 1.76 | 1 |
| August----- | 96.4 | 58.7 | 77.6 | 106 | 46 | 852 | 0.62 | 0.64 | 1.20 | 1 |
| September-- | 86.6 | 50.6 | 68.6 | 102 | 35 | 639 | 0.66 | 0.21 | 1.60 | 1 |
| October--- | 79.1 | 44.4 | 61.8 | 94 | 29 | 605 | 0.70 | 0.20 | 1.41 | 1 |
| November-- | 63.2 | 33.5 | 48.4 | 82 | 18 | 229 | 1.76 | 0.56 | 3.52 | 2 |
| December-- | 55.1 | 29.3 | 42.2 | 76 | 13 | 167 | 0.29 | 0.34 | 0.51 | 2 |
| Yearly : | | | | | | | | | | |
| Average | 75.7 | 43.0 | 59.4 | --- | --- | --- | --- | --- | --- | --- |
| Extreme | 112 | 6 | --- | 112 | 8 | --- | --- | --- | --- | --- |
| Total | --- | --- | --- | --- | --- | 5,955 | 9.75 | 1.68 | 12.54 | 18 |

*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 1964-1990 at Pahranaqat Wildlife Refuge, 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* | 2 years in 10 will have-- | | | Average number of days with 0.10 inch or more |
| | | | | Maximum temperature higher than-- | Minimum temperature lower than-- | | Average | less than | more than | |
| January--- | 53.2 | 26.9 | 40.0 | 71 | 10 | 83 | 0.54 | 0.17 | 1.04 | 1 |
| February-- | 58.9 | 30.9 | 44.9 | 76 | 15 | 160 | 0.61 | 0.10 | 1.15 | 1 |
| March----- | 64.2 | 34.8 | 49.5 | 82 | 19 | 295 | 0.72 | 0.14 | 1.22 | 2 |
| April----- | 71.7 | 40.3 | 56.0 | 89 | 24 | 478 | 0.69 | 0.20 | 1.51 | 1 |
| May----- | 81.8 | 49.0 | 65.4 | 97 | 33 | 789 | 0.42 | 0.21 | 0.80 | 1 |
| June----- | 91.6 | 56.7 | 74.1 | 106 | 42 | 990 | 0.22 | 0.12 | 0.65 | 0 |
| July----- | 97.6 | 63.5 | 80.5 | 108 | 50 | 1,207 | 0.59 | 0.07 | 1.10 | 1 |
| August----- | 95.4 | 62.0 | 78.7 | 107 | 48 | 1,252 | 0.77 | 0.26 | 1.46 | 1 |
| September-- | 88.4 | 53.1 | 70.7 | 101 | 38 | 902 | 0.42 | 0.10 | 0.99 | 1 |
| October--- | 77.3 | 43.5 | 60.4 | 94 | 26 | 642 | 0.56 | 0.14 | 1.21 | 1 |
| November--- | 62.8 | 33.2 | 48.0 | 80 | 18 | 249 | 0.54 | 0.21 | 1.12 | 1 |
| December-- | 53.2 | 26.7 | 40.0 | 69 | 11 | 74 | 0.36 | 0.13 | 0.68 | 1 |
| Yearly : | | | | | | | | | | |
| Average | 74.7 | 43.4 | 59.0 | --- | --- | --- | --- | --- | --- | --- |
| Extreme | 112 | 3 | --- | 109 | 8 | --- | --- | --- | --- | --- |
| Total | --- | --- | --- | --- | --- | 7,123 | 6.46 | 2.39 | 8.76 | 12 |

*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 1931-1990 at Caliente, Nevada.)

| 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-- | April 26 | May 13 | May 24 |
| 2 years in 10 later than-- | April 19 | May 7 | May 19 |
| 5 years in 10 later than-- | April 7 | April 25 | May 9 |
| First freezing temperature in fall: | | | |
| 1 year in 10 earlier than-- | October 17 | October 2 | September 21 |
| 2 years in 10 earlier than-- | October 22 | October 8 | September 26 |
| 5 years in 10 earlier than-- | November 1 | October 19 | October 7 |

TABLE 2.--FREEZE DATES IN SPRING AND FALL
(Recorded in the period 1985-1990 at Elgin, Nevada.)

| 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-- | April 15 | June 3 | May 25 |
| 2 years in 10 later than-- | April 2 | May 14 | May 12 |
| 5 year in 10 later than-- | March 8 | April 5 | April 17 |
| First freezing temperature in fall: | | | |
| 1 year in 10 earlier than-- | November 15 | November 13 | November 10 |
| 2 years in 10 earlier than-- | November 19 | November 14 | November 12 |
| 5 years in 10 earlier than-- | November 25 | November 16 | November 15 |

TABLE 2.--FREEZE DATES IN SPRING AND FALL

(Recorded in the period 1964-1990 at Pahrnagat Wildlife Refuge, Nevada)

| Probability | Temperature | | |
|---|--------------|--------------|--------------|
| | 24F or lower | 28F or lower | 32F or lower |
| Last freezing temperature in spring: | | | |
| 1 year in 10 later than-- | April 16 | April 28 | May 11 |
| 2 years in 10 later than-- | April 3 | April 18 | May 3 |
| 5 years in 10 later than-- | March 11 | March 31 | April 18 |
| First freezing temperature in fall: | | | |
| 1 year in 10 earlier than-- | November 6 | October 19 | October 4 |
| 2 years in 10 earlier than-- | November 12 | October 26 | October 11 |
| 5 years in 10 earlier than-- | November 24 | November 7 | October 25 |

TABLE 3.--GROWING SEASON

(Recorded in the period 1931-1990 at Caliente, Nevada.)

| Probability | Daily Minimum Temperature during growing season | | |
|---------------|--|---------------------------------|---------------------------------|
| | 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 | 197 | 176 | 155 |
| 8 years in 10 | 205 | 183 | 163 |
| 5 years in 10 | 221 | 199 | 179 |
| 2 years in 10 | 237 | 214 | 195 |
| 1 year in 10 | 245 | 222 | 203 |

TABLE 3.--GROWING SEASON

(Recorded in the period 1985-1990 at Elgin, Nevada.)

| Probability | Daily Minimum Temperature during growing season | | |
|---------------|--|---------------------------------|---------------------------------|
| | 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 | 227 | 176 | 192 |
| 8 years in 10 | 247 | 204 | 207 |
| 5 years in 10 | 285 | 257 | 237 |
| 2 years in 10 | 323 | 309 | 266 |
| 1 year in 10 | 343 | 337 | 281 |

TABLE 3.--GROWING SEASON

(Recorded in the period 1964-1990 at Pahrnagat Wildlife Refuge, Nevada.)

| Probability | Daily Minimum Temperature during growing season | | |
|---------------|--|---------------------------------|---------------------------------|
| | 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 | 222 | 207 | 183 |
| 8 years in 10 | 238 | 219 | 195 |
| 5 years in 10 | 268 | 243 | 217 |
| 2 years in 10 | 298 | 267 | 240 |
| 1 year in 10 | 313 | 279 | 252 |

TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS

| Map symbol | Soil name | Acres | Percent |
|------------|---|--------|---------|
| 1000 | Weiser-Tencee-Arizo association----- | 10,198 | 0.4 |
| 1001 | Weiser-Tencee association----- | 54,825 | 2.1 |
| 1010 | Tencee-Weiser association----- | 13,076 | 0.5 |
| 1016 | Tencee association----- | 24,654 | 0.9 |
| 1017 | Tencee-Bard-Arizo association----- | 13,321 | 0.5 |
| 1020 | Kurstan-Tencee association----- | 16,072 | 0.6 |
| 1021 | Kurstan-Knob Hill association----- | 6,281 | 0.2 |
| 1030 | Arizo-Bluepoint association----- | 9,474 | 0.4 |
| 1031 | Arizo association----- | 3,745 | 0.1 |
| 1040 | Akela-Rock outcrop association----- | 20,148 | 0.8 |
| 1041 | Akela-Rochpah-Rock outcrop association----- | 7,025 | 0.3 |
| 1052 | Knob Hill-Arizo association----- | 3,918 | 0.1 |
| 1060 | St. Thomas-Chinkle-Rock outcrop association----- | 7,780 | 0.3 |
| 1061 | St. Thomas-Zeheme-Rock outcrop association----- | 97,427 | 3.7 |
| 1062 | Zeheme-Chinkle-Shankba association----- | 14,513 | 0.5 |
| 1063 | Zeheme-Kanesprings-Rock outcrop association----- | 4,227 | 0.2 |
| 1064 | Zeheme-Kanackey-Rock outcrop association----- | 3,535 | 0.1 |
| 1065 | Zeheme-Rock outcrop association----- | 12,523 | 0.5 |
| 1066 | Zeheme-Boxspring-Rock outcrop association----- | 13,124 | 0.5 |
| 1070 | Bellehelen-Brier association----- | 50,626 | 1.9 |
| 1080 | Kaspal-Canutio association----- | 28,427 | 1.1 |
| 1090 | Logring-Rock outcrop association----- | 27,007 | 1.0 |
| 1091 | Logring-Eaglepass-Rock outcrop complex----- | 9,497 | 0.4 |
| 1100 | Geta-Arizo association----- | 11,753 | 0.4 |
| 1101 | Geta gravelly sandy loam, 2 to 4 percent slopes----- | 9,194 | 0.3 |
| 1102 | Geta-Bluepoint-Arizo association----- | 4,635 | 0.2 |
| 1110 | Kanesprings-Kanackey-Rock outcrop association----- | 31,823 | 1.2 |
| 1113 | Kanesprings-Gabbvally association----- | 12,656 | 0.5 |
| 1160 | Silent-Koyen association----- | 7,802 | 0.3 |
| 1170 | Alko-Arizo association----- | 29,080 | 1.1 |
| 1172 | Alko-Geta association----- | 7,454 | 0.3 |
| 1180 | Acoma-Decan-Cath association----- | 27,018 | 1.0 |
| 1190 | Minu-Shroe-Acoma association----- | 27,918 | 1.0 |
| 1210 | Brier-Acoma-Bellehelen association----- | 34,023 | 1.3 |
| 1211 | Brier-Rock outcrop association----- | 13,291 | 0.5 |
| 1220 | Lien-Vest association----- | 9,710 | 0.4 |
| 1230 | Pahranagat association----- | 699 | * |
| 1250 | Patter-Heist association----- | 1,296 | * |
| 1260 | Hollace-Gabbvally association----- | 10,982 | 0.4 |
| 1261 | Hollace-Rochpah-Wyva association----- | 3,556 | 0.1 |
| 1262 | Hollace-Winkle-Wyva association----- | 5,802 | 0.2 |
| 1270 | Laross-Rock outcrop association----- | 11,537 | 0.4 |
| 1300 | Mormount-Arizo association----- | 14,751 | 0.6 |
| 1302 | Mormount very gravelly sandy loam, 2 to 8 percent slopes----- | 10,781 | 0.4 |
| 1303 | Mormount-Canutio association----- | 19,312 | 0.7 |
| 1340 | Aymate-Canutio association----- | 15,532 | 0.6 |

See footnotes at end of table

TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS--Continued

| Map symbol | Soil name | Acres | Percent |
|------------|--|--------|---------|
| 1341 | Aymate sandy loam, 0 to 2 percent slopes----- | 4,172 | 0.2 |
| 1342 | Aymate-Mormount-Arizo association----- | 3,855 | 0.1 |
| 1350 | Bard gravelly fine sandy loam, 2 to 8 percent slopes----- | 1,738 | * |
| 1360 | Canutio-Arizo association----- | 3,334 | 0.1 |
| 1370 | Mormon Mesa association----- | 18,793 | 0.7 |
| 1371 | Mormon Mesa-Naye-Dalian association----- | 40,030 | 1.5 |
| 1372 | Mormon Mesa-Tonopah-Arada association----- | 18,679 | 0.7 |
| 1380 | Bracken gravelly fine sandy loam, 2 to 8 percent slopes----- | 2,529 | * |
| 1390 | Shankba-Chinkle-Kanackey association----- | 5,714 | 0.2 |
| 1400 | Cave-Canutio association----- | 12,163 | 0.5 |
| 1401 | Cave-Arizo association----- | 63,354 | 2.4 |
| 1403 | Cave-Tencee association----- | 51,451 | 1.9 |
| 1404 | Cave-Mormount-Canutio association----- | 10,993 | 0.4 |
| 1405 | Cave-Zeheme association----- | 5,728 | 0.2 |
| 1406 | Cave very gravelly sandy loam, 4 to 30 percent slopes----- | 32,410 | 1.2 |
| 1420 | Kanackey-Rock outcrop association----- | 4,898 | 0.2 |
| 1430 | Typic Torriorthents-Badland association----- | 15,834 | 0.6 |
| 1460 | Pintwater-Rochpah association----- | 76,157 | 2.9 |
| 1470 | Tybo-Keefa-Koyen association----- | 4,918 | 0.2 |
| 1471 | Tybo-Koyen association----- | 32,069 | 1.2 |
| 1472 | Tybo-Geer association----- | 6,496 | 0.2 |
| 1473 | Tybo-Leo association----- | 14,143 | 0.5 |
| 1474 | Tybo-Delamar association----- | 16,903 | 0.6 |
| 1490 | Keefa-Penoyer association----- | 3,032 | 0.1 |
| 1491 | Keefa, warm-Penoyer association----- | 2,355 | * |
| 1510 | Koyen gravelly sandy loam, 2 to 4 percent slopes----- | 29,869 | 1.1 |
| 1512 | Koyen-Penoyer association----- | 12,857 | 0.5 |
| 1520 | Geer-Penoyer association----- | 34,751 | 1.3 |
| 1530 | Delamar-Leo association----- | 11,213 | 0.4 |
| 1531 | Delamar-Veet association----- | 3,503 | 0.1 |
| 1533 | Delamar-Tybo-Koyen association----- | 14,538 | 0.5 |
| 1534 | Delamar-Koyen association----- | 36,528 | 1.4 |
| 1535 | Delamar gravelly sandy loam, 2 to 8 percent slopes----- | 20,774 | 0.8 |
| 1540 | Oleman-Leo association----- | 19,112 | 0.7 |
| 1541 | Oleman-Cave association----- | 5,261 | 0.2 |
| 1542 | Oleman gravelly sandy loam, 4 to 15 percent slopes----- | 17,293 | 0.7 |
| 1550 | Pahroc-Leo association----- | 36,674 | 1.4 |
| 1551 | Pahroc very gravelly very fine sandy loam, 4 to 15 percent slopes----- | 25,846 | 1.0 |
| 1570 | Kyler-Eaglepass-Rock outcrop association----- | 23,289 | 0.9 |
| 1571 | Kyler-Logring-Rock outcrop association----- | 25,407 | 1.0 |
| 1590 | Winklo-Wyva association----- | 25,407 | 1.0 |
| 1591 | Winklo-Rochpah-Rock outcrop association----- | 7,328 | 0.3 |
| 1650 | Handpah-Veet association----- | 54,231 | 2.0 |
| 1660 | Dewrust-Veet association----- | 10,119 | 0.4 |
| 1680 | Rochpah-Hollace-Gabbvally association----- | 10,041 | 0.4 |
| 1681 | Rochpah-Veet association----- | 16,133 | 0.6 |
| 1683 | Rochpah-Rock outcrop-Leo association----- | 11,400 | 0.4 |

See footnote at end of table

TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS--Continued

| Map symbol | Soil name | Acres | Percent |
|------------|---|-----------|---------|
| 1690 | Jolan-Geer association----- | 5,256 | 0.2 |
| 1700 | Sieroclipf-Veet association----- | 2,092 | * |
| 1710 | Cliffdown gravelly sandy loam, 4 to 8 percent slopes----- | 853 | * |
| 1730 | Cath-Veet association----- | 12,247 | 0.5 |
| 1740 | Slaw-Playas association----- | 2,736 | 0.1 |
| 1741 | Slaw silt loam, 0 to 2 percent slopes----- | 3,184 | 0.1 |
| 1750 | Chanybuck-Brier-Rock outcrop association----- | 3,515 | 0.1 |
| 1761 | Wyva-Rock outcrop association----- | 19,513 | 0.7 |
| 1762 | Wyva-Slidytn association----- | 15,443 | 0.6 |
| 1770 | Veet-Mosida association----- | 3,453 | 0.1 |
| 1810 | Boxspring-Rock outcrop association----- | 111,874 | 4.2 |
| 1811 | Boxspring-Theriot-Rock outcrop association----- | 33,824 | 1.3 |
| 1821 | Turba-Acti association----- | 145,895 | 5.5 |
| 1830 | Zaqua-Winklo association----- | 49,282 | 1.9 |
| 1831 | Zaqua-Boxspring association----- | 10,956 | 0.4 |
| 1832 | Zaqua-Winklo-Kanesprings association----- | 55,488 | 2.1 |
| 1833 | Zaqua-Rock outcrop association----- | 9,703 | 0.4 |
| 1850 | Rapado-Oleman association----- | 21,529 | 0.8 |
| 1851 | Rapado-Veet association----- | 12,646 | 0.5 |
| 1870 | Faleria-Laross association----- | 12,204 | 0.5 |
| 1880 | Tejabe-Pintwater-Rock outcrop association----- | 20,802 | 0.8 |
| 1890 | Welring-Rock outcrop association----- | 6,676 | 0.3 |
| 1900 | Glendale-Bluepoint association----- | 1,306 | * |
| 1910 | Land silt loam, 0 to 2 percent slopes----- | 173 | * |
| 1920 | Motoqua-Rock outcrop association----- | 17,343 | 0.7 |
| 1921 | Motoqua-Thunderbird association----- | 42,890 | 1.6 |
| 1941 | Slidytn-Capsus association----- | 60,910 | 2.3 |
| 1950 | Ursine-Lomoin association----- | 26,413 | 1.0 |
| 1951 | Ursine association----- | 29,676 | 1.1 |
| 1952 | Ursine-Geer association----- | 8,095 | 0.3 |
| 1960 | Crystal Springs gravelly sandy loam, 2 to 8 percent slopes----- | 7,754 | 0.3 |
| 1980 | Longjim-Arizo association----- | 13,096 | 0.5 |
| 1990 | Gabbvally-Rock outcrop association----- | 47,313 | 1.8 |
| 1991 | Gabbvally-Hollace association----- | 16,023 | 0.6 |
| 1992 | Gabbvally-Brier-Rock outcrop association----- | 27,447 | 1.0 |
| 2000 | Playas----- | 4,610 | 0.2 |
| 2010 | Stewval-Gabbvally association----- | 85,876 | 3.2 |
| 2011 | Stewval-Lomoin-Rock outcrop association----- | 36,766 | 1.4 |
| | Total----- | 2,660,212 | 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 |
|--------------------------------|--|
| 1000: | |
| Weiser----- | Lime content Limited available water capacity Soil blowing Surface crusting Surface rock fragments |
| Tencee----- | Lime content Limited available water capacity Restricted permeability Root restrictive layer Soil blowing Surface rock fragments |
| Arizo----- | Flooding Limited available water capacity Potential for ground-water pollution Soil blowing Surface crusting Surface rock fragments |
| 1001: | |
| Weiser----- | Lime content Limited available water capacity Soil blowing Surface crusting Surface rock fragments |
| Tencee----- | Lime content Limited available water capacity Restricted permeability Root restrictive layer Soil blowing Surface rock fragments |
| 1010: | |
| Tencee----- | Lime content Limited available water capacity Restricted permeability Root restrictive layer Soil blowing Surface rock fragments |
| Weiser----- | Lime content Limited available water capacity Soil blowing Surface crusting Surface rock fragments |

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

| Soil name and map symbol | Cropland limitations or hazards |
|--------------------------------|--|
| 1016: Tencee----- | Erosion by water Lime content Limited available water capacity Restricted permeability Root restrictive layer Slope Soil blowing Surface rock fragments |
| Tencee----- | Lime content Limited available water capacity Restricted permeability Root restrictive layer Soil blowing Surface rock fragments |
| 1017: Tencee----- | Lime content Limited available water capacity Restricted permeability Root restrictive layer Slope Soil blowing Surface rock fragments |
| Bard----- | Lime content Limited available water capacity Restricted permeability Root restrictive layer Soil blowing Surface crusting |
| Arizo----- | Flooding Limited available water capacity Potential for ground-water pollution Soil blowing Surface crusting Surface rock fragments |

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

| Soil name and map symbol | Cropland limitations or hazards |
|--------------------------------|--|
| 1020: Kurstan----- | Erosion by water Lime content Limited available water capacity Slope Soil blowing Surface crusting |
| Tencee----- | Lime content Limited available water capacity Restricted permeability Root restrictive layer Slope Soil blowing Surface rock fragments |
| 1021: Kurstan----- | Lime content Limited available water capacity Soil blowing Surface crusting |
| Knob Hill----- | Excessive permeability below restriction Limited available water capacity Potential for ground-water pollution Soil blowing Surface crusting |
| 1030: Arizo----- | Limited available water capacity Potential for ground-water pollution Soil blowing Surface crusting Surface rock fragments |
| Arizo----- | Flooding Lime content Limited available water capacity Potential for ground-water pollution Soil blowing Surface crusting Surface rock fragments |
| Bluepoint----- | 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 |
|--------------------------------|---|
| 1031: Arizo----- | Flooding Lime content Limited available water capacity Potential for ground-water pollution Soil blowing Surface crusting Surface rock fragments |
| Arizo----- | Limited available water capacity Potential for ground-water pollution Soil blowing Surface crusting Surface rock fragments |
| 1040: Akela----- | Areas of rock outcrop Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface crusting Surface rock fragments |
| Rock outcrop----- | Nonsoil material |
| 1041: Akela----- | Areas of rock outcrop Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface crusting Surface stones |
| Rochpah----- | Areas of rock outcrop Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface crusting Surface rock fragments |
| Rock outcrop----- | Nonsoil material |

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

| Soil name and map symbol | Cropland limitations or hazards |
|--------------------------------|---|
| 1052: Knob Hill----- | Excessive permeability below restriction Limited available water capacity Potential for ground-water pollution Soil blowing Surface crusting Surface rock fragments |
| Arizo----- | Flooding Lime content Limited available water capacity Potential for ground-water pollution Soil blowing Surface crusting Surface rock fragments |
| 1060: St. Thomas----- | Areas of rock outcrop Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Slope Surface crusting Surface stones |
| Chinkle----- | Areas of rock outcrop Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing Surface crusting Surface rock fragments |
| Rock outcrop----- | Nonsoil material |

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

| Soil name and map symbol | Cropland limitations or hazards |
|--------------------------------|---|
| 1061: St. Thomas----- | Areas of rock outcrop Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface crusting Surface rock fragments |
| Zeheme----- | Areas of rock outcrop Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface crusting Surface rock fragments |
| Rock outcrop----- | Nonsoil material |
| 1062: Zeheme----- | Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface crusting Surface rock fragments |
| Chinkle----- | Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing Surface crusting Surface rock fragments |
| Shankba----- | Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing Surface crusting Surface rock fragments |

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

| Soil name and map symbol | Cropland limitations or hazards |
|--------------------------------|--|
| 1063: Zeheme----- | Areas of rock outcrop Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface crusting Surface rock fragments |
| Kanesprings----- | Areas of rock outcrop Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Restricted permeability Root restrictive layer Slope Soil blowing Surface crusting Surface rock fragments |
| Rock outcrop----- | Nonsoil material |
| 1064: Zeheme----- | Areas of rock outcrop Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Slope Surface crusting Surface stones |
| Kanackey----- | Areas of rock outcrop Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface rock fragments |
| Rock outcrop----- | Nonsoil material |

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

| Soil name and map symbol | Cropland limitations or hazards |
|--------------------------------|---|
| 1065: Zeheme----- | Areas of rock outcrop Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Slope Surface crusting Surface stones |
| Rock outcrop----- | Nonsoil material |
| 1066: Zeheme----- | Areas of rock outcrop Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface crusting Surface rock fragments |
| Boxspring----- | Areas of rock outcrop Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Slope Surface crusting Surface rock fragments |
| Rock outcrop----- | Nonsoil material |
| 1070: Bellehelen----- | Depth to rock Erosion by water Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface stones |
| Brier----- | Depth to rock Erosion by water 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 |
|--------------------------------|---|
| 1080: Kaspal----- | Lime content Limited available water capacity Soil blowing Surface crusting Surface rock fragments |
| Canutio----- | Lime content Limited available water capacity Soil blowing Surface crusting Surface rock fragments |
| 1090: Logring----- | Areas of rock outcrop Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface crusting Surface rock fragments |
| Rock outcrop----- | Nonsoil material |
| 1091: Logring----- | Areas of rock outcrop Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface crusting Surface rock fragments |
| Eaglepass----- | Areas of rock outcrop Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Slope Surface crusting Surface stones |
| Rock outcrop----- | Nonsoil material |

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

| Soil name and map symbol | Cropland limitations or hazards |
|--------------------------------|--|
| 1100: Geta----- | Lime content Soil blowing Surface crusting |
| Geta----- | Lime content Limited available water capacity Potential for ground-water pollution Soil blowing Surface crusting |
| Arizo----- | Flooding Limited available water capacity Potential for ground-water pollution Soil blowing Surface crusting Surface rock fragments |
| 1101: Geta----- | Lime content Soil blowing Surface crusting |
| 1102: Geta----- | Lime content Soil blowing Surface crusting |
| Bluepoint----- | Limited available water capacity Potential for ground-water pollution Soil blowing |
| Arizo----- | Flooding Limited available water capacity Potential for ground-water pollution Soil blowing Surface crusting Surface rock fragments |

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

| Soil name and map symbol | Cropland limitations or hazards |
|--------------------------------|--|
| 1110: Kanesprings----- | Areas of rock outcrop Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Restricted permeability Root restrictive layer Slope Soil blowing Surface crusting Surface rock fragments |
| Kanackey----- | Areas of rock outcrop Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface rock fragments |
| Rock outcrop----- | Nonsoil material |
| 1113: Kanesprings----- | Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Restricted permeability Root restrictive layer Slope Soil blowing Surface crusting Surface rock fragments |
| Gabbvally----- | Depth to rock Erosion by water Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface crusting Surface stones |

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

| Soil name and map symbol | Cropland limitations or hazards |
|--------------------------------|--|
| 1160: Silent----- | Lime content Limited available water capacity Restricted permeability Root restrictive layer Salt content Soil blowing Surface crusting |
| Koyen----- | Lime content Limited available water capacity Potential for ground-water pollution Soil blowing Surface crusting |
| 1170: Alko----- | Lime content Limited available water capacity Restricted permeability Root restrictive layer Soil blowing Surface crusting |
| Alko----- | Lime content Limited available water capacity Restricted permeability Root restrictive layer Soil blowing Surface crusting |
| Arizo----- | Flooding Lime content Limited available water capacity Potential for ground-water pollution Soil blowing Surface crusting Surface stones |
| 1172: Alko----- | Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Restricted permeability Root restrictive layer Slope Soil blowing Surface crusting |
| Geta----- | Erosion by water Lime content Soil blowing Surface crusting |

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

| Soil name and map symbol | Cropland limitations or hazards |
|--------------------------------|--|
| 1180: Acoma----- | Erosion by water Slope Soil blowing |
| Decan----- | Erosion by water Limited available water capacity Poor tilth Restricted permeability Root restrictive layer Slope Soil blowing |
| Cath----- | Potential for ground-water pollution Soil blowing Surface crusting |
| 1190: Minu----- | Excessive permeability below restriction Lime content Limited available water capacity Potential for ground-water pollution Root restrictive layer Soil blowing Surface crusting |
| Shroe----- | Erosion by water Slope Soil blowing |
| Acoma----- | Erosion by water Soil blowing |
| 1210: Brier----- | Depth to rock Erosion by water Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface stones |
| Acoma----- | Erosion by water Slope Soil blowing |
| Bellehelen----- | Depth to rock Erosion by water Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface stones |

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

| Soil name and map symbol | Cropland limitations or hazards |
|--------------------------------|--|
| 1211: Brier----- | Areas of rock outcrop Depth to rock Erosion by water Limited available water capacity Potential for ground-water pollution Slope Surface stones |
| Rock outcrop----- | Nonsoil material |
| 1220: Lien----- | Lime content Limited available water capacity Restricted permeability Root restrictive layer Slope Soil blowing Surface crusting Surface rock fragments |
| Veet----- | Limited available water capacity Potential for ground-water pollution Soil blowing Surface crusting |
| 1230: Pahrnatag----- | Flooding Lime content Salt content Soil blowing Surface crusting Water table |
| Pahrnatag----- | Flooding Lime content Potential for ground-water pollution Salt content Sodium content Soil blowing Surface crusting Water table |
| 1250: Patter----- | Lime content Soil blowing Surface crusting |
| Heist----- | Erosion by water Soil blowing |

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

| Soil name and map symbol | Cropland limitations or hazards |
|--------------------------------|---|
| 1260: Hollace----- | Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Restricted permeability Root restrictive layer Slope Soil blowing Surface crusting Surface rock fragments |
| Gabbvally----- | Depth to rock Erosion by water Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface crusting Surface stones |
| 1261: Hollace----- | Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Restricted permeability Root restrictive layer Slope Soil blowing Surface crusting Surface rock fragments |
| Rochpah----- | Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface crusting Surface rock fragments |
| Wyva----- | Depth to rock Erosion by water Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface crusting Surface stones |

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

| Soil name and map symbol | Cropland limitations or hazards |
|--------------------------------|---|
| 1262: Hollace----- | Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Restricted permeability Root restrictive layer Slope Soil blowing Surface crusting Surface rock fragments |
| Winklo----- | Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing Surface crusting Surface rock fragments |
| Wyva----- | Depth to rock Erosion by water Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface crusting Surface stones |
| 1270: Laross----- | Areas of rock outcrop Erosion by water Potential for ground-water pollution Slope Soil blowing Surface rock fragments |
| Rock outcrop----- | Nonsoil material |

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

| Soil name and map symbol | Cropland limitations or hazards |
|--------------------------------|--|
| 1300: Mormount----- | Erosion by water Lime content Limited available water capacity Restricted permeability Root restrictive layer Slope Soil blowing Surface crusting |
| Arizo----- | Flooding Limited available water capacity Potential for ground-water pollution Soil blowing Surface crusting Surface rock fragments |
| 1302: Mormount----- | Lime content Limited available water capacity Restricted permeability Root restrictive layer Soil blowing Surface crusting Surface rock fragments |
| 1303: Mormount----- | Erosion by water Lime content Limited available water capacity Restricted permeability Root restrictive layer Slope Soil blowing Surface crusting |
| Canutio----- | Lime content Limited available water capacity Soil blowing Surface crusting Surface rock fragments |
| 1340: Aymate----- | Limited available water capacity Restricted permeability Root restrictive layer Soil blowing Surface crusting |
| Canutio----- | Lime content Limited available water capacity Soil blowing Surface crusting |

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

| Soil name and map symbol | Cropland limitations or hazards |
|--------------------------------|--|
| 1341: Aymate----- | Limited available water capacity Restricted permeability Root restrictive layer Soil blowing Surface crusting |
| 1342: Aymate----- | Limited available water capacity Restricted permeability Root restrictive layer Soil blowing Surface crusting |
| Mormount----- | Lime content Limited available water capacity Restricted permeability Root restrictive layer Soil blowing Surface crusting |
| Arizo----- | Flooding Limited available water capacity Potential for ground-water pollution Soil blowing Surface crusting Surface rock fragments |
| 1350: Bard----- | Lime content Limited available water capacity Restricted permeability Root restrictive layer Soil blowing Surface crusting |
| 1360: Canutio----- | Lime content Limited available water capacity Soil blowing Surface crusting |
| Arizo----- | Flooding Limited available water capacity Potential for ground-water pollution Soil blowing Surface crusting Surface rock fragments |

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

| Soil name and map symbol | Cropland limitations or hazards |
|--------------------------------|--|
| 1370: Mormon Mesa----- | Lime content Limited available water capacity Restricted permeability Root restrictive layer Soil blowing Surface crusting |
| Mormon Mesa----- | Erosion by water Lime content Limited available water capacity Restricted permeability Root restrictive layer Slope Soil blowing Surface crusting |
| 1371: Mormon Mesa----- | Lime content Limited available water capacity Restricted permeability Root restrictive layer Soil blowing Surface crusting |
| Naye----- | Lime content Limited available water capacity Restricted permeability Root restrictive layer Soil blowing Surface crusting |
| Dalian----- | Lime content Limited available water capacity Soil blowing Surface rock fragments |

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

| Soil name and map symbol | Cropland limitations or hazards |
|--------------------------------|--|
| 1372: Mormon Mesa----- | Lime content Limited available water capacity Restricted permeability Root restrictive layer Soil blowing Surface crusting |
| Tonopah----- | Lime content Limited available water capacity Potential for ground-water pollution Soil blowing Surface crusting Surface rock fragments |
| Arada----- | Lime content Limited available water capacity Potential for ground-water pollution Soil blowing Surface crusting |
| 1380: Bracken----- | 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 hazards |
|--------------------------------|--|
| 1390: Shankba----- | Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing Surface crusting Surface rock fragments |
| Chinkle----- | Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing Surface crusting Surface rock fragments |
| Kanackey----- | Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface rock fragments |
| 1400: Cave----- | Lime content Limited available water capacity Restricted permeability Root restrictive layer Slope Soil blowing Surface crusting Surface rock fragments |
| Canutio----- | Lime content Limited available water capacity Soil blowing Surface crusting Surface rock fragments |

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

| Soil name and map symbol | Cropland limitations or hazards |
|--------------------------------|--|
| 1401: Cave----- | Lime content Limited available water capacity Restricted permeability Root restrictive layer Slope Soil blowing Surface crusting Surface rock fragments |
| Arizo----- | Flooding Limited available water capacity Potential for ground-water pollution Soil blowing Surface crusting Surface rock fragments |
| 1403: Cave----- | Lime content Limited available water capacity Restricted permeability Root restrictive layer Slope Soil blowing Surface crusting Surface rock fragments |
| Tencee----- | Lime content Limited available water capacity Restricted permeability Root restrictive layer Slope Soil blowing Surface rock fragments |

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

| Soil name and map symbol | Cropland limitations or hazards |
|--------------------------------|--|
| 1404: Cave----- | Lime content Limited available water capacity Restricted permeability Root restrictive layer Slope Soil blowing Surface crusting Surface rock fragments |
| Mormount----- | Erosion by water Lime content Limited available water capacity Restricted permeability Root restrictive layer Soil blowing Surface crusting |
| Canutio----- | Lime content Limited available water capacity Soil blowing Surface crusting Surface rock fragments |
| 1405: Cave----- | Lime content Limited available water capacity Restricted permeability Root restrictive layer Slope Soil blowing Surface crusting Surface rock fragments |
| Zeheme----- | Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Slope Surface crusting Surface stones |
| 1406: Cave----- | Lime content Limited available water capacity Restricted permeability Root restrictive layer Slope Soil blowing Surface crusting Surface rock fragments |

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

| Soil name and map symbol | Cropland limitations or hazards |
|-----------------------------------|---|
| 1420: Kanackey----- | Areas of rock outcrop Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface rock fragments |
| Rock outcrop----- | Nonsoil material |
| 1430: Typic Torriorthents----- | Erosion by water Lime content Slope Sodium content Soil blowing Surface crusting Surface rock fragments |
| Badland----- | Nonsoil material |
| 1460: Pintwater----- | Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Slope Surface crusting Surface stones |
| Rochpah----- | Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface crusting Surface rock fragments |

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

| Soil name and map symbol | Cropland limitations or hazards |
|--------------------------------|---|
| 1470: Tybo----- | Lime content Limited available water capacity Restricted permeability Root restrictive layer Salt content Soil blowing Surface crusting |
| Keefa----- | Lime content Limited available water capacity Soil blowing Surface crusting |
| Koyen----- | Lime content Limited available water capacity Potential for ground-water pollution Soil blowing Surface crusting |
| 1471: Tybo----- | Lime content Limited available water capacity Restricted permeability Root restrictive layer Salt content Soil blowing Surface crusting |
| Koyen----- | Lime content Limited available water capacity Potential for ground-water pollution Soil blowing Surface crusting |
| 1472: Tybo----- | Lime content Limited available water capacity Restricted permeability Root restrictive layer Salt content Soil blowing Surface crusting |
| Geer----- | Lime content Soil blowing Surface crusting |

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

| Soil name and map symbol | Cropland limitations or hazards |
|--------------------------------|---|
| 1473: Tybo----- | Lime content Limited available water capacity Restricted permeability Root restrictive layer Salt content Soil blowing Surface crusting |
| Leo----- | Lime content Limited available water capacity Potential for ground-water pollution Soil blowing Surface rock fragments |
| 1474: Tybo----- | Erosion by water Lime content Limited available water capacity Restricted permeability Root restrictive layer Salt content Soil blowing Surface crusting |
| Delamar----- | Limited available water capacity Restricted permeability Root restrictive layer Soil blowing Surface crusting |
| 1490: Keefa----- | Lime content Soil blowing Surface crusting |
| Penoyer----- | Lime content Soil blowing Surface crusting |
| 1491: Keefa----- | Lime content Soil blowing Surface crusting |
| Penoyer----- | Lime content Soil blowing Surface crusting |

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

| Soil name and map symbol | Cropland limitations or hazards |
|--------------------------------|--|
| 1510: Koyen----- | Lime content Limited available water capacity Potential for ground-water pollution Soil blowing Surface crusting |
| 1512: Koyen----- | Lime content Limited available water capacity Potential for ground-water pollution Soil blowing Surface crusting |
| Penoyer----- | Lime content Soil blowing Surface crusting |
| 1520: Geer----- | Lime content Soil blowing Surface crusting |
| Penoyer----- | Lime content Soil blowing Surface crusting |
| 1530: Delamar----- | Limited available water capacity Restricted permeability Root restrictive layer Soil blowing Surface crusting |
| Leo----- | Lime content Limited available water capacity Potential for ground-water pollution Soil blowing |
| 1531: Delamar----- | Limited available water capacity Restricted permeability Root restrictive layer Soil blowing Surface crusting |
| Veet----- | Limited available water capacity Potential for ground-water pollution Soil blowing Surface crusting Surface rock fragments |

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

| Soil name and map symbol | Cropland limitations or hazards |
|--------------------------------|---|
| 1533: Delamar----- | Limited available water capacity Restricted permeability Root restrictive layer Soil blowing Surface crusting |
| Tybo----- | Lime content Limited available water capacity Restricted permeability Root restrictive layer Salt content Soil blowing Surface crusting |
| Koyen----- | Lime content Limited available water capacity Potential for ground-water pollution Soil blowing Surface crusting |
| 1534: Delamar----- | Limited available water capacity Restricted permeability Root restrictive layer Soil blowing Surface crusting |
| Koyen----- | Lime content Limited available water capacity Potential for ground-water pollution Soil blowing Surface crusting |
| 1535: Delamar----- | Limited available water capacity Restricted permeability Root restrictive layer Soil blowing Surface crusting |

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

| Soil name and map symbol | Cropland limitations or hazards |
|--------------------------------|--|
| 1540: Oleman----- | Excessive permeability below restriction Lime content Limited available water capacity Potential for ground-water pollution Restricted permeability Root restrictive layer Slope Soil blowing Surface crusting Surface rock fragments |
| Leo----- | Lime content Limited available water capacity Potential for ground-water pollution Soil blowing Surface rock fragments |
| 1541: Oleman----- | Excessive permeability below restriction Lime content Limited available water capacity Potential for ground-water pollution Restricted permeability Root restrictive layer Soil blowing Surface crusting |
| Cave----- | Lime content Limited available water capacity Restricted permeability Root restrictive layer Slope Soil blowing Surface crusting Surface rock fragments |
| 1542: Oleman----- | Erosion by water Excessive permeability below restriction Lime content Limited available water capacity Potential for ground-water pollution Restricted permeability Root restrictive layer Slope Soil blowing Surface crusting |

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

| Soil name and map symbol | Cropland limitations or hazards |
|--------------------------------|--|
| 1550: Pahroc----- | Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Restricted permeability Root restrictive layer Slope Soil blowing Surface crusting Surface rock fragments |
| Leo----- | Lime content Limited available water capacity Potential for ground-water pollution Soil blowing Surface rock fragments |
| 1551: Pahroc----- | Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Restricted permeability Root restrictive layer Slope Soil blowing Surface crusting Surface rock fragments |
| 1570: Kyler----- | Areas of rock outcrop Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Slope Surface crusting Surface rock fragments |
| Eaglepass----- | Areas of rock outcrop Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Slope Surface crusting Surface stones |
| Rock outcrop----- | Nonsoil material |

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

| Soil name and map symbol | Cropland limitations or hazards |
|--------------------------------|---|
| 1571: Kyler----- | Areas of rock outcrop Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Slope Surface crusting Surface rock fragments |
| Logring----- | Areas of rock outcrop Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface crusting Surface rock fragments |
| Rock outcrop----- | Nonsoil material |
| 1590: Winklo----- | Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing Surface crusting Surface rock fragments |
| Wyva----- | Depth to rock Erosion by water Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface crusting Surface rock fragments |

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

| Soil name and map symbol | Cropland limitations or hazards |
|--------------------------------|---|
| 1591: Winklo----- | Areas of rock outcrop Depth to rock Erosion by water Lime content Limited available water capacity Slope Soil blowing Surface crusting Surface rock fragments |
| Rochpah----- | Areas of rock outcrop Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface crusting Surface rock fragments |
| Rock outcrop----- | Nonsoil material |
| 1650: Handpah----- | Limited available water capacity Restricted permeability Root restrictive layer Soil blowing Surface crusting Surface rock fragments |
| Veet----- | Limited available water capacity Potential for ground-water pollution Soil blowing Surface crusting |
| 1660: Dewrust----- | Limited available water capacity Restricted permeability Root restrictive layer Soil blowing Surface crusting Surface rock fragments |
| Veet----- | 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 |
|--------------------------------|---|
| 1680: Rochpah----- | Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface crusting Surface rock fragments |
| Hollace----- | Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Restricted permeability Root restrictive layer Slope Soil blowing Surface crusting Surface rock fragments |
| Gabbvally----- | Depth to rock Erosion by water Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface crusting Surface rock fragments |
| 1681: Rochpah----- | Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface crusting Surface rock fragments |
| Veet----- | 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 |
|--------------------------------|---|
| 1683: Rochpah----- | Areas of rock outcrop Depth to rock Lime content Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface crusting Surface rock fragments |
| Rock outcrop----- | Nonsoil material |
| Leo----- | Areas of rock outcrop Lime content Limited available water capacity Potential for ground-water pollution Soil blowing Surface rock fragments |
| 1690: Jolan----- | Erosion by water Lime content Limited available water capacity Restricted permeability Root restrictive layer Salt content Sodium content Soil blowing Surface crusting |
| Geer----- | Lime content Soil blowing Surface crusting |
| 1700: Sieroclipf----- | Lime content Limited available water capacity Restricted permeability Root restrictive layer Soil blowing Surface crusting |
| Veet----- | Limited available water capacity Potential for ground-water pollution Soil blowing Surface crusting Surface rock fragments |
| 1710: Cliffdown----- | Lime content Limited available water capacity Soil blowing Surface crusting |

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

| Soil name and map symbol | Cropland limitations or hazards |
|--------------------------------|---|
| 1730: Cath----- | Potential for ground-water pollution Soil blowing Surface crusting |
| Veet----- | Limited available water capacity Potential for ground-water pollution Soil blowing Surface crusting |
| 1740: Slaw----- | Flooding Lime content Salt content Sodium content Surface crusting |
| Playas----- | Nonsoil material |
| 1741: Slaw----- | Flooding Lime content Salt content Sodium content Surface crusting |
| 1750: Chanybuck----- | Areas of rock outcrop Depth to rock Erosion by water Limited available water capacity Potential for ground-water pollution Slope Surface stones |
| Brier----- | Areas of rock outcrop Depth to rock Erosion by water Limited available water capacity Potential for ground-water pollution Slope Surface stones |
| Rock outcrop----- | Nonsoil material |

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

| Soil name and map symbol | Cropland limitations or hazards |
|--------------------------------|---|
| 1761: Wyva----- | Areas of rock outcrop Depth to rock Erosion by water Limited available water capacity Potential for ground-water pollution Slope Surface crusting Surface rock fragments |
| Rock outcrop----- | Nonsoil material |
| 1762: Wyva----- | Depth to rock Erosion by water Limited available water capacity Potential for ground-water pollution Slope Surface crusting Surface stones |
| Slidymtn----- | Depth to rock Erosion by water Limited available water capacity Potential for ground-water pollution Slope Surface rock fragments |
| 1770: Veet----- | Limited available water capacity Potential for ground-water pollution Surface crusting Surface rock fragments |
| Mosida----- | Flooding |
| 1810: Boxspring----- | Areas of rock outcrop Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Slope Surface crusting Surface rock fragments |
| Rock outcrop----- | Nonsoil material |

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

| Soil name and map symbol | Cropland limitations or hazards |
|--------------------------------|---|
| 1811: Boxspring----- | Areas of rock outcrop Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Slope Surface crusting Surface rock fragments |
| Theriot----- | Areas of rock outcrop Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Slope Surface crusting Surface stones |
| Rock outcrop----- | Nonsoil material |
| 1821: Turba----- | Depth to rock Erosion by water Limited available water capacity Slope Surface rock fragments |
| Acti----- | Depth to rock Erosion by water Limited available water capacity Potential for ground-water pollution Slope Surface rock fragments |
| 1830: Zaqua----- | Depth to rock Erosion by water Limited available water capacity Slope Surface rock fragments |
| Winklo----- | Depth to rock Erosion by water Lime content Limited available water capacity Slope Surface crusting Surface rock fragments |

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

| Soil name and map symbol | Cropland limitations or hazards |
|--------------------------------|---|
| 1831: Zaqua----- | Depth to rock Erosion by water Limited available water capacity Slope Surface rock fragments |
| Boxspring----- | Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Slope Surface crusting Surface rock fragments |
| 1832: Zaqua----- | Depth to rock Erosion by water Limited available water capacity Slope Surface rock fragments |
| Winklo----- | Depth to rock Erosion by water Lime content Limited available water capacity Slope Surface crusting Surface rock fragments |
| Kanesprings----- | Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Restricted permeability Root restrictive layer Slope Surface crusting Surface rock fragments |
| 1833: Zaqua----- | Areas of rock outcrop Depth to rock Erosion by water Limited available water capacity Slope Surface rock fragments |
| Rock outcrop----- | Nonsoil material |

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

| Soil name and map symbol | Cropland limitations or hazards |
|--------------------------------|---|
| 1850: Rapado----- | Erosion by water Lime content Limited available water capacity Restricted permeability Root restrictive layer Slope Surface crusting Surface rock fragments |
| Oleman----- | Excessive permeability below restriction Lime content Limited available water capacity Potential for ground-water pollution Restricted permeability Root restrictive layer Surface crusting |
| 1851: Rapado----- | Lime content Limited available water capacity Restricted permeability Root restrictive layer Surface crusting Surface rock fragments |
| Veet----- | Limited available water capacity Potential for ground-water pollution Surface crusting Surface rock fragments |
| 1870: Faleria----- | Erosion by water Potential for ground-water pollution Slope |
| Laross----- | Erosion by water Potential for ground-water pollution Slope Surface rock fragments |

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

| Soil name and map symbol | Cropland limitations or hazards |
|--------------------------------|---|
| 1880: Tejabe----- | Areas of rock outcrop Depth to rock Erosion by water Limited available water capacity Potential for ground-water pollution Slope Surface stones |
| Pintwater----- | Areas of rock outcrop Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Slope Surface crusting Surface stones |
| Rock outcrop----- | Nonsoil material |
| 1890: Welring----- | Areas of rock outcrop Depth to rock Lime content Limited available water capacity Potential for ground-water pollution Slope Surface rock fragments |
| Rock outcrop----- | Nonsoil material |
| 1900: Glendale----- | Flooding Lime content Limited available water capacity Salt content Sodium content Surface crusting |
| Bluepoint----- | Erosion by water Limited available water capacity Potential for ground-water pollution Slope |
| 1910: Land----- | Flooding Lime content Potential for ground-water pollution Salt content Sodium content Surface crusting Water table |

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

| Soil name and map symbol | Cropland limitations or hazards |
|--------------------------------|---|
| 1920: Motoqua----- | Areas of rock outcrop Depth to rock Limited available water capacity Potential for ground-water pollution Slope Surface rock fragments |
| Rock outcrop----- | Nonsoil material |
| 1921: Motoqua----- | Depth to rock Erosion by water Limited available water capacity Potential for ground-water pollution Slope Surface rock fragments |
| Thunderbird----- | Depth to rock Erosion by water Limited available water capacity Potential for ground-water pollution Slope Surface rock fragments |
| 1941: Slidymtn----- | Depth to rock Erosion by water Limited available water capacity Potential for ground-water pollution Slope Surface rock fragments |
| Capsus----- | Depth to rock Erosion by water Limited available water capacity Potential for ground-water pollution Slope Surface rock fragments |

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

| Soil name and map symbol | Cropland limitations or hazards |
|--------------------------------|---|
| 1950: Ursine----- | Erosion by water Lime content Limited available water capacity Root restrictive layer Slope Surface crusting |
| Lomoine----- | Depth to rock Erosion by water Limited available water capacity Potential for ground-water pollution Slope Surface rock fragments |
| Ursine----- | Erosion by water Lime content Limited available water capacity Root restrictive layer Slope Surface crusting Surface rock fragments |
| 1951: Ursine----- | Erosion by water Lime content Limited available water capacity Root restrictive layer Slope Surface crusting Surface rock fragments |
| Ursine----- | Erosion by water Lime content Limited available water capacity Root restrictive layer Slope Surface crusting Surface rock fragments |

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

| Soil name and map symbol | Cropland limitations or hazards |
|--------------------------------|---|
| 1952: Ursine----- | Erosion by water Lime content Limited available water capacity Root restrictive layer Slope Surface crusting Surface rock fragments |
| Ursine----- | Erosion by water Lime content Limited available water capacity Root restrictive layer Slope Surface crusting Surface rock fragments |
| Geer----- | Lime content Surface crusting |
| 1960: Crystal Springs----- | Lime content Limited available water capacity Restricted permeability Root restrictive layer Surface crusting |
| 1980: Longjim----- | Lime content Limited available water capacity Restricted permeability Root restrictive layer Surface crusting Surface rock fragments |
| Arizo----- | Flooding Lime content Limited available water capacity Potential for ground-water pollution Surface crusting Surface rock fragments |
| 1990: Gabbvally----- | Areas of rock outcrop Depth to rock Erosion by water Limited available water capacity Potential for ground-water pollution Slope Surface crusting Surface stones |
| Rock outcrop----- | Nonsoil material |

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

| Soil name and map symbol | Cropland limitations or hazards |
|--------------------------------|---|
| 1991: Gabbvally----- | Depth to rock Erosion by water Limited available water capacity Potential for ground-water pollution Slope Surface crusting Surface stones |
| Hollace----- | Depth to rock Erosion by water Lime content Limited available water capacity Potential for ground-water pollution Restricted permeability Root restrictive layer Slope Surface crusting Surface rock fragments |
| 1992: Gabbvally----- | Areas of rock outcrop Depth to rock Erosion by water Limited available water capacity Potential for ground-water pollution Slope Surface crusting Surface stones |
| Brier----- | Areas of rock outcrop Depth to rock Erosion by water Limited available water capacity Potential for ground-water pollution Slope Surface stones |
| Rock outcrop----- | Nonsoil material |
| 2000: Playas----- | Nonsoil material |

TABLE 5.--CROPLAND LIMITATIONS AND HAZARDS--Continued

| Soil name and map symbol | Cropland limitations or hazards |
|--------------------------------|---|
| 2010: Stewval----- | Depth to rock Erosion by water Limited available water capacity Potential for ground-water pollution Slope Surface rock fragments |
| Gabbvally----- | Depth to rock Erosion by water Limited available water capacity Potential for ground-water pollution Slope Surface crusting Surface stones |
| 2011: Stewval----- | Areas of rock outcrop Depth to rock Erosion by water Limited available water capacity Potential for ground-water pollution Slope Surface rock fragments |
| Lomoine----- | 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 |

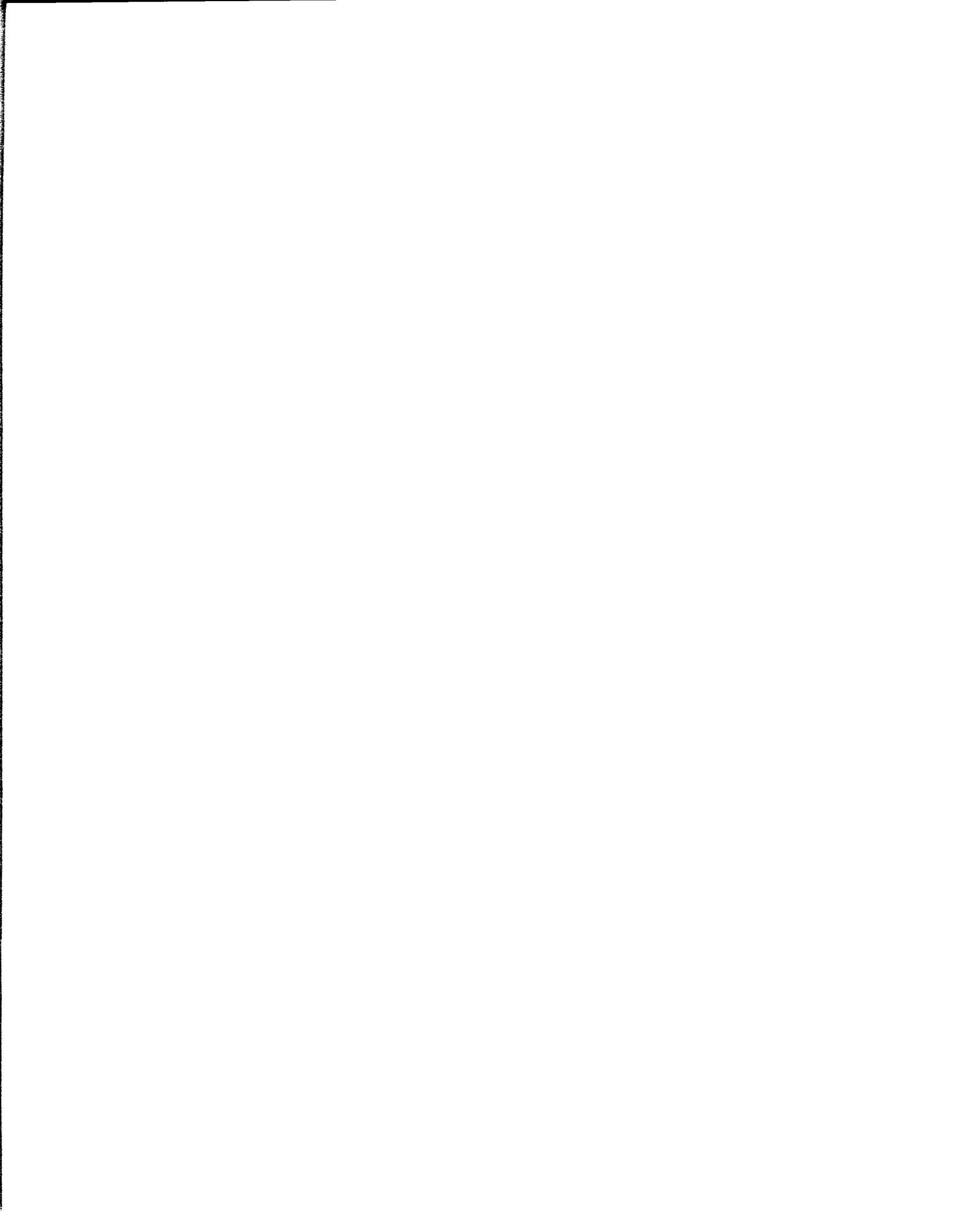


TABLE 6.--LAND CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE

(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 | Pasture |
|-----------------------------|--------------------|-------------|---------|
| | | Tons | AUM |
| 1030: | | | |
| Arizo----- | | --- | --- |
| Arizo----- | | --- | --- |
| Bluepoint----- | 3S | 7.0 | 6.0 |
| 1102: | | | |
| Geta----- | 2S | 7.2 | --- |
| Bluepoint----- | 3S | 7.0 | 6.0 |
| Arizo----- | | --- | --- |
| 1230: | | | |
| Pahrnagat----- | 2W | 6.0 | --- |
| Pahrnagat----- | 6W | --- | 2.0 |
| 1900: | | | |
| Glendale----- | | --- | --- |
| Bluepoint----- | 4S | 6.0 | 6.0 |

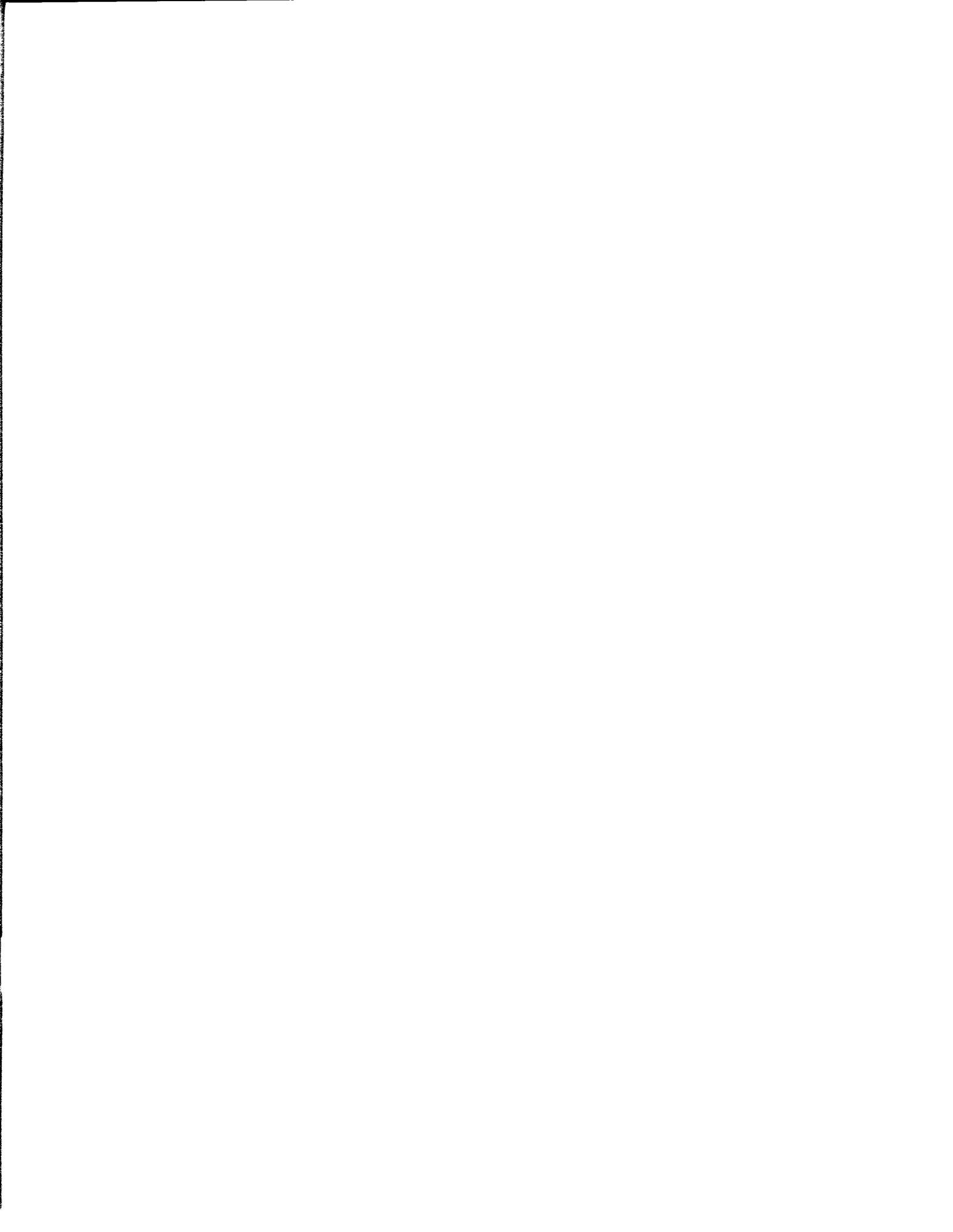


Table 7.--SUITABILITY FOR RANGELAND SEEDING

| Soil name and map symbol | Limitation rating | Restrictive features |
|-----------------------------|--------------------|-----------------------------------|
| 1000: | | |
| Weiser----- | Poorly suited----- | Too arid, small stones. |
| Tencee----- | Poorly suited----- | Too arid, droughty, small stones. |
| Arizo----- | Poorly suited----- | Too arid, droughty, too sandy. |
| 1001: | | |
| Weiser----- | Poorly suited----- | Too arid, droughty, small stones. |
| Tencee----- | Poorly suited----- | Too arid, droughty, small stones. |
| 1010: | | |
| Tencee----- | Poorly suited----- | Too arid, droughty, small stones. |
| Weiser----- | Poorly suited----- | Too arid, small stones. |
| 1016: | | |
| Tencee----- | Poorly suited----- | Too arid, droughty, small stones. |
| Tencee----- | Poorly suited----- | Too arid, droughty, small stones. |
| 1017: | | |
| Tencee----- | Poorly suited----- | Too arid, droughty, small stones. |
| Bard----- | Poorly suited----- | Too arid, droughty. |
| Arizo----- | Poorly suited----- | Too arid, droughty, too sandy. |
| 1020: | | |
| Kurstan----- | Poorly suited----- | Too arid. |
| Tencee----- | Poorly suited----- | Too arid, droughty, small stones. |
| 1021: | | |
| Kurstan----- | Poorly suited----- | Too arid. |
| Knob Hill----- | Poorly suited----- | Too arid, droughty, too sandy. |
| 1030: | | |
| Arizo----- | Poorly suited----- | Too arid, droughty, too sandy. |
| Arizo----- | Poorly suited----- | Too arid, droughty, too sandy. |
| Bluepoint----- | Poorly suited----- | Too arid, too sandy, excess salt. |

Table 7.--SUITABILITY FOR RANGELAND SEEDING--Continued

| Soil name and map symbol | Limitation rating | Restrictive features |
|-----------------------------|--------------------|-----------------------------------|
| 1031: | | |
| Arizo----- | Poorly suited----- | Too arid, droughty, too sandy. |
| Arizo----- | Poorly suited----- | Too arid, droughty, too sandy. |
| 1040: | | |
| Akela----- | Poorly suited----- | Too arid, droughty, small stones. |
| Rock Outcrop----- | Not rated----- | |
| 1041: | | |
| Akela----- | Poorly suited----- | Too arid, droughty, small stones. |
| Rochpah----- | Poorly suited----- | Too arid, droughty, small stones. |
| Rock Outcrop----- | Not rated----- | |
| 1052: | | |
| Knob Hill----- | Poorly suited----- | Too arid, droughty, too sandy. |
| Arizo----- | Poorly suited----- | Too arid, droughty, too sandy. |
| 1060: | | |
| St. Thomas----- | Poorly suited----- | Too arid, droughty, small stones. |
| Chinkle----- | Poorly suited----- | Too arid, droughty. |
| Rock Outcrop----- | Not rated----- | |
| 1061: | | |
| St. Thomas----- | Poorly suited----- | Too arid, droughty, small stones. |
| Zeheme----- | Poorly suited----- | Too arid, droughty, small stones. |
| Rock Outcrop----- | Not rated----- | |
| 1062: | | |
| Zeheme----- | Poorly suited----- | Too arid, droughty, small stones. |
| Chinkle----- | Poorly suited----- | Too arid, droughty. |
| Shankba----- | Poorly suited----- | Too arid, droughty, small stones. |

Table 7.--SUITABILITY FOR RANGELAND SEEDING--Continued

| Soil name and map symbol | Limitation rating | Restrictive features |
|-----------------------------|--------------------|-----------------------------------|
| 1063: | | |
| Zeheme----- | Poorly suited----- | Too arid, droughty, small stones. |
| Kanesprings----- | Poorly suited----- | Too arid. |
| Rock Outcrop----- | Not rated----- | |
| 1064: | | |
| Zeheme----- | Poorly suited----- | Too arid, droughty, small stones. |
| Kanackey----- | Poorly suited----- | Too arid, droughty, small stones. |
| Rock Outcrop----- | Not rated----- | |
| 1065: | | |
| Zeheme----- | Poorly suited----- | Too arid, droughty, small stones. |
| Rock Outcrop----- | Not rated----- | |
| 1066: | | |
| Zeheme----- | Poorly suited----- | Too arid, droughty, small stones. |
| Boxspring----- | Poorly suited----- | Too arid, droughty, small stones. |
| Rock Outcrop----- | Not rated----- | |
| 1070: | | |
| Bellehelen----- | Poorly suited----- | Droughty, small stones. |
| Brier----- | Poorly suited----- | Droughty, small stones. |
| 1080: | | |
| Kaspal----- | Poorly suited----- | Too arid, rooting depth. |
| Canutio----- | Poorly suited----- | Too arid, droughty, too sandy. |
| 1090: | | |
| Logring----- | Poorly suited----- | Too arid, droughty, small stones. |
| Rock Outcrop----- | Not rated----- | |
| 1091: | | |
| Logring----- | Poorly suited----- | Too arid, droughty, small stones. |
| Eaglepass----- | Poorly suited----- | Too arid, droughty, small stones. |
| Rock Outcrop----- | Not rated----- | |

Table 7.--SUITABILITY FOR RANGELAND SEEDING--Continued

| Soil name and map symbol | Limitation rating | Restrictive features |
|-----------------------------|--------------------|------------------------------------|
| 1100: Geta----- | Poorly suited----- | Too arid. |
| Geta----- | Poorly suited----- | Too arid, too sandy. |
| Arizo----- | Poorly suited----- | Too arid, droughty, too sandy. |
| 1101: Geta----- | Poorly suited----- | Too arid. |
| 1102: Geta----- | Poorly suited----- | Too arid. |
| Bluepoint----- | Poorly suited----- | Too arid, too sandy, excess salt. |
| Arizo----- | Poorly suited----- | Too arid, droughty, too sandy. |
| 1110: Kanesprings----- | Poorly suited----- | Too arid. |
| Kanackey----- | Poorly suited----- | Too arid, droughty, small stones. |
| Rock Outcrop----- | Not rated----- | |
| 1113: Kanesprings----- | Poorly suited----- | Too arid. |
| Gabbvally----- | Poorly suited----- | Too arid, droughty, small stones. |
| 1160: Silent----- | Poorly suited----- | Too arid, droughty, rooting depth. |
| Koyen----- | Poorly suited----- | Too arid, too sandy. |
| 1170: Alko----- | Poorly suited----- | Too arid, droughty. |
| Alko----- | Poorly suited----- | Too arid, droughty. |
| Arizo----- | Poorly suited----- | Too arid, droughty, too sandy. |
| 1172: Alko----- | Poorly suited----- | Too arid, droughty, soil blowing. |
| Geta----- | Poorly suited----- | Too arid. |

Table 7.--SUITABILITY FOR RANGELAND SEEDING--Continued

| Soil name and map symbol | Limitation rating | Restrictive features |
|-----------------------------|--------------------|---------------------------------------|
| 1180: | | |
| Acoma----- | Poorly suited----- | Rooting depth. |
| Decan----- | Suited----- | Too arid, droughty, too clayey. |
| Cath----- | Poorly suited----- | Rooting depth. |
| 1190: | | |
| Minu----- | Poorly suited----- | Droughty, rooting depth. |
| Shroe----- | Poorly suited----- | Rooting depth. |
| Acoma----- | Poorly suited----- | Rooting depth. |
| 1210: | | |
| Brier----- | Poorly suited----- | Droughty, small stones. |
| Accma----- | Poorly suited----- | Rooting depth. |
| Bellehelen----- | Poorly suited----- | Droughty, small stones. |
| 1211: | | |
| Brier----- | Poorly suited----- | Droughty, small stones. |
| Rock Outcrop----- | Not rated----- | |
| 1220: | | |
| Lien----- | Poorly suited----- | Too arid, droughty, small stones. |
| Veet----- | Poorly suited----- | Too arid, small stones. |
| 1230: | | |
| Pahranagat----- | Poorly suited----- | Too arid, excess salt. |
| Pahranagat----- | Poorly suited----- | Too arid, excess salt, excess sodium. |
| 1250: | | |
| Patter----- | Suited----- | Too arid, excess salt. |
| Heist----- | Suited----- | Too arid, excess salt. |
| 1260: | | |
| Hollace----- | Poorly suited----- | Too arid, droughty, small stones. |
| Gabbvally----- | Poorly suited----- | Too arid, droughty, small stones. |

Table 7.--SUITABILITY FOR RANGELAND SEEDING--Continued

| Soil name and map symbol | Limitation rating | Restrictive features |
|-----------------------------|--------------------|--|
| 1261: | | |
| Hollace----- | Poorly suited----- | Too arid, droughty, small stones. |
| Rochpah----- | Poorly suited----- | Too arid, droughty, small stones. |
| Wyva----- | Poorly suited----- | Droughty, large stones, rooting depth. |
| 1262: | | |
| Hollace----- | Poorly suited----- | Too arid, droughty, small stones. |
| Winklo----- | Poorly suited----- | Too arid, rooting depth. |
| Wyva----- | Poorly suited----- | Droughty, large stones, rooting depth. |
| 1270: | | |
| Laross----- | Poorly suited----- | Too arid. |
| Rock Outcrop----- | Not rated----- | |
| 1300: | | |
| Mormount----- | Poorly suited----- | Too arid, droughty. |
| Arizo----- | Poorly suited----- | Too arid, droughty, too sandy. |
| 1302: | | |
| Mormount----- | Poorly suited----- | Too arid, droughty. |
| 1303: | | |
| Mormount----- | Poorly suited----- | Too arid, droughty. |
| Canutio----- | Poorly suited----- | Too arid, droughty, too sandy. |
| 1340: | | |
| Aymate----- | Poorly suited----- | Too arid. |
| Canutio----- | Poorly suited----- | Too arid, too sandy, small stones. |
| 1341: | | |
| Aymate----- | Poorly suited----- | Too arid. |
| 1342: | | |
| Aymate----- | Poorly suited----- | Too arid. |
| Mormount----- | Poorly suited----- | Too arid, droughty. |
| Arizo----- | Poorly suited----- | Too arid, droughty, too sandy. |

Table 7.--SUITABILITY FOR RANGELAND SEEDING--Continued

| Soil name and map symbol | Limitation rating | Restrictive features |
|--------------------------|--------------------|------------------------------------|
| 1350: | | |
| Bard----- | Poorly suited----- | Too arid, droughty. |
| 1360: | | |
| Canutio----- | Poorly suited----- | Too arid, too sandy, small stones. |
| Arizo----- | Poorly suited----- | Too arid, droughty, too sandy. |
| 1370: | | |
| Mormon Mesa----- | Poorly suited----- | Too arid, droughty. |
| Mormon Mesa----- | Poorly suited----- | Too arid, droughty. |
| 1371: | | |
| Mormon Mesa----- | Poorly suited----- | Too arid, droughty. |
| Naye----- | Poorly suited----- | Too arid, droughty, small stones. |
| Dalian----- | Poorly suited----- | Too arid, droughty, small stones. |
| 1372: | | |
| Mormon Mesa----- | Poorly suited----- | Too arid, droughty. |
| Tonopah----- | Poorly suited----- | Too arid, droughty, small stones. |
| Arada----- | Poorly suited----- | Too arid, droughty, too sandy. |
| 1380: | | |
| Bracken----- | Poorly suited----- | Too arid, droughty. |
| 1390: | | |
| Shankba----- | Poorly suited----- | Too arid, droughty, small stones. |
| Chinkle----- | Poorly suited----- | Too arid, droughty. |
| Kanackey----- | Poorly suited----- | Too arid, droughty, small stones. |
| 1400: | | |
| Cave----- | Poorly suited----- | Too arid, droughty. |
| Canutio----- | Poorly suited----- | Too arid, droughty, too sandy. |
| 1401: | | |
| Cave----- | Poorly suited----- | Too arid, droughty. |
| Arizo----- | Poorly suited----- | Too arid, droughty, too sandy. |

Table 7.--SUITABILITY FOR RANGELAND SEEDING--Continued

| Soil name and map symbol | Limitation rating | Restrictive features |
|-----------------------------|--------------------|---------------------------------------|
| 1403: | | |
| Cave----- | Poorly suited----- | Too arid, droughty. |
| Tencee----- | Poorly suited----- | Too arid, droughty, small stones. |
| 1404: | | |
| Cave----- | Poorly suited----- | Too arid, droughty. |
| Mormount----- | Poorly suited----- | Too arid, droughty. |
| Canutio----- | Poorly suited----- | Too arid, droughty, too sandy. |
| 1405: | | |
| Cave----- | Poorly suited----- | Too arid, droughty. |
| Zeheme----- | Poorly suited----- | Too arid, droughty, small stones. |
| 1406: | | |
| Cave----- | Poorly suited----- | Too arid, droughty. |
| 1420: | | |
| Kanackey----- | Poorly suited----- | Too arid, droughty, small stones. |
| Rock Outcrop----- | Not rated----- | |
| 1430: | | |
| Typic Torriorthents----- | Poorly suited----- | Too arid, excess salt, excess sodium. |
| Badland----- | Poorly suited----- | Too arid, droughty, depth to rock. |
| 1460: | | |
| Pintwater----- | Poorly suited----- | Too arid, droughty, small stones. |
| Rochpah----- | Poorly suited----- | Too arid, droughty, small stones. |
| 1470: | | |
| Tybo----- | Poorly suited----- | Too arid, droughty, excess salt. |
| Keefa----- | Poorly suited----- | Too arid. |
| Koyen----- | Poorly suited----- | Too arid, too sandy. |
| 1471: | | |
| Tybo----- | Poorly suited----- | Too arid, droughty, excess salt. |
| Koyen----- | Poorly suited----- | Too arid, too sandy. |

Table 7.--SUITABILITY FOR RANGELAND SEEDING--Continued

| Soil name and map symbol | Limitation rating | Restrictive features |
|-----------------------------|--------------------|-----------------------------------|
| 1472: | | |
| Tybo----- | Poorly suited----- | Too arid, droughty, excess salt. |
| Geer----- | Poorly suited----- | Too arid. |
| 1473: | | |
| Tybo----- | Poorly suited----- | Too arid, droughty, excess salt. |
| Leo----- | Poorly suited----- | Too arid, droughty, small stones. |
| 1474: | | |
| Tybo----- | Poorly suited----- | Too arid, droughty, excess salt. |
| Delamar----- | Poorly suited----- | Too arid, rooting depth. |
| 1490: | | |
| Keefa----- | Poorly suited----- | Too arid. |
| Penoyer----- | Poorly suited----- | Too arid. |
| 1491: | | |
| Keefa----- | Poorly suited----- | Too arid. |
| Penoyer----- | Poorly suited----- | Too arid. |
| 1510: | | |
| Koyen----- | Poorly suited----- | Too arid, too sandy. |
| 1512: | | |
| Koyen----- | Poorly suited----- | Too arid, too sandy. |
| Penoyer----- | Poorly suited----- | Too arid. |
| 1520: | | |
| Geer----- | Poorly suited----- | Too arid. |
| Penoyer----- | Poorly suited----- | Too arid. |
| 1530: | | |
| Delamar----- | Poorly suited----- | Too arid, rooting depth. |
| Leo----- | Poorly suited----- | Too arid, droughty. |
| 1531: | | |
| Delamar----- | Poorly suited----- | Too arid, rooting depth. |
| Veet----- | Poorly suited----- | Too arid, droughty, small stones. |

Table 7.--SUITABILITY FOR RANGELAND SEEDING--Continued

| Soil name and map symbol | Limitation rating | Restrictive features |
|-----------------------------|--------------------|-----------------------------------|
| 1533: Delamar----- | Poorly suited----- | Too arid, rooting depth. |
| Tybo----- | Poorly suited----- | Too arid, droughty, excess salt. |
| Koyen----- | Poorly suited----- | Too arid, too sandy. |
| 1534: Delamar----- | Poorly suited----- | Too arid, rooting depth. |
| Koyen----- | Poorly suited----- | Too arid, too sandy. |
| 1535: Delamar----- | Poorly suited----- | Too arid, rooting depth. |
| 1540: Oleman----- | Poorly suited----- | Too arid, droughty, small stones. |
| Leo----- | Poorly suited----- | Too arid, droughty, small stones. |
| 1541: Oleman----- | Poorly suited----- | Too arid, droughty, small stones. |
| Cave----- | Poorly suited----- | Too arid, droughty. |
| 1542: Oleman----- | Poorly suited----- | Too arid, droughty, small stones. |
| 1550: Pahroc----- | Poorly suited----- | Too arid, droughty, small stones. |
| Leo----- | Poorly suited----- | Too arid, droughty, small stones. |
| 1551: Pahroc----- | Poorly suited----- | Too arid, droughty, small stones. |
| 1570: Kylar----- | Poorly suited----- | Too arid, droughty, small stones. |
| Eaglepass----- | Poorly suited----- | Too arid, droughty, small stones. |
| Rock Outcrop----- | Not rated----- | |

Table 7.--SUITABILITY FOR RANGELAND SEEDING--Continued

| Soil name and map symbol | Limitation rating | Restrictive features |
|-----------------------------|--------------------|--|
| 1571: | | |
| Kyler----- | Poorly suited----- | Too arid, droughty, small stones. |
| Logring----- | Poorly suited----- | Too arid, droughty, small stones. |
| Rock Outcrop----- | Not rated----- | |
| 1590: | | |
| Winklo----- | Poorly suited----- | Too arid. |
| Wyva----- | Poorly suited----- | Droughty, large stones, rooting depth. |
| 1591: | | |
| Winklo----- | Poorly suited----- | Too arid, rooting depth. |
| Rochpah----- | Poorly suited----- | Too arid, droughty, small stones. |
| Rock Outcrop----- | Not rated----- | |
| 1650: | | |
| Handpah----- | Poorly suited----- | Too arid, rooting depth. |
| Veet----- | Poorly suited----- | Too arid, small stones. |
| 1660: | | |
| Dewrust----- | Poorly suited----- | Small stones, rooting depth. |
| Veet----- | Poorly suited----- | Too arid, small stones. |
| 1680: | | |
| Rochpah----- | Poorly suited----- | Too arid, droughty, small stones. |
| Hollace----- | Poorly suited----- | Too arid, droughty, small stones. |
| Gabbvally----- | Poorly suited----- | Too arid, droughty, small stones. |
| 1681: | | |
| Rochpah----- | Poorly suited----- | Too arid, droughty, small stones. |
| Veet----- | Poorly suited----- | Too arid, small stones. |
| 1683: | | |
| Rochpah----- | Poorly suited----- | Too arid, droughty, small stones. |
| Rock Outcrop----- | Not rated----- | |
| Leo----- | Poorly suited----- | Too arid, droughty, small stones. |

Table 7.--SUITABILITY FOR RANGELAND SEEDING--Continued

| Soil name and map symbol | Limitation rating | Restrictive features |
|-----------------------------|--------------------|--|
| 1690: | | |
| Jolan----- | Poorly suited----- | Too arid, excess salt, excess sodium. |
| Geer----- | Poorly suited----- | Too arid. |
| 1700: | | |
| Sieroclipf----- | Poorly suited----- | Too arid. |
| Veet----- | Poorly suited----- | Too arid, droughty, small stones. |
| 1710: | | |
| Cliffdown----- | Poorly suited----- | Too arid, droughty, excess salt. |
| 1730: | | |
| Cath----- | Poorly suited----- | Rooting depth. |
| Veet----- | Poorly suited----- | Too arid, small stones. |
| 1740: | | |
| Slaw----- | Poorly suited----- | Too arid, rooting depth, excess salt. |
| Playas----- | Poorly suited----- | Too arid, droughty, rooting depth. |
| 1741: | | |
| Slaw----- | Poorly suited----- | Too arid, rooting depth, excess salt. |
| 1750: | | |
| Chanybuck----- | Poorly suited----- | Droughty, large stones, depth to rock. |
| Brier----- | Poorly suited----- | Droughty, small stones. |
| Rock Outcrop----- | Not rated----- | |
| 1761: | | |
| Wyva----- | Poorly suited----- | Droughty, large stones, rooting depth. |
| Rock Outcrop----- | Not rated----- | |
| 1762: | | |
| Wyva----- | Poorly suited----- | Droughty, large stones, rooting depth. |
| Slidytn----- | Poorly suited----- | Droughty, small stones, rooting depth. |
| 1770: | | |
| Veet----- | Poorly suited----- | Too arid, droughty, small stones. |
| Mosida----- | Suited----- | Too arid. |

Table 7.--SUITABILITY FOR RANGELAND SEEDING--Continued

| Soil name and map symbol | Limitation rating | Restrictive features |
|-----------------------------|--------------------|--|
| 1810: Boxspring----- | Poorly suited----- | Too arid, droughty, small stones. |
| Rock Outcrop----- | Not rated----- | |
| 1811: Boxspring----- | Poorly suited----- | Too arid, droughty, small stones. |
| Theriot----- | Poorly suited----- | Too arid, droughty, small stones. |
| Rock Outcrop----- | Not rated----- | |
| 1821: Turba----- | Poorly suited----- | Too arid, droughty, small stones. |
| Acti----- | Poorly suited----- | Droughty, small stones, rooting depth. |
| 1830: Zaqua----- | Poorly suited----- | Too arid, droughty, small stones. |
| Winklo----- | Poorly suited----- | Too arid, rooting depth. |
| 1831: Zaqua----- | Poorly suited----- | Too arid, droughty, small stones. |
| Boxspring----- | Poorly suited----- | Too arid, droughty, small stones. |
| 1832: Zaqua----- | Poorly suited----- | Too arid, droughty, small stones. |
| Winklo----- | Poorly suited----- | Too arid, rooting depth. |
| Kanesprings----- | Poorly suited----- | Too arid. |
| 1833: Zaqua----- | Poorly suited----- | Too arid, droughty, small stones. |
| Rock Outcrop----- | Not rated----- | |
| 1850: Rapado----- | Poorly suited----- | Too arid, small stones, rooting depth. |
| Oleman----- | Poorly suited----- | Too arid, droughty, small stones. |
| 1851: Rapado----- | Poorly suited----- | Too arid, small stones, rooting depth. |
| Veet----- | Poorly suited----- | Too arid, droughty, small stones. |

Table 7.--SUITABILITY FOR RANGELAND SEEDING--Continued

| Soil name and map symbol | Limitation rating | Restrictive features |
|-----------------------------|--------------------|---------------------------------------|
| 1870: | | |
| Faleria----- | Poorly suited----- | Too arid. |
| Laross----- | Poorly suited----- | Too arid. |
| 1880: | | |
| Tejabe----- | Poorly suited----- | Too arid, droughty, small stones. |
| Pintwater----- | Poorly suited----- | Too arid, droughty, small stones. |
| Rock Outcrop----- | Not rated----- | |
| 1890: | | |
| Welring----- | Poorly suited----- | Too arid, droughty, small stones. |
| Rock Outcrop----- | Not rated----- | |
| 1900: | | |
| Glendale----- | Poorly suited----- | Too arid, droughty, excess salt. |
| Bluepoint----- | Poorly suited----- | Too arid, too sandy, excess salt. |
| 1910: | | |
| Land----- | Poorly suited----- | Too arid, excess salt, excess sodium. |
| 1920: | | |
| Motoqua----- | Poorly suited----- | Too arid, droughty, small stones. |
| Rock Outcrop----- | Not rated----- | |
| 1921: | | |
| Motoqua----- | Poorly suited----- | Too arid, droughty, small stones. |
| Thunderbird----- | Poorly suited----- | Too arid, rooting depth. |
| 1941: | | |
| Slidytn----- | Poorly suited----- | Too arid, droughty, small stones. |
| Capsus----- | Poorly suited----- | Too arid, droughty, rooting depth. |
| 1950: | | |
| Ursine----- | Poorly suited----- | Too arid, droughty. |
| Lomoine----- | Poorly suited----- | Too arid, droughty, small stones. |
| Ursine----- | Poorly suited----- | Too arid, droughty. |

Table 7.--SUITABILITY FOR RANGELAND SEEDING--Continued

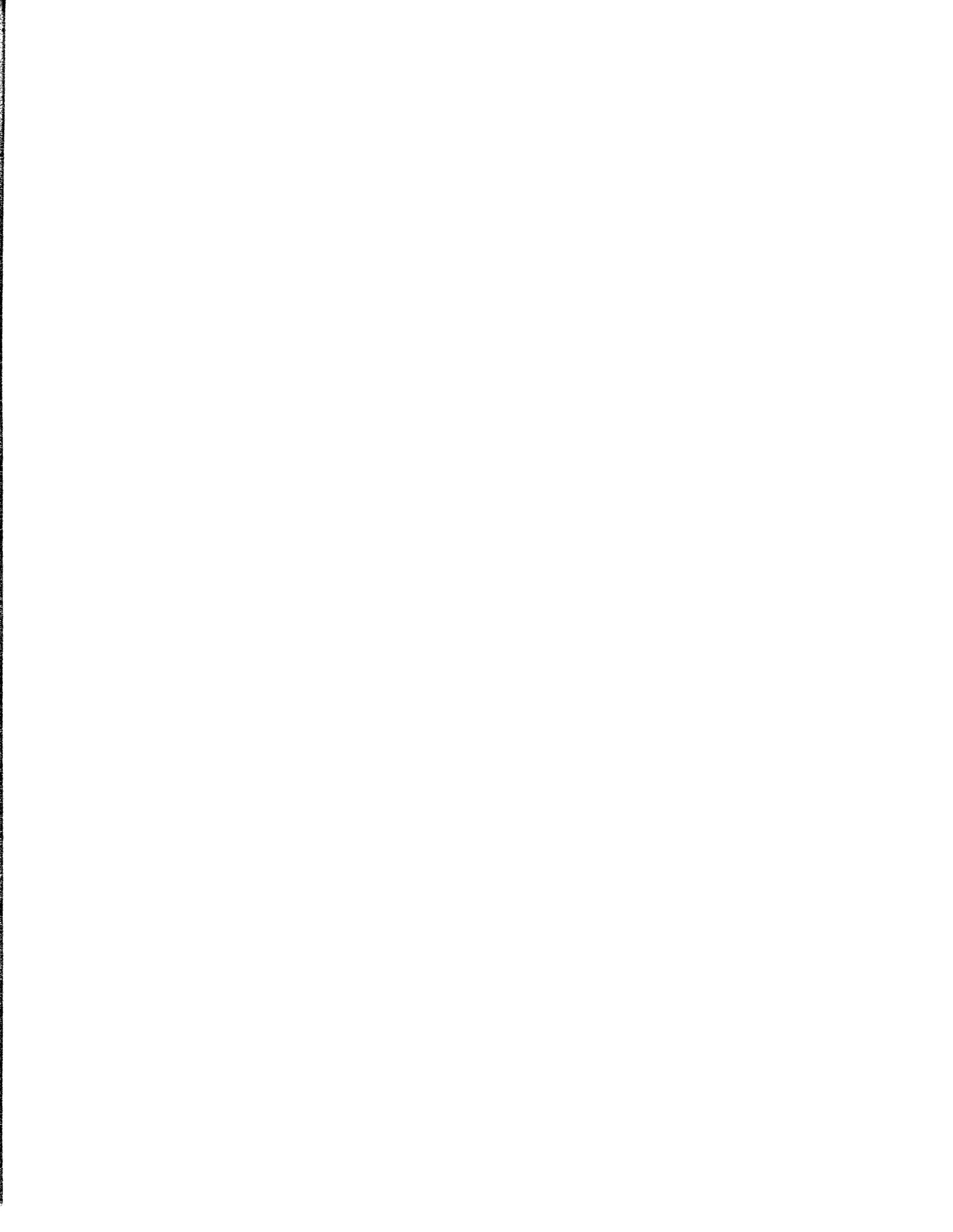
| Soil name and map symbol | Limitation rating | Restrictive features |
|-----------------------------|--------------------|------------------------------------|
| 1951: | | |
| Ursine----- | Poorly suited----- | Too arid, droughty. |
| Ursine----- | Poorly suited----- | Too arid, droughty. |
| 1952: | | |
| Ursine----- | Poorly suited----- | Too arid, droughty. |
| Ursine----- | Poorly suited----- | Too arid, droughty. |
| Geer----- | Poorly suited----- | Too arid. |
| 1960: | | |
| Crystal Springs----- | Poorly suited----- | Too arid, droughty. |
| 1980: | | |
| Longjim----- | Poorly suited----- | Too arid, droughty, small stones. |
| Arizo----- | Poorly suited----- | Too arid, droughty, too sandy. |
| 1990: | | |
| Gabbvally----- | Poorly suited----- | Too arid, droughty, small stones. |
| Rock Outcrop----- | Not rated----- | |
| 1991: | | |
| Gabbvally----- | Poorly suited----- | Too arid, droughty, small stones. |
| Hollace----- | Poorly suited----- | Too arid, droughty, small stones. |
| 1992: | | |
| Gabbvally----- | Poorly suited----- | Too arid, droughty, small stones. |
| Brier----- | Poorly suited----- | Droughty, small stones. |
| Rock Outcrop----- | Not rated----- | |
| 2000: | | |
| Playas----- | Poorly suited----- | Too arid, droughty, rooting depth. |
| 2010: | | |
| Stewval----- | Poorly suited----- | Too arid, droughty, small stones. |
| Gabbvally----- | Poorly suited----- | Too arid, droughty, small stones. |

Table 7.--SUITABILITY FOR RANGELAND SEEDING--Continued

| Soil name and map symbol | Limitation rating | Restrictive features |
|-----------------------------|--------------------|-----------------------------------|
| 2011: | | |
| Stewval----- | Poorly suited----- | Too arid, droughty, small stones. |
| Lomaine----- | Poorly suited----- | Too arid, droughty, small stones. |
| Rock Outcrop----- | Not rated----- | |

TABLE 8.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

| Map symbol and soil name | Ordi- nation symbol | Management concerns | | | | | Potential productivity | | | Suggested trees to plant |
|--|---------------------------|----------------------------|-----------------------------------|----------------------------------|----------------------------|----------------------------------|--|----------------------------------|---|--|
| | | Erosion hazard | Equip- ment Limita- tion | Seedling mortal- ity | Wind- throw hazard | Plant competi- tion | Common trees | Site index | Volume of wood fiber m3/ha | |
| 1220: Lien----- Veet. | 0D | Slight | Moderate | Moderate | Severe | Severe | Utah juniper----- Singleleaf pinyon--- | 40 40 | --- --- | |
| 1270: Laross----- Rock Outcrop. | 1R | Severe | Severe | Slight | Slight | | Singleleaf pinyon--- | 115 | 1 | |
| 1571: Kyler. Logring----- Rock Outcrop. | 0R | Severe | Severe | Severe | Slight | Moderate | Utah juniper----- Singleleaf pinyon--- | 45 45 | --- --- | |
| 1750: Chanybuck----- Brier----- Rock Outcrop. | 3R 0R | Severe Severe | Severe Severe | Severe Severe | Moderate Moderate | Severe Severe | White fir----- Singleleaf pinyon--- Utah juniper----- Singleleaf pinyon--- | 28 40 40 40 | 3 --- --- --- | |
| 1762: Wyva. Slidytn----- 1821: Turba----- Acti----- | 0R 0R 0R | Severe Severe Severe | Severe Severe Severe | Moderate Moderate Moderate | Slight Slight Slight | Moderate Moderate Moderate | Utah juniper----- Singleleaf pinyon--- Utah juniper----- Singleleaf pinyon--- | 45 45 30 30 30 30 | --- --- --- --- --- --- | Singleleaf pinyon Singleleaf pinyon |
| 1870: Faleria----- Laross----- | 3R 1R | Severe Severe | Severe Severe | Slight Slight | Slight Slight | Moderate | Ponderosa pine----- Singleleaf pinyon--- | 70 115 | 3 1 | |
| 1890: Welring----- Rock Outcrop. | 0R | Moderate | Severe | Moderate | Slight | Slight | Utah juniper----- Singleleaf pinyon--- | 40 40 | --- --- | |
| 1920: Motoqua----- Rock Outcrop. | 0R | Moderate | Severe | Moderate | Severe | Severe | Utah juniper----- Singleleaf pinyon--- | 45 45 | --- --- | |



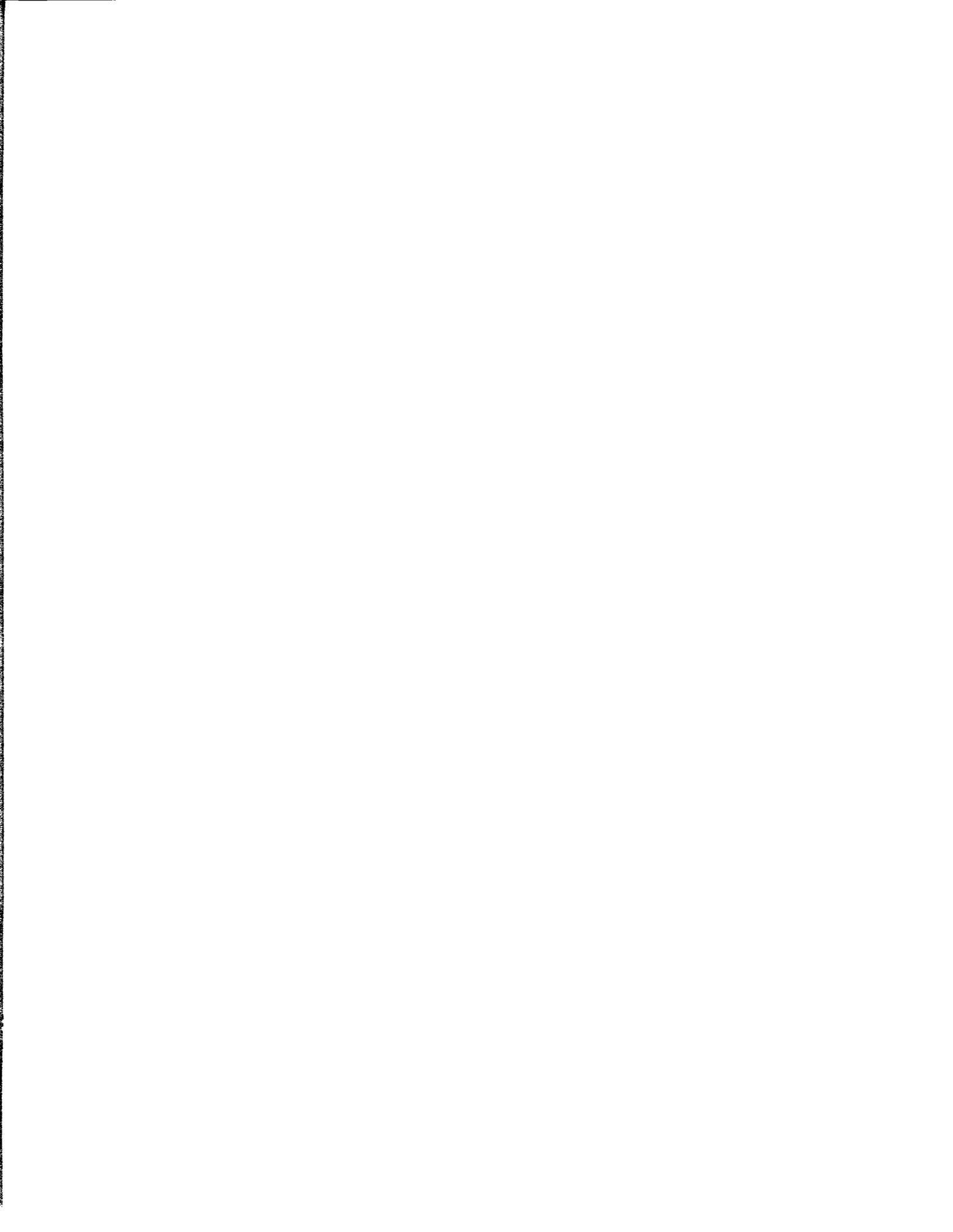


TABLE 10.--RECREATIONAL DEVELOPMENT

(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 |
|--------------------------|--|--|---|---------------------------|--|
| 1000: Weiser----- | Severe: large stones, small stones | Severe: large stones, small stones | Severe: large stones, small stones | Moderate: large stones | Severe: small stones, large stones |
| Tencee----- | Severe: large stones, cemented pan | Severe: large stones, cemented pan | Severe: large stones, small stones, cemented pan | Slight | Severe: cemented pan |
| Arizo----- | Severe: flooding, small stones | Severe: small stones | Severe: small stones | Severe: small stones | Severe: small stones, droughty |
| 1001: Weiser----- | Severe: small stones | Severe: small stones | Severe: small stones | Severe: small stones | Severe: small stones |
| Tencee----- | Severe: small stones, cemented pan | Severe: small stones, cemented pan | Severe: small stones, cemented pan | Severe: small stones | Severe: small stones, cemented pan |
| 1010: Tencee----- | Severe: large stones, cemented pan | Severe: large stones, cemented pan | Severe: large stones, small stones, cemented pan | Slight | Severe: cemented pan |
| Weiser----- | Severe: large stones, small stones | Severe: large stones, small stones | Severe: large stones, small stones | Moderate: large stones | Severe: small stones, large stones |
| 1016: Tencee----- | Severe: slope, small stones, cemented pan | Severe: slope, small stones, cemented pan | Severe: slope, small stones, cemented pan | Severe: small stones | Severe: small stones, slope, cemented pan |
| Tencee----- | Severe: small stones, cemented pan | Severe: small stones, cemented pan | Severe: slope, small stones, cemented pan | Severe: small stones | Severe: small stones, cemented pan |
| 1017: Tencee----- | Severe: small stones, cemented pan | Severe: small stones, cemented pan | Severe: slope, small stones, cemented pan | Severe: small stones | Severe: small stones, cemented pan |
| Bard----- | Severe: cemented pan | Severe: cemented pan | Severe: small stones, cemented pan | Slight | Severe: cemented pan |
| Arizo----- | Severe: flooding, small stones | Severe: small stones | Severe: small stones | Severe: small stones | Severe: small stones, droughty |

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

| Map symbol and soil name | Camp areas | Picnic areas | Playgrounds | Paths and trails | Golf fairways |
|--------------------------|---|---|---|---|---|
| 1020: Kurstan----- | Moderate: slope, small stones | Moderate: slope, small stones | Severe: slope, small stones | Slight | Moderate: small stones, large stones, droughty |
| Tencee----- | Severe: small stones, cemented pan | Severe: small stones, cemented pan | Severe: slope, small stones, cemented pan | Severe: small stones | Severe: small stones, cemented pan |
| 1021: Kurstan----- | Moderate: small stones | Moderate: small stones | Severe: small stones | Slight | Moderate: small stones, large stones, droughty |
| Knob Hill----- | Slight | Slight | Moderate: slope, small stones | Slight | Moderate: droughty |
| 1030: Arizo----- | Severe: flooding, small stones | Severe: small stones | Severe: small stones | Severe: small stones | Severe: small stones, droughty |
| Arizo----- | Severe: flooding, large stones, small stones | Severe: large stones, small stones | Severe: large stones, small stones | Moderate: large stones, too sandy | Severe: small stones, large stones, droughty |
| Bluepoint----- | Severe: flooding | Moderate: too sandy | Severe: slope | Moderate: too sandy | Moderate: droughty |
| 1031: Arizo----- | Severe: flooding, large stones, small stones | Severe: large stones, small stones | Severe: large stones, small stones | Moderate: large stones, too sandy | Severe: small stones, large stones, droughty |
| Arizo----- | Severe: flooding, small stones | Severe: small stones | Severe: small stones | Severe: small stones | Severe: small stones, droughty |
| 1040: Akela----- | 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, droughty, slope |
| Rock Outcrop. | | | | | |
| 1041: Akela----- | Severe: slope, depth to rock | Severe: slope, depth to rock | Severe: large stones, slope, small stones | Severe: slope | Severe: droughty, slope, depth to rock |
| Rochpah----- | Severe: slope, small stones, depth to rock | Severe: slope, small stones, depth to rock | Severe: slope, small stones, depth to rock | Severe: 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.): Rock Outcrop. | | | | | |
| 1052: Knob Hill----- | Severe: small stones | Severe: small stones | Severe: small stones | Slight | Severe: small stones |
| Arizo----- | Severe: flooding, large stones, small stones | Severe: large stones, small stones | Severe: large stones, small stones | Moderate: large stones, too sandy | Severe: small stones, large stones, droughty |
| 1060: St. Thomas----- | Severe: slope, large stones, small stones | Severe: slope, large stones, small stones | Severe: large stones, slope, small stones | Severe: slope | Severe: small stones, large stones, droughty |
| Chinkle----- | 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 |
| Rock Outcrop. | | | | | |
| 1061: St. Thomas----- | 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 |
| Zeheme----- | 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. | | | | | |
| 1062: Zeheme----- | Severe: slope, depth to rock | Severe: slope, depth to rock | Severe: large stones, slope, depth to rock | Severe: slope | Severe: slope, depth to rock |
| Chinkle----- | 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 |
| Shankba----- | Severe: slope, small stones, depth to rock | Severe: slope, small stones, depth to rock | Severe: slope, small stones, depth to rock | Severe: small stones | Severe: small stones, slope, depth to rock |
| 1063: Zeheme----- | Severe: slope, depth to rock | Severe: slope, depth to rock | Severe: large stones, slope, depth to rock | Severe: 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 |
|---|---|---|---|-------------------------|---|
| 1063 (con.): Kanesprings----- Rock Outcrop. | 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 |
| 1064: Zeheme----- Kanackey----- Rock Outcrop. | Severe: slope, large stones, depth to rock | Severe: slope, large stones, depth to rock | Severe: large stones, slope, small stones | Severe: slope | Severe: slope, depth to rock |
| 1065: Zeheme----- Rock Outcrop. | Severe: slope, large stones, depth to rock | Severe: slope, large stones, depth to rock | Severe: large stones, slope, small stones | Severe: slope | Severe: slope, depth to rock |
| 1066: Zeheme----- Boxspring----- Rock Outcrop. | Severe: slope, small stones, depth to rock | Severe: slope, small stones, depth to rock | Severe: large stones, slope, depth to rock | Severe: slope | Severe: slope, depth to rock |
| 1070: Bellehelen----- Brier----- | 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 |
| 1080: Kaspal----- Canutio----- | Severe: small stones | Severe: small stones | Severe: small stones | Slight | Severe: small stones |
| | Severe: small stones | Severe: small stones | Severe: slope, small stones | Severe: small stones | Severe: small stones |

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

| Map symbol and soil name | Camp areas | Picnic areas | Playgrounds | Paths and trails | Golf fairways |
|--|---|---|---|-------------------------------------|---|
| 1090: Logring----- 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 |
| 1091: Logring----- Eaglepass----- 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 |
| 1100: Geta----- Geta----- Arizo----- 1101: Geta----- 1102: Geta----- Bluepoint----- Arizo----- 1110: Kanesprings----- Kanackey----- Rock Outcrop. | Moderate: dusty | Moderate: dusty | Moderate: small stones, dusty | Moderate: dusty | Slight |
| | Severe: too sandy | Severe: too sandy | Severe: too sandy | Severe: too sandy | Slight |
| | Severe: flooding, small stones | Severe: small stones | Severe: small stones | Severe: small stones | Severe: small stones, droughty |
| | Moderate: small stones | Moderate: small stones | Severe: small stones | Slight | Moderate: small stones |
| | Moderate: dusty | Moderate: dusty | Moderate: small stones, dusty | Moderate: dusty | Slight |
| | Severe: flooding | Moderate: too sandy | Moderate: too sandy | Moderate: too sandy | Moderate: droughty |
| | Severe: flooding, small stones | Severe: small stones | Severe: small stones | Severe: small stones | Severe: small stones, droughty |
| | Severe: slope, large stones, small stones | Severe: slope, large stones, small stones | Severe: large stones, slope, small stones | Moderate: large stones, slope | Severe: small stones, large stones, slope |
| | 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 |
|---------------------------|--|--|--|---|---|
| 1113: Kanesprings----- | Severe: slope, large stones, small stones | Severe: slope, large stones, small stones | Severe: large stones, slope, small stones | Moderate: large stones, slope | Severe: small stones, large stones, slope |
| Gabbvally----- | Severe: slope, depth to rock | Severe: slope, depth to rock | Severe: large stones, slope, small stones | Moderate: slope, dusty | Severe: slope, depth to rock |
| 1160: Silent----- | Severe: cemented pan | Severe: cemented pan | Severe: small stones, cemented pan | Slight | Severe: cemented pan |
| Koyen----- | Severe: flooding | Moderate: small stones | Severe: small stones | Slight | Moderate: small stones, droughty |
| 1170: Alko----- | Severe: cemented pan | Severe: cemented pan | Severe: small stones, cemented pan | Slight | Severe: cemented pan |
| Alko----- | Severe: cemented pan | Severe: cemented pan | Severe: slope, small stones, cemented pan | Slight | Severe: cemented pan |
| Arizo----- | Severe: flooding, small stones | Severe: small stones | Severe: large stones, small stones | Moderate: large stones, too sandy | Severe: small stones, large stones, droughty |
| 1172: Alko----- | Severe: cemented pan | Severe: cemented pan | Severe: slope, cemented pan | Moderate: too sandy | Severe: cemented pan |
| Geta----- | Moderate: small stones | Moderate: small stones | Severe: small stones | Slight | Moderate: small stones |
| 1180: Acoma----- | Moderate: slope, small stones | Moderate: slope, small stones | Severe: slope, small stones | Slight | Moderate: small stones, droughty, slope |
| Decan----- | Moderate: slope, small stones | Moderate: slope, small stones | Severe: slope, small stones | Slight | Moderate: small stones, slope, cemented pan |
| Cath----- | Slight | Slight | Moderate: slope, small stones | Slight | Moderate: droughty |
| 1190: Minu----- | Severe: cemented pan | Severe: cemented pan | Severe: small stones, cemented pan | Slight | Severe: cemented pan |

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

| Map symbol and soil name | Camp areas | Picnic areas | Playgrounds | Paths and trails | Golf fairways |
|----------------------------|--|--|--|---|---|
| 1190 (con.): Shroe----- | Severe: slope | Severe: slope | Severe: slope, small stones | Moderate: slope, dusty | Severe: slope |
| Acoma----- | Moderate: small stones | Moderate: small stones | Severe: small stones | Slight | Moderate: small stones, droughty |
| 1210: Brier----- | Severe: slope, depth to rock | Severe: slope, depth to rock | Severe: large stones, slope, small stones | Severe: slope | Severe: large stones, slope, depth to rock |
| Acoma----- | Moderate: slope, small stones | Moderate: slope, small stones | Severe: slope, small stones | Slight | Moderate: small stones, droughty, slope |
| Bellehelen----- | Severe: slope, depth to rock | Severe: slope, depth to rock | Severe: large stones, slope, small stones | Moderate: large stones, slope, dusty | Severe: large stones, slope, depth to rock |
| 1211: Brier----- | 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 |
| Rock Outcrop. | | | | | |
| 1220: Lien----- | Severe: small stones, cemented pan | Severe: small stones, cemented pan | Severe: slope, small stones, cemented pan | Severe: small stones | Severe: small stones, cemented pan |
| Veet----- | Severe: flooding | Moderate: small stones | Severe: small stones | Slight | Severe: droughty |
| 1230: Pahranagat----- | Severe: flooding | Moderate: excess salt, percs slowly | Moderate: flooding, percs slowly, excess salt | Slight | Moderate: excess salt, flooding |
| Pahranagat----- | Severe: flooding, excess salt | Severe: excess salt | Severe: excess salt | Moderate: wetness | Severe: excess salt |
| 1250: Patter----- | Severe: flooding | Moderate: dusty | Moderate: slope, small stones, dusty | Moderate: dusty | Slight |
| Heist----- | Slight | Slight | Moderate: slope | Slight | Moderate: droughty |

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

| Map symbol and soil name | Camp areas | Picnic areas | Playgrounds | Paths and trails | Golf fairways |
|--------------------------|---|---|---|-----------------------------------|---|
| 1260: Hollace----- | 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 |
| Gabbvally----- | Severe: slope, depth to rock | Severe: slope, depth to rock | Severe: large stones, slope, small stones | Severe: slope | Severe: slope, depth to rock |
| 1261: Hollace----- | 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 |
| Rochpah----- | 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 |
| Wyva----- | Severe: slope, small stones, depth to rock | Severe: slope, small stones, depth to rock | Severe: large stones, slope, small stones | Severe: slope | Severe: small stones, large stones, slope |
| 1262: Hollace----- | 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 |
| Winklo----- | Severe: slope, small stones | Severe: slope, small stones | Severe: slope, small stones | Severe: slope | Severe: small stones, slope |
| Wyva----- | Severe: slope, small stones, depth to rock | Severe: slope, small stones, depth to rock | Severe: large stones, slope, small stones | Severe: slope | Severe: small stones, large stones, slope |
| 1270: Laross----- | Severe: slope | Severe: slope | Severe: large stones, slope, small stones | Severe: slope | Severe: slope |
| Rock Outcrop. | | | | | |
| 1300: Mormount----- | Severe: cemented pan | Severe: cemented pan | Severe: slope, small stones, cemented pan | Moderate: dusty | Severe: cemented pan |
| Arizo----- | Severe: flooding, small stones | Severe: small stones | Severe: slope, small stones | Severe: small stones | Severe: small stones, droughty |

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

| Map symbol and soil name | Camp areas | Picnic areas | Playgrounds | Paths and trails | Golf fairways |
|---------------------------|--|--|--|-------------------------|---|
| 1302: Mormount----- | Severe: small stones, cemented pan | Severe: small stones, cemented pan | Severe: small stones, cemented pan | Severe: small stones | Severe: small stones, cemented pan |
| 1303: Mormount----- | Severe: cemented pan | Severe: cemented pan | Severe: slope, small stones, cemented pan | Moderate: dusty | Severe: cemented pan |
| Canutio----- | Severe: small stones | Severe: small stones | Severe: small stones | Severe: small stones | Severe: small stones |
| 1340: Aymate----- | Moderate: small stones | Moderate: small stones | Severe: small stones | Slight | Moderate: small stones, cemented pan |
| Canutio----- | Moderate: small stones | Moderate: small stones | Severe: small stones | Slight | Moderate: small stones, large stones, droughty |
| 1341: Aymate----- | Slight | Slight | Moderate: small stones | Slight | Moderate: cemented pan |
| 1342: Aymate----- | Moderate: small stones | Moderate: small stones | Severe: small stones | Slight | Moderate: small stones, cemented pan |
| Mormount----- | Severe: cemented pan | Severe: cemented pan | Severe: small stones, cemented pan | Moderate: dusty | Severe: cemented pan |
| Arizo----- | Severe: flooding, small stones | Severe: small stones | Severe: small stones | Severe: small stones | Severe: small stones, droughty |
| 1350: Bard----- | Severe: cemented pan | Severe: cemented pan | Severe: small stones, cemented pan | Slight | Severe: cemented pan |
| 1360: Canutio----- | Moderate: small stones | Moderate: small stones | Severe: small stones | Slight | Moderate: small stones, large stones, droughty |
| Arizo----- | Severe: flooding, small stones | Severe: small stones | Severe: small stones | Severe: small stones | Severe: small stones, droughty |
| 1370: Mormon Mesa----- | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Slight | Severe: cemented pan |

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

| Map symbol and soil name | Camp areas | Picnic areas | Playgrounds | Paths and trails | Golf fairways |
|----------------------------------|---|---|---|-----------------------------------|---|
| 1370 (con.): Mormon Mesa----- | Severe: cemented pan | Severe: cemented pan | Severe: slope, small stones, cemented pan | Slight | Severe: cemented pan |
| 1371: Mormon Mesa----- | Severe: cemented pan | Severe: cemented pan | Severe: slope, small stones, cemented pan | Slight | Severe: cemented pan |
| Naye----- | Moderate: small stones | Moderate: small stones | Severe: slope, small stones | Slight | Moderate: small stones, large stones, droughty |
| Dalian----- | Severe: flooding, small stones | Severe: small stones | Severe: slope, small stones | Severe: small stones | Severe: small stones |
| 1372: Mormon Mesa----- | Severe: cemented pan | Severe: cemented pan | Severe: small stones, cemented pan | Slight | Severe: cemented pan |
| Tonopah----- | Severe: flooding, small stones | Severe: small stones | Severe: small stones | Severe: small stones | Severe: small stones, droughty |
| Arada----- | Severe: too sandy | Severe: too sandy | Severe: too sandy | Severe: too sandy | Moderate: droughty |
| 1380: Bracken----- | Moderate: small stones | Moderate: small stones | Severe: small stones | Slight | Moderate: small stones, droughty |
| 1390: Shankba----- | 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 |
| Chinkle----- | 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 |
| Kanackey----- | 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 |
| 1400: Cave----- | Severe: small stones, cemented pan | Severe: small stones, cemented pan | Severe: slope, small stones, cemented pan | Severe: small stones | Severe: small stones, cemented pan |
| Canutio----- | Severe: small stones | Severe: small stones | Severe: small stones | Severe: small stones | Severe: small stones |

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

| Map symbol and soil name | Camp areas | Picnic areas | Playgrounds | Paths and trails | Golf fairways |
|--------------------------|---|---|---|-------------------------|---|
| 1401: Cave----- | Severe: small stones, cemented pan | Severe: small stones, cemented pan | Severe: slope, small stones, cemented pan | Severe: small stones | Severe: small stones, cemented pan |
| Arizo----- | Severe: flooding, small stones | Severe: small stones | Severe: slope, small stones | Severe: small stones | Severe: small stones, droughty |
| 1403: Cave----- | Severe: slope, small stones, cemented pan | Severe: slope, small stones, cemented pan | Severe: slope, small stones, cemented pan | Severe: small stones | Severe: small stones, slope, cemented pan |
| Tencee----- | Severe: small stones, cemented pan | Severe: small stones, cemented pan | Severe: slope, small stones, cemented pan | Severe: small stones | Severe: small stones, cemented pan |
| 1404: Cave----- | Severe: small stones, cemented pan | Severe: small stones, cemented pan | Severe: slope, small stones, cemented pan | Severe: small stones | Severe: small stones, cemented pan |
| Mormount----- | Severe: cemented pan | Severe: cemented pan | Severe: slope, small stones, cemented pan | Slight | Severe: cemented pan |
| Canutio----- | Severe: small stones | Severe: small stones | Severe: small stones | Severe: small stones | Severe: small stones |
| 1405: Cave----- | Severe: small stones, cemented pan | Severe: small stones, cemented pan | Severe: slope, small stones, cemented pan | Severe: small stones | Severe: small stones, cemented pan |
| Zeheme----- | Severe: slope, large stones, depth to rock | Severe: slope, large stones, depth to rock | Severe: large stones, slope, small stones | Severe: slope | Severe: slope, depth to rock |
| 1406: Cave----- | Severe: slope, small stones, cemented pan | Severe: slope, small stones, cemented pan | Severe: slope, small stones, cemented pan | Severe: small stones | Severe: small stones, slope, cemented pan |
| 1420: Kanackey----- | 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. | | | | | |

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

| Map symbol and soil name | Camp areas | Picnic areas | Playgrounds | Paths and trails | Golf fairways |
|-----------------------------------|---|---|---|------------------------------------|---|
| 1430: Typic Torriorthents-- | Severe: slope, small stones | Severe: slope, small stones | Severe: slope, small stones | Severe: slope | Severe: small stones, slope |
| 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 |
| 1460: Pintwater----- | Severe: slope, large stones, small stones | Severe: slope, large stones, small stones | Severe: large stones, slope, small stones | Severe: slope | Severe: small stones, slope, depth to rock |
| Rochpah----- | Severe: slope, small stones, depth to rock | Severe: slope, small stones, depth to rock | Severe: slope, small stones, depth to rock | Severe: small stones | Severe: small stones, slope, depth to rock |
| 1470: Tybo----- | Severe: cemented pan | Severe: cemented pan | Severe: small stones, cemented pan | Slight | Severe: cemented pan |
| Keefa----- | Moderate: small stones, dusty | Moderate: small stones, dusty | Severe: small stones | Moderate: dusty | Moderate: small stones, droughty |
| Koyen----- | Moderate: small stones | Moderate: small stones | Severe: small stones | Slight | Moderate: small stones, droughty |
| 1471: Tybo----- | Severe: cemented pan | Severe: cemented pan | Severe: small stones, cemented pan | Slight | Severe: cemented pan |
| Koyen----- | Moderate: small stones | Moderate: small stones | Severe: small stones | Slight | Moderate: small stones, droughty |
| 1472: Tybo----- | Severe: cemented pan | Severe: cemented pan | Severe: small stones, cemented pan | Slight | Severe: cemented pan |
| Geer----- | Severe: flooding | Slight | Slight | Slight | Slight |
| 1473: Tybo----- | Severe: cemented pan | Severe: cemented pan | Severe: small stones, cemented pan | Slight | Severe: cemented pan |
| Leo----- | Severe: flooding, small stones | Severe: small stones | Severe: small stones | Severe: small stones | Severe: small stones, droughty |

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

| Map symbol and soil name | Camp areas | Picnic areas | Playgrounds | Paths and trails | Golf fairways |
|--------------------------|--------------------------------------|---------------------------|--|-------------------------|--|
| 1474: Tybo----- | Severe: cemented pan | Severe: cemented pan | Severe: small stones, cemented pan | Slight | Severe: cemented pan |
| Delamar----- | Slight | Slight | Moderate: slope, small stones, cemented pan | Slight | Moderate: cemented pan |
| 1490: Keefa----- | Slight | Slight | Moderate: small stones | Slight | Moderate: droughty |
| Penoyer----- | Severe: flooding | Moderate: dusty | Moderate: dusty | Moderate: dusty | Slight |
| 1491: Keefa----- | Slight | Slight | Moderate: small stones | Slight | Moderate: droughty |
| Penoyer----- | Severe: flooding | Moderate: dusty | Moderate: dusty | Moderate: dusty | Slight |
| 1510: Koyen----- | Moderate: small stones | Moderate: small stones | Severe: small stones | Slight | Moderate: small stones, droughty |
| 1512: Koyen----- | Moderate: small stones | Moderate: small stones | Severe: small stones | Slight | Moderate: small stones, droughty |
| Penoyer----- | Severe: flooding | Moderate: dusty | Moderate: dusty | Moderate: dusty | Slight |
| 1520: Geer----- | Severe: flooding | Slight | Slight | Slight | Slight |
| Penoyer----- | Severe: flooding | Moderate: dusty | Moderate: dusty | Moderate: dusty | Slight |
| 1530: Delamar----- | Moderate: small stones | Moderate: small stones | Severe: small stones | Slight | Moderate: small stones, cemented pan |
| Leo----- | Severe: flooding | Moderate: small stones | Severe: small stones | Slight | Severe: droughty |
| 1531: Delamar----- | Moderate: small stones | Moderate: small stones | Severe: small stones | Slight | Moderate: small stones, cemented pan |
| Veet----- | Severe: flooding, small stones | Severe: small stones | Severe: small stones | Severe: small stones | Severe: small stones, droughty |

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

| Map symbol and soil name | Camp areas | Picnic areas | Playgrounds | Paths and trails | Golf fairways |
|--------------------------|--|--|--|-------------------------|--|
| 1533: Delamar----- | Slight | Slight | Moderate: slope, small stones, cemented pan | Slight | Moderate: cemented pan |
| Tybo----- | Severe: cemented pan | Severe: cemented pan | Severe: small stones, cemented pan | Slight | Severe: cemented pan |
| Koyen----- | Moderate: small stones | Moderate: small stones | Severe: small stones | Slight | Moderate: small stones, droughty |
| 1534: Delamar----- | Moderate: small stones | Moderate: small stones | Severe: small stones | Slight | Moderate: small stones, cemented pan |
| Koyen----- | Moderate: small stones | Moderate: small stones | Severe: small stones | Slight | Moderate: small stones, droughty |
| 1535: Delamar----- | Moderate: small stones | Moderate: small stones | Severe: small stones | Slight | Moderate: small stones, cemented pan |
| 1540: Oleman----- | Severe: small stones, cemented pan | Severe: small stones, cemented pan | Severe: slope, small stones, cemented pan | Slight | Severe: small stones, cemented pan |
| Leo----- | Severe: flooding, small stones | Severe: small stones | Severe: small stones | Severe: small stones | Severe: small stones, droughty |
| 1541: Oleman----- | Severe: cemented pan | Severe: cemented pan | Severe: slope, small stones, cemented pan | Slight | Severe: cemented pan |
| Cave----- | Severe: small stones, cemented pan | Severe: small stones, cemented pan | Severe: slope, small stones, cemented pan | Severe: small stones | Severe: small stones, cemented pan |
| 1542: Oleman----- | Severe: cemented pan | Severe: cemented pan | Severe: slope, small stones, cemented pan | Slight | Severe: cemented pan |
| 1550: Pahroc----- | Severe: small stones, cemented pan | Severe: small stones, cemented pan | Severe: slope, small stones, cemented pan | Severe: small stones | Severe: small stones, cemented pan |

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

| Map symbol and soil name | Camp areas | Picnic areas | Playgrounds | Paths and trails | Golf fairways |
|--------------------------|---|---|---|-----------------------------------|---|
| 1550 (con.): Leo----- | Severe: flooding, small stones | Severe: small stones | Severe: small stones | Severe: small stones | Severe: small stones, droughty |
| 1551: Pahroc----- | Severe: small stones, cemented pan | Severe: small stones, cemented pan | Severe: slope, small stones, cemented pan | Severe: small stones | Severe: small stones, cemented pan |
| 1570: Kyler----- | 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 |
| Eaglepass----- | 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, droughty |
| Rock Outcrop. | | | | | |
| 1571: Kyler----- | 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 |
| Logring----- | 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. | | | | | |
| 1590: Winklo----- | Severe: slope, large stones, small stones | Severe: slope, large stones, small stones | Severe: large stones, slope, small stones | Severe: slope | Severe: small stones, large stones, slope |
| Wyva----- | Severe: slope, large stones, depth to rock | Severe: slope, large stones, depth to rock | Severe: large stones, slope, small stones | Severe: slope | Severe: large stones, slope, depth to rock |
| 1591: Winklo----- | Severe: slope, small stones | Severe: slope, small stones | Severe: slope, small stones | Severe: slope | Severe: small stones, slope |
| Rochpah----- | 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 |
|--------------------------|---|---|---|-----------------------------------|---|
| 1650: Handpah----- | Severe: small stones, cemented pan | Severe: small stones, cemented pan | Severe: small stones, cemented pan | Slight | Severe: small stones, cemented pan |
| Veet----- | Severe: flooding | Moderate: small stones | Severe: small stones | Slight | Severe: droughty |
| 1660: Dewrust----- | Severe: small stones | Severe: small stones | Severe: slope, small stones | Slight | Severe: small stones |
| Veet----- | Severe: flooding | Moderate: small stones | Severe: small stones | Slight | Severe: droughty |
| 1680: Rochpah----- | 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 |
| Hollace----- | 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 |
| Gabbvally----- | 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 |
| 1681: Rochpah----- | 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 |
| Veet----- | Severe: flooding | Moderate: small stones | Severe: small stones | Slight | Severe: droughty |
| 1683: Rochpah----- | 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 |
| Rock Outcrop. | | | | | |
| Leo----- | Severe: flooding, small stones | Severe: small stones | Severe: small stones | Severe: small stones | Severe: small stones, droughty |
| 1690: Jolan----- | Moderate: dusty, excess salt | Moderate: excess salt, dusty | Moderate: slope, cemented pan, dusty | Moderate: dusty | Moderate: excess salt, cemented pan |
| Geer----- | Severe: flooding | Slight | Moderate: slope | Slight | Slight |

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

| Map symbol and soil name | Camp areas | Picnic areas | Playgrounds | Paths and trails | Golf fairways |
|--------------------------|---|---|---|-----------------------------------|---|
| 1700: Sieroclipf----- | Moderate: small stones | Moderate: small stones | Severe: small stones | Slight | Moderate: small stones, droughty, cemented pan |
| Veet----- | Severe: flooding, small stones | Severe: small stones | Severe: small stones | Severe: small stones | Severe: small stones, droughty |
| 1710: Cliffdown----- | Severe: flooding | Moderate: small stones | Severe: slope, small stones | Slight | Moderate: small stones, droughty |
| 1730: Cath----- | Slight | Slight | Moderate: slope, small stones | Slight | Moderate: droughty |
| Veet----- | Severe: flooding | Moderate: small stones | Severe: small stones | Slight | Severe: droughty |
| 1740: Slaw----- | Severe: flooding, excess salt | Severe: excess salt | Severe: excess salt | Moderate: dusty | Severe: excess salt |
| 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 |
| 1741: Slaw----- | Severe: flooding, excess salt | Severe: excess salt | Severe: excess salt | Moderate: dusty | Severe: excess salt |
| 1750: Chanybuck----- | 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, droughty, slope |
| Brier----- | 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 |
| Rock Outcrop. | | | | | |
| 1761: Wyva----- | Severe: slope, large stones, depth to rock | Severe: slope, large stones, depth to rock | Severe: large stones, slope, small stones | Severe: 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 |
|--------------------------|---|---|---|-----------------------------------|---|
| 1762: Wyva----- | Severe: slope, small stones, depth to rock | Severe: slope, small stones, depth to rock | Severe: large stones, slope, small stones | Severe: slope | Severe: small stones, large stones, slope |
| Slidytn----- | 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 |
| 1770: Veet----- | Severe: flooding, small stones | Severe: small stones | Severe: small stones | Severe: small stones | Severe: small stones, droughty |
| Mosida----- | Severe: flooding | Moderate: dusty | Moderate: slope, flooding, dusty | Moderate: dusty | Moderate: flooding |
| 1810: Boxspring----- | 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. | | | | | |
| 1811: Boxspring----- | 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 |
| Theriot----- | Severe: slope, small stones, depth to rock | Severe: slope, small stones, depth to rock | Severe: large stones, slope, small stones | Severe: slope | Severe: small stones, droughty, slope |
| Rock Outcrop. | | | | | |
| 1821: Turba----- | 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 |
| Acti----- | 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 |
| 1830: Zaqua----- | 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 |
| Winklo----- | 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 |
|--------------------------|---|---|---|-----------------------------------|---|
| 1831: Zaqua----- | 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 |
| Boxspring----- | 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 |
| 1832: Zaqua----- | 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 |
| Winklo----- | Severe: slope, small stones | Severe: slope, small stones | Severe: slope, small stones | Severe: slope | Severe: small stones, slope |
| Kanesprings---- | 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 |
| 1833: Zaqua----- | 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. | | | | | |
| 1850: Rapado----- | Severe: slope, small stones | Severe: slope, small stones | Severe: slope, small stones | Severe: small stones | Severe: small stones, slope |
| Oleman----- | Severe: cemented pan | Severe: cemented pan | Severe: small stones, cemented pan | Slight | Severe: cemented pan |
| 1851: Rapado----- | Severe: small stones | Severe: small stones | Severe: slope, small stones | Severe: small stones | Severe: small stones |
| Veast----- | Severe: flooding, small stones | Severe: small stones | Severe: small stones | Severe: small stones | Severe: small stones, droughty |
| 1870: Faleria----- | Severe: slope | Severe: slope | Severe: slope, small stones | Severe: slope | Severe: slope |
| Laross----- | Severe: slope | Severe: slope | Severe: large stones, slope, small stones | Severe: slope | Severe: slope |

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

| Map symbol and soil name | Camp areas | Picnic areas | Playgrounds | Paths and trails | Golf fairways |
|--------------------------|---|---|---|-----------------------------------|---|
| 1880: Tejabe----- | Severe: slope, small stones, depth to rock | Severe: slope, small stones, depth to rock | Severe: large stones, slope, small stones | Severe: slope | Severe: small stones, slope, depth to rock |
| Pintwater----- | Severe: slope, large stones, small stones | Severe: slope, large stones, small stones | Severe: large stones, slope, small stones | Severe: slope | Severe: small stones, slope, depth to rock |
| Rock Outcrop. | | | | | |
| 1890: Welring----- | 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. | | | | | |
| 1900: Glendale----- | Severe: flooding, excess salt | Severe: excess salt | Severe: excess salt | Moderate: dusty | Severe: excess salt |
| Bluepoint----- | Severe: flooding | Moderate: slope, too sandy | Severe: slope | Moderate: too sandy | Moderate: droughty, slope |
| 1910: Land----- | Severe: flooding, excess salt | Severe: excess salt | Severe: excess salt | Moderate: dusty | Severe: excess salt |
| 1920: Motoqua----- | Severe: slope, small stones, depth to rock | Severe: slope, small stones, depth to rock | Severe: slope, small stones, depth to rock | Severe: small stones | Severe: small stones, slope, depth to rock |
| Rock Outcrop. | | | | | |
| 1921: Motoqua----- | 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 |
| Thunderbird---- | Severe: slope | Severe: slope | Severe: large stones, slope, small stones | Severe: slope | Severe: slope |
| 1941: Slidyntn----- | 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 |
|-----------------------------|---|---|---|---|---|
| 1941 (con.): Capsus----- | Severe: slope, large stones, small stones | Severe: slope, large stones, small stones | Severe: large stones, slope, small stones | Moderate: large stones, slope | Severe: small stones, large stones, slope |
| 1950: Ursine----- | Severe: slope, cemented pan | Severe: slope, cemented pan | Severe: slope, small stones, cemented pan | Moderate: slope, dusty | Severe: slope, cemented pan |
| Lomoin----- | 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 |
| Ursine----- | Severe: small stones, cemented pan | Severe: small stones, cemented pan | Severe: slope, small stones, cemented pan | Severe: small stones | Severe: small stones, cemented pan |
| 1951: Ursine----- | Severe: small stones, cemented pan | Severe: small stones, cemented pan | Severe: slope, small stones, cemented pan | Severe: small stones | Severe: small stones, cemented pan |
| Ursine----- | Severe: slope, small stones, cemented pan | Severe: slope, small stones, cemented pan | Severe: slope, small stones, cemented pan | Severe: small stones | Severe: small stones, slope, cemented pan |
| 1952: Ursine----- | Severe: slope, small stones, cemented pan | Severe: slope, small stones, cemented pan | Severe: slope, small stones, cemented pan | Severe: small stones | Severe: small stones, slope, cemented pan |
| Ursine----- | Severe: small stones, cemented pan | Severe: small stones, cemented pan | Severe: slope, small stones, cemented pan | Severe: small stones | Severe: small stones, cemented pan |
| Geer----- | Severe: flooding | Slight | Moderate: slope | Slight | Slight |
| 1960: Crystal Springs- | Severe: cemented pan | Severe: cemented pan | Severe: small stones, cemented pan | Slight | Severe: cemented pan |
| 1980: Longjim----- | Severe: small stones, cemented pan | Severe: small stones, cemented pan | Severe: small stones, cemented pan | Severe: small stones | Severe: small stones, droughty, cemented pan |
| Arizo----- | Severe: flooding, large stones, small stones | Severe: large stones, small stones | Severe: large stones, small stones | Moderate: large stones, too sandy | 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 |
|--|---|---|---|-----------------------------------|---|
| 1990: Gabbvally----- 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 |
| 1991: Gabbvally----- Hollace----- | Severe: depth to rock | Severe: depth to rock | Severe: large stones, slope, small stones | Moderate: dusty | Severe: depth to rock |
| 1992: Gabbvally----- Brier----- Rock Outcrop. | 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 |
| 2000: Playas----- | Severe: slope, depth to rock | Severe: slope, depth to rock | Severe: large stones, slope, small stones | Severe: slope | Severe: slope, depth to rock |
| 2010: Stewval----- Gabbvally----- | Severe: slope, depth to rock | Severe: slope, depth to rock | Severe: large stones, slope, small stones | Severe: slope | Severe: large stones, slope, depth to rock |
| 2011: Stewval----- Lomaine----- Rock Outcrop. | Severe: flooding, ponding, percs slowly | Severe: ponding, excess salt, percs slowly | Severe: ponding, percs slowly, excess salt | Severe: ponding | Severe: excess salt, ponding, droughty |
| | 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 |
| | 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, 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 |
| | 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 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 |
|--------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-------------------------------------|-----------------------------------|---|
| 1000: Weiser----- | Moderate: large stones | Moderate: large stones | Moderate: large stones | Moderate: large stones | Moderate: large stones | Severe: small stones, large stones |
| Tencee----- | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan |
| Arizo----- | Severe: cutbanks cave | Severe: flooding | Severe: flooding | Severe: flooding | Severe: flooding | Severe: small stones, droughty |
| 1001: Weiser----- | Moderate: large stones | Moderate: large stones | Moderate: large stones | Moderate: slope, large stones | Moderate: large stones | Severe: small stones |
| Tencee----- | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: small stones, cemented pan |
| 1010: Tencee----- | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan |
| Weiser----- | Moderate: large stones | Moderate: large stones | Moderate: large stones | Moderate: slope, large stones | Moderate: large stones | Severe: small stones, large stones |
| 1016: Tencee----- | Severe: cemented pan, slope | Severe: slope, cemented pan | Severe: cemented pan, slope | Severe: slope, cemented pan | Severe: cemented pan, slope | Severe: small stones, slope, cemented pan |
| Tencee----- | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: small stones, cemented pan |
| 1017: Tencee----- | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: slope, cemented pan | Severe: cemented pan | Severe: small stones, cemented pan |
| Bard----- | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan |
| Arizo----- | Severe: cutbanks cave | Severe: flooding | Severe: flooding | Severe: flooding | Severe: flooding | Severe: small stones, droughty |
| 1020: Kurstan----- | Moderate: slope | Moderate: slope | Moderate: slope | Severe: slope | Moderate: slope | Moderate: small stones, large stones, 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 |
|-----------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|--|---|
| 1020 (con.): Tencee----- | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: slope, cemented pan | Severe: cemented pan | Severe: small stones, cemented pan |
| 1021: Kurstan----- | Slight | Slight | Slight | Moderate: slope | Slight | Moderate: small stones, large stones, droughty |
| Knob Hill----- | Severe: cutbanks cave | Slight | Slight | Slight | Slight | Moderate: droughty |
| 1030: Arizo----- | Severe: cutbanks cave | Severe: flooding | Severe: flooding | Severe: flooding | Moderate: flooding, large stones | Severe: small stones, droughty |
| Arizo----- | Severe: cutbanks cave | Severe: flooding | Severe: flooding | Severe: flooding | Severe: flooding | Severe: small stones, large stones, droughty |
| Bluepoint----- | Severe: cutbanks cave | Severe: flooding | Severe: flooding | Severe: flooding | Moderate: flooding | Moderate: droughty |
| 1031: Arizo----- | Severe: cutbanks cave | Severe: flooding | Severe: flooding | Severe: flooding | Severe: flooding | Severe: small stones, large stones, droughty |
| Arizo----- | Severe: cutbanks cave | Severe: flooding | Severe: flooding | Severe: flooding | Moderate: flooding, large stones | Severe: small stones, droughty |
| 1040: Akela----- | 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, droughty, slope |
| Rock Outcrop. | | | | | | |
| 1041: Akela----- | 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: droughty, slope, depth to rock |
| Rochpah----- | 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. | | | | | | |
| 1052: Knob Hill----- | Severe: cutbanks cave | Slight | Slight | Slight | Slight | Severe: 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 |
|----------------------------|---|---|---|---|---|---|
| 1052 (con.): Arizo----- | Severe: cutbanks cave | Severe: flooding | Severe: flooding | Severe: flooding | Severe: flooding | Severe: small stones, large stones, droughty |
| 1060: St. Thomas----- | 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, droughty |
| Chinkle----- | Severe: depth to rock | Moderate: slope, depth to rock | Severe: depth to rock | Severe: slope | Moderate: depth to rock, slope | Severe: small stones, depth to rock |
| Rock Outcrop. | | | | | | |
| 1061: St. Thomas----- | 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 |
| Zeheme----- | 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. | | | | | | |
| 1062: Zeheme----- | 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 |
| Chinkle----- | Severe: depth to rock, slope | Severe: slope | Severe: depth to rock, slope | Severe: slope | Severe: slope | Severe: small stones, slope, depth to rock |
| Shankba----- | Severe: depth to rock, slope | Severe: slope | Severe: depth to rock, slope | Severe: slope | Severe: slope | Severe: small stones, slope, depth to rock |
| 1063: Zeheme----- | 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 |
| Kanesprings----- | Severe: depth to rock, cemented pan, slope | Severe: slope, depth to rock, cemented pan | Severe: depth to rock, cemented pan, slope | Severe: slope, depth to rock, cemented pan | Severe: depth to rock, cemented pan, slope | Severe: small stones, slope, depth to rock |
| Rock Outcrop. | | | | | | |
| 1064: Zeheme----- | 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 |

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 |
|-------------------------------|---|---|---|---|---|--|
| 1064 (con.): Kanackey----- | Severe: depth to rock, large stones, slope | Severe: slope, depth to rock, large stones | Severe: depth to rock, slope, large stones | Severe: slope, depth to rock, large stones | Severe: depth to rock, slope, large stones | Severe: small stones, slope, depth to rock |
| Rock Outcrop. | | | | | | |
| 1065: Zeheme----- | 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 |
| Rock Outcrop. | | | | | | |
| 1066: Zeheme----- | 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: depth to rock, slope, depth to rock |
| Boxspring----- | 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. | | | | | | |
| 1070: Bellehelen----- | 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 |
| Brier----- | 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 |
| 1080: Kaspal----- | Moderate: cemented pan, too clayey | Severe: shrink-swell | Severe: shrink-swell | Severe: shrink-swell | Severe: shrink-swell, low strength | Severe: small stones |
| Canutio----- | Severe: cutbanks cave | Moderate: large stones | Moderate: large stones | Moderate: slope, large stones | Moderate: large stones | Severe: small stones |
| 1090: Logring----- | 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. | | | | | | |
| 1091: Logring----- | 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 |
|---|--|--|--|--|--|---|
| 1091 (con.): Eaglepass----- 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: small stones, large stones, droughty |
| 1100: Geta----- Geta----- Arizo----- | Slight Slight Severe: cutbanks cave | Slight Slight Severe: flooding | Slight Slight Severe: flooding | Slight Slight Severe: flooding | Slight Slight Severe: flooding | Slight Slight Severe: small stones, droughty |
| 1101: Geta----- | Slight | Slight | Slight | Slight | Slight | Moderate: small stones |
| 1102: Geta----- Bluepoint----- Arizo----- | Slight Severe: cutbanks cave Severe: cutbanks cave | Slight Severe: flooding Severe: flooding | Slight Severe: flooding Severe: flooding | Slight Severe: flooding Severe: flooding | Slight Moderate: flooding Severe: flooding | Slight Moderate: droughty Severe: small stones, droughty |
| 1110: Kanesprings----- Kanackey----- Rock Outcrop. | Severe: depth to rock, cemented pan, slope Severe: depth to rock, large stones, slope | Severe: slope, depth to rock, cemented pan Severe: slope, depth to rock, large stones | Severe: depth to rock, cemented pan, slope Severe: depth to rock, slope, large stones | Severe: slope, depth to rock, cemented pan Severe: slope, depth to rock, large stones | Severe: depth to rock, cemented pan, slope Severe: depth to rock, slope, large stones | Severe: small stones, large stones, slope Severe: small stones, slope, depth to rock |
| 1113: Kanesprings----- Gabbvally----- | Severe: depth to rock, cemented pan, slope Severe: depth to rock, slope | Severe: slope, depth to rock, cemented pan Severe: slope, depth to rock | Severe: depth to rock, cemented pan, slope Severe: depth to rock, slope | Severe: slope, depth to rock, cemented pan Severe: slope, depth to rock | Severe: depth to rock, cemented pan, slope Severe: depth to rock, slope | Severe: small stones, large stones, slope Severe: slope, depth to rock |
| 1160: Silent----- Koyen----- | Severe: cemented pan Severe: cutbanks cave | Severe: cemented pan Severe: flooding | Severe: cemented pan Severe: flooding | Severe: cemented pan Severe: flooding | Severe: cemented pan Moderate: flooding | Severe: cemented pan Moderate: small stones, 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 |
|--------------------------|---|------------------------------------|--|------------------------------------|--|---|
| 1170: Alko----- | Severe: cemented pan, cutbanks cave | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan |
| Alko----- | Severe: cemented pan, cutbanks cave | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan |
| Arizo----- | Severe: cutbanks cave | Severe: flooding | Severe: flooding | Severe: flooding | Severe: flooding | Severe: small stones, large stones, droughty |
| 1172: Alko----- | Severe: cemented pan, cutbanks cave | Severe: cemented pan | Severe: cemented pan | Severe: slope, cemented pan | Severe: cemented pan | Severe: cemented pan |
| Geta----- | Slight | Slight | Slight | Moderate: slope | Slight | Moderate: small stones |
| 1180: Acoma----- | Moderate: too clayey, slope | Severe: shrink-swell | Moderate: slope, shrink-swell | Severe: shrink-swell, slope | Severe: shrink-swell | Moderate: small stones, droughty, slope |
| Decan----- | Severe: cemented pan | Severe: shrink-swell | Severe: cemented pan, shrink-swell | Severe: shrink-swell, slope | Severe: shrink-swell, low strength | Moderate: small stones, slope, cemented pan |
| Cath----- | Severe: cutbanks cave | Moderate: shrink-swell | Slight | Moderate: shrink-swell | Severe: low strength | Moderate: droughty |
| 1190: Minu----- | Severe: cemented pan, cutbanks cave | Moderate: cemented pan | Severe: cemented pan | Moderate: cemented pan | Moderate: cemented pan, frost action | Severe: cemented pan |
| Shroe----- | Severe: slope | Severe: slope | Severe: slope | Severe: slope | Severe: slope | Severe: slope |
| Acoma----- | Moderate: too clayey | Severe: shrink-swell | Moderate: shrink-swell | Severe: shrink-swell | Severe: shrink-swell | Moderate: small stones, droughty |
| 1210: Brier----- | 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 |
| Acoma----- | Moderate: too clayey, slope | Severe: shrink-swell | Moderate: slope, shrink-swell | Severe: shrink-swell, slope | Severe: shrink-swell | Moderate: small stones, droughty, 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 |
|---------------------------------|---|---|---|---|---|---|
| 1210 (con.): Ballehelen----- | 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 |
| 1211: Brier----- | 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. | | | | | | |
| 1220: Lien----- | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: slope, cemented pan | Severe: cemented pan | Severe: small stones, cemented pan |
| Vest----- | Severe: cutbanks cave | Severe: flooding | Severe: flooding | Severe: flooding | Moderate: flooding, frost action | Severe: droughty |
| 1230: Pahranagat----- | Moderate: wetness, flooding | Severe: flooding | Severe: flooding | Severe: flooding | Severe: low strength, flooding, frost action | Moderate: excess salt, flooding |
| Pahranagat----- | Severe: wetness | Severe: flooding | Severe: flooding, wetness | Severe: flooding | Severe: low strength, flooding, frost action | Severe: excess salt |
| 1250: Patter----- | Slight | Severe: flooding | Severe: flooding | Severe: flooding | Moderate: flooding, frost action | Slight |
| Heist----- | Severe: cutbanks cave | Slight | Slight | Moderate: slope | Moderate: frost action | Moderate: droughty |
| 1260: Hollace----- | Severe: depth to rock, cemented pan, slope | Severe: slope, depth to rock, cemented pan | Severe: depth to rock, cemented pan, slope | Severe: slope, depth to rock, cemented pan | Severe: depth to rock, cemented pan, slope | Severe: small stones, slope, depth to rock |
| Gabbvally----- | 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 |
| 1261: Hollace----- | Severe: depth to rock, cemented pan, slope | Severe: slope, depth to rock, cemented pan | Severe: depth to rock, cemented pan, slope | Severe: slope, depth to rock, cemented pan | Severe: depth to rock, cemented pan, slope | Severe: small stones, slope, depth to rock |
| Rochpah----- | 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 |
|---------------------------|---|---|---|---|---|---|
| 1261 (con.): Wyva----- | Severe: depth to rock, large stones, slope | Severe: slope, depth to rock, large stones | Severe: depth to rock, slope, large stones | Severe: slope, depth to rock, large stones | Severe: depth to rock, slope, large stones | Severe: small stones, large stones, slope |
| 1262: Hollace----- | Severe: depth to rock, cemented pan, slope | Severe: slope, depth to rock, cemented pan | Severe: depth to rock, cemented pan, slope | Severe: slope, depth to rock, cemented pan | Severe: depth to rock, cemented pan, slope | Severe: small stones, slope, depth to rock |
| Winklo----- | Severe: slope | Severe: slope | Severe: slope | Severe: slope | Severe: low strength, slope | Severe: small stones, slope |
| Wyva----- | Severe: depth to rock, large stones, slope | Severe: slope, depth to rock, large stones | Severe: depth to rock, slope, large stones | Severe: slope, depth to rock, large stones | Severe: depth to rock, slope, large stones | Severe: small stones, large stones, slope |
| 1270: Laross----- | Severe: slope | Severe: slope | Severe: slope | Severe: slope | Severe: slope | Severe: slope |
| Rock Outcrop. | | | | | | |
| 1300: Mormount----- | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: slope, cemented pan | Severe: cemented pan | Severe: cemented pan |
| Arizo----- | Severe: cutbanks cave | Severe: flooding | Severe: flooding | Severe: flooding | Severe: flooding | Severe: small stones, droughty |
| 1302: Mormount----- | Severe: cemented pan | Severe: small stones, cemented pan |
| 1303: Mormount----- | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: slope, cemented pan | Severe: cemented pan | Severe: cemented pan |
| Canutio----- | Severe: cutbanks cave | Moderate: large stones | Moderate: large stones | Moderate: large stones | Moderate: large stones | Severe: small stones |
| 1340: Aymate----- | Severe: cemented pan | Moderate: cemented pan | Severe: cemented pan | Moderate: cemented pan | Moderate: cemented pan | Moderate: small stones, cemented pan |
| Canutio----- | Severe: cutbanks cave | Moderate: large stones | Moderate: large stones | Moderate: large stones | Moderate: large stones | Moderate: small stones, large stones, droughty |
| 1341: Aymate----- | Severe: cemented pan | Moderate: cemented pan | Severe: cemented pan | Moderate: cemented pan | Moderate: cemented pan | Moderate: cemented pan |

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 |
|---------------------------|--------------------------|-----------------------------|---------------------------|-------------------------------------|---------------------------|---|
| 1342: Aymate----- | Severe: cemented pan | Moderate: cemented pan | Severe: cemented pan | Moderate: slope, cemented pan | Moderate: cemented pan | Moderate: small stones, cemented pan |
| Mormount----- | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan |
| Arizo----- | Severe: cutbanks cave | Severe: flooding | Severe: flooding | Severe: flooding | Severe: flooding | Severe: small stones, droughty |
| 1350: Bard----- | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan |
| 1360: Canutio----- | Severe: cutbanks cave | Moderate: large stones | Moderate: large stones | Moderate: large stones | Moderate: large stones | Moderate: small stones, large stones, droughty |
| Arizo----- | Severe: cutbanks cave | Severe: flooding | Severe: flooding | Severe: flooding | Severe: flooding | Severe: small stones, droughty |
| 1370: Mormon Mesa----- | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan |
| Mormon Mesa----- | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: slope, cemented pan | Severe: cemented pan | Severe: cemented pan |
| 1371: Mormon Mesa----- | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan |
| Naye----- | Severe: cemented pan | Moderate: cemented pan | Severe: cemented pan | Moderate: slope, cemented pan | Moderate: cemented pan | Moderate: small stones, large stones, droughty |
| Dalian----- | Slight | Severe: flooding | Severe: flooding | Severe: flooding | Moderate: flooding | Severe: small stones |
| 1372: Mormon Mesa----- | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan |
| Tonopah----- | Severe: cutbanks cave | Severe: flooding | Severe: flooding | Severe: flooding | Moderate: flooding | Severe: small stones, droughty |
| Arada----- | Severe: cutbanks cave | Slight | Slight | Moderate: slope | Slight | Moderate: droughty |
| 1380: Bracken----- | Slight | Slight | Slight | Moderate: slope | Slight | Moderate: small stones, 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 |
|--------------------------|---|---|---|---|---|---|
| 1390: Shankba----- | Severe: depth to rock, slope | Severe: slope | Severe: depth to rock, slope | Severe: slope | Severe: slope | Severe: small stones, slope, depth to rock |
| Chinkle----- | Severe: depth to rock, slope | Severe: slope | Severe: depth to rock, slope | Severe: slope | Severe: slope | Severe: small stones, slope, depth to rock |
| Kanackey----- | Severe: depth to rock, large stones, slope | Severe: slope, depth to rock, large stones | Severe: depth to rock, slope, large stones | Severe: slope, depth to rock, large stones | Severe: depth to rock, slope, large stones | Severe: small stones, slope, depth to rock |
| 1400: Cave----- | Severe: cemented pan, cutbanks cave | Severe: cemented pan | Severe: cemented pan | Severe: slope, cemented pan | Severe: cemented pan | Severe: small stones, cemented pan |
| Canutio----- | Severe: cutbanks cave | Moderate: large stones | Moderate: large stones | Moderate: slope, large stones | Moderate: large stones | Severe: small stones |
| 1401: Cave----- | Severe: cemented pan, cutbanks cave | Severe: cemented pan | Severe: cemented pan | Severe: slope, cemented pan | Severe: cemented pan | Severe: small stones, cemented pan |
| Arizo----- | Severe: cutbanks cave | Severe: flooding | Severe: flooding | Severe: flooding | Severe: flooding | Severe: small stones, droughty |
| 1403: Cave----- | Severe: cemented pan, cutbanks cave, slope | Severe: slope, cemented pan | Severe: cemented pan, slope | Severe: slope, cemented pan | Severe: cemented pan, slope | Severe: small stones, slope, cemented pan |
| Tencee----- | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: slope, cemented pan | Severe: cemented pan | Severe: small stones, cemented pan |
| 1404: Cave----- | Severe: cemented pan, cutbanks cave | Severe: cemented pan | Severe: cemented pan | Severe: slope, cemented pan | Severe: cemented pan | Severe: small stones, cemented pan |
| Mormount----- | Severe: cemented pan |
| Canutio----- | Severe: cutbanks cave | Moderate: large stones | Moderate: large stones | Moderate: large stones | Moderate: large stones | Severe: small stones |
| 1405: Cave----- | Severe: cemented pan, cutbanks cave | Severe: cemented pan | Severe: cemented pan | Severe: slope, cemented pan | Severe: cemented pan | Severe: small stones, cemented pan |

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 |
|-----------------------------------|---|---|---|---|---|---|
| 1405 (con.): Zeheme----- | 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 |
| 1406: Cave----- | Severe: cemented pan, cutbanks cave, slope | Severe: slope, cemented pan | Severe: cemented pan, slope | Severe: slope, cemented pan | Severe: cemented pan, slope | Severe: small stones, slope, cemented pan |
| 1420: Kanackey----- | Severe: depth to rock, large stones, slope | Severe: slope, depth to rock, large stones | Severe: depth to rock, slope, large stones | Severe: slope, depth to rock, large stones | Severe: depth to rock, slope, large stones | Severe: small stones, slope, depth to rock |
| Rock Outcrop. | | | | | | |
| 1430: Typic Torriorthents-- | Severe: cutbanks cave, slope | Severe: slope | Severe: slope | Severe: slope | Severe: slope | Severe: small stones, slope |
| Badland----- | Severe: depth to rock, slope | Severe: slope | Severe: depth to rock, slope | Severe: slope | Severe: slope | Severe: excess salt, slope, depth to rock |
| 1460: Pintwater----- | 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 |
| Rochpah----- | 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 |
| 1470: Tybo----- | Severe: cemented pan |
| Keefa----- | Severe: cutbanks cave | Slight | Slight | Slight | Slight | Moderate: small stones, droughty |
| Koyen----- | Severe: cutbanks cave | Slight | Slight | Slight | Slight | Moderate: small stones, droughty |
| 1471: Tybo----- | Severe: cemented pan |
| Koyen----- | Severe: cutbanks cave | Slight | Slight | Slight | Slight | Moderate: small stones, 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 |
|--------------------------|---|-----------------------------|--------------------------|----------------------------|--|--|
| 1472: Tybo----- | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan |
| Geer----- | Slight | Severe: flooding | Severe: flooding | Severe: flooding | Moderate: flooding | Slight |
| 1473: Tybo----- | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan |
| Leo----- | Severe: cutbanks cave | Severe: flooding | Severe: flooding | Severe: flooding | Moderate: flooding | Severe: small stones, droughty |
| 1474: Tybo----- | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan |
| Delamar----- | Severe: cemented pan, cutbanks cave | Moderate: cemented pan | Severe: cemented pan | Moderate: cemented pan | Moderate: cemented pan | Moderate: cemented pan |
| 1490: Keefa----- | Severe: cutbanks cave | Slight | Slight | Slight | Slight | Moderate: droughty |
| Penoyer----- | Slight | Severe: flooding | Severe: flooding | Severe: flooding | Moderate: flooding, frost action | Slight |
| 1491: Keefa----- | Severe: cutbanks cave | Slight | Slight | Slight | Slight | Moderate: droughty |
| Penoyer----- | Slight | Severe: flooding | Severe: flooding | Severe: flooding | Moderate: flooding, frost action | Slight |
| 1510: Koyen----- | Severe: cutbanks cave | Slight | Slight | Slight | Slight | Moderate: small stones, droughty |
| 1512: Koyen----- | Severe: cutbanks cave | Slight | Slight | Slight | Slight | Moderate: small stones, droughty |
| Penoyer----- | Slight | Severe: flooding | Severe: flooding | Severe: flooding | Moderate: flooding, frost action | Slight |
| 1520: Geer----- | Slight | Severe: flooding | Severe: flooding | Severe: flooding | Moderate: flooding | Slight |
| Penoyer----- | Slight | Severe: flooding | Severe: flooding | Severe: flooding | Moderate: flooding, frost action | Slight |

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 |
|--------------------------|---|--|--------------------------|--|---|--|
| 1530: Delamar----- | Severe: cemented pan, cutbanks cave | Moderate: cemented pan | Severe: cemented pan | Moderate: cemented pan | Moderate: cemented pan | Moderate: small stones, cemented pan |
| Leo----- | Severe: cutbanks cave | Severe: flooding | Severe: flooding | Severe: flooding | Moderate: flooding | Severe: droughty |
| 1531: Delamar----- | Severe: cemented pan, cutbanks cave | Moderate: cemented pan | Severe: cemented pan | Moderate: cemented pan | Moderate: cemented pan | Moderate: small stones, cemented pan |
| Veet----- | Severe: cutbanks cave | Severe: flooding | Severe: flooding | Severe: flooding | Moderate: flooding, frost action | Severe: small stones, droughty |
| 1533: Delamar----- | Severe: cemented pan, cutbanks cave | Moderate: cemented pan | Severe: cemented pan | Moderate: slope, cemented pan | Moderate: cemented pan | Moderate: cemented pan |
| Tybo----- | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan |
| Koyen----- | Severe: cutbanks cave | Slight | Slight | Slight | Slight | Moderate: small stones, droughty |
| 1534: Delamar----- | Severe: cemented pan, cutbanks cave | Moderate: cemented pan | Severe: cemented pan | Moderate: cemented pan | Moderate: cemented pan | Moderate: small stones, cemented pan |
| Koyen----- | Severe: cutbanks cave | Slight | Slight | Slight | Slight | Moderate: small stones, droughty |
| 1535: Delamar----- | Severe: cemented pan, cutbanks cave | Moderate: cemented pan | Severe: cemented pan | Moderate: slope, cemented pan | Moderate: cemented pan | Moderate: small stones, cemented pan |
| 1540: Oleman----- | Severe: cemented pan, cutbanks cave | Moderate: slope, cemented pan, large stones | Severe: cemented pan | Severe: slope | Moderate: cemented pan, slope, frost action | Severe: small stones, cemented pan |
| Leo----- | Severe: cutbanks cave | Severe: flooding | Severe: flooding | Severe: flooding | Moderate: flooding | Severe: small stones, droughty |
| 1541: Oleman----- | Severe: cemented pan, cutbanks cave | Moderate: cemented pan, large stones | Severe: cemented pan | Moderate: slope, cemented pan, large stones | Moderate: cemented pan, frost action, large stones | Severe: cemented pan |
| Cave----- | Severe: cemented pan, cutbanks cave | Severe: cemented pan | Severe: cemented pan | Severe: slope, cemented pan | Severe: cemented pan | Severe: small stones, cemented pan |

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 |
|--------------------------|---|--|---|---|--|---|
| 1542: Oleman----- | Severe: cemented pan, cutbanks cave | Moderate: slope, cemented pan, large stones | Severe: cemented pan | Severe: slope | Moderate: cemented pan, slope, frost action | Severe: cemented pan |
| 1550: Pahroc----- | Severe: cemented pan, cutbanks cave | Severe: cemented pan | Severe: cemented pan | Severe: slope, cemented pan | Severe: cemented pan | Severe: small stones, cemented pan |
| Leo----- | Severe: cutbanks cave | Severe: flooding | Severe: flooding | Severe: flooding | Moderate: flooding | Severe: small stones, droughty |
| 1551: Pahroc----- | Severe: cemented pan, cutbanks cave | Severe: cemented pan | Severe: cemented pan | Severe: slope, cemented pan | Severe: cemented pan | Severe: small stones, cemented pan |
| 1570: Kyler----- | 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 |
| Eaglepass----- | 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, droughty |
| Rock Outcrop. | | | | | | |
| 1571: Kyler----- | 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 |
| Logring----- | 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. | | | | | | |
| 1590: Winklo----- | Severe: slope | Severe: slope | Severe: slope | Severe: slope | Severe: low strength, slope | Severe: small stones, large stones, slope |
| Wyva----- | Severe: depth to rock, large stones, slope | Severe: slope, depth to rock, large stones | Severe: depth to rock, slope, large stones | Severe: slope, depth to rock, large stones | Severe: depth to rock, slope, large stones | Severe: large stones, slope, depth to rock |
| 1591: Winklo----- | Severe: slope | Severe: slope | Severe: slope | Severe: slope | Severe: low strength, 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 |
|------------------------------|---|---|---|---|---|---|
| 1591 (con.): Rochpah----- | 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. | | | | | | |
| 1650: Handpah----- | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: small stones, cemented pan |
| Veet----- | Severe: cutbanks cave | Severe: flooding | Severe: flooding | Severe: flooding | Moderate: flooding, frost action | Severe: droughty |
| 1660: Dewrust----- | Severe: cemented pan | Severe: shrink-swell | Severe: cemented pan, shrink-swell | Severe: shrink-swell | Severe: shrink-swell, low strength | Severe: small stones |
| Veet----- | Severe: cutbanks cave | Severe: flooding | Severe: flooding | Severe: flooding | Moderate: flooding, frost action | Severe: droughty |
| 1680: Rochpah----- | 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 |
| Hollace----- | Severe: depth to rock, cemented pan, slope | Severe: depth to rock, cemented pan | Severe: depth to rock, cemented pan, slope | Severe: slope, depth to rock, cemented pan | Severe: depth to rock, cemented pan, slope | Severe: small stones, slope, depth to rock |
| Gabbvally----- | 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 |
| 1681: Rochpah----- | 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 |
| Veet----- | Severe: cutbanks cave | Severe: flooding | Severe: flooding | Severe: flooding | Moderate: flooding, frost action | Severe: droughty |
| 1683: Rochpah----- | Severe: depth to rock | Severe: depth to rock | Severe: depth to rock | Severe: slope, depth to rock | Severe: depth to rock | Severe: small stones, depth to rock |
| Rock Outcrop. | | | | | | |
| Leo----- | Severe: cutbanks cave | Severe: flooding | Severe: flooding | Severe: flooding | Moderate: flooding | Severe: small stones, 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 |
|--------------------------|--------------------------------------|--|--|--|--|---|
| 1690: Jolan----- | Severe: cemented pan | Moderate: cemented pan | Severe: cemented pan | Moderate: cemented pan | Moderate: cemented pan, frost action | Moderate: excess salt, cemented pan |
| Geer----- | Slight | Severe: flooding | Severe: flooding | Severe: flooding | Moderate: flooding | Slight |
| 1700: Sieroclipf----- | Severe: cemented pan | Moderate: cemented pan | Severe: cemented pan | Moderate: slope, cemented pan | Moderate: cemented pan, frost action | Moderate: small stones, droughty, cemented pan |
| Veet----- | Severe: cutbanks cave | Severe: flooding | Severe: flooding | Severe: flooding | Moderate: flooding, frost action | Severe: small stones, droughty |
| 1710: Cliffdown----- | Slight | Severe: flooding | Severe: flooding | Severe: flooding | Moderate: flooding | Moderate: small stones, droughty |
| 1730: Cath----- | Severe: cutbanks cave | Moderate: shrink-swell | Slight | Moderate: shrink-swell | Severe: low strength | Moderate: droughty |
| Veet----- | Severe: cutbanks cave | Severe: flooding | Severe: flooding | Severe: flooding | Moderate: flooding, frost action | Severe: droughty |
| 1740: Slaw----- | Moderate: too clayey, flooding | Severe: flooding | Severe: flooding | Severe: flooding | Severe: low strength, flooding | Severe: excess salt |
| 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 |
| 1741: Slaw----- | Moderate: too clayey, flooding | Severe: flooding | Severe: flooding | Severe: flooding | Severe: low strength, flooding | Severe: excess salt |
| 1750: Chanybuck----- | 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 |
| Brier----- | 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. | | | | | | |

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 |
|--|---|---|---|---|---|---|
| 1761: Wyva----- Rock Outcrop. | Severe: depth to rock, large stones, slope | Severe: slope, depth to rock, large stones | Severe: depth to rock, slope, large stones | Severe: slope, depth to rock, large stones | Severe: depth to rock, slope, large stones | Severe: large stones, slope, depth to rock |
| 1762: Wyva----- Slidyntn----- | Severe: depth to rock, large stones, slope | Severe: slope, depth to rock, large stones | Severe: depth to rock, slope, large stones | Severe: slope, depth to rock, large stones | Severe: depth to rock, slope, large stones | Severe: small stones, large stones, slope |
| 1770: Veet----- Mosida----- | Severe: cutbanks cave | Severe: flooding | Severe: flooding | Severe: flooding | Moderate: flooding, frost action | Severe: small stones, droughty |
| 1810: Boxspring----- Rock Outcrop. | Moderate: flooding | Severe: flooding | Severe: flooding | Severe: flooding | Severe: flooding | Moderate: flooding |
| 1811: Boxspring----- Theriot----- 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: small stones, slope, depth to rock |
| 1821: Turba----- Acti----- | 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 |
| | 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, 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 |
|--------------------------|---|---|---|--|---|---|
| 1830: Zaqua----- | Severe: depth to rock, slope | Severe: slope | Severe: depth to rock, slope | Severe: slope | Severe: slope | Severe: small stones, slope, depth to rock |
| Winklo----- | Severe: slope | Severe: slope | Severe: slope | Severe: slope | Severe: low strength, slope | Severe: small stones, slope |
| 1831: Zaqua----- | Severe: depth to rock, slope | Severe: slope | Severe: depth to rock, slope | Severe: slope | Severe: slope | Severe: small stones, slope, depth to rock |
| Boxspring----- | 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 |
| 1832: Zaqua----- | Severe: depth to rock, slope | Severe: slope | Severe: depth to rock, slope | Severe: slope | Severe: slope | Severe: small stones, slope, depth to rock |
| Winklo----- | Severe: slope | Severe: slope | Severe: slope | Severe: slope | Severe: low strength, slope | Severe: small stones, slope |
| Kanesprings----- | Severe: depth to rock, cemented pan, slope | Severe: slope, depth to rock, cemented pan | Severe: depth to rock, cemented pan, slope | Severe: slope, depth to rock, cemented pan | Severe: depth to rock, cemented pan, slope | Severe: small stones, slope, depth to rock |
| 1833: Zaqua----- | 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. | | | | | | |
| 1850: Rapado----- | Severe: cemented pan, slope | Severe: slope | Severe: cemented pan, slope | Severe: slope | Severe: slope | Severe: small stones, slope |
| Oleman----- | Severe: cemented pan, cutbanks cave | Moderate: cemented pan, large stones | Severe: cemented pan | Moderate: slope, cemented pan, large stones | Moderate: cemented pan, frost action, large stones | Severe: cemented pan |
| 1851: Rapado----- | Severe: cemented pan | Moderate: cemented pan | Severe: cemented pan | Moderate: slope, cemented pan | Moderate: cemented pan | Severe: small stones |
| Veet----- | Severe: cutbanks cave | Severe: flooding | Severe: flooding | Severe: flooding | Moderate: flooding, frost action | Severe: small stones, 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 |
|--------------------------|--|------------------------------------|---|------------------------------------|--|---|
| 1870: Faleria----- | Severe: slope | Severe: slope | Severe: slope | Severe: slope | Severe: slope | Severe: slope |
| Laross----- | Severe: slope | Severe: slope | Severe: slope | Severe: slope | Severe: slope | Severe: slope |
| 1880: Tejabe----- | 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 |
| Pintwater----- | 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. | | | | | | |
| 1890: Welring----- | 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. | | | | | | |
| 1900: Glendale----- | Moderate: flooding | Severe: flooding | Severe: flooding | Severe: flooding | Severe: flooding | Severe: excess salt |
| Bluepoint----- | Severe: cutbanks cave | Severe: flooding | Severe: flooding | Severe: flooding, slope | Moderate: slope, flooding | Moderate: droughty, slope |
| 1910: Land----- | Moderate: too clayey, wetness, flooding | Severe: flooding | Severe: flooding | Severe: flooding | Severe: low strength, flooding | Severe: excess salt |
| 1920: Motoqua----- | 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. | | | | | | |
| 1921: Motoqua----- | 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 |
| Thunderbird----- | Severe: depth to rock, slope | Severe: shrink-swell, slope | Severe: depth to rock, slope, shrink-swell | Severe: shrink-swell, slope | Severe: shrink-swell, low strength, slope | Severe: 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 |
|---------------------------|------------------------------------|---|---|---|---|---|
| 1941: Slidymtn----- | 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 |
| Capsus----- | 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, slope | Severe: small stones, large stones, slope |
| 1950: Ursine----- | Severe: cemented pan, slope | Severe: slope, cemented pan | Severe: cemented pan, slope | Severe: slope, cemented pan | Severe: cemented pan, slope | Severe: slope, cemented pan |
| Lomcine----- | 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 |
| Ursine----- | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: slope, cemented pan | Severe: cemented pan | Severe: small stones, cemented pan |
| 1951: Ursine----- | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: slope, cemented pan | Severe: cemented pan | Severe: small stones, cemented pan |
| Ursine----- | Severe: cemented pan, slope | Severe: slope, cemented pan | Severe: cemented pan, slope | Severe: slope, cemented pan | Severe: cemented pan, slope | Severe: small stones, slope, cemented pan |
| 1952: Ursine----- | Severe: cemented pan, slope | Severe: slope, cemented pan | Severe: cemented pan, slope | Severe: slope, cemented pan | Severe: cemented pan, slope | Severe: small stones, slope, cemented pan |
| Ursine----- | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: slope, cemented pan | Severe: cemented pan | Severe: small stones, cemented pan |
| Geer----- | Slight | Severe: flooding | Severe: flooding | Severe: flooding | Moderate: flooding | Slight |
| 1960: Crystal Springs- | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan |
| 1980: Longjim----- | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Severe: small stones, droughty, cemented pan |
| Arizo----- | Severe: cutbanks cave | Severe: flooding | Severe: flooding | Severe: flooding | Severe: flooding | Severe: small stones, large stones, 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 |
|---|------------------------------------|--|--|--|--|---|
| 1990: Gabbvally----- 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 |
| 1991: Gabbvally----- Hollace----- | Severe: depth to rock | Severe: depth to rock | Severe: depth to rock | Severe: slope, depth to rock | Severe: depth to rock | Severe: depth to rock |
| 1992: Gabbvally----- Brier----- 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: small stones, slope, depth to rock |
| 2000: 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 |
| 2010: Stewval----- Gabbvally----- | 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 |
| 2011: Stewval----- Lomcaine----- 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: small stones, slope, depth to rock |

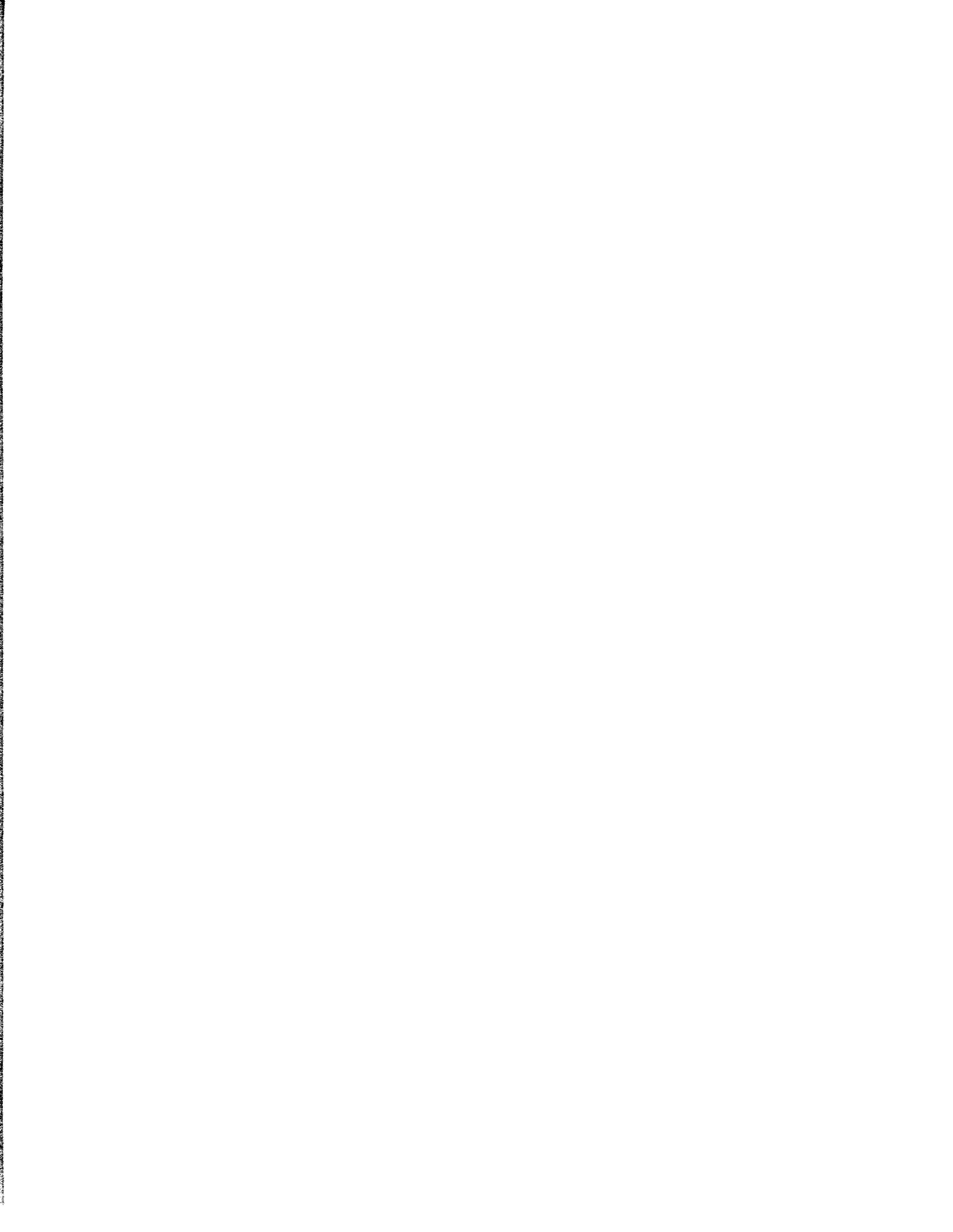


TABLE 12.--SANITARY FACILITIES

(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 |
|--------------------------|-------------------------------------|-------------------------------------|-----------------------------------|------------------------|--|
| 1000: Weiser----- | Moderate: large stones | Severe: seepage, large stones | Severe: large stones | Slight | Poor: seepage, small stones |
| Tencee----- | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Slight | Poor: cemented pan, seepage, small stones |
| Arizo----- | Severe: flooding, poor filter | Severe: seepage, flooding | Severe: flooding, too sandy | Severe: flooding | Poor: seepage, too sandy, small stones |
| 1001: Weiser----- | Moderate: large stones | Severe: seepage | Severe: large stones | Slight | Poor: seepage, small stones |
| Tencee----- | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Slight | Poor: cemented pan, seepage, small stones |
| 1010: Tencee----- | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Slight | Poor: cemented pan, seepage, small stones |
| Weiser----- | Moderate: large stones | Severe: seepage, large stones | Severe: large stones | Slight | Poor: seepage, small stones |
| 1016: Tencee----- | Severe: cemented pan, slope | Severe: cemented pan, slope | Severe: cemented pan, slope | Severe: slope | Poor: cemented pan, seepage, small stones |
| Tencee----- | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Slight | Poor: cemented pan, seepage, small stones |
| 1017: Tencee----- | Severe: cemented pan | Severe: cemented pan, slope | Severe: cemented pan | Moderate: slope | Poor: cemented pan, seepage, small stones |
| Bard----- | Severe: cemented pan | Severe: seepage, cemented pan | Severe: cemented pan | Slight | Poor: cemented pan |

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 |
|----------------------------|-------------------------------------|------------------------------------|------------------------------------|------------------------|---|
| 1017 (con.): Arizo----- | Severe: flooding, poor filter | Severe: seepage, flooding | Severe: flooding, too sandy | Severe: flooding | Poor: seepage, too sandy, small stones |
| 1020: Kurstan----- | Moderate: slope | Severe: seepage, slope | Moderate: slope | Moderate: slope | Poor: small stones |
| Tencee----- | Severe: cemented pan | Severe: cemented pan, slope | Severe: cemented pan | Moderate: slope | Poor: cemented pan, seepage, small stones |
| 1021: Kurstan----- | Slight | Severe: seepage | Slight | Slight | Poor: small stones |
| Knob Hill----- | Slight | Severe: seepage | Moderate: too sandy | Slight | Poor: small stones |
| 1030: Arizo----- | Severe: poor filter | Severe: seepage | Severe: too sandy | Moderate: flooding | Poor: seepage, too sandy, small stones |
| Arizo----- | Severe: flooding, poor filter | Severe: seepage, flooding | Severe: flooding, too sandy | Severe: flooding | Poor: seepage, too sandy, small stones |
| Bluepoint----- | Severe: poor filter | Severe: seepage | Severe: too sandy | Moderate: flooding | Poor: too sandy |
| 1031: Arizo----- | Severe: flooding, poor filter | Severe: seepage, flooding | Severe: flooding, too sandy | Severe: flooding | Poor: seepage, too sandy, small stones |
| Arizo----- | Severe: poor filter | Severe: seepage | Severe: too sandy | Moderate: flooding | Poor: seepage, too sandy, small stones |
| 1040: Akela----- | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: slope | Poor: depth to rock, seepage, small stones |
| Rock Outcrop. | | | | | |
| 1041: Akela----- | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: slope | Poor: depth to rock, 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 |
|------------------------------|-------------------------------------|--|---|------------------------|---|
| 1041 (con.): Rochpah----- | Severe: depth to rock, slope | Severe: seepage, depth to rock, slope | Severe: depth to rock, slope, large stones | Severe: slope | Poor: depth to rock, small stones, slope |
| Rock Outcrop. | | | | | |
| 1052: Knob Hill----- | Slight | Severe: seepage | Moderate: too sandy | Slight | Poor: small stones |
| Arizo----- | Severe: flooding, poor filter | Severe: seepage, flooding | Severe: flooding, too sandy | Severe: flooding | Poor: seepage, too sandy, small stones |
| 1060: St. Thomas----- | Severe: depth to rock, slope | Severe: seepage, depth to rock, slope | Severe: depth to rock, slope, large stones | Severe: slope | Poor: depth to rock, small stones, slope |
| Chinkle----- | Severe: depth to rock | Severe: seepage, depth to rock, slope | Severe: depth to rock | Moderate: slope | Poor: depth to rock, small stones |
| Rock Outcrop. | | | | | |
| 1061: St. Thomas----- | Severe: depth to rock, slope | Severe: seepage, depth to rock, slope | Severe: depth to rock, slope, large stones | Severe: slope | Poor: depth to rock, small stones, slope |
| Zehame----- | 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 |
| Rock Outcrop. | | | | | |
| 1062: Zehame----- | 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 |
| Chinkle----- | 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 |
| Shankba----- | 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 |
|--------------------------|---|---|---|------------------------------------|---|
| 1063: Zeheme----- | 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 |
| Kanesprings---- | Severe: depth to rock, cemented pan, slope | Severe: depth to rock, cemented pan, slope | Severe: depth to rock, cemented pan, slope | Severe: slope | Poor: depth to rock, small stones, slope |
| Rock Outcrop. | | | | | |
| 1064: Zeheme----- | 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 |
| Kanackey----- | Severe: depth to rock, slope, large stones | Severe: depth to rock, slope, large stones | Severe: depth to rock, slope, large stones | Severe: slope | Poor: depth to rock, large stones, slope |
| Rock Outcrop. | | | | | |
| 1065: Zeheme----- | 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 |
| Rock Outcrop. | | | | | |
| 1066: Zeheme----- | 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 |
| Boxspring----- | 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. | | | | | |
| 1070: Bellehelen----- | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: depth to rock, slope | Poor: depth to rock, slope |
| Brier----- | Severe: depth to rock, slope | Severe: depth to rock, slope, large stones | Severe: depth to rock, slope, large stones | Severe: depth to rock, slope | Poor: depth to rock, small stones, slope |
| 1080: Kaspal----- | Severe: percs slowly | Moderate: cemented pan, slope | Severe: cemented pan | 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 |
|------------------------------|---|---|---|------------------------|---|
| 1080 (con.): Canutio----- | Moderate: large stones | Severe: seepage | Moderate: too sandy, large stones | Slight | Poor: seepage, small stones |
| 1090: Logring----- | 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 |
| Rock Outcrop. | | | | | |
| 1091: Logring----- | 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 |
| Eaglepass----- | 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, slope |
| Rock Outcrop. | | | | | |
| 1100: Geta----- | Moderate: percs slowly | Moderate: seepage | Slight | Slight | Fair: small stones |
| Geta----- | Moderate: percs slowly | Moderate: seepage | Slight | Slight | Fair: small stones |
| Arizo----- | Severe: flooding, poor filter | Severe: seepage, flooding | Severe: flooding, too sandy | Severe: flooding | Poor: seepage, too sandy, small stones |
| 1101: Geta----- | Moderate: percs slowly | Moderate: seepage, slope | Slight | Slight | Fair: small stones |
| 1102: Geta----- | Moderate: percs slowly | Moderate: seepage | Slight | Slight | Fair: small stones |
| Bluepoint----- | Severe: poor filter | Severe: seepage | Severe: too sandy | Moderate: flooding | Poor: too sandy |
| Arizo----- | Severe: flooding, poor filter | Severe: seepage, flooding | Severe: flooding, too sandy | Severe: flooding | Poor: seepage, too sandy, small stones |
| 1110: Kanesprings---- | Severe: depth to rock, cemented pan, slope | Severe: depth to rock, cemented pan, slope | Severe: depth to rock, cemented pan, 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 |
|---|---|---|---|------------------------|--|
| 1110 (con.): Kanackey----- Rock Outcrop. | Severe: depth to rock, slope, large stones | Severe: depth to rock, slope, large stones | Severe: depth to rock, slope, large stones | Severe: slope | Poor: depth to rock, large stones, slope |
| 1113: Kanesprings----- Gabbvally----- | Severe: depth to rock, cemented pan, slope | Severe: depth to rock, cemented pan, slope | Severe: depth to rock, cemented pan, slope | Severe: slope | Poor: depth to rock, small stones, slope |
| 1160: Silent----- Koyen----- | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Slight | Poor: cemented pan |
| 1170: Alko----- Alko----- Arizo----- | Severe: poor filter | Severe: seepage | Moderate: flooding, too sandy | Moderate: flooding | Poor: seepage, small stones |
| 1172: Alko----- Geta----- | Severe: cemented pan | Severe: seepage, cemented pan, slope | Severe: cemented pan, too sandy | Slight | Poor: cemented pan, too sandy, small stones |
| 1180: Acoma----- Decan----- | Moderate: percs slowly | Moderate: seepage, slope | Slight | Slight | Fair: small stones |
| | Severe: percs slowly | Severe: slope | Moderate: slope | Moderate: slope | Poor: small stones |
| | Severe: cemented pan | Severe: cemented pan, slope | Severe: cemented pan | Moderate: slope | Poor: cemented pan, 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 |
|---------------------------|--|---|--|------------------------------------|--|
| 1180 (con.): Cath----- | Severe: percs slowly | Moderate: slope | Moderate: too sandy | Slight | Poor: seepage, small stones |
| 1190: Minu----- | Severe: cemented pan, poor filter | Severe: seepage, cemented pan | Severe: too sandy | Slight | Poor: cemented pan, seepage, too sandy |
| Shroe----- | Severe: percs slowly, slope | Severe: slope | Severe: slope | Severe: slope | Poor: slope |
| Acoma----- | Severe: percs slowly | Moderate: slope | Slight | Slight | Poor: small stones |
| 1210: Brier----- | Severe: depth to rock, slope | Severe: depth to rock, slope, large stones | Severe: depth to rock, slope, large stones | Severe: depth to rock, slope | Poor: depth to rock, small stones, slope |
| Acoma----- | Severe: percs slowly | Severe: slope | Moderate: slope | Moderate: slope | Poor: small stones |
| Bellehelen---- | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: depth to rock, slope | Poor: depth to rock, slope |
| 1211: Brier----- | Severe: depth to rock, slope | Severe: depth to rock, slope, large stones | Severe: depth to rock, slope, large stones | Severe: depth to rock, slope | Poor: depth to rock, small stones, slope |
| Rock Outcrop. | | | | | |
| 1220: Lien----- | Severe: cemented pan | Severe: seepage, cemented pan, slope | Severe: cemented pan | Moderate: slope | Poor: cemented pan, seepage, small stones |
| Veet----- | Severe: poor filter | Severe: seepage | Moderate: flooding, too sandy, large stones | Moderate: flooding | Poor: seepage, small stones |
| 1230: Pahranagat----- | Severe: flooding, wetness, percs slowly | Severe: flooding, wetness | Severe: flooding, wetness | Severe: flooding, wetness | Fair: too clayey, wetness |
| Pahranagat----- | Severe: flooding, wetness, percs slowly | Severe: flooding, wetness | Severe: flooding, wetness, excess salt | Severe: flooding, wetness | Fair: too clayey, 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 |
|--------------------------|---|---|---|------------------------------|--|
| 1250: Patter----- | Severe: percs slowly | Moderate: slope | Moderate: flooding | Moderate: flooding | Good |
| Heist----- | Slight | Severe: seepage | Slight | Slight | Poor: small stones |
| 1260: Hollace----- | Severe: depth to rock, cemented pan, slope | Severe: depth to rock, cemented pan, slope | Severe: depth to rock, cemented pan, slope | Severe: slope | Poor: depth to rock, small stones, slope |
| Gabbvally----- | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: slope | Poor: depth to rock, slope |
| 1261: Hollace----- | Severe: depth to rock, cemented pan, slope | Severe: depth to rock, cemented pan, slope | Severe: depth to rock, cemented pan, slope | Severe: slope | Poor: depth to rock, small stones, slope |
| Rochpah----- | Severe: depth to rock, slope | Severe: seepage, depth to rock, slope | Severe: depth to rock, slope, large stones | Severe: slope | Poor: depth to rock, small stones, slope |
| Wyva----- | Severe: depth to rock, slope, large stones | Severe: depth to rock, slope, large stones | Severe: depth to rock, slope, large stones | Severe: slope | Poor: depth to rock, large stones, slope |
| 1262: Hollace----- | Severe: depth to rock, cemented pan, slope | Severe: depth to rock, cemented pan, slope | Severe: depth to rock, cemented pan, slope | Severe: slope | Poor: depth to rock, small stones, slope |
| Winklo----- | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: slope | Poor: depth to rock, hard to pack, small stones |
| Wyva----- | Severe: depth to rock, slope, large stones | Severe: depth to rock, slope, large stones | Severe: depth to rock, slope, large stones | Severe: slope | Poor: depth to rock, large stones, slope |
| 1270: Laross----- | Severe: slope | Severe: seepage, slope | Severe: depth to rock, seepage, slope | Severe: seepage, slope | Poor: seepage, small stones, slope |
| Rock Outcrop. | | | | | |
| 1300: Mormount----- | Severe: cemented pan | Severe: cemented pan, slope | Severe: cemented pan | Moderate: slope | Poor: cemented pan, 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 |
|----------------------------|--|-------------------------------------|---|------------------------|---|
| 1300 (con.): Arizo----- | Severe: flooding, poor filter | Severe: seepage, flooding | Severe: flooding, too sandy | Severe: flooding | Poor: seepage, too sandy, small stones |
| 1302: Mormount----- | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Slight | Poor: cemented pan, small stones |
| 1303: Mormount----- | Severe: cemented pan | Severe: cemented pan, slope | Severe: cemented pan | Moderate: slope | Poor: cemented pan, small stones |
| Canutio----- | Moderate: large stones | Severe: seepage | Moderate: too sandy, large stones | Slight | Poor: seepage, small stones |
| 1340: Aymate----- | Severe: cemented pan, percs slowly | Severe: seepage, cemented pan | Severe: cemented pan | Slight | Poor: cemented pan, small stones |
| Canutio----- | Moderate: large stones | Severe: seepage | Moderate: too sandy, large stones | Slight | Poor: seepage, small stones |
| 1341: Aymate----- | Severe: cemented pan, percs slowly | Severe: seepage, cemented pan | Severe: cemented pan | Slight | Poor: cemented pan, small stones |
| 1342: Aymate----- | Severe: cemented pan, percs slowly | Severe: seepage, cemented pan | Severe: cemented pan | Slight | Poor: cemented pan, small stones |
| Mormount----- | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Slight | Poor: cemented pan, small stones |
| Arizo----- | Severe: flooding, poor filter | Severe: seepage, flooding | Severe: flooding, too sandy | Severe: flooding | Poor: seepage, too sandy, small stones |
| 1350: Bard----- | Severe: cemented pan | Severe: seepage, cemented pan | Severe: cemented pan | Slight | Poor: cemented pan |
| 1360: Canutio----- | Moderate: large stones | Severe: seepage | Moderate: too sandy, large stones | Slight | Poor: seepage, small stones |
| Arizo----- | Severe: flooding, poor filter | Severe: seepage, flooding | Severe: flooding, too sandy | Severe: flooding | 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 |
|---------------------------|---|---|---|------------------------|---|
| 1370: Mormon Mesa----- | Severe: cemented pan | Severe: seepage, cemented pan | Severe: cemented pan | Slight | Poor: cemented pan |
| Mormon Mesa----- | Severe: cemented pan | Severe: seepage, cemented pan, slope | Severe: cemented pan | Moderate: slope | Poor: cemented pan |
| 1371: Mormon Mesa----- | Severe: cemented pan | Severe: seepage, cemented pan | Severe: cemented pan | Slight | Poor: cemented pan |
| Naye----- | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Slight | Poor: cemented pan, small stones |
| Dalian----- | Moderate: flooding | Severe: seepage | Moderate: flooding | Moderate: flooding | Poor: small stones |
| 1372: Mormon Mesa----- | Severe: cemented pan | Severe: seepage, cemented pan | Severe: cemented pan | Slight | Poor: cemented pan |
| Tonopah----- | Severe: poor filter | Severe: seepage | Severe: too sandy | Moderate: flooding | Poor: seepage, too sandy, small stones |
| Arada----- | Severe: poor filter | Severe: seepage | Moderate: too sandy | Slight | Poor: seepage, small stones |
| 1380: Bracken----- | Moderate: depth to rock | Moderate: depth to rock, slope | Severe: depth to rock | Slight | Poor: thin layer |
| 1390: Shankba----- | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: slope | Poor: depth to rock, small stones, slope |
| Chinkle----- | 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 |
| Kanackey----- | Severe: depth to rock, slope, large stones | Severe: depth to rock, slope, large stones | Severe: depth to rock, slope, large stones | Severe: slope | Poor: depth to rock, large stones, slope |
| 1400: Cave----- | Severe: cemented pan | Severe: seepage, cemented pan, slope | Severe: cemented pan | Moderate: slope | Poor: cemented pan, 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 |
|------------------------------|-------------------------------------|--|---|------------------------|--|
| 1400 (con.): Canutio----- | Moderate: large stones | Severe: seepage | Moderate: too sandy, large stones | Slight | Poor: seepage, small stones |
| 1401: Cave----- | Severe: cemented pan | Severe: seepage, cemented pan, slope | Severe: cemented pan | Moderate: slope | Poor: cemented pan, small stones |
| Arizo----- | Severe: flooding, poor filter | Severe: seepage, flooding | Severe: flooding, too sandy | Severe: flooding | Poor: seepage, too sandy, small stones |
| 1403: Cave----- | Severe: cemented pan, slope | Severe: seepage, cemented pan, slope | Severe: cemented pan, slope | Severe: slope | Poor: cemented pan, small stones, slope |
| Tencee----- | Severe: cemented pan | Severe: cemented pan, slope | Severe: cemented pan | Moderate: slope | Poor: cemented pan, seepage, small stones |
| 1404: Cave----- | Severe: cemented pan | Severe: seepage, cemented pan, slope | Severe: cemented pan | Moderate: slope | Poor: cemented pan, small stones |
| Mormount----- | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Slight | Poor: cemented pan, small stones |
| Canutio----- | Moderate: large stones | Severe: seepage | Moderate: too sandy, large stones | Slight | Poor: seepage, small stones |
| 1405: Cave----- | Severe: cemented pan | Severe: seepage, cemented pan, slope | Severe: cemented pan | Moderate: slope | Poor: cemented pan, small stones |
| Zeheme----- | 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 |
| 1406: Cave----- | Severe: cemented pan, slope | Severe: seepage, cemented pan, slope | Severe: cemented pan, slope | Severe: slope | Poor: cemented pan, 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 |
|--|--|--|--|--|--|
| 1420: Kanackey----- Rock Outcrop. | Severe: depth to rock, slope, large stones | Severe: depth to rock, slope, large stones | Severe: depth to rock, slope, large stones | Severe: slope | Poor: depth to rock, large stones, slope |
| 1430: Typic Torriorthents-- Badland----- | Severe: percs slowly, slope Severe: depth to rock, slope | Severe: slope Severe: depth to rock, slope | Severe: slope, too sandy Severe: depth to rock, slope, excess salt | Severe: slope Severe: depth to rock, slope | Poor: slope Poor: depth to rock, slope, excess salt |
| 1460: Pintwater----- Rochpah----- | Severe: depth to rock, slope Severe: depth to rock, slope | Severe: seepage, depth to rock, slope Severe: seepage, depth to rock, slope | Severe: depth to rock, slope, large stones Severe: depth to rock, slope, large stones | Severe: slope Severe: slope | Poor: depth to rock, small stones, slope Poor: depth to rock, small stones, slope |
| 1470: Tybo----- Keefa----- Koyen----- | Severe: cemented pan Moderate: percs slowly Severe: poor filter | Severe: seepage, cemented pan Severe: seepage Severe: seepage | Severe: cemented pan Slight Moderate: too sandy | Slight Slight Slight | Poor: cemented pan Fair: small stones, thin layer Poor: seepage, small stones |
| 1471: Tybo----- Koyen----- | Severe: cemented pan Severe: poor filter | Severe: seepage, cemented pan Severe: seepage | Severe: cemented pan Moderate: too sandy | Slight Slight | Poor: cemented pan Poor: seepage, small stones |
| 1472: Tybo----- Geer----- | Severe: cemented pan Moderate: flooding, percs slowly | Severe: seepage, cemented pan Moderate: seepage | Severe: cemented pan Moderate: flooding | Slight Moderate: flooding | Poor: cemented pan 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 |
|-----------------------------|--|-------------------------------------|---------------------------------------|------------------------------|---|
| 1473: Tybo----- | Severe: cemented pan | Severe: seepage, cemented pan | Severe: cemented pan | Slight | Poor: cemented pan |
| Leo----- | Severe: poor filter | Severe: seepage | Severe: too sandy | Moderate: flooding | Poor: seepage, too sandy, small stones |
| 1474: Tybo----- | Severe: cemented pan | Severe: seepage, cemented pan | Severe: cemented pan | Slight | Poor: cemented pan |
| Delamar----- | Severe: cemented pan | Severe: seepage, cemented pan | Severe: cemented pan, too sandy | Slight | Poor: cemented pan, too sandy |
| 1490: Keefa----- | Moderate: percs slowly | Severe: seepage | Slight | Slight | Fair: small stones, thin layer |
| Penoyer----- | Moderate: flooding, percs slowly | Moderate: seepage | Moderate: flooding | Moderate: flooding | Good |
| 1491: Keefa----- | Moderate: percs slowly | Severe: seepage | Severe: too sandy | Slight | Poor: too sandy |
| Penoyer----- | Moderate: flooding, percs slowly | Moderate: seepage | Moderate: flooding | Moderate: flooding | Good |
| 1510: Koyen----- | Severe: poor filter | Severe: seepage | Moderate: too sandy | Slight | Poor: seepage, small stones |
| 1512: Koyen----- | Severe: poor filter | Severe: seepage | Moderate: too sandy | Slight | Poor: seepage, small stones |
| Penoyer----- | Moderate: flooding, percs slowly | Moderate: seepage | Moderate: flooding | Moderate: flooding | Good |
| 1520: Geer----- | Moderate: flooding, percs slowly | Moderate: seepage | Moderate: flooding | Moderate: flooding | Good |
| Penoyer----- | Moderate: flooding, percs slowly | Moderate: seepage | Moderate: flooding | Moderate: 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 |
|--------------------------|---|---|--|------------------------|---|
| 1530: Delamar----- | Severe: cemented pan | Severe: seepage, cemented pan | Severe: cemented pan, too sandy | Slight | Poor: cemented pan, too sandy |
| Leo----- | Severe: poor filter | Severe: seepage | Severe: too sandy | Moderate: flooding | Poor: seepage, too sandy, small stones |
| 1531: Delamar----- | Severe: cemented pan | Severe: seepage, cemented pan | Severe: cemented pan, too sandy | Slight | Poor: cemented pan, too sandy |
| Veet----- | Severe: poor filter | Severe: seepage | Moderate: flooding, too sandy, large stones | Moderate: flooding | Poor: seepage, small stones |
| 1533: Delamar----- | Severe: cemented pan | Severe: seepage, cemented pan | Severe: cemented pan, too sandy | Slight | Poor: cemented pan, too sandy |
| Tybo----- | Severe: cemented pan | Severe: seepage, cemented pan | Severe: cemented pan | Slight | Poor: cemented pan |
| Koyen----- | Severe: poor filter | Severe: seepage | Moderate: too sandy | Slight | Poor: seepage, small stones |
| 1534: Delamar----- | Severe: cemented pan | Severe: seepage, cemented pan | Severe: cemented pan, too sandy | Slight | Poor: cemented pan, too sandy |
| Koyen----- | Severe: poor filter | Severe: seepage | Moderate: too sandy | Slight | Poor: seepage, small stones |
| 1535: Delamar----- | Severe: cemented pan | Severe: seepage, cemented pan | Severe: cemented pan, too sandy | Slight | Poor: cemented pan, too sandy |
| 1540: Oleman----- | Severe: cemented pan, poor filter | Severe: seepage, cemented pan, slope | Severe: too sandy | Moderate: slope | Poor: cemented pan, seepage, too sandy |
| Leo----- | Severe: poor filter | Severe: seepage | Severe: too sandy | Moderate: flooding | 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 |
|--------------------------|---|---|---|------------------------|--|
| 1541: Oleman----- | Severe: cemented pan, poor filter | Severe: seepage, cemented pan | Severe: too sandy | Slight | Poor: cemented pan, seepage, too sandy |
| Cave----- | Severe: cemented pan | Severe: seepage, cemented pan, slope | Severe: cemented pan | Moderate: slope | Poor: cemented pan, small stones |
| 1542: Oleman----- | Severe: cemented pan, poor filter | Severe: seepage, cemented pan, slope | Severe: too sandy | Moderate: slope | Poor: cemented pan, seepage, too sandy |
| 1550: Pahroc----- | Severe: cemented pan, poor filter | Severe: seepage, cemented pan, slope | Severe: cemented pan | Moderate: slope | Poor: cemented pan, seepage, small stones |
| Leo----- | Severe: poor filter | Severe: seepage | Severe: too sandy | Moderate: flooding | Poor: seepage, too sandy, small stones |
| 1551: Pahroc----- | Severe: cemented pan, poor filter | Severe: seepage, cemented pan, slope | Severe: cemented pan | Moderate: slope | Poor: cemented pan, seepage, small stones |
| 1570: Kyler----- | 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 |
| Eaglepass----- | 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, slope |
| Rock Outcrop. | | | | | |
| 1571: Kyler----- | 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 |
| Logring----- | 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 |
| Rock Outcrop. | | | | | |

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 |
|--------------------------|---|---|--|------------------------|--|
| 1590: Winklo----- | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: slope | Poor: depth to rock, hard to pack, small stones |
| Wyva----- | Severe: depth to rock, slope, large stones | Severe: depth to rock, slope, large stones | Severe: depth to rock, slope, large stones | Severe: slope | Poor: depth to rock, large stones, slope |
| 1591: Winklo----- | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: slope | Poor: depth to rock, hard to pack, small stones |
| Rochpah----- | Severe: depth to rock, slope | Severe: seepage, depth to rock, slope | Severe: depth to rock, slope, large stones | Severe: slope | Poor: depth to rock, small stones, slope |
| Rock Outcrop. | | | | | |
| 1650: Handpah----- | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Slight | Poor: cemented pan |
| Veet----- | Severe: poor filter | Severe: seepage | Moderate: flooding, too sandy, large stones | Moderate: flooding | Poor: seepage, small stones |
| 1660: Dewrust----- | Severe: cemented pan, percs slowly | Severe: cemented pan | Severe: cemented pan | Slight | Poor: cemented pan, hard to pack |
| Veet----- | Severe: poor filter | Severe: seepage | Moderate: flooding, too sandy, large stones | Moderate: flooding | Poor: seepage, small stones |
| 1680: Rochpah----- | Severe: depth to rock, slope | Severe: seepage, depth to rock, slope | Severe: depth to rock, slope, large stones | Severe: slope | Poor: depth to rock, small stones, slope |
| Hollace----- | Severe: depth to rock, cemented pan, slope | Severe: depth to rock, cemented pan, slope | Severe: depth to rock, cemented pan, slope | Severe: slope | Poor: depth to rock, small stones, slope |
| Gabbvally----- | 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 |
|---------------------------|--|--|--|------------------------|---|
| 1681: Rochpah----- | Severe: depth to rock, slope | Severe: seepage, depth to rock, slope | Severe: depth to rock, slope, large stones | Severe: slope | Poor: depth to rock, small stones, slope |
| Veet----- | Severe: poor filter | Severe: seepage | Moderate: flooding, too sandy, large stones | Moderate: flooding | Poor: seepage, small stones |
| 1683: Rochpah----- | Severe: depth to rock | Severe: seepage, depth to rock, slope | Severe: depth to rock, large stones | Moderate: slope | Poor: depth to rock, small stones |
| Rock Outcrop. Leo----- | Severe: poor filter | Severe: seepage | Severe: too sandy | Moderate: flooding | Poor: seepage, too sandy, small stones |
| 1690: Jolan----- | Severe: cemented pan | Severe: seepage, cemented pan | Severe: cemented pan | Slight | Poor: cemented pan |
| Geer----- | Moderate: flooding, percs slowly | Moderate: seepage, slope | Moderate: flooding | Moderate: flooding | Good |
| 1700: Sieroclipf----- | Severe: cemented pan | Severe: cemented pan | Severe: cemented pan | Slight | Poor: cemented pan, small stones |
| Veet----- | Severe: poor filter | Severe: seepage | Moderate: flooding, too sandy, large stones | Moderate: flooding | Poor: seepage, small stones |
| 1710: Cliffdown----- | Moderate: flooding | Severe: seepage | Moderate: flooding | Moderate: flooding | Poor: small stones |
| 1730: Cath----- | Severe: percs slowly | Moderate: slope | Moderate: too sandy | Slight | Poor: seepage, small stones |
| Veet----- | Severe: poor filter | Severe: seepage | Moderate: flooding, too sandy, large stones | Moderate: flooding | Poor: seepage, small stones |
| 1740: Slaw----- | Severe: flooding, percs slowly | Severe: flooding | Severe: flooding, excess salt | 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 |
|-----------------------------|---|---|--|------------------------------------|---|
| 1740 (con.): Playas----- | Severe: ponding, percs slowly | Severe: ponding | Severe: ponding, too clayey, excess salt | Severe: ponding | Poor: too clayey, hard to pack, ponding |
| 1741: Slaw----- | Severe: flooding, percs slowly | Severe: flooding | Severe: flooding, excess salt | Severe: flooding | Good |
| 1750: Chanybuck----- | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: depth to rock, seepage, slope | Severe: depth to rock, slope | Poor: depth to rock, slope |
| Brier----- | Severe: depth to rock, slope | Severe: depth to rock, slope, large stones | Severe: depth to rock, slope, large stones | Severe: depth to rock, slope | Poor: depth to rock, small stones, slope |
| Rock Outcrop. | | | | | |
| 1761: Wyva----- | Severe: depth to rock, slope, large stones | Severe: depth to rock, slope, large stones | Severe: depth to rock, slope, large stones | Severe: slope | Poor: depth to rock, large stones, slope |
| Rock Outcrop. | | | | | |
| 1762: Wyva----- | Severe: depth to rock, slope, large stones | Severe: depth to rock, slope, large stones | Severe: depth to rock, slope, large stones | Severe: slope | Poor: depth to rock, large stones, slope |
| Slidyntn----- | 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 |
| 1770: Vest----- | Severe: poor filter | Severe: seepage | Moderate: flooding, too sandy, large stones | Moderate: flooding | Poor: seepage, small stones |
| Mosida----- | Severe: flooding | Severe: flooding | Severe: flooding | Severe: flooding | Good |
| 1810: Boxspring----- | 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. | | | | | |

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 |
|--------------------------|---|---|---|------------------------------------|--|
| 1811: Boxspring----- | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: slope | Poor: depth to rock, small stones, slope |
| Theriot----- | 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 |
| Rock Outcrop. | | | | | |
| 1821: Turba----- | 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 |
| Acti----- | 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, small stones |
| 1830: Zaqua----- | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: slope | Poor: depth to rock, small stones, slope |
| Winklo----- | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: slope | Poor: depth to rock, hard to pack, small stones |
| 1831: Zaqua----- | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: slope | Poor: depth to rock, small stones, slope |
| Boxspring----- | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: slope | Poor: depth to rock, small stones, slope |
| 1832: Zaqua----- | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: slope | Poor: depth to rock, small stones, slope |
| Winklo----- | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: slope | Poor: depth to rock, hard to pack, small stones |
| Kanesprings----- | Severe: depth to rock, cemented pan, slope | Severe: depth to rock, cemented pan, slope | Severe: depth to rock, cemented pan, 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 |
|---|------------------------------------|--|--|------------------------------------|---|
| 1833: Zaqua----- Rock Outcrop. | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: slope | Poor: depth to rock, small stones, slope |
| 1850: Rapado----- Oleman----- | Severe: cemented pan, slope | Severe: seepage, cemented pan, slope | Severe: cemented pan, slope | Severe: slope | Poor: cemented pan, small stones, slope |
| 1851: Rapado----- Veet----- | Severe: cemented pan | Severe: seepage, cemented pan | Severe: too sandy | Slight | Poor: cemented pan, seepage, too sandy |
| 1870: Falexia----- Laross----- | Severe: poor filter | Severe: seepage | Moderate: flooding, too sandy, large stones | Moderate: flooding | Poor: seepage, small stones |
| 1880: Tejabe----- Pintwater----- Rock Outcrop. | Severe: slope | Severe: seepage, slope | Severe: depth to rock, seepage, slope | Severe: seepage, slope | Poor: small stones, slope |
| 1890: Welring----- Rock Outcrop. | Severe: depth to rock, slope | Severe: seepage, depth to rock, slope | Severe: depth to rock, slope, large stones | Severe: seepage, slope | Poor: seepage, small stones, slope |
| | 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 |

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 |
|--------------------------|---|---|---|------------------------------------|--|
| 1900: Glendale----- | Severe: flooding, percs slowly | Severe: flooding | Severe: flooding, excess salt | Severe: flooding | Good |
| Bluepoint----- | Severe: poor filter | Severe: seepage, slope | Severe: too sandy | Moderate: flooding, slope | Poor: too sandy |
| 1910: Land----- | Severe: flooding, wetness, percs slowly | Severe: flooding, wetness | Severe: flooding, wetness, excess salt | Severe: flooding, wetness | Fair: wetness |
| 1920: Motoqua----- | Severe: depth to rock, slope | Severe: depth to rock, slope, large stones | Severe: depth to rock, slope, large stones | Severe: depth to rock, slope | Poor: depth to rock, large stones, slope |
| Rock Outcrop. | | | | | |
| 1921: Motoqua----- | Severe: depth to rock, slope | Severe: depth to rock, slope, large stones | Severe: depth to rock, slope, large stones | Severe: depth to rock, slope | Poor: depth to rock, large stones, slope |
| Thunderbird----- | Severe: depth to rock, percs slowly, slope | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: slope | Poor: depth to rock, hard to pack, slope |
| 1941: Slidytmn----- | 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 |
| Capsus----- | 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, small stones |
| 1950: Ursine----- | Severe: cemented pan, slope | Severe: seepage, cemented pan, slope | Severe: cemented pan, slope | Severe: slope | Poor: cemented pan, small stones, slope |
| Lomcoine----- | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: slope | Poor: depth to rock, slope |
| Ursine----- | Severe: cemented pan | Severe: seepage, cemented pan, slope | Severe: cemented pan | Moderate: slope | Poor: cemented pan, 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 |
|---------------------------|---|---|---|------------------------|---|
| 1951: Ursine----- | Severe: cemented pan | Severe: seepage, cemented pan, slope | Severe: cemented pan | Moderate: slope | Poor: cemented pan, small stones |
| Ursine----- | Severe: cemented pan, slope | Severe: seepage, cemented pan, slope | Severe: cemented pan, slope | Severe: slope | Poor: cemented pan, small stones, slope |
| 1952: Ursine----- | Severe: cemented pan, slope | Severe: seepage, cemented pan, slope | Severe: cemented pan, slope | Severe: slope | Poor: cemented pan, small stones, slope |
| Ursine----- | Severe: cemented pan | Severe: seepage, cemented pan, slope | Severe: cemented pan | Moderate: slope | Poor: cemented pan, small stones |
| Geer----- | Moderate: flooding, percs slowly | Moderate: seepage, slope | Moderate: flooding | Moderate: flooding | Good |
| 1960: Crystal Springs- | Severe: cemented pan | Severe: seepage, cemented pan | Severe: cemented pan | Slight | Poor: cemented pan, small stones |
| 1980: Longjim----- | Severe: cemented pan | Severe: seepage, cemented pan | Severe: cemented pan | Slight | Poor: cemented pan, small stones |
| Arizo----- | Severe: flooding, poor filter | Severe: seepage, flooding | Severe: flooding, too sandy | Severe: flooding | Poor: seepage, too sandy, small stones |
| 1990: Gabbvally----- | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: slope | Poor: depth to rock, slope |
| Rock Outcrop. | | | | | |
| 1991: Gabbvally----- | Severe: depth to rock | Severe: depth to rock, slope | Severe: depth to rock | Moderate: slope | Poor: depth to rock |
| Hollace----- | Severe: depth to rock, cemented pan, slope | Severe: depth to rock, cemented pan, slope | Severe: depth to rock, cemented pan, slope | Severe: slope | Poor: depth to rock, small stones, slope |
| 1992: Gabbvally----- | 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 |
|----------------------------|-------------------------------------|---|---|------------------------------------|---|
| 1992 (con.): Brier----- | Severe: depth to rock, slope | Severe: depth to rock, slope, large stones | Severe: depth to rock, slope, large stones | Severe: depth to rock, slope | Poor: depth to rock, small stones, slope |
| Rock Outcrop. | | | | | |
| 2000: Playas----- | Severe: ponding, percs slowly | Severe: ponding | Severe: ponding, too clayey, excess salt | Severe: ponding | Poor: too clayey, hard to pack, ponding |
| 2010: Stewval----- | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: slope | Poor: depth to rock, slope |
| Gabbvally----- | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: slope | Poor: depth to rock, slope |
| 2011: Stewval----- | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: slope | Poor: depth to rock, slope |
| Lomoin----- | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: depth to rock, slope | Severe: slope | Poor: depth to rock, slope |
| Rock Outcrop. | | | | | |

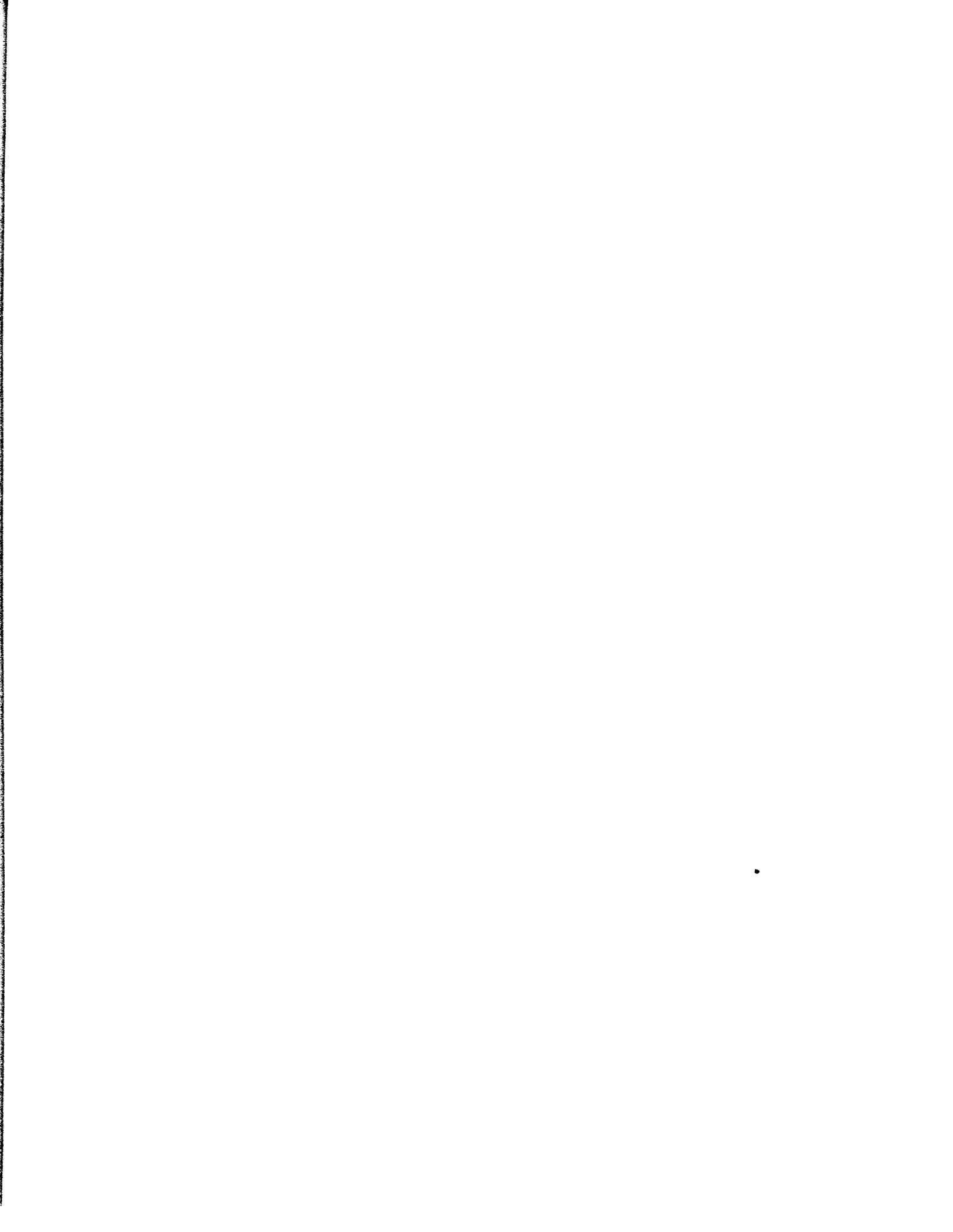


TABLE 13--CONSTRUCTION MATERIALS

| Map symbol and soil name | Roadfill | Sand | Gravel | Topsoil |
|-----------------------------|-----------------------|-----------------------------|-----------------------------|--|
| 1000: Weiser----- | Fair: large stones | Improbable: small stones | Probable | Poor: small stones, area reclaim |
| Tencee----- | Poor: cemented pan | Improbable: thin layer | Improbable: thin layer | Poor: cemented pan, small stones |
| Arizo----- | Fair: large stones | Probable | Probable | Poor: too sandy, small stones, area reclaim |
| 1001: Weiser----- | Fair: large stones | Improbable: small stones | Probable | Poor: small stones, area reclaim |
| Tencee----- | Poor: cemented pan | Improbable: thin layer | Improbable: thin layer | Poor: cemented pan, small stones |
| 1010: Tencee----- | Poor: cemented pan | Improbable: thin layer | Improbable: thin layer | Poor: cemented pan, small stones |
| Weiser----- | Fair: large stones | Improbable: small stones | Probable | Poor: small stones, area reclaim |
| 1016: Tencee----- | Poor: cemented pan | Improbable: thin layer | Improbable: thin layer | Poor: cemented pan, small stones, slope |
| Tencee----- | Poor: cemented pan | Improbable: thin layer | Improbable: thin layer | Poor: cemented pan, small stones |
| 1017: Tencee----- | Poor: cemented pan | Improbable: thin layer | Improbable: thin layer | Poor: cemented pan, small stones |
| Bard----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: cemented pan |
| Arizo----- | Fair: large stones | Probable | Probable | Poor: too sandy, small stones, area reclaim |

TABLE 13--CONSTRUCTION MATERIALS--Continued

| Map symbol and soil name | Roadfill | Sand | Gravel | Topsoil |
|-----------------------------|----------------------------------|-----------------------------|-----------------------------|--|
| 1020: Kurstan----- | Good | Improbable: excess fines | Improbable: excess fines | Poor: small stones, area reclaim |
| Tencee----- | Poor: cemented pan | Improbable: thin layer | Improbable: thin layer | Poor: cemented pan, small stones |
| 1021: Kurstan----- | Good | Improbable: excess fines | Improbable: excess fines | Poor: small stones, area reclaim |
| Knob Hill----- | Good | Improbable: excess fines | Improbable: excess fines | Poor: small stones, area reclaim |
| 1030: Arizo----- | Fair: large stones | Probable | Probable | Poor: too sandy, small stones, area reclaim |
| Arizo----- | Fair: large stones | Probable | Probable | Poor: too sandy, small stones, area reclaim |
| Bluepoint----- | Good | Improbable: excess fines | Improbable: excess fines | Poor: too sandy |
| 1031: Arizo----- | Fair: large stones | Probable | Probable | Poor: too sandy, small stones, area reclaim |
| Arizo----- | Fair: large stones | Probable | Probable | Poor: too sandy, small stones, area reclaim |
| 1040: Akela----- | Poor: depth to rock | Improbable: thin layer | Improbable: thin layer | Poor: depth to rock, small stones, slope |
| Rock Outcrop. | | | | |
| 1041: Akela----- | Poor: depth to rock, slope | Improbable: thin layer | Improbable: thin layer | Poor: depth to rock, small stones, slope |
| Rochpah----- | Poor: depth to rock | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| Rock Outcrop. | | | | |

TABLE 13--CONSTRUCTION MATERIALS--Continued

| Map symbol and soil name | Roadfill | Sand | Gravel | Topsoil |
|--------------------------|----------------------------------|-----------------------------|-----------------------------|--|
| 1052: Knob Hill----- | Good | Improbable: excess fines | Improbable: excess fines | Poor: small stones, area reclaim |
| Arizo----- | Fair: large stones | Probable | Probable | Poor: too sandy, small stones, area reclaim |
| 1060: St. Thomas----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| Chinkle----- | Poor: depth to rock | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones |
| Rock Outcrop. | | | | |
| 1061: St. Thomas----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| Zeheme----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| Rock Outcrop. | | | | |
| 1062: Zeheme----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| Chinkle----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| Shankba----- | Poor: depth to rock | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| 1063: Zeheme----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| Kanesprings----- | Poor: depth to rock | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, cemented pan, small stones |
| Rock Outcrop. | | | | |

TABLE 13--CONSTRUCTION MATERIALS--Continued

| Map symbol and soil name | Roadfill | Sand | Gravel | Topsoil |
|-----------------------------|---|--|--|--|
| 1064: Zeheme----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| Kanackey----- | Poor: depth to rock, large stones | Improbable: excess fines, large stones | Improbable: excess fines, large stones | Poor: depth to rock, too clayey, small stones |
| Rock Outcrop. | | | | |
| 1065: Zeheme----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| Rock Outcrop. | | | | |
| 1066: Zeheme----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| Boxspring----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| Rock Outcrop. | | | | |
| 1070: Bellehelen----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| Brier----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| 1080: Kaspal----- | Poor: shrink-swell, low strength | Improbable: excess fines | Improbable: excess fines | Poor: too clayey, small stones, area reclaim |
| Canutio----- | Fair: large stones | Improbable: small stones | Probable | Poor: small stones, area reclaim |
| 1090: Logring----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| Rock Outcrop. | | | | |

TABLE 13--CONSTRUCTION MATERIALS--Continued

| Map symbol and soil name | Roadfill | Sand | Gravel | Topsoil |
|---------------------------|---|--|--|--|
| 1091: Logring----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| Eaglepass----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| Rock Outcrop. | | | | |
| 1100: Geta----- | Good | Improbable: excess fines | Improbable: excess fines | Poor: small stones |
| Geta----- | Good | Improbable: excess fines | Improbable: excess fines | Poor: small stones |
| Arizo----- | Fair: large stones | Probable | Probable | Poor: too sandy, small stones, area reclaim |
| 1101: Geta----- | Good | Improbable: excess fines | Improbable: excess fines | Poor: small stones |
| 1102: Geta----- | Good | Improbable: excess fines | Improbable: excess fines | Poor: small stones |
| Bluepoint----- | Good | Improbable: excess fines | Improbable: excess fines | Poor: too sandy |
| Arizo----- | Fair: large stones | Probable | Probable | Poor: too sandy, small stones, area reclaim |
| 1110: Kanesprings----- | Poor: depth to rock | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, cemented pan, small stones |
| Kanackey----- | Poor: depth to rock, large stones, slope | Improbable: excess fines, large stones | Improbable: excess fines, large stones | Poor: depth to rock, too clayey, small stones |
| Rock Outcrop. | | | | |
| 1113: Kanesprings----- | Poor: depth to rock | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, cemented pan, small stones |

TABLE 13--CONSTRUCTION MATERIALS--Continued

| Map symbol and soil name | Roadfill | Sand | Gravel | Topsoil |
|--------------------------------|---|-----------------------------|-----------------------------|---|
| 1113 (con.): Gabbvally----- | Poor: depth to rock | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| 1160: Silent----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: cemented pan, small stones, excess salt |
| Koyen----- | Good | Probable | Probable | Poor: small stones, area reclaim |
| 1170: Alko----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: cemented pan, small stones, area reclaim |
| Alko----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: cemented pan, small stones, area reclaim |
| Arizo----- | Fair: large stones | Probable | Probable | Poor: too sandy, small stones, area reclaim |
| 1172: Alko----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: cemented pan, small stones, area reclaim |
| Gata----- | Good | Improbable: excess fines | Improbable: excess fines | Poor: small stones |
| 1180: Acoma----- | Fair: shrink-swell | Improbable: excess fines | Improbable: excess fines | Poor: too clayey, small stones, area reclaim |
| Decan----- | Poor: cemented pan, shrink-swell, low strength | Improbable: excess fines | Improbable: excess fines | Poor: too clayey, small stones |
| Cath----- | Good | Probable | Probable | Poor: small stones, area reclaim |
| 1190: Minu----- | Good | Probable | Probable | Poor: cemented pan, too sandy, small stones |

TABLE 13--CONSTRUCTION MATERIALS--Continued

| Map symbol and soil name | Roadfill | Sand | Gravel | Topsoil |
|----------------------------|----------------------------------|-----------------------------|-----------------------------|---|
| 1190 (con.): Shroe----- | Fair: shrink-swell, slope | Improbable: excess fines | Improbable: excess fines | Poor: small stones, slope |
| Acoma----- | Fair: shrink-swell | Improbable: excess fines | Improbable: excess fines | Poor: too clayey, small stones, area reclaim |
| 1210: Brier----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| Acoma----- | Fair: shrink-swell | Improbable: excess fines | Improbable: excess fines | Poor: too clayey, small stones, area reclaim |
| Bellehelen----- | Poor: depth to rock | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| 1211: Brier----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| Rock Outcrop. | | | | |
| 1220: Lien----- | Poor: cemented pan | Improbable: small stones | Improbable: thin layer | Poor: cemented pan, small stones |
| Veet----- | Good | Probable | Probable | Poor: small stones, area reclaim |
| 1230: Pahranagat----- | Poor: low strength | Improbable: excess fines | Improbable: excess fines | Fair: too clayey, excess salt |
| Pahranagat----- | Poor: low strength | Improbable: excess fines | Improbable: excess fines | Fair: too clayey, excess salt |
| 1250: Patter----- | Good | Improbable: excess fines | Improbable: excess fines | Fair: small stones |
| Heist----- | Good | Improbable: excess fines | Improbable: excess fines | Poor: small stones, area reclaim |

TABLE 13--CONSTRUCTION MATERIALS--Continued

| Map symbol and soil name | Roadfill | Sand | Gravel | Topsoil |
|--------------------------|---|--|--|--|
| 1260: Hollace----- | Poor: depth to rock | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, cemented pan, small stones |
| Gabbvally----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| 1261: Hollace----- | Poor: depth to rock | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, cemented pan, small stones |
| Rochpah----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| Wyva----- | Poor: depth to rock, large stones, slope | Improbable: excess fines, large stones | Improbable: excess fines, large stones | Poor: depth to rock, large stones, slope |
| 1262: Hollace----- | Poor: depth to rock | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, cemented pan, small stones |
| Winklo----- | Poor: depth to rock, low strength, slope | Improbable: excess fines | Improbable: excess fines | Poor: too clayey, small stones, slope |
| Wyva----- | Poor: depth to rock, large stones, slope | Improbable: excess fines, large stones | Improbable: excess fines, large stones | Poor: depth to rock, large stones, slope |
| 1270: Laross----- | Poor: slope | Improbable: thin layer | Improbable: thin layer | Poor: small stones, area reclaim, slope |
| Rock Outcrop. | | | | |
| 1300: Mormount----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: cemented pan, small stones |
| Arizo----- | Fair: large stones | Probable | Probable | Poor: too sandy, small stones, area reclaim |

TABLE 13--CONSTRUCTION MATERIALS--Continued

| Map symbol and soil name | Roadfill | Sand | Gravel | Topsoil |
|---------------------------|-----------------------|-----------------------------|-----------------------------|--|
| 1302: Mormount----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: cemented pan, small stones |
| 1303: Mormount----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: cemented pan, small stones |
| Canutio----- | Fair: large stones | Improbable: small stones | Probable | Poor: small stones, area reclaim |
| 1340: Aymate----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: small stones |
| Canutio----- | Fair: large stones | Improbable: small stones | Probable | Poor: small stones, area reclaim |
| 1341: Aymate----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: small stones |
| 1342: Aymate----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: small stones |
| Mormount----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: cemented pan, small stones |
| Arizo----- | Fair: large stones | Probable | Probable | Poor: too sandy, small stones, area reclaim |
| 1350: Bard----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: cemented pan |
| 1360: Canutio----- | Fair: large stones | Improbable: small stones | Probable | Poor: small stones, area reclaim |
| Arizo----- | Fair: large stones | Probable | Probable | Poor: too sandy, small stones, area reclaim |
| 1370: Mormon Mesa----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: cemented pan, small stones |
| Mormon Mesa----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: cemented pan, small stones |

TABLE 13--CONSTRUCTION MATERIALS--Continued

| Map symbol and soil name | Roadfill | Sand | Gravel | Topsoil |
|-----------------------------|---|--|--|---|
| 1371: Mormon Mesa----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: cemented pan, small stones |
| Naye----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: small stones |
| Dalian----- | Good | Improbable: excess fines | Improbable: excess fines | Poor: small stones, area reclaim |
| 1372: Mormon Mesa----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: cemented pan, small stones |
| Tonopah----- | Good | Improbable: small stones | Probable | Poor: too sandy, small stones, area reclaim |
| Arada----- | Good | Probable | Probable | Poor: too sandy, area reclaim |
| 1380: Bracken----- | Poor: thin layer | Improbable: excess fines | Improbable: excess fines | Poor: small stones |
| 1390: Shankba----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| Chinkle----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| Kanackey----- | Poor: depth to rock, large stones | Improbable: excess fines, large stones | Improbable: excess fines, large stones | Poor: depth to rock, too clayey, small stones |
| 1400: Cave----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: cemented pan, small stones, area reclaim |
| Canutio----- | Fair: large stones | Improbable: small stones | Probable | Poor: small stones, area reclaim |
| 1401: Cave----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: cemented pan, small stones, area reclaim |

TABLE 13--CONSTRUCTION MATERIALS--Continued

| Map symbol and soil name | Roadfill | Sand | Gravel | Topsoil |
|-----------------------------------|---|--|--|---|
| 1401 (con.): Arizo----- | Fair: large stones | Probable | Probable | Poor: too sandy, small stones, area reclaim |
| 1403: Cave----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: cemented pan, small stones, area reclaim |
| Tencee----- | Poor: cemented pan | Improbable: thin layer | Improbable: thin layer | Poor: cemented pan, small stones |
| 1404: Cave----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: cemented pan, small stones, area reclaim |
| Mormount----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: cemented pan, small stones |
| Canutio----- | Fair: large stones | Improbable: small stones | Probable | Poor: small stones, area reclaim |
| 1405: Cave----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: cemented pan, small stones, area reclaim |
| Zehame----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| 1406: Cave----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: cemented pan, small stones, area reclaim |
| 1420: Kanackey----- | Poor: depth to rock, large stones, slope | Improbable: excess fines, large stones | Improbable: excess fines, large stones | Poor: depth to rock, too clayey, small stones |
| Rock Outcrop. | | | | |
| 1430: Typic Torriorthents-- | Poor: slope | Improbable: excess fines | Improbable: excess fines | Poor: too sandy, slope |

TABLE 13--CONSTRUCTION MATERIALS--Continued

| Map symbol and soil name | Roadfill | Sand | Gravel | Topsoil |
|------------------------------|----------------------------------|--|--|---|
| 1430 (con.): Badland----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, excess salt |
| 1460: Pintwater----- | Poor: depth to rock, slope | Improbable: excess fines, large stones | Improbable: excess fines, large stones | Poor: depth to rock, small stones, slope |
| Rochpah----- | Poor: depth to rock | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| 1470: Tybo----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: cemented pan, small stones |
| Keefa----- | Good | Improbable: excess fines | Improbable: excess fines | Poor: small stones |
| Koyen----- | Good | Probable | Probable | Poor: small stones, area reclaim |
| 1471: Tybo----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: cemented pan, small stones |
| Koyen----- | Good | Probable | Probable | Poor: small stones, area reclaim |
| 1472: Tybo----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: cemented pan, small stones |
| Gear----- | Good | Improbable: excess fines | Improbable: excess fines | Fair: small stones |
| 1473: Tybo----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: cemented pan, small stones |
| Leo----- | Good | Probable | Probable | Poor: too sandy, small stones, area reclaim |
| 1474: Tybo----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: cemented pan, small stones |
| Delamar----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: small stones |

TABLE 13--CONSTRUCTION MATERIALS--Continued

| Map symbol and soil name | Roadfill | Sand | Gravel | Topsoil |
|-----------------------------|-----------------------|-----------------------------|-----------------------------|--|
| 1490: Keefa----- | Good | Improbable: excess fines | Improbable: excess fines | Poor: small stones |
| Penoyer----- | Good | Improbable: excess fines | Improbable: excess fines | Good |
| 1491: Keefa----- | Good | Improbable: excess fines | Improbable: excess fines | Poor: small stones |
| Penoyer----- | Good | Improbable: excess fines | Improbable: excess fines | Good |
| 1510: Koyen----- | Good | Probable | Probable | Poor: small stones, area reclaim |
| 1512: Koyen----- | Good | Probable | Probable | Poor: small stones, area reclaim |
| Penoyer----- | Good | Improbable: excess fines | Improbable: excess fines | Good |
| 1520: Geer----- | Good | Improbable: excess fines | Improbable: excess fines | Fair: small stones |
| Penoyer----- | Good | Improbable: excess fines | Improbable: excess fines | Good |
| 1530: Delamar----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: small stones |
| Leo----- | Good | Probable | Probable | Poor: too sandy, small stones, area reclaim |
| 1531: Delamar----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: small stones |
| Veet----- | Good | Probable | Probable | Poor: small stones, area reclaim |
| 1533: Delamar----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: small stones |
| Tybo----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: cemented pan, small stones |
| Koyen----- | Good | Probable | Probable | Poor: small stones, area reclaim |

TABLE 13--CONSTRUCTION MATERIALS--Continued

| Map symbol and soil name | Roadfill | Sand | Gravel | Topsoil |
|-----------------------------|----------------------------------|-----------------------------|-----------------------------|---|
| 1534: Delamar----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: small stones |
| Koyan----- | Good | Probable | Probable | Poor: small stones, area reclaim |
| 1535: Delamar----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: small stones |
| 1540: Oleman----- | Fair: large stones | Probable | Probable | Poor: cemented pan, too sandy, small stones |
| Leo----- | Good | Probable | Probable | Poor: too sandy, small stones, area reclaim |
| 1541: Oleman----- | Fair: large stones | Probable | Probable | Poor: cemented pan, too sandy, small stones |
| Cave----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: cemented pan, small stones, area reclaim |
| 1542: Oleman----- | Fair: large stones | Probable | Probable | Poor: cemented pan, too sandy, small stones |
| 1550: Pahroc----- | Poor: cemented pan | Improbable: small stones | Probable | Poor: cemented pan, small stones, area reclaim |
| Leo----- | Good | Probable | Probable | Poor: too sandy, small stones, area reclaim |
| 1551: Pahroc----- | Poor: cemented pan | Improbable: small stones | Probable | Poor: cemented pan, small stones, area reclaim |
| 1570: Kyler----- | 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 |
|--------------------------------|---|--|--|---|
| 1570 (con.): Eaglepass----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| Rock Outcrop. | | | | |
| 1571: Kyler----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| Logring----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| Rock Outcrop. | | | | |
| 1590: Winklo----- | Poor: depth to rock, low strength, slope | Improbable: excess fines | Improbable: excess fines | Poor: too clayey, small stones, slope |
| Wyva----- | Poor: depth to rock, large stones, slope | Improbable: excess fines, large stones | Improbable: excess fines, large stones | Poor: depth to rock, large stones, slope |
| 1591: Winklo----- | Poor: depth to rock, low strength, slope | Improbable: excess fines | Improbable: excess fines | Poor: too clayey, small stones, slope |
| Rochpah----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| Rock Outcrop. | | | | |
| 1650: Handpah----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: cemented pan, small stones |
| Veet----- | Good | Probable | Probable | Poor: small stones, area reclaim |
| 1660: Dewrust----- | Poor: cemented pan, shrink-swell, low strength | Improbable: excess fines | Improbable: excess fines | Poor: too clayey, small stones |
| Veet----- | Good | Probable | Probable | Poor: small stones, area reclaim |

TABLE 13--CONSTRUCTION MATERIALS--Continued

| Map symbol and soil name | Roadfill | Sand | Gravel | Topsoil |
|---------------------------|----------------------------------|-----------------------------|-----------------------------|--|
| 1680: Rochpah----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| Hollace----- | Poor: depth to rock | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, cemented pan, small stones |
| Gabbvally----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| 1681: Rochpah----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| Vest----- | Good | Probable | Probable | Poor: small stones, area reclaim |
| 1683: Rochpah----- | Poor: depth to rock | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones |
| Rock Outcrop. Leo----- | Good | Probable | Probable | Poor: too sandy, small stones, area reclaim |
| 1690: Jolan----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: excess salt |
| Geer----- | Good | Improbable: excess fines | Improbable: excess fines | Fair: small stones |
| 1700: Sieroclipf----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: small stones |
| Vest----- | Good | Probable | Probable | Poor: small stones, area reclaim |
| 1710: Cliffdown----- | Good | Improbable: excess fines | Improbable: excess fines | Poor: small stones, area reclaim |
| 1730: Cath----- | Good | Probable | Probable | Poor: small stones, area reclaim |

TABLE 13--CONSTRUCTION MATERIALS--Continued

| Map symbol and soil name | Roadfill | Sand | Gravel | Topsoil |
|---------------------------|--|--|--|---|
| 1730 (con.): Veet----- | Good | Probable | Probable | Poor: small stones, area reclaim |
| 1740: Slaw----- | Poor: low strength | Improbable: excess fines | Improbable: excess fines | Poor: too clayey, excess salt |
| Playas----- | Poor: shrink-swell, low strength, wetness | Improbable: excess fines | Improbable: excess fines | Poor: too clayey, excess salt, wetness |
| 1741: Slaw----- | Poor: low strength | Improbable: excess fines | Improbable: excess fines | Poor: too clayey, excess salt |
| 1750: Chanybuck----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| Brier----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| Rock Outcrop. | | | | |
| 1761: Wyva----- | Poor: depth to rock, large stones, slope | Improbable: excess fines, large stones | Improbable: excess fines, large stones | Poor: depth to rock, large stones, slope |
| Rock Outcrop. | | | | |
| 1762: Wyva----- | Poor: depth to rock, large stones, slope | Improbable: excess fines, large stones | Improbable: excess fines, large stones | Poor: depth to rock, large stones, slope |
| Slidytn----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| 1770: Veet----- | Good | Probable | Probable | Poor: small stones, area reclaim |
| Mosida----- | Good | Improbable: excess fines | Improbable: excess fines | Fair: small stones |

TABLE 13--CONSTRUCTION MATERIALS--Continued

| Map symbol and soil name | Roadfill | Sand | Gravel | Topsoil |
|--|----------------------------------|-----------------------------|-----------------------------|---|
| 1810: Boxspring----- Rock Outcrop. | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| 1811: Boxspring----- Theriot----- Rock Outcrop. | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| 1821: Turba----- Acti----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| 1830: Zaqua----- Winklo----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| 1831: Zaqua----- Boxspring----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| 1832: Zaqua----- | 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 |
|-----------------------------|---|--|--|--|
| 1832 (con.): Winklo----- | Poor: depth to rock, low strength, slope | Improbable: excess fines | Improbable: excess fines | Poor: too clayey, small stones, slope |
| Kanesprings----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, cemented pan, small stones |
| 1833: Zaqua----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| Rock Outcrop. | | | | |
| 1850: Rapado----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: small stones, slope |
| Oleman----- | Fair: large stones | Probable | Probable | Poor: cemented pan, too sandy, small stones |
| 1851: Rapado----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: small stones |
| Veet----- | Good | Probable | Probable | Poor: small stones, area reclaim |
| 1870: Faleria----- | Poor: slope | Improbable: excess fines | Improbable: excess fines | Poor: small stones, area reclaim, slope |
| Laross----- | Poor: slope | Improbable: thin layer | Improbable: thin layer | Poor: small stones, area reclaim, slope |
| 1880: Tejabe----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| Pintwater----- | Poor: depth to rock, slope | Improbable: excess fines, large stones | Improbable: excess fines, large stones | Poor: depth to rock, small stones, slope |
| Rock Outcrop. | | | | |

TABLE 13--CONSTRUCTION MATERIALS--Continued

| Map symbol and soil name | Roadfill | Sand | Gravel | Topsoil |
|--|--|---|---|---|
| 1890: Welring----- Rock Outcrop. | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| 1900: Glendale----- Bluepoint----- | Fair: shrink-swell, low strength Good | Improbable: excess fines Improbable: excess fines | Improbable: excess fines Improbable: excess fines | Poor: excess salt Poor: too sandy |
| 1910: Land----- | Poor: low strength | Improbable: excess fines | Improbable: excess fines | Poor: too clayey, excess salt |
| 1920: Motoqua----- Rock Outcrop. | Poor: depth to rock | Improbable: excess fines, large stones | Improbable: excess fines, large stones | Poor: depth to rock, small stones, slope |
| 1921: Motoqua----- Thunderbird---- | Poor: depth to rock, slope Poor: depth to rock, shrink-swell, low strength | Improbable: excess fines, large stones Improbable: excess fines | Improbable: excess fines, large stones Improbable: excess fines | Poor: depth to rock, small stones, slope Poor: too clayey, small stones, slope |
| 1941: Slidymtn----- Capsus----- | Poor: depth to rock, slope Poor: depth to rock, shrink-swell | Improbable: excess fines Improbable: excess fines | Improbable: excess fines Improbable: excess fines | Poor: depth to rock, small stones, slope Poor: depth to rock, too clayey, small stones |
| 1950: Ursine----- Lemoine----- | Poor: cemented pan Poor: depth to rock | Improbable: excess fines Improbable: excess fines | Improbable: excess fines Improbable: excess fines | Poor: cemented pan, small stones, slope Poor: depth to rock, small stones, slope |

TABLE 13--CONSTRUCTION MATERIALS--Continued

| Map symbol and soil name | Roadfill | Sand | Gravel | Topsoil |
|-----------------------------|----------------------------------|-----------------------------|-----------------------------|--|
| 1950 (con.): Ursine----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: cemented pan, small stones |
| 1951: Ursine----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: cemented pan, small stones |
| Ursine----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: cemented pan, small stones, slope |
| 1952: Ursine----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: cemented pan, small stones, slope |
| Ursine----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: cemented pan, small stones |
| Geer----- | Good | Improbable: excess fines | Improbable: excess fines | Fair: small stones |
| 1960: Crystal Springs- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: cemented pan, small stones |
| 1980: Longjim----- | Poor: cemented pan | Improbable: excess fines | Improbable: excess fines | Poor: cemented pan, small stones |
| Arizo----- | Fair: large stones | Probable | Probable | Poor: too sandy, small stones, area reclaim |
| 1990: Gabbvally----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| Rock Outcrop. | | | | |
| 1991: Gabbvally----- | Poor: depth to rock | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones |
| Hollace----- | Poor: depth to rock | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, cemented pan, small stones |

TABLE 13--CONSTRUCTION MATERIALS--Continued

| Map symbol and soil name | Roadfill | Sand | Gravel | Topsoil |
|-----------------------------|--|-----------------------------|-----------------------------|---|
| 1992: Gabbvally----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| Brier----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| Rock Outcrop. | | | | |
| 2000: Playas----- | Poor: shrink-swell, low strength, wetness | Improbable: excess fines | Improbable: excess fines | Poor: too clayey, excess salt, wetness |
| 2010: Stewval----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| Gabbvally----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| 2011: Stewval----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| Lemoine----- | Poor: depth to rock, slope | Improbable: excess fines | Improbable: excess fines | Poor: depth to rock, small stones, slope |
| Rock Outcrop. | | | | |

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 |
| 1000: Weiser----- | Severe: seepage | Severe: seepage, large stones | Severe: no water | Deep to water | Slope, large stones, droughty | Large stones |
| Tencee----- | Severe: cemented pan | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, cemented pan | Large stones, cemented pan |
| Arizo----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Slope, large stones, droughty | Large stones, too sandy |
| 1001: Weiser----- | Severe: seepage | Severe: seepage, large stones | Severe: no water | Deep to water | Slope, large stones, droughty | Large stones |
| Tencee----- | Severe: cemented pan | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, cemented pan | Large stones, cemented pan |
| 1010: Tencee----- | Severe: cemented pan | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, cemented pan | Large stones, cemented pan |
| Weiser----- | Severe: seepage | Severe: seepage, large stones | Severe: no water | Deep to water | Slope, large stones, droughty | Large stones |
| 1016: Tencee----- | Severe: cemented pan, slope | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, cemented pan | Slope, large stones, cemented pan |
| Tencee----- | Severe: cemented pan | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, cemented pan | Large stones, cemented pan |
| 1017: Tencee----- | Severe: cemented pan, slope | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, cemented pan | Slope, large stones, cemented pan |
| Bard----- | Severe: cemented pan | Severe: thin layer | Severe: no water | Deep to water | Slope, cemented pan | Cemented pan |
| Arizo----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Slope, large stones, droughty | Large stones, too sandy |
| 1020: Kurstan----- | Severe: seepage, slope | Severe: seepage | Severe: no water | Deep to water | Slope, droughty | Slope |

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 |
| 1020 (con.): Tencee----- | Severe: cemented pan, slope | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, cemented pan | Slope, large stones, cemented pan |
| 1021: Kurstan----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Slope, droughty | Favorable |
| Knob Hill----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, fast intake | Too sandy, soil blowing |
| 1030: Arizo----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Large stones, droughty, fast intake | Large stones, too sandy |
| Arizo----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Large stones, droughty, fast intake | Large stones, too sandy |
| Bluepoint----- | Severe: seepage | Severe: seepage, piping | Severe: no water | Deep to water | Slope, droughty, fast intake | Too sandy, soil blowing |
| 1031: Arizo----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Slope, large stones, droughty | Large stones, too sandy |
| Arizo----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Slope, large stones, droughty | Large stones, too sandy |
| 1040: Akela----- | Severe: depth to rock, slope | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, depth to rock | Slope, large stones, depth to rock |
| Rock Outcrop. | | | | | | |
| 1041: Akela----- | Severe: depth to rock, slope | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, depth to rock | Slope, depth to rock |
| Rochpah----- | Severe: depth to rock, slope | Severe: seepage, large stones | Severe: no water | Deep to water | Slope, large stones, droughty | Slope, large stones, depth to rock |
| Rock Outcrop. | | | | | | |
| 1052: Knob Hill----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Slope, droughty | Too sandy |
| Arizo----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Slope, large stones, 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 |
| 1060: St. Thomas----- | Severe: depth to rock, slope | Severe: seepage, large stones | Severe: no water | Deep to water | Slope, large stones, droughty | Slope, large stones, depth to rock |
| Chinkle----- | 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. | | | | | | |
| 1061: St. Thomas----- | Severe: depth to rock, slope | Severe: seepage, large stones | Severe: no water | Deep to water | Slope, large stones, droughty | Slope, large stones, depth to rock |
| Zehema----- | Severe: depth to rock, slope | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, depth to rock | Slope, large stones, depth to rock |
| Rock Outcrop. | | | | | | |
| 1062: Zehema----- | Severe: depth to rock, slope | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, depth to rock | Slope, large stones, depth to rock |
| Chinkle----- | Severe: depth to rock, slope | Severe: thin layer | Severe: no water | Deep to water | Slope, droughty, depth to rock | Slope, depth to rock |
| Shankba----- | Severe: depth to rock, slope | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, depth to rock | Slope, depth to rock |
| 1063: Zehema----- | Severe: depth to rock, slope | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, depth to rock | Slope, large stones, depth to rock |
| Kanesprings---- | Severe: depth to rock, cemented pan, slope | Severe: thin layer | Severe: no water | Deep to water | Slope, depth to rock, cemented pan | Slope, depth to rock, cemented pan |
| Rock Outcrop. | | | | | | |
| 1064: Zehema----- | Severe: depth to rock, slope | Severe: seepage | Severe: no water | Deep to water | Slope, large stones, droughty | Slope, large stones, depth to rock |
| Kanackey----- | Severe: depth to rock, slope | Severe: large stones | 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 |
| 1065: Zehema----- Rock Outcrop. | Severe: depth to rock, slope | Severe: seepage | Severe: no water | Deep to water | Slope, large stones, droughty | Slope, large stones, depth to rock |
| 1066: Zehema----- Boxspring----- Rock Outcrop. | Severe: depth to rock, slope | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, depth to rock | Slope, large stones, depth to rock |
| 1070: Bellehelen----- Brier----- | 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 |
| 1080: Kaspal----- Canutio----- | Moderate: cemented pan, slope | Moderate: thin layer, hard to pack, large stones | Severe: no water | Deep to water | Slope, percs slowly | Large stones, percs slowly |
| 1090: Logring----- Rock Outcrop. | Severe: depth to rock, slope | Severe: seepage, large stones | Severe: no water | Deep to water | Slope, large stones, droughty | Slope, large stones, depth to rock |
| 1091: Logring----- Eaglepass----- Rock Outcrop. | Severe: depth to rock, slope | Severe: seepage, large stones | Severe: no water | Deep to water | Slope, large stones, droughty | Slope, large stones, depth to rock |
| 1100: Geta----- Geta----- | Moderate: seepage | Moderate: piping | Severe: no water | Deep to water | Soil blowing | Erodes easily, soil blowing |
| | Moderate: seepage | Moderate: piping | Severe: no water | Deep to water | Fast intake, soil blowing | Erodes easily, 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 |
| 1100 (con.): Arizo----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Large stones, droughty, fast intake | Large stones, too sandy |
| 1101: Geta----- | Moderate: seepage, slope | Moderate: piping | Severe: no water | Deep to water | Slope | Erodes easily |
| 1102: Geta----- | Moderate: seepage | Moderate: piping | Severe: no water | Deep to water | Soil blowing | Erodes easily, soil blowing |
| Bluepoint----- | Severe: seepage | Severe: seepage, piping | Severe: no water | Deep to water | Droughty, fast intake, soil blowing | Too sandy, soil blowing |
| Arizo----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Large stones, droughty, fast intake | Large stones, too sandy |
| 1110: Kanesprings----- | Severe: depth to rock, cemented pan, slope | Severe: thin layer | Severe: no water | Deep to water | Slope, depth to rock, cemented pan | Slope, large stones, depth to rock |
| Kanackey----- | Severe: depth to rock, slope | Severe: large stones | Severe: no water | Deep to water | Slope, large stones, droughty | Slope, large stones, depth to rock |
| Rock Outcrop. | | | | | | |
| 1113: Kanesprings----- | Severe: depth to rock, cemented pan, slope | Severe: thin layer | Severe: no water | Deep to water | Slope, depth to rock, cemented pan | Slope, large stones, depth to rock |
| Gabbvally----- | Severe: depth to rock, slope | Severe: thin layer | Severe: no water | Deep to water | Slope, depth to rock | Slope, depth to rock |
| 1160: Silent----- | Severe: cemented pan | Severe: thin layer | Severe: no water | Deep to water | Slope, cemented pan, excess salt | Cemented pan, erodes easily |
| Koyen----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Droughty | Too sandy |
| 1170: Alko----- | Severe: seepage, cemented pan | Severe: seepage | Severe: no water | Deep to water | Droughty, cemented pan | Cemented pan, too sandy |
| Alko----- | Severe: seepage, cemented pan | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, cemented pan | Cemented pan, 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 |
| 1170 (con.): Arizo----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Large stones, droughty, fast intake | Large stones, too sandy |
| 1172: Alko----- | Severe: seepage, cemented pan, slope | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, fast intake | Slope, cemented pan, too sandy |
| Geta----- | Moderate: seepage, slope | Moderate: piping | Severe: no water | Deep to water | Slope | Erodes easily |
| 1180: Acoma----- | Severe: slope | Slight | Severe: no water | Deep to water | Slope, droughty, percs slowly | Slope |
| Decan----- | Severe: slope | Severe: thin layer | Severe: no water | Deep to water | Slope, percs slowly, cemented pan | Slope, cemented pan, erodes easily |
| Cath----- | Moderate: slope | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, soil blowing | Too sandy, soil blowing |
| 1190: Minu----- | Severe: seepage, cemented pan | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, cemented pan | Cemented pan, too sandy |
| Shroe----- | Severe: slope | Severe: piping | Severe: no water | Deep to water | Slope, droughty, percs slowly | Slope, erodes easily |
| Acoma----- | Moderate: slope | Slight | Severe: no water | Deep to water | Slope, droughty, percs slowly | Favorable |
| 1210: Brier----- | Severe: depth to rock, slope | Severe: large stones | Severe: no water | Deep to water | Slope, large stones, droughty | Slope, large stones, depth to rock |
| Acoma----- | Severe: slope | Slight | Severe: no water | Deep to water | Slope, droughty, percs slowly | Slope |
| Bellehelen----- | 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 |
| 1211: Brier----- | Severe: depth to rock, slope | Severe: large stones | 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 |
| 1220: Lien----- | Severe: cemented pan, slope | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, cemented pan | Slope, cemented pan |
| Veet----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Slope, droughty | Large stones, too sandy |
| 1230: Pahranagat----- | Slight | Moderate: piping, wetness | Severe: slow refill | Deep to water | Flooding, excess salt | Favorable |
| Pahranagat----- | Slight | Severe: wetness, excess salt | Severe: slow refill, salty water | Flooding, frost action, excess salt | Wetness, erodes easily, flooding | Erodes easily, wetness |
| 1250: Patter----- | Slight | Severe: piping | Severe: no water | Deep to water | Erodes easily | Erodes easily |
| Heist----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, soil blowing | Soil blowing |
| 1260: Hollace----- | Severe: depth to rock, cemented pan, slope | Severe: large stones | Severe: no water | Deep to water | Slope, large stones, droughty | Slope, large stones, depth to rock |
| Gabbvally----- | Severe: depth to rock, slope | Severe: thin layer | Severe: no water | Deep to water | Slope, depth to rock | Slope, depth to rock |
| 1261: Hollace----- | Severe: depth to rock, cemented pan, slope | Severe: large stones | Severe: no water | Deep to water | Slope, large stones, droughty | Slope, large stones, depth to rock |
| Rochpah----- | Severe: depth to rock, slope | Severe: seepage, large stones | Severe: no water | Deep to water | Slope, large stones, droughty | Slope, large stones, depth to rock |
| Wyva----- | Severe: depth to rock, slope | Severe: large stones | Severe: no water | Deep to water | Slope, large stones, droughty | Slope, large stones, depth to rock |
| 1262: Hollace----- | Severe: depth to rock, cemented pan, slope | Severe: large stones | Severe: no water | Deep to water | Slope, large stones, droughty | Slope, large stones, depth to rock |
| Winklo----- | Severe: 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 |
| 1262 (con.): Wyva----- | Severe: depth to rock, slope | Severe: large stones | Severe: no water | Deep to water | Slope, large stones, droughty | Slope, large stones, depth to rock |
| 1270: Laross----- | Severe: seepage, slope | Severe: seepage, large stones | Severe: no water | Deep to water | Slope, large stones | Slope, large stones |
| Rock Outcrop. | | | | | | |
| 1300: Mormount----- | Severe: cemented pan, slope | Severe: thin layer | Severe: no water | Deep to water | Slope, cemented pan | Slope, cemented pan |
| Arizo----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Slope, large stones, droughty | Large stones, too sandy |
| 1302: Mormount----- | Severe: cemented pan | Severe: thin layer | Severe: no water | Deep to water | Slope, droughty, cemented pan | Cemented pan |
| 1303: Mormount----- | Severe: cemented pan, slope | Severe: thin layer | Severe: no water | Deep to water | Slope, cemented pan | Slope, cemented pan |
| Canutio----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Large stones, droughty | Large stones, too sandy |
| 1340: Aymate----- | Severe: seepage | Severe: thin layer | Severe: no water | Deep to water | Slope, cemented pan | Cemented pan |
| Canutio----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Slope, large stones, droughty | Large stones, too sandy |
| 1341: Aymate----- | Severe: seepage | Severe: thin layer | Severe: no water | Deep to water | Soil blowing, cemented pan | Cemented pan, soil blowing |
| 1342: Aymate----- | Severe: seepage | Severe: thin layer | Severe: no water | Deep to water | Slope, cemented pan | Cemented pan |
| Mormount----- | Severe: cemented pan | Severe: thin layer | Severe: no water | Deep to water | Slope, cemented pan | Cemented pan |
| Arizo----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Slope, large stones, droughty | Large stones, too sandy |
| 1350: Bard----- | Severe: cemented pan | Severe: thin layer | Severe: no water | Deep to water | Slope, cemented pan | Cemented pan |

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 |
| 1360: Canutio----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Slope, large stones, droughty | Large stones, too sandy |
| Arizo----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Slope, large stones, droughty | Large stones, too sandy |
| 1370: Mormon Mesa----- | Severe: cemented pan | Severe: piping | Severe: no water | Deep to water | Soil blowing, cemented pan | Cemented pan, soil blowing |
| Mormon Mesa----- | Severe: cemented pan, slope | Severe: piping | Severe: no water | Deep to water | Slope, cemented pan | Slope, cemented pan |
| 1371: Mormon Mesa----- | Severe: cemented pan | Severe: piping | Severe: no water | Deep to water | Slope, cemented pan | Cemented pan |
| Naye----- | Moderate: seepage, cemented pan, slope | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, cemented pan | Cemented pan |
| Dalian----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Slope, droughty | Favorable |
| 1372: Mormon Mesa----- | Severe: cemented pan | Severe: piping | Severe: no water | Deep to water | Cemented pan | Cemented pan |
| Tonopah----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, rooting depth | Too sandy |
| Arada----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, fast intake | Too sandy, soil blowing |
| 1380: Bracken----- | Severe: seepage | Severe: thin layer | Severe: no water | Deep to water | Slope, droughty | Favorable |
| 1390: Shankba----- | Severe: depth to rock, slope | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, depth to rock | Slope, depth to rock |
| Chinkle----- | Severe: depth to rock, slope | Severe: thin layer | Severe: no water | Deep to water | Slope, droughty, depth to rock | Slope, depth to rock |
| Kanackey----- | Severe: depth to rock, slope | Severe: large stones | 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 |
| 1400: Cave----- | Severe: seepage, cemented pan, slope | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, cemented pan | Slope, cemented pan, too sandy |
| Canutio----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Slope, large stones, droughty | Large stones, too sandy |
| 1401: Cave----- | Severe: seepage, cemented pan, slope | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, cemented pan | Slope, cemented pan, too sandy |
| Arizo----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Slope, large stones, droughty | Large stones, too sandy |
| 1403: Cave----- | Severe: seepage, cemented pan, slope | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, cemented pan | Slope, cemented pan, too sandy |
| Tencee----- | Severe: cemented pan, slope | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, cemented pan | Slope, large stones, cemented pan |
| 1404: Cave----- | Severe: seepage, cemented pan, slope | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, cemented pan | Slope, cemented pan, too sandy |
| Mormount----- | Severe: cemented pan | Severe: thin layer | Severe: no water | Deep to water | Slope, cemented pan | Cemented pan |
| Canutio----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Slope, large stones, droughty | Large stones, too sandy |
| 1405: Cave----- | Severe: seepage, cemented pan, slope | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, cemented pan | Slope, cemented pan, too sandy |
| Zeheme----- | Severe: depth to rock, slope | Severe: seepage | Severe: no water | Deep to water | Slope, large stones, droughty | Slope, large stones, depth to rock |
| 1406: Cave----- | Severe: seepage, cemented pan, slope | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, cemented pan | Slope, cemented pan, 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 |
| 1420: Kanackey----- Rock Outcrop. | Severe: depth to rock, slope | Severe: large stones | Severe: no water | Deep to water | Slope, large stones, droughty | Slope, large stones, depth to rock |
| 1430: Typic Torriorthents-- Badland----- | Severe: slope | Severe: piping | Severe: no water | Deep to water | Slope, droughty, percs slowly | Slope, erodes easily, percs slowly |
| 1460: Pintwater----- Rochpah----- | 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 |
| 1470: Tybo----- Keefa----- Koyen----- | Severe: depth to rock, slope | Severe: seepage, large stones | Severe: no water | Deep to water | Slope, large stones, droughty | Slope, large stones, depth to rock |
| 1471: Tybo----- Koyen----- | Severe: cemented pan | Severe: piping | Severe: no water | Deep to water | Slope, droughty, cemented pan | Cemented pan, erodes easily |
| 1472: Tybo----- Geer----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Droughty | Favorable |
| 1473: Tybo----- Leo----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Droughty | Too sandy |
| | Severe: cemented pan | Severe: piping | Severe: no water | Deep to water | Slope, droughty, cemented pan | Cemented pan, erodes easily |
| | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Slope, droughty | Too sandy |
| | Moderate: seepage | Severe: piping | Severe: no water | Deep to water | Droughty, cemented pan, excess salt | Cemented pan, erodes easily |
| | Severe: seepage | Severe: piping | Severe: no water | Deep to water | Soil blowing, erodes easily | Erodes easily, soil blowing |
| | Severe: cemented pan | Severe: piping | Severe: no water | Deep to water | Slope, droughty, cemented pan | Cemented pan, erodes easily |
| | 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 |
| 1474: Tybo----- | Severe: cemented pan | Severe: piping | Severe: no water | Deep to water | Slope, droughty, cemented pan | Cemented pan, erodes easily |
| Delamar----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Slope, soil blowing, cemented pan | Cemented pan, too sandy, soil blowing |
| 1490: Keefa----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Droughty, soil blowing | Soil blowing |
| Penoyer----- | Moderate: seepage | Severe: piping | Severe: no water | Deep to water | Erodes easily | Erodes easily |
| 1491: Keefa----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Droughty, soil blowing, excess salt | Too sandy, soil blowing |
| Penoyer----- | Moderate: seepage | Severe: piping | Severe: no water | Deep to water | Erodes easily | Erodes easily |
| 1510: Koyen----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Slope, droughty | Too sandy |
| 1512: Koyen----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Slope, droughty | Too sandy |
| Penoyer----- | Moderate: seepage | Severe: piping | Severe: no water | Deep to water | Erodes easily | Erodes easily |
| 1520: Geer----- | Moderate: seepage | Severe: piping | Severe: no water | Deep to water | Soil blowing, erodes easily | Erodes easily, soil blowing |
| Penoyer----- | Moderate: seepage | Severe: piping | Severe: no water | Deep to water | Erodes easily | Erodes easily |
| 1530: Delamar----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Slope, cemented pan | Cemented pan, too sandy |
| Leo----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Slope, droughty | Large stones, too sandy |
| 1531: Delamar----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Slope, cemented pan | Cemented pan, too sandy |
| Veet----- | 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 |
| 1533: Delamar----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Slope, soil blowing, cemented pan | Cemented pan, too sandy, soil blowing |
| Tybo----- | Severe: cemented pan | Severe: piping | Severe: no water | Deep to water | Slope, droughty, cemented pan | Cemented pan, erodes easily |
| Koyen----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Slope, droughty | Too sandy |
| 1534: Delamar----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Cemented pan | Cemented pan, too sandy |
| Koyen----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Droughty | Too sandy |
| 1535: Delamar----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Slope, cemented pan | Cemented pan, too sandy |
| 1540: Oleman----- | Severe: seepage, cemented pan, slope | Severe: seepage | Severe: no water | Deep to water | Slope, large stones, droughty | Slope, large stones, cemented pan |
| Leo----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Slope, droughty | Large stones, too sandy |
| 1541: Oleman----- | Severe: seepage, cemented pan | Severe: seepage | Severe: no water | Deep to water | Slope, large stones, droughty | Large stones, cemented pan, too sandy |
| Cave----- | Severe: seepage, cemented pan, slope | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, cemented pan | Slope, cemented pan, too sandy |
| 1542: Oleman----- | Severe: seepage, cemented pan, slope | Severe: seepage | Severe: no water | Deep to water | Slope, large stones, droughty | Slope, large stones, cemented pan |
| 1550: Fahroc----- | Severe: seepage, cemented pan, slope | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, cemented pan | Slope, cemented pan, too sandy |
| Leo----- | 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 |
| 1551: Pahroc----- | Severe: seepage, cemented pan, slope | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, cemented pan | Slope, cemented pan, too sandy |
| 1570: Kyler----- | Severe: depth to rock, slope | Severe: large stones | Severe: no water | Deep to water | Slope, large stones, droughty | Slope, large stones, depth to rock |
| Eaglepass----- | Severe: depth to rock, slope | Severe: large stones | Severe: no water | Deep to water | Slope, large stones, droughty | Slope, large stones, depth to rock |
| Rock Outcrop. | | | | | | |
| 1571: Kyler----- | Severe: depth to rock, slope | Severe: large stones | Severe: no water | Deep to water | Slope, large stones, droughty | Slope, large stones, depth to rock |
| Logring----- | Severe: depth to rock, slope | Severe: seepage, large stones | Severe: no water | Deep to water | Slope, large stones, droughty | Slope, large stones, depth to rock |
| Rock Outcrop. | | | | | | |
| 1590: Winklo----- | Severe: slope | Severe: thin layer | Severe: no water | Deep to water | Slope, percs slowly, depth to rock | Slope, depth to rock, percs slowly |
| Wyva----- | Severe: depth to rock, slope | Severe: large stones | Severe: no water | Deep to water | Slope, large stones, droughty | Slope, large stones, depth to rock |
| 1591: Winklo----- | Severe: slope | Severe: thin layer | Severe: no water | Deep to water | Slope, percs slowly, depth to rock | Slope, depth to rock, percs slowly |
| Rochpah----- | Severe: depth to rock, slope | Severe: seepage, large stones | Severe: no water | Deep to water | Slope, large stones, droughty | Slope, large stones, depth to rock |
| Rock Outcrop. | | | | | | |
| 1650: Handpah----- | Severe: cemented pan | Severe: thin layer | Severe: no water | Deep to water | Slope, percs slowly, cemented pan | Cemented pan, percs slowly |
| Veet----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Slope, droughty | Large stones, too sandy |
| 1660: Dewrust----- | Moderate: cemented pan, slope | Severe: thin layer | Severe: no water | Deep to water | Slope, percs slowly, cemented pan | Cemented pan, 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 |
| 1660 (con.): Veet----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Slope, droughty | Large stones, too sandy |
| 1680: Rochpah----- | Severe: depth to rock, slope | Severe: seepage, large stones | Severe: no water | Deep to water | Slope, large stones, droughty | Slope, large stones, depth to rock |
| Hollace----- | Severe: depth to rock, cemented pan, slope | Severe: large stones | Severe: no water | Deep to water | Slope, large stones, droughty | Slope, large stones, depth to rock |
| Gabbvally----- | Severe: depth to rock, slope | Severe: thin layer | Severe: no water | Deep to water | Slope, droughty, depth to rock | Slope, depth to rock |
| 1681: Rochpah----- | Severe: depth to rock, slope | Severe: seepage, large stones | Severe: no water | Deep to water | Slope, large stones, droughty | Slope, large stones, depth to rock |
| Veet----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Slope, droughty | Large stones, too sandy |
| 1683: Rochpah----- | Severe: depth to rock, slope | Severe: seepage, large stones | Severe: no water | Deep to water | Slope, large stones, droughty | Slope, large stones, depth to rock |
| Rock Outcrop. Leo----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Slope, droughty | Large stones, too sandy |
| 1690: Jolan----- | Severe: seepage | Severe: piping | Severe: no water | Deep to water | Slope, soil blowing, cemented pan | Cemented pan, erodes easily, soil blowing |
| Geer----- | Moderate: seepage, slope | Severe: piping | Severe: no water | Deep to water | Slope, soil blowing, erodes easily | Erodes easily, soil blowing |
| 1700: Sieroclipf----- | Moderate: seepage, cemented pan, slope | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, cemented pan | Cemented pan |
| Veet----- | 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 |
| 1710: Cliffdown----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, excess salt | Favorable |
| 1730: Cath----- | Moderate: slope | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, soil blowing | Too sandy, soil blowing |
| Veet----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Slope, droughty | Large stones, too sandy |
| 1740: Slaw----- | Slight | Severe: excess salt | Severe: no water | Deep to water | Percs slowly, erodes easily, flooding | Erodes easily, percs slowly |
| 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 |
| 1741: Slaw----- | Slight | Severe: excess salt | Severe: no water | Deep to water | Percs slowly, erodes easily, flooding | Erodes easily, percs slowly |
| 1750: Chanybuck----- | Severe: depth to rock, slope | Severe: thin layer | Severe: no water | Deep to water | Slope, droughty, depth to rock | Slope, depth to rock |
| Brier----- | Severe: depth to rock, slope | Severe: large stones | Severe: no water | Deep to water | Slope, large stones, droughty | Slope, large stones, depth to rock |
| Rock Outcrop. | | | | | | |
| 1761: Wyva----- | Severe: depth to rock, slope | Severe: large stones | Severe: no water | Deep to water | Slope, large stones, droughty | Slope, large stones, depth to rock |
| Rock Outcrop. | | | | | | |
| 1762: Wyva----- | Severe: depth to rock, slope | Severe: large stones | Severe: no water | Deep to water | Slope, large stones, droughty | Slope, large stones, depth to rock |
| Slidymtn----- | Severe: depth to rock, slope | Severe: thin layer | Severe: no water | Deep to water | Slope, droughty, depth to rock | Slope, depth to rock |
| 1770: Veet----- | 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 |
| 1770 (con.): Mosida----- | Moderate: seepage, slope | Severe: piping | Severe: no water | Deep to water | Slope, erodes easily, flooding | Erodes easily |
| 1810: Boxspring----- | Severe: depth to rock, slope | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, depth to rock | Slope, large stones, depth to rock |
| Rock Outcrop. | | | | | | |
| 1811: Boxspring----- | Severe: depth to rock, slope | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, depth to rock | Slope, large stones, depth to rock |
| Theriot----- | Severe: depth to rock, slope | Severe: seepage, large stones | Severe: no water | Deep to water | Slope, large stones, droughty | Slope, large stones, depth to rock |
| Rock Outcrop. | | | | | | |
| 1821: Turba----- | 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 |
| Acti----- | Severe: depth to rock, slope | Severe: thin layer | Severe: no water | Deep to water | Slope, large stones, droughty | Slope, large stones, depth to rock |
| 1830: Zaqua----- | Severe: depth to rock, slope | Severe: thin layer | Severe: no water | Deep to water | Slope, depth to rock | Slope, large stones, depth to rock |
| Winklo----- | Severe: slope | Severe: thin layer | Severe: no water | Deep to water | Slope, percs slowly, depth to rock | Slope, depth to rock, percs slowly |
| 1831: Zaqua----- | Severe: depth to rock, slope | Severe: thin layer | Severe: no water | Deep to water | Slope, depth to rock | Slope, large stones, depth to rock |
| Boxspring----- | Severe: depth to rock, slope | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, depth to rock | Slope, large stones, depth to rock |
| 1832: Zaqua----- | Severe: depth to rock, slope | Severe: thin layer | Severe: no water | Deep to water | Slope, depth to rock | Slope, large stones, depth to rock |
| Winklo----- | Severe: 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 |
| 1832 (con.): Kanesprings----- | Severe: depth to rock, cemented pan, slope | Severe: thin layer | Severe: no water | Deep to water | Slope, depth to rock, cemented pan | Slope, depth to rock, cemented pan |
| 1833: Zaqua----- | Severe: depth to rock, slope | Severe: thin layer | Severe: no water | Deep to water | Slope, depth to rock | Slope, large stones, depth to rock |
| Rock Outcrop. | | | | | | |
| 1850: Rapado----- | Severe: seepage, slope | Severe: thin layer | Severe: no water | Deep to water | Slope, droughty, cemented pan | Slope, cemented pan |
| Oleman----- | Severe: seepage, cemented pan | Severe: seepage | Severe: no water | Deep to water | Slope, large stones, droughty | Large stones, cemented pan, too sandy |
| 1851: Rapado----- | Severe: seepage | Severe: thin layer | Severe: no water | Deep to water | Slope, droughty, cemented pan | Cemented pan |
| Veet----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Slope, droughty | Large stones, too sandy |
| 1870: Faleria----- | Severe: seepage, slope | Severe: seepage | Severe: no water | Deep to water | Slope | Slope, large stones |
| Laross----- | Severe: seepage, slope | Severe: seepage, large stones | Severe: no water | Deep to water | Slope, large stones | Slope, large stones |
| 1880: Tejabe----- | Severe: depth to rock, slope | Severe: thin layer | Severe: no water | Deep to water | Slope, droughty, depth to rock | Slope, depth to rock |
| Pintwater----- | Severe: depth to rock, slope | Severe: seepage, large stones | Severe: no water | Deep to water | Slope, large stones, droughty | Slope, large stones, depth to rock |
| Rock Outcrop. | | | | | | |
| 1890: Welring----- | 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 |
| 1900: Glendale----- | Slight | Severe: piping, excess salt | Severe: no water | Deep to water | Droughty, flooding, excess salt | Erodes easily |
| Bluepoint----- | Severe: seepage, slope | Severe: seepage, piping | Severe: no water | Deep to water | Slope, droughty, fast intake | Slope, too sandy, soil blowing |
| 1910: Land----- | Slight | Severe: excess salt | Severe: slow refill, salty water | Deep to water | Erodes easily, flooding, excess salt | Erodes easily |
| 1920: Motoqua----- | Severe: depth to rock, slope | Severe: large stones | Severe: no water | Deep to water | Slope, large stones, droughty | Slope, large stones, depth to rock |
| Rock Outcrop. | | | | | | |
| 1921: Motoqua----- | Severe: depth to rock, slope | Severe: large stones | Severe: no water | Deep to water | Slope, large stones, droughty | Slope, large stones, depth to rock |
| Thunderbird----- | Severe: slope | Severe: thin layer | Severe: no water | Deep to water | Slope, percs slowly, depth to rock | Slope, large stones, depth to rock |
| 1941: Slidytn----- | Severe: depth to rock, slope | Severe: thin layer | Severe: no water | Deep to water | Slope, droughty, depth to rock | Slope, depth to rock |
| Capsus----- | 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 |
| 1950: Ursine----- | Severe: cemented pan, slope | Severe: thin layer | Severe: no water | Deep to water | Slope, cemented pan, excess salt | Slope, cemented pan |
| Lomoin----- | Severe: depth to rock, slope | Severe: thin layer | Severe: no water | Deep to water | Slope, large stones, droughty | Slope, large stones, depth to rock |
| Ursine----- | Severe: cemented pan, slope | Severe: thin layer | Severe: no water | Deep to water | Slope, droughty, cemented pan | Slope, cemented pan |
| 1951: Ursine----- | Severe: cemented pan, slope | Severe: thin layer | Severe: no water | Deep to water | Slope, droughty, cemented pan | Slope, cemented pan |
| Ursine----- | Severe: cemented pan, slope | Severe: thin layer | Severe: no water | Deep to water | Slope, droughty, cemented pan | Slope, cemented pan |

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 |
| 1952: Ursine----- | Severe: cemented pan, slope | Severe: thin layer | Severe: no water | Deep to water | Slope, droughty, cemented pan | Slope, cemented pan |
| Ursine----- | Severe: cemented pan, slope | Severe: thin layer | Severe: no water | Deep to water | Slope, droughty, cemented pan | Slope, cemented pan |
| Geer----- | Moderate: seepage | Severe: piping | Severe: no water | Deep to water | Soil blowing, erodes easily | Erodes easily, soil blowing |
| 1960: Crystal Springs- | Severe: cemented pan | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, cemented pan | Cemented pan |
| 1980: Longjim----- | Severe: cemented pan | Severe: seepage | Severe: no water | Deep to water | Slope, droughty, cemented pan | Large stones, cemented pan |
| Arizo----- | Severe: seepage | Severe: seepage | Severe: no water | Deep to water | Slope, large stones, droughty | Large stones, too sandy |
| 1990: Gabbvally----- | Severe: depth to rock, slope | Severe: thin layer | Severe: no water | Deep to water | Slope, depth to rock | Slope, depth to rock |
| Rock Outcrop. | | | | | | |
| 1991: Gabbvally----- | Severe: depth to rock, slope | Severe: thin layer | Severe: no water | Deep to water | Slope, depth to rock | Slope, depth to rock |
| Hollace----- | Severe: depth to rock, cemented pan, slope | Severe: large stones | Severe: no water | Deep to water | Slope, large stones, droughty | Slope, large stones, depth to rock |
| 1992: Gabbvally----- | Severe: depth to rock, slope | Severe: thin layer | Severe: no water | Deep to water | Slope, depth to rock | Slope, depth to rock |
| Brier----- | Severe: depth to rock, slope | Severe: large stones | Severe: no water | Deep to water | Slope, large stones, droughty | Slope, large stones, depth to rock |
| Rock Outcrop. | | | | | | |
| 2000: 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 |

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 |
| 2010: Stewval----- | 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 |
| Gabbvally----- | Severe: depth to rock, slope | Severe: thin layer | Severe: no water | Deep to water | Slope, depth to rock | Slope, depth to rock |
| 2011: Stewval----- | 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 |
| Lomcaine----- | 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 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 | |
| 1000: Weiser----- | 0-6 | Very cobbly sandy loam | GM, SM | A-1, A-2 | 0-5 | 25-45 | 55-70 | 45-65 | 30-45 | 20-30 | 15-25 | NP-5 |
| | 6-60 | Stratified very gravelly fine sandy loam to extremely gravelly sandy loam | GP-GM, GP-GC, GP, GM | A-1, A-2 | 0-5 | 0-40 | 20-35 | 10-35 | 5-30 | 0-20 | 15-25 | NP-10 |
| Tencee----- | 0-3 | Very cobbly sandy loam | GM-GC | A-2 | 0-5 | 15-25 | 60-70 | 50-60 | 40-50 | 20-30 | 20-30 | 5-10 |
| | 3-11 | Extremely gravelly sandy loam, very gravelly loam, very gravelly silt loam | GP-GM, GM-GC | A-2 | 0 | 0-25 | 35-50 | 25-45 | 15-40 | 5-35 | 20-30 | 5-10 |
| | 11-15 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Arizo----- | 0-1 | Very gravelly loamy sand | GP-GM, GM | A-1 | 0 | 0-5 | 30-55 | 25-50 | 15-30 | 5-15 | --- | NP |
| | 1-60 | Stratified cobbly coarse sand to extremely gravelly sand | GP-GM, GP | A-1 | 0 | 10-35 | 35-55 | 20-50 | 10-30 | 0-10 | --- | NP |
| 1001: Weiser----- | 0-6 | Very gravelly sandy loam | GM, GM-GC | A-1, A-2 | 0 | 0-15 | 30-65 | 25-55 | 20-45 | 15-30 | 15-25 | NP-10 |
| | 6-60 | Stratified very gravelly fine sandy loam to extremely gravelly sandy loam | GP-GM, GP-GC, GP, GM | A-1, A-2 | 0-5 | 0-40 | 20-35 | 10-35 | 5-30 | 0-20 | 15-25 | NP-10 |
| Tencee----- | 0-3 | Very gravelly sandy loam | GM-GC | A-2 | 0 | 0-15 | 35-55 | 30-50 | 20-45 | 10-20 | 20-30 | 5-10 |
| | 3-11 | Extremely gravelly sandy loam, very gravelly loam, very gravelly silt loam | GP-GM, GM-GC | A-2 | 0 | 0-25 | 35-50 | 25-45 | 15-40 | 5-35 | 20-30 | 5-10 |
| | 11-15 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1010: Tencee----- | 0-3 | Very cobbly sandy loam | GM-GC | A-2 | 0-5 | 15-25 | 60-70 | 50-60 | 40-50 | 20-30 | 20-30 | 5-10 |
| | 3-11 | Extremely gravelly sandy loam, very gravelly loam, very gravelly silt loam | GP-GM, GM-GC | A-2 | 0 | 0-25 | 35-50 | 25-45 | 15-40 | 5-35 | 20-30 | 5-10 |
| | 11-15 | Indurated | | | 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 inches | 3-10 inches | 4 | 10 | 40 | 200 | | |
| | | | | | Pct | Pct | | | | | | |
| 1010 (con.): Weiser----- | In | | | | | | | | | | | |
| | 0-6 | Very cobbly sandy loam | GM, SM | A-1, A-2 | 0-5 | 25-45 | 55-70 | 45-65 | 30-45 | 20-30 | 15-25 | NP-5 |
| | 6-60 | Stratified very gravelly fine sandy loam to extremely gravelly sandy loam | GP-GM, GP-GC, GP, GM | A-1, A-2 | 0-5 | 0-40 | 20-35 | 10-35 | 5-30 | 0-20 | 15-25 | NP-10 |
| 1016: Tencee----- | 0-3 | Very gravelly sandy loam | GM-GC | A-2 | 0 | 0-15 | 35-55 | 30-50 | 20-45 | 10-20 | 20-30 | 5-10 |
| | 3-11 | Extremely gravelly sandy loam, very gravelly loam, very gravelly silt loam | GP-GM, GM-GC | A-2 | 0 | 0-25 | 35-50 | 25-45 | 15-40 | 5-35 | 20-30 | 5-10 |
| | 11-15 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Tencee----- | 0-3 | Very gravelly sandy loam | GM-GC | A-2 | 0 | 0-15 | 35-55 | 30-50 | 20-45 | 10-20 | 20-30 | 5-10 |
| | 3-11 | Extremely gravelly sandy loam, very gravelly loam, very gravelly silt loam | GP-GM, GM-GC | A-2 | 0 | 0-25 | 35-50 | 25-45 | 15-40 | 5-35 | 20-30 | 5-10 |
| | 11-15 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1017: Tencee----- | 0-3 | Very gravelly sandy loam | GM-GC | A-2 | 0 | 0-15 | 35-55 | 30-50 | 20-45 | 10-20 | 20-30 | 5-10 |
| | 3-11 | Extremely gravelly sandy loam, very gravelly loam, very gravelly silt loam | GP-GM, GM-GC | A-2 | 0 | 0-25 | 35-50 | 25-45 | 15-40 | 5-35 | 20-30 | 5-10 |
| | 11-15 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Bard----- | 0-3 | Gravelly fine sandy loam | SM | A-2, A-1 | 0 | 0 | 70-80 | 55-65 | 40-50 | 20-30 | 20-30 | NP-5 |
| | 3-19 | Fine sandy loam, sandy loam, loam | SM | A-4 | 0 | 0 | 90-95 | 80-90 | 55-65 | 35-50 | 0-14 | NP |
| | 19-23 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Arizo----- | 0-1 | Very gravelly loamy sand | GP-GM, GM | A-1 | 0 | 0-5 | 30-55 | 25-50 | 15-30 | 5-15 | --- | NP |
| | 1-60 | Stratified cobbly coarse sand to extremely gravelly sand | GP-GM, GP | A-1 | 0 | 10-35 | 35-55 | 20-50 | 10-30 | 0-10 | --- | 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 | | | | | | |
| 1020: Kurstan----- | 0-9 | Gravelly sandy loam | SM, SC-SM | A-1, A-2 | 0 | 0-10 | 65-80 | 55-70 | 30-50 | 10-35 | 15-25 | NP-10 |
| | 9-60 | Gravelly sandy loam | SM, SC-SM | A-1, A-2 | 0 | 0-10 | 65-85 | 55-75 | 30-55 | 10-35 | 15-25 | NP-10 |
| Tencee----- | 0-3 | Very gravelly sandy loam | GM-GC | A-2 | 0 | 0-15 | 35-55 | 30-50 | 20-45 | 10-20 | 20-30 | 5-10 |
| | 3-11 | Extremely gravelly sandy loam, very gravelly loam, very gravelly silt loam | GP-GM, GM-GC | A-2 | 0 | 0-25 | 35-50 | 25-45 | 15-40 | 5-35 | 20-30 | 5-10 |
| | 11-15 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1021: Kurstan----- | 0-9 | Gravelly sandy loam | SM, SC-SM | A-1, A-2 | 0 | 0-10 | 65-80 | 55-70 | 30-50 | 10-35 | 15-25 | NP-10 |
| | 9-60 | Gravelly sandy loam | SM, SC-SM | A-1, A-2 | 0 | 0-10 | 65-85 | 55-75 | 30-55 | 10-35 | 15-25 | NP-10 |
| Knob Hill----- | 0-2 | Loamy sand | SM | A-2 | 0 | 0 | 85-100 | 80-95 | 50-60 | 15-30 | 0-14 | NP |
| | 2-22 | Stratified sandy loam to very gravelly loamy sand | GM, SM | A-1 | 0 | 0-10 | 50-75 | 50-70 | 30-50 | 10-25 | 0-14 | NP |
| | 22-52 | Stratified gravelly fine sandy loam to gravelly loamy sand | GM, SM | A-1, A-2 | 0 | 0-5 | 50-75 | 50-70 | 30-60 | 10-30 | 0-14 | NP |
| | 52-60 | Stratified loamy fine sand to very gravelly loamy sand | SM | A-1, A-2 | 0 | 0-10 | 65-90 | 60-85 | 40-60 | 10-25 | 0-14 | NP |
| 1030: Arizo----- | 0-1 | Very gravelly loamy sand | GP-GM, GM | A-1 | 0 | 0-5 | 30-55 | 25-50 | 15-30 | 5-15 | --- | NP |
| | 1-60 | Stratified cobbly coarse sand to extremely gravelly sand | GP-GM, GP | A-1 | 0 | 10-35 | 35-55 | 20-50 | 10-30 | 0-10 | --- | NP |
| Arizo----- | 0-1 | Very cobbly loamy sand | GP-GM, GM, SP-SM, SM | A-1 | 0-5 | 30-45 | 50-75 | 45-70 | 10-25 | 5-15 | --- | NP |
| | 1-60 | Stratified cobbly coarse sand to extremely gravelly loamy sand | GP-GM, GP | A-1 | 0-5 | 10-30 | 35-55 | 20-50 | 10-30 | 0-10 | --- | 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 | | | | | | |
| 1030 (con.): Bluepoint----- | 0-3 | Loamy fine sand | SM | A-2 | 0 | 0 | 90-100 | 90-100 | 70-85 | 20-35 | 0-14 | NP |
| | 3-42 | Stratified fine sand to loamy fine sand | SM | A-2 | 0 | 0 | 90-100 | 90-100 | 70-80 | 15-25 | 0-14 | NP |
| | 42-60 | Stratified loamy fine sand to very fine sandy loam | SM | A-2, A-4 | 0 | 0 | 90-100 | 90-100 | 75-85 | 30-45 | 0-14 | NP |
| 1031: Arizo----- | 0-1 | Very cobbly loamy sand | GP-GM, GM, SP-SM, SM | A-1 | 0-5 | 30-45 | 50-75 | 45-70 | 10-25 | 5-15 | --- | NP |
| | 1-60 | Stratified cobble coarse sand to extremely gravelly loamy sand | GP-GM, GP | A-1 | 0-5 | 10-30 | 35-55 | 20-50 | 10-30 | 0-10 | --- | NP |
| Arizo----- | 0-1 | Very gravelly loamy sand | GP-GM, GM | A-1 | 0 | 0-5 | 30-55 | 25-50 | 15-30 | 5-15 | --- | NP |
| | 1-60 | Stratified cobble coarse sand to extremely gravelly sand | GP-GM, GP | A-1 | 0 | 10-35 | 35-55 | 20-50 | 10-30 | 0-10 | --- | NP |
| 1040: Rock Outcrop. | | | | | | | | | | | | |
| Akela----- | 0-3 | Very cobbly sandy loam | SM | A-1, A-2 | 0 | 25-55 | 65-70 | 60-65 | 40-55 | 15-35 | 15-20 | NP-5 |
| | 3-12 | Very gravelly fine sandy loam, extremely gravelly fine sandy loam | GP-GM | A-1 | 0 | 0-5 | 30-40 | 10-30 | 10-25 | 5-10 | 0-14 | NP |
| | 12-16 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1041: Rock Outcrop. | | | | | | | | | | | | |
| Akela----- | 0-2 | Very stony sandy loam | GM, SM | A-1, A-2 | 10-20 | 10-15 | 55-70 | 50-65 | 30-55 | 15-35 | 15-20 | NP-5 |
| | 2-12 | Very gravelly fine sandy loam, extremely gravelly fine sandy loam | GP-GM | A-1 | 0 | 0-5 | 30-40 | 10-30 | 10-25 | 5-10 | 0-14 | NP |
| | 12-22 | 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 | Plas- ticity index |
|------------------------------|-------|--|-------------------------|----------|-----------|--------|--------------------------------------|-------|-------|-------|-----------------|--------------------------|
| | | | Unified | AASHTO | >10 | 3-10 | 4 | 10 | 40 | 200 | | |
| | | | | | inches | inches | | | | | | |
| | In | | | | Pct | Pct | | | | | Pct | |
| 1041 (con.): Rochpah----- | 0-4 | Very gravelly sandy loam | GM | A-1 | 0 | 10-20 | 40-55 | 30-45 | 20-40 | 10-25 | 15-25 | NP-5 |
| | 4-19 | Very gravelly sandy loam, very cobbly sandy loam, very gravelly coarse sandy loam | GM | A-1 | 0 | 0-45 | 40-60 | 25-50 | 20-40 | 10-20 | 15-25 | NP-5 |
| | 19-29 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1052: Knob Hill----- | 0-2 | Very gravelly sandy loam | GM | A-1, A-2 | 0 | 0-10 | 45-65 | 35-50 | 25-45 | 10-30 | 0-14 | NP |
| | 2-22 | Stratified sandy loam to very gravelly loamy sand | GM, SM | A-1 | 0 | 0-10 | 50-75 | 50-70 | 30-50 | 10-25 | 0-14 | NP |
| | 22-52 | Stratified gravelly fine sandy loam to gravelly loamy sand | GM, SM | A-1, A-2 | 0 | 0-5 | 50-75 | 50-70 | 30-60 | 10-30 | 0-14 | NP |
| | 52-60 | Stratified loamy fine sand to very gravelly loamy sand | SM | A-1, A-2 | 0 | 0-10 | 65-90 | 60-85 | 40-60 | 10-25 | 0-14 | NP |
| Arizo----- | 0-1 | Very cobbly loamy sand | GP-GM, GM, SP-SM, SM | A-1 | 0-5 | 30-45 | 50-75 | 45-70 | 10-25 | 5-15 | --- | NP |
| | 1-60 | Stratified cobbly coarse sand to extremely gravelly loamy sand | GP-GM, GP | A-1 | 0-5 | 10-30 | 35-55 | 20-50 | 10-30 | 0-10 | --- | NP |
| 1060: Rock Outcrop. | | | | | | | | | | | | |
| St. Thomas----- | 0-3 | Extremely stony fine sandy loam | GM, SM | A-1, A-2 | 25-50 | 30-50 | 50-75 | 45-65 | 30-50 | 20-35 | 15-20 | NP-5 |
| | 3-16 | Extremely cobbly loam, extremely gravelly loam, extremely gravelly fine sandy loam | GM, GM-GC | A-1, A-2 | 0-15 | 15-45 | 25-45 | 20-40 | 20-35 | 10-30 | 15-25 | NP-10 |
| | 16-20 | 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 | | | | | | |
| 1060 (con.): Chinkle----- | 0-2 | Very gravelly very fine sandy loam | GM | A-1, A-2 | 0 | 0-10 | 35-60 | 30-50 | 25-50 | 15-35 | 20-25 | NP-5 |
| | 2-13 | Gravelly loam, gravelly very fine sandy loam, gravelly fine sandy loam | GM, SM | A-2, A-4 | 0 | 0-10 | 55-85 | 50-75 | 45-65 | 25-40 | 20-25 | NP-5 |
| | 13-25 | Weathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| | 25-35 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1061: Rock Outcrop. | | | | | | | | | | | | |
| St. Thomas----- | 0-3 | Very gravelly sandy loam | GM | A-1 | 0-1 | 5-30 | 35-55 | 30-50 | 20-45 | 10-25 | 0-14 | NP |
| | 3-16 | Extremely cobble loam, extremely gravelly loam, extremely gravelly fine sandy loam | GM, GM-GC | A-1, A-2 | 0-15 | 15-45 | 25-45 | 20-40 | 15-35 | 10-30 | 15-25 | NP-10 |
| | 16-20 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Zeheme----- | 0-3 | Very gravelly fine sandy loam | GM | A-1 | 0 | 0-5 | 35-50 | 30-50 | 20-40 | 15-25 | 20-25 | NP-5 |
| | 3-13 | Very gravelly fine sandy loam, very gravelly sandy loam | GM | A-1, A-2 | 0 | 5-25 | 35-55 | 30-50 | 20-40 | 15-30 | 20-25 | NP-5 |
| | 13-23 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1062: Zeheme----- | 0-3 | Cobbly loam | SM | A-4 | 0 | 15-25 | 80-90 | 75-85 | 45-70 | 40-50 | 20-25 | NP-5 |
| | 3-13 | Very gravelly fine sandy loam, very gravelly sandy loam | GM | A-1, A-2 | 0 | 5-25 | 35-55 | 30-50 | 20-40 | 15-30 | 20-25 | NP-5 |
| | 13-23 | 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 | | | | | | |
| 1064 (con.): Zeheme----- | 0-2 | Extremely stony fine sandy loam | SM | A-1, A-2 | 25-30 | 15-30 | 55-70 | 50-65 | 35-55 | 10-35 | 20-25 | NP-5 |
| | 2-13 | Very gravelly fine sandy loam, very gravelly sandy loam | GM | A-1, A-2 | 0 | 5-25 | 35-55 | 30-50 | 20-40 | 15-30 | 20-25 | NP-5 |
| | 13-23 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Kanackey----- | 0-2 | Very gravelly loam | GM-GC | A-2 | 0 | 10-25 | 45-55 | 35-45 | 20-40 | 20-35 | 20-25 | 5-10 |
| | 2-5 | Very cobbly clay, very cobbly sandy clay | GC | A-2 | 0 | 30-50 | 50-60 | 45-55 | 40-50 | 20-35 | 45-65 | 20-35 |
| | 5-11 | Extremely cobbly clay, extremely cobbly sandy clay, very cobbly clay | GC | A-2, A-7 | 0-5 | 50-65 | 40-70 | 35-65 | 30-55 | 15-40 | 45-65 | 20-35 |
| | 11-15 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1065: Rock Outcrop. | | | | | | | | | | | | |
| Zeheme----- | 0-2 | Extremely stony fine sandy loam | SM | A-1, A-2 | 25-30 | 15-30 | 55-70 | 50-65 | 35-55 | 10-35 | 20-25 | NP-5 |
| | 2-13 | Very gravelly fine sandy loam, very gravelly sandy loam | GM | A-1, A-2 | 0 | 5-25 | 35-55 | 30-50 | 20-40 | 15-30 | 20-25 | NP-5 |
| | 13-23 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1066: Rock Outcrop. | | | | | | | | | | | | |
| Zeheme----- | 0-3 | Cobbly loam | SM | A-4 | 0 | 15-25 | 80-90 | 75-85 | 45-70 | 40-50 | 20-25 | NP-5 |
| | 3-13 | Very gravelly fine sandy loam, very gravelly sandy loam | GM | A-1, A-2 | 0 | 5-25 | 35-55 | 30-50 | 20-40 | 15-30 | 20-25 | NP-5 |
| | 13-23 | 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 | | | | | | |
| 1090 (con.): Logring----- | In | | | | | | | | | | | |
| | 0-3 | Very gravelly loam | GM | A-1, A-2 | 0-5 | 10-15 | 45-60 | 35-55 | 25-50 | 20-35 | 15-25 | NP-5 |
| | 3-12 | Very cobbly loam, very cobbly fine sandy loam, extremely cobbly loam | GM, SM | A-1, A-2 | 0-10 | 30-50 | 50-70 | 40-60 | 20-45 | 15-30 | 15-25 | NP-5 |
| | 12-16 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1091: Rock Outcrop. Logring----- | 0-3 | Very gravelly loam | GM | A-1, A-2 | 0-5 | 10-15 | 45-60 | 35-55 | 25-50 | 20-35 | 15-25 | NP-5 |
| | 3-12 | Very cobbly loam, very cobbly fine sandy loam, extremely cobbly loam | GM, SM | A-1, A-2 | 0-10 | 30-50 | 50-70 | 40-60 | 20-45 | 15-30 | 15-25 | NP-5 |
| | 12-16 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Eaglepass----- | 0-2 | Extremely stony loam | GM | A-1, A-2 | 25-40 | 30-45 | 30-65 | 25-60 | 20-50 | 15-35 | 15-25 | NP-5 |
| | 2-6 | Extremely stony loam, very cobbly fine sandy loam, extremely gravelly sandy loam | GM | A-1, A-2 | 0-40 | 25-45 | 30-65 | 25-60 | 20-50 | 10-35 | 15-25 | NP-5 |
| | 6-10 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1100: Geta----- | 0-1 | Very fine sandy loam | ML, CL-ML | A-4 | 0 | 0 | 80-100 | 75-100 | 75-95 | 55-80 | 15-30 | NP-10 |
| | 1-20 | Very fine sandy loam, fine sandy loam, sandy loam | ML, SM, CL-ML, SC-SM | A-4 | 0 | 0 | 85-100 | 75-90 | 65-85 | 35-55 | 15-25 | NP-10 |
| | 20-60 | Gravelly very fine sandy loam, gravelly sandy loam | SM, GM, SC-SM, GM-GC | A-4, A-2 | 0 | 0 | 60-85 | 55-75 | 45-70 | 30-45 | 15-25 | NP-10 |
| Geta----- | 0-6 | Fine sand | SM | A-2 | 0 | 0 | 100 | 100 | 50-70 | 10-20 | --- | NP |
| | 6-20 | Very fine sandy loam, fine sandy loam, sandy loam | ML, SM, CL-ML, SC-SM | A-4 | 0 | 0 | 85-100 | 75-90 | 65-85 | 35-55 | 15-25 | NP-10 |
| | 20-60 | Gravelly very fine sandy loam, gravelly sandy loam | SM, GM, SC-SM, GM-GC | A-4, A-2 | 0 | 0 | 60-85 | 55-75 | 45-70 | 30-45 | 15-25 | NP-10 |

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 | | | | | | |
| 1110 (con.): Kanesprings----- | 0-3 | Very cobbly sandy loam | GM, SM | A-1, A-2 | 0-5 | 30-45 | 55-75 | 45-70 | 30-45 | 20-35 | 10-20 | NP-5 |
| | 3-8 | Gravelly loam, gravelly clay loam | SC, CL, GC | A-6 | 0 | 5-10 | 65-85 | 55-75 | 40-65 | 35-55 | 30-40 | 10-20 |
| | 8-18 | Gravelly clay loam, gravelly sandy clay loam | SC, GC, CL | A-6, A-7 | 0 | 5-15 | 60-80 | 50-70 | 40-65 | 35-60 | 35-50 | 15-25 |
| | 18-24 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| | 24-28 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Kanackey----- | 0-2 | Very gravelly loam | GM-GC | A-2 | 0 | 10-25 | 45-55 | 35-45 | 20-40 | 20-35 | 20-25 | 5-10 |
| | 2-5 | Very cobbly clay, very cobbly sandy clay | GC | A-2 | 0 | 30-50 | 50-60 | 45-55 | 40-50 | 20-35 | 45-65 | 20-35 |
| | 5-11 | Extremely cobbly clay, extremely cobbly sandy clay, very cobbly clay | GC | A-2, A-7 | 0-5 | 50-65 | 40-70 | 35-65 | 30-55 | 15-40 | 45-65 | 20-35 |
| | 11-15 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1113: Kanesprings----- | 0-3 | Very cobbly sandy loam | GM, SM | A-1, A-2 | 0-5 | 30-45 | 55-75 | 45-70 | 30-45 | 20-35 | 10-20 | NP-5 |
| | 3-8 | Gravelly loam, gravelly clay loam | SC, CL, GC | A-6 | 0 | 5-10 | 65-85 | 55-75 | 40-65 | 35-55 | 30-40 | 10-20 |
| | 8-18 | Gravelly clay loam, gravelly sandy clay loam | SC, GC, CL | A-6, A-7 | 0 | 5-15 | 60-80 | 50-70 | 40-65 | 35-60 | 35-50 | 15-25 |
| | 18-24 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| | 24-28 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Gabbvally----- | 0-2 | Very stony loam | GM | A-4 | 5-25 | 5-10 | 60-75 | 55-70 | 45-55 | 35-50 | 20-25 | NP-5 |
| | 2-9 | Very gravelly sandy clay loam, very gravelly sandy loam, very gravelly loam | GC, GM-GC | A-2 | 0-5 | 0-15 | 50-60 | 35-50 | 25-35 | 15-25 | 25-35 | 5-15 |
| | 9-13 | 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 | AASETO | >10 | 3-10 | 4 | 10 | 40 | 200 | | |
| | | | | | inches | inches | | | | | | |
| | In | | | | Pct | Pct | | | | | Pct | |
| 1160: Silent----- | 0-2 | Gravelly sandy loam | GM, SM | A-2, A-4 | 0 | 0 | 55-80 | 50-75 | 35-50 | 25-40 | 15-25 | NP-5 |
| | 2-4 | Clay loam, sandy clay loam, loam | CL | A-6, A-7 | 0 | 0 | 80-100 | 75-100 | 60-75 | 50-60 | 35-45 | 15-20 |
| | 4-12 | Gravelly clay loam, gravelly loam | GC, CL | A-6, A-7, A-2 | 0 | 0 | 55-80 | 50-75 | 40-60 | 30-55 | 35-45 | 15-20 |
| | 12-16 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Koyen----- | 0-3 | Gravelly fine sandy loam | SM | A-2, A-4 | 0 | 0 | 65-90 | 50-75 | 40-65 | 25-40 | 15-25 | NP-5 |
| | 3-32 | Stratified loam to gravelly loamy sand | SM | A-2, A-4 | 0 | 0 | 80-90 | 75-85 | 50-60 | 25-40 | 15-25 | NP-5 |
| | 32-60 | Gravelly loamy sand, very gravelly loamy sand | GP-GM, GM, SP-SM, SM | A-1 | 0 | 0 | 50-60 | 45-55 | 25-35 | 5-15 | --- | NP |
| 1170: Alko----- | 0-3 | Gravelly sandy loam | GM, SM | A-1, A-2 | 0 | 0-10 | 55-75 | 55-75 | 30-55 | 15-35 | 20-25 | NP-5 |
| | 3-11 | Gravelly sandy loam, coarse sandy loam | SM | A-1 | 0 | 0-5 | 70-90 | 55-85 | 35-50 | 15-25 | 15-25 | NP-5 |
| | 11-33 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| | 33-60 | Stratified loam to gravelly coarse sand | SM | A-1 | 0 | 0-10 | 75-90 | 55-85 | 30-50 | 10-25 | 0-14 | NP |
| Alko----- | 0-3 | Gravelly sandy loam | GM, SM | A-1, A-2 | 0 | 0-10 | 55-75 | 55-75 | 30-55 | 15-35 | 20-25 | NP-5 |
| | 3-11 | Gravelly sandy loam, coarse sandy loam | SM | A-1 | 0 | 0-5 | 70-90 | 55-85 | 35-50 | 15-25 | 15-25 | NP-5 |
| | 11-33 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| | 33-60 | Stratified loam to gravelly coarse sand | SM | A-1 | 0 | 0-10 | 75-90 | 55-85 | 30-50 | 10-25 | 0-14 | NP |
| Arizo----- | 0-1 | Very stony loamy sand | GP-GM, GM, SP-SM, SM | A-1 | 10-20 | 10-35 | 50-75 | 45-70 | 10-25 | 5-15 | --- | NP |
| | 1-60 | Stratified cobbly coarse sand to extremely gravelly loamy sand | GP-GM, GP | A-1 | 0-5 | 10-30 | 35-55 | 20-50 | 10-30 | 0-10 | --- | NP |
| 1172: Alko----- | 0-3 | Loamy coarse sand | SM | A-1, A-2 | 0 | 0-5 | 85-95 | 75-90 | 40-50 | 20-30 | 15-25 | NP-5 |
| | 3-11 | Gravelly sandy loam, coarse sandy loam | SM | A-1 | 0 | 0-5 | 70-90 | 55-85 | 35-50 | 15-25 | 15-25 | NP-5 |
| | 11-33 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| | 33-60 | Stratified loam to gravelly coarse sand | SM | A-1 | 0 | 0-10 | 75-90 | 55-85 | 30-50 | 10-25 | 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 | | | | | | |
| 1172 (con.): Geta----- | 0-1 | Gravelly sandy loam | SM, SC-SM | A-1, A-2 | 0 | 0 | 65-75 | 55-70 | 40-55 | 10-20 | 15-30 | NP-10 |
| | 1-20 | Very fine sandy loam, fine sandy loam, sandy loam | ML, SM, CL-ML, SC-SM | A-4 | 0 | 0 | 85-100 | 75-90 | 65-85 | 35-55 | 15-25 | NP-10 |
| | 20-60 | Gravelly very fine sandy loam, gravelly sandy loam | SM, GM, SC-SM, GM-GC | A-4, A-2 | 0 | 0 | 60-85 | 55-75 | 45-70 | 30-45 | 15-25 | NP-10 |
| 1180: Accoma----- | 0-5 | Gravelly sandy loam | SM | A-2, A-4 | 0 | 0 | 70-90 | 50-75 | 40-55 | 25-40 | 15-25 | NP-5 |
| | 5-30 | Sandy clay, gravelly sandy clay, gravelly clay | SC | A-7 | 0 | 0 | 70-90 | 50-85 | 45-65 | 35-45 | 40-50 | 20-30 |
| | 30-60 | Very gravelly sandy clay loam, extremely gravelly sandy clay loam | GC, GP-GC | A-2 | 0 | 0 | 40-60 | 10-50 | 10-35 | 5-20 | 30-40 | 10-15 |
| Decan----- | 0-3 | Gravelly clay loam | ML, CL, GC, GM | A-6, A-7 | 0 | 0 | 60-80 | 50-75 | 45-65 | 35-55 | 35-45 | 10-20 |
| | 3-17 | Clay, gravelly clay | GC, CL, CH | A-7 | 0 | 0 | 60-90 | 50-85 | 45-75 | 40-60 | 45-55 | 20-30 |
| | 17-23 | Loam, clay loam | CL | A-6 | 0 | 0 | 85-100 | 75-95 | 70-85 | 50-60 | 30-40 | 10-15 |
| | 23-27 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Cath----- | 0-4 | Coarse sandy loam | SM | A-1, A-2 | 0 | 0 | 90-100 | 75-100 | 10-50 | 10-35 | 15-25 | NP-5 |
| | 4-21 | Clay loam, sandy clay loam, gravelly clay loam | SC, CL | A-6, A-7 | 0 | 0 | 80-100 | 65-100 | 60-90 | 40-85 | 35-45 | 15-25 |
| | 21-32 | Very gravelly sandy clay loam | GC | A-2 | 0 | 0 | 30-60 | 25-50 | 20-40 | 15-35 | 30-40 | 10-20 |
| | 32-60 | Stratified very gravelly loamy coarse sand to very gravelly loam | GM, GP-GM | A-1 | 0 | 0 | 30-60 | 25-50 | 20-40 | 5-20 | --- | 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 | | | | | Pct | |
| 1190: Minu----- | 0-4 | Gravelly sandy loam | SM | A-2 | 0 | 0-5 | 65-80 | 60-75 | 40-60 | 25-35 | 20-25 | NP-5 |
| | 4-14 | Gravelly clay loam, gravelly sandy clay loam | GC, SC | A-2, A-6 | 0 | 0-5 | 55-75 | 50-60 | 25-45 | 20-40 | 30-40 | 10-15 |
| | 14-19 | Cemented | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| | 19-60 | Extremely gravelly loamy sand, very gravelly loamy coarse sand, very gravelly sand | GM, GP-GM, GP, SM | A-1 | 0 | 0-10 | 30-60 | 20-50 | 10-30 | 0-15 | --- | NP |
| Shroe----- | 0-5 | Gravelly loam | CL-ML, CL, GM-GC, GC | A-4, A-6 | 0 | 0-5 | 55-80 | 50-75 | 45-65 | 35-55 | 25-35 | 5-15 |
| | 5-13 | Very gravelly clay, very gravelly sandy clay, very gravelly clay loam | GC, SC | A-2 | 0 | 0-5 | 50-70 | 35-50 | 30-40 | 20-35 | 40-55 | 20-30 |
| | 13-36 | Very gravelly sandy clay loam | GC, SC | A-2 | 0 | 0-5 | 50-70 | 35-50 | 25-35 | 15-30 | 30-45 | 10-20 |
| | 36-60 | Loam | CL-ML, CL | A-4, A-6 | 0 | 0-5 | 80-95 | 75-95 | 60-75 | 50-65 | 25-35 | 5-15 |
| Acoma----- | 0-5 | Gravelly sandy loam | SM | A-2, A-4 | 0 | 0 | 70-90 | 50-75 | 40-55 | 25-40 | 15-25 | NP-5 |
| | 5-30 | Sandy clay, gravelly sandy clay, gravelly clay | SC | A-7 | 0 | 0 | 70-90 | 50-85 | 45-65 | 35-45 | 40-50 | 20-30 |
| | 30-60 | Very gravelly sandy clay loam, extremely gravelly sandy clay loam | GC, GP-GC | A-2 | 0 | 0 | 40-60 | 10-50 | 10-35 | 5-20 | 30-40 | 10-15 |
| 1210: Brier----- | 0-3 | Very stony loam | GM-GC, GM | A-2, A-4 | 10-20 | 20-40 | 55-65 | 50-60 | 40-50 | 30-40 | 25-35 | 5-10 |
| | 3-15 | Very cobbly clay loam, very cobbly loam, very cobbly sandy clay loam | GC | A-2, A-6 | 0-2 | 30-45 | 50-70 | 45-65 | 40-50 | 30-45 | 30-40 | 10-20 |
| | 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 | | | | | | |
| 1210 (con.): Acoma----- | In | | | | | | | | | | | |
| | 0-5 | Gravelly sandy loam | SM | A-2, A-4 | 0 | 0 | 70-90 | 50-75 | 40-55 | 25-40 | 15-25 | NP-5 |
| | 5-30 | Sandy clay, gravelly sandy clay, gravelly clay | SC | A-7 | 0 | 0 | 70-90 | 50-85 | 45-65 | 35-45 | 40-50 | 20-30 |
| | 30-60 | Very gravelly sandy clay loam, extremely gravelly sandy clay loam | GC, GP-GC | A-2 | 0 | 0 | 40-60 | 10-50 | 10-35 | 5-20 | 30-40 | 10-15 |
| Bellehelen----- | 0-5 | Very stony loam | SM, GM | A-4 | 5-15 | 5-40 | 65-80 | 55-70 | 45-55 | 35-50 | 20-25 | NP-5 |
| | 5-10 | Very gravelly loam, very gravelly sandy clay loam, very gravelly clay loam | GM-GC, GC | A-2 | 0-5 | 0-25 | 50-60 | 35-50 | 20-40 | 15-30 | 25-40 | 5-20 |
| | 10-14 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1211: Rock Outcrop. | | | | | | | | | | | | |
| Brier----- | 0-4 | Extremely bouldery sandy loam | GM, GP-GM | A-1 | 40-50 | 10-15 | 40-50 | 30-40 | 20-30 | 5-25 | 20-25 | NP-5 |
| | 4-15 | Very cobbly clay loam, very cobbly loam, very cobbly sandy clay loam | GC | A-2, A-6 | 0 | 30-45 | 50-70 | 45-65 | 40-50 | 30-45 | 30-40 | 10-20 |
| | 15-25 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1220: Lien----- | 0-4 | Very gravelly sandy loam | GM | A-1 | 0 | 0 | 40-60 | 30-50 | 20-40 | 10-25 | 20-30 | NP-5 |
| | 4-14 | Very gravelly fine sandy loam, very gravelly sandy loam, extremely gravelly loam | GM, GM-GC, GP-GC, GP-GM | A-1, A-2 | 0 | 0 | 20-50 | 15-40 | 10-35 | 5-25 | 15-30 | NP-10 |
| | 14-24 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| | 24-60 | Cemented | | | 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 | |
| 1220 (con.): Veet----- | 0-3 | Gravelly sandy loam | SM | A-2 | 0 | 0-10 | 75-90 | 50-75 | 40-60 | 25-35 | 15-25 | NP-5 |
| | 3-19 | Very gravelly sandy loam | GM-GC | A-2 | 0 | 10-25 | 40-60 | 35-55 | 25-50 | 15-25 | 20-25 | 5-10 |
| | 19-60 | Stratified extremely gravelly sandy loam to very gravelly loamy coarse sand | GP-GM, GM | A-1 | 0 | 10-25 | 45-55 | 30-50 | 15-30 | 5-15 | --- | NP |
| 1230: | | | | | | | | | | | | |
| Pahranagat----- | 0-16 | Silty clay loam | CL, ML | A-7 | 0 | 0 | 100 | 100 | 95-100 | 80-90 | 40-50 | 15-20 |
| | 16-60 | Stratified silt loam to silty clay loam | ML | A-6, A-7 | 0 | 0 | 100 | 100 | 95-100 | 85-95 | 35-50 | 10-20 |
| Pahranagat----- | 0-15 | Silt loam | CL, ML | A-6 | 0 | 0 | 100 | 100 | 95-100 | 80-90 | 35-40 | 10-15 |
| | 15-60 | Stratified silt loam to silty clay loam | ML | A-6, A-7 | 0 | 0 | 100 | 100 | 95-100 | 85-95 | 35-50 | 10-20 |
| 1250: | | | | | | | | | | | | |
| Patter----- | 0-3 | Loam | SM, ML | A-4 | 0 | 0 | 100 | 80-90 | 55-75 | 45-65 | 20-30 | NP-5 |
| | 3-14 | Very fine sandy loam, loam, silt loam | ML | A-4 | 0 | 0 | 100 | 80-90 | 60-80 | 50-65 | 20-30 | NP-5 |
| | 14-60 | Very fine sandy loam, loam, silt loam | ML | A-4 | 0 | 0 | 100 | 80-90 | 60-80 | 50-65 | 20-30 | NP-5 |
| Heist----- | 0-9 | Fine sandy loam | SM, ML | A-4 | 0 | 0 | 100 | 95-100 | 85-95 | 40-65 | 15-25 | NP-5 |
| | 9-43 | Gravelly sandy loam, sandy loam | SM | A-1, A-2, A-4 | 0 | 0-5 | 65-100 | 50-90 | 35-65 | 10-40 | 20-25 | NP-5 |
| | 43-60 | Stratified fine sandy loam to very gravelly loamy sand | SM | A-1, A-2 | 0 | 0-5 | 75-100 | 45-85 | 25-65 | 10-20 | 15-25 | NP-5 |
| 1260: | | | | | | | | | | | | |
| Hollace----- | 0-2 | Very gravelly loam | GM-GC | A-2 | 0 | 5-15 | 45-55 | 35-45 | 25-35 | 20-30 | 15-25 | 5-10 |
| | 2-8 | Very cobbly clay loam, very cobbly loam | GC | A-2 | 0 | 30-50 | 50-65 | 40-55 | 35-45 | 25-35 | 25-35 | 10-15 |
| | 8-17 | Very cobbly clay loam, very cobbly sandy clay loam | GC | A-2, A-6 | 0 | 30-50 | 50-65 | 40-55 | 35-45 | 25-40 | 35-40 | 15-20 |
| | 17-21 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| | 21-31 | 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 | | | | | | |
| 1260 (con.): Gabbvally----- | In | | | | | | | | | | | |
| | 0-2 | Very stony loam | GM | A-4 | 5-25 | 5-10 | 60-75 | 55-70 | 45-55 | 35-50 | 20-25 | NP-5 |
| | 2-9 | Very gravelly sandy clay loam, very gravelly sandy loam, very gravelly loam | GC, GM-GC | A-2 | 0-5 | 0-15 | 50-60 | 35-50 | 25-35 | 15-25 | 25-35 | 5-15 |
| | 9-13 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1261: Hollace----- | 0-2 | Very gravelly loam | GM-GC | A-2 | 0 | 5-15 | 45-55 | 35-45 | 25-35 | 20-30 | 15-25 | 5-10 |
| | 2-8 | Very cobbly clay loam, very cobbly loam | GC | A-2 | 0 | 30-50 | 50-65 | 40-55 | 35-45 | 25-35 | 25-35 | 10-15 |
| | 8-17 | Very cobbly clay loam, very cobbly sandy clay loam | GC | A-2, A-6 | 0 | 30-50 | 50-65 | 40-55 | 35-45 | 25-40 | 35-40 | 15-20 |
| | 17-21 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| | 21-31 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Rochpah----- | 0-4 | Very gravelly sandy loam | GM | A-1 | 0 | 10-20 | 40-55 | 30-45 | 20-40 | 10-25 | 15-25 | NP-5 |
| | 4-19 | Very gravelly sandy loam, very cobbly sandy loam, very gravelly coarse sandy loam | GM | A-1 | 0 | 0-45 | 40-60 | 25-50 | 20-40 | 10-20 | 15-25 | NP-5 |
| | 19-29 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Wyva----- | 0-2 | Very stony sandy loam | GM-GC | A-2 | 10-20 | 30-40 | 55-65 | 45-55 | 25-40 | 15-30 | 20-25 | 5-10 |
| | 2-15 | Extremely cobbly clay loam, very cobbly clay loam | SC, GC | A-2, A-6, A-7 | 0-10 | 50-80 | 60-80 | 50-70 | 40-50 | 25-40 | 35-45 | 20-30 |
| | 15-25 | 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 | |
| 1262: Hollace----- | 0-2 | Very gravelly sandy loam | GM | A-1 | 0 | 5-15 | 45-55 | 35-45 | 20-30 | 15-25 | 0-14 | NP |
| | 2-8 | Very cobbly clay loam, very cobbly loam | GC | A-2 | 0 | 30-50 | 50-65 | 40-55 | 35-45 | 25-35 | 25-35 | 10-15 |
| | 8-17 | Very cobbly clay loam, very cobbly sandy clay loam | GC | A-2, A-6 | 0 | 30-50 | 50-65 | 40-55 | 35-45 | 25-40 | 35-40 | 15-20 |
| | 17-21 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| | 21-31 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Winklo----- | 0-3 | Very gravelly sandy loam | GM | A-1 | 0 | 0-10 | 45-55 | 40-50 | 30-40 | 10-25 | 15-25 | NP-5 |
| | 3-9 | Gravelly clay loam, gravelly sandy clay loam | SC | A-2, A-6, A-7 | 0 | 0-10 | 65-80 | 55-75 | 45-55 | 30-45 | 35-45 | 15-25 |
| | 9-23 | Gravelly clay | GC, CL, CH | A-7 | 0 | 0-10 | 65-75 | 55-65 | 50-60 | 40-55 | 45-60 | 20-35 |
| | 23-33 | Weathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Wyva----- | 0-2 | Very stony sandy loam | GM-GC | A-2 | 10-20 | 30-40 | 55-65 | 45-55 | 25-40 | 15-30 | 20-25 | 5-10 |
| | 2-15 | Extremely cobbly clay loam, very cobbly clay loam | SC, GC | A-2, A-6, A-7 | 0-10 | 50-80 | 60-80 | 50-70 | 40-50 | 25-40 | 35-45 | 20-30 |
| | 15-25 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1270: Rock Outcrop. | | | | | | | | | | | | |
| Laross----- | 0-3 | Cobbly loam | SM | A-4 | 0 | 20-30 | 75-90 | 65-80 | 50-65 | 35-45 | 30-40 | NP-10 |
| | 3-8 | Gravelly loam | SM | A-2 | 0 | 5-10 | 65-80 | 55-70 | 40-55 | 25-35 | 30-40 | NP-10 |
| | 8-19 | Extremely cobbly loam, extremely gravelly loam | GM | A-1, A-2 | 0 | 15-25 | 35-50 | 20-35 | 15-25 | 10-20 | 30-40 | NP-10 |
| | 19-52 | Extremely cobbly sandy loam | GP-GM, SP-SM, SM, GM | A-1, A-2 | 0 | 45-55 | 45-60 | 20-35 | 15-25 | 5-15 | 30-40 | NP-10 |
| | 52-62 | 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 | | | | | | |
| 1300: Mormount----- | 0-3 | Gravelly very fine sandy loam | SM | A-2, A-4 | 0 | 0-5 | 70-85 | 50-75 | 45-65 | 25-50 | 15-25 | NP-5 |
| | 3-15 | Gravelly very fine sandy loam, gravelly loam | SC-SM | A-2, A-4 | 0 | 0-5 | 65-85 | 50-75 | 45-65 | 30-50 | 20-30 | 5-10 |
| | 15-19 | Gravelly sandy clay loam, gravelly clay loam | SC, GC | A-2, A-6 | 0 | 5-10 | 60-85 | 50-75 | 40-65 | 30-50 | 25-35 | 10-20 |
| | 19-60 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Arizo----- | 0-1 | Very gravelly loamy sand | GP-GM, GM | A-1 | 0 | 0-5 | 30-55 | 25-50 | 15-30 | 5-15 | --- | NP |
| | 1-60 | Stratified cobble coarse sand to extremely gravelly sand | GP-GM, GP | A-1 | 0 | 10-35 | 35-55 | 20-50 | 10-30 | 0-10 | --- | NP |
| 1302: Mormount----- | 0-3 | Very gravelly sandy loam | GM | A-1, A-2 | 0 | 0-10 | 35-55 | 30-50 | 20-40 | 10-30 | 15-25 | NP-5 |
| | 3-15 | Gravelly very fine sandy loam, gravelly loam | SC-SM | A-2, A-4 | 0 | 0-5 | 65-85 | 50-75 | 45-65 | 30-50 | 20-30 | 5-10 |
| | 15-19 | Gravelly sandy clay loam, gravelly clay loam | SC, GC | A-2, A-6 | 0 | 5-10 | 60-85 | 50-75 | 40-65 | 30-50 | 25-35 | 10-20 |
| | 19-60 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1303: Mormount----- | 0-3 | Gravelly very fine sandy loam | SM | A-2, A-4 | 0 | 0-5 | 70-85 | 50-75 | 45-65 | 25-50 | 15-25 | NP-5 |
| | 3-15 | Gravelly very fine sandy loam, gravelly loam | SC-SM | A-2, A-4 | 0 | 0-5 | 65-85 | 50-75 | 45-65 | 30-50 | 20-30 | 5-10 |
| | 15-19 | Gravelly sandy clay loam, gravelly clay loam | SC, GC | A-2, A-6 | 0 | 5-10 | 60-85 | 50-75 | 40-65 | 30-50 | 25-35 | 10-20 |
| | 19-60 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Canutio----- | 0-2 | Very gravelly sandy loam | GM, GM-GC, GC | A-1, A-2 | 0 | 0-20 | 30-55 | 25-50 | 20-40 | 15-30 | 15-25 | NP-10 |
| | 2-60 | Stratified gravelly loam to extremely gravelly loamy coarse sand | GM, GM-GC, GC, GP-GM | A-1, A-2 | 0 | 5-30 | 30-55 | 25-50 | 15-35 | 10-30 | 15-25 | NP-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 | |
| 1340: Aymate----- | 0-3 | Gravelly sandy loam | SM | A-1, A-2 | 0 | 0-5 | 70-85 | 60-70 | 35-50 | 15-30 | 15-25 | NP-5 |
| | 3-13 | Sandy loam | SM | A-2, A-4 | 0 | 0-5 | 85-100 | 80-95 | 40-65 | 25-40 | 15-25 | NP-5 |
| | 13-28 | Gravelly clay loam, gravelly sandy clay loam, gravelly loam | SC | A-2, A-6 | 0 | 0-5 | 70-85 | 50-75 | 40-65 | 30-45 | 25-40 | 10-20 |
| | 28-35 | Gravelly sandy loam, gravelly coarse sandy loam | SM | A-1, A-2 | 0 | 0-5 | 70-85 | 60-75 | 35-55 | 15-30 | 0-14 | NP |
| | 35-60 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Canutio----- | 0-2 | Gravelly sandy loam | SM, SC-SM, GC, GM-GC | A-1, A-2 | 0 | 0-15 | 60-80 | 55-75 | 40-60 | 20-35 | 15-25 | NP-10 |
| | 2-60 | Stratified gravelly loam to extremely gravelly loamy coarse sand | GM, GM-GC, GC, GP-GM | A-1, A-2 | 0 | 5-30 | 30-55 | 25-50 | 15-35 | 10-30 | 15-25 | NP-10 |
| 1341: Aymate----- | 0-3 | Sandy loam | SM | A-2 | 0 | 0 | 90-100 | 80-100 | 65-80 | 20-35 | 15-25 | NP-5 |
| | 3-13 | Sandy loam | SM | A-2, A-4 | 0 | 0-5 | 85-100 | 80-95 | 40-65 | 25-40 | 15-25 | NP-5 |
| | 13-28 | Gravelly clay loam, gravelly sandy clay loam, gravelly loam | SC | A-2, A-6 | 0 | 0-5 | 70-85 | 50-75 | 40-65 | 30-45 | 25-40 | 10-20 |
| | 28-35 | Gravelly sandy loam, gravelly coarse sandy loam | SM | A-1, A-2 | 0 | 0-5 | 70-85 | 60-75 | 35-55 | 15-30 | 0-14 | NP |
| | 35-60 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1342: Aymate----- | 0-3 | Gravelly sandy loam | SM | A-1, A-2 | 0 | 0-5 | 70-85 | 60-70 | 35-50 | 15-30 | 15-25 | NP-5 |
| | 3-13 | Sandy loam | SM | A-2, A-4 | 0 | 0-5 | 85-100 | 80-95 | 40-65 | 25-40 | 15-25 | NP-5 |
| | 13-28 | Gravelly clay loam, gravelly sandy clay loam, gravelly loam | SC | A-2, A-6 | 0 | 0-5 | 70-85 | 50-75 | 40-65 | 30-45 | 25-40 | 10-20 |
| | 28-35 | Gravelly sandy loam, gravelly coarse sandy loam | SM | A-1, A-2 | 0 | 0-5 | 70-85 | 60-75 | 35-55 | 15-30 | 0-14 | NP |
| | 35-60 | Indurated | | | 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 | |
| 1342 (con.): Mormount----- | 0-3 | Gravelly very fine sandy loam | SM | A-2, A-4 | 0 | 0-5 | 70-85 | 50-75 | 45-65 | 25-50 | 15-25 | NP-5 |
| | 3-15 | Gravelly very fine sandy loam, gravelly loam | SC-SM | A-2, A-4 | 0 | 0-5 | 65-85 | 50-75 | 45-65 | 30-50 | 20-30 | 5-10 |
| | 15-19 | Gravelly sandy clay loam, gravelly clay loam | SC, GC | A-2, A-6 | 0 | 5-10 | 60-85 | 50-75 | 40-65 | 30-50 | 25-35 | 10-20 |
| | 19-60 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Arizo----- | 0-1 | Very gravelly loamy sand | GP-GM, GM | A-1 | 0 | 0-5 | 30-55 | 25-50 | 15-30 | 5-15 | --- | NP |
| | 1-60 | Stratified cobbly coarse sand to extremely gravelly sand | GP-GM, GP | A-1 | 0 | 10-35 | 35-55 | 20-50 | 10-30 | 0-10 | --- | NP |
| 1350: Bard----- | 0-3 | Gravelly fine sandy loam | SM | A-2, A-1 | 0 | 0 | 70-80 | 55-65 | 40-50 | 20-30 | 20-30 | NP-5 |
| | 3-19 | Fine sandy loam, sandy loam, loam | SM | A-4 | 0 | 0 | 90-95 | 80-90 | 55-65 | 35-50 | 0-14 | NP |
| | 19-23 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1360: Canutio----- | 0-2 | Gravelly sandy loam | SM, SC-SM, GC, GM-GC | A-1, A-2 | 0 | 0-15 | 60-80 | 55-75 | 40-60 | 20-35 | 15-25 | NP-10 |
| | 2-60 | Stratified gravelly loam to extremely gravelly loamy coarse sand | GM, GM-GC, GC, GP-GM | A-1, A-2 | 0 | 5-30 | 30-55 | 25-50 | 15-35 | 10-30 | 15-25 | NP-10 |
| Arizo----- | 0-1 | Very gravelly loamy sand | GP-GM, GM | A-1 | 0 | 0-5 | 30-55 | 25-50 | 15-30 | 5-15 | --- | NP |
| | 1-60 | Stratified cobbly coarse sand to extremely gravelly sand | GP-GM, GP | A-1 | 0 | 10-35 | 35-55 | 20-50 | 10-30 | 0-10 | --- | NP |
| 1370: Mormon Mesa---- | 0-2 | Fine sandy loam | SM | A-4 | 0 | 0-5 | 90-100 | 80-90 | 60-70 | 35-45 | 15-25 | NP-5 |
| | 2-18 | Fine sandy loam, sandy loam | SM, ML | A-4, A-2 | 0 | 0-5 | 80-100 | 75-100 | 60-90 | 20-60 | 15-25 | NP-5 |
| | 18-22 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Mormon Mesa---- | 0-2 | Gravelly fine sandy loam | GM, SM | A-1, A-2, A-4 | 0 | 0-5 | 55-80 | 50-75 | 40-70 | 15-50 | 15-25 | NP-5 |
| | 2-18 | Fine sandy loam, sandy loam | SM, ML | A-4, A-2 | 0 | 0-5 | 80-100 | 75-100 | 60-90 | 20-60 | 15-25 | NP-5 |
| | 18-22 | Indurated | | | 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 | |
| 1371: Mormon Mesa----- | 0-2 | Gravelly fine sandy loam | GM, SM | A-1, A-2, A-4 | 0 | 0-5 | 55-80 | 50-75 | 40-70 | 15-50 | 15-25 | NP-5 |
| | 2-18 | Fine sandy loam, sandy loam | SM, ML | A-4, A-2 | 0 | 0-5 | 80-100 | 75-100 | 60-90 | 20-60 | 15-25 | NP-5 |
| | 18-22 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Naye----- | 0-2 | Gravelly fine sandy loam | SM, GM | A-1, A-2 | 0 | 0-10 | 60-80 | 55-75 | 40-60 | 20-35 | 15-25 | NP-5 |
| | 2-26 | Very gravelly fine sandy loam, very gravelly sandy loam | GM | A-1 | 0 | 0-15 | 35-55 | 25-50 | 20-40 | 10-25 | 15-25 | NP-5 |
| | 26-30 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Dalian----- | 0-3 | Very gravelly fine sandy loam | GM | A-1 | 0 | 0 | 30-55 | 25-50 | 20-40 | 10-25 | 0-14 | NP |
| | 3-60 | Very gravelly sandy loam, very gravelly fine sandy loam | GM | A-1 | 0 | 5-10 | 35-55 | 30-50 | 20-40 | 10-25 | 0-14 | NP |
| 1372: Mormon Mesa----- | 0-2 | Gravelly fine sandy loam | GM, SM | A-1, A-2, A-4 | 0 | 0-5 | 55-80 | 50-75 | 40-70 | 15-50 | 15-25 | NP-5 |
| | 2-18 | Fine sandy loam, sandy loam | SM, ML | A-4, A-2 | 0 | 0-5 | 80-100 | 75-100 | 60-90 | 20-60 | 15-25 | NP-5 |
| | 18-22 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Tonopah----- | 0-5 | Very gravelly sandy loam | GM | A-1 | 0 | 0-5 | 35-45 | 30-40 | 20-30 | 10-15 | 0-14 | NP |
| | 5-60 | Extremely gravelly sand | GP, GW | A-1 | 0 | 0-5 | 20-30 | 15-25 | 5-15 | 0-5 | 0-14 | NP |
| Arada----- | 0-8 | Fine sand | SP-SM | A-3 | 0 | 0 | 100 | 100 | 75-85 | 5-10 | --- | NP |
| | 8-28 | Fine sand | SM | A-2 | 0 | 0 | 100 | 100 | 80-90 | 10-20 | --- | NP |
| | 28-38 | Gravelly loamy fine sand | SM | A-1 | 0 | 0 | 85-95 | 70-75 | 40-50 | 10-20 | --- | NP |
| | 38-60 | Stratified extremely gravelly fine sandy loam to extremely gravelly loamy coarse sand | GP-GM | A-1 | 0 | 0-5 | 35-45 | 10-25 | 5-15 | 5-10 | --- | NP |
| 1380: Bracken----- | 0-2 | Gravelly fine sandy loam | GM, SM | A-2 | 0 | 0-5 | 60-85 | 50-75 | 40-60 | 25-35 | 0-14 | NP |
| | 2-60 | Gypsiferous material | | | 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 | | | | | | |
| 1390: Shankba----- | 0-2 | Very gravelly fine sandy loam | GM | A-1, A-2 | 0 | 0-10 | 35-60 | 30-50 | 25-50 | 15-35 | 20-25 | NP-5 |
| | 2-18 | Very gravelly fine sandy loam, very gravelly loam, very gravelly very fine sandy loam | GM | A-1, A-2 | 0 | 0-10 | 35-60 | 30-50 | 25-50 | 15-35 | 20-25 | NP-5 |
| | 18-23 | Weathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| | 23-33 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Chinkle----- | 0-2 | Very gravelly very fine sandy loam | GM | A-1, A-2 | 0 | 0-10 | 35-60 | 30-50 | 25-50 | 15-35 | 20-25 | NP-5 |
| | 2-13 | Gravelly loam, gravelly very fine sandy loam, gravelly fine sandy loam | GM, SM | A-2, A-4 | 0 | 0-10 | 55-85 | 50-75 | 45-65 | 25-40 | 20-25 | NP-5 |
| | 13-25 | Weathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| | 25-35 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Kanackey----- | 0-2 | Very gravelly loam | GM-GC | A-2 | 0 | 10-25 | 45-55 | 35-45 | 20-40 | 20-35 | 20-25 | 5-10 |
| | 2-5 | Very cobbly clay, very cobbly sandy clay | GC | A-2 | 0 | 30-50 | 50-60 | 45-55 | 40-50 | 20-35 | 45-65 | 20-35 |
| | 5-11 | Extremely cobbly clay, extremely cobbly sandy clay, very cobbly clay | GC | A-2, A-7 | 0-5 | 50-65 | 40-70 | 35-65 | 30-55 | 15-40 | 45-65 | 20-35 |
| | 11-15 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1400: Cave----- | 0-3 | Very gravelly sandy loam | GM-GC, GM | A-2, A-1 | 0 | 0-10 | 35-55 | 25-50 | 15-40 | 10-20 | 20-30 | NP-10 |
| | 3-14 | Gravelly loam, gravelly sandy loam | GM-GC, SC-SM, GM, SM | A-2, A-4 | 0 | 0-10 | 60-80 | 55-75 | 40-60 | 25-50 | 20-30 | NP-10 |
| | 14-22 22-60 | Indurated Gravelly loamy sand, very gravelly sandy loam | GM, SM | A-1 | 0 0 | 0 0-10 | 0 35-75 | 0 30-60 | 0 20-35 | 0 10-25 | --- 0-14 | NP 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 | | | | | | |
| 1400 (con.): Canutio----- | 0-2 | Very gravelly sandy loam | GM, GM-GC, GC | A-1, A-2 | 0 | 0-20 | 30-55 | 25-50 | 20-40 | 15-30 | 15-25 | NP-10 |
| | 2-60 | Stratified gravelly loam to extremely gravelly loamy coarse sand | GM, GM-GC, GC, GP-GM | A-1, A-2 | 0 | 5-30 | 30-55 | 25-50 | 15-35 | 10-30 | 15-25 | NP-10 |
| 1401: Cave----- | 0-3 | Very gravelly sandy loam | GM-GC, GM | A-2, A-1 | 0 | 0-10 | 35-55 | 25-50 | 15-40 | 10-20 | 20-30 | NP-10 |
| | 3-14 | Gravelly loam, gravelly sandy loam | GM-GC, SC-SM, GM, SM | A-2, A-4 | 0 | 0-10 | 60-80 | 55-75 | 40-60 | 25-50 | 20-30 | NP-10 |
| | 14-22 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| | 22-60 | Gravelly loamy sand, very gravelly sandy loam | GM, SM | A-1 | 0 | 0-10 | 35-75 | 30-60 | 20-35 | 10-25 | 0-14 | NP |
| Arizo----- | 0-1 | Very gravelly loamy sand | GP-GM, GM | A-1 | 0 | 0-5 | 30-55 | 25-50 | 15-30 | 5-15 | --- | NP |
| | 1-60 | Stratified cobble coarse sand to extremely gravelly sand | GP-GM, GP | A-1 | 0 | 10-35 | 35-55 | 20-50 | 10-30 | 0-10 | --- | NP |
| 1403: Cave----- | 0-3 | Very gravelly sandy loam | GM-GC, GM | A-2, A-1 | 0 | 0-10 | 35-55 | 25-50 | 15-40 | 10-20 | 20-30 | NP-10 |
| | 3-14 | Gravelly loam, gravelly sandy loam | GM-GC, SC-SM, GM, SM | A-2, A-4 | 0 | 0-10 | 60-80 | 55-75 | 40-60 | 25-50 | 20-30 | NP-10 |
| | 14-22 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| | 22-60 | Gravelly loamy sand, very gravelly sandy loam | GM, SM | A-1 | 0 | 0-10 | 35-75 | 30-60 | 20-35 | 10-25 | 0-14 | NP |
| Tencee----- | 0-3 | Very gravelly sandy loam | GM-GC | A-2 | 0 | 0-15 | 35-55 | 30-50 | 20-45 | 10-20 | 20-30 | 5-10 |
| | 3-11 | Extremely gravelly sandy loam, very gravelly loam, very gravelly silt loam | GP-GM, GM-GC | A-2 | 0 | 0-25 | 35-50 | 25-45 | 15-40 | 5-35 | 20-30 | 5-10 |
| | 11-15 | Indurated | | | 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 | | | | | | |
| 1404: Cave----- | 0-3 | Very gravelly sandy loam | GM-GC, GM | A-2, A-1 | 0 | 0-10 | 35-55 | 25-50 | 15-40 | 10-20 | 20-30 | NP-10 |
| | 3-14 | Gravelly loam, gravelly sandy loam | GM-GC, SC-SM, GM, SM | A-2, A-4 | 0 | 0-10 | 60-80 | 55-75 | 40-60 | 25-50 | 20-30 | NP-10 |
| | 14-22 22-60 | Indurated Gravelly loamy sand, very gravelly sandy loam | GM, SM | A-1 | 0 0 | 0 0-10 | 0 35-75 | 0 30-60 | 0 20-35 | 0 10-25 | --- 0-14 | NP NP |
| Mormount----- | 0-3 | Gravelly sandy loam | SM | A-2, A-1 | 0 | 0-5 | 70-85 | 50-75 | 40-65 | 20-35 | 15-25 | NP-5 |
| | 3-15 | Gravelly very fine sandy loam, gravelly loam | SC-SM | A-2, A-4 | 0 | 0-5 | 65-85 | 50-75 | 45-65 | 30-50 | 20-30 | 5-10 |
| | 15-19 19-60 | Gravelly sandy clay loam, gravelly clay loam Indurated | SC, GC | A-2, A-6 | 0 0 | 5-10 0 | 60-85 0 | 50-75 0 | 40-65 0 | 30-50 0 | 25-35 --- | 10-20 NP |
| Canutio----- | 0-2 | Very gravelly sandy loam | GM, GM-GC, GC | A-1, A-2 | 0 | 0-20 | 30-55 | 25-50 | 20-40 | 15-30 | 15-25 | NP-10 |
| | 2-60 | Stratified gravelly loam to extremely gravelly loamy coarse sand | GM, GM-GC, GC, GP-GM | A-1, A-2 | 0 | 5-30 | 30-55 | 25-50 | 15-35 | 10-30 | 15-25 | NP-10 |
| 1405: Cave----- | 0-3 | Very gravelly fine sandy loam | GM-GC, GM | A-2, A-1 | 0 | 0-10 | 35-55 | 25-50 | 15-40 | 10-20 | 20-30 | NP-10 |
| | 3-14 | Gravelly loam, gravelly sandy loam | GM-GC, SC-SM, GM, SM | A-2, A-4 | 0 | 0-10 | 60-80 | 55-75 | 40-60 | 25-50 | 20-30 | NP-10 |
| | 14-22 22-60 | Indurated Gravelly loamy sand, very gravelly sandy loam | GM, SM | A-1 | 0 0 | 0 0-10 | 0 35-75 | 0 30-60 | 0 20-35 | 0 10-25 | --- 0-14 | NP NP |
| Zeheme----- | 0-2 | Extremely stony fine sandy loam | SM | A-1, A-2 | 25-30 | 15-30 | 55-70 | 50-65 | 35-55 | 10-35 | 20-25 | NP-5 |
| | 2-13 | Very gravelly fine sandy loam, very gravelly sandy loam | GM | A-1, A-2 | 0 | 5-25 | 35-55 | 30-50 | 20-40 | 15-30 | 20-25 | NP-5 |
| | 13-23 | 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 | |
| 1406: Cave----- | 0-3 | Very gravelly sandy loam | GM-GC, GM | A-2, A-1 | 0 | 0-10 | 35-55 | 25-50 | 15-40 | 10-20 | 20-30 | NP-10 |
| | 3-14 | Gravelly loam, gravelly sandy loam | GM-GC, SC-SM, GM, SM | A-2, A-4 | 0 | 0-10 | 60-80 | 55-75 | 40-60 | 25-50 | 20-30 | NP-10 |
| | 14-22 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| | 22-60 | Gravelly loamy sand, very gravelly sandy loam | GM, SM | A-1 | 0 | 0-10 | 35-75 | 30-60 | 20-35 | 10-25 | 0-14 | NP |
| 1420: Rock Outcrop. | | | | | | | | | | | | |
| Kanackey----- | 0-2 | Very gravelly loam | GM-GC | A-2 | 0 | 10-25 | 45-55 | 35-45 | 20-40 | 20-35 | 20-25 | 5-10 |
| | 2-5 | Very cobbly clay, very cobbly sandy clay | GC | A-2 | 0 | 30-50 | 50-60 | 45-55 | 40-50 | 20-35 | 45-65 | 20-35 |
| | 5-11 | Extremely cobbly clay, extremely cobbly sandy clay, very cobbly clay | GC | A-2, A-7 | 0-5 | 50-65 | 40-70 | 35-65 | 30-55 | 15-40 | 45-65 | 20-35 |
| | 11-15 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1430: Typic Torriorthents-- | 0-3 | Very gravelly sandy loam | GM | A-1 | 0 | 0-10 | 45-60 | 35-55 | 20-35 | 10-20 | 15-20 | NP-5 |
| | 3-60 | Stratified very fine sand to silty clay loam | SM, ML, CL-ML, CL | A-2, A-4, A-6 | 0 | 0 | 90-100 | 85-100 | 50-90 | 30-70 | 15-35 | NP-15 |
| 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 |
| 1460: Pintwater----- | 0-2 | Extremely stony fine sandy loam | GM, SM | A-1, A-2 | 25-35 | 0-10 | 45-75 | 40-65 | 30-50 | 15-30 | 20-25 | NP-5 |
| | 2-14 | Very cobbly fine sandy loam, very stony fine sandy loam, extremely cobbly fine sandy loam | GM, SM | A-1 | 0-20 | 10-55 | 30-60 | 25-50 | 15-35 | 10-20 | 20-25 | NP-5 |
| | 14-18 | 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 inches | 3-10 inches | 4 | 10 | 40 | 200 | | |
| | | | | | Pct | Pct | | | | | | |
| 1460 (con.): Rochpah----- | In | | | | | | | | | | | |
| | 0-4 | Very gravelly sandy loam | GM | A-1 | 0 | 10-20 | 40-55 | 30-45 | 20-40 | 10-25 | 15-25 | NP-5 |
| | 4-19 | Very gravelly sandy loam, very cobbly sandy loam, very gravelly coarse sandy loam | GM | A-1 | 0 | 0-45 | 40-60 | 25-50 | 20-40 | 10-20 | 15-25 | NP-5 |
| | 19-29 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1470: Tybo----- | 0-4 | Gravelly fine sandy loam | GM, SM | A-2, A-1 | 0 | 0-5 | 55-80 | 50-75 | 40-65 | 20-35 | 15-25 | NP-5 |
| | 4-19 | Fine sandy loam, gravelly sandy loam, very fine sandy loam | SM | A-1, A-2, A-4 | 0 | 0-5 | 60-95 | 55-90 | 35-80 | 20-50 | 15-25 | NP-5 |
| | 19-23 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Keefa----- | 0-8 | Gravelly very fine sandy loam | SM, ML, GM | A-4 | 0 | 0 | 65-90 | 50-75 | 45-75 | 35-55 | 15-25 | NP-5 |
| | 8-26 | Sandy loam, gravelly sandy loam, gravelly coarse sandy loam | SM | A-1, A-2 | 0 | 0 | 85-100 | 65-100 | 40-75 | 20-35 | 15-25 | NP-5 |
| | 26-50 | Gravelly sandy loam, gravelly coarse sandy loam | SM | A-1, A-2 | 0 | 0 | 75-90 | 50-75 | 30-55 | 15-25 | 15-25 | NP-5 |
| | 50-60 | Stratified very gravelly sand to gravelly sandy loam | SM | A-1, A-2 | 0 | 0 | 60-90 | 50-75 | 30-55 | 10-15 | 15-25 | NP-5 |
| Koyen----- | 0-3 | Gravelly fine sandy loam | SM | A-2, A-4 | 0 | 0 | 65-90 | 50-75 | 40-65 | 25-40 | 15-25 | NP-5 |
| | 3-32 | Stratified loam to gravelly loamy sand | SM | A-2, A-4 | 0 | 0 | 80-90 | 75-85 | 50-60 | 25-40 | 15-25 | NP-5 |
| | 32-60 | Gravelly loamy sand, very gravelly loamy sand | GP-GM, GM, SP-SM, SM | A-1 | 0 | 0 | 50-60 | 45-55 | 25-35 | 5-15 | --- | NP |
| 1471: Tybo----- | 0-4 | Gravelly fine sandy loam | GM, SM | A-2, A-1 | 0 | 0-5 | 55-80 | 50-75 | 40-65 | 20-35 | 15-25 | NP-5 |
| | 4-19 | Fine sandy loam, gravelly sandy loam, very fine sandy loam | SM | A-1, A-2, A-4 | 0 | 0-5 | 60-95 | 55-90 | 35-80 | 20-50 | 15-25 | NP-5 |
| | 19-23 | Indurated | | | 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 | |
| 1471 (con.): Koyen----- | 0-3 | Gravelly sandy loam | SM | A-2, A-4 | 0 | 0 | 65-90 | 50-75 | 40-65 | 25-40 | 15-25 | NP-5 |
| | 3-32 | Stratified loam to gravelly loamy sand | SM | A-2, A-4 | 0 | 0 | 80-90 | 75-85 | 50-60 | 25-40 | 15-25 | NP-5 |
| | 32-60 | Gravelly loamy sand, very gravelly loamy sand | GP-GM, GM, SP-SM, SM | A-1 | 0 | 0 | 50-60 | 45-55 | 25-35 | 5-15 | --- | NP |
| 1472: Tybo----- | 0-4 | Gravelly fine sandy loam | GM, SM | A-2, A-1 | 0 | 0-5 | 55-80 | 50-75 | 40-65 | 20-35 | 15-25 | NP-5 |
| | 4-19 | Fine sandy loam, gravelly sandy loam, very fine sandy loam | SM | A-1, A-2, A-4 | 0 | 0-5 | 60-95 | 55-90 | 35-80 | 20-50 | 15-25 | NP-5 |
| | 19-23 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Geer----- | 0-6 | Fine sandy loam | SM, ML | A-4 | 0 | 0 | 100 | 95-100 | 85-95 | 40-65 | 15-25 | NP-5 |
| | 6-60 | Stratified fine sandy loam to very fine sandy loam | SM, ML | A-4 | 0 | 0 | 85-100 | 85-100 | 80-95 | 40-75 | 15-25 | NP-5 |
| 1473: Tybo----- | 0-4 | Gravelly fine sandy loam | GM, SM | A-2, A-1 | 0 | 0-5 | 55-80 | 50-75 | 40-65 | 20-35 | 15-25 | NP-5 |
| | 4-19 | Fine sandy loam, gravelly sandy loam, very fine sandy loam | SM | A-1, A-2, A-4 | 0 | 0-5 | 60-95 | 55-90 | 35-80 | 20-50 | 15-25 | NP-5 |
| | 19-23 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Leo----- | 0-5 | Very gravelly sandy loam | GP-GM, SP-SM, SM, GM | A-1 | 0 | 0 | 45-65 | 25-50 | 20-40 | 5-25 | 15-25 | NP-5 |
| | 5-60 | Stratified gravelly fine sandy loam to extremely gravelly coarse sand | GM, GP-GM, SP-SM, SM | A-1 | 0-5 | 0-25 | 45-60 | 40-50 | 15-35 | 5-20 | --- | NP |
| 1474: Tybo----- | 0-4 | Gravelly fine sandy loam | GM, SM | A-2, A-1 | 0 | 0-5 | 55-80 | 50-75 | 40-65 | 20-35 | 15-25 | NP-5 |
| | 4-19 | Fine sandy loam, gravelly sandy loam, very fine sandy loam | SM | A-1, A-2, A-4 | 0 | 0-5 | 60-95 | 55-90 | 35-80 | 20-50 | 15-25 | NP-5 |
| | 19-23 | Indurated | | | 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 | | | | | | |
| 1474 (con.): Delamar----- | 0-5 | Sandy loam | SM | A-2, A-4, A-1 | 0 | 0 | 95-100 | 85-100 | 45-80 | 10-50 | 0-14 | NP |
| | 5-15 | Sandy loam, sandy clay loam, gravelly clay loam | SC, CL | A-2, A-6 | 0 | 0-5 | 65-100 | 60-90 | 50-80 | 30-55 | 30-40 | 10-20 |
| | 15-21 | Clay loam, gravelly clay loam | GC, SC | A-2, A-6, A-7 | 0 | 0-5 | 60-90 | 55-85 | 40-55 | 30-50 | 35-45 | 15-25 |
| | 21-30 | Gravelly sandy loam, gravelly loamy coarse sand, gravelly coarse sand | SM | A-1, A-2, A-4 | 0 | 0 | 60-80 | 50-75 | 30-50 | 10-50 | 0-14 | NP |
| | 30-60 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1490: Keefa----- | 0-4 | Sandy loam | SM | A-2 | 0 | 0 | 90-100 | 80-100 | 60-75 | 25-30 | 15-25 | NP-5 |
| | 4-26 | Sandy loam, gravelly sandy loam, gravelly coarse sandy loam | SM | A-1, A-2 | 0 | 0 | 85-100 | 65-100 | 40-75 | 20-35 | 15-25 | NP-5 |
| | 26-50 | Gravelly sandy loam, gravelly coarse sandy loam | SM | A-1, A-2 | 0 | 0 | 75-90 | 50-75 | 30-55 | 15-25 | 15-25 | NP-5 |
| | 50-60 | Stratified very gravelly sand to gravelly sandy loam | SM | A-1, A-2 | 0 | 0 | 60-90 | 50-75 | 30-55 | 10-15 | 15-25 | NP-5 |
| Penoyer----- | 0-4 | Silt loam | ML | A-4 | 0 | 0 | 100 | 100 | 95-100 | 85-95 | 20-30 | NP-5 |
| | 4-60 | Silt loam | ML | A-4 | 0 | 0 | 100 | 100 | 95-100 | 85-95 | 20-30 | NP-5 |
| 1491: Keefa----- | 0-4 | Sandy loam | SM | A-2 | 0 | 0 | 90-100 | 80-100 | 60-75 | 25-30 | 15-25 | NP-5 |
| | 4-26 | Sandy loam, gravelly sandy loam, gravelly coarse sandy loam | SM | A-1, A-2 | 0 | 0 | 85-100 | 65-100 | 40-75 | 20-35 | 15-25 | NP-5 |
| | 26-38 | Gravelly sandy loam, gravelly coarse sandy loam | SM | A-1, A-2 | 0 | 0 | 75-90 | 50-75 | 30-55 | 15-25 | 15-25 | NP-5 |
| | 38-60 | Stratified very gravelly sand to gravelly sandy loam | SM | A-1, A-2 | 0 | 0 | 60-90 | 50-75 | 30-55 | 10-15 | 15-25 | NP-5 |
| Penoyer----- | 0-4 | Silt loam | ML | A-4 | 0 | 0 | 100 | 100 | 95-100 | 85-95 | 20-30 | NP-5 |
| | 4-60 | Silt loam | ML | A-4 | 0 | 0 | 100 | 100 | 95-100 | 85-95 | 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 | | | | | | |
| 1510: Koyen----- | 0-3 | Gravelly sandy loam | SM | A-2, A-4 | 0 | 0 | 65-90 | 50-75 | 40-65 | 25-40 | 15-25 | NP-5 |
| | 3-32 | Stratified loam to gravelly loamy sand | SM | A-2, A-4 | 0 | 0 | 80-90 | 75-85 | 50-60 | 25-40 | 15-25 | NP-5 |
| | 32-60 | Gravelly loamy sand, very gravelly loamy sand | GP-GM, GM, SP-SM, SM | A-1 | 0 | 0 | 50-60 | 45-55 | 25-35 | 5-15 | --- | NP |
| 1512: Koyen----- | 0-3 | Gravelly fine sandy loam | SM | A-2, A-4 | 0 | 0 | 65-90 | 50-75 | 40-65 | 25-40 | 15-25 | NP-5 |
| | 3-32 | Stratified loam to gravelly loamy sand | SM | A-2, A-4 | 0 | 0 | 80-90 | 75-85 | 50-60 | 25-40 | 15-25 | NP-5 |
| | 32-60 | Gravelly loamy sand, very gravelly loamy sand | GP-GM, GM, SP-SM, SM | A-1 | 0 | 0 | 50-60 | 45-55 | 25-35 | 5-15 | --- | NP |
| Penoyer----- | 0-4 | Silt loam | ML | A-4 | 0 | 0 | 100 | 100 | 95-100 | 85-95 | 20-30 | NP-5 |
| | 4-60 | Silt loam | ML | A-4 | 0 | 0 | 100 | 100 | 95-100 | 85-95 | 20-30 | NP-5 |
| 1520: Geer----- | 0-6 | Fine sandy loam | SM, ML | A-4 | 0 | 0 | 100 | 95-100 | 85-95 | 40-65 | 15-25 | NP-5 |
| | 6-60 | Stratified fine sandy loam to very fine sandy loam | SM, ML | A-4 | 0 | 0 | 85-100 | 85-100 | 80-95 | 40-75 | 15-25 | NP-5 |
| Penoyer----- | 0-4 | Silt loam | ML | A-4 | 0 | 0 | 100 | 100 | 95-100 | 85-95 | 20-30 | NP-5 |
| | 4-60 | Silt loam | ML | A-4 | 0 | 0 | 100 | 100 | 95-100 | 85-95 | 20-30 | NP-5 |
| 1530: Delamar----- | 0-5 | Gravelly sandy loam | SM | A-2, A-4 | 0 | 0-5 | 65-80 | 50-75 | 40-65 | 30-50 | 0-14 | NP |
| | 5-15 | Sandy loam, sandy clay loam, gravelly clay loam | SC, CL | A-2, A-6 | 0 | 0-5 | 65-100 | 60-90 | 50-80 | 30-55 | 30-40 | 10-20 |
| | 15-21 | Clay loam, gravelly clay loam | GC, SC | A-2, A-6, A-7 | 0 | 0-5 | 60-90 | 55-85 | 40-55 | 30-50 | 35-45 | 15-25 |
| | 21-30 | Gravelly sandy loam, gravelly loamy coarse sand, gravelly coarse sand | SM | A-1, A-2, A-4 | 0 | 0 | 60-80 | 50-75 | 30-50 | 10-50 | 0-14 | NP |
| | 30-60 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Leo----- | 0-5 | Gravelly sandy loam | SM | A-1, A-2 | 0 | 0 | 65-85 | 50-75 | 40-60 | 20-35 | 15-25 | NP-5 |
| | 5-60 | Stratified gravelly fine sandy loam to extremely gravelly coarse sand | GM, GP-GM, SP-SM, SM | A-1 | 0-5 | 0-25 | 45-60 | 40-50 | 15-35 | 5-20 | --- | 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 | | | | | Pct | |
| 1531: Delamar----- | 0-5 | Gravelly sandy loam | SM | A-2, A-4 | 0 | 0-5 | 65-80 | 50-75 | 40-65 | 30-50 | 0-14 | NP |
| | 5-15 | Sandy loam, sandy clay loam, gravelly clay loam | SC, CL | A-2, A-6 | 0 | 0-5 | 65-100 | 60-90 | 50-80 | 30-55 | 30-40 | 10-20 |
| | 15-21 | Clay loam, gravelly clay loam | GC, SC | A-2, A-6, A-7 | 0 | 0-5 | 60-90 | 55-85 | 40-55 | 30-50 | 35-45 | 15-25 |
| | 21-30 | Gravelly sandy loam, gravelly loamy coarse sand, gravelly coarse sand | SM | A-1, A-2, A-4 | 0 | 0 | 60-80 | 50-75 | 30-50 | 10-50 | 0-14 | NP |
| | 30-60 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Vest----- | 0-3 | Very gravelly sandy loam | SM | A-1 | 0 | 0-10 | 60-75 | 30-50 | 20-45 | 15-25 | 15-25 | NP-5 |
| | 3-19 | Very gravelly sandy loam | GM-GC | A-2 | 0 | 10-25 | 40-60 | 35-55 | 25-50 | 15-25 | 20-25 | 5-10 |
| | 19-60 | Stratified extremely gravelly sandy loam to very gravelly loamy coarse sand | GP-GM, GM | A-1 | 0 | 10-25 | 45-55 | 30-50 | 15-30 | 5-15 | --- | NP |
| 1533: Delamar----- | 0-5 | Sandy loam | SM | A-2, A-4, A-1 | 0 | 0 | 95-100 | 85-100 | 45-80 | 10-50 | 0-14 | NP |
| | 5-15 | Sandy loam, sandy clay loam, gravelly clay loam | SC, CL | A-2, A-6 | 0 | 0-5 | 65-100 | 60-90 | 50-80 | 30-55 | 30-40 | 10-20 |
| | 15-21 | Clay loam, gravelly clay loam | GC, SC | A-2, A-6, A-7 | 0 | 0-5 | 60-90 | 55-85 | 40-55 | 30-50 | 35-45 | 15-25 |
| | 21-30 | Gravelly sandy loam, gravelly loamy coarse sand, gravelly coarse sand | SM | A-1, A-2, A-4 | 0 | 0 | 60-80 | 50-75 | 30-50 | 10-50 | 0-14 | NP |
| | 30-60 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Tybo----- | 0-4 | Gravelly fine sandy loam | GM, SM | A-2, A-1 | 0 | 0-5 | 55-80 | 50-75 | 40-65 | 20-35 | 15-25 | NP-5 |
| | 4-19 | Fine sandy loam, gravelly sandy loam, very fine sandy loam | SM | A-1, A-2, A-4 | 0 | 0-5 | 60-95 | 55-90 | 35-80 | 20-50 | 15-25 | NP-5 |
| | 19-23 | Indurated | | | 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 | |
| 1533 (con.): Koyen----- | 0-3 | Gravelly sandy loam | SM | A-2, A-4 | 0 | 0 | 65-90 | 50-75 | 40-65 | 25-40 | 15-25 | NP-5 |
| | 3-32 | Stratified loam to gravelly loamy sand | SM | A-2, A-4 | 0 | 0 | 80-90 | 75-85 | 50-60 | 25-40 | 15-25 | NP-5 |
| | 32-60 | Gravelly loamy sand, very gravelly loamy sand | GP-GM, GM, SP-SM, SM | A-1 | 0 | 0 | 50-60 | 45-55 | 25-35 | 5-15 | --- | NP |
| 1534: Delamar----- | 0-5 | Gravelly sandy loam | SM | A-2, A-4 | 0 | 0-5 | 65-80 | 50-75 | 40-65 | 30-50 | 0-14 | NP |
| | 5-15 | Sandy loam, sandy clay loam, gravelly clay loam | SC, CL | A-2, A-6 | 0 | 0-5 | 65-100 | 60-90 | 50-80 | 30-55 | 30-40 | 10-20 |
| | 15-21 | Clay loam, gravelly clay loam | GC, SC | A-2, A-6, A-7 | 0 | 0-5 | 60-90 | 55-85 | 40-55 | 30-50 | 35-45 | 15-25 |
| | 21-30 | Gravelly sandy loam, gravelly loamy coarse sand, gravelly coarse sand | SM | A-1, A-2, A-4 | 0 | 0 | 60-80 | 50-75 | 30-50 | 10-50 | 0-14 | NP |
| | 30-60 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Koyen----- | 0-3 | Gravelly sandy loam | SM | A-2, A-4 | 0 | 0 | 65-90 | 50-75 | 40-65 | 25-40 | 15-25 | NP-5 |
| | 3-32 | Stratified loam to gravelly loamy sand | SM | A-2, A-4 | 0 | 0 | 80-90 | 75-85 | 50-60 | 25-40 | 15-25 | NP-5 |
| | 32-60 | Gravelly loamy sand, very gravelly loamy sand | GP-GM, GM, SP-SM, SM | A-1 | 0 | 0 | 50-60 | 45-55 | 25-35 | 5-15 | --- | NP |
| 1535: Delamar----- | 0-5 | Gravelly sandy loam | SM | A-2, A-4 | 0 | 0-5 | 65-80 | 50-75 | 40-65 | 30-50 | 0-14 | NP |
| | 5-15 | Sandy loam, sandy clay loam, gravelly clay loam | SC, CL | A-2, A-6 | 0 | 0-5 | 65-100 | 60-90 | 50-80 | 30-55 | 30-40 | 10-20 |
| | 15-21 | Clay loam, gravelly clay loam | GC, SC | A-2, A-6, A-7 | 0 | 0-5 | 60-90 | 55-85 | 40-55 | 30-50 | 35-45 | 15-25 |
| | 21-30 | Gravelly sandy loam, gravelly loamy coarse sand, gravelly coarse sand | SM | A-1, A-2, A-4 | 0 | 0 | 60-80 | 50-75 | 30-50 | 10-50 | 0-14 | NP |
| | 30-60 | Indurated | | | 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 | | | | | | |
| 1540: Oleman----- | 0-2 | Very gravelly fine sandy loam | SC-SM | A-2 | 0 | 0-10 | 70-90 | 35-50 | 20-45 | 10-20 | 20-30 | 5-10 |
| | 2-14 | Very gravelly loam, very gravelly clay loam | SC, SM | A-2 | 0-5 | 5-25 | 70-80 | 40-50 | 30-40 | 15-25 | 35-45 | 10-20 |
| | 14-24 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| | 24-60 | Stratified very gravelly loamy sand to extremely cobble sand | SP-SM, SM, GM, GP-GM | A-1 | 0-5 | 5-35 | 50-60 | 30-50 | 10-30 | 5-15 | --- | NP |
| Leo----- | 0-5 | Very gravelly sandy loam | GP-GM, SP-SM, SM, GM | A-1 | 0 | 0 | 45-65 | 25-50 | 20-40 | 5-25 | 15-25 | NP-5 |
| | 5-60 | Stratified gravelly fine sandy loam to extremely gravelly coarse sand | GM, GP-GM, SP-SM, SM | A-1 | 0-5 | 0-25 | 45-60 | 40-50 | 15-35 | 5-20 | --- | NP |
| 1541: Oleman----- | 0-2 | Gravelly sandy loam | SM | A-1, A-2 | 0 | 0-10 | 80-90 | 65-75 | 40-50 | 20-30 | 15-25 | NP-5 |
| | 2-14 | Very gravelly loam, very gravelly clay loam | SC, SM | A-2 | 0-5 | 5-25 | 70-80 | 40-50 | 30-40 | 15-25 | 35-45 | 10-20 |
| | 14-24 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| | 24-60 | Stratified very gravelly loamy sand to extremely cobble sand | SP-SM, SM, GM, GP-GM | A-1 | 0-5 | 5-35 | 50-60 | 30-50 | 10-30 | 5-15 | --- | NP |
| Cave----- | 0-3 | Very gravelly sandy loam | GM-GC, GM | A-2, A-1 | 0 | 0-10 | 35-55 | 25-50 | 15-40 | 10-20 | 20-30 | NP-10 |
| | 3-14 | Gravelly loam, gravelly sandy loam | GM-GC, SC-SM, GM, SM | A-2, A-4 | 0 | 0-10 | 60-80 | 55-75 | 40-60 | 25-50 | 20-30 | NP-10 |
| | 14-22 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| | 22-60 | Gravelly loamy sand, very gravelly sandy loam | GM, SM | A-1 | 0 | 0-10 | 35-75 | 30-60 | 20-35 | 10-25 | 0-14 | 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 | | | | | | |
| | | | | Pct | Pct | | | | | Pct | | |
| 1570 (con.): Kyler----- | In | | | | | | | | | | | |
| | 0-3 | Extremely cobbly loam | GM, GM-GC | A-1, A-2 | 0-10 | 40-50 | 30-40 | 25-40 | 20-35 | 15-25 | 15-25 | NP-10 |
| | 3-11 | Very cobbly loam, very gravelly loam | GM, GM-GC, SM, SC-SM | A-2, A-4 | 0-10 | 15-40 | 55-70 | 50-65 | 40-60 | 25-40 | 15-25 | NP-10 |
| | 11-15 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Eaglepass----- | 0-2 | Extremely stony loam | GM | A-1, A-2 | 25-40 | 30-45 | 30-65 | 25-60 | 20-50 | 15-35 | 15-25 | NP-5 |
| | 2-6 | Extremely stony loam, very cobbly fine sandy loam, extremely gravelly sandy loam | GM | A-1, A-2 | 0-40 | 25-45 | 30-65 | 25-60 | 20-50 | 10-35 | 15-25 | NP-5 |
| | 6-10 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1571: Rock Outcrop. | | | | | | | | | | | | |
| Kyler----- | 0-3 | Extremely cobbly loam | GM, GM-GC | A-1, A-2 | 0-10 | 40-50 | 30-40 | 25-40 | 20-35 | 15-25 | 15-25 | NP-10 |
| | 3-11 | Very cobbly loam, very gravelly loam | GM, GM-GC, SM, SC-SM | A-2, A-4 | 0-10 | 15-40 | 55-70 | 50-65 | 40-60 | 25-40 | 15-25 | NP-10 |
| | 11-15 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Logring----- | 0-3 | Very gravelly loam | GM | A-1, A-2 | 0-5 | 10-15 | 45-60 | 35-55 | 25-50 | 20-35 | 15-25 | NP-5 |
| | 3-12 | Very cobbly loam, very cobbly fine sandy loam, extremely cobbly loam | GM, SM | A-1, A-2 | 0-10 | 30-50 | 50-70 | 40-60 | 20-45 | 15-30 | 15-25 | NP-5 |
| | 12-16 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1590: Winklo----- | | | | | | | | | | | | |
| 0-3 | Very cobbly loam | GM-GC, GC | A-2 | 0 | 25-35 | 55-65 | 45-55 | 35-40 | 25-30 | 25-35 | 5-15 | |
| | 3-9 | Gravelly clay loam, gravelly sandy clay loam | SC | A-2, A-6, A-7 | 0 | 0-10 | 65-80 | 55-75 | 45-55 | 30-45 | 35-45 | 15-25 |
| | 9-23 23-33 | Gravelly clay weathered bedrock | GC, CL, CH | A-7 | 0 0 | 0-10 0 | 65-75 0 | 55-65 0 | 50-60 0 | 40-55 0 | 45-60 --- | 20-35 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 | | | | | | |
| 1590 (con.): Wyva----- | 0-2 | Very cobbly sandy loam | SC-SM | A-2 | 0 | 30-50 | 60-70 | 50-60 | 30-45 | 10-25 | 20-25 | 5-10 |
| | 2-15 | Extremely cobbly clay loam, very cobbly clay loam | SC, GC | A-2, A-6, A-7 | 0-10 | 50-80 | 60-80 | 50-70 | 40-50 | 25-40 | 35-45 | 20-30 |
| | 15-25 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1591: Rock Outcrop. | | | | | | | | | | | | |
| Winklo----- | 0-3 | Very gravelly sandy loam | GM | A-1 | 0 | 0-10 | 45-55 | 40-50 | 30-40 | 10-25 | 15-25 | NP-5 |
| | 3-9 | Gravelly clay loam, gravelly sandy clay loam | SC | A-2, A-6, A-7 | 0 | 0-10 | 65-80 | 55-75 | 45-55 | 30-45 | 35-45 | 15-25 |
| | 9-23 | Gravelly clay | GC, CL, CH | A-7 | 0 | 0-10 | 65-75 | 55-65 | 50-60 | 40-55 | 45-60 | 20-35 |
| | 23-33 | Weathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Rochpah----- | 0-4 | Very gravelly sandy loam | GM | A-1 | 0 | 10-20 | 40-55 | 30-45 | 20-40 | 10-25 | 15-25 | NP-5 |
| | 4-19 | Very gravelly sandy loam, very cobbly sandy loam, very gravelly coarse sandy loam | GM | A-1 | 0 | 0-45 | 40-60 | 25-50 | 20-40 | 10-20 | 15-25 | NP-5 |
| | 19-29 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1650: Handpah----- | 0-4 | Very gravelly sandy loam | GM | A-2, A-1 | 0 | 0 | 50-60 | 35-50 | 25-40 | 15-30 | 20-25 | NP-5 |
| | 4-19 | Gravelly clay loam, gravelly loam, gravelly sandy clay loam | SC, GC | A-6 | 0 | 0-10 | 60-85 | 60-75 | 50-60 | 40-50 | 35-40 | 15-20 |
| | 19-29 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| | 29-60 | Cemented | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Veet----- | 0-3 | Gravelly sandy loam | SM | A-2 | 0 | 0-10 | 75-90 | 50-75 | 40-60 | 25-35 | 15-25 | NP-5 |
| | 3-19 | Very gravelly sandy loam | GM-GC | A-2 | 0 | 10-25 | 40-60 | 35-55 | 25-50 | 15-25 | 20-25 | 5-10 |
| | 19-60 | Stratified extremely gravelly sandy loam to very gravelly loamy coarse sand | GP-GM, GM | A-1 | 0 | 10-25 | 45-55 | 30-50 | 15-30 | 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 inches | 3-10 inches | 4 | 10 | 40 | 200 | | |
| | | | | | Pct | Pct | | | | | | |
| 1660: Dewrust----- | 0-6 | Very gravelly sandy loam | GM | A-1 | 0 | 0-10 | 45-60 | 35-50 | 25-45 | 10-25 | 20-25 | NP-5 |
| | 6-11 | Clay loam, gravelly clay loam | CL, SC | A-6, A-7 | 0 | 0-5 | 75-90 | 70-85 | 60-80 | 45-60 | 35-45 | 15-25 |
| | 11-23 | Clay, gravelly clay, gravelly clay loam | CL, CH, SC | A-7 | 0 | 0-5 | 75-90 | 70-85 | 60-80 | 45-60 | 45-65 | 20-35 |
| | 23-30 | Gravelly clay, very gravelly clay | CH, GC | A-2, A-7 | 0-5 | 5-25 | 45-75 | 40-70 | 30-60 | 25-55 | 55-65 | 30-35 |
| | 30-40 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Veet----- | 0-3 | Gravelly sandy loam | SM | A-2 | 0 | 0-10 | 75-90 | 50-75 | 40-60 | 25-35 | 15-25 | NP-5 |
| | 3-19 | Very gravelly sandy loam | GM-GC | A-2 | 0 | 10-25 | 40-60 | 35-55 | 25-50 | 15-25 | 20-25 | 5-10 |
| | 19-60 | Stratified extremely gravelly sandy loam to very gravelly loamy coarse sand | GP-GM, GM | A-1 | 0 | 10-25 | 45-55 | 30-50 | 15-30 | 5-15 | --- | NP |
| 1680: Rochpah----- | 0-4 | Very gravelly sandy loam | GM | A-1 | 0 | 10-20 | 40-55 | 30-45 | 20-40 | 10-25 | 15-25 | NP-5 |
| | 4-19 | Very gravelly sandy loam, very cobbly sandy loam, very gravelly coarse sandy loam | GM | A-1 | 0 | 0-45 | 40-60 | 25-50 | 20-40 | 10-20 | 15-25 | NP-5 |
| | 19-29 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Hollace----- | 0-2 | Very gravelly sandy loam | GM | A-1 | 0 | 5-15 | 45-55 | 35-45 | 20-30 | 15-25 | 0-14 | NP |
| | 2-8 | Very cobbly clay loam, very cobbly loam | GC | A-2 | 0 | 30-50 | 50-65 | 40-55 | 35-45 | 25-35 | 25-35 | 10-15 |
| | 8-17 | Very cobbly clay loam, very cobbly sandy clay loam | GC | A-2, A-6 | 0 | 30-50 | 50-65 | 40-55 | 35-45 | 25-40 | 35-40 | 15-20 |
| | 17-21 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| | 21-31 | 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 | |
| 1680 (con.): Gabbvally----- | 0-2 | Very gravelly sandy loam | GM | A-1 | 0 | 0-10 | 50-60 | 35-45 | 25-40 | 15-25 | 20-25 | NP-5 |
| | 2-9 | Very gravelly sandy clay loam, very gravelly sandy loam, very gravelly loam | GC, GM-GC | A-2 | 0-5 | 0-15 | 50-60 | 35-50 | 25-35 | 15-25 | 25-35 | 5-15 |
| | 9-13 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1681: Rochpah----- | 0-4 | Very gravelly sandy loam | GM | A-1 | 0 | 10-20 | 40-55 | 30-45 | 20-40 | 10-25 | 15-25 | NP-5 |
| | 4-19 | Very gravelly sandy loam, very cobbly sandy loam, very gravelly coarse sandy loam | GM | A-1 | 0 | 0-45 | 40-60 | 25-50 | 20-40 | 10-20 | 15-25 | NP-5 |
| | 19-29 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Veet----- | 0-3 | Gravelly sandy loam | SM | A-2 | 0 | 0-10 | 75-90 | 50-75 | 40-60 | 25-35 | 15-25 | NP-5 |
| | 3-19 | Very gravelly sandy loam | GM-GC | A-2 | 0 | 10-25 | 40-60 | 35-55 | 25-50 | 15-25 | 20-25 | 5-10 |
| | 19-60 | Stratified extremely gravelly sandy loam to very gravelly loamy coarse sand | GP-GM, GM | A-1 | 0 | 10-25 | 45-55 | 30-50 | 15-30 | 5-15 | --- | NP |
| 1683: Rock Outcrop. Rochpah----- | 0-4 | Very gravelly sandy loam | GM | A-1 | 0 | 10-20 | 40-55 | 30-45 | 20-40 | 10-25 | 15-25 | NP-5 |
| | 4-19 | Very gravelly sandy loam, very cobbly sandy loam, very gravelly coarse sandy loam | GM | A-1 | 0 | 0-45 | 40-60 | 25-50 | 20-40 | 10-20 | 15-25 | NP-5 |
| | 19-29 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Leo----- | 0-5 | Very gravelly sandy loam | GP-GM, SP-SM, SM, GM | A-1 | 0 | 0 | 45-65 | 25-50 | 20-40 | 5-25 | 15-25 | NP-5 |
| | 5-60 | Stratified gravelly fine sandy loam to extremely gravelly coarse sand | GM, GP-GM, SP-SM, SM | A-1 | 0-5 | 0-25 | 45-60 | 40-50 | 15-35 | 5-20 | --- | 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 | | | | | | |
| 1690: Jolan----- | 0-6 | Very fine sandy loam | ML | A-4 | 0 | 0 | 100 | 100 | 85-95 | 55-65 | 20-30 | NP-5 |
| | 6-24 | Fine sandy loam, sandy loam, very fine sandy loam | SM, ML | A-2, A-4 | 0 | 0 | 75-100 | 75-100 | 55-90 | 25-65 | 15-25 | NP-5 |
| | 24-28 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Geer----- | 0-6 | Fine sandy loam | SM, ML | A-4 | 0 | 0 | 100 | 95-100 | 85-95 | 40-65 | 15-25 | NP-5 |
| | 6-60 | Stratified fine sandy loam to very fine sandy loam | SM, ML | A-4 | 0 | 0 | 85-100 | 85-100 | 80-95 | 40-75 | 15-25 | NP-5 |
| 1700: Sieroclipf----- | 0-3 | Gravelly sandy loam | GM, SM | A-2, A-4 | 0 | 0-5 | 55-80 | 50-75 | 40-60 | 25-45 | 15-25 | NP-5 |
| | 3-11 | Gravelly loam, very gravelly loam | GM-GC, GC, CL-ML, CL | A-4, A-6 | 0 | 0-5 | 65-95 | 60-90 | 55-80 | 45-70 | 25-40 | 5-15 |
| | 11-26 | Very gravelly loam, very gravelly sandy loam, extremely gravelly fine sandy loam | GM | A-1 | 0 | 0-5 | 30-50 | 20-35 | 15-25 | 10-15 | 15-25 | NP-5 |
| | 26-60 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Veet----- | 0-3 | Very gravelly sandy loam | SM | A-1 | 0 | 0-10 | 60-75 | 30-50 | 20-45 | 15-25 | 15-25 | NP-5 |
| | 3-19 | Very gravelly sandy loam | GM-GC | A-2 | 0 | 10-25 | 40-60 | 35-55 | 25-50 | 15-25 | 20-25 | 5-10 |
| | 19-60 | Stratified extremely gravelly sandy loam to very gravelly loamy coarse sand | GP-GM, GM | A-1 | 0 | 10-25 | 45-55 | 30-50 | 15-30 | 5-15 | --- | NP |
| 1710: Cliffdown----- | 0-2 | Gravelly sandy loam | SM | A-1, A-2 | 0 | 0-5 | 70-80 | 65-75 | 40-50 | 20-30 | 0-14 | NP |
| | 2-60 | Stratified gravelly sandy loam to very gravelly fine sandy loam | GM | A-1, A-2 | 0 | 0-5 | 45-55 | 40-50 | 30-40 | 15-30 | 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 inches | 3-10 inches | 4 | 10 | 40 | 200 | | |
| | | | | | Pct | Pct | | | | | | |
| 1730: Cath----- | 0-4 | Coarse sandy loam | SM | A-1, A-2 | 0 | 0 | 90-100 | 75-100 | 10-50 | 10-35 | 15-25 | NP-5 |
| | 4-21 | Clay loam, sandy clay loam, gravelly clay loam | SC, CL | A-6, A-7 | 0 | 0 | 80-100 | 65-100 | 60-90 | 40-85 | 35-45 | 15-25 |
| | 21-32 | Very gravelly sandy clay loam | GC | A-2 | 0 | 0 | 30-60 | 25-50 | 20-40 | 15-35 | 30-40 | 10-20 |
| | 32-60 | Stratified very gravelly loamy coarse sand to very gravelly loam | GM, GP-GM | A-1 | 0 | 0 | 30-60 | 25-50 | 20-40 | 5-20 | --- | NP |
| Veet----- | 0-3 | Gravelly sandy loam | SM | A-2 | 0 | 0-10 | 75-90 | 50-75 | 40-60 | 25-35 | 15-25 | NP-5 |
| | 3-19 | Very gravelly sandy loam | GM-GC | A-2 | 0 | 10-25 | 40-60 | 35-55 | 25-50 | 15-25 | 20-25 | 5-10 |
| | 19-60 | Stratified extremely gravelly sandy loam to very gravelly loamy coarse sand | GP-GM, GM | A-1 | 0 | 10-25 | 45-55 | 30-50 | 15-30 | 5-15 | --- | NP |
| 1740: Slaw----- | 0-4 | Silt loam | CL-ML | A-4 | 0 | 0 | 100 | 100 | 95-100 | 80-90 | 15-25 | 5-10 |
| | 4-60 | 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 |
| 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 |
| 1741: Slaw----- | 0-4 | Silt loam | CL-ML | A-4 | 0 | 0 | 100 | 100 | 95-100 | 80-90 | 15-25 | 5-10 |
| | 4-60 | 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 |
| 1750: Rock Outcrop. | | | | | | | | | | | | |
| Chanybuck----- | 0-4 | Extremely bouldery sandy loam | SP-SM, SM | A-1 | 50-60 | 0-10 | 80-90 | 20-35 | 10-30 | 5-20 | --- | NP |
| | 4-7 | Very gravelly sandy loam, very gravelly fine sandy loam | SM | A-1 | 0 | 5-10 | 65-90 | 35-50 | 30-40 | 10-25 | --- | NP |
| | 7-11 | 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 | | | | | | |
| 1750 (con.): Brier----- | 0-4 | Extremely bouldery sandy loam | GM, GP-GM | A-1 | 40-50 | 10-15 | 40-50 | 30-40 | 20-30 | 5-25 | 20-25 | NP-5 |
| | 4-15 | Very cobbly clay loam, very cobbly loam, very cobbly sandy clay loam | GC | A-2, A-6 | 0 | 30-45 | 50-70 | 45-65 | 40-50 | 30-45 | 30-40 | 10-20 |
| | 15-25 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1761: Rock Outcrop. | | | | | | | | | | | | |
| Wyva----- | 0-2 | Very cobbly sandy loam | SC-SM | A-2 | 0 | 30-50 | 60-70 | 50-60 | 30-45 | 10-25 | 20-25 | 5-10 |
| | 2-15 | Extremely cobbly clay loam, very cobbly clay loam | SC, GC | A-2, A-6, A-7 | 0-10 | 50-80 | 60-80 | 50-70 | 40-50 | 25-40 | 35-45 | 20-30 |
| | 15-25 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1762: Wyva----- | 0-2 | Very stony sandy loam | GM-GC | A-2 | 10-20 | 30-40 | 55-65 | 45-55 | 25-40 | 15-30 | 20-25 | 5-10 |
| | 2-15 | Extremely cobbly clay loam, very cobbly clay loam | SC, GC | A-2, A-6, A-7 | 0-10 | 50-80 | 60-80 | 50-70 | 40-50 | 25-40 | 35-45 | 20-30 |
| | 15-25 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Slidytn----- | 0-3 | Very gravelly sandy loam | GM, SM | A-1 | 0 | 5-15 | 50-65 | 40-55 | 25-45 | 10-25 | 20-25 | NP-5 |
| | 3-16 | Very gravelly clay loam, very gravelly sandy clay loam | GC | A-2 | 0 | 5-15 | 55-65 | 40-55 | 30-50 | 25-35 | 35-45 | 15-25 |
| | 16-26 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1770: Veet----- | 0-3 | Very gravelly sandy loam | SM | A-1 | 0 | 0-10 | 60-75 | 30-50 | 20-45 | 15-25 | 15-25 | NP-5 |
| | 3-19 | Very gravelly sandy loam | GM-GC | A-2 | 0 | 10-25 | 40-60 | 35-55 | 25-50 | 15-25 | 20-25 | 5-10 |
| | 19-60 | Stratified extremely gravelly sandy loam to very gravelly loamy coarse sand | GP-GM, GM | A-1 | 0 | 10-25 | 45-55 | 30-50 | 15-30 | 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 | | | | | | |
| 1770 (con.): Mosida----- | 0-8 | Loam | CL-ML | A-4 | 0 | 0 | 100 | 100 | 75-90 | 60-75 | 25-30 | 5-10 |
| | 8-60 | Fine sandy loam, loam, silt loam | ML, CL-ML | A-4 | 0 | 0 | 100 | 80-100 | 60-85 | 55-75 | 15-30 | NP-10 |
| 1810: Rock Outcrop. | | | | | | | | | | | | |
| Boxspring----- | 0-3 | Extremely gravelly loam | GM | A-1 | 0-5 | 15-25 | 35-45 | 25-30 | 20-30 | 15-25 | 20-25 | NP-5 |
| | 3-16 | Very gravelly loam, very cobbly loam, extremely gravelly loam | GM | A-1, A-2, A-4 | 0 | 10-25 | 30-60 | 25-55 | 20-45 | 15-40 | 20-25 | NP-5 |
| | 16-26 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1811: Rock Outcrop. | | | | | | | | | | | | |
| Boxspring----- | 0-3 | Extremely gravelly loam | GM | A-1 | 0-5 | 15-25 | 35-45 | 25-30 | 20-30 | 15-25 | 20-25 | NP-5 |
| | 3-16 | Very gravelly loam, very cobbly loam, extremely gravelly loam | GM | A-1, A-2, A-4 | 0 | 10-25 | 30-60 | 25-55 | 20-45 | 15-40 | 20-25 | NP-5 |
| | 16-26 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Theriot----- | 0-3 | Very stony loam | GM, ML, SM | A-4 | 15-25 | 5-25 | 45-80 | 45-80 | 40-75 | 35-65 | 20-25 | NP-5 |
| | 3-11 | Very stony loam, very cobbly loam, very gravelly sandy loam | GM, SM | A-1, A-2, A-4 | 0-25 | 10-40 | 40-75 | 35-75 | 25-60 | 15-50 | 20-25 | NP-5 |
| | 11-11 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1821: Turba----- | 0-7 | Very gravelly sandy loam | SM | A-1, A-2 | 0 | 0-10 | 70-80 | 30-40 | 20-35 | 10-20 | 30-40 | NP-10 |
| | 7-16 | Very gravelly sandy clay loam, very cobbly sandy clay loam | SC | A-2 | 0-5 | 5-30 | 75-90 | 35-50 | 25-40 | 15-25 | 45-60 | 20-35 |
| | 16-20 | 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 | | | | | | |
| 1821 (con.): Acti----- | 0-2 | Very gravelly loam | GM-GC, GM | A-2 | 0 | 10-20 | 40-55 | 30-45 | 20-40 | 15-30 | 25-35 | 5-10 |
| | 2-8 | Very gravelly clay, very cobbly clay, very gravelly clay loam | GC | A-2 | 0 | 0-10 | 40-55 | 30-50 | 20-45 | 15-35 | 35-65 | 15-35 |
| | 8-18 | Very gravelly clay, very cobbly clay | GC | A-2, A-7 | 0 | 20-40 | 50-65 | 40-55 | 30-50 | 25-40 | 40-65 | 20-35 |
| | 18-22 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1830: Zaqua----- | 0-3 | Very gravelly sandy loam | GM | A-1 | 0 | 0-20 | 50-60 | 40-50 | 20-40 | 10-25 | 20-25 | NP-5 |
| | 3-17 | Very gravelly clay loam, very gravelly sandy clay loam | GC | A-2 | 0 | 5-15 | 45-55 | 35-45 | 30-45 | 20-35 | 30-40 | 10-20 |
| | 17-27 | Weathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Winklo----- | 0-3 | Very gravelly sandy loam | GM | A-1 | 0 | 0-10 | 45-55 | 40-50 | 30-40 | 10-25 | 15-25 | NP-5 |
| | 3-9 | Gravelly clay loam, gravelly sandy clay loam | SC | A-2, A-6, A-7 | 0 | 0-10 | 65-80 | 55-75 | 45-55 | 30-45 | 35-45 | 15-25 |
| | 9-23 | Gravelly clay loam | GC, CL, CH | A-7 | 0 | 0-10 | 65-75 | 55-65 | 50-60 | 40-55 | 45-60 | 20-35 |
| | 23-33 | Weathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1831: Zaqua----- | 0-3 | Very gravelly sandy loam | GM | A-1 | 0 | 0-20 | 50-60 | 40-50 | 20-40 | 10-25 | 20-25 | NP-5 |
| | 3-17 | Very gravelly clay loam, very gravelly sandy clay loam | GC | A-2 | 0 | 5-15 | 45-55 | 35-45 | 30-45 | 20-35 | 30-40 | 10-20 |
| | 17-27 | Weathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Boxspring----- | 0-3 | Extremely gravelly loam | GM | A-1 | 0-5 | 15-25 | 35-45 | 25-30 | 20-30 | 15-25 | 20-25 | NP-5 |
| | 3-16 | Very gravelly loam, very cobbly loam, extremely gravelly loam | GM | A-1, A-2, A-4 | 0 | 10-25 | 30-60 | 25-55 | 20-45 | 15-40 | 20-25 | NP-5 |
| | 16-26 | 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 inches | 3-10 inches | 4 | 10 | 40 | 200 | | |
| | | | | | Pct | Pct | | | | | | |
| 1832: Zaqua----- | In | | | | | | | | | | | |
| | 0-3 | Very gravelly sandy loam | GM | A-1 | 0 | 0-20 | 50-60 | 40-50 | 20-40 | 10-25 | 20-25 | NP-5 |
| | 3-17 | Very gravelly clay loam, very gravelly sandy clay loam | GC | A-2 | 0 | 5-15 | 45-55 | 35-45 | 30-45 | 20-35 | 30-40 | 10-20 |
| | 17-27 | Weathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Winklo----- | 0-3 | Very gravelly sandy loam | GM | A-1 | 0 | 0-10 | 45-55 | 40-50 | 30-40 | 10-25 | 15-25 | NP-5 |
| | 3-9 | Gravelly clay loam, gravelly sandy clay loam | SC | A-2, A-6, A-7 | 0 | 0-10 | 65-80 | 55-75 | 45-55 | 30-45 | 35-45 | 15-25 |
| | 9-23 23-33 | Gravelly clay loam Weathered bedrock | GC, CL, CH | A-7 | 0 0 | 0-10 0 | 65-75 0 | 55-65 0 | 50-60 0 | 40-55 0 | 45-60 --- | 20-35 NP |
| Kanesprings---- | 0-3 | Very gravelly sandy loam | GM | A-1, A-2 | 0 | 0-5 | 45-55 | 35-50 | 25-40 | 15-30 | 10-20 | NP-5 |
| | 3-8 | Gravelly loam, gravelly clay loam | SC, CL, GC | A-6 | 0 | 5-10 | 65-85 | 55-75 | 40-65 | 35-55 | 30-40 | 10-20 |
| | 8-18 | Gravelly clay loam, gravelly sandy clay loam | SC, GC, CL | A-6, A-7 | 0 | 5-15 | 60-80 | 50-70 | 40-65 | 35-60 | 35-50 | 15-25 |
| | 18-24 24-28 | Indurated Unweathered bedrock | | | 0 0 | 0 0 | 0 0 | 0 0 | 0 0 | 0 0 | --- --- | NP NP |
| 1833: Rock Outcrop. Zaqua----- | 0-3 | Very gravelly sandy loam | GM | A-1 | 0 | 0-20 | 50-60 | 40-50 | 20-40 | 10-25 | 20-25 | NP-5 |
| | 3-17 | Very gravelly clay loam, very gravelly sandy clay loam | GC | A-2 | 0 | 5-15 | 45-55 | 35-45 | 30-45 | 20-35 | 30-40 | 10-20 |
| | 17-27 | 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 | 3-10 | 4 | 10 | 40 | 200 | | |
| | | | | | inches | inches | | | | | | |
| 1850: Rapado----- | 0-3 | Very gravelly sandy loam | SM | A-1 | 0 | 0-5 | 60-70 | 30-45 | 20-35 | 10-20 | 15-25 | NP-5 |
| | 3-24 | Very gravelly sandy clay loam, very gravelly clay loam | SC | A-2 | 0 | 0-5 | 60-70 | 30-50 | 20-40 | 10-35 | 35-45 | 15-25 |
| | 24-32 | Extremely gravelly coarse sandy loam, extremely gravelly sandy loam | GP-GM | A-1 | 0-10 | 0-10 | 45-55 | 15-25 | 10-20 | 5-10 | 15-20 | NP-5 |
| | 32-39 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| | 39-60 | Cemented | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Oleman----- | 0-2 | Gravelly sandy loam | SM | A-1, A-2 | 0 | 0-10 | 80-90 | 65-75 | 40-50 | 20-30 | 15-25 | NP-5 |
| | 2-14 | Very gravelly loam, very gravelly clay loam | SC, SM | A-2 | 0-5 | 5-25 | 70-80 | 40-50 | 30-40 | 15-25 | 35-45 | 10-20 |
| | 14-24 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| | 24-60 | Stratified very gravelly loamy sand to extremely cobble sand | SP-SM, SM, GM, GP-GM | A-1 | 0-5 | 5-35 | 50-60 | 30-50 | 10-30 | 5-15 | --- | NP |
| 1851: Rapado----- | 0-3 | Very gravelly fine sandy loam | SM | A-1 | 0 | 0-5 | 60-70 | 30-45 | 20-35 | 10-20 | 15-25 | NP-5 |
| | 3-24 | Very gravelly sandy clay loam, very gravelly clay loam | SC | A-2 | 0 | 0-5 | 60-70 | 30-50 | 20-40 | 10-35 | 35-45 | 15-25 |
| | 24-32 | Extremely gravelly coarse sandy loam, extremely gravelly sandy loam | GP-GM | A-1 | 0-10 | 0-10 | 45-55 | 15-25 | 10-20 | 5-10 | 15-20 | NP-5 |
| | 32-39 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| | 39-60 | Cemented | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Veet----- | 0-3 | Very gravelly sandy loam | SM | A-1 | 0 | 0-10 | 60-75 | 30-50 | 20-45 | 15-25 | 15-25 | NP-5 |
| | 3-19 | Very gravelly sandy loam | GM-GC | A-2 | 0 | 10-25 | 40-60 | 35-55 | 25-50 | 15-25 | 20-25 | 5-10 |
| | 19-60 | Stratified extremely gravelly sandy loam to very gravelly loamy coarse sand | GP-GM, GM | A-1 | 0 | 10-25 | 45-55 | 30-50 | 15-30 | 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 | | | | | | |
| 1890 (con.): Welring----- | 0-3 | Very gravelly loam | GM-GC | A-2 | 0 | 0-10 | 40-55 | 30-50 | 25-35 | 15-30 | 20-30 | 5-10 |
| | 3-18 | Very gravelly loam | GM-GC | A-2 | 0 | 0-10 | 40-55 | 30-50 | 25-35 | 15-30 | 20-30 | 5-10 |
| | 18-22 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1900: Glendale----- | 0-6 | Loam | ML, CL-ML, CL | A-4 | 0 | 0 | 100 | 100 | 85-95 | 55-65 | 20-30 | NP-10 |
| | 6-60 | Stratified very fine sandy loam to silty clay loam | CL, CL-ML | A-4, A-6 | 0 | 0 | 100 | 100 | 95-100 | 75-85 | 25-35 | 5-15 |
| Bluepoint----- | 0-3 | Loamy fine sand | SM | A-2 | 0 | 0 | 90-100 | 90-100 | 70-85 | 20-35 | 0-14 | NP |
| | 3-42 | Stratified fine sand to loamy fine sand | SM | A-2 | 0 | 0 | 90-100 | 90-100 | 70-80 | 15-25 | 0-14 | NP |
| | 42-60 | Stratified loamy fine sand to very fine sandy loam | SM | A-2, A-4 | 0 | 0 | 90-100 | 90-100 | 75-85 | 30-45 | 0-14 | NP |
| 1910: Land----- | 0-3 | Silt loam | CL-ML, CL | A-4, A-6 | 0 | 0 | 100 | 100 | 90-100 | 70-90 | 25-35 | 5-15 |
| | 3-60 | Stratified silty clay to silt loam | CL | A-6 | 0 | 0 | 100 | 100 | 95-100 | 85-95 | 25-40 | 10-20 |
| 1920: Rock Outcrop. | | | | | | | | | | | | |
| Motoqua----- | 0-3 | Very gravelly sandy loam | GM-GC, GM | A-1 | 0 | 5-10 | 35-55 | 30-50 | 20-35 | 10-20 | 15-25 | NP-5 |
| | 3-12 | Very gravelly sandy clay loam, very cobbly sandy clay loam | GM-GC, GC | A-2, A-4, A-6 | 0-10 | 25-60 | 55-65 | 50-60 | 35-50 | 20-40 | 25-35 | 5-15 |
| | 12-16 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1921: Motoqua----- | 0-3 | Very gravelly sandy loam | GM-GC, GM | A-1 | 0 | 5-10 | 35-55 | 30-50 | 20-35 | 10-20 | 15-25 | NP-5 |
| | 3-12 | Very gravelly sandy clay loam, very cobbly sandy clay loam | GM-GC, GC | A-2, A-4, A-6 | 0-10 | 25-60 | 55-65 | 50-60 | 35-50 | 20-40 | 25-35 | 5-15 |
| | 12-16 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Thunderbird---- | 0-3 | Cobbly loam | CL-ML | A-4 | 0 | 15-25 | 70-95 | 65-90 | 60-80 | 50-70 | 25-30 | 5-10 |
| | 3-30 | Clay, clay loam, cobbly clay loam | CL, CH | A-7 | 0-5 | 5-15 | 95-100 | 85-95 | 80-90 | 60-85 | 40-60 | 20-35 |
| | 30-34 | 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 | |
| 1941: Slidytn----- | 0-3 | Very gravelly sandy loam | GM, SM | A-1 | 0 | 5-15 | 50-65 | 40-55 | 25-45 | 10-25 | 20-25 | NP-5 |
| | 3-16 | Very gravelly clay loam, very gravelly sandy clay loam | GC | A-2 | 0 | 5-15 | 55-65 | 40-55 | 30-50 | 25-35 | 35-45 | 15-25 |
| | 16-26 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Capsus----- | 0-2 | Very cobbly sandy clay loam | SC | A-2 | 0 | 30-45 | 60-80 | 45-60 | 25-45 | 15-35 | 30-35 | 10-15 |
| | 2-16 | Gravelly clay loam, gravelly clay | SC, CL | A-7 | 0 | 5-10 | 70-95 | 50-75 | 40-65 | 35-55 | 40-50 | 20-25 |
| | 16-26 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1950: Ursine----- | 0-3 | Gravelly loam | SC-SM, SC, CL-ML, CL | A-4, A-6 | 0 | 0-5 | 80-90 | 65-75 | 60-70 | 40-55 | 20-35 | 5-15 |
| | 3-10 | Gravelly loam, loam | SC-SM, SC, CL-ML, CL | A-4, A-6 | 0 | 0-5 | 70-95 | 60-90 | 55-80 | 40-60 | 20-35 | 5-15 |
| | 10-16 | Very gravelly loam, very gravelly silt loam, very gravelly sandy loam | GM-GC | A-2 | 0 | 0-5 | 30-60 | 25-50 | 15-45 | 10-35 | 20-30 | 5-10 |
| | 16-20 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Lomoin----- | 0-2 | Very gravelly sandy loam | SP-SM, GP-GM, SM, GM | A-1 | 0 | 0-25 | 45-70 | 35-50 | 20-35 | 5-20 | 15-25 | NP-5 |
| | 2-6 | Very gravelly sandy loam, very gravelly coarse sandy loam | SM, GM | A-1 | 0-5 | 0-30 | 45-70 | 30-50 | 15-35 | 10-20 | 15-25 | NP-5 |
| | 6-10 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Ursine----- | 0-3 | Very gravelly loam | GM-GC, GC | A-2 | 0 | 0-5 | 40-60 | 30-50 | 25-45 | 20-35 | 20-35 | 5-15 |
| | 3-10 | Gravelly loam, loam | SC-SM, SC, CL-ML, CL | A-4, A-6 | 0 | 0-5 | 70-95 | 60-90 | 55-80 | 40-60 | 20-35 | 5-15 |
| | 10-16 | Very gravelly loam, very gravelly silt loam, very gravelly sandy loam | GM-GC | A-2 | 0 | 0-5 | 30-60 | 25-50 | 15-45 | 10-35 | 20-30 | 5-10 |
| | 16-20 | Indurated | | | 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 | |
| 1951: Ursine----- | 0-3 | Very gravelly loam | GM-GC, GC | A-2 | 0 | 0-5 | 40-60 | 30-50 | 25-45 | 20-35 | 20-35 | 5-15 |
| | 3-10 | Gravelly loam, loam | SC-SM, SC, CL-ML, CL | A-4, A-6 | 0 | 0-5 | 70-95 | 60-90 | 55-80 | 40-60 | 20-35 | 5-15 |
| | 10-16 | Very gravelly loam, very gravelly silt loam, very gravelly sandy loam | GM-GC | A-2 | 0 | 0-5 | 30-60 | 25-50 | 15-45 | 10-35 | 20-30 | 5-10 |
| | 16-20 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Ursine----- | 0-3 | Very gravelly loam | GM-GC, GC | A-2 | 0 | 0-5 | 40-60 | 30-50 | 25-45 | 20-35 | 20-35 | 5-15 |
| | 3-10 | Gravelly loam, loam | SC-SM, SC, CL-ML, CL | A-4, A-6 | 0 | 0-5 | 70-95 | 60-90 | 55-80 | 40-60 | 20-35 | 5-15 |
| | 10-16 | Very gravelly loam, very gravelly silt loam, very gravelly sandy loam | GM-GC | A-2 | 0 | 0-5 | 30-60 | 25-50 | 15-45 | 10-35 | 20-30 | 5-10 |
| | 16-20 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1952: Ursine----- | 0-3 | Very gravelly loam | GM-GC, GC | A-2 | 0 | 0-5 | 40-60 | 30-50 | 25-45 | 20-35 | 20-35 | 5-15 |
| | 3-10 | Gravelly loam, loam | SC-SM, SC, CL-ML, CL | A-4, A-6 | 0 | 0-5 | 70-95 | 60-90 | 55-80 | 40-60 | 20-35 | 5-15 |
| | 10-16 | Very gravelly loam, very gravelly silt loam, very gravelly sandy loam | GM-GC | A-2 | 0 | 0-5 | 30-60 | 25-50 | 15-45 | 10-35 | 20-30 | 5-10 |
| | 16-20 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Ursine----- | 0-3 | Very gravelly loam | GM-GC, GC | A-2 | 0 | 0-5 | 40-60 | 30-50 | 25-45 | 20-35 | 20-35 | 5-15 |
| | 3-10 | Gravelly loam, loam | SC-SM, SC, CL-ML, CL | A-4, A-6 | 0 | 0-5 | 70-95 | 60-90 | 55-80 | 40-60 | 20-35 | 5-15 |
| | 10-16 | Very gravelly loam, very gravelly silt loam, very gravelly sandy loam | GM-GC | A-2 | 0 | 0-5 | 30-60 | 25-50 | 15-45 | 10-35 | 20-30 | 5-10 |
| | 16-20 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Geer----- | 0-6 | Fine sandy loam | SM, ML | A-4 | 0 | 0 | 100 | 95-100 | 85-95 | 40-65 | 15-25 | NP-5 |
| | 6-60 | Stratified fine sandy loam to very fine sandy loam | SM, ML | A-4 | 0 | 0 | 85-100 | 85-100 | 80-95 | 40-75 | 15-25 | NP-5 |

TABLE 15.--ENGINEERING INDEX PROPERTIES--Continued

| Map symbol and soil name | Depth | USDA texture | Classification | | Fragments | | Percentage passing sieve number-- | | | | Liquid limit | Plasticity index |
|---------------------------|-------|---|----------------------|----------|------------|-------------|-----------------------------------|-------|-------|-------|--------------|------------------|
| | | | Unified | AASHTO | >10 inches | 3-10 inches | 4 | 10 | 40 | 200 | | |
| | | | | | Pct | Pct | | | | | | |
| 1960: Crystal Springs- | In | | | | | | | | | | | |
| | 0-3 | Gravelly sandy loam | SM | A-1, A-2 | 0 | 0 | 75-85 | 65-75 | 40-55 | 20-30 | 15-25 | NP-5 |
| | 3-15 | Gravelly fine sandy loam | SM | A-2 | 0 | 0-10 | 65-85 | 55-70 | 50-65 | 10-30 | 15-25 | NP-5 |
| | 15-25 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1980: Longjim----- | 0-4 | Very gravelly fine sandy loam | GM, GM-GC | A-1, A-2 | 0 | 0-10 | 30-55 | 25-50 | 20-40 | 10-30 | 15-25 | NP-10 |
| | 4-16 | Very gravelly sandy loam, very cobbly sandy loam | GM | A-1 | 0 | 0-25 | 30-55 | 25-50 | 15-35 | 10-20 | 0-14 | NP |
| | 16-20 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Arizo----- | 0-1 | Very cobbly loamy sand | GP-GM, GM, SP-SM, SM | A-1 | 0-5 | 30-45 | 50-75 | 45-70 | 10-25 | 5-15 | --- | NP |
| | 1-60 | Stratified cobbly coarse sand to extremely gravelly loamy sand | GP-GM, GP | A-1 | 0-5 | 10-30 | 35-55 | 20-50 | 10-30 | 0-10 | --- | NP |
| 1990: Rock Outcrop. | | | | | | | | | | | | |
| Gabbvally----- | 0-2 | Very stony loam | GM | A-4 | 5-25 | 5-10 | 60-75 | 55-70 | 45-55 | 35-50 | 20-25 | NP-5 |
| | 2-9 | Very gravelly sandy clay loam, very gravelly sandy loam, very gravelly loam | GC, GM-GC | A-2 | 0-5 | 0-15 | 50-60 | 35-50 | 25-35 | 15-25 | 25-35 | 5-15 |
| | 9-13 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1991: Gabbvally----- | 0-2 | Very stony loam | GM | A-4 | 5-25 | 5-10 | 60-75 | 55-70 | 45-55 | 35-50 | 20-25 | NP-5 |
| | 2-9 | Very gravelly sandy clay loam, very gravelly sandy loam, very gravelly loam | GC, GM-GC | A-2 | 0-5 | 0-15 | 50-60 | 35-50 | 25-35 | 15-25 | 25-35 | 5-15 |
| | 9-13 | 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 | | | | | | |
| 1991 (con.): Hollace----- | | | | | Pct | Pct | | | | | Pct | |
| | 0-2 | Very gravelly loam | GM-GC | A-2 | 0 | 5-15 | 45-55 | 35-45 | 25-35 | 20-30 | 15-25 | 5-10 |
| | 2-8 | Very cobbly clay loam, very cobbly loam | GC | A-2 | 0 | 30-50 | 50-65 | 40-55 | 35-45 | 25-35 | 25-35 | 10-15 |
| | 8-17 | Very cobbly clay loam, very cobbly sandy clay loam | GC | A-2, A-6 | 0 | 30-50 | 50-65 | 40-55 | 35-45 | 25-40 | 35-40 | 15-20 |
| | 17-21 | Indurated | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| | 21-31 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 1992: Rock Outcrop. | | | | | | | | | | | | |
| Gabbvally----- | 0-2 | Very stony loam | GM | A-4 | 5-25 | 5-10 | 60-75 | 55-70 | 45-55 | 35-50 | 20-25 | NP-5 |
| | 2-9 | Very gravelly sandy clay loam, very gravelly sandy loam, very gravelly loam | GC, GM-GC | A-2 | 0-5 | 0-15 | 50-60 | 35-50 | 25-35 | 15-25 | 25-35 | 5-15 |
| | 9-13 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Brier----- | 0-3 | Very stony loam | GM-GC, GM | A-2, A-4 | 10-20 | 20-40 | 55-65 | 50-60 | 40-50 | 30-40 | 25-35 | 5-10 |
| | 3-15 | Very cobbly clay loam, very cobbly loam, very cobbly sandy clay loam | GC | A-2, A-6 | 0-2 | 30-45 | 50-70 | 45-65 | 40-50 | 30-45 | 30-40 | 10-20 |
| | 15-19 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 2000: 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 |
| 2010: Stewval----- | 0-2 | Very gravelly fine sandy loam | GM-GC | A-2 | 0 | 0-10 | 35-55 | 30-45 | 20-35 | 10-20 | 20-25 | 5-10 |
| | 2-10 | Extremely gravelly loam, very gravelly clay loam, very gravelly loam | GC | A-2 | 0-10 | 0-25 | 20-55 | 15-45 | 10-35 | 10-30 | 30-40 | 10-20 |
| | 10-14 | 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 | |
| 2010 (con.): Gabbvally----- | 0-2 | Very stony loam | GM | A-4 | 5-25 | 5-10 | 60-75 | 55-70 | 45-55 | 35-50 | 20-25 | NP-5 |
| | 2-9 | Very gravelly sandy clay loam, very gravelly sandy loam, very gravelly loam | GC, GM-GC | A-2 | 0-5 | 0-15 | 50-60 | 35-50 | 25-35 | 15-25 | 25-35 | 5-15 |
| | 9-13 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| 2011: Rock Outcrop. | | | | | | | | | | | | |
| Stewval----- | 0-2 | Very gravelly fine sandy loam | GM-GC | A-2 | 0 | 0-10 | 35-55 | 30-45 | 20-35 | 10-20 | 20-25 | 5-10 |
| | 2-10 | Extremely gravelly loam, very gravelly clay loam, very gravelly loam | GC | A-2 | 0-10 | 0-25 | 20-55 | 15-45 | 10-35 | 10-30 | 30-40 | 10-20 |
| | 10-14 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |
| Lomoine----- | 0-2 | Very gravelly sandy loam | SP-SM, GP-GM, SM, GM | A-1 | 0 | 0-25 | 45-70 | 35-50 | 20-35 | 5-20 | 15-25 | NP-5 |
| | 2-6 | Very gravelly sandy loam, very gravelly coarse sandy loam | SM, GM | A-1 | 0-5 | 0-30 | 45-70 | 30-50 | 15-35 | 10-20 | 15-25 | NP-5 |
| | 6-10 | Unweathered bedrock | | | 0 | 0 | 0 | 0 | 0 | 0 | --- | NP |

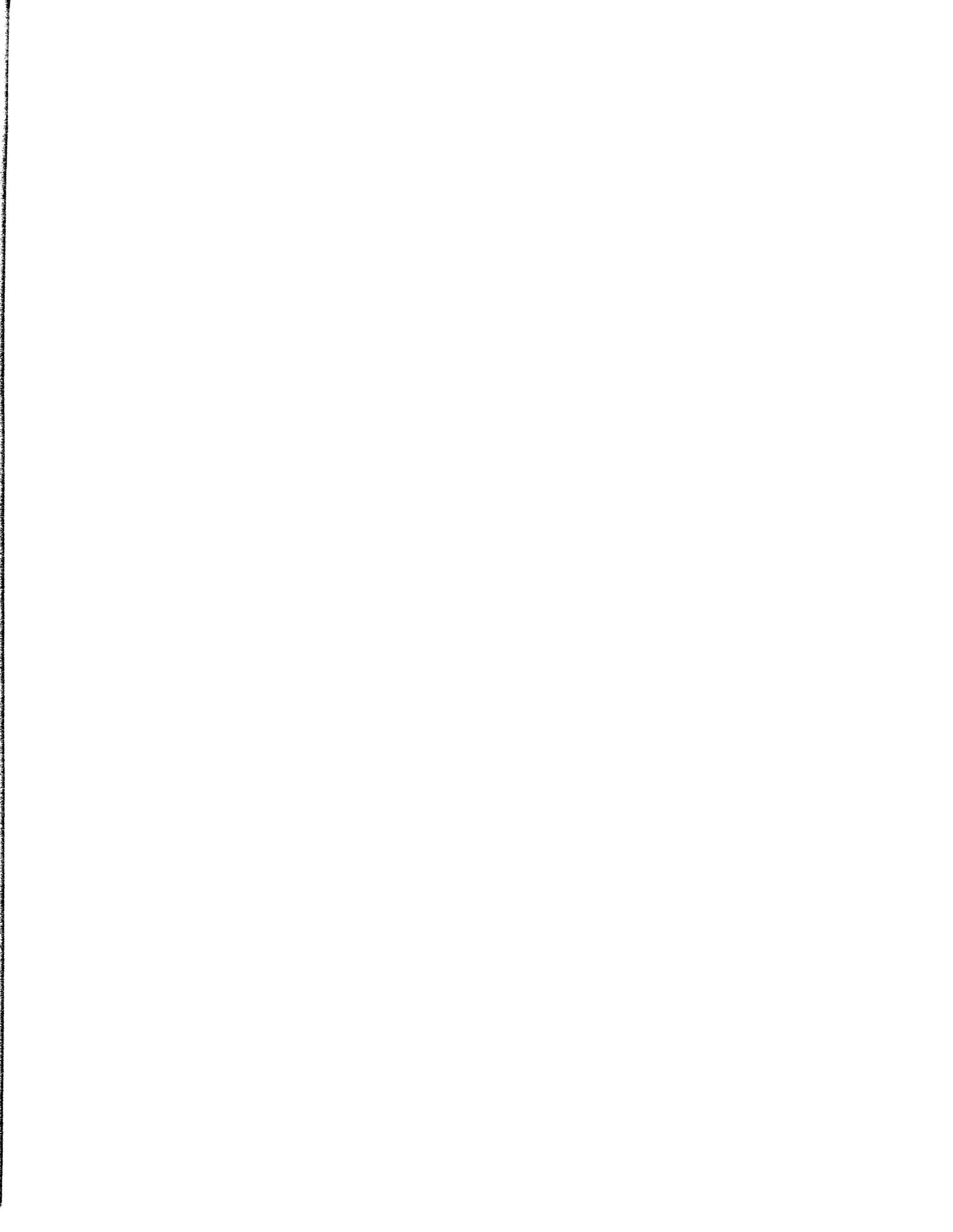


TABLE 16.--PHYSICAL PROPERTIES OF THE SOILS

(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 | | | | | |
| 1000: Weiser----- | 0-6 6-60 | 8-15 5-18 | 1.25-1.45 1.25-1.45 | 2.00-6.00 2.00-6.00 | 0.07-0.09 0.07-0.09 | Low Low | 0.0-0.5 0.0-0.5 | 0.15 0.15 | 0.32 0.32 | 5 | 5 | 56 |
| Tencee----- | 0-3 3-11 11-15 | 10-20 10-20 --- | 1.45-1.55 1.45-1.55 --- | 2.00-6.00 0.60-2.00 0.00-0.01 | 0.05-0.07 0.05-0.08 --- | Low Low | 0.0-0.5 0.0-0.5 --- | 0.10 0.10 --- | 0.32 0.37 --- | 1 | 5 | 56 |
| Arizo----- | 0-1 1-60 | 2-8 0-5 | 1.45-1.65 1.45-1.65 | 6.00-20.00 >20.00 | 0.04-0.06 0.04-0.06 | Low Low | 0.0-0.5 0.0-0.5 | 0.05 0.10 | 0.24 0.32 | 5 | 4 | 86 |
| 1001: Weiser----- | 0-6 6-60 | 5-18 5-18 | 1.25-1.45 1.25-1.45 | 2.00-6.00 2.00-6.00 | 0.06-0.08 0.07-0.09 | Low Low | 0.0-0.5 0.0-0.5 | 0.15 0.15 | 0.32 0.32 | 5 | 5 | 56 |
| Tencee----- | 0-3 3-11 11-15 | 10-20 10-20 --- | 1.45-1.55 1.45-1.55 --- | 2.00-6.00 0.60-2.00 0.00-0.01 | 0.05-0.07 0.05-0.08 --- | Low Low | 0.0-0.5 0.0-0.5 --- | 0.10 0.10 --- | 0.28 0.37 --- | 1 | 5 | 56 |
| 1010: Tencee----- | 0-3 3-11 11-15 | 10-20 10-20 --- | 1.45-1.55 1.45-1.55 --- | 2.00-6.00 0.60-2.00 0.00-0.01 | 0.05-0.07 0.05-0.08 --- | Low Low | 0.0-0.5 0.0-0.5 --- | 0.10 0.10 --- | 0.32 0.37 --- | 1 | 5 | 56 |
| Weiser----- | 0-6 6-60 | 8-15 5-18 | 1.25-1.45 1.25-1.45 | 2.00-6.00 2.00-6.00 | 0.07-0.09 0.07-0.09 | Low Low | 0.0-0.5 0.0-0.5 | 0.15 0.15 | 0.32 0.32 | 5 | 5 | 56 |
| 1016: Tencee----- | 0-3 3-11 11-15 | 10-20 10-20 --- | 1.45-1.55 1.45-1.55 --- | 2.00-6.00 0.60-2.00 0.00-0.01 | 0.05-0.07 0.05-0.08 --- | Low Low | 0.0-0.5 0.0-0.5 --- | 0.10 0.10 --- | 0.28 0.37 --- | 1 | 5 | 56 |
| Tencee----- | 0-3 3-11 11-15 | 10-20 10-20 --- | 1.45-1.55 1.45-1.55 --- | 2.00-6.00 0.60-2.00 0.00-0.01 | 0.05-0.07 0.05-0.08 --- | Low Low | 0.0-0.5 0.0-0.5 --- | 0.10 0.10 --- | 0.28 0.37 --- | 1 | 5 | 56 |
| 1017: Tencee----- | 0-3 3-11 11-15 | 10-20 10-20 --- | 1.45-1.55 1.45-1.55 --- | 2.00-6.00 0.60-2.00 0.00-0.01 | 0.05-0.07 0.05-0.08 --- | Low Low | 0.0-0.5 0.0-0.5 --- | 0.10 0.10 --- | 0.28 0.37 --- | 1 | 5 | 56 |
| Bard----- | 0-3 3-19 19-23 | 10-20 5-15 --- | 1.40-1.55 1.35-1.55 --- | 2.00-6.00 2.00-6.00 0.00-0.01 | 0.06-0.11 0.11-0.13 --- | Low Low | 0.0-0.5 0.0-0.5 --- | 0.20 0.32 --- | 0.37 0.37 --- | 1 | 4 | 86 |
| Arizo----- | 0-1 1-60 | 2-8 0-5 | 1.45-1.65 1.45-1.65 | 6.00-20.00 >20.00 | 0.04-0.06 0.04-0.06 | Low Low | 0.0-0.5 0.0-0.5 | 0.05 0.10 | 0.24 0.32 | 5 | 4 | 86 |
| 1020: Kurstan----- | 0-9 9-60 | 8-18 8-18 | 1.30-1.50 1.35-1.55 | 2.00-6.00 2.00-6.00 | 0.07-0.09 0.07-0.09 | Low Low | 0.0-0.5 0.0-0.5 | 0.15 0.15 | 0.32 0.28 | 5 | 4 | 86 |
| Tencee----- | 0-3 3-11 11-15 | 10-20 10-20 --- | 1.45-1.55 1.45-1.55 --- | 2.00-6.00 0.60-2.00 0.00-0.01 | 0.05-0.07 0.05-0.08 --- | Low Low | 0.0-0.5 0.0-0.5 --- | 0.10 0.10 --- | 0.28 0.37 --- | 1 | 5 | 56 |

TABLE 16.--PHYSICAL PROPERTIES OF THE 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 | | | | | |
| 1021: | | | | | | | | | | | | |
| Kurstan----- | 0-9 | 8-18 | 1.30-1.50 | 2.00-6.00 | 0.07-0.09 | Low | 0.0-0.5 | 0.15 | 0.32 | 5 | 4 | 86 |
| | 9-60 | 8-18 | 1.35-1.55 | 2.00-6.00 | 0.07-0.09 | Low | 0.0-0.5 | 0.15 | 0.28 | | | |
| Knob Hill----- | 0-2 | 3-8 | 1.50-1.65 | 6.00-20.00 | 0.06-0.08 | Low | 0.0-0.5 | 0.17 | 0.20 | 3 | 2 | 134 |
| | 2-22 | 3-10 | 1.50-1.65 | 2.00-6.00 | 0.06-0.08 | Low | 0.0-0.5 | 0.10 | 0.24 | | | |
| | 22-52 | 3-10 | 1.35-1.55 | 2.00-6.00 | 0.06-0.08 | Low | 0.0-0.5 | 0.10 | 0.20 | | | |
| | 52-60 | 3-8 | 1.40-1.60 | 6.00-20.00 | 0.05-0.07 | Low | 0.0-0.5 | 0.10 | 0.17 | | | |
| 1030: | | | | | | | | | | | | |
| Arizo----- | 0-1 | 2-8 | 1.45-1.65 | 6.00-20.00 | 0.04-0.06 | Low | 0.0-0.5 | 0.05 | 0.24 | 5 | 4 | 86 |
| | 1-60 | 0-5 | 1.45-1.65 | >20.00 | 0.04-0.06 | Low | 0.0-0.5 | 0.10 | 0.32 | | | |
| Arizo----- | 0-1 | 0-5 | 1.45-1.65 | 6.00-20.00 | 0.04-0.06 | Low | 0.0-0.5 | 0.15 | 0.24 | 5 | 4 | 86 |
| | 1-60 | 0-5 | 1.45-1.65 | >20.00 | 0.04-0.06 | Low | 0.0-0.5 | 0.10 | 0.24 | | | |
| Bluepoint----- | 0-3 | 3-8 | 1.50-1.70 | 6.00-20.00 | 0.07-0.09 | Low | 0.0-0.5 | 0.15 | 0.15 | 5 | 2 | 134 |
| | 3-42 | 0-5 | 1.50-1.70 | 6.00-20.00 | 0.07-0.09 | Low | 0.0-0.5 | 0.15 | 0.15 | | | |
| | 42-60 | 3-10 | 1.55-1.75 | 2.00-6.00 | 0.10-0.12 | Low | 0.0-0.5 | 0.20 | 0.20 | | | |
| 1031: | | | | | | | | | | | | |
| Arizo----- | 0-1 | 0-5 | 1.45-1.65 | 6.00-20.00 | 0.04-0.06 | Low | 0.0-0.5 | 0.15 | 0.24 | 5 | 4 | 86 |
| | 1-60 | 0-5 | 1.45-1.65 | >20.00 | 0.04-0.06 | Low | 0.0-0.5 | 0.10 | 0.24 | | | |
| Arizo----- | 0-1 | 2-8 | 1.45-1.65 | 6.00-20.00 | 0.04-0.06 | Low | 0.0-0.5 | 0.05 | 0.24 | 5 | 4 | 86 |
| | 1-60 | 0-5 | 1.45-1.65 | >20.00 | 0.04-0.06 | Low | 0.0-0.5 | 0.10 | 0.32 | | | |
| 1040: | | | | | | | | | | | | |
| Rock Outcrop. | | | | | | | | | | | | |
| Akela----- | 0-3 | 5-12 | 1.25-1.45 | 0.60-2.00 | 0.04-0.09 | Low | 0.5-1.0 | 0.10 | 0.28 | 1 | 5 | 56 |
| | 3-12 | 6-10 | 1.30-1.50 | 0.60-2.00 | 0.04-0.09 | Low | 0.0-0.5 | 0.17 | 0.28 | | | |
| | 12-16 | --- | --- | 0.00-0.01 | --- | --- | --- | --- | --- | | | |
| 1041: | | | | | | | | | | | | |
| Rock Outcrop. | | | | | | | | | | | | |
| Akela----- | 0-2 | 5-12 | 1.25-1.45 | 0.60-2.00 | 0.04-0.09 | Low | 0.5-1.0 | 0.10 | 0.32 | 1 | 5 | 56 |
| | 2-12 | 6-10 | 1.30-1.50 | 0.60-2.00 | 0.04-0.09 | Low | 0.5-1.0 | 0.17 | 0.28 | | | |
| | 12-22 | --- | --- | 0.00-0.01 | --- | --- | --- | --- | --- | | | |
| Rochpah----- | 0-4 | 5-18 | 1.35-1.50 | 2.00-6.00 | 0.05-0.07 | Low | 0.0-0.5 | 0.10 | 0.43 | 1 | 5 | 56 |
| | 4-19 | 5-18 | 1.35-1.50 | 2.00-6.00 | 0.05-0.07 | Low | 0.0-0.5 | 0.10 | 0.28 | | | |
| | 19-29 | --- | --- | 0.00-0.01 | --- | --- | --- | --- | --- | | | |
| 1052: | | | | | | | | | | | | |
| Knob Hill----- | 0-2 | 5-10 | 1.40-1.55 | 2.00-6.00 | 0.06-0.09 | Low | 0.0-0.5 | 0.15 | 0.32 | 3 | 5 | 56 |
| | 2-22 | 3-10 | 1.50-1.65 | 2.00-6.00 | 0.06-0.08 | Low | 0.0-0.5 | 0.10 | 0.24 | | | |
| | 22-52 | 3-10 | 1.35-1.55 | 2.00-6.00 | 0.06-0.08 | Low | 0.0-0.5 | 0.10 | 0.20 | | | |
| | 52-60 | 3-8 | 1.40-1.60 | 6.00-20.00 | 0.05-0.07 | Low | 0.0-0.5 | 0.10 | 0.17 | | | |
| Arizo----- | 0-1 | 0-5 | 1.45-1.65 | 6.00-20.00 | 0.04-0.06 | Low | 0.0-0.5 | 0.15 | 0.24 | 5 | 4 | 86 |
| | 1-60 | 0-5 | 1.45-1.65 | >20.00 | 0.04-0.06 | Low | 0.0-0.5 | 0.10 | 0.24 | | | |
| 1060: | | | | | | | | | | | | |
| Rock Outcrop. | | | | | | | | | | | | |
| St. Thomas----- | 0-3 | 8-15 | 1.15-1.35 | 2.00-6.00 | 0.04-0.07 | Low | 0.0-0.5 | 0.10 | 0.32 | 1 | 8 | --- |
| | 3-16 | 8-15 | 1.15-1.35 | 2.00-6.00 | 0.04-0.07 | Low | 0.0-0.5 | 0.10 | 0.43 | | | |
| | 16-20 | --- | --- | 0.00-0.01 | --- | --- | --- | --- | --- | | | |

TABLE 16.--PHYSICAL PROPERTIES OF THE 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 | | | | | |
| 1065 (con.): Zeheme----- | 0-2 | 8-18 | 1.35-1.40 | 2.00-6.00 | 0.05-0.10 | Low | 0.0-0.5 | 0.10 | 0.28 | 1 | 8 | --- |
| | 2-13 | 8-18 | 1.45-1.55 | 2.00-6.00 | 0.05-0.10 | Low | 0.0-0.5 | 0.10 | 0.28 | | | |
| | 13-23 | --- | --- | 0.00-0.01 | --- | --- | --- | --- | --- | | | |
| 1066: Rock Outcrop. | | | | | | | | | | | | |
| Zeheme----- | 0-3 | 8-18 | 1.35-1.40 | 2.00-6.00 | 0.10-0.14 | Low | 0.0-0.6 | 0.20 | 0.37 | 1 | 5 | 56 |
| | 3-13 | 8-18 | 1.45-1.55 | 2.00-6.00 | 0.05-0.10 | Low | 0.0-0.5 | 0.10 | 0.28 | | | |
| | 13-23 | --- | --- | 0.00-0.01 | --- | --- | --- | --- | --- | | | |
| Boxspring----- | 0-3 | 10-18 | 1.40-1.60 | 0.60-2.00 | 0.07-0.09 | Low | 0.0-0.5 | 0.15 | 0.43 | 1 | 8 | --- |
| | 3-16 | 10-18 | 1.45-1.60 | 0.60-2.00 | 0.09-0.11 | Low | 0.0-0.5 | 0.17 | 0.43 | | | |
| | 16-26 | --- | --- | 0.00-0.01 | --- | --- | --- | --- | --- | | | |
| 1070: Bellehelen----- | 0-5 | 10-18 | 1.35-1.50 | 0.60-2.00 | 0.13-0.15 | Low | 1.0-2.0 | 0.15 | 0.43 | 1 | 7 | 38 |
| | 5-10 | 18-35 | 1.30-1.45 | 0.20-0.60 | 0.12-0.14 | Moderate | 0.5-2.0 | 0.10 | 0.32 | | | |
| | 10-14 | --- | --- | 0.00-0.01 | --- | --- | --- | --- | --- | | | |
| Brier----- | 0-3 | 10-20 | 1.20-1.40 | 2.00-6.00 | 0.06-0.08 | Low | 2.0-5.0 | 0.10 | 0.32 | 1 | 5 | 56 |
| | 3-15 | 18-35 | 1.30-1.50 | 0.20-0.60 | 0.08-0.10 | Moderate | 1.0-3.0 | 0.10 | 0.32 | | | |
| | 15-19 | --- | --- | 0.00-0.01 | --- | --- | --- | --- | --- | | | |
| 1080: Kaspal----- | 0-2 | 8-18 | 1.30-1.50 | 2.00-6.00 | 0.05-0.07 | Low | 0.0-0.5 | 0.15 | 0.43 | 3 | 5 | 56 |
| | 2-11 | 27-35 | 1.30-1.50 | 0.20-0.60 | 0.18-0.20 | Moderate | 0.0-0.5 | 0.28 | 0.43 | | | |
| | 11-34 | 35-55 | 1.30-1.50 | 0.06-0.20 | 0.14-0.16 | High | 0.0-0.5 | 0.24 | 0.32 | | | |
| | 34-47 | 30-40 | 1.25-1.45 | 0.20-0.60 | 0.08-0.12 | Moderate | 0.0-0.5 | 0.20 | 0.43 | | | |
| | 47-51 | --- | --- | 0.00-0.20 | --- | --- | --- | --- | --- | | | |
| Canutio----- | 0-2 | 8-18 | 1.40-1.60 | 2.00-6.00 | 0.06-0.08 | Low | 0.1-0.5 | 0.05 | 0.28 | 5 | 5 | 56 |
| | 2-60 | 8-18 | 1.40-1.60 | 2.00-6.00 | 0.06-0.08 | Low | 0.1-0.5 | 0.05 | 0.20 | | | |
| 1090: Rock Outcrop. | | | | | | | | | | | | |
| Logring----- | 0-3 | 8-15 | 1.35-1.50 | 0.60-2.00 | 0.08-0.10 | Low | 1.0-3.0 | 0.17 | 0.55 | 1 | 6 | 48 |
| | 3-12 | 10-18 | 1.30-1.45 | 0.60-2.00 | 0.08-0.10 | Low | 0.5-1.0 | 0.15 | 0.43 | | | |
| | 12-16 | --- | --- | 0.00-0.01 | --- | --- | --- | --- | --- | | | |
| 1091: Rock Outcrop. | | | | | | | | | | | | |
| Logring----- | 0-3 | 8-15 | 1.35-1.50 | 0.60-2.00 | 0.08-0.10 | Low | 1.0-3.0 | 0.17 | 0.55 | 1 | 6 | 48 |
| | 3-12 | 10-18 | 1.30-1.45 | 0.60-2.00 | 0.08-0.10 | Low | 0.5-1.0 | 0.15 | 0.43 | | | |
| | 12-16 | --- | --- | 0.00-0.01 | --- | --- | --- | --- | --- | | | |
| Eaglepass----- | 0-2 | 8-18 | 1.20-1.40 | 2.00-6.00 | 0.06-0.10 | Low | 0.0-0.5 | 0.15 | 0.43 | 1 | 8 | --- |
| | 2-6 | 8-18 | 1.20-1.40 | 2.00-6.00 | 0.03-0.05 | Low | 0.0-0.5 | 0.10 | 0.32 | | | |
| | 6-10 | --- | --- | 0.00-0.01 | --- | --- | --- | --- | --- | | | |
| 1100: Geta----- | 0-1 | 5-18 | 1.30-1.45 | 0.20-0.60 | 0.19-0.21 | Low | 0.0-0.5 | 0.32 | 0.37 | 5 | 3 | 86 |
| | 1-20 | 5-18 | 1.40-1.50 | 0.60-2.00 | 0.14-0.16 | Low | 0.0-0.5 | 0.43 | 0.55 | | | |
| | 20-60 | 5-18 | 1.40-1.60 | 0.60-2.00 | 0.09-0.11 | Low | 0.0-0.5 | 0.24 | 0.43 | | | |
| Geta----- | 0-6 | 0-5 | 1.45-1.60 | 6.00-20.00 | 0.05-0.07 | Low | 0.0-0.5 | 0.15 | 0.15 | 5 | 1 | 250 |
| | 6-20 | 5-18 | 1.40-1.50 | 0.60-2.00 | 0.14-0.16 | Low | 0.0-0.5 | 0.43 | 0.55 | | | |
| | 20-60 | 5-18 | 1.40-1.60 | 0.60-2.00 | 0.09-0.11 | Low | 0.0-0.5 | 0.24 | 0.43 | | | |

TABLE 16.--PHYSICAL PROPERTIES OF THE 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.): Arizo----- | 0-1 1-60 | 2-8 0-5 | 1.45-1.65 1.45-1.65 | 6.00-20.00 >20.00 | 0.04-0.06 0.04-0.06 | Low Low | 0.0-0.5 0.0-0.5 | 0.05 0.10 | 0.24 0.32 | 5 | 4 | 86 |
| 1101: Geta----- | 0-1 1-20 20-60 | 5-18 5-18 5-18 | 1.30-1.45 1.40-1.50 1.40-1.60 | 0.60-2.00 0.60-2.00 0.60-2.00 | 0.07-0.09 0.14-0.16 0.09-0.11 | Low Low Low | 0.0-0.5 0.0-0.5 0.0-0.5 | 0.32 0.43 0.24 | 0.37 0.55 0.43 | 5 | 4 | 86 |
| 1102: Geta----- | 0-6 6-20 20-60 | 5-18 5-18 5-18 | 1.30-1.45 1.40-1.50 1.40-1.60 | 0.20-0.60 0.60-2.00 0.60-2.00 | 0.19-0.21 0.14-0.16 0.09-0.11 | Low Low Low | 0.0-0.5 0.0-0.5 0.0-0.5 | 0.32 0.43 0.24 | 0.37 0.55 0.43 | 5 | 3 | 86 |
| Bluepoint----- | 0-3 3-42 42-60 | 3-8 0-5 3-10 | 1.50-1.70 1.50-1.70 1.55-1.75 | 6.00-20.00 6.00-20.00 2.00-6.00 | 0.07-0.09 0.07-0.09 0.10-0.12 | Low Low Low | 0.0-0.5 0.0-0.5 0.0-0.5 | 0.15 0.15 0.20 | 0.15 0.15 0.20 | 5 | 2 | 134 |
| Arizo----- | 0-1 1-60 | 2-8 0-5 | 1.45-1.65 1.45-1.65 | 6.00-20.00 >20.00 | 0.04-0.06 0.04-0.06 | Low Low | 0.0-0.5 0.0-0.5 | 0.05 0.10 | 0.24 0.32 | 5 | 4 | 86 |
| 1110: Rock Outcrop. | | | | | | | | | | | | |
| Kanesprings----- | 0-3 3-8 8-18 18-24 24-28 | 5-15 20-30 27-40 --- --- | 1.40-1.60 1.40-1.60 1.40-1.60 --- --- | 2.00-6.00 0.60-2.00 0.20-0.60 0.00-0.01 0.00-0.01 | 0.04-0.07 0.14-0.18 0.15-0.19 --- --- | Low Moderate Moderate --- --- | 0.0-0.5 0.0-0.5 0.0-0.5 --- --- | 0.17 0.24 0.24 --- --- | 0.32 0.49 0.55 --- --- | 1 | 5 | 56 |
| Kanackey----- | 0-2 2-5 5-11 11-15 | 15-20 40-60 40-60 --- | 1.35-1.55 1.25-1.40 1.25-1.40 --- | 0.60-2.00 0.06-0.20 0.06-0.20 0.00-0.01 | 0.12-0.14 0.08-0.10 0.07-0.09 --- | Low Moderate Moderate --- | 0.0-0.5 0.0-0.5 0.0-0.5 --- | 0.10 0.17 0.15 --- | 0.37 0.37 0.37 --- | 1 | 6 | 48 |
| 1113: Kanesprings----- | 0-3 3-8 8-18 18-24 24-28 | 5-15 20-30 27-40 --- --- | 1.40-1.60 1.40-1.60 1.40-1.60 --- --- | 2.00-6.00 0.60-2.00 0.20-0.60 0.00-0.01 0.00-0.01 | 0.04-0.07 0.14-0.18 0.15-0.19 --- --- | Low Moderate Moderate --- --- | 0.0-0.5 0.0-0.5 0.0-0.5 --- --- | 0.17 0.24 0.24 --- --- | 0.32 0.49 0.55 --- --- | 1 | 5 | 56 |
| Gabbvally----- | 0-2 2-9 9-13 | 10-18 18-27 --- | 1.35-1.50 1.30-1.50 --- | 0.60-2.00 0.60-2.00 0.00-0.01 | 0.13-0.15 0.11-0.13 --- | Low Low --- | 1.0-2.0 0.0-0.8 --- | 0.15 0.15 --- | 0.43 0.32 --- | 1 | 7 | 38 |
| 1160: Silent----- | 0-2 2-4 4-12 12-16 | 5-15 25-35 25-35 --- | 1.40-1.55 1.30-1.50 1.30-1.50 --- | 0.60-2.00 0.20-0.60 0.20-0.60 0.00-0.01 | 0.07-0.09 0.15-0.19 0.12-0.15 --- | Low Moderate Moderate --- | 0.0-0.5 0.0-0.5 0.0-0.5 --- | 0.20 0.37 0.20 --- | 0.37 0.43 0.37 --- | 1 | 4 | 86 |
| Koyen----- | 0-3 3-32 32-60 | 5-15 10-18 0-10 | 1.30-1.45 1.35-1.55 1.50-1.65 | 2.00-6.00 2.00-6.00 6.00-20.00 | 0.10-0.12 0.11-0.13 0.03-0.05 | Low Low Low | 0.5-0.7 0.0-0.5 0.0-0.5 | 0.20 0.28 0.05 | 0.32 0.37 0.24 | 4 | 4 | 86 |
| 1170: Alko----- | 0-3 3-11 11-33 33-60 | 10-20 10-15 --- 0-5 | 1.50-1.65 1.50-1.70 --- 1.50-1.70 | 0.60-2.00 2.00-6.00 0.00-0.01 2.00-6.00 | 0.05-0.10 0.08-0.10 --- 0.05-0.07 | Low Low --- Low | 0.0-0.5 0.0-0.5 --- 0.0-0.5 | 0.15 0.20 --- 0.10 | 0.28 0.20 --- 0.17 | 1 | 4 | 86 |

TABLE 16.--PHYSICAL PROPERTIES OF THE 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 | | | | | |
| 1170 (con.): | | | | | | | | | | | | |
| Alko----- | 0-3 | 10-20 | 1.50-1.65 | 0.60-2.00 | 0.05-0.10 | Low | 0.0-0.5 | 0.15 | 0.28 | 1 | 4 | 86 |
| | 3-11 | 10-15 | 1.50-1.70 | 2.00-6.00 | 0.08-0.10 | Low | 0.0-0.5 | 0.20 | 0.20 | | | |
| | 11-33 | --- | --- | 0.00-0.01 | --- | --- | --- | --- | --- | | | |
| | 33-60 | 0-5 | 1.50-1.70 | 2.00-6.00 | 0.05-0.07 | Low | 0.0-0.5 | 0.10 | 0.17 | | | |
| Arizo----- | 0-1 | 0-5 | 1.45-1.65 | 6.00-20.00 | 0.04-0.06 | Low | 0.0-0.5 | 0.15 | 0.24 | 5 | 4 | 86 |
| | 1-60 | 0-5 | 1.45-1.65 | >20.00 | 0.04-0.06 | Low | 0.0-0.5 | 0.10 | 0.24 | | | |
| 1172: | | | | | | | | | | | | |
| Alko----- | 0-3 | 5-10 | 1.50-1.65 | 6.00-20.00 | 0.08-0.10 | Low | 0.0-0.5 | 0.20 | 0.28 | 1 | 2 | 134 |
| | 3-11 | 10-15 | 1.50-1.70 | 2.00-6.00 | 0.08-0.10 | Low | 0.0-0.5 | 0.20 | 0.20 | | | |
| | 11-33 | --- | --- | 0.00-0.01 | --- | --- | --- | --- | --- | | | |
| | 33-60 | 0-5 | 1.50-1.70 | 2.00-6.00 | 0.05-0.07 | Low | 0.0-0.5 | 0.10 | 0.17 | | | |
| Geta----- | 0-1 | 5-18 | 1.30-1.45 | 0.60-2.00 | 0.07-0.09 | Low | 0.0-0.5 | 0.32 | 0.37 | 5 | 4 | 86 |
| | 1-20 | 5-18 | 1.40-1.50 | 0.60-2.00 | 0.14-0.16 | Low | 0.0-0.5 | 0.43 | 0.55 | | | |
| | 20-60 | 5-18 | 1.40-1.60 | 0.60-2.00 | 0.09-0.11 | Low | 0.0-0.5 | 0.24 | 0.43 | | | |
| 1180: | | | | | | | | | | | | |
| Acoma----- | 0-5 | 10-15 | 1.35-1.45 | 2.00-6.00 | 0.07-0.09 | Low | 1.0-2.0 | 0.28 | 0.32 | 3 | 4 | 86 |
| | 5-30 | 35-45 | 1.30-1.45 | 0.06-0.20 | 0.12-0.15 | High | 0.5-1.0 | 0.17 | 0.28 | | | |
| | 30-60 | 20-30 | 1.40-1.50 | 0.20-0.60 | 0.05-0.07 | Moderate | 0.0-0.5 | 0.24 | 0.37 | | | |
| Decan----- | 0-3 | 27-40 | 1.15-1.35 | 0.20-0.60 | 0.13-0.16 | Moderate | 2.0-4.0 | 0.17 | 0.32 | 2 | 5 | 56 |
| | 3-17 | 40-50 | 1.30-1.45 | 0.06-0.20 | 0.15-0.17 | High | 0.5-2.0 | 0.20 | 0.32 | | | |
| | 17-23 | 25-35 | 1.35-1.55 | 0.60-2.00 | 0.13-0.15 | Low | 0.0-0.5 | 0.37 | 0.43 | | | |
| | 23-27 | --- | --- | 0.00-0.01 | --- | --- | --- | --- | --- | | | |
| Cath----- | 0-4 | 5-18 | 1.35-1.50 | 6.00-20.00 | 0.10-0.13 | Low | 1.0-2.0 | 0.24 | 0.28 | 5 | 3 | 86 |
| | 4-21 | 25-35 | 1.30-1.50 | 0.06-0.20 | 0.13-0.15 | Moderate | 0.5-2.0 | 0.32 | 0.43 | | | |
| | 21-32 | 20-30 | 1.30-1.50 | 0.20-0.60 | 0.06-0.08 | Moderate | 0.5-1.0 | 0.05 | 0.37 | | | |
| | 32-60 | 5-10 | 1.50-1.70 | 0.20-0.60 | 0.05-0.07 | Low | 0.0-0.3 | 0.05 | 0.28 | | | |
| 1190: | | | | | | | | | | | | |
| Minu----- | 0-4 | 8-15 | 1.40-1.55 | 2.00-6.00 | 0.09-0.11 | Low | 0.6-2.0 | 0.24 | 0.43 | 2 | 4 | 86 |
| | 4-14 | 20-35 | 1.20-1.35 | 0.20-0.60 | 0.10-0.12 | Moderate | 0.5-1.0 | 0.28 | 0.37 | | | |
| | 14-19 | --- | --- | 0.00-0.20 | --- | --- | --- | --- | --- | | | |
| | 19-60 | 3-5 | 1.45-1.65 | 6.00-20.00 | 0.04-0.07 | Low | 0.0-0.5 | 0.10 | 0.20 | | | |
| Shroe----- | 0-5 | 15-27 | 1.20-1.40 | 0.60-2.00 | 0.10-0.13 | Moderate | 2.0-4.0 | 0.17 | 0.32 | 5 | 6 | 48 |
| | 5-13 | 35-45 | 1.15-1.35 | 0.06-0.20 | 0.05-0.08 | Moderate | 0.5-2.0 | 0.05 | 0.37 | | | |
| | 13-36 | 20-35 | 1.25-1.45 | 0.20-0.60 | 0.05-0.08 | Low | 0.0-0.5 | 0.05 | 0.37 | | | |
| | 36-60 | 15-27 | 1.35-1.55 | 0.60-2.00 | 0.13-0.16 | Moderate | 0.0-0.5 | 0.37 | 0.49 | | | |
| Acoma----- | 0-5 | 10-15 | 1.35-1.45 | 2.00-6.00 | 0.07-0.09 | Low | 1.0-2.0 | 0.28 | 0.32 | 3 | 4 | 86 |
| | 5-30 | 35-45 | 1.30-1.45 | 0.06-0.20 | 0.12-0.15 | High | 0.5-1.0 | 0.17 | 0.28 | | | |
| | 30-60 | 20-30 | 1.40-1.50 | 0.20-0.60 | 0.05-0.07 | Moderate | 0.0-0.5 | 0.24 | 0.37 | | | |
| 1210: | | | | | | | | | | | | |
| Brier----- | 0-3 | 15-27 | 1.15-1.35 | 0.60-2.00 | 0.08-0.10 | Low | 2.0-5.0 | 0.15 | 0.43 | 1 | 7 | 38 |
| | 3-15 | 18-35 | 1.30-1.50 | 0.20-0.60 | 0.08-0.10 | Moderate | 1.0-3.0 | 0.10 | 0.32 | | | |
| | 15-19 | --- | --- | 0.00-0.01 | --- | --- | --- | --- | --- | | | |
| Acoma----- | 0-5 | 10-15 | 1.35-1.45 | 2.00-6.00 | 0.07-0.09 | Low | 1.0-2.0 | 0.28 | 0.32 | 3 | 4 | 86 |
| | 5-30 | 35-45 | 1.30-1.45 | 0.06-0.20 | 0.12-0.15 | High | 0.5-1.0 | 0.17 | 0.28 | | | |
| | 30-60 | 20-30 | 1.40-1.50 | 0.20-0.60 | 0.05-0.07 | Moderate | 0.0-0.5 | 0.24 | 0.37 | | | |
| Bellefleur----- | 0-5 | 10-18 | 1.35-1.50 | 0.60-2.00 | 0.13-0.15 | Low | 1.0-2.0 | 0.15 | 0.43 | 1 | 7 | 38 |
| | 5-10 | 18-35 | 1.30-1.45 | 0.20-0.60 | 0.12-0.14 | Moderate | 0.5-2.0 | 0.10 | 0.32 | | | |
| | 10-14 | --- | --- | 0.00-0.01 | --- | --- | --- | --- | --- | | | |

TABLE 16.--PHYSICAL PROPERTIES OF THE 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 | | | | | |
| 1211: Rock Outcrop. | | | | | | | | | | | | |
| Brier----- | 0-4 | 10-18 | 1.15-1.35 | 2.00-6.00 | 0.08-0.10 | Low | 2.0-5.0 | 0.10 | 0.32 | 1 | 8 | --- |
| | 4-15 | 18-35 | 1.30-1.50 | 0.20-0.60 | 0.08-0.10 | Moderate | 2.0-5.0 | 0.15 | 0.43 | | | |
| | 15-25 | --- | --- | 0.00-0.01 | --- | | --- | --- | --- | | | |
| 1220: | | | | | | | | | | | | |
| Lien----- | 0-4 | 8-15 | 1.40-1.60 | 2.00-6.00 | 0.07-0.10 | Low | 0.8-2.0 | 0.10 | 0.32 | 1 | 5 | 56 |
| | 4-14 | 8-24 | 1.50-1.70 | 2.00-6.00 | 0.07-0.10 | Low | 0.5-1.0 | 0.15 | 0.37 | | | |
| | 14-24 | --- | --- | 0.00-0.01 | --- | | --- | --- | --- | | | |
| | 24-60 | --- | --- | 0.00-0.01 | --- | | --- | --- | --- | | | |
| Veet----- | 0-3 | 8-15 | 1.35-1.50 | 2.00-6.00 | 0.08-0.11 | Low | 0.8-2.0 | 0.17 | 0.32 | 3 | 4 | 86 |
| | 3-19 | 10-18 | 1.35-1.55 | 2.00-6.00 | 0.06-0.08 | Low | 0.0-0.5 | 0.10 | 0.37 | | | |
| | 19-60 | 5-10 | 1.40-1.60 | 6.00-20.00 | 0.03-0.05 | Low | 0.0-0.5 | 0.10 | 0.32 | | | |
| 1230: | | | | | | | | | | | | |
| Pahranagat----- | 0-16 | 27-35 | 1.20-1.40 | 0.20-0.60 | 0.19-0.21 | Moderate | 1.0-8.0 | 0.32 | 0.32 | 5 | 4L | 86 |
| | 16-60 | 18-35 | 1.30-1.50 | 0.20-0.60 | 0.19-0.21 | Moderate | 0.5-1.0 | 0.32 | 0.32 | | | |
| Pahranagat----- | 0-15 | 18-27 | 1.20-1.40 | 0.60-2.00 | 0.19-0.21 | Moderate | 1.0-8.0 | 0.37 | 0.37 | 5 | 4L | 86 |
| | 15-60 | 18-35 | 1.30-1.50 | 0.20-0.60 | 0.19-0.21 | Moderate | 0.5-2.0 | 0.32 | 0.32 | | | |
| 1250: | | | | | | | | | | | | |
| Patter----- | 0-3 | 10-18 | 1.40-1.55 | 0.20-0.60 | 0.16-0.18 | Low | 1.0-2.0 | 0.43 | 0.55 | 5 | 4L | 86 |
| | 3-14 | 10-18 | 1.40-1.55 | 0.20-0.60 | 0.16-0.19 | Low | 0.0-0.5 | 0.55 | 0.64 | | | |
| | 14-60 | 10-18 | 1.40-1.55 | 0.20-0.60 | 0.16-0.19 | Low | 0.0-0.5 | 0.55 | 0.64 | | | |
| Heist----- | 0-9 | 5-18 | 1.30-1.50 | 0.60-2.00 | 0.14-0.16 | Low | 0.5-1.0 | 0.32 | 0.32 | 5 | 3 | 86 |
| | 9-43 | 10-18 | 1.35-1.55 | 2.00-6.00 | 0.08-0.10 | Low | 0.5-1.0 | 0.28 | 0.32 | | | |
| | 43-60 | 5-18 | 1.35-1.55 | 2.00-6.00 | 0.09-0.11 | Low | 0.5-1.0 | 0.10 | 0.17 | | | |
| 1260: | | | | | | | | | | | | |
| Hollace----- | 0-2 | 8-18 | 1.35-1.55 | 0.60-2.00 | 0.08-0.10 | Low | 0.5-1.0 | 0.17 | 0.43 | 1 | 6 | 48 |
| | 2-8 | 18-30 | 1.30-1.50 | 0.20-0.60 | 0.10-0.12 | Low | 0.5-1.0 | 0.20 | 0.43 | | | |
| | 8-17 | 27-35 | 1.30-1.50 | 0.20-0.60 | 0.09-0.11 | Moderate | 0.0-0.5 | 0.20 | 0.43 | | | |
| | 17-21 | --- | --- | 0.00-0.01 | --- | | --- | --- | --- | | | |
| | 21-31 | --- | --- | 0.00-0.01 | --- | | --- | --- | --- | | | |
| Gabbvally----- | 0-2 | 10-18 | 1.35-1.50 | 0.60-2.00 | 0.13-0.15 | Low | 1.0-2.0 | 0.15 | 0.43 | 1 | 7 | 38 |
| | 2-9 | 18-27 | 1.30-1.50 | 0.60-2.00 | 0.11-0.13 | Low | 0.0-0.8 | 0.15 | 0.32 | | | |
| | 9-13 | --- | --- | 0.00-0.01 | --- | | --- | --- | --- | | | |
| 1261: | | | | | | | | | | | | |
| Hollace----- | 0-2 | 8-18 | 1.35-1.55 | 0.60-2.00 | 0.08-0.10 | Low | 0.5-1.0 | 0.17 | 0.43 | 1 | 6 | 48 |
| | 2-8 | 18-30 | 1.30-1.50 | 0.20-0.60 | 0.10-0.12 | Low | 0.5-1.0 | 0.20 | 0.43 | | | |
| | 8-17 | 27-35 | 1.30-1.50 | 0.20-0.60 | 0.09-0.11 | Moderate | 0.0-0.5 | 0.20 | 0.43 | | | |
| | 17-21 | --- | --- | 0.00-0.01 | --- | | --- | --- | --- | | | |
| | 21-31 | --- | --- | 0.00-0.01 | --- | | --- | --- | --- | | | |
| kochpah----- | 0-4 | 5-18 | 1.35-1.50 | 2.00-6.00 | 0.05-0.07 | Low | 0.0-0.5 | 0.10 | 0.43 | 1 | 5 | 56 |
| | 4-19 | 5-18 | 1.35-1.50 | 2.00-6.00 | 0.05-0.07 | Low | 0.0-0.5 | 0.10 | 0.28 | | | |
| | 19-29 | --- | --- | 0.00-0.01 | --- | | --- | --- | --- | | | |
| Wyva----- | 0-2 | 10-18 | 1.35-1.55 | 2.00-6.00 | 0.05-0.07 | Low | 1.0-2.0 | 0.05 | 0.43 | 1 | 5 | 56 |
| | 2-15 | 27-35 | 1.30-1.50 | 0.20-0.60 | 0.08-0.12 | Moderate | 1.0-2.0 | 0.10 | 0.43 | | | |
| | 15-25 | --- | --- | 0.00-0.01 | --- | | --- | --- | --- | | | |

TABLE 16.--PHYSICAL PROPERTIES OF THE 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 | | | | | |
| 1262: Hollace----- | 0-2 | 5-10 | 1.35-1.55 | 2.00-6.00 | 0.06-0.08 | Low | 0.5-1.0 | 0.17 | 0.32 | 1 | 5 | 56 |
| | 2-8 | 18-30 | 1.30-1.50 | 0.20-0.60 | 0.10-0.12 | Low | 0.5-1.0 | 0.20 | 0.43 | | | |
| | 8-17 | 27-35 | 1.30-1.50 | 0.20-0.60 | 0.09-0.11 | Moderate | 0.0-0.5 | 0.20 | 0.43 | | | |
| | 17-21 | --- | --- | 0.00-0.01 | --- | --- | --- | --- | --- | | | |
| | 21-31 | --- | --- | 0.00-0.01 | --- | --- | --- | --- | --- | | | |
| Winklo----- | 0-3 | 8-18 | 1.30-1.50 | 2.00-6.00 | 0.05-0.07 | Low | 0.1-2.0 | 0.15 | 0.43 | 3 | 5 | 56 |
| | 3-9 | 30-40 | 1.30-1.50 | 0.20-0.60 | 0.13-0.15 | Moderate | 0.5-1.0 | 0.17 | 0.32 | | | |
| | 9-23 | 40-55 | 1.25-1.45 | 0.06-0.20 | 0.11-0.13 | Moderate | 0.0-0.5 | 0.15 | 0.28 | | | |
| | 23-33 | --- | --- | 0.00-0.01 | --- | --- | --- | --- | --- | | | |
| Wyva----- | 0-2 | 10-18 | 1.35-1.55 | 2.00-6.00 | 0.05-0.07 | Low | 1.0-2.0 | 0.05 | 0.43 | 1 | 5 | 56 |
| | 2-15 | 27-35 | 1.30-1.50 | 0.20-0.60 | 0.08-0.12 | Moderate | 1.0-2.0 | 0.10 | 0.43 | | | |
| | 15-25 | --- | --- | 0.00-0.01 | --- | --- | --- | --- | --- | | | |
| 1270: Rock Outcrop. | | | | | | | | | | | | |
| Laross----- | 0-3 | 10-18 | 0.90-1.10 | 0.60-2.00 | 0.19-0.21 | Low | 3.0-4.0 | 0.15 | 0.32 | 3 | 6 | 48 |
| | 3-8 | 10-18 | 0.90-1.10 | 0.60-2.00 | 0.19-0.21 | Low | 3.0-4.0 | 0.15 | 0.43 | | | |
| | 8-19 | 10-18 | 0.90-1.10 | 0.60-2.00 | 0.12-0.15 | Low | 2.0-3.0 | 0.10 | 0.55 | | | |
| | 19-52 | 10-18 | 0.90-1.10 | 2.00-6.00 | 0.12-0.15 | Low | 0.5-1.0 | 0.10 | 0.32 | | | |
| | 52-62 | --- | --- | 0.00-0.01 | --- | --- | --- | --- | --- | | | |
| 1300: Mormount----- | 0-3 | 5-15 | 1.40-1.60 | 2.00-6.00 | 0.10-0.12 | Low | 0.5-0.8 | 0.32 | 0.64 | 1 | 4 | 86 |
| | 3-15 | 15-25 | 1.45-1.65 | 0.60-2.00 | 0.10-0.14 | Low | 0.0-0.5 | 0.28 | 0.55 | | | |
| | 15-19 | 20-30 | 1.45-1.65 | 0.60-2.00 | 0.12-0.16 | Low | 0.0-0.5 | 0.24 | 0.49 | | | |
| | 19-60 | --- | --- | 0.00-0.01 | --- | --- | --- | --- | --- | | | |
| Arizo----- | 0-1 | 2-8 | 1.45-1.65 | 6.00-20.00 | 0.04-0.06 | Low | 0.0-0.5 | 0.05 | 0.24 | 5 | 4 | 86 |
| | 1-60 | 0-5 | 1.45-1.65 | >20.00 | 0.04-0.06 | Low | 0.0-0.5 | 0.10 | 0.32 | | | |
| 1302: Mormount----- | 0-3 | 5-15 | 1.40-1.60 | 2.00-6.00 | 0.06-0.08 | Low | 0.5-0.8 | 0.17 | 0.32 | 1 | 5 | 56 |
| | 3-15 | 15-25 | 1.45-1.65 | 0.60-2.00 | 0.10-0.14 | Low | 0.0-0.5 | 0.28 | 0.55 | | | |
| | 15-19 | 20-30 | 1.45-1.65 | 0.60-2.00 | 0.12-0.16 | Low | 0.0-0.5 | 0.24 | 0.49 | | | |
| | 19-60 | --- | --- | 0.00-0.01 | --- | --- | --- | --- | --- | | | |
| 1303: Mormount----- | 0-3 | 5-15 | 1.40-1.60 | 2.00-6.00 | 0.10-0.12 | Low | 0.5-0.8 | 0.32 | 0.64 | 1 | 4 | 86 |
| | 3-15 | 15-25 | 1.45-1.65 | 0.60-2.00 | 0.10-0.14 | Low | 0.0-0.5 | 0.28 | 0.55 | | | |
| | 15-19 | 20-30 | 1.45-1.65 | 0.60-2.00 | 0.12-0.16 | Low | 0.0-0.5 | 0.24 | 0.49 | | | |
| | 19-60 | --- | --- | 0.00-0.01 | --- | --- | --- | --- | --- | | | |
| Canutio----- | 0-2 | 8-18 | 1.40-1.60 | 2.00-6.00 | 0.06-0.08 | Low | 0.1-0.5 | 0.05 | 0.28 | 5 | 5 | 56 |
| | 2-60 | 8-18 | 1.40-1.60 | 2.00-6.00 | 0.06-0.08 | Low | 0.1-0.5 | 0.05 | 0.20 | | | |
| 1340: Aymate----- | 0-3 | 8-18 | 1.30-1.50 | 2.00-6.00 | 0.09-0.11 | Low | 0.0-0.5 | 0.24 | 0.43 | 2 | 4 | 86 |
| | 3-13 | 8-18 | 1.30-1.50 | 2.00-6.00 | 0.11-0.13 | Low | 0.0-0.5 | 0.20 | 0.24 | | | |
| | 13-28 | 18-30 | 1.40-1.55 | 0.20-0.60 | 0.16-0.19 | Low | 0.0-0.5 | 0.15 | 0.37 | | | |
| | 28-35 | 5-10 | 1.35-1.50 | 2.00-6.00 | 0.05-0.08 | Low | 0.0-0.5 | 0.24 | 0.28 | | | |
| | 35-60 | --- | --- | 0.00-0.01 | --- | --- | --- | --- | --- | | | |
| Canutio----- | 0-2 | 8-18 | 1.40-1.60 | 2.00-6.00 | 0.08-0.11 | Low | 0.1-0.5 | 0.10 | 0.28 | 3 | 4 | 86 |
| | 2-60 | 8-18 | 1.40-1.60 | 2.00-6.00 | 0.06-0.08 | Low | 0.1-0.5 | 0.05 | 0.20 | | | |

TABLE 16.--PHYSICAL PROPERTIES OF THE 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 | | | | | |
| 1341: Aymate----- | 0-3 3-13 13-28 28-35 35-60 | 8-18 8-18 18-30 5-10 --- | 1.30-1.50 1.30-1.50 1.40-1.55 1.35-1.50 --- | 2.00-6.00 2.00-6.00 0.20-0.60 2.00-6.00 0.00-0.01 | 0.11-0.13 0.11-0.13 0.16-0.19 0.05-0.08 --- | Low Low Low Low --- | 0.0-0.5 0.0-0.5 0.0-0.5 0.0-0.5 --- | 0.28 0.20 0.15 0.24 --- | 0.32 0.24 0.37 0.28 --- | 2 2 2 2 --- | 3 3 3 3 --- | 86 86 86 86 --- |
| 1342: Aymate----- | 0-3 3-13 13-28 28-35 35-60 | 8-18 8-18 18-30 5-10 --- | 1.30-1.50 1.30-1.50 1.40-1.55 1.35-1.50 --- | 2.00-6.00 2.00-6.00 0.20-0.60 2.00-6.00 0.00-0.01 | 0.09-0.11 0.11-0.13 0.16-0.19 0.05-0.08 --- | Low Low Low Low --- | 0.0-0.5 0.0-0.5 0.0-0.5 0.0-0.5 --- | 0.24 0.20 0.15 0.24 --- | 0.43 0.24 0.37 0.28 --- | 2 2 2 2 --- | 4 4 4 4 --- | 86 86 86 86 --- |
| Mormount----- | 0-3 3-15 15-19 19-60 | 5-15 15-25 20-30 --- | 1.40-1.60 1.45-1.65 1.45-1.65 --- | 2.00-6.00 0.60-2.00 0.60-2.00 0.00-0.01 | 0.10-0.12 0.10-0.14 0.12-0.16 --- | Low Low Low --- | 0.5-0.8 0.0-0.5 0.0-0.5 --- | 0.32 0.28 0.24 --- | 0.64 0.55 0.49 --- | 1 1 1 --- | 4 4 4 --- | 86 86 86 --- |
| Arizo----- | 0-1 1-60 | 2-8 0-5 | 1.45-1.65 1.45-1.65 | 6.00-20.00 >20.00 | 0.04-0.06 0.04-0.06 | Low Low | 0.0-0.5 0.0-0.5 | 0.05 0.10 | 0.24 0.32 | 5 5 | 4 4 | 86 86 |
| 1350: Bard----- | 0-3 3-19 19-23 | 10-20 5-15 --- | 1.40-1.55 1.35-1.55 --- | 2.00-6.00 2.00-6.00 0.00-0.01 | 0.06-0.11 0.11-0.13 --- | Low Low --- | 0.0-0.5 0.0-0.5 --- | 0.20 0.32 --- | 0.37 0.37 --- | 1 1 --- | 4 4 --- | 86 86 --- |
| 1360: Canutio----- | 0-2 2-60 | 8-18 8-18 | 1.40-1.60 1.40-1.60 | 2.00-6.00 2.00-6.00 | 0.08-0.11 0.06-0.08 | Low Low | 0.1-0.5 0.1-0.5 | 0.10 0.05 | 0.28 0.20 | 3 3 | 4 4 | 86 86 |
| Arizo----- | 0-1 1-60 | 2-8 0-5 | 1.45-1.65 1.45-1.65 | 6.00-20.00 >20.00 | 0.04-0.06 0.04-0.06 | Low Low | 0.0-0.5 0.0-0.5 | 0.05 0.10 | 0.24 0.32 | 5 5 | 4 4 | 86 86 |
| 1370: Mormon Mesa----- | 0-2 2-18 18-22 | 5-18 5-18 --- | 1.50-1.70 1.40-1.60 --- | 2.00-6.00 2.00-6.00 0.00-0.01 | 0.13-0.15 0.10-0.13 --- | Low Low --- | 0.0-0.5 0.0-0.5 --- | 0.28 0.32 --- | 0.37 0.37 --- | 1 1 --- | 3 3 --- | 86 86 --- |
| Mormon Mesa----- | 0-2 2-18 18-22 | 5-18 5-18 --- | 1.40-1.60 1.40-1.60 --- | 2.00-6.00 2.00-6.00 0.00-0.01 | 0.13-0.15 0.10-0.13 --- | Low Low --- | 0.0-0.5 0.0-0.5 --- | 0.15 0.32 --- | 0.28 0.37 --- | 1 1 --- | 4 4 --- | 86 86 --- |
| 1371: Mormon Mesa----- | 0-2 2-18 18-22 | 5-18 5-18 --- | 1.40-1.60 1.40-1.60 --- | 2.00-6.00 2.00-6.00 0.00-0.01 | 0.13-0.15 0.10-0.13 --- | Low Low --- | 0.0-0.5 0.0-0.5 --- | 0.15 0.32 --- | 0.28 0.37 --- | 1 1 --- | 4 4 --- | 86 86 --- |
| Naye----- | 0-2 2-26 26-30 | 5-18 5-18 --- | 1.50-1.65 1.50-1.65 --- | 2.00-6.00 0.60-2.00 0.00-0.01 | 0.10-0.12 0.06-0.08 --- | Low Low --- | 0.0-0.5 0.0-0.5 --- | 0.20 0.15 --- | 0.37 0.32 --- | 2 2 --- | 4 4 --- | 86 86 --- |
| Dalian----- | 0-3 3-60 | 5-10 3-12 | 1.45-1.55 1.45-1.55 | 2.00-6.00 2.00-6.00 | 0.05-0.09 0.05-0.09 | Low Low | 0.0-0.5 0.0-0.5 | 0.15 0.15 | 0.28 0.28 | 2 2 | 5 5 | 56 56 |
| 1372: Mormon Mesa----- | 0-2 2-18 18-22 | 5-18 5-18 --- | 1.40-1.60 1.40-1.60 --- | 2.00-6.00 2.00-6.00 0.00-0.01 | 0.13-0.15 0.10-0.13 --- | Low Low --- | 0.0-0.5 0.0-0.5 --- | 0.15 0.32 --- | 0.28 0.37 --- | 1 1 --- | 4 4 --- | 86 86 --- |

TABLE 16.--PHYSICAL PROPERTIES OF THE 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 | | | | | |
| 1372 (con.): Tonopah----- | 0-5 5-60 | 5-15 2-10 | 1.55-1.70 1.55-1.75 | 6.00-20.00 >20.00 | 0.04-0.06 0.03-0.05 | Low Low | 0.0-0.5 0.0-0.5 | 0.10 0.10 | 0.37 0.20 | 5 | 5 | 56 |
| Arada----- | 0-8 8-28 28-38 38-60 | 0-10 0-10 5-10 5-10 | 1.50-1.70 1.50-1.70 1.50-1.70 1.50-1.70 | >20.00 >20.00 6.00-20.00 2.00-6.00 | 0.05-0.07 0.05-0.07 0.06-0.08 0.04-0.07 | Low Low Low Low | 0.0-0.5 0.0-0.5 0.0-0.5 0.0-0.5 | 0.15 0.15 0.10 0.10 | 0.15 0.15 0.28 0.28 | 3 | 1 | 250 |
| 1380: Bracken----- | 0-2 2-60 | 4-10 --- | 1.40-1.55 1.10-1.30 | 2.00-6.00 0.00-20.00 | 0.08-0.12 --- | Low --- | 0.0-0.5 --- | 0.20 --- | 0.37 --- | 2 | 4 | 86 |
| 1390: Shankba----- | 0-2 2-18 18-23 23-33 | 10-18 8-18 --- --- | 1.40-1.50 1.45-1.55 --- --- | 2.00-6.00 0.60-2.00 0.06-0.20 0.00-0.01 | 0.05-0.10 0.06-0.12 --- --- | Low Low --- --- | 0.0-0.6 0.0-0.5 --- --- | 0.10 0.10 --- --- | 0.28 0.32 --- --- | 2 | 5 | 56 |
| Chinkle----- | 0-2 2-13 13-25 25-35 | 8-18 8-18 --- --- | 1.35-1.45 1.40-1.55 --- --- | 2.00-6.00 2.00-6.00 0.06-0.20 0.00-0.01 | 0.06-0.11 0.10-0.15 --- --- | Low Low --- --- | 0.0-0.6 0.0-0.6 --- --- | 0.20 0.20 --- --- | 0.49 0.37 --- --- | 2 | 5 | 56 |
| Kanackey----- | 0-2 2-5 5-11 11-15 | 15-20 40-60 40-60 --- | 1.35-1.55 1.25-1.40 1.25-1.40 --- | 0.60-2.00 0.06-0.20 0.06-0.20 0.00-0.01 | 0.12-0.14 0.08-0.10 0.07-0.09 --- | Low Moderate Moderate --- | 0.0-0.5 0.0-0.5 0.0-0.5 --- | 0.10 0.17 0.15 --- | 0.37 0.37 0.37 --- | 1 | 6 | 48 |
| 1400: Cave----- | 0-3 3-14 14-22 22-60 | 10-20 10-20 --- 2-5 | 1.35-1.50 1.40-1.55 --- 1.45-1.65 | 2.00-6.00 0.60-2.00 0.00-0.01 2.00-6.00 | 0.04-0.07 0.07-0.09 --- 0.04-0.06 | Low Low --- Low | 0.0-0.5 0.0-0.5 --- 0.0-0.5 | 0.05 0.28 --- 0.10 | 0.17 0.55 --- 0.32 | 1 | 5 | 56 |
| Canutio----- | 0-2 2-60 | 8-18 8-18 | 1.40-1.60 1.40-1.60 | 2.00-6.00 2.00-6.00 | 0.06-0.08 0.06-0.08 | Low Low | 0.1-0.5 0.1-0.5 | 0.05 0.05 | 0.28 0.20 | 5 | 5 | 56 |
| 1401: Cave----- | 0-3 3-14 14-22 22-60 | 10-20 10-20 --- 2-5 | 1.35-1.50 1.40-1.55 --- 1.45-1.65 | 2.00-6.00 0.60-2.00 0.00-0.01 2.00-6.00 | 0.04-0.07 0.07-0.09 --- 0.04-0.06 | Low Low --- Low | 0.0-0.5 0.0-0.5 --- 0.0-0.5 | 0.05 0.28 --- 0.10 | 0.17 0.55 --- 0.32 | 1 | 5 | 56 |
| Arizo----- | 0-1 1-60 | 2-8 0-5 | 1.45-1.65 1.45-1.65 | 6.00-20.00 >20.00 | 0.04-0.06 0.04-0.06 | Low Low | 0.0-0.5 0.0-0.5 | 0.05 0.10 | 0.24 0.32 | 5 | 4 | 86 |
| 1403: Cave----- | 0-3 3-14 14-22 22-60 | 10-20 10-20 --- 2-5 | 1.35-1.50 1.40-1.55 --- 1.45-1.65 | 2.00-6.00 0.60-2.00 0.00-0.01 2.00-6.00 | 0.04-0.07 0.07-0.09 --- 0.04-0.06 | Low Low --- Low | 0.0-0.5 0.0-0.5 --- 0.0-0.5 | 0.05 0.28 --- 0.10 | 0.17 0.55 --- 0.32 | 1 | 5 | 56 |
| Tencee----- | 0-3 3-11 11-15 | 10-20 10-20 --- | 1.45-1.55 1.45-1.55 --- | 2.00-6.00 0.60-2.00 0.00-0.01 | 0.05-0.07 0.05-0.08 --- | Low Low --- | 0.0-0.5 0.0-0.5 --- | 0.10 0.10 --- | 0.28 0.37 --- | 1 | 5 | 56 |

TABLE 16.--PHYSICAL PROPERTIES OF THE 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 | | | | | |
| 1404: Cave----- | 0-3 | 10-20 | 1.35-1.50 | 2.00-6.00 | 0.04-0.07 | Low | 0.0-0.5 | 0.05 | 0.17 | 1 | 5 | 56 |
| | 3-14 | 10-20 | 1.40-1.55 | 0.60-2.00 | 0.07-0.09 | Low | 0.0-0.5 | 0.28 | 0.55 | | | |
| | 14-22 | --- | --- | 0.00-0.01 | --- | | --- | --- | --- | | | |
| | 22-60 | 2-5 | 1.45-1.65 | 2.00-6.00 | 0.04-0.06 | Low | 0.0-0.5 | 0.10 | 0.32 | | | |
| Mormount----- | 0-3 | 5-15 | 1.40-1.60 | 2.00-6.00 | 0.08-0.10 | Low | 0.5-0.8 | 0.28 | 0.32 | 1 | 4 | 86 |
| | 3-15 | 15-25 | 1.45-1.65 | 0.60-2.00 | 0.10-0.14 | Low | 0.0-0.5 | 0.28 | 0.55 | | | |
| | 15-19 | 20-30 | 1.45-1.65 | 0.60-2.00 | 0.12-0.16 | Low | 0.0-0.5 | 0.24 | 0.49 | | | |
| | 19-60 | --- | --- | 0.00-0.01 | --- | | --- | --- | --- | | | |
| Canutio----- | 0-2 | 8-18 | 1.40-1.60 | 2.00-6.00 | 0.06-0.08 | Low | 0.1-0.5 | 0.05 | 0.28 | 5 | 5 | 56 |
| | 2-60 | 8-18 | 1.40-1.60 | 2.00-6.00 | 0.06-0.08 | Low | 0.1-0.5 | 0.05 | 0.20 | | | |
| 1405: Cave----- | 0-3 | 10-20 | 1.35-1.50 | 2.00-6.00 | 0.04-0.07 | Low | 0.0-0.5 | 0.05 | 0.17 | 1 | 5 | 56 |
| | 3-14 | 10-20 | 1.40-1.55 | 0.60-2.00 | 0.07-0.09 | Low | 0.0-0.5 | 0.28 | 0.55 | | | |
| | 14-22 | --- | --- | 0.00-0.01 | --- | | --- | --- | --- | | | |
| | 22-60 | 2-5 | 1.45-1.65 | 2.00-6.00 | 0.04-0.06 | Low | 0.0-0.5 | 0.10 | 0.32 | | | |
| Zeheme----- | 0-2 | 8-18 | 1.35-1.40 | 2.00-6.00 | 0.05-0.10 | Low | 0.0-0.5 | 0.10 | 0.28 | 1 | 8 | --- |
| | 2-13 | 8-18 | 1.45-1.55 | 2.00-6.00 | 0.05-0.10 | Low | 0.0-0.5 | 0.10 | 0.28 | | | |
| | 13-23 | --- | --- | 0.00-0.01 | --- | | --- | --- | --- | | | |
| 1406: Cave----- | 0-3 | 10-20 | 1.35-1.50 | 2.00-6.00 | 0.04-0.07 | Low | 0.0-0.5 | 0.05 | 0.17 | 1 | 5 | 56 |
| | 3-14 | 10-20 | 1.40-1.55 | 0.60-2.00 | 0.07-0.09 | Low | 0.0-0.5 | 0.28 | 0.55 | | | |
| | 14-22 | --- | --- | 0.00-0.01 | --- | | --- | --- | --- | | | |
| | 22-60 | 2-5 | 1.45-1.65 | 2.00-6.00 | 0.04-0.06 | Low | 0.0-0.5 | 0.10 | 0.32 | | | |
| 1420: Rock Outcrop. | | | | | | | | | | | | |
| Kanackey----- | 0-2 | 15-20 | 1.35-1.55 | 0.60-2.00 | 0.12-0.14 | Low | 0.0-0.5 | 0.10 | 0.37 | 1 | 6 | 48 |
| | 2-5 | 40-60 | 1.25-1.40 | 0.06-0.20 | 0.08-0.10 | Moderate | 0.0-0.5 | 0.17 | 0.37 | | | |
| | 5-11 | 40-60 | 1.25-1.40 | 0.06-0.20 | 0.07-0.09 | Moderate | 0.0-0.5 | 0.15 | 0.37 | | | |
| | 11-15 | --- | --- | 0.00-0.01 | --- | | --- | --- | --- | | | |
| 1430: Typic Torriorthents-- | 0-3 | 8-12 | 1.40-1.55 | 2.00-6.00 | 0.09-0.11 | Low | 0.0-0.5 | 0.05 | 0.32 | 3 | 5 | 56 |
| | 3-60 | 5-30 | 1.60-1.70 | 0.06-0.20 | 0.10-0.18 | Moderate | 0.0-0.5 | 0.43 | 0.49 | | | |
| Badland----- | 0-2 | 25-70 | 1.40-1.60 | 0.00-0.06 | 0.18-0.22 | High | 0.0-0.1 | 0.37 | 0.37 | 5 | 4L | 86 |
| | 2-60 | --- | 1.60-1.80 | 0.00-0.01 | --- | | --- | --- | --- | | | |
| 1460: Pintwater----- | 0-2 | 10-18 | 1.35-1.55 | 2.00-6.00 | 0.09-0.11 | Low | 0.0-0.5 | 0.15 | 0.32 | 1 | 8 | --- |
| | 2-14 | 10-18 | 1.35-1.50 | 2.00-6.00 | 0.06-0.09 | Low | 0.0-0.5 | 0.10 | 0.32 | | | |
| | 14-18 | --- | --- | 0.00-0.01 | --- | | --- | --- | --- | | | |
| Rochpah----- | 0-4 | 5-18 | 1.35-1.50 | 2.00-6.00 | 0.05-0.07 | Low | 0.0-0.5 | 0.10 | 0.43 | 1 | 5 | 56 |
| | 4-19 | 5-18 | 1.35-1.50 | 2.00-6.00 | 0.05-0.07 | Low | 0.0-0.5 | 0.10 | 0.28 | | | |
| | 19-29 | --- | --- | 0.00-0.01 | --- | | --- | --- | --- | | | |
| 1470: Tybo----- | 0-4 | 5-18 | 1.40-1.55 | 2.00-6.00 | 0.06-0.09 | Low | 0.0-0.5 | 0.28 | 0.32 | 1 | 4 | 86 |
| | 4-19 | 5-18 | 1.40-1.55 | 2.00-6.00 | 0.09-0.15 | Low | 0.0-0.5 | 0.37 | 0.55 | | | |
| | 19-23 | --- | --- | 0.00-0.01 | --- | | --- | --- | --- | | | |

TABLE 16.--PHYSICAL PROPERTIES OF THE 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 | | | | | |
| 1470 (con.): Keefa----- | 0-8 | 8-15 | 1.30-1.50 | 2.00-6.00 | 0.11-0.13 | Low | 0.0-0.5 | 0.20 | 0.37 | 5 | 4 | 86 |
| | 8-26 | 8-15 | 1.30-1.50 | 2.00-6.00 | 0.07-0.13 | Low | 0.0-0.5 | 0.20 | 0.24 | | | |
| | 26-50 | 8-15 | 1.50-1.70 | 0.60-2.00 | 0.07-0.09 | Low | 0.0-0.5 | 0.15 | 0.28 | | | |
| | 50-60 | 5-15 | 1.40-1.60 | 2.00-6.00 | 0.05-0.08 | Low | 0.0-0.5 | 0.10 | 0.20 | | | |
| Koyen----- | 0-3 | 5-15 | 1.30-1.45 | 2.00-6.00 | 0.10-0.12 | Low | 0.5-0.7 | 0.20 | 0.32 | 4 | 4 | 86 |
| | 3-32 | 10-18 | 1.35-1.55 | 2.00-6.00 | 0.11-0.13 | Low | 0.0-0.5 | 0.28 | 0.37 | | | |
| | 32-60 | 0-10 | 1.50-1.65 | 6.00-20.00 | 0.03-0.05 | Low | 0.0-0.5 | 0.05 | 0.24 | | | |
| 1471: Tybo----- | 0-4 | 5-18 | 1.40-1.55 | 2.00-6.00 | 0.06-0.09 | Low | 0.0-0.5 | 0.28 | 0.32 | 1 | 4 | 86 |
| | 4-19 | 5-18 | 1.40-1.55 | 2.00-6.00 | 0.09-0.15 | Low | 0.0-0.5 | 0.37 | 0.55 | | | |
| | 19-23 | --- | --- | 0.00-0.01 | --- | --- | --- | --- | --- | | | |
| Koyen----- | 0-3 | 5-15 | 1.30-1.45 | 2.00-6.00 | 0.10-0.12 | Low | 0.5-0.7 | 0.20 | 0.32 | 4 | 4 | 86 |
| | 3-32 | 10-18 | 1.35-1.55 | 2.00-6.00 | 0.11-0.13 | Low | 0.0-0.5 | 0.28 | 0.37 | | | |
| | 32-60 | 0-10 | 1.50-1.65 | 6.00-20.00 | 0.03-0.05 | Low | 0.0-0.5 | 0.05 | 0.24 | | | |
| 1472: Tybo----- | 0-4 | 5-18 | 1.40-1.55 | 2.00-6.00 | 0.06-0.09 | Low | 0.0-0.5 | 0.28 | 0.32 | 1 | 4 | 86 |
| | 4-19 | 5-18 | 1.40-1.55 | 2.00-6.00 | 0.09-0.15 | Low | 0.0-0.5 | 0.37 | 0.55 | | | |
| | 19-23 | --- | --- | 0.00-0.01 | --- | --- | --- | --- | --- | | | |
| Geer----- | 0-6 | 5-18 | 1.30-1.50 | 0.60-2.00 | 0.14-0.16 | Low | 0.5-1.0 | 0.37 | 0.37 | 5 | 3 | 86 |
| | 6-60 | 5-18 | 1.30-1.50 | 0.60-2.00 | 0.15-0.17 | Low | 0.5-1.0 | 0.32 | 0.32 | | | |
| 1473: Tybo----- | 0-4 | 5-18 | 1.40-1.55 | 2.00-6.00 | 0.06-0.09 | Low | 0.0-0.5 | 0.28 | 0.32 | 1 | 4 | 86 |
| | 4-19 | 5-18 | 1.40-1.55 | 2.00-6.00 | 0.09-0.15 | Low | 0.0-0.5 | 0.37 | 0.55 | | | |
| | 19-23 | --- | --- | 0.00-0.01 | --- | --- | --- | --- | --- | | | |
| Leo----- | 0-5 | 5-15 | 1.45-1.65 | 2.00-6.00 | 0.05-0.08 | Low | 0.0-0.5 | 0.05 | 0.17 | 5 | 5 | 56 |
| | 5-60 | 0-5 | 1.50-1.65 | 6.00-20.00 | 0.04-0.06 | Low | 0.0-0.5 | 0.02 | 0.20 | | | |
| 1474: Tybo----- | 0-4 | 5-18 | 1.40-1.55 | 2.00-6.00 | 0.06-0.09 | Low | 0.0-0.5 | 0.28 | 0.32 | 1 | 4 | 86 |
| | 4-19 | 5-18 | 1.40-1.55 | 2.00-6.00 | 0.09-0.15 | Low | 0.0-0.5 | 0.37 | 0.55 | | | |
| | 19-23 | --- | --- | 0.00-0.01 | --- | --- | --- | --- | --- | | | |
| Delamar----- | 0-5 | 5-10 | 1.40-1.60 | 2.00-6.00 | 0.11-0.13 | Low | 0.5-1.0 | 0.24 | 0.28 | 2 | 3 | 86 |
| | 5-15 | 18-30 | 1.40-1.60 | 0.20-0.60 | 0.16-0.19 | Low | 0.0-0.5 | 0.20 | 0.32 | | | |
| | 15-21 | 27-35 | 1.40-1.60 | 0.20-0.60 | 0.16-0.19 | Moderate | 0.0-0.5 | 0.24 | 0.37 | | | |
| | 21-30 | 2-10 | 1.45-1.65 | 2.00-6.00 | 0.04-0.10 | Low | 0.0-0.5 | 0.15 | 0.17 | | | |
| | 30-60 | --- | --- | 0.00-0.01 | --- | --- | --- | --- | --- | | | |
| 1490: Keefa----- | 0-4 | 8-15 | 1.30-1.50 | 2.00-6.00 | 0.11-0.13 | Low | 0.0-0.5 | 0.20 | 0.24 | 5 | 3 | 86 |
| | 4-26 | 8-15 | 1.30-1.50 | 2.00-6.00 | 0.07-0.13 | Low | 0.0-0.5 | 0.20 | 0.24 | | | |
| | 26-50 | 8-15 | 1.50-1.70 | 0.60-2.00 | 0.07-0.09 | Low | 0.0-0.5 | 0.15 | 0.28 | | | |
| | 50-60 | 5-15 | 1.40-1.60 | 2.00-6.00 | 0.05-0.08 | Low | 0.0-0.5 | 0.10 | 0.20 | | | |
| Pencyer----- | 0-4 | 10-18 | 1.35-1.55 | 0.60-2.00 | 0.19-0.21 | Low | 0.0-0.5 | 0.55 | 0.55 | 5 | 4L | 86 |
| | 4-60 | 10-18 | 1.35-1.55 | 0.60-2.00 | 0.19-0.21 | Low | 0.0-0.5 | 0.55 | 0.55 | | | |
| 1491: Keefa----- | 0-4 | 8-15 | 1.30-1.50 | 2.00-6.00 | 0.11-0.13 | Low | 0.0-0.5 | 0.20 | 0.24 | 5 | 3 | 86 |
| | 4-26 | 8-15 | 1.30-1.50 | 2.00-6.00 | 0.07-0.13 | Low | 0.0-0.5 | 0.20 | 0.24 | | | |
| | 26-38 | 8-15 | 1.50-1.70 | 0.60-2.00 | 0.07-0.09 | Low | 0.0-0.5 | 0.15 | 0.28 | | | |
| | 38-60 | 5-15 | 1.40-1.60 | 2.00-6.00 | 0.05-0.08 | Low | 0.0-0.5 | 0.10 | 0.20 | | | |

TABLE 16.--PHYSICAL PROPERTIES OF THE 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 | | | | | |
| 1491 (con.): Penoyer----- | 0-4 4-60 | 10-18 10-18 | 1.35-1.55 1.35-1.55 | 0.60-2.00 0.60-2.00 | 0.19-0.21 0.19-0.21 | Low Low | 0.0-0.5 0.0-0.5 | 0.55 0.55 | 0.55 0.55 | 5 | 4L | 86 |
| 1510: Koyen----- | 0-3 3-32 32-60 | 5-15 10-18 0-10 | 1.30-1.45 1.35-1.55 1.50-1.65 | 2.00-6.00 2.00-6.00 6.00-20.00 | 0.10-0.12 0.11-0.13 0.03-0.05 | Low Low Low | 0.5-0.7 0.0-0.5 0.0-0.5 | 0.20 0.28 0.05 | 0.32 0.37 0.24 | 4 | 4 | 86 |
| 1512: Koyen----- | 0-3 3-32 32-60 | 5-15 10-18 0-10 | 1.30-1.45 1.35-1.55 1.50-1.65 | 2.00-6.00 2.00-6.00 6.00-20.00 | 0.10-0.12 0.11-0.13 0.03-0.05 | Low Low Low | 0.5-0.7 0.0-0.5 0.0-0.5 | 0.20 0.28 0.05 | 0.32 0.37 0.24 | 4 | 4 | 86 |
| Penoyer----- | 0-4 4-60 | 10-18 10-18 | 1.35-1.55 1.35-1.55 | 0.60-2.00 0.60-2.00 | 0.19-0.21 0.19-0.21 | Low Low | 0.0-0.5 0.0-0.5 | 0.55 0.55 | 0.55 0.55 | 5 | 4L | 86 |
| 1520: Geer----- | 0-6 6-60 | 5-18 5-18 | 1.30-1.50 1.30-1.50 | 0.60-2.00 0.60-2.00 | 0.14-0.16 0.15-0.17 | Low Low | 0.5-1.0 0.5-1.0 | 0.37 0.32 | 0.37 0.32 | 5 | 3 | 86 |
| Penoyer----- | 0-4 4-60 | 10-18 10-18 | 1.35-1.55 1.35-1.55 | 0.60-2.00 0.60-2.00 | 0.19-0.21 0.19-0.21 | Low Low | 0.0-0.5 0.0-0.5 | 0.55 0.55 | 0.55 0.55 | 5 | 4L | 86 |
| 1530: Delamar----- | 0-5 5-15 15-21 21-30 30-60 | 5-10 18-30 27-35 2-10 --- | 1.40-1.60 1.40-1.60 1.40-1.60 1.45-1.65 --- | 0.60-2.00 0.20-0.60 0.20-0.60 2.00-6.00 0.00-0.01 | 0.08-0.11 0.16-0.19 0.16-0.19 0.04-0.10 --- | Low Low Moderate Low --- | 0.5-1.0 0.0-0.5 0.0-0.5 0.0-0.5 --- | 0.17 0.20 0.24 0.15 --- | 0.32 0.32 0.37 0.17 --- | 2 | 4 | 86 |
| Leo----- | 0-5 5-60 | 5-15 0-5 | 1.40-1.60 1.50-1.65 | 2.00-6.00 6.00-20.00 | 0.07-0.09 0.04-0.06 | Low Low | 0.0-0.5 0.0-0.5 | 0.10 0.02 | 0.20 0.20 | 5 | 4 | 86 |
| 1531: Delamar----- | 0-5 5-15 15-21 21-30 30-60 | 5-10 18-30 27-35 2-10 --- | 1.40-1.60 1.40-1.60 1.40-1.60 1.45-1.65 --- | 0.60-2.00 0.20-0.60 0.20-0.60 2.00-6.00 0.00-0.01 | 0.08-0.11 0.16-0.19 0.16-0.19 0.04-0.10 --- | Low Low Moderate Low --- | 0.5-1.0 0.0-0.5 0.0-0.5 0.0-0.5 --- | 0.17 0.20 0.24 0.15 --- | 0.32 0.32 0.37 0.17 --- | 2 | 4 | 86 |
| Veet----- | 0-3 3-19 19-60 | 8-15 10-18 5-10 | 1.35-1.50 1.35-1.55 1.40-1.60 | 2.00-6.00 0.60-2.00 6.00-20.00 | 0.06-0.08 0.06-0.08 0.03-0.05 | Low Low Low | 0.8-2.0 0.0-0.5 0.0-0.5 | 0.10 0.10 0.10 | 0.32 0.37 0.32 | 3 | 5 | 56 |
| 1533: Delamar----- | 0-5 5-15 15-21 21-30 30-60 | 5-10 18-30 27-35 2-10 --- | 1.40-1.60 1.40-1.60 1.40-1.60 1.45-1.65 --- | 2.00-6.00 0.20-0.60 0.20-0.60 2.00-6.00 0.00-0.01 | 0.11-0.13 0.16-0.19 0.16-0.19 0.04-0.10 --- | Low Low Moderate Low --- | 0.5-1.0 0.0-0.5 0.0-0.5 0.0-0.5 --- | 0.24 0.20 0.24 0.15 --- | 0.28 0.32 0.37 0.17 --- | 2 | 3 | 86 |
| Tybo----- | 0-4 4-19 19-23 | 5-18 5-18 --- | 1.40-1.55 1.40-1.55 --- | 2.00-6.00 2.00-6.00 0.00-0.01 | 0.06-0.09 0.09-0.15 --- | Low Low --- | 0.0-0.5 0.0-0.5 --- | 0.28 0.37 --- | 0.32 0.55 --- | 1 | 4 | 86 |
| Koyen----- | 0-3 3-32 32-60 | 5-15 10-18 0-10 | 1.30-1.45 1.35-1.55 1.50-1.65 | 2.00-6.00 2.00-6.00 6.00-20.00 | 0.10-0.12 0.11-0.13 0.03-0.05 | Low Low Low | 0.5-0.7 0.0-0.5 0.0-0.5 | 0.20 0.28 0.05 | 0.32 0.37 0.24 | 4 | 4 | 86 |

TABLE 16.--PHYSICAL PROPERTIES OF THE 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 | | |
| 1570 (con.): Kyler----- | 0-3 3-11 11-15 | 7-18 7-18 --- | 1.30-1.45 1.25-1.45 --- | 0.60-2.00 0.60-2.00 0.00-0.01 | 0.04-0.06 0.08-0.11 --- | Low Low --- | 0.5-1.0 0.0-0.5 --- | 0.15 0.15 --- | 0.43 0.43 --- | 1 | 8 | --- |
| Eaglepass----- | 0-2 2-6 6-10 | 8-18 8-18 --- | 1.20-1.40 1.20-1.40 --- | 2.00-6.00 2.00-6.00 0.00-0.01 | 0.06-0.10 0.03-0.05 --- | Low Low --- | 0.0-0.5 0.0-0.5 --- | 0.15 0.10 --- | 0.43 0.32 --- | 1 | 8 | --- |
| 1571: Rock Outcrop. | | | | | | | | | | | | |
| Kyler----- | 0-3 3-11 11-15 | 7-18 7-18 --- | 1.30-1.45 1.25-1.45 --- | 0.60-2.00 0.60-2.00 0.00-0.01 | 0.04-0.06 0.08-0.11 --- | Low Low --- | 0.5-1.0 0.0-0.5 --- | 0.15 0.15 --- | 0.43 0.43 --- | 1 | 8 | --- |
| Logring----- | 0-3 3-12 12-16 | 8-15 10-18 --- | 1.35-1.50 1.30-1.45 --- | 0.60-2.00 0.60-2.00 0.00-0.01 | 0.08-0.10 0.08-0.10 --- | Low Low --- | 1.0-3.0 0.5-1.0 --- | 0.17 0.15 --- | 0.55 0.43 --- | 1 | 6 | 48 |
| 1590: Winklo----- | 0-3 3-9 9-23 23-33 | 18-27 30-40 40-55 --- | 1.30-1.50 1.30-1.50 1.25-1.45 --- | 0.60-2.00 0.20-0.60 0.06-0.20 0.00-0.01 | 0.08-0.10 0.13-0.15 0.11-0.13 --- | Low Moderate Moderate --- | 0.1-2.0 0.5-1.0 0.0-0.5 --- | 0.10 0.17 0.15 --- | 0.37 0.32 0.28 --- | 3 | 6 | 48 |
| Wyva----- | 0-2 2-15 15-25 | 10-18 27-35 --- | 1.35-1.55 1.30-1.50 --- | 2.00-6.00 0.20-0.60 0.00-0.01 | 0.05-0.07 0.08-0.12 --- | Low Moderate --- | 1.0-2.0 1.0-2.0 --- | 0.05 0.10 --- | 0.24 0.43 --- | 1 | 5 | 56 |
| 1591: Rock Outcrop. | | | | | | | | | | | | |
| Winklo----- | 0-3 3-9 9-23 23-33 | 8-18 30-40 40-55 --- | 1.30-1.50 1.30-1.50 1.25-1.45 --- | 2.00-6.00 0.20-0.60 0.06-0.20 0.00-0.01 | 0.05-0.07 0.13-0.15 0.11-0.13 --- | Low Moderate Moderate --- | 0.1-2.0 0.5-1.0 0.0-0.5 --- | 0.15 0.17 0.15 --- | 0.43 0.32 0.28 --- | 3 | 5 | 56 |
| Rochpah----- | 0-4 4-19 19-29 | 5-18 5-18 --- | 1.35-1.50 1.35-1.50 --- | 2.00-6.00 2.00-6.00 0.00-0.01 | 0.05-0.07 0.05-0.07 --- | Low Low --- | 0.0-0.5 0.0-0.5 --- | 0.10 0.10 --- | 0.43 0.28 --- | 1 | 5 | 56 |
| 1650: Handpah----- | 0-4 4-19 19-29 29-60 | 10-18 25-35 --- --- | 1.40-1.60 1.20-1.40 --- --- | 0.60-2.00 0.06-0.20 0.00-0.01 0.00-0.01 | 0.08-0.11 0.15-0.17 --- --- | Low Moderate --- --- | 1.0-2.0 0.0-0.5 --- --- | 0.10 0.15 --- --- | 0.32 0.28 --- --- | 1 | 5 | 56 |
| Veet----- | 0-3 3-19 19-60 | 8-15 10-18 5-10 | 1.35-1.50 1.35-1.55 1.40-1.60 | 2.00-6.00 0.60-2.00 6.00-20.00 | 0.08-0.11 0.06-0.08 0.03-0.05 | Low Low Low | 0.8-2.0 0.0-0.5 0.0-0.5 | 0.17 0.10 0.10 | 0.32 0.37 0.32 | 3 | 4 | 86 |
| 1660: Dewrust----- | 0-6 6-11 11-23 23-30 30-40 | 10-15 27-35 35-60 50-60 --- | 1.45-1.65 1.40-1.60 1.30-1.50 1.20-1.40 --- | 2.00-6.00 0.06-0.20 0.06-0.20 0.06-0.20 0.00-0.01 | 0.06-0.08 0.15-0.20 0.12-0.19 0.10-0.12 --- | Low Moderate High High --- | 1.0-2.0 0.5-1.0 0.0-0.5 0.0-0.5 --- | 0.10 0.10 0.05 0.05 --- | 0.32 0.43 0.05 0.37 --- | 2 | 5 | 56 |

TABLE 16.--PHYSICAL PROPERTIES OF THE 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 | | | | | |
| 1660 (con.): Veet----- | 0-3 | 8-15 | 1.35-1.50 | 2.00-6.00 | 0.08-0.11 | Low | 0.8-2.0 | 0.17 | 0.32 | 3 | 4 | 86 |
| | 3-19 | 10-18 | 1.35-1.55 | 0.60-2.00 | 0.06-0.08 | Low | 0.0-0.5 | 0.10 | 0.37 | | | |
| | 19-60 | 5-10 | 1.40-1.60 | 6.00-20.00 | 0.03-0.05 | Low | 0.0-0.5 | 0.10 | 0.32 | | | |
| 1680: Rochpah----- | 0-4 | 5-18 | 1.35-1.50 | 2.00-6.00 | 0.05-0.07 | Low | 0.0-0.5 | 0.10 | 0.43 | 1 | 5 | 56 |
| | 4-19 | 5-18 | 1.35-1.50 | 2.00-6.00 | 0.05-0.07 | Low | 0.0-0.5 | 0.10 | 0.28 | | | |
| | 19-29 | --- | --- | 0.00-0.01 | --- | --- | --- | --- | --- | | | |
| Hollace----- | 0-2 | 5-10 | 1.35-1.55 | 2.00-6.00 | 0.06-0.08 | Low | 0.5-1.0 | 0.17 | 0.32 | 1 | 5 | 56 |
| | 2-8 | 18-30 | 1.30-1.50 | 0.20-0.60 | 0.10-0.12 | Low | 0.5-1.0 | 0.20 | 0.43 | | | |
| | 8-17 | 27-35 | 1.30-1.50 | 0.20-0.60 | 0.09-0.11 | Moderate | 0.0-0.5 | 0.20 | 0.43 | | | |
| | 17-21 | --- | --- | 0.00-0.01 | --- | --- | --- | --- | --- | | | |
| | 21-31 | --- | --- | 0.00-0.01 | --- | --- | --- | --- | --- | | | |
| Gabbvally----- | 0-2 | 10-18 | 1.30-1.50 | 2.00-6.00 | 0.06-0.08 | Low | 0.8-2.0 | 0.10 | 0.32 | 1 | 5 | 56 |
| | 2-9 | 18-27 | 1.30-1.50 | 0.60-2.00 | 0.11-0.13 | Low | 0.5-2.0 | 0.15 | 0.32 | | | |
| | 9-13 | --- | --- | 0.00-0.01 | --- | --- | --- | --- | --- | | | |
| 1681: Rochpah----- | 0-4 | 5-18 | 1.35-1.50 | 2.00-6.00 | 0.05-0.07 | Low | 0.0-0.5 | 0.10 | 0.43 | 1 | 5 | 56 |
| | 4-19 | 5-18 | 1.35-1.50 | 2.00-6.00 | 0.05-0.07 | Low | 0.0-0.5 | 0.10 | 0.28 | | | |
| | 19-29 | --- | --- | 0.00-0.01 | --- | --- | --- | --- | --- | | | |
| Veet----- | 0-3 | 8-15 | 1.35-1.50 | 2.00-6.00 | 0.08-0.11 | Low | 0.8-2.0 | 0.17 | 0.32 | 3 | 4 | 86 |
| | 3-19 | 10-18 | 1.35-1.55 | 0.60-2.00 | 0.06-0.08 | Low | 0.0-0.5 | 0.10 | 0.37 | | | |
| | 19-60 | 5-10 | 1.40-1.60 | 6.00-20.00 | 0.03-0.05 | Low | 0.0-0.5 | 0.10 | 0.32 | | | |
| 1683: Rock Outcrop. | | | | | | | | | | | | |
| Rochpah----- | 0-4 | 5-18 | 1.35-1.50 | 2.00-6.00 | 0.05-0.07 | Low | 0.0-0.5 | 0.10 | 0.43 | 1 | 5 | 56 |
| | 4-19 | 5-18 | 1.35-1.50 | 2.00-6.00 | 0.05-0.07 | Low | 0.0-0.5 | 0.10 | 0.28 | | | |
| | 19-29 | --- | --- | 0.00-0.01 | --- | --- | --- | --- | --- | | | |
| Leo----- | 0-5 | 5-15 | 1.45-1.65 | 2.00-6.00 | 0.05-0.08 | Low | 0.0-0.5 | 0.05 | 0.17 | 5 | 5 | 56 |
| | 5-60 | 0-5 | 1.50-1.65 | 6.00-20.00 | 0.04-0.06 | Low | 0.0-0.5 | 0.02 | 0.20 | | | |
| 1690: Jolan----- | 0-6 | 10-20 | 1.40-1.55 | 0.60-2.00 | 0.17-0.19 | Low | 0.0-0.5 | 0.64 | 0.64 | 2 | 3 | 86 |
| | 6-24 | 10-18 | 1.40-1.55 | 2.00-6.00 | 0.11-0.14 | Low | 0.0-0.5 | 0.43 | 0.49 | | | |
| | 24-28 | --- | --- | 0.00-0.01 | --- | --- | --- | --- | --- | | | |
| Geer----- | 0-6 | 5-18 | 1.30-1.50 | 0.60-2.00 | 0.14-0.16 | Low | 0.5-1.0 | 0.37 | 0.37 | 5 | 3 | 86 |
| | 6-60 | 5-18 | 1.30-1.50 | 0.60-2.00 | 0.15-0.17 | Low | 0.5-1.0 | 0.32 | 0.32 | | | |
| 1700: Sieroclipf----- | 0-3 | 5-15 | 1.35-1.50 | 2.00-6.00 | 0.08-0.10 | Low | 1.0-2.0 | 0.10 | 0.32 | 2 | 4 | 86 |
| | 3-11 | 18-30 | 1.15-1.35 | 0.60-2.00 | 0.12-0.14 | Moderate | 1.0-2.0 | 0.24 | 0.37 | | | |
| | 11-26 | 10-18 | 1.40-1.60 | 0.60-2.00 | 0.08-0.10 | Low | 0.5-1.0 | 0.10 | 0.37 | | | |
| | 26-60 | --- | --- | 0.00-0.01 | --- | --- | --- | --- | --- | | | |
| Veet----- | 0-3 | 8-15 | 1.35-1.50 | 2.00-6.00 | 0.06-0.08 | Low | 0.8-2.0 | 0.10 | 0.32 | 3 | 5 | 56 |
| | 3-19 | 10-18 | 1.35-1.55 | 0.60-2.00 | 0.06-0.08 | Low | 0.0-0.5 | 0.10 | 0.37 | | | |
| | 19-60 | 5-10 | 1.40-1.60 | 6.00-20.00 | 0.03-0.05 | Low | 0.0-0.5 | 0.10 | 0.32 | | | |
| 1710: Cliffdown----- | 0-2 | 10-15 | 1.40-1.55 | 2.00-6.00 | 0.07-0.08 | Low | 0.0-0.5 | 0.24 | 0.43 | 5 | 4 | 86 |
| | 2-60 | 5-15 | 1.40-1.60 | 2.00-6.00 | 0.06-0.07 | Low | 0.0-0.5 | 0.20 | 0.37 | | | |

TABLE 16.--PHYSICAL PROPERTIES OF THE 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 | | | | | |
| 1810 (con.): Boxspring----- | 0-3 3-16 16-26 | 10-18 10-18 --- | 1.40-1.60 1.45-1.60 --- | 0.60-2.00 0.60-2.00 0.00-0.01 | 0.07-0.09 0.09-0.11 --- | Low Low --- | 0.0-0.5 0.0-0.5 --- | 0.15 0.17 --- | 0.43 0.43 --- | 1 | 8 | --- |
| 1811: Rock Outcrop. | | | | | | | | | | | | |
| Boxspring----- | 0-3 3-16 16-26 | 10-18 10-18 --- | 1.40-1.60 1.45-1.60 --- | 0.60-2.00 0.60-2.00 0.00-0.01 | 0.07-0.09 0.09-0.11 --- | Low Low --- | 0.0-0.5 0.0-0.5 --- | 0.15 0.17 --- | 0.43 0.43 --- | 1 | 8 | --- |
| Theriot----- | 0-3 3-11 11 | 8-14 5-14 --- | 1.20-1.40 1.25-1.45 --- | 0.60-2.00 0.60-2.00 0.00-0.01 | 0.04-0.06 0.04-0.06 --- | Low Low --- | 0.0-1.0 --- --- | 0.17 0.10 --- | 0.43 0.32 --- | 1 | 6 | 48 |
| 1821: Turba----- | 0-7 7-16 16-20 | 10-18 25-35 --- | 1.10-1.30 1.10-1.30 --- | 2.00-6.00 0.20-0.60 0.00-0.01 | 0.08-0.10 0.08-0.12 --- | Low Moderate --- | 4.0-5.0 0.5-3.0 --- | 0.15 0.10 --- | 0.32 0.37 --- | 2 | 5 | 56 |
| Acti----- | 0-2 2-8 8-18 18-22 | 15-25 35-60 40-60 --- | 1.35-1.55 1.30-1.50 1.25-1.45 --- | 0.60-2.00 0.06-0.20 0.00-0.06 0.00-0.01 | 0.09-0.11 0.11-0.13 0.07-0.09 --- | Low Moderate High --- | 2.0-3.0 1.0-3.0 0.5-2.0 --- | 0.05 0.10 0.05 --- | 0.43 0.32 0.37 --- | 1 | 7 | 38 |
| 1830: Zaqua----- | 0-3 3-17 17-27 | 10-15 27-35 --- | 1.30-1.50 1.30-1.50 --- | 2.00-6.00 0.20-0.60 0.00-0.01 | 0.06-0.08 0.12-0.14 --- | Low Moderate --- | 1.0-2.0 0.5-1.0 --- | 0.10 0.15 --- | 0.32 0.55 --- | 2 | 5 | 56 |
| Winklo----- | 0-3 3-9 9-23 23-33 | 8-18 30-40 40-55 --- | 1.30-1.50 1.30-1.50 1.25-1.45 --- | 2.00-6.00 0.20-0.60 0.06-0.20 0.00-0.01 | 0.05-0.07 0.13-0.15 0.11-0.13 --- | Low Moderate Moderate --- | 0.1-2.0 0.5-1.0 0.0-0.5 --- | 0.15 0.17 0.15 --- | 0.43 0.32 0.28 --- | 3 | 5 | 56 |
| 1831: Zaqua----- | 0-3 3-17 17-27 | 10-15 27-35 --- | 1.30-1.50 1.30-1.50 --- | 2.00-6.00 0.20-0.60 0.00-0.01 | 0.06-0.08 0.12-0.14 --- | Low Moderate --- | 1.0-2.0 0.5-1.0 --- | 0.10 0.15 --- | 0.32 0.55 --- | 2 | 5 | 56 |
| Boxspring----- | 0-3 3-16 16-26 | 10-18 10-18 --- | 1.40-1.60 1.45-1.60 --- | 0.60-2.00 0.60-2.00 0.00-0.01 | 0.07-0.09 0.09-0.11 --- | Low Low --- | 0.0-0.5 0.0-0.5 --- | 0.15 0.17 --- | 0.43 0.43 --- | 1 | 8 | --- |
| 1832: Zaqua----- | 0-3 3-17 17-27 | 10-15 27-35 --- | 1.30-1.50 1.30-1.50 --- | 2.00-6.00 0.20-0.60 0.00-0.01 | 0.06-0.08 0.12-0.14 --- | Low Moderate --- | 1.0-2.0 0.5-1.0 --- | 0.10 0.15 --- | 0.32 0.55 --- | 2 | 5 | 56 |
| Winklo----- | 0-3 3-9 9-23 23-33 | 8-18 30-40 40-55 --- | 1.30-1.50 1.30-1.50 1.25-1.45 --- | 2.00-6.00 0.20-0.60 0.06-0.20 0.00-0.01 | 0.05-0.07 0.13-0.15 0.11-0.13 --- | Low Moderate Moderate --- | 0.1-2.0 0.5-1.0 0.0-0.5 --- | 0.15 0.17 0.15 --- | 0.43 0.32 0.28 --- | 3 | 5 | 56 |
| Kanesprings---- | 0-3 3-8 8-18 18-24 24-28 | 5-15 20-30 27-40 --- --- | 1.45-1.60 1.40-1.60 1.40-1.60 --- --- | 2.00-6.00 0.60-2.00 0.20-0.60 0.00-0.01 0.00-0.01 | 0.04-0.07 0.14-0.18 0.15-0.19 --- --- | Low Moderate Moderate --- --- | 0.0-0.5 0.0-0.5 0.0-0.5 --- --- | 0.17 0.24 0.24 --- --- | 0.32 0.49 0.55 --- --- | 1 | 5 | 56 |

TABLE 16.--PHYSICAL PROPERTIES OF THE 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 | | | | | |
| 1833: Rock Outcrop. | | | | | | | | | | | | |
| Zaqua----- | 0-3 | 10-15 | 1.30-1.50 | 2.00-6.00 | 0.06-0.08 | Low | 1.0-2.0 | 0.10 | 0.32 | 2 | 5 | 56 |
| | 3-17 | 27-35 | 1.30-1.50 | 0.20-0.60 | 0.12-0.14 | Moderate | 0.5-1.0 | 0.15 | 0.55 | | | |
| | 17-27 | --- | --- | 0.00-0.01 | --- | | --- | --- | --- | | | |
| 1850: Rapado----- | | | | | | | | | | | | |
| | 0-3 | 5-18 | 1.35-1.55 | 2.00-6.00 | 0.06-0.08 | Low | 0.8-2.0 | 0.17 | 0.32 | 2 | 5 | 56 |
| | 3-24 | 27-35 | 1.40-1.60 | 0.20-0.60 | 0.08-0.10 | Low | 0.6-1.0 | 0.17 | 0.55 | | | |
| | 24-32 | 5-15 | 1.45-1.65 | 2.00-6.00 | 0.05-0.08 | Low | 0.0-0.5 | 0.10 | 0.24 | | | |
| | 32-39 | --- | --- | 0.00-0.01 | --- | | --- | --- | --- | | | |
| | 39-60 | --- | --- | 0.00-0.01 | --- | | --- | --- | --- | | | |
| Oleman----- | | | | | | | | | | | | |
| | 0-2 | 5-15 | 1.40-1.55 | 2.00-6.00 | 0.07-0.09 | Low | 1.0-2.0 | 0.15 | 0.24 | 1 | 4 | 86 |
| | 2-14 | 25-35 | 1.25-1.45 | 0.20-0.60 | 0.11-0.13 | Low | 0.5-1.0 | 0.17 | 0.55 | | | |
| | 14-24 | --- | --- | 0.00-0.01 | --- | | --- | --- | --- | | | |
| | 24-60 | 5-10 | 1.30-1.50 | 6.00-20.00 | 0.03-0.05 | Low | 0.0-0.5 | 0.05 | 0.24 | | | |
| 1851: Rapado----- | | | | | | | | | | | | |
| | 0-3 | 5-18 | 1.35-1.55 | 2.00-6.00 | 0.06-0.08 | Low | 0.8-2.0 | 0.17 | 0.32 | 2 | 5 | 56 |
| | 3-24 | 27-35 | 1.40-1.60 | 0.20-0.60 | 0.08-0.10 | Low | 0.6-1.0 | 0.17 | 0.55 | | | |
| | 24-32 | 5-15 | 1.45-1.65 | 2.00-6.00 | 0.05-0.08 | Low | 0.0-0.5 | 0.10 | 0.24 | | | |
| | 32-39 | --- | --- | 0.00-0.01 | --- | | --- | --- | --- | | | |
| | 39-60 | --- | --- | 0.00-0.01 | --- | | --- | --- | --- | | | |
| Veet----- | | | | | | | | | | | | |
| | 0-3 | 8-15 | 1.35-1.50 | 2.00-6.00 | 0.06-0.08 | Low | 0.8-2.0 | 0.10 | 0.32 | 3 | 5 | 56 |
| | 3-19 | 10-18 | 1.35-1.55 | 0.60-2.00 | 0.06-0.08 | Low | 0.0-0.5 | 0.10 | 0.37 | | | |
| | 19-60 | 5-10 | 1.40-1.60 | 6.00-20.00 | 0.03-0.05 | Low | 0.0-0.5 | 0.10 | 0.32 | | | |
| 1870: Faleria----- | | | | | | | | | | | | |
| | 0-2 | 10-15 | 0.90-1.10 | 2.00-6.00 | 0.19-0.21 | Low | 4.0-5.0 | 0.17 | 0.28 | 3 | 4 | 86 |
| | 2-7 | 10-15 | 0.90-1.10 | 0.60-2.00 | 0.15-0.17 | Low | 4.0-5.0 | 0.15 | 0.43 | | | |
| | 7-26 | 18-27 | 0.90-1.10 | 2.00-6.00 | 0.14-0.16 | Low | 2.0-3.0 | 0.10 | 0.32 | | | |
| | 26-47 | 10-20 | 0.90-1.10 | 2.00-6.00 | 0.10-0.12 | Low | 0.5-1.0 | 0.10 | 0.37 | | | |
| | 47-57 | --- | --- | 0.00-0.01 | --- | | --- | --- | --- | | | |
| Laross----- | | | | | | | | | | | | |
| | 0-3 | 10-18 | 0.90-1.10 | 0.60-2.00 | 0.19-0.21 | Low | 3.0-4.0 | 0.15 | 0.32 | 3 | 6 | 48 |
| | 3-8 | 10-18 | 0.90-1.10 | 0.60-2.00 | 0.19-0.21 | Low | 3.0-4.0 | 0.15 | 0.43 | | | |
| | 8-19 | 10-18 | 0.90-1.10 | 0.60-2.00 | 0.12-0.15 | Low | 2.0-3.0 | 0.10 | 0.55 | | | |
| | 19-52 | 10-18 | 0.90-1.10 | 2.00-6.00 | 0.12-0.15 | Low | 0.5-1.0 | 0.10 | 0.32 | | | |
| | 52-62 | --- | --- | 0.00-0.01 | --- | | --- | --- | --- | | | |
| 1880: Rock Outcrop. | | | | | | | | | | | | |
| Tejabe----- | 0-2 | 10-18 | 1.30-1.50 | 2.00-6.00 | 0.09-0.11 | Low | 0.5-1.0 | 0.10 | 0.32 | 1 | 5 | 56 |
| | 2-6 | 10-18 | 1.30-1.50 | 2.00-6.00 | 0.08-0.10 | Low | 0.0-0.5 | 0.10 | 0.32 | | | |
| | 6-10 | --- | --- | 0.00-0.01 | --- | | --- | --- | --- | | | |
| Pintwater----- | | | | | | | | | | | | |
| | 0-2 | 10-18 | 1.35-1.55 | 2.00-6.00 | 0.09-0.11 | Low | 0.0-0.5 | 0.15 | 0.32 | 1 | 8 | --- |
| | 2-14 | 10-18 | 1.35-1.50 | 2.00-6.00 | 0.06-0.09 | Low | 0.0-0.5 | 0.10 | 0.32 | | | |
| | 14-18 | --- | --- | 0.00-0.01 | --- | | --- | --- | --- | | | |
| 1890: Rock Outcrop. | | | | | | | | | | | | |
| Welring----- | 0-3 | 15-25 | 1.25-1.35 | 0.60-2.00 | 0.07-0.09 | Low | 0.0-1.0 | 0.02 | 0.37 | 1 | 6 | 48 |
| | 3-18 | 15-25 | 1.25-1.35 | 0.60-2.00 | 0.07-0.09 | Low | 0.0-1.0 | 0.05 | 0.32 | | | |
| | 18-22 | --- | --- | 0.00-0.60 | --- | | --- | --- | --- | | | |

TABLE 16.--PHYSICAL PROPERTIES OF THE 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 | | |
| 1900: Glendale----- | 0-6 6-60 | 10-20 18-30 | 1.30-1.50 1.25-1.45 | 0.60-2.00 0.20-0.60 | 0.04-0.07 0.08-0.12 | Low Moderate | 0.5-1.0 0.5-1.0 | 0.32 0.55 | 0.32 0.55 | 5 | 4L | 86 |
| Bluepoint----- | 0-3 3-42 42-60 | 3-8 0-5 3-10 | 1.50-1.70 1.50-1.70 1.55-1.75 | 6.00-20.00 6.00-20.00 2.00-6.00 | 0.07-0.09 0.07-0.09 0.10-0.12 | Low Low Low | 0.0-0.5 0.0-0.5 0.0-0.5 | 0.15 0.15 0.20 | 0.15 0.15 0.20 | 5 | 2 | 134 |
| 1910: Land----- | 0-3 3-60 | 15-27 18-35 | 1.25-1.45 1.35-1.55 | 0.60-2.00 0.20-0.60 | 0.19-0.21 0.17-0.19 | Moderate Moderate | 1.0-2.0 0.0-0.5 | 0.43 0.37 | 0.43 0.37 | 5 | 4L | 86 |
| 1920: Rock Outcrop. Motoqua----- | 0-3 3-12 12-16 | 6-12 20-35 --- | 1.40-1.50 1.25-1.40 --- | 2.00-6.00 0.60-2.00 0.00-0.01 | 0.05-0.07 0.08-0.12 --- | Low Low --- | 1.0-3.0 0.5-2.0 --- | 0.05 0.05 --- | 0.17 0.24 --- | 1 | 5 | 56 |
| 1921: Motoqua----- | 0-3 3-12 12-16 | 6-12 20-35 --- | 1.40-1.50 1.25-1.40 --- | 2.00-6.00 0.60-2.00 0.00-0.01 | 0.05-0.07 0.08-0.12 --- | Low Low --- | 1.0-3.0 0.5-2.0 --- | 0.05 0.05 --- | 0.17 0.24 --- | 1 | 5 | 56 |
| Thunderbird---- | 0-3 3-30 30-34 | 15-20 35-55 --- | 1.20-1.40 1.10-1.30 --- | 0.20-0.60 0.00-0.06 0.00-0.01 | 0.14-0.16 0.14-0.16 --- | Low High --- | 1.0-2.0 0.5-2.0 --- | 0.24 0.24 --- | 0.43 0.32 --- | 2 | 6 | 56 |
| 1941: Slidytn----- | 0-3 3-16 16-26 | 10-18 27-35 --- | 1.30-1.50 1.20-1.40 --- | 2.00-6.00 0.20-0.60 0.00-0.01 | 0.08-0.10 0.10-0.12 --- | Low Moderate --- | 1.0-2.0 1.0-2.0 --- | 0.15 0.20 --- | 0.43 0.55 --- | 1 | 5 | 56 |
| Capsus----- | 0-2 2-16 16-26 | 25-30 35-60 --- | 1.35-1.55 1.25-1.45 --- | 0.20-0.60 0.06-0.20 0.00-0.01 | 0.10-0.12 0.10-0.12 --- | Moderate High --- | 2.0-3.0 1.0-2.0 --- | 0.10 0.15 --- | 0.43 0.28 --- | 1 | 7 | 38 |
| 1950: Ursine----- | 0-3 3-10 10-16 16-20 | 10-25 10-25 8-20 --- | 1.35-1.50 1.35-1.55 1.35-1.55 --- | 0.60-2.00 0.60-2.00 2.00-6.00 0.00-0.02 | 0.12-0.15 0.12-0.15 0.07-0.10 --- | Low Low Low --- | 1.0-2.0 0.5-2.0 0.5-1.0 --- | 0.32 0.32 0.15 --- | 0.55 0.49 0.32 --- | 1 | 5 | 56 |
| Lomoin----- | 0-2 2-6 6-10 | 8-15 8-15 --- | 1.35-1.55 1.35-1.55 --- | 2.00-6.00 2.00-6.00 0.00-0.01 | 0.07-0.09 0.07-0.09 --- | Low Low --- | 0.5-1.0 0.0-0.5 --- | 0.10 0.10 --- | 0.32 0.28 --- | 1 | 5 | 56 |
| Ursine----- | 0-3 3-10 10-16 16-20 | 10-25 10-25 8-20 --- | 1.35-1.50 1.35-1.55 1.35-1.55 --- | 2.00-6.00 0.60-2.00 2.00-6.00 0.00-0.02 | 0.07-0.10 0.12-0.15 0.07-0.10 --- | Low Low Low --- | 1.0-2.0 0.5-2.0 0.5-1.0 --- | 0.24 0.32 0.15 --- | 0.43 0.49 0.32 --- | 1 | 6 | 48 |
| 1951: Ursine----- | 0-3 3-10 10-16 16-20 | 10-25 10-25 8-20 --- | 1.35-1.50 1.35-1.55 1.35-1.55 --- | 2.00-6.00 0.60-2.00 2.00-6.00 0.00-0.02 | 0.07-0.10 0.12-0.15 0.07-0.10 --- | Low Low Low --- | 1.0-2.0 0.5-2.0 0.5-1.0 --- | 0.24 0.32 0.15 --- | 0.43 0.49 0.32 --- | 1 | 6 | 48 |

TABLE 16.--PHYSICAL PROPERTIES OF THE 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 | | | | | |
| 1951 (con.): | | | | | | | | | | | | |
| Ursine----- | 0-3 | 10-25 | 1.35-1.50 | 2.00-6.00 | 0.07-0.10 | Low | 1.0-2.0 | 0.24 | 0.43 | 1 | 6 | 48 |
| | 3-10 | 10-25 | 1.35-1.55 | 0.60-2.00 | 0.12-0.15 | Low | 0.5-2.0 | 0.32 | 0.49 | | | |
| | 10-16 | 8-20 | 1.35-1.55 | 2.00-6.00 | 0.07-0.10 | Low | 0.5-1.0 | 0.15 | 0.32 | | | |
| | 16-20 | --- | --- | 0.00-0.02 | --- | | --- | --- | --- | | | |
| 1952: | | | | | | | | | | | | |
| Ursine----- | 0-3 | 10-25 | 1.35-1.50 | 2.00-6.00 | 0.07-0.10 | Low | 1.0-2.0 | 0.24 | 0.43 | 1 | 6 | 48 |
| | 3-10 | 10-25 | 1.35-1.55 | 0.60-2.00 | 0.12-0.15 | Low | 0.5-2.0 | 0.32 | 0.49 | | | |
| | 10-16 | 8-20 | 1.35-1.55 | 2.00-6.00 | 0.07-0.10 | Low | 0.5-1.0 | 0.15 | 0.32 | | | |
| | 16-20 | --- | --- | 0.00-0.02 | --- | | --- | --- | --- | | | |
| Ursine----- | 0-3 | 10-25 | 1.35-1.50 | 2.00-6.00 | 0.07-0.10 | Low | 1.0-2.0 | 0.24 | 0.43 | 1 | 6 | 48 |
| | 3-10 | 10-25 | 1.35-1.55 | 0.60-2.00 | 0.12-0.15 | Low | 0.5-2.0 | 0.32 | 0.49 | | | |
| | 10-16 | 8-20 | 1.35-1.55 | 2.00-6.00 | 0.07-0.10 | Low | 0.5-1.0 | 0.15 | 0.32 | | | |
| | 16-20 | --- | --- | 0.00-0.02 | --- | | --- | --- | --- | | | |
| Geer----- | 0-6 | 5-18 | 1.30-1.50 | 0.60-2.00 | 0.14-0.16 | Low | 0.5-1.0 | 0.37 | 0.37 | 5 | 3 | 86 |
| | 6-60 | 5-18 | 1.30-1.50 | 0.60-2.00 | 0.15-0.17 | Low | 0.5-1.0 | 0.32 | 0.32 | | | |
| 1960: | | | | | | | | | | | | |
| Crystal Springs- | 0-3 | 5-18 | 1.40-1.55 | 2.00-6.00 | 0.09-0.11 | Low | 0.0-0.5 | 0.20 | 0.32 | 1 | 4 | 86 |
| | 3-15 | 5-18 | 1.45-1.65 | 2.00-6.00 | 0.09-0.11 | Low | 0.0-0.5 | 0.17 | 0.32 | | | |
| | 15-25 | --- | --- | 0.00-0.01 | --- | | --- | --- | --- | | | |
| 1980: | | | | | | | | | | | | |
| Longjim----- | 0-4 | 10-20 | 1.35-1.50 | 2.00-6.00 | 0.04-0.06 | Low | 0.0-0.5 | 0.10 | 0.37 | 1 | 5 | 56 |
| | 4-16 | 5-10 | 1.40-1.60 | 2.00-6.00 | 0.04-0.06 | Low | 0.0-0.5 | 0.15 | 0.32 | | | |
| | 16-20 | --- | --- | 0.00-0.01 | --- | | --- | --- | --- | | | |
| Arizo----- | 0-1 | 0-5 | 1.45-1.65 | 6.00-20.00 | 0.04-0.06 | Low | 0.0-0.5 | 0.15 | 0.24 | 5 | 4 | 86 |
| | 1-60 | 0-5 | 1.45-1.65 | >20.00 | 0.04-0.06 | Low | 0.0-0.5 | 0.10 | 0.24 | | | |
| 1990: | | | | | | | | | | | | |
| Rock Outcrop. | | | | | | | | | | | | |
| Gabbvally----- | 0-2 | 10-18 | 1.35-1.50 | 0.60-2.00 | 0.13-0.15 | Low | 1.0-2.0 | 0.15 | 0.43 | 1 | 7 | 38 |
| | 2-9 | 18-27 | 1.30-1.50 | 0.60-2.00 | 0.11-0.13 | Low | 0.0-0.8 | 0.15 | 0.32 | | | |
| | 9-13 | --- | --- | 0.00-0.01 | --- | | --- | --- | --- | | | |
| 1991: | | | | | | | | | | | | |
| Gabbvally----- | 0-2 | 10-18 | 1.35-1.50 | 0.60-2.00 | 0.13-0.15 | Low | 1.0-2.0 | 0.15 | 0.43 | 1 | 7 | 38 |
| | 2-9 | 18-27 | 1.30-1.50 | 0.60-2.00 | 0.11-0.13 | Low | 0.0-0.8 | 0.15 | 0.32 | | | |
| | 9-13 | --- | --- | 0.00-0.01 | --- | | --- | --- | --- | | | |
| Hollace----- | 0-2 | 8-18 | 1.35-1.55 | 0.60-2.00 | 0.08-0.10 | Low | 0.5-1.0 | 0.17 | 0.43 | 1 | 6 | 48 |
| | 2-8 | 18-30 | 1.30-1.50 | 0.20-0.60 | 0.10-0.12 | Low | 0.5-1.0 | 0.20 | 0.43 | | | |
| | 8-17 | 27-35 | 1.30-1.50 | 0.20-0.60 | 0.09-0.11 | Moderate | 0.0-0.5 | 0.20 | 0.43 | | | |
| | 17-21 | --- | --- | 0.00-0.01 | --- | | --- | --- | --- | | | |
| | 21-31 | --- | --- | 0.00-0.01 | --- | | --- | --- | --- | | | |
| 1992: | | | | | | | | | | | | |
| Rock Outcrop. | | | | | | | | | | | | |
| Gabbvally----- | 0-2 | 10-18 | 1.35-1.50 | 0.60-2.00 | 0.13-0.15 | Low | 1.0-2.0 | 0.15 | 0.43 | 1 | 7 | 38 |
| | 2-9 | 18-27 | 1.30-1.50 | 0.60-2.00 | 0.11-0.13 | Low | 0.0-0.8 | 0.15 | 0.32 | | | |
| | 9-13 | --- | --- | 0.00-0.01 | --- | | --- | --- | --- | | | |
| Brier----- | 0-3 | 15-27 | 1.15-1.35 | 0.60-2.00 | 0.08-0.10 | Low | 2.0-5.0 | 0.15 | 0.43 | 1 | 7 | 38 |
| | 3-15 | 18-35 | 1.30-1.50 | 0.20-0.60 | 0.08-0.10 | Moderate | 1.0-3.0 | 0.10 | 0.32 | | | |
| | 15-19 | --- | --- | 0.00-0.01 | --- | | --- | --- | --- | | | |

TABLE 16.--PHYSICAL PROPERTIES OF THE 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 | | | | | |
| 2000: 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 |
| 2010: Stewval----- | 0-2 2-10 10-14 | 12-18 24-30 --- | 1.35-1.50 1.30-1.45 --- | 2.00-6.00 0.60-2.00 0.00-0.01 | 0.07-0.09 0.04-0.09 --- | Low Low | 0.5-2.0 0.5-1.0 --- | 0.15 0.10 --- | 0.43 0.43 --- | 1 | 5 | 56 |
| Gabbvally----- | 0-2 2-9 9-13 | 10-18 18-27 --- | 1.35-1.50 1.30-1.50 --- | 0.60-2.00 0.60-2.00 0.00-0.01 | 0.13-0.15 0.11-0.13 --- | Low Low | 1.0-2.0 0.0-0.8 --- | 0.15 0.15 --- | 0.43 0.32 --- | 1 | 7 | 38 |
| 2011: Rock Outcrop. | | | | | | | | | | | | |
| Stewval----- | 0-2 2-10 10-14 | 12-18 24-30 --- | 1.35-1.50 1.30-1.45 --- | 2.00-6.00 0.60-2.00 0.00-0.01 | 0.07-0.09 0.04-0.09 --- | Low Low | 0.5-2.0 0.5-1.0 --- | 0.15 0.10 --- | 0.43 0.43 --- | 1 | 5 | 56 |
| Lomoin----- | 0-2 2-6 6-10 | 8-15 8-15 --- | 1.35-1.55 1.35-1.55 --- | 2.00-6.00 2.00-6.00 0.00-0.01 | 0.07-0.09 0.07-0.09 --- | Low Low | 0.5-1.0 0.0-0.5 --- | 0.10 0.10 --- | 0.32 0.28 --- | 1 | 5 | 56 |

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 | |
| 1000: | | | | | | | | | |
| Weiser----- | 0-6 | 8-15 | 4.0-9.0 | 7.9-9.0 | 25-40 | --- | 0-2 | 0-5 | |
| | 6-60 | 5-18 | 3.0-10.0 | 7.9-9.0 | 35-50 | --- | 0-2 | 0-5 | |
| Tencee----- | 0-3 | 10-20 | 5.0-10.0 | 7.9-8.4 | 30-40 | --- | 0-2 | 0-2 | |
| | 3-11 | 10-20 | 5.0-10.0 | 7.9-8.4 | 30-40 | --- | 0-2 | 0-2 | |
| | 11-15 | --- | --- | --- | --- | --- | --- | --- | |
| Arizo----- | 0-1 | 2-8 | 1.0-5.0 | 7.4-9.0 | 0-5 | --- | 0-2 | 1-12 | |
| | 1-60 | 0-5 | 1.0-5.0 | 7.4-9.0 | 1-5 | --- | 0-2 | 1-12 | |
| 1001: | | | | | | | | | |
| Weiser----- | 0-6 | 5-18 | 3.0-10.0 | 7.9-9.0 | 25-40 | --- | 0-2 | 0-5 | |
| | 6-60 | 5-18 | 3.0-10.0 | 7.9-9.0 | 35-50 | --- | 0-2 | 0-5 | |
| Tencee----- | 0-3 | 10-20 | 5.0-10.0 | 7.9-8.4 | 30-40 | --- | 0-2 | 0-2 | |
| | 3-11 | 10-20 | 5.0-10.0 | 7.9-8.4 | 30-40 | --- | 0-2 | 0-2 | |
| | 11-15 | --- | --- | --- | --- | --- | --- | --- | |
| 1010: | | | | | | | | | |
| Tencee----- | 0-3 | 10-20 | 5.0-10.0 | 7.9-8.4 | 30-40 | --- | 0-2 | 0-2 | |
| | 3-11 | 10-20 | 5.0-10.0 | 7.9-8.4 | 30-40 | --- | 0-2 | 0-2 | |
| | 11-15 | --- | --- | --- | --- | --- | --- | --- | |
| Weiser----- | 0-6 | 8-15 | 4.0-9.0 | 7.9-9.0 | 25-40 | --- | 0-2 | 0-5 | |
| | 6-60 | 5-18 | 3.0-10.0 | 7.9-9.0 | 35-50 | --- | 0-2 | 0-5 | |
| 1016: | | | | | | | | | |
| Tencee----- | 0-3 | 10-20 | 5.0-10.0 | 7.9-8.4 | 30-40 | --- | 0-2 | 0-2 | |
| | 3-11 | 10-20 | 5.0-10.0 | 7.9-8.4 | 30-40 | --- | 0-2 | 0-2 | |
| | 11-15 | --- | --- | --- | --- | --- | --- | --- | |
| Tencee----- | 0-3 | 10-20 | 5.0-10.0 | 7.9-8.4 | 30-40 | --- | 0-2 | 0-2 | |
| | 3-11 | 10-20 | 5.0-10.0 | 7.9-8.4 | 30-40 | --- | 0-2 | 0-2 | |
| | 11-15 | --- | --- | --- | --- | --- | --- | --- | |
| 1017: | | | | | | | | | |
| Tencee----- | 0-3 | 10-20 | 5.0-10.0 | 7.9-8.4 | 30-40 | --- | 0-2 | 0-2 | |
| | 3-11 | 10-20 | 5.0-10.0 | 7.9-8.4 | 30-40 | --- | 0-2 | 0-2 | |
| | 11-15 | --- | --- | --- | --- | --- | --- | --- | |
| Bard----- | 0-3 | 10-20 | 7.0-15.0 | 7.9-9.0 | 15-30 | --- | 0-2 | 0-5 | |
| | 3-19 | 5-15 | 4.0-12.0 | 7.9-9.0 | 30-40 | --- | 0-2 | 0-5 | |
| | 19-23 | --- | --- | --- | --- | --- | --- | --- | |
| Arizo----- | 0-1 | 2-8 | 1.0-5.0 | 7.4-9.0 | 0-5 | --- | 0-2 | 1-12 | |
| | 1-60 | 0-5 | 1.0-5.0 | 7.4-9.0 | 1-5 | --- | 0-2 | 1-12 | |
| 1020: | | | | | | | | | |
| Kurstan----- | 0-9 | 8-18 | 5.0-15.0 | 7.9-9.0 | 5-10 | --- | 0-2 | 0-5 | |
| | 9-60 | 8-18 | 5.0-15.0 | 8.5-9.0 | 10-30 | --- | 0-2 | 0-5 | |
| Tencee----- | 0-3 | 10-20 | 5.0-10.0 | 7.9-8.4 | 30-40 | --- | 0-2 | 0-2 | |
| | 3-11 | 10-20 | 5.0-10.0 | 7.9-8.4 | 30-40 | --- | 0-2 | 0-2 | |
| | 11-15 | --- | --- | --- | --- | --- | --- | --- | |
| 1021: | | | | | | | | | |
| Kurstan----- | 0-9 | 8-18 | 5.0-15.0 | 7.9-9.0 | 5-10 | --- | 0-2 | 0-5 | |
| | 9-60 | 8-18 | 5.0-15.0 | 8.5-9.0 | 10-30 | --- | 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 | |
| 1065 (con.): Zeheme----- | 0-2 2-13 13-23 | 8-18 8-18 --- | 7.0-15.0 7.0-15.0 --- | 7.9-8.4 7.9-8.4 --- | 20-40 30-50 --- | --- --- --- | 0-2 0-2 --- | 0-5 0-5 --- |
| 1066: Rock Outcrop. | | | | | | | | |
| Zeheme----- | 0-3 3-13 13-23 | 8-18 8-18 --- | 7.0-15.0 7.0-15.0 --- | 7.9-8.4 7.9-8.4 --- | 40-60 40-80 --- | --- --- --- | 0-2 0-2 --- | 0-5 0-5 --- |
| Boxspring----- | 0-3 3-16 16-26 | 10-18 10-18 --- | 10.0-15.0 10.0-15.0 --- | 7.9-8.4 7.9-9.0 --- | 30-40 30-40 --- | --- --- --- | 0-2 0-4 --- | 0-5 0-5 --- |
| 1070: Bellehelen----- | 0-5 5-10 10-14 | 10-18 18-35 --- | 10.0-20.0 10.0-30.0 --- | 6.6-7.8 6.6-7.8 --- | --- --- --- | --- --- --- | --- --- --- | --- --- --- |
| Brier----- | 0-3 3-15 15-19 | 10-20 18-35 --- | 8.0-25.0 15.0-35.0 --- | 6.6-7.8 6.6-7.8 --- | --- --- --- | --- --- --- | --- --- --- | --- --- --- |
| 1080: Kaspal----- | 0-2 2-11 11-34 34-47 47-51 | 8-18 27-35 35-55 30-40 --- | 5.0-15.0 20.0-25.0 25.0-40.0 20.0-30.0 --- | 7.4-8.4 7.9-9.0 7.9-9.0 7.9-9.0 --- | 0-5 5-15 5-15 15-25 --- | --- --- --- --- --- | 0-2 0-2 0-2 0-2 --- | 0-5 0-5 0-5 0-5 --- |
| Canutio----- | 0-2 2-60 | 8-18 8-18 | 5.0-15.0 5.0-15.0 | 7.9-9.0 7.9-9.0 | 5-10 5-10 | --- --- | 0-4 0-4 | 0-5 0-5 |
| 1090: Rock Outcrop. | | | | | | | | |
| Logring----- | 0-3 3-12 12-16 | 8-15 10-18 --- | 5.0-20.0 5.0-20.0 --- | 7.9-9.0 7.9-9.0 --- | 40-60 40-60 --- | --- --- --- | 0-4 0-4 --- | 0-5 0-5 --- |
| 1091: Rock Outcrop. | | | | | | | | |
| Logring----- | 0-3 3-12 12-16 | 8-15 10-18 --- | 5.0-20.0 5.0-20.0 --- | 7.9-9.0 7.9-9.0 --- | 40-60 40-60 --- | --- --- --- | 0-4 0-4 --- | 0-5 0-5 --- |
| Eaglepass----- | 0-2 2-6 6-10 | 8-18 8-18 --- | 5.0-15.0 5.0-15.0 --- | 7.9-9.0 7.9-9.0 --- | 15-30 15-30 --- | --- --- --- | 0-2 0-2 --- | 0-5 0-5 --- |
| 1100: Geta----- | 0-1 1-20 20-60 | 5-18 5-18 5-18 | 3.0-13.0 3.0-13.0 3.0-13.0 | 7.9-9.0 7.9-9.0 8.5-9.0 | 5-15 5-15 5-15 | --- --- --- | 0-4 0-4 0-4 | 0-12 0-12 0-12 |
| Geta----- | 0-6 6-20 20-60 | 0-5 5-18 5-18 | 0.0-5.0 3.0-13.0 3.0-13.0 | 7.9-9.0 7.9-9.0 8.5-9.0 | 5-15 5-15 5-15 | --- --- --- | 0-4 0-4 0-4 | 0-12 0-12 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 | |
| 1100 (con.): | | | | | | | | |
| Arizo----- | 0-1 | 2-8 | 1.0-5.0 | 7.4-9.0 | 0-5 | --- | 0-2 | 1-12 |
| | 1-60 | 0-5 | 1.0-5.0 | 7.4-9.0 | 1-5 | --- | 0-2 | 1-12 |
| 1101: | | | | | | | | |
| Geta----- | 0-1 | 5-18 | 3.0-13.0 | 7.9-9.0 | 5-15 | --- | 0-4 | 0-12 |
| | 1-20 | 5-18 | 3.0-13.0 | 7.9-9.0 | 5-15 | --- | 0-4 | 0-12 |
| | 20-60 | 5-18 | 3.0-13.0 | 8.5-9.0 | 5-15 | --- | 0-4 | 0-12 |
| 1102: | | | | | | | | |
| Geta----- | 0-6 | 5-18 | 3.0-13.0 | 7.9-9.0 | 5-15 | --- | 0-4 | 0-12 |
| | 6-20 | 5-18 | 3.0-13.0 | 7.9-9.0 | 5-15 | --- | 0-4 | 0-12 |
| | 20-60 | 5-18 | 3.0-13.0 | 8.5-9.0 | 5-15 | --- | 0-4 | 0-12 |
| Bluepoint----- | 0-3 | 3-8 | 1.0-5.0 | 7.4-9.0 | 1-5 | --- | 0-4 | 0-4 |
| | 3-42 | 0-5 | 0.0-5.0 | 7.4-9.0 | 1-5 | 0-1 | 0-8 | 0-12 |
| | 42-60 | 3-10 | 1.0-7.0 | 7.4-9.0 | 1-5 | 0-5 | 0-8 | 0-12 |
| Arizo----- | 0-1 | 2-8 | 1.0-5.0 | 7.4-9.0 | 0-5 | --- | 0-2 | 1-12 |
| | 1-60 | 0-5 | 1.0-5.0 | 7.4-9.0 | 1-5 | --- | 0-2 | 1-12 |
| 1110: | | | | | | | | |
| Rock Outcrop. | | | | | | | | |
| Kanesprings----- | 0-3 | 5-15 | 4.0-12.0 | 7.9-9.0 | 0-5 | --- | 0-2 | 0-5 |
| | 3-8 | 20-30 | 15.0-20.0 | 7.9-9.0 | 5-15 | --- | 0-2 | 0-5 |
| | 8-18 | 27-40 | 25.0-30.0 | 7.9-9.0 | 5-15 | --- | 0-2 | 0-5 |
| | 18-24 | --- | --- | --- | --- | --- | --- | --- |
| | 24-28 | --- | --- | --- | --- | --- | --- | --- |
| Kanackey----- | 0-2 | 15-20 | 8.0-11.0 | 7.9-9.0 | 2-10 | --- | 0-2 | 0-2 |
| | 2-5 | 40-60 | 20.0-31.0 | 7.4-8.4 | 0-2 | --- | 0-2 | 0-2 |
| | 5-11 | 40-60 | 20.0-31.0 | 7.4-8.4 | 0-2 | --- | 0-2 | 0-2 |
| | 11-15 | --- | --- | --- | --- | --- | --- | --- |
| 1113: | | | | | | | | |
| Kanesprings----- | 0-3 | 5-15 | 4.0-12.0 | 7.9-9.0 | 0-5 | --- | 0-2 | 0-5 |
| | 3-8 | 20-30 | 15.0-20.0 | 7.9-9.0 | 5-15 | --- | 0-2 | 0-5 |
| | 8-18 | 27-40 | 25.0-30.0 | 7.9-9.0 | 5-15 | --- | 0-2 | 0-5 |
| | 18-24 | --- | --- | --- | --- | --- | --- | --- |
| | 24-28 | --- | --- | --- | --- | --- | --- | --- |
| Gabbvally----- | 0-2 | 10-18 | 10.0-20.0 | 6.6-7.8 | --- | --- | 0-2 | 0-5 |
| | 2-9 | 18-27 | 15.0-25.0 | 6.6-7.8 | --- | --- | 0-2 | 0-5 |
| | 9-13 | --- | --- | --- | --- | --- | --- | --- |
| 1160: | | | | | | | | |
| Silent----- | 0-2 | 5-15 | 3.0-12.0 | 7.9-9.0 | 5-15 | --- | 0-4 | 0-5 |
| | 2-4 | 25-35 | 20.0-25.0 | 7.9-9.0 | 5-15 | --- | 4-8 | 5-12 |
| | 4-12 | 25-35 | 20.0-25.0 | 7.9-9.0 | 5-15 | 0-5 | 8-16 | 5-12 |
| | 12-16 | --- | --- | --- | --- | --- | --- | --- |
| Koyen----- | 0-3 | 5-15 | 3.0-15.0 | 7.9-9.0 | --- | --- | 0-2 | 0-5 |
| | 3-32 | 10-18 | 5.0-15.0 | 7.9-9.0 | 5-15 | --- | 0-2 | 0-5 |
| | 32-60 | 0-10 | 0.0-8.0 | 7.9-9.0 | 0-8 | 0-1 | 0-2 | 1-12 |
| 1170: | | | | | | | | |
| Alko----- | 0-3 | 10-20 | 7.0-14.0 | 7.9-9.0 | 5-15 | --- | 0-4 | 0-5 |
| | 3-11 | 10-15 | 7.0-10.0 | 7.9-9.0 | 5-15 | --- | 0-4 | 0-5 |
| | 11-33 | --- | --- | --- | --- | --- | --- | --- |
| | 33-60 | 0-5 | 0.0-4.0 | 8.5-9.0 | 5-15 | --- | 0-4 | 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 | |
| 1262: | | | | | | | | |
| Hollace----- | 0-2 | 5-10 | 5.0-10.0 | 7.4-8.4 | 0-5 | --- | 0-2 | 1-5 |
| | 2-8 | 18-30 | 15.0-25.0 | 7.4-8.4 | 1-5 | --- | 0-2 | 1-5 |
| | 8-17 | 27-35 | 15.0-25.0 | 7.4-8.4 | 10-15 | --- | 0-2 | 1-5 |
| | 17-21 | --- | --- | --- | --- | --- | --- | --- |
| | 21-31 | --- | --- | --- | --- | --- | --- | --- |
| Winklo----- | 0-3 | 8-18 | 10.0-15.0 | 7.4-8.4 | 1-5 | --- | 0-2 | 1-5 |
| | 3-9 | 30-40 | 25.0-30.0 | 7.4-8.4 | 1-5 | --- | 0-2 | 1-5 |
| | 9-23 | 40-55 | 30.0-35.0 | 7.4-8.4 | 10-20 | --- | 2-4 | 1-5 |
| | 23-33 | --- | --- | --- | --- | --- | --- | --- |
| Wyva----- | 0-2 | 10-18 | 8.0-15.0 | 7.4-7.8 | --- | --- | 0-2 | 0-5 |
| | 2-15 | 27-35 | 15.0-25.0 | 7.4-7.8 | --- | --- | 0-2 | 0-5 |
| | 15-25 | --- | --- | --- | --- | --- | --- | --- |
| 1270: | | | | | | | | |
| Rock Outcrop. | | | | | | | | |
| Laross----- | 0-3 | 10-18 | 20.0-30.0 | 6.1-7.3 | --- | --- | --- | --- |
| | 3-8 | 10-18 | 20.0-30.0 | 6.1-7.3 | --- | --- | --- | --- |
| | 8-19 | 10-18 | 10.0-20.0 | 6.1-7.3 | --- | --- | --- | --- |
| | 19-52 | 10-18 | 10.0-20.0 | 6.1-7.3 | --- | --- | --- | --- |
| | 52-62 | --- | --- | --- | --- | --- | --- | --- |
| 1300: | | | | | | | | |
| Mormount----- | 0-3 | 5-15 | 5.0-15.0 | 7.9-8.4 | 0-5 | --- | 0-2 | 0-5 |
| | 3-15 | 15-25 | 10.0-20.0 | 7.9-8.4 | 1-10 | --- | 0-2 | 0-5 |
| | 15-19 | 20-30 | 15.0-25.0 | 7.9-8.4 | 5-25 | --- | 0-2 | 0-5 |
| | 19-60 | --- | --- | --- | --- | --- | --- | --- |
| Arizo----- | 0-1 | 2-8 | 1.0-5.0 | 7.4-9.0 | 0-5 | --- | 0-2 | 1-12 |
| | 1-60 | 0-5 | 1.0-5.0 | 7.4-9.0 | 1-5 | --- | 0-2 | 1-12 |
| 1302: | | | | | | | | |
| Mormount----- | 0-3 | 5-15 | 5.0-15.0 | 7.9-8.4 | 0-5 | --- | 0-2 | 0-5 |
| | 3-15 | 15-25 | 10.0-20.0 | 7.9-8.4 | 1-10 | --- | 0-2 | 0-5 |
| | 15-19 | 20-30 | 15.0-25.0 | 7.9-8.4 | 5-25 | --- | 0-2 | 0-5 |
| | 19-60 | --- | --- | --- | --- | --- | --- | --- |
| 1303: | | | | | | | | |
| Mormount----- | 0-3 | 5-15 | 5.0-15.0 | 7.9-8.4 | 0-5 | --- | 0-2 | 0-5 |
| | 3-15 | 15-25 | 10.0-20.0 | 7.9-8.4 | 1-10 | --- | 0-2 | 0-5 |
| | 15-19 | 20-30 | 15.0-25.0 | 7.9-8.4 | 5-25 | --- | 0-2 | 0-5 |
| | 19-60 | --- | --- | --- | --- | --- | --- | --- |
| Canutio----- | 0-2 | 8-18 | 5.0-15.0 | 7.9-9.0 | 5-10 | --- | 0-4 | 0-5 |
| | 2-60 | 8-18 | 5.0-15.0 | 7.9-9.0 | 5-10 | --- | 0-4 | 0-5 |
| 1340: | | | | | | | | |
| Aymate----- | 0-3 | 8-18 | 5.0-10.0 | 7.9-9.0 | 0-1 | --- | 0-2 | 0-5 |
| | 3-13 | 8-18 | 5.0-10.0 | 7.9-9.0 | 1-5 | --- | 0-2 | 0-5 |
| | 13-28 | 18-30 | 10.0-25.0 | 7.9-9.0 | 1-5 | --- | 0-2 | 0-5 |
| | 28-35 | 5-10 | 5.0-10.0 | 7.9-9.0 | 1-5 | --- | 0-2 | 0-5 |
| | 35-60 | --- | --- | --- | --- | --- | --- | --- |
| Canutio----- | 0-2 | 8-18 | 5.0-15.0 | 7.9-9.0 | 5-10 | --- | 0-4 | 0-5 |
| | 2-60 | 8-18 | 5.0-15.0 | 7.9-9.0 | 5-10 | --- | 0-4 | 0-5 |

TABLE 17.--CHEMICAL PROPERTIES OF THE SOILS--Continued

| Map symbol and soil name | Depth | | Clay Pct | Cation- exchange capacity meq/100g | Soil reaction pH | Calcium carbonate Pct | Gypsum Pct | Salinity mmhos/cm | Sodium adsorption ratio |
|------------------------------|-------------------------------|--------------------------------|---|---|---------------------------------|-----------------------------|--------------------------|---------------------------|-------------------------------|
| | In | Pct | | | | | | | |
| 1372 (con.): Tonopah----- | 0-5 5-60 | 5-15 2-10 | 4.0-12.0 2.0-7.0 | 7.9-9.0 8.5-9.0 | 5-15 10-40 | --- 0-5 | 0-2 0-4 | 0-5 0-12 | |
| Arada----- | 0-8 8-28 28-38 38-60 | 0-10 0-10 5-10 5-10 | 0.0-7.0 0.0-7.0 4.0-7.0 4.0-7.0 | 7.9-8.4 8.5-9.0 8.5-9.0 8.5-9.0 | 5-15 10-20 20-40 20-40 | --- --- --- --- | 0-2 0-2 0-2 0-2 | 0-5 0-5 0-5 0-12 | |
| 1380: Bracken----- | 0-2 2-60 | 4-10 --- | 1.0-7.0 --- | 7.4-8.4 --- | 1-10 --- | --- 50-95 | 0-2 --- | 0-5 --- | |
| 1390: Shankba----- | 0-2 2-18 18-23 23-33 | 10-18 8-18 --- --- | 7.0-15.0 6.0-14.0 --- --- | 7.9-9.0 7.9-9.0 --- --- | 2-10 2-10 --- --- | --- 0-5 --- --- | 0-2 0-2 --- --- | 0-5 0-5 --- --- | |
| Chinkle----- | 0-2 2-13 13-25 25-35 | 8-18 8-18 --- --- | 7.0-15.0 7.0-15.0 --- --- | 7.9-9.0 7.9-9.0 --- --- | 2-10 2-10 --- --- | --- --- --- --- | 0-2 0-2 --- --- | 0-5 0-5 --- --- | |
| Kanackey----- | 0-2 2-5 5-11 11-15 | 15-20 40-60 40-60 --- | 8.0-11.0 20.0-31.0 20.0-31.0 --- | 7.9-9.0 7.4-8.4 7.4-8.4 --- | 2-10 0-2 0-2 --- | --- --- --- --- | 0-2 0-2 0-2 --- | 0-2 0-2 0-2 --- | |
| 1400: Cave----- | 0-3 3-14 14-22 22-60 | 10-20 10-20 --- 2-5 | 8.0-16.0 8.0-16.0 --- 1.0-4.0 | 7.9-8.4 7.9-8.4 --- 7.9-8.4 | 5-10 5-10 --- 5-10 | --- --- --- --- | 0-4 0-4 --- 0-4 | 0-5 0-5 --- 0-5 | |
| Canutio----- | 0-2 2-60 | 8-18 8-18 | 5.0-15.0 5.0-15.0 | 7.9-9.0 7.9-9.0 | 5-10 5-10 | --- --- | 0-4 0-4 | 0-5 0-5 | |
| 1401: Cave----- | 0-3 3-14 14-22 22-60 | 10-20 10-20 --- 2-5 | 8.0-16.0 8.0-16.0 --- 1.0-4.0 | 7.9-8.4 7.9-8.4 --- 7.9-8.4 | 5-10 5-10 --- 5-10 | --- --- --- --- | 0-4 0-4 --- 0-4 | 0-5 0-5 --- 0-5 | |
| Arizo----- | 0-1 1-60 | 2-8 0-5 | 1.0-5.0 1.0-5.0 | 7.4-9.0 7.4-9.0 | 0-5 1-5 | --- --- | 0-2 0-2 | 1-12 1-12 | |
| 1403: Cave----- | 0-3 3-14 14-22 22-60 | 10-20 10-20 --- 2-5 | 8.0-16.0 8.0-16.0 --- 1.0-4.0 | 7.9-8.4 7.9-8.4 --- 7.9-8.4 | 5-10 5-10 --- 5-10 | --- --- --- --- | 0-4 0-4 --- 0-4 | 0-5 0-5 --- 0-5 | |
| Tencee----- | 0-3 3-11 11-15 | 10-20 10-20 --- | 5.0-10.0 5.0-10.0 --- | 7.9-8.4 7.9-8.4 --- | 30-40 30-40 --- | --- --- --- | 0-2 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 |
|-----------------------------|-------|-------|---------------------------------|------------------|----------------------|--------|----------|-------------------------------|
| | | | | | | | | |
| 1470 (con.): Keefa----- | 0-8 | 8-15 | 5.0-15.0 | 7.9-8.4 | 10-20 | --- | 0-2 | 0-5 |
| | 8-26 | 8-15 | 5.0-15.0 | 7.9-9.0 | 15-25 | --- | 0-2 | 0-5 |
| | 26-50 | 8-15 | 5.0-15.0 | 7.9-9.0 | 15-25 | 0-1 | 0-4 | 1-12 |
| | 50-60 | 5-15 | 5.0-15.0 | 7.9-9.0 | 10-20 | 0-1 | 4-8 | 1-12 |
| Koyen----- | 0-3 | 5-15 | 3.0-15.0 | 7.9-9.0 | --- | --- | 0-2 | 0-5 |
| | 3-32 | 10-18 | 5.0-15.0 | 7.9-9.0 | 5-15 | --- | 0-2 | 0-5 |
| | 32-60 | 0-10 | 0.0-8.0 | 7.9-9.0 | 0-8 | 0-1 | 0-2 | 1-12 |
| 1471: Tybo----- | 0-4 | 5-18 | 5.0-15.0 | 8.5-9.6 | 5-15 | --- | 4-8 | 5-12 |
| | 4-19 | 5-18 | 5.0-15.0 | 8.5-9.6 | 1-10 | --- | 4-8 | 5-12 |
| | 19-23 | --- | --- | --- | --- | --- | --- | --- |
| Koyen----- | 0-3 | 5-15 | 3.0-15.0 | 7.9-9.0 | --- | --- | 0-2 | 0-5 |
| | 3-32 | 10-18 | 5.0-15.0 | 7.9-9.0 | 5-15 | --- | 0-2 | 0-5 |
| | 32-60 | 0-10 | 0.0-8.0 | 7.9-9.0 | 0-8 | 0-1 | 0-2 | 1-12 |
| 1472: Tybo----- | 0-4 | 5-18 | 5.0-15.0 | 8.5-9.6 | 5-15 | --- | 4-8 | 5-12 |
| | 4-19 | 5-18 | 5.0-15.0 | 8.5-9.6 | 1-10 | --- | 4-8 | 5-12 |
| | 19-23 | --- | --- | --- | --- | --- | --- | --- |
| Geer----- | 0-6 | 5-18 | 5.0-15.0 | 7.9-8.4 | 1-10 | --- | 0-2 | 0-5 |
| | 6-60 | 5-18 | 5.0-15.0 | 7.9-9.0 | 5-15 | --- | 2-4 | 1-5 |
| 1473: Tybo----- | 0-4 | 5-18 | 5.0-15.0 | 8.5-9.6 | 5-15 | --- | 4-8 | 5-12 |
| | 4-19 | 5-18 | 5.0-15.0 | 8.5-9.6 | 1-10 | --- | 4-8 | 5-12 |
| | 19-23 | --- | --- | --- | --- | --- | --- | --- |
| Leo----- | 0-5 | 5-15 | 0.0-3.0 | 7.9-9.0 | 0-5 | --- | 0-2 | 0-2 |
| | 5-60 | 0-5 | 0.0-3.0 | 7.9-9.0 | 1-10 | --- | 0-4 | 0-2 |
| 1474: Tybo----- | 0-4 | 5-18 | 5.0-15.0 | 8.5-9.6 | 5-15 | --- | 4-8 | 5-12 |
| | 4-19 | 5-18 | 5.0-15.0 | 8.5-9.6 | 1-10 | --- | 4-8 | 5-12 |
| | 19-23 | --- | --- | --- | --- | --- | --- | --- |
| Delamar----- | 0-5 | 5-10 | 5.0-10.0 | 7.9-9.0 | 1-5 | --- | 0-2 | 0-5 |
| | 5-15 | 18-30 | 15.0-20.0 | 7.9-9.0 | 1-5 | --- | 0-2 | 0-12 |
| | 15-21 | 27-35 | 20.0-25.0 | 7.9-9.0 | 1-10 | --- | 0-2 | 0-12 |
| | 21-30 | 2-10 | 1.0-7.0 | 7.9-9.0 | 5-15 | --- | 0-2 | 0-12 |
| | 30-60 | --- | --- | --- | --- | --- | --- | --- |
| 1490: Keefa----- | 0-4 | 8-15 | 5.0-15.0 | 7.9-8.4 | 10-20 | --- | 0-2 | 0-5 |
| | 4-26 | 8-15 | 5.0-15.0 | 7.9-9.0 | 15-25 | --- | 0-2 | 0-5 |
| | 26-50 | 8-15 | 5.0-15.0 | 7.9-9.0 | 15-25 | 0-1 | 0-4 | 1-12 |
| | 50-60 | 5-15 | 5.0-15.0 | 7.9-9.0 | 10-20 | 0-1 | 4-8 | 1-12 |
| Penoyer----- | 0-4 | 10-18 | 5.0-10.0 | 7.9-9.0 | 10-30 | --- | 0-4 | 0-12 |
| | 4-60 | 10-18 | 5.0-10.0 | 7.9-9.0 | 10-30 | 0-5 | 0-4 | 0-12 |
| 1491: Keefa----- | 0-4 | 8-15 | 5.0-15.0 | 7.9-8.4 | 10-20 | --- | 0-2 | 0-5 |
| | 4-26 | 8-15 | 5.0-15.0 | 7.9-9.0 | 15-25 | --- | 0-2 | 0-5 |
| | 26-38 | 8-15 | 5.0-15.0 | 7.9-9.0 | 15-25 | 0-1 | 0-4 | 1-12 |
| | 38-60 | 5-15 | 5.0-15.0 | 7.9-9.0 | 10-20 | 0-1 | 4-8 | 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 | |
| 1491 (con.): Penoyer----- | 0-4 4-60 | 10-18 10-18 | 5.0-10.0 5.0-10.0 | 7.9-9.0 7.9-9.0 | 10-30 10-30 | --- 0-5 | 0-4 0-4 | 0-12 0-12 |
| 1510: Koyen----- | 0-3 3-32 32-60 | 5-15 10-18 0-10 | 3.0-15.0 5.0-15.0 0.0-8.0 | 7.9-9.0 7.9-9.0 7.9-9.0 | --- 5-15 0-8 | --- --- 0-1 | 0-2 0-2 0-2 | 0-5 0-5 1-12 |
| 1512: Koyen----- | 0-3 3-32 32-60 | 5-15 10-18 0-10 | 3.0-15.0 5.0-15.0 0.0-8.0 | 7.9-9.0 7.9-9.0 7.9-9.0 | --- 5-15 0-8 | --- --- 0-1 | 0-2 0-2 0-2 | 0-5 0-5 1-12 |
| Penoyer----- | 0-4 4-60 | 10-18 10-18 | 5.0-10.0 5.0-10.0 | 7.9-9.0 7.9-9.0 | 10-30 10-30 | --- 0-5 | 0-4 0-4 | 0-12 0-12 |
| 1520: Geer----- | 0-6 6-60 | 5-18 5-18 | 5.0-15.0 5.0-15.0 | 7.9-8.4 7.9-9.0 | 1-10 5-15 | --- --- | 0-2 2-4 | 0-5 1-5 |
| Penoyer----- | 0-4 4-60 | 10-18 10-18 | 5.0-10.0 5.0-10.0 | 7.9-9.0 7.9-9.0 | 10-30 10-30 | --- 0-5 | 0-4 0-4 | 0-12 0-12 |
| 1530: Delamar----- | 0-5 5-15 15-21 21-30 30-60 | 5-10 18-30 27-35 2-10 --- | 5.0-10.0 15.0-20.0 20.0-25.0 1.0-7.0 --- | 7.9-9.0 7.9-9.0 7.9-9.0 7.9-9.0 --- | 1-5 1-5 1-10 5-15 --- | --- --- --- --- --- | 0-2 0-2 0-2 0-2 --- | 0-5 0-12 0-12 0-12 --- |
| Leo----- | 0-5 5-60 | 5-15 0-5 | 0.0-3.0 0.0-3.0 | 7.9-9.0 7.9-9.0 | 0-5 1-10 | --- --- | 0-2 0-4 | 0-2 0-2 |
| 1531: Delamar----- | 0-5 5-15 15-21 21-30 30-60 | 5-10 18-30 27-35 2-10 --- | 5.0-10.0 15.0-20.0 20.0-25.0 1.0-7.0 --- | 7.9-9.0 7.9-9.0 7.9-9.0 7.9-9.0 --- | 1-5 1-5 1-10 5-15 --- | --- --- --- --- --- | 0-2 0-2 0-2 0-2 --- | 0-5 0-12 0-12 0-12 --- |
| Veet----- | 0-3 3-19 19-60 | 8-15 10-18 5-10 | 5.0-15.0 5.0-15.0 2.0-8.0 | 7.4-8.4 7.4-9.0 7.9-9.0 | 0-5 0-5 10-20 | --- --- --- | 0-2 0-2 0-2 | 0-5 0-5 0-5 |
| 1533: Delamar----- | 0-5 5-15 15-21 21-30 30-60 | 5-10 18-30 27-35 2-10 --- | 5.0-10.0 15.0-20.0 20.0-25.0 1.0-7.0 --- | 7.9-9.0 7.9-9.0 7.9-9.0 7.9-9.0 --- | 1-5 1-5 1-10 5-15 --- | --- --- --- --- --- | 0-2 0-2 0-2 0-2 --- | 0-5 0-12 0-12 0-12 --- |
| Tybo----- | 0-4 4-19 19-23 | 5-18 5-18 --- | 5.0-15.0 5.0-15.0 --- | 8.5-9.6 8.5-9.6 --- | 5-15 1-10 --- | --- --- --- | 4-8 4-8 --- | 5-12 5-12 --- |
| Koyen----- | 0-3 3-32 32-60 | 5-15 10-18 0-10 | 3.0-15.0 5.0-15.0 0.0-8.0 | 7.9-9.0 7.9-9.0 7.9-9.0 | --- 5-15 0-8 | --- --- 0-1 | 0-2 0-2 0-2 | 0-5 0-5 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 | |
| 1660 (con.): Veet----- | 0-3 3-19 19-60 | 8-15 10-18 5-10 | 5.0-15.0 5.0-15.0 2.0-8.0 | 7.4-8.4 7.4-9.0 7.9-9.0 | 0-5 0-5 10-20 | --- --- --- | 0-2 0-2 0-2 | 0-5 0-5 0-5 |
| 1680: Rochpah----- | 0-4 4-19 19-29 | 5-18 5-18 --- | 10.0-15.0 10.0-15.0 --- | 7.9-8.4 7.9-9.0 --- | 5-10 10-20 --- | --- --- --- | 0-2 0-2 --- | 0-5 0-5 --- |
| Hollace----- | 0-2 2-8 8-17 17-21 21-31 | 5-10 18-30 27-35 --- --- | 5.0-10.0 15.0-25.0 15.0-25.0 --- --- | 7.4-8.4 7.4-8.4 7.4-8.4 --- --- | 0-5 1-5 10-15 --- --- | --- --- --- --- --- | 0-2 0-2 0-2 --- --- | 1-5 1-5 1-5 --- --- |
| Gabbvally----- | 0-2 2-9 9-13 | 10-18 18-27 --- | 5.0-20.0 10.0-20.0 --- | 6.6-7.8 6.6-7.8 --- | --- --- --- | --- --- --- | 0-2 0-2 --- | 0-5 0-5 --- |
| 1681: Rochpah----- | 0-4 4-19 19-29 | 5-18 5-18 --- | 10.0-15.0 10.0-15.0 --- | 7.9-8.4 7.9-9.0 --- | 5-10 10-20 --- | --- --- --- | 0-2 0-2 --- | 0-5 0-5 --- |
| Veet----- | 0-3 3-19 19-60 | 8-15 10-18 5-10 | 5.0-15.0 5.0-15.0 2.0-8.0 | 7.4-8.4 7.4-9.0 7.9-9.0 | 0-5 0-5 10-20 | --- --- --- | 0-2 0-2 0-2 | 0-5 0-5 0-5 |
| 1683: Rock Outcrop. Rochpah----- | 0-4 4-19 19-29 | 5-18 5-18 --- | 10.0-15.0 10.0-15.0 --- | 7.9-8.4 7.9-9.0 --- | 5-10 10-20 --- | --- --- --- | 0-2 0-2 --- | 0-5 0-5 --- |
| Leo----- | 0-5 5-60 | 5-15 0-5 | 0.0-3.0 0.0-3.0 | 7.9-9.0 7.9-9.0 | 0-5 1-10 | --- --- | 0-2 0-4 | 0-2 0-2 |
| 1690: Jolan----- | 0-6 6-24 24-28 | 10-20 10-18 --- | 7.0-15.0 7.0-15.0 --- | 7.9-9.0 7.9-9.0 --- | 0-5 5-15 --- | --- --- --- | 4-8 4-16 --- | 1-12 13-30 --- |
| Geer----- | 0-6 6-60 | 5-18 5-18 | 5.0-15.0 5.0-15.0 | 7.9-8.4 7.9-9.0 | 1-10 5-15 | --- --- | 0-2 2-4 | 0-5 1-5 |
| 1700: Sieroccliff----- | 0-3 3-11 11-26 26-60 | 5-15 18-30 10-18 --- | 15.0-20.0 15.0-20.0 15.0-20.0 --- | 7.9-9.6 7.9-9.6 7.9-9.6 --- | 10-20 60-80 60-80 --- | --- --- --- --- | 0-2 0-2 0-2 --- | 0-5 0-5 0-5 --- |
| Veet----- | 0-3 3-19 19-60 | 8-15 10-18 5-10 | 5.0-15.0 5.0-15.0 2.0-8.0 | 7.4-8.4 7.4-9.0 7.9-9.0 | 0-5 0-5 10-20 | --- --- --- | 0-2 0-2 0-2 | 0-5 0-5 0-5 |
| 1710: Cliffdown----- | 0-2 2-60 | 10-15 5-15 | 5.0-10.0 5.0-10.0 | 7.9-9.0 7.9-9.0 | 15-30 15-30 | --- --- | 0-2 0-8 | 0-5 1-12 |

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 |
| 1000: Weiser----- | B | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Tencee----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Arizo----- | A | Occasional | --- | Mar-Sep | >6.0 | --- | --- | --- | --- |
| 1001: Weiser----- | B | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Tencee----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1010: Tencee----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Weiser----- | B | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1016: Tencee----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Tencee----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1017: Tencee----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Bard----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Arizo----- | A | Occasional | --- | Mar-Sep | >6.0 | --- | --- | --- | --- |
| 1020: Kurstan----- | B | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Tencee----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1021: Kurstan----- | B | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Knob Hill----- | B | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1030: Arizo----- | A | Rare | --- | --- | >6.0 | --- | --- | --- | --- |
| Arizo----- | A | Occasional | --- | Mar-Sep | >6.0 | --- | --- | --- | --- |
| Bluepoint----- | A | Rare | --- | --- | >6.0 | --- | --- | --- | --- |
| 1031: Arizo----- | A | Occasional | --- | Mar-Sep | >6.0 | --- | --- | --- | --- |
| Arizo----- | A | Rare | --- | --- | >6.0 | --- | --- | --- | --- |
| 1040: Akela----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Rock Outcrop. | | | | | | | | | |
| 1041: Akela----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Rochpah----- | 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 |
| 1041 (con.): Rock Outcrop. | | | | | | | | | |
| 1052: Knob Hill----- | B | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Arizo----- | A | Occasional | --- | Mar-Sep | >6.0 | --- | --- | --- | --- |
| 1060: St. Thomas----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Chinkle----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Rock Outcrop. | | | | | | | | | |
| 1061: St. Thomas----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Zeheme----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Rock Outcrop. | | | | | | | | | |
| 1062: Zeheme----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Chinkle----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Shankba----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1063: Zeheme----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Kanesprings----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Rock Outcrop. | | | | | | | | | |
| 1064: Zeheme----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Kanackey----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Rock Outcrop. | | | | | | | | | |
| 1065: Zeheme----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Rock Outcrop. | | | | | | | | | |
| 1066: Zeheme----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Boxspring----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Rock Outcrop. | | | | | | | | | |
| 1070: Bellehelen----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Brier----- | 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 |
| 1080: Kaspal----- | C | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Canutio----- | B | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1090: Logring----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Rock Outcrop. | | | | | | | | | |
| 1091: Logring----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Eaglepass----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Rock Outcrop. | | | | | | | | | |
| 1100: Geta----- | B | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Geta----- | B | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Arizo----- | A | Occasional | --- | Mar-Sep | >6.0 | --- | --- | --- | --- |
| 1101: Geta----- | B | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1102: Geta----- | B | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Bluepoint----- | A | Rare | --- | --- | >6.0 | --- | --- | --- | --- |
| Arizo----- | A | Occasional | --- | Mar-Sep | >6.0 | --- | --- | --- | --- |
| 1110: Kanesprings----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Kanackey----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Rock Outcrop. | | | | | | | | | |
| 1113: Kanesprings----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Gabbvally----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1160: Silent----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Koyen----- | B | Rare | --- | --- | >6.0 | --- | --- | --- | --- |
| 1170: Alko----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Alko----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Arizo----- | A | Occasional | --- | Mar-Sep | >6.0 | --- | --- | --- | --- |
| 1172: Alko----- | 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 |
| 1172 (con.): Geta----- | B | None | --- | --- | >6.0 | --- | --- | --- | --- | |
| 1180: Acoma----- | C | None | --- | --- | >6.0 | --- | --- | --- | --- | |
| Decan----- | C | None | --- | --- | >6.0 | --- | --- | --- | --- | |
| Cath----- | C | None | --- | --- | >6.0 | --- | --- | --- | --- | |
| 1190: Minu----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- | |
| Shroe----- | C | None | --- | --- | >6.0 | --- | --- | --- | --- | |
| Acoma----- | C | None | --- | --- | >6.0 | --- | --- | --- | --- | |
| 1210: Brier----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- | |
| Acoma----- | C | None | --- | --- | >6.0 | --- | --- | --- | --- | |
| Bellehelen----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- | |
| 1211: Brier----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- | |
| Rock Outcrop. | | | | | | | | | | |
| 1220: Lien----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- | |
| Veet----- | B | Rare | --- | --- | >6.0 | --- | --- | --- | --- | |
| 1230: Fahranagat----- | C | Occasional | Brief | Dec-Mar | 3.0-5.0 | Apparent | Feb-Jun | --- | --- | |
| Fahranagat----- | C | Occasional | Brief | Dec-Mar | 1.5-2.5 | Apparent | Feb-Jun | --- | --- | |
| 1250: Patter----- | B | Rare | --- | --- | >6.0 | --- | --- | --- | --- | |
| Heist----- | B | None | --- | --- | >6.0 | --- | --- | --- | --- | |
| 1260: Hollace----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- | |
| Gabbvally----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- | |
| 1261: Hollace----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- | |
| Rochpah----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- | |
| Wyva----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- | |
| 1262: Hollace----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- | |
| Winklo----- | 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 |
| 1262 (con.): Wyva----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1270: Laross----- | B | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Rock Outcrop. | | | | | | | | | |
| 1300: Mormount----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Arizo----- | A | Occasional | --- | Mar-Sep | >6.0 | --- | --- | --- | --- |
| 1302: Mormount----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1303: Mormount----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Canutio----- | B | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1340: Aymate----- | C | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Canutio----- | B | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1341: Aymate----- | C | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1342: Aymate----- | C | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Mormount----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Arizo----- | A | Occasional | --- | Mar-Sep | >6.0 | --- | --- | --- | --- |
| 1350: Bard----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1360: Canutio----- | B | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Arizo----- | A | Occasional | --- | Mar-Sep | >6.0 | --- | --- | --- | --- |
| 1370: Mormon Mesa----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Mormon Mesa----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1371: Mormon Mesa----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Naye----- | C | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Dalian----- | B | Rare | --- | --- | >6.0 | --- | --- | --- | --- |
| 1372: Mormon Mesa----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Tonopah----- | A | Rare | --- | --- | >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 |
| 1372 (con.): Arada----- | B | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1380: Bracken----- | B | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1390: Shankba----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Chinkle----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Kanackey----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1400: Cave----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Canutio----- | B | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1401: Cave----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Arizo----- | A | Occasional | --- | Mar-Sep | >6.0 | --- | --- | --- | --- |
| 1403: Cave----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Tencee----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1404: Cave----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Mormount----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Canutio----- | B | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1405: Cave----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Zeheme----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1406: Cave----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1420: Kanackey----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Rock Outcrop. | | | | | | | | | |
| 1430: Typic Torriorthents-- | C | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Badland----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1460: Pintwater----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Rochpah----- | 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 |
| 1470: Tybo----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Keefa----- | B | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Koyen----- | B | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1471: Tybo----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Koyen----- | B | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1472: Tybo----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Geer----- | B | Rare | --- | --- | >6.0 | --- | --- | --- | --- |
| 1473: Tybo----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Leo----- | A | Rare | --- | --- | >6.0 | --- | --- | --- | --- |
| 1474: Tybo----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Delamar----- | B | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1490: Keefa----- | B | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Penoyer----- | B | Rare | --- | --- | >6.0 | --- | --- | --- | --- |
| 1491: Keefa----- | B | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Penoyer----- | B | Rare | --- | --- | >6.0 | --- | --- | --- | --- |
| 1510: Koyen----- | B | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1512: Koyen----- | B | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Penoyer----- | B | Rare | --- | --- | >6.0 | --- | --- | --- | --- |
| 1520: Geer----- | B | Rare | --- | --- | >6.0 | --- | --- | --- | --- |
| Penoyer----- | B | Rare | --- | --- | >6.0 | --- | --- | --- | --- |
| 1530: Delamar----- | B | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Leo----- | A | Rare | --- | --- | >6.0 | --- | --- | --- | --- |
| 1531: Delamar----- | B | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Veet----- | B | Rare | --- | --- | >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 |
| 1533: Delamar----- | B | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Tybo----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Koyen----- | B | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1534: Delamar----- | B | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Koyen----- | B | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1535: Delamar----- | B | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1540: Oleman----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Leo----- | A | Rare | --- | --- | >6.0 | --- | --- | --- | --- |
| 1541: Oleman----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Cave----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1542: Oleman----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1550: Pahroc----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Leo----- | A | Rare | --- | --- | >6.0 | --- | --- | --- | --- |
| 1551: Pahroc----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1570: Kyler----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Eaglepass----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Rock Outcrop. | | | | | | | | | |
| 1571: Kyler----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Logring----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Rock Outcrop. | | | | | | | | | |
| 1590: Winklo----- | C | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Wyva----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1591: Winklo----- | C | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Rochpah----- | 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 |
| 1591 (con.): Rock Outcrop. | | | | | | | | | |
| 1650: Handpah----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Veet----- | B | Rare | --- | --- | >6.0 | --- | --- | --- | --- |
| 1660: Dewrust----- | C | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Veet----- | B | Rare | --- | --- | >6.0 | --- | --- | --- | --- |
| 1680: Rochpah----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Hollace----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Gabbvally----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1681: Rochpah----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Veet----- | B | Rare | --- | --- | >6.0 | --- | --- | --- | --- |
| 1683: Rochpah----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Rock Outcrop. | | | | | | | | | |
| Leo----- | A | Rare | --- | --- | >6.0 | --- | --- | --- | --- |
| 1690: Jolan----- | C | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Geer----- | B | Rare | --- | --- | >6.0 | --- | --- | --- | --- |
| 1700: Sieroclipf----- | C | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Veet----- | B | Rare | --- | --- | >6.0 | --- | --- | --- | --- |
| 1710: Cliffdown----- | B | Rare | --- | --- | >6.0 | --- | --- | --- | --- |
| 1730: Cath----- | C | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Veet----- | B | Rare | --- | --- | >6.0 | --- | --- | --- | --- |
| 1740: Slaw----- | C | Occasional | Brief | Dec-May | >6.0 | --- | --- | --- | --- |
| Playas----- | D | Rare | --- | --- | -1.0-1.0 | Apparent | Feb-Sep | Long | 1.0 |
| 1741: Slaw----- | C | Occasional | Brief | Dec-May | >6.0 | --- | --- | --- | --- |
| 1750: Chanybuck----- | 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 |
| 1850: Rapado----- | C | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Oleman----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1851: Rapado----- | C | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Veet----- | B | Rare | --- | --- | >6.0 | --- | --- | --- | --- |
| 1870: Faleria----- | B | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Laross----- | B | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1880: Tejabe----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Pintwater----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Rock Outcrop. | | | | | | | | | |
| 1890: Welring----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Rock Outcrop. | | | | | | | | | |
| 1900: Glendale----- | B | Occasional | --- | Jun-Sep | >6.0 | --- | --- | --- | --- |
| Bluepoint----- | A | Rare | --- | --- | >6.0 | --- | --- | --- | --- |
| 1910: Land----- | C | Occasional | --- | Jun-Sep | 3.0-3.5 | Apparent | Jan-Dec | --- | --- |
| 1920: Motoqua----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Rock Outcrop. | | | | | | | | | |
| 1921: Motoqua----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Thunderbird----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1941: Slidytn----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Capsus----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1950: Ursine----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Lomoine----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| Ursine----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |
| 1951: Ursine----- | D | None | --- | --- | >6.0 | --- | --- | --- | --- |

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 | | | |
| 1000: Weiser----- | >60 | --- | --- | --- | --- | --- | None | High | Low |
| Tencee----- | >60 | --- | 7-20 | Thick | --- | --- | Low | High | Low |
| Arizo----- | >60 | --- | --- | --- | --- | --- | Low | High | Low |
| 1001: Weiser----- | >60 | --- | --- | --- | --- | --- | None | High | Low |
| Tencee----- | >60 | --- | 7-20 | Thick | --- | --- | Low | High | Low |
| 1010: Tencee----- | >60 | --- | 7-20 | Thick | --- | --- | Low | High | Low |
| Weiser----- | >60 | --- | --- | --- | --- | --- | None | High | Low |
| 1016: Tencee----- | >60 | --- | 7-20 | Thick | --- | --- | Low | High | Low |
| Tencee----- | >60 | --- | 7-20 | Thick | --- | --- | Low | High | Low |
| 1017: Tencee----- | >60 | --- | 7-20 | Thick | --- | --- | Low | High | Low |
| Bard----- | >60 | --- | 14-20 | Thick | --- | --- | None | High | Low |
| Arizo----- | >60 | --- | --- | --- | --- | --- | Low | High | Low |
| 1020: Kurstan----- | >60 | --- | --- | --- | --- | --- | Low | High | Low |
| Tencee----- | >60 | --- | 7-20 | Thick | --- | --- | Low | High | Low |
| 1021: Kurstan----- | >60 | --- | --- | --- | --- | --- | Low | High | Low |
| Knob Hill----- | >60 | --- | --- | --- | --- | --- | None | High | Low |
| 1030: Arizo----- | >60 | --- | --- | --- | --- | --- | Low | High | Low |
| Arizo----- | >60 | --- | --- | --- | --- | --- | --- | High | Low |
| Bluepoint----- | >60 | --- | --- | --- | --- | --- | None | High | Moderate |
| 1031: Arizo----- | >60 | --- | --- | --- | --- | --- | --- | High | Low |
| Arizo----- | >60 | --- | --- | --- | --- | --- | Low | High | Low |
| 1040: Akela----- | 10-20 | Hard | --- | --- | --- | --- | None | High | Low |
| Rock Outcrop. | | | | | | | | | |
| 1041: Akela----- | 10-20 | Hard | --- | --- | --- | --- | None | High | Low |
| Rochpah----- | 14-20 | 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.): Rock Outcrop. | | | | | | | | | |
| 1052: Knob Hill----- | >60 | --- | --- | --- | --- | --- | None | High | Low |
| Arizo----- | >60 | --- | --- | --- | --- | --- | --- | High | Low |
| 1060: St. Thomas----- | 4-20 | Hard | --- | --- | --- | --- | Low | High | Low |
| Chinkle----- | 8-14 | Soft | --- | --- | --- | --- | Low | High | Low |
| Rock Outcrop. | | | | | | | | | |
| 1061: St. Thomas----- | 4-20 | Hard | --- | --- | --- | --- | None | High | Low |
| Zeheme----- | 7-14 | Hard | --- | --- | --- | --- | Low | High | Low |
| Rock Outcrop. | | | | | | | | | |
| 1062: Zeheme----- | 7-14 | Hard | --- | --- | --- | --- | Low | High | Low |
| Chinkle----- | 8-14 | Soft | --- | --- | --- | --- | Low | High | Low |
| Shankba----- | 14-20 | Soft | --- | --- | --- | --- | Low | High | Low |
| 1063: Zeheme----- | 7-14 | Hard | --- | --- | --- | --- | Low | High | Low |
| Kanesprings---- | 18-30 | Hard | 14-20 | Thick | --- | --- | Low | High | Low |
| Rock Outcrop. | | | | | | | | | |
| 1064: Zeheme----- | 7-14 | Hard | --- | --- | --- | --- | Low | High | Low |
| Kanackey----- | 8-14 | Hard | --- | --- | --- | --- | Low | High | Low |
| Rock Outcrop. | | | | | | | | | |
| 1065: Zeheme----- | 7-14 | Hard | --- | --- | --- | --- | Low | High | Low |
| Rock Outcrop. | | | | | | | | | |
| 1066: Zeheme----- | 7-14 | Hard | --- | --- | --- | --- | Low | High | Low |
| Boxspring----- | 14-20 | Hard | --- | --- | --- | --- | Low | High | Low |
| Rock Outcrop. | | | | | | | | | |
| 1070: Bellehelen----- | 7-14 | Hard | --- | --- | --- | --- | Moderate | Moderate | Low |
| Brier----- | 14-20 | Hard | --- | --- | --- | --- | Moderate | Moderate | 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 | | | |
| 1080: Kaspal----- | >60 | --- | 40-60 | Thick | --- | --- | Low | High | Low |
| Canutio----- | >60 | --- | --- | --- | --- | --- | None | High | Low |
| 1090: Logring----- | 7-14 | Hard | --- | --- | --- | --- | Moderate | High | Low |
| Rock Outcrop. | | | | | | | | | |
| 1091: Logring----- | 7-14 | Hard | --- | --- | --- | --- | Moderate | High | Low |
| Eaglepass----- | 4-6 | Hard | --- | --- | --- | --- | Moderate | High | Low |
| Rock Outcrop. | | | | | | | | | |
| 1100: Geta----- | >60 | --- | --- | --- | --- | --- | Low | High | Low |
| Geta----- | >60 | --- | --- | --- | --- | --- | Low | High | Low |
| Arizo----- | >60 | --- | --- | --- | --- | --- | Low | High | Low |
| 1101: Geta----- | >60 | --- | --- | --- | --- | --- | Low | High | Low |
| 1102: Geta----- | >60 | --- | --- | --- | --- | --- | Low | High | Low |
| Bluepoint----- | >60 | --- | --- | --- | --- | --- | None | High | Moderate |
| Arizo----- | >60 | --- | --- | --- | --- | --- | Low | High | Low |
| 1110: Kanesprings---- | 18-30 | Hard | 14-20 | Thick | --- | --- | Low | High | Low |
| Kanackey----- | 8-14 | Hard | --- | --- | --- | --- | Low | High | Low |
| Rock Outcrop. | | | | | | | | | |
| 1113: Kanesprings---- | 18-30 | Hard | 14-20 | Thick | --- | --- | Low | High | Low |
| Gabbvally----- | 6-14 | Hard | --- | --- | --- | --- | Moderate | Moderate | Low |
| 1160: Silent----- | >60 | --- | 10-20 | Thick | --- | --- | Low | High | Low |
| Koyen----- | >60 | --- | --- | --- | --- | --- | Low | High | Low |
| 1170: Alko----- | >60 | --- | 10-20 | Thick | --- | --- | None | High | Low |
| Alko----- | >60 | --- | 10-20 | Thick | --- | --- | None | High | Low |
| Arizo----- | >60 | --- | --- | --- | --- | --- | --- | High | Low |
| 1172: Alko----- | >60 | --- | 10-20 | Thick | --- | --- | None | 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 | | | |
| 1172 (con.): Geta----- | >60 | --- | --- | --- | --- | --- | Low | High | Low |
| 1180: Acoma----- | >60 | --- | --- | --- | --- | --- | Low | High | Low |
| Decan----- | >60 | --- | 20-40 | Thick | --- | --- | Low | High | Low |
| Cath----- | >60 | --- | --- | --- | --- | --- | Moderate | High | Low |
| 1190: Minu----- | >60 | --- | 12-18 | Thin | --- | --- | Moderate | High | Moderate |
| Shroe----- | >60 | --- | --- | --- | --- | --- | Moderate | Moderate | Low |
| Acoma----- | >60 | --- | --- | --- | --- | --- | Low | High | Low |
| 1210: Brier----- | 14-20 | Hard | --- | --- | --- | --- | Moderate | Moderate | Low |
| Acoma----- | >60 | --- | --- | --- | --- | --- | Low | High | Low |
| Bellehelen---- | 7-14 | Hard | --- | --- | --- | --- | Moderate | Moderate | Low |
| 1211: Brier----- | 14-20 | Hard | --- | --- | --- | --- | Moderate | Moderate | Low |
| Rock Outcrop. | | | | | | | | | |
| 1220: Lien----- | >60 | --- | 6-14 | Thick | --- | --- | Moderate | High | Low |
| Veet----- | >60 | --- | --- | --- | --- | --- | Moderate | High | Low |
| 1230: Pahranagat---- | >60 | --- | --- | --- | --- | --- | High | High | Moderate |
| Pahranagat---- | >60 | --- | --- | --- | --- | --- | High | High | High |
| 1250: Patter----- | >60 | --- | --- | --- | --- | --- | Moderate | High | Low |
| Heist----- | >60 | --- | --- | --- | --- | --- | Moderate | High | Low |
| 1260: Hollace----- | 18-25 | Hard | 14-20 | Thick | --- | --- | Low | High | Low |
| Gabbvally----- | 6-14 | Hard | --- | --- | --- | --- | Moderate | Moderate | Low |
| 1261: Hollace----- | 18-25 | Hard | 14-20 | Thick | --- | --- | Low | High | Low |
| Rochpah----- | 14-20 | Hard | --- | --- | --- | --- | Low | High | Low |
| Wyva----- | 14-20 | Hard | --- | --- | --- | --- | Low | High | Low |
| 1262: Hollace----- | 18-25 | Hard | 14-20 | Thick | --- | --- | Low | High | Low |
| Winklo----- | 20-40 | 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 | | | |
| 1262 (con.): Wyva----- | 14-20 | Hard | --- | --- | --- | --- | Low | High | Low |
| 1270: Laross----- | 40-60 | Hard | --- | --- | --- | --- | Moderate | Moderate | Low |
| Rock Outcrop. | | | | | | | | | |
| 1300: Mormount----- | >60 | --- | 14-20 | Thick | --- | --- | Low | High | Low |
| Arizo----- | >60 | --- | --- | --- | --- | --- | Low | High | Low |
| 1302: Mormount----- | >60 | --- | 14-20 | Thick | --- | --- | Low | High | Low |
| 1303: Mormount----- | >60 | --- | 14-20 | Thick | --- | --- | Low | High | Low |
| Canutio----- | >60 | --- | --- | --- | --- | --- | None | High | Low |
| 1340: Aymate----- | >60 | --- | 20-40 | Thick | --- | --- | Low | High | Low |
| Canutio----- | >60 | --- | --- | --- | --- | --- | None | High | Low |
| 1341: Aymate----- | >60 | --- | 20-40 | Thick | --- | --- | Low | High | Low |
| 1342: Aymate----- | >60 | --- | 20-40 | Thick | --- | --- | Low | High | Low |
| Mormount----- | >60 | --- | 14-20 | Thick | --- | --- | Low | High | Low |
| Arizo----- | >60 | --- | --- | --- | --- | --- | Low | High | Low |
| 1350: Bard----- | >60 | --- | 14-20 | Thick | --- | --- | None | High | Low |
| 1360: Canutio----- | >60 | --- | --- | --- | --- | --- | None | High | Low |
| Arizo----- | >60 | --- | --- | --- | --- | --- | Low | High | Low |
| 1370: Mormon Mesa----- | >60 | --- | 10-20 | Thick | --- | --- | --- | High | Low |
| Mormon Mesa----- | >60 | --- | 10-20 | Thick | --- | --- | --- | High | Low |
| 1371: Mormon Mesa----- | >60 | --- | 10-20 | Thick | --- | --- | --- | High | Low |
| Naye----- | >60 | --- | 20-40 | Thick | --- | --- | None | High | Low |
| Dalian----- | >60 | --- | --- | --- | --- | --- | None | High | Low |
| 1372: Mormon Mesa----- | >60 | --- | 10-20 | Thick | --- | --- | --- | High | Low |
| Tonopah----- | >60 | --- | --- | --- | --- | --- | None | 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 | | | |
| 1372 (con.): Arada----- | >60 | --- | --- | --- | --- | --- | --- | High | Low |
| 1380: Bracken----- | 40-60 | Soft | --- | --- | --- | --- | None | High | High |
| 1390: Shankba----- | 14-20 | Soft | --- | --- | --- | --- | Low | High | Low |
| Chinkle----- | 8-14 | Soft | --- | --- | --- | --- | Low | High | Low |
| Kanackey----- | 8-14 | Hard | --- | --- | --- | --- | Low | High | Low |
| 1400: Cave----- | >60 | --- | 4-20 | Thick | --- | --- | None | High | Low |
| Canutio----- | >60 | --- | --- | --- | --- | --- | None | High | Low |
| 1401: Cave----- | >60 | --- | 4-20 | Thick | --- | --- | None | High | Low |
| Arizo----- | >60 | --- | --- | --- | --- | --- | Low | High | Low |
| 1403: Cave----- | >60 | --- | 4-20 | Thick | --- | --- | None | High | Low |
| Tencee----- | >60 | --- | 7-20 | Thick | --- | --- | Low | High | Low |
| 1404: Cave----- | >60 | --- | 4-20 | Thick | --- | --- | None | High | Low |
| Mormount----- | >60 | --- | 14-20 | Thick | --- | --- | Low | High | Low |
| Canutio----- | >60 | --- | --- | --- | --- | --- | None | High | Low |
| 1405: Cave----- | >60 | --- | 4-20 | Thick | --- | --- | None | High | Low |
| Zeheme----- | 7-14 | Hard | --- | --- | --- | --- | Low | High | Low |
| 1406: Cave----- | >60 | --- | 4-20 | Thick | --- | --- | None | High | Low |
| 1420: Kanackey----- | 8-14 | Hard | --- | --- | --- | --- | Low | High | Low |
| Rock Outcrop. | | | | | | | | | |
| 1430: Typic Torriorthents-- | >60 | --- | --- | --- | --- | --- | Low | High | High |
| Badland----- | 1-4 | Soft | --- | --- | --- | --- | None | High | High |
| 1460: Pintwater----- | 10-20 | Hard | --- | --- | --- | --- | Low | High | Low |
| Rochpah----- | 14-20 | Hard | --- | --- | --- | --- | Low | High | Low |
| 1470: Tybo----- | >60 | --- | 8-20 | Thick | --- | --- | 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 | | | |
| 1470 (con.): Keefa----- | >60 | --- | --- | --- | --- | --- | Low | High | Low |
| Koyen----- | >60 | --- | --- | --- | --- | --- | Low | High | Low |
| 1471: Tybo----- | >60 | --- | 8-20 | Thick | --- | --- | Low | High | Low |
| Koyen----- | >60 | --- | --- | --- | --- | --- | Low | High | Low |
| 1472: Tybo----- | >60 | --- | 8-20 | Thick | --- | --- | Low | High | Low |
| Geer----- | >60 | --- | --- | --- | --- | --- | Low | High | Low |
| 1473: Tybo----- | >60 | --- | 8-20 | Thick | --- | --- | Low | High | Low |
| Leo----- | >60 | --- | --- | --- | --- | --- | Low | High | Low |
| 1474: Tybo----- | >60 | --- | 8-20 | Thick | --- | --- | Low | High | Low |
| Delamar----- | >60 | --- | 20-40 | Thick | --- | --- | Low | High | Low |
| 1490: Keefa----- | >60 | --- | --- | --- | --- | --- | Low | High | Low |
| Penoyer----- | >60 | --- | --- | --- | --- | --- | Moderate | High | Low |
| 1491: Keefa----- | >60 | --- | --- | --- | --- | --- | Low | High | Low |
| Penoyer----- | >60 | --- | --- | --- | --- | --- | Moderate | High | Low |
| 1510: Koyen----- | >60 | --- | --- | --- | --- | --- | Low | High | Low |
| 1512: Koyen----- | >60 | --- | --- | --- | --- | --- | Low | High | Low |
| Penoyer----- | >60 | --- | --- | --- | --- | --- | Moderate | High | Low |
| 1520: Geer----- | >60 | --- | --- | --- | --- | --- | Low | High | Low |
| Penoyer----- | >60 | --- | --- | --- | --- | --- | Moderate | High | Low |
| 1530: Delamar----- | >60 | --- | 20-40 | Thick | --- | --- | Low | High | Low |
| Leo----- | >60 | --- | --- | --- | --- | --- | Low | High | Low |
| 1531: Delamar----- | >60 | --- | 20-40 | Thick | --- | --- | Low | High | Low |
| Veet----- | >60 | --- | --- | --- | --- | --- | Moderate | High | Low |
| 1533: Delamar----- | >60 | --- | 20-40 | Thick | --- | --- | 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 | | | |
| 1761: Wyva----- Rock Outcrop. | 14-20 | Hard | --- | --- | --- | --- | Low | High | Low |
| 1762: Wyva----- Slidymtn----- | 14-20 | Hard | --- | --- | --- | --- | Low | High | Low |
| | 14-20 | Hard | --- | --- | --- | --- | Moderate | High | Low |
| 1770: Veet----- Mosida----- | >60 | --- | --- | --- | --- | --- | Moderate | High | Low |
| | >60 | --- | --- | --- | --- | --- | Moderate | High | Moderate |
| 1810: Boxspring----- Rock Outcrop. | 14-20 | Hard | --- | --- | --- | --- | Low | High | Low |
| 1811: Boxspring----- Theriot----- Rock Outcrop. | 14-20 | Hard | --- | --- | --- | --- | Low | High | Low |
| | 4-20 | Hard | --- | --- | --- | --- | Low | High | Low |
| 1821: Turba----- Acti----- | 14-20 | Soft | --- | --- | --- | --- | Moderate | High | Low |
| | 14-20 | Hard | --- | --- | --- | --- | Low | High | Low |
| 1830: Zaqua----- Winklo----- | 14-20 | Soft | --- | --- | --- | --- | Low | High | Low |
| | 20-40 | Soft | --- | --- | --- | --- | Low | High | Low |
| 1831: Zaqua----- Boxspring----- | 14-20 | Soft | --- | --- | --- | --- | Low | High | Low |
| | 14-20 | Hard | --- | --- | --- | --- | Low | High | Low |
| 1832: Zaqua----- Winklo----- Kanesprings---- | 14-20 | Soft | --- | --- | --- | --- | Low | High | Low |
| | 20-40 | Soft | --- | --- | --- | --- | Low | High | Low |
| | 18-30 | Hard | 14-20 | Thick | --- | --- | Low | High | Low |
| 1833: Zaqua----- Rock Outcrop. | 14-20 | Soft | --- | --- | --- | --- | Low | High | Low |
| 1850: Rapado----- Oleman----- | >60 | --- | 20-40 | Thick | --- | --- | Low | High | Low |
| | >60 | --- | 14-20 | Thin | --- | --- | Moderate | High | Low |
| 1851: Rapado----- | >60 | --- | 20-40 | Thick | --- | --- | 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 | | | |
| 1851 (con.): Veet----- | >60 | --- | --- | --- | --- | --- | Moderate | High | Low |
| 1870: Faleria----- | 40-60 | Hard | --- | --- | --- | --- | Moderate | Moderate | Low |
| Laross----- | 40-60 | Hard | --- | --- | --- | --- | Moderate | Moderate | Low |
| 1880: Tejabe----- | 4-10 | Hard | --- | --- | --- | --- | Moderate | Moderate | Low |
| Pintwater----- | 10-20 | Hard | --- | --- | --- | --- | Low | High | Low |
| Rock Outcrop. | | | | | | | | | |
| 1890: Welring----- | 10-20 | Hard | --- | --- | --- | --- | Moderate | High | Low |
| Rock Outcrop. | | | | | | | | | |
| 1900: Glendale----- | >60 | --- | --- | --- | --- | --- | None | High | High |
| Bluepoint----- | >60 | --- | --- | --- | --- | --- | None | High | Moderate |
| 1910: Land----- | >60 | --- | --- | --- | --- | --- | None | High | High |
| 1920: Motoqua----- | 8-20 | Hard | --- | --- | --- | --- | Moderate | Moderate | Low |
| Rock Outcrop. | | | | | | | | | |
| 1921: Motoqua----- | 8-20 | Hard | --- | --- | --- | --- | Moderate | Moderate | Low |
| Thunderbird----- | 20-40 | Hard | --- | --- | --- | --- | Low | High | Low |
| 1941: Slidymtn----- | 14-20 | Hard | --- | --- | --- | --- | Moderate | High | Low |
| Capsus----- | 14-20 | Hard | --- | --- | --- | --- | Low | High | Low |
| 1950: Ursine----- | >60 | --- | 14-20 | Thick | --- | --- | Moderate | High | Moderate |
| Lomoine----- | 4-14 | Hard | --- | --- | --- | --- | Moderate | High | Low |
| Ursine----- | >60 | --- | 14-20 | Thick | --- | --- | Moderate | High | Moderate |
| 1951: Ursine----- | >60 | --- | 14-20 | Thick | --- | --- | Moderate | High | Moderate |
| Ursine----- | >60 | --- | 14-20 | Thick | --- | --- | Moderate | High | Moderate |
| 1952: Ursine----- | >60 | --- | 14-20 | Thick | --- | --- | Moderate | High | Moderate |
| Ursine----- | >60 | --- | 14-20 | Thick | --- | --- | Moderate | High | Moderate |
| Geer----- | >60 | --- | --- | --- | --- | --- | Low | High | Low |

TABLE 20.--CLASSIFICATION OF THE SOILS

| Soil name | Family or higher taxonomic class |
|----------------------|--|
| Acoma----- | Xerollic Paleargids, fine, montmorillonitic, mesic |
| Acti----- | Lithic Argiustolls, clayey-skeletal, montmorillonitic, mesic |
| Akela----- | Lithic Torriorthents, loamy-skeletal, mixed (calcareous), thermic |
| Alko----- | Typic Durorthids, loamy, mixed, thermic, shallow |
| Arada----- | Typic Calciorthids, sandy, mixed, thermic |
| Arizo----- | Typic Torriorthents, sandy-skeletal, mixed, thermic |
| Aymate----- | Petrocalcic Ustalfic Paleargids, fine-loamy, mixed, thermic |
| Bard----- | Typic Paleorthids, loamy, carbonatic, thermic, shallow |
| Bellehelen----- | Lithic Argixerolls, loamy-skeletal, mixed, mesic |
| Bluepoint----- | Typic Torripsamments, mixed, thermic |
| Boxspring----- | Lithic Ustic Torriorthents, loamy-skeletal, carbonatic, mesic |
| Bracken----- | Typic Gypsiorthids, coarse-loamy, gypsic, thermic |
| Brier----- | Lithic Argixerolls, loamy-skeletal, mixed, mesic |
| Canutio----- | Typic Torriorthents, loamy-skeletal, mixed (calcareous), thermic |
| Capsus----- | Lithic Argiustolls, clayey, montmorillonitic, mesic |
| Cath----- | Durixerollic Haplargids, fine-loamy, mixed, mesic |
| Cave----- | Typic Paleorthids, loamy, mixed, thermic, shallow |
| Chanybuck----- | Lithic Haploxerolls, ashy-skeletal, frigid |
| Chinkle----- | Typic Torriorthents, loamy, mixed (calcareous), thermic, shallow |
| Cliffdown----- | Typic Torriorthents, loamy-skeletal, mixed (calcareous), mesic |
| Crystal Springs----- | Typic Paleorthids, loamy, carbonatic, mesic, shallow |
| Dalian----- | Typic Torriorthents, loamy-skeletal, carbonatic, thermic |
| Decan----- | Aridic Durixerolls, fine, montmorillonitic, mesic |
| Delamar----- | Typic Durargids, fine-loamy, mixed, mesic |
| Dewrust----- | Xerollic Durargids, fine, montmorillonitic, mesic |
| Eaglepass----- | Lithic Xeric Torriorthents, loamy-skeletal, carbonatic, mesic |
| Faleria----- | Vitrandic Eutroboralfs, ashy-skeletal |
| Gabbvally----- | Lithic Xerollic Haplargids, loamy-skeletal, mixed, mesic |
| Geer----- | Typic Torriorthents, coarse-loamy, mixed (calcareous), mesic |
| Geta----- | Ustochreptic Camborthids, coarse-loamy, mixed, thermic |
| Glendale----- | Typic Torrifluvents, fine-silty, mixed (calcareous), thermic |
| Handpah----- | Xerollic Durargids, loamy, mixed, mesic, shallow |
| Heist----- | Xeric Torriorthents, coarse-loamy, mixed (calcareous), mesic |
| Hollace----- | Petrocalcic Ustollic Paleargids, loamy-skeletal, mixed, mesic, shallow |
| Jolan----- | Typic Durorthids, coarse-loamy, mixed, mesic |
| Kanackey----- | Lithic Haplargids, clayey-skeletal, montmorillonitic, thermic |
| Kanesprings----- | Typic Durargids, loamy, mixed, thermic, shallow |
| Kaspal----- | Typic Haplargids, fine, montmorillonitic, thermic |
| Keefa----- | Duric Camborthids, coarse-loamy, mixed, mesic |
| Knob Hill----- | Typic Calciorthids, sandy, mixed, thermic |
| Koyen----- | Typic Camborthids, coarse-loamy, mixed, mesic |
| Kurstan----- | Duric Calciorthids, coarse-loamy, mixed, thermic |
| Kyler----- | Lithic Xeric Torriorthents, loamy-skeletal, carbonatic, mesic |
| Land----- | Typic Salorthids, fine-silty, mixed, thermic |
| Laross----- | Vitrandic Haplustolls, ashy-skeletal, mesic |
| Leo----- | Typic Torriorthents, sandy-skeletal, mixed, mesic |
| Lien----- | Xerollic Durorthids, loamy-skeletal, mixed, mesic, shallow |
| Logring----- | Lithic Xeric Torriorthents, loamy-skeletal, carbonatic, mesic |
| Lomoine----- | Lithic Xeric Torriorthents, loamy-skeletal, mixed (calcareous), mesic |
| Longjim----- | Typic Durorthids, loamy-skeletal, mixed, thermic, shallow |
| Minu----- | Haploxerollic Durargids, loamy, mixed, mesic, shallow |
| Mormon Mesa----- | Typic Paleorthids, loamy, carbonatic, thermic, shallow |
| Mormount----- | Petrocalcic Ustollic Paleargids, loamy, mixed, thermic, shallow |
| Mosida----- | Torrifluventic Haploxerolls, coarse-loamy, mixed, mesic |
| Motoqua----- | Lithic Argiustolls, loamy-skeletal, mixed, mesic |
| Naye----- | Typic Paleorthids, loamy-skeletal, carbonatic, thermic |
| Oleman----- | Xerollic Durargids, loamy-skeletal, mixed, mesic, shallow |
| Pahrnagat----- | Fluvaquentic Haplaquolls, fine-silty, mixed (calcareous), mesic |

TABLE 20.--CLASSIFICATION OF THE SOILS--Continued

| Soil name | Family or higher taxonomic class |
|--------------------------|---|
| Pahroc----- | Typic Durorthids, loamy-skeletal, mixed, mesic, shallow |
| Patter----- | Durixerollic Camborthids, coarse-loamy, mixed, mesic |
| Penoyer----- | Typic Torriorthents, coarse-silty, mixed (calcareous), mesic |
| Pintwater----- | Lithic Torriorthents, loamy-skeletal, mixed (calcareous), mesic |
| Rapado----- | Petrocalcic Ustollic Paleargids, loamy-skeletal, mixed, mesic |
| Rochpah----- | Lithic Calciorthids, loamy-skeletal, mixed, mesic |
| Shankba----- | Typic Torriorthents, loamy-skeletal, mixed (calcareous), thermic, shallow |
| Shroe----- | Aridic Argixerolls, loamy-skeletal, mixed, mesic |
| Sieroclipf----- | Xerollic Paleorthids, loamy-skeletal, carbonatic, mesic |
| Silent----- | Typic Durargids, loamy, mixed, mesic, shallow |
| Slaw----- | Typic Torrifluvents, fine-silty, mixed (calcareous), mesic |
| Slidyatn----- | Lithic Argiustolls, loamy-skeletal, mixed, mesic |
| St. Thomas----- | Lithic Torriorthents, loamy-skeletal, carbonatic, thermic |
| Stewval----- | Lithic Xerollic Haplargids, loamy-skeletal, mixed, mesic |
| Tejabe----- | Lithic Xeric Torriorthents, loamy-skeletal, mixed, nonacid, mesic |
| Tencee----- | Typic Paleorthids, loamy-skeletal, carbonatic, thermic, shallow |
| Theriot----- | Lithic Torriorthents, loamy-skeletal, carbonatic, mesic |
| Thunderbird----- | Aridic Argiustolls, fine, montmorillonitic, mesic |
| Tonopah----- | Typic Calciorthids, sandy-skeletal, mixed, thermic |
| Turba----- | Typic Argiustolls, loamy-skeletal, mixed, mesic, shallow |
| Tybo----- | Typic Durorthids, loamy, mixed, mesic, shallow |
| Typic Torriorthents----- | Typic Torriorthents |
| Ursine----- | Xerollic Durorthids, loamy-skeletal, carbonatic, mesic, shallow |
| Veet----- | Xerollic Camborthids, loamy-skeletal, mixed, mesic |
| Weiser----- | Typic Calciorthids, loamy-skeletal, carbonatic, thermic |
| Weisring----- | Lithic Ustic Torriorthents, loamy-skeletal, carbonatic, mesic |
| Winklo----- | Ustollic Haplargids, fine, montmorillonitic, mesic |
| Wyva----- | Lithic Ustollic Haplargids, loamy-skeletal, mixed, mesic |
| Zaqua----- | Ustollic Haplargids, loamy-skeletal, mixed, mesic, shallow |
| Zehame----- | Lithic Calciorthids, loamy-skeletal, carbonatic, thermic |

RANGELAND PLANTS AND WOODLAND UNDERSTORY



1000--WEISER-TENCEE-ARIZO 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-- | | | | | |
| | | WEISER | TENCEE | ARIZO | Inclusion 1 | Inclusion 2 | Inclusion 3 |
| big galleta | HIRI | --- | --- | 5-10 | --- | T-8 | --- |
| bush muhly | MUPO2 | --- | --- | 1-5 | --- | --- | --- |
| Nevada ephedra | EPNE | --- | --- | 1-5 | --- | T-5 | --- |
| baccharis | BACCH | --- | --- | 5-15 | --- | --- | --- |
| bursage | FRANS* | --- | --- | 5-20 | --- | --- | --- |
| creosotebush | LATR2 | 65-80 | 65-80 | 5-20 | --- | 10-25 | --- |
| erigonum | ERIOG | --- | --- | 1-5 | --- | --- | --- |
| range ratany | KRPA | --- | --- | --- | --- | 2-5 | --- |
| ratany | KRAME | T-5 | T-5 | --- | --- | --- | --- |
| white burrobrush | HYSA | --- | --- | 2-5 | --- | --- | --- |
| white bursage | AMDU2 | 5-25 | 5-25 | --- | --- | 25-50 | --- |
| Range site number | | 030XB019NV | 030XB019NV | 030XB028NV | none | 030XB005NV | none |
| Potential production (lb/acre): | | | | | | | |
| Favorable years | | 225 | 225 | 500 | | 500 | |
| Normal years | | 150 | 150 | 350 | | 300 | |
| Unfavorable years | | 100 | 100 | 200 | | 200 | |

1001--WEISER-TENCEE 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-- | | | | |
| | | WEISER | TENCEE | Inclusion 1 | Inclusion 2 | Inclusion 3 |
| big galleta | HIRI | --- | --- | T-8 | 5-10 | --- |
| bush muhly | MUPO2 | --- | --- | --- | 1-5 | --- |
| Nevada ephedra | EPNE | --- | --- | T-5 | 1-5 | --- |
| baccharis | BACCH | --- | --- | --- | 5-15 | --- |
| bursage | FRANS* | --- | --- | --- | 5-20 | --- |
| creosotebush | LATR2 | 65-80 | 65-80 | 10-25 | 5-20 | --- |
| erigonum | ERIOG | --- | --- | --- | 1-5 | --- |
| range ratany | KRPA | --- | --- | 2-5 | --- | --- |
| ratany | KRAME | T-5 | T-5 | --- | --- | --- |
| white burrobrush | HYSA | --- | --- | --- | 2-5 | --- |
| white bursage | AMDU2 | 5-25 | 5-25 | 25-50 | --- | --- |
| Range site number | | 030XB019NV | 030XB019NV | 030XB005NV | 030XB028NV | none |
| Potential production (lb/acre): | | | | | | |
| Favorable years | | 225 | 225 | 500 | 500 | |
| Normal years | | 150 | 150 | 300 | 350 | |
| Unfavorable years | | 100 | 100 | 200 | 200 | |

1010--TENCKE-WEISER 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-- | | | | |
| | | TENCKE | WEISER | Inclusion 1 | Inclusion 2 | Inclusion 3 |
| big galleta | HIRI | --- | --- | 5-10 | --- | --- |
| bush muhly | MUPO2 | --- | --- | 1-5 | --- | --- |
| Nevada ephedra | EPNE | --- | --- | 1-5 | --- | --- |
| baccharis | BACCH | --- | --- | 5-15 | --- | --- |
| bursage | FRANS+ | --- | --- | 5-20 | --- | --- |
| creosotebush | LATR2 | 65-80 | 65-80 | 5-20 | --- | --- |
| eriogonum | ERIOG | --- | --- | 1-5 | --- | --- |
| ratany | KRAME | T-5 | T-5 | --- | --- | --- |
| white burrobrush | HYSA | --- | --- | 2-5 | --- | --- |
| white bursage | AMDU2 | 5-25 | 5-25 | --- | --- | --- |
| Range site number | | 030XB019NV | 030XB019NV | 030XB028NV | none | none |
| Potential production (lb/acre): | | | | | | |
| Favorable years | | 225 | 225 | 500 | | |
| Normal years | | 150 | 150 | 350 | | |
| Unfavorable years | | 100 | 100 | 200 | | |

1016--TENCEE 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-- | | | | | |
| | | TENCEE | TENCEE | Inclusion 1 | Inclusion 2 | Inclusion 3 | Inclusion 4 |
| big galleta | HIRI | --- | --- | 5-10 | T-8 | --- | --- |
| bush muhly | MUPO2 | --- | --- | 1-5 | --- | --- | --- |
| fluffgrass | ERPUS | 2-5 | --- | --- | --- | 2-5 | --- |
| Nevada ephedra | EPNE | --- | --- | 1-5 | T-5 | --- | --- |
| baccharis | BACCE | --- | --- | 5-15 | --- | --- | --- |
| bursage | FRANS* | --- | --- | 5-20 | --- | --- | --- |
| creosotebush | LATR2 | 75-90 | 65-80 | 5-20 | 10-25 | 75-90 | --- |
| eriogonum | ERIOG | --- | --- | 1-5 | --- | --- | --- |
| range ratany | KRPA | --- | --- | --- | 2-5 | --- | --- |
| ratany | KRAME | --- | T-5 | --- | --- | --- | --- |
| white burrobrush | HYSA | --- | --- | 2-5 | --- | --- | --- |
| white bursage | AMDU2 | 2-15 | 5-25 | --- | 25-50 | 2-15 | --- |

| Range site number | 030XB017NV | 030XB019NV | 030XB028NV | 030XB005NV | 030XB017NV | none |
|---------------------------------|------------|------------|------------|------------|------------|------|
| Potential production (lb/acre): | | | 500 | 500 | 125 | |
| Favorable years | 125 | 225 | 350 | 300 | 75 | |
| Normal years | 75 | 150 | 200 | 200 | 25 | |
| Unfavorable years | 25 | 100 | | | | |

1017--TENCREE-BARD-ARIZO 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-- | | | | |
| | | TENCREE | BARD | ARIZO | Inclusion 1 | Inclusion 2 |
| big galleta | HIRI | --- | --- | 5-10 | T-8 | --- |
| bush muhly | MUPO2 | --- | --- | 1-5 | --- | --- |
| Nevada ephedra | EPNE | --- | --- | 1-5 | T-5 | --- |
| baccharis | BACCH | --- | --- | 5-15 | --- | --- |
| bursage | FRANS* | --- | --- | 5-20 | --- | --- |
| creosotebush | LATR2 | 65-80 | 65-80 | 5-20 | 10-25 | --- |
| erigonum | ERIOG | --- | --- | 1-5 | --- | --- |
| range ratany | KRPA | --- | --- | --- | 2-5 | --- |
| ratany | KRAME | T-5 | T-5 | --- | --- | --- |
| white burrobrush | HYSA | --- | --- | 2-5 | --- | --- |
| white bursage | AMDU2 | 5-25 | 5-25 | --- | 25-50 | --- |
| Range site number | | 030XB019NV | 030XB019NV | 030XB028NV | 030XB005NV | none |
| Potential production (lb/acre): | | | | | | |
| Favorable years | | 225 | 225 | 500 | 500 | |
| Normal years | | 150 | 150 | 350 | 300 | |
| Unfavorable years | | 100 | 100 | 200 | 200 | |

1020--KURSTAN-TENCEE 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-- | | | | |
| | | KURSTAN | TENCEE | Inclusion 1 | Inclusion 2 | Inclusion 3 |
| big galleta | HIRI | --- | --- | --- | T-8 | 5-10 |
| bush muhly | MUPO2 | --- | --- | --- | --- | 1-5 |
| fluffgrass | ERPUS | --- | --- | 2-5 | --- | --- |
| Nevada ephedra | EPNE | --- | --- | --- | T-5 | 1-5 |
| baccharis | BACCH | --- | --- | --- | --- | 5-15 |
| bursage | FRANS* | --- | --- | --- | --- | 5-20 |
| creosotebush | LATR2 | 65-80 | 65-80 | 75-90 | 10-25 | 5-20 |
| erigonum | ERIOG | --- | --- | --- | --- | 1-5 |
| range ratany | KRPA | --- | --- | --- | 2-5 | --- |
| ratany | KRAME | T-5 | T-5 | --- | --- | --- |
| white burrobrush | HYSA | --- | --- | --- | --- | 2-5 |
| white bursage | AMDU2 | 5-25 | 5-25 | 2-15 | 25-50 | --- |
| Range site number | | 030XB019NV | 030XB019NV | 030XB017NV | 030XB005NV | 030XB028NV |
| Potential production (lb/acre): | | | | | | |
| Favorable years | | 225 | 225 | 125 | 500 | 500 |
| Normal years | | 150 | 150 | 75 | 300 | 350 |
| Unfavorable years | | 100 | 100 | 25 | 200 | 200 |

1021--KURSTAN-KNOB HILL 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-- | | | | |
| | | KURSTAN | KNOB HILL | Inclusion 1 | Inclusion 2 | Inclusion 3 |
| big galleta | HIRI | --- | --- | --- | 5-10 | --- |
| bush mihly | MUPO2 | --- | --- | --- | 1-5 | --- |
| Nevada ephedra | EPNE | --- | --- | --- | 1-5 | --- |
| baccharis | BACCH | --- | --- | --- | 5-15 | --- |
| bursage | FRANS* | --- | --- | --- | 5-20 | --- |
| creosotebush | LATR2 | 65-80 | 65-80 | 65-80 | 5-20 | --- |
| erigonum | ERIOG | --- | --- | --- | 1-5 | --- |
| ratany | KRAME | T-5 | T-5 | T-5 | --- | --- |
| white burrobrush | HYSA | --- | --- | --- | 2-5 | --- |
| white bursage | AMDU2 | 5-25 | 5-25 | 5-25 | --- | --- |
| Range site number | | 030XB019NV | 030XB019NV | 030XB019NV | 030XB028NV | none |
| Potential production (lb/acre): | | | | | | |
| Favorable years | | 225 | 225 | 225 | 500 | |
| Normal years | | 150 | 150 | 150 | 350 | |
| Unfavorable years | | 100 | 100 | 100 | 200 | |

1030--ARIZO-BLUEPOINT 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-- | | | | | | |
| | | ARIZO | ARIZO | BLUEPOINT | Inclusion 1 | Inclusion 2 | Inclusion 3 | Inclusion 4 |
| Indian ricegrass | OREY | --- | --- | 2-5 | --- | --- | --- | --- |
| alkali sacaton | SPAI | --- | --- | --- | --- | --- | 20-30 | --- |
| big galleta | HIRI | --- | --- | --- | T-8 | T-8 | 5-15 | --- |
| bush muhly | MUPO2 | --- | 1-5 | --- | --- | --- | --- | --- |
| inland saltgrass | DISPS2 | --- | --- | --- | --- | --- | 5-15 | --- |
| Nevada ephedra | EPNE | --- | 1-5 | --- | T-5 | T-5 | --- | --- |
| Torrey quailbush | ATPO | --- | --- | --- | --- | --- | 5-10 | --- |
| baccharis | BACCE | --- | 5-15 | --- | --- | --- | --- | --- |
| bursage | FRANS* | --- | 5-20 | --- | --- | --- | --- | --- |
| cattle saltbush | ATPO | --- | --- | 25-45 | --- | --- | --- | --- |
| creosotebush | LATR2 | 65-80 | 5-20 | 5-15 | 10-25 | 10-25 | --- | --- |
| erigonum | ERIOG | --- | 1-5 | --- | --- | --- | 15-25 | --- |
| fourwing saltbush | ATCA2 | --- | --- | --- | --- | --- | 5-15 | --- |
| mesquite | PROSO | --- | --- | --- | --- | --- | 2-5 | --- |
| rabbitbrush | CHRS9 | --- | --- | --- | 2-5 | 2-5 | --- | --- |
| range ratany | KRPA | --- | --- | --- | --- | --- | --- | --- |
| ratany | KRAME | T-5 | --- | --- | --- | --- | --- | --- |
| white burrobrush | HYSA | --- | 2-5 | --- | --- | --- | --- | --- |
| white bursage | AMDU2 | 5-25 | --- | 10-20 | 25-50 | 25-50 | --- | --- |
| Range site number | | 030XB019NV | 030XB028NV | 030XY046NV | 030XB005NV | 030XB005NV | 030XB020NV | none |
| Potential production (lb/acre): | | | | | | | | |
| Favorable years | | 225 | 500 | 450 | 500 | 500 | 2500 | |
| Normal years | | 150 | 350 | 300 | 300 | 300 | 1500 | |
| Unfavorable years | | 100 | 200 | 100 | 200 | 200 | 800 | |

1031--ARIZO 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-- | | | | |
| | | ARIZO | ARIZO | Inclusion 1 | Inclusion 2 | Inclusion 3 |
| big galleta | HIRI | 5-10 | --- | T-8 | T-8 | --- |
| bush muhly | MUPO2 | 1-5 | --- | --- | --- | --- |
| Nevada ephedra | EPNE | 1-5 | --- | T-5 | T-5 | --- |
| baccharis | BACCH | 5-15 | --- | --- | --- | --- |
| bursage | FRANS* | 5-20 | --- | --- | --- | --- |
| creosotebush | LATR2 | 5-20 | 65-80 | 10-25 | 10-25 | --- |
| erigonum | ERIOG | 1-5 | --- | --- | --- | --- |
| range ratany | KRPA | --- | --- | 2-5 | 2-5 | --- |
| ratany | KRAME | --- | T-5 | --- | --- | --- |
| white burrobrush | HUSA | 2-5 | --- | --- | --- | --- |
| white bursage | AMDU2 | --- | 5-25 | 25-50 | 25-50 | --- |

| Range site number | 030XB028NV | 030XB019NV | 030XB005NV | 030XB005NV | none |
|---------------------------------|------------|------------|------------|------------|------|
| Potential production (lb/acre): | | | | | |
| Favorable years | 500 | 225 | 500 | 500 | |
| Normal years | 350 | 150 | 300 | 300 | |
| Unfavorable years | 200 | 100 | 200 | 200 | |

1040--AKELA-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-- | | | |
| | | AKELA | ROCK OUTCROP | Inclusion 1 | Inclusion 2 |
| big galleta | HIRI | T-5 | --- | 5-10 | --- |
| bush muhly | MUPO2 | --- | --- | 1-5 | --- |
| fluffgrass | ERPUS | 2-5 | --- | --- | --- |
| Nevada ephedra | EFNE | --- | --- | 1-5 | --- |
| baccharis | BACCH | --- | --- | 5-15 | --- |
| bursage | FRANS* | --- | --- | 5-20 | --- |
| creosotebush | LATR2 | 5-20 | --- | 5-20 | --- |
| desert pepperweed | LEFR2 | T-5 | --- | --- | --- |
| ephedra | EPHED | T-10 | --- | --- | --- |
| erigonum | ERIOG | --- | --- | 1-5 | --- |
| range ratany | KRPA | 2-5 | --- | --- | --- |
| white burrobrush | HYSA | --- | --- | 2-5 | --- |
| white bursage | AMDU2 | 50-60 | --- | --- | --- |
| Range site number | | 030XB001NV | none | 030XB028NV | none |
| Potential production (lb/acre): | | | | | |
| Favorable years | | 350 | | 500 | |
| Normal years | | 250 | | 350 | |
| Unfavorable years | | 100 | | 200 | |

1041--AKELA-ROCHPAH-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-- | | | | |
| | | AKELA | ROCHPAH | ROCK OUTCROP | Inclusion 1 | Inclusion 2 |
| Indian ricegrass | ORHY | 5-10 | 5-10 | --- | --- | 5-15 |
| big galleta | HIRI | 2-5 | --- | --- | 5-10 | 60-75 |
| bush muhly | MUPO2 | 2-5 | --- | --- | 1-5 | 10-20 |
| desert needlegrass | STSP3 | 40-50 | --- | --- | --- | --- |
| dropseed | SPORO | --- | --- | --- | --- | 2-5 |
| Fremont dalea | PSFR | 2-5 | --- | --- | --- | --- |
| Nevada ephedra | EPNE | 10-15 | 2-5 | --- | 1-5 | --- |
| baccharis | BACCH | --- | --- | --- | 5-15 | --- |
| blackbrush | CORA | --- | 60-70 | --- | --- | --- |
| bud sagebrush | ARSP5 | --- | 1-5 | --- | --- | --- |
| bursage | FRANS* | --- | --- | --- | 5-20 | --- |
| creosotebush | LATR2 | --- | --- | --- | 5-20 | --- |
| erigonum | ERIOG | --- | --- | --- | 1-5 | --- |
| fourwing saltbush | ATCA2 | --- | 1-3 | --- | --- | --- |
| shadscale | ATCO | 10-15 | --- | --- | --- | --- |
| white burrobrush | HYSA | --- | --- | --- | 2-5 | --- |
| winterfat | EULA5 | 2-5 | --- | --- | --- | --- |
| Range site number | | 030XB010NV | 029XY013NV | none | 030XB028NV | 030XB034NV |
| Potential production (lb/acre): | | | | | | |
| Favorable years | | 800 | 350 | | 500 | 1800 |
| Normal years | | 600 | 250 | | 350 | 1300 |
| Unfavorable years | | 400 | 100 | | 200 | 900 |

1052--KNOB HILL-ARIZO 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-- | | | |
| | | KNOB HILL | ARIZO | Inclusion 1 | Inclusion 2 |
| big galleta | HIRI | T-8 | 5-10 | T-8 | --- |
| bush muhly | MUPO2 | --- | 1-5 | --- | --- |
| Nevada ephedra | EPNE | T-5 | 1-5 | T-5 | --- |
| baccharis | BACCH | --- | 5-15 | --- | --- |
| bursage | FRANS* | --- | 5-20 | --- | --- |
| creosotebush | LATR2 | 10-25 | 5-20 | 10-25 | --- |
| erigonum | ERIOG | --- | 1-5 | --- | --- |
| range ratany | KRPA | 2-5 | --- | 2-5 | --- |
| white burrobrush | HVSA | --- | 2-5 | --- | --- |
| white bursage | AMDU2 | 25-50 | --- | 25-50 | --- |

| Range site number | 030XB005NV | 030XB028NV | 030XB005NV | none |
|---------------------------------|------------|------------|------------|------|
| Potential production (lb/acre): | | | | |
| Favorable years | 500 | 500 | 500 | |
| Normal years | 300 | 350 | 300 | |
| Unfavorable years | 200 | 200 | 200 | |

1060--ST. THOMAS-CHINKLE-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-- | | | | | | |
| | | ST THOMAS | CHINKLE | ROCK OUTCROP | Inclusion 1 | Inclusion 2 | Inclusion 3 | Inclusion 4 |
| Indian ricegrass | ORHY | --- | --- | --- | 2-5 | --- | --- | --- |
| big galleta | HIRI | T-5 | T-5 | --- | 5-15 | T-5 | 5-10 | --- |
| bush muhly | MUPO2 | --- | --- | --- | --- | --- | 1-5 | --- |
| fluffgrass | ERPU8 | 2-5 | 2-5 | --- | --- | 2-5 | --- | --- |
| Nevada ephedra | EPNE | --- | --- | --- | --- | --- | 1-5 | --- |
| baccharis | BACCH | --- | --- | --- | --- | --- | 5-15 | --- |
| blackbrush | CORA | --- | --- | --- | 60-70 | --- | --- | --- |
| bursage | FRANS* | --- | --- | --- | --- | --- | 5-20 | --- |
| creosotebush | LATE2 | 5-20 | 5-20 | --- | 2-5 | 5-20 | 5-20 | --- |
| desert pepperweed | LEFR2 | T-5 | T-5 | --- | --- | T-5 | --- | --- |
| ephedra | EPHE2 | T-10 | T-10 | --- | --- | T-10 | --- | --- |
| erigonum | ERIOG | --- | --- | --- | --- | --- | 1-5 | --- |
| range ratany | KRPA | 2-5 | 2-5 | --- | --- | 2-5 | --- | --- |
| white burrobrush | HYSA | --- | --- | --- | --- | --- | 2-5 | --- |
| white bursage | AMDU2 | 50-60 | 50-60 | --- | T-8 | 50-60 | --- | --- |
| Range site number | | 030XB001NV | 030XB001NV | none | 030XB029NV | 030XB001NV | 030XB028NV | none |
| Potential production (lb/acre): | | | | | | | | |
| Favorable years | | 350 | 350 | | 500 | 350 | 500 | |
| Normal years | | 250 | 250 | | 350 | 250 | 350 | |
| Unfavorable years | | 100 | 100 | | 250 | 100 | 200 | |

1061--ST. THOMAS-ZEHENE-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-- | | | | | |
| | | ST THOMAS | ZEHENE | ROCK OUTCROP | Inclusion 1 | Inclusion 2 | Inclusion 3 |
| big galleta | HIRI | T-5 | 2-5 | --- | T-8 | 5-10 | --- |
| bush muhly | MUPO2 | --- | --- | --- | --- | 1-5 | --- |
| desert needlegrass | STSP3 | --- | 2-5 | --- | --- | --- | --- |
| fluffgrass | ERPUS | 2-5 | --- | --- | --- | --- | --- |
| Nevada ephedra | EPNE | --- | 2-5 | --- | T-5 | 1-5 | --- |
| baccharis | BACCH | --- | --- | --- | --- | 5-15 | --- |
| blackbrush | CORA | --- | 60-85 | --- | --- | --- | --- |
| bursage | FRANS* | --- | --- | --- | --- | 5-20 | --- |
| creosotebush | LATR2 | 5-20 | --- | --- | 10-25 | 5-20 | --- |
| desert pepperweed | LEFR2 | T-5 | --- | --- | --- | --- | --- |
| ephedra | EPHED | T-10 | --- | --- | --- | --- | --- |
| erigonum | ERIOG | --- | --- | --- | --- | 1-5 | --- |
| range ratany | KRPA | 2-5 | --- | --- | 2-5 | --- | --- |
| white burrobrush | HYSA | --- | --- | --- | --- | 2-5 | --- |
| white bursage | AMDU2 | 50-60 | --- | --- | 25-50 | --- | --- |
| Range site number | | 030XB001NV | 030XB030NV | none | 030XB005NV | 030XB028NV | none |
| Potential production (lb/acre): | | | | | 500 | 500 | |
| Favorable years | | 350 | 300 | | 300 | 350 | |
| Normal years | | 250 | 200 | | 200 | 200 | |
| Unfavorable years | | 100 | 150 | | | | |

1062--ZEHEME-CHINKLE-SHANKBA 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-- | | | | | | |
| | | ZEHEME | CHINKLE | SHANKBA | Inclusion 1 | Inclusion 2 | Inclusion 3 | Inclusion 4 |
| Indian ricegrass | ORHY | --- | --- | 2-5 | --- | 2-8 | --- | --- |
| big galleta | HIRI | 2-5 | T-5 | 5-15 | --- | 40-65 | 5-10 | --- |
| bush muhly | MUPO2 | --- | --- | --- | --- | 5-15 | 1-5 | --- |
| desert needlegrass | STSP3 | 2-5 | --- | --- | --- | --- | --- | --- |
| fluffgrass | ERPUS | --- | 2-5 | --- | --- | --- | --- | --- |
| Nevada ephedra | EPNE | 2-5 | --- | --- | --- | --- | 1-5 | --- |
| baccharis | BACCH | --- | --- | --- | --- | --- | 5-15 | --- |
| blackbrush | CORA | 60-85 | --- | 60-70 | --- | --- | --- | --- |
| bursage | FRANS* | --- | --- | --- | --- | --- | 5-20 | --- |
| creosotebush | LATR2 | --- | 5-20 | 2-5 | --- | 2-5 | 5-20 | --- |
| desert pepperweed | LEFR2 | --- | T-5 | --- | --- | --- | --- | --- |
| ephedra | EPHE2 | --- | T-10 | --- | --- | --- | --- | --- |
| erigonum | ERIOG | --- | --- | --- | --- | --- | 1-5 | --- |
| range ratany | KRPA | --- | 2-5 | --- | --- | --- | --- | --- |
| white burrobrush | HYSA | --- | --- | --- | --- | --- | 2-5 | --- |
| white bursage | AMDU2 | --- | 50-60 | T-8 | --- | T-5 | --- | --- |
| Range site number | | 030XB030NV | 030XB001NV | 030XB029NV | none | 030XB039NV | 030XB028NV | none |
| Potential production (lb/acre): | | | | | | | | |
| Favorable years | | 300 | 350 | 500 | | 1400 | 500 | |
| Normal years | | 200 | 250 | 350 | | 1000 | 350 | |
| Unfavorable years | | 150 | 100 | 250 | | 700 | 200 | |

1063--ZEPHEME-KANESPRINGS-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-- | | | | | |
| | | ZEPHEME | KANESPRINGS | ROCK OUTCROP | Inclusion 1 | Inclusion 2 | Inclusion 3 |
| Indian ricegrass | ORHY | --- | 2-5 | --- | 2-5 | --- | --- |
| big galleta | HIRI | 2-5 | 5-15 | --- | 5-15 | 5-10 | --- |
| bush muhly | MUPO2 | --- | --- | --- | --- | 1-5 | --- |
| desert needlegrass | STSP3 | 2-5 | --- | --- | --- | --- | --- |
| Nevada ephedra | EPNE | 2-5 | --- | --- | --- | 1-5 | --- |
| baccharis | BACCH | --- | --- | --- | --- | 5-15 | --- |
| blackbrush | CORA | 60-85 | 60-70 | --- | 60-70 | --- | --- |
| bursage | FRANS* | --- | --- | --- | --- | 5-20 | --- |
| creosotebush | LATR2 | --- | 2-5 | --- | 2-5 | 5-20 | --- |
| eriogonum | ERIOG | --- | --- | --- | --- | 1-5 | --- |
| white burrobrush | HYSA | --- | --- | --- | --- | 2-5 | --- |
| white bursage | AMDU2 | --- | T-8 | --- | T-8 | --- | --- |
| Range site number | | 030XB030NV | 030XB029NV | none | 030XB029NV | 030XB028NV | none |
| Potential production (lb/acre): | | | | | | | |
| Favorable years | | 300 | 500 | | 500 | 500 | |
| Normal years | | 200 | 350 | | 350 | 350 | |
| Unfavorable years | | 150 | 250 | | 250 | 200 | |

1064--ZEHEHE-KANACKY-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-- | | | | | |
| | | ZEHEHE | KANACKY | ROCK OUTCROP | Inclusion 1 | Inclusion 2 | Inclusion 3 |
| Indian ricegrass | OREY | --- | 2-5 | --- | --- | --- | --- |
| big galleta | HIRI | 2-5 | 5-15 | --- | 50-60 | 5-10 | --- |
| bush muhly | MUPO2 | --- | --- | --- | 10-20 | 1-5 | --- |
| desert needlegrass | STSP3 | 2-5 | --- | --- | 2-5 | --- | --- |
| Nevada ephedra | EPNE | 2-5 | --- | --- | --- | 1-5 | --- |
| baccharis | BACCH | --- | --- | --- | --- | 5-15 | --- |
| blackbrush | CORA | 60-85 | 60-70 | --- | --- | --- | --- |
| bursage | FRANS* | --- | --- | --- | --- | 5-20 | --- |
| creosotebush | LATR2 | --- | 2-5 | --- | 5-15 | 5-20 | --- |
| ephedra | EPHED | --- | --- | --- | 1-5 | --- | --- |
| erigonum | ERIOG | --- | --- | --- | --- | 1-5 | --- |
| range ratany | KRPA | --- | --- | --- | 2-5 | --- | --- |
| white burrobrush | HYSA | --- | --- | --- | --- | 2-5 | --- |
| white bursage | AMDU2 | --- | T-8 | --- | 10-20 | --- | --- |
| Range site number | | 030XB030NV | 030XB029NV | none | 030XB007NV | 030XB028NV | none |
| Potential production (lb/acre): | | | | | | | |
| Favorable years | | 300 | 500 | | 500 | 500 | |
| Normal years | | 200 | 350 | | 350 | 350 | |
| Unfavorable years | | 150 | 250 | | 200 | 200 | |

1065--ZEHEME-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-- | | | | | |
| | | ZEHEME | ROCK OUTCROP | Inclusion 1 | Inclusion 2 | Inclusion 3 | Inclusion 4 |
| Indian ricegrass | ORHY | --- | --- | --- | 2-8 | --- | --- |
| big galleta | HIRI | 2-5 | --- | T-5 | 40-65 | 5-10 | --- |
| bush muhly | MUPO2 | --- | --- | --- | 5-15 | 1-5 | --- |
| desert needlegrass | STSP3 | 2-5 | --- | --- | --- | --- | --- |
| fluffgrass | ERP8 | --- | --- | 2-5 | --- | --- | --- |
| Nevada ephedra | EPNK | 2-5 | --- | --- | --- | 1-5 | --- |
| baccharis | BACCH | --- | --- | --- | --- | 5-15 | --- |
| blackbrush | CORA | 60-85 | --- | --- | --- | --- | --- |
| bursage | FRANS* | --- | --- | --- | --- | 5-20 | --- |
| creosotebush | LATR2 | --- | --- | 5-20 | 2-5 | 5-20 | --- |
| desert pepperweed | LEFR2 | --- | --- | T-5 | --- | --- | --- |
| ephedra | EPHE2 | --- | --- | T-10 | --- | --- | --- |
| erigonum | ERIOG | --- | --- | --- | --- | 1-5 | --- |
| range ratany | KRPA | --- | --- | 2-5 | --- | --- | --- |
| white burrobrush | HYSA | --- | --- | --- | --- | 2-5 | --- |
| white bursage | AMDU2 | --- | --- | 50-60 | T-5 | --- | --- |
| Range site number | | 030XB03ONV | none | 030XB001NV | 030XB039NV | 030XB028NV | none |
| Potential production (lb/acre): | | | | | | | |
| Favorable years | | 300 | | 350 | 1400 | 500 | |
| Normal years | | 200 | | 250 | 1000 | 350 | |
| Unfavorable years | | 150 | | 100 | 700 | 200 | |

1066--ZEHEME-BOXSPRING-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-- | | | | | | |
| | | ZEHEME | BOXSPRING | ROCK OUTCROP | Inclusion 1 | Inclusion 2 | Inclusion 3 | Inclusion 4 |
| Indian ricegrass | ORRY | --- | 1-3 | --- | --- | 2-8 | 2-8 | 10-15 |
| big galleta | HIRI | 2-5 | --- | --- | 5-10 | 40-65 | 40-65 | --- |
| blue grama | BOGR2 | --- | --- | --- | --- | --- | --- | 2-5 |
| bush muhly | MUPO2 | --- | --- | --- | 1-5 | 5-15 | 5-15 | --- |
| desert needlegrass | STSP3 | 2-5 | 2-8 | --- | --- | --- | --- | --- |
| galleta | HIJA | --- | --- | --- | --- | --- | --- | 2-8 |
| needleandthread | STCO4 | --- | --- | --- | --- | --- | --- | 10-20 |
| Nevada ephedra | EPNE | 2-5 | 2-5 | --- | 1-5 | --- | --- | --- |
| Stansbury cliffrose | COMES | --- | T-8 | --- | --- | --- | --- | 2-10 |
| baccharis | BACCH | --- | --- | --- | 5-15 | --- | --- | --- |
| big sagebrush | ARTR2 | --- | --- | --- | --- | --- | --- | 20-30 |
| blackbrush | CORA | 60-85 | 60-75 | --- | --- | --- | --- | --- |
| bursage | FRANS* | --- | --- | --- | 5-20 | --- | --- | --- |
| creosotebush | LATR2 | --- | --- | --- | 5-20 | 2-5 | 2-5 | --- |
| desert bitterbrush | FUGL2 | --- | 2-8 | --- | --- | --- | --- | --- |
| ephedra | EPHED | --- | 2-5 | --- | --- | --- | --- | 5-10 |
| eriogonum | ERIOG | --- | --- | --- | 1-5 | --- | --- | --- |
| fourwing saltbush | ATCA2 | --- | --- | --- | --- | --- | --- | 2-5 |
| white burrobrush | HYSA | --- | --- | --- | 2-5 | --- | --- | --- |
| white bursage | AMDU2 | --- | --- | --- | --- | T-5 | T-5 | --- |

| Range site number | 030XB030NV | 029XY077NV | none | 030XB028NV | 030XB039NV | 030XB039NV | 029XY075NV |
|---------------------------------|------------|------------|------|------------|------------|------------|------------|
| Potential production (lb/acre): | | | | | | | |
| Favorable years | 300 | 700 | | 500 | 1400 | 1400 | 700 |
| Normal years | 200 | 500 | | 350 | 1000 | 1000 | 500 |
| Unfavorable years | 150 | 300 | | 200 | 700 | 700 | 300 |

1070--BELLEHELEN-BRIER 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-- | | | |
| | | BELLEHELEN | BRIER | Inclusion 1 | Inclusion 2 |
| Canby bluegrass | POCA | --- | X | X | --- |
| Indian ricegrass | ORHY | X | --- | --- | --- |
| Sandberg bluegrass | POSE | X | X | X | --- |
| bottlebrush squirreltail | SIRY | X | --- | --- | --- |
| green sphedra | EPVI | X | --- | --- | --- |
| muttongrass | POFE | --- | X | X | --- |
| prairie junegrass | KOPY | --- | X | X | --- |
| eriogonum | ERIOG | --- | X | X | --- |
| Wyoming big sagebrush | ARTRW | --- | X | --- | --- |
| black sagebrush | ARARN | X | --- | X | --- |
| desert bitterbrush | PUGL2 | --- | X | X | --- |
| mountain big sagebrush | ARVA2 | --- | X | X | --- |
| singleleaf pinyon | PIMO | --- | X | X | --- |
| Range site number | | 029XY071NV | 029XY065NV | 029XY065NV | none |
| Potential production (lb/acre): | | 400 | 500 | 500 | |
| Favorable years | | 250 | 300 | 300 | |
| Normal years | | 150 | 200 | 200 | |
| Unfavorable years | | | | | |

1080--KASPAL-CANUTIO 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-- | | | |
| | | KASPAL | CANUTIO | Inclusion 1 | Inclusion 2 |
| Indian ricegrass | ORHY | 2-5 | 2-8 | --- | --- |
| big galleta | HIRI | 5-15 | 40-65 | 5-10 | --- |
| bush muhly | MUPO2 | --- | 5-15 | 1-5 | --- |
| Nevada ephedra | EPNE | --- | --- | 1-5 | --- |
| baccharis | BACCE | --- | --- | 5-15 | --- |
| blackbrush | CORA | 60-70 | --- | --- | --- |
| bursage | FRANS* | --- | --- | 5-20 | --- |
| creosotebush | LATR2 | 2-5 | 2-5 | 5-20 | --- |
| erigonum | ERIOG | --- | --- | 1-5 | --- |
| white burrobrush | HYSA | --- | --- | 2-5 | --- |
| white bursage | AMDU2 | T-8 | T-5 | --- | --- |
| Range site number | | 030XB029NV | 030XB039NV | 030XB028NV | none |
| Potential production (lb/acre): | | | | | |
| Favorable years | | 500 | 1400 | 500 | |
| Normal years | | 350 | 1000 | 350 | |
| Unfavorable years | | 250 | 700 | 200 | |

1090--LOGRING-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-- | | | | | |
| | | LOGRING | ROCK OUTCROP | Inclusion 1 | Inclusion 2 | Inclusion 3 | Inclusion 4 |
| Canby bluegrass | POCA | --- | --- | --- | --- | X | X |
| Indian ricegrass | OREY | --- | --- | 10-20 | 2-5 | --- | --- |
| Sandberg bluegrass | POSE | --- | --- | --- | --- | X | X |
| bluegrass | POA++ | X | --- | --- | --- | --- | --- |
| bottlebrush squirreltail | SIEY | X | --- | --- | --- | --- | --- |
| galleta | HIJA | --- | --- | 2-8 | --- | --- | --- |
| muttongrass | POPE | X | --- | --- | --- | X | X |
| needleandthread | STCO4 | --- | --- | 5-15 | 5-15 | --- | --- |
| needlegrass | STIPA | --- | --- | --- | 2-8 | --- | --- |
| prairie junegrass | KOPY | --- | --- | --- | --- | X | X |
| erigonum | ERIOG | --- | --- | --- | --- | X | X |
| Nevada ephedra | EPNE | --- | --- | 2-8 | --- | --- | --- |
| Nevada greasebush | FONE2 | --- | --- | --- | 1-3 | --- | --- |
| Stansbury cliffrose | COMES | X | --- | --- | --- | --- | --- |
| Wyoming big sagebrush | ARTRW | --- | --- | --- | --- | X | X |
| black sagebrush | ARARN | X | --- | 35-45 | 5-15 | --- | --- |
| desert bitterbrush | PUGL2 | --- | --- | --- | --- | X | X |
| ephedra | EPHED | --- | --- | --- | 2-5 | --- | --- |
| green ephedra | EPVI | X | --- | --- | --- | --- | --- |
| littleleaf mountainmahogany | CEIN7 | --- | --- | --- | 60-70 | --- | --- |
| mountain big sagebrush | ARVA2 | --- | --- | --- | --- | X | X |
| shadscale | ATCO | --- | --- | 1-5 | --- | --- | --- |
| singleleaf pinyon | PIMO | X | --- | --- | --- | X | X |

| Range site number | 029XY069NV | none | 029XY014NV | 029XY040NV | 029XY065NV | 029XY065NV |
|---------------------------------|------------|------|------------|------------|------------|------------|
| Potential production (lb/acre): | | | | | | |
| Favorable years | 400 | | 350 | 600 | 500 | 500 |
| Normal years | 300 | | 200 | 450 | 300 | 300 |
| Unfavorable years | 150 | | 75 | 300 | 200 | 200 |

1091--LOGRING-EAGLEPASS-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-- | | | | |
| | | LOGRING | EAGLEPASS | ROCK OUTCROP | Inclusion 1 | Inclusion 2 |
| Canby bluegrass | POCA | --- | --- | --- | X | --- |
| Indian ricegrass | ORHY | --- | 2-5 | --- | --- | 20-35 |
| Sandberg bluegrass | POSE | --- | --- | --- | X | --- |
| bluegrass | POA++ | X | --- | --- | --- | --- |
| bottlebrush squirreltail | SIHY | X | --- | --- | --- | --- |
| desert needlegrass | STSP3 | --- | --- | --- | --- | --- |
| muttongrass | POFK | X | --- | --- | X | --- |
| needleandthread | STCO4 | --- | 5-15 | --- | --- | 5-15 |
| needlegrass | STIPA | --- | 2-8 | --- | --- | --- |
| prairie junegrass | KOPY | --- | --- | --- | X | --- |
| erigonum | ERIOG | --- | --- | --- | X | --- |
| Nevada ephedra | EPNE | --- | --- | --- | --- | 2-5 |
| Nevada greasebush | FONE2 | --- | 1-3 | --- | --- | --- |
| Stansbury cliffrose | COMES | X | --- | --- | --- | --- |
| Wyoming big sagebrush | ARTRW | --- | --- | --- | X | 25-35 |
| black sagebrush | ARARN | X | 5-15 | --- | --- | --- |
| desert bitterbrush | FUGL2 | --- | --- | --- | X | --- |
| ephedra | EPHE2 | --- | 2-5 | --- | --- | --- |
| fourwing saltbush | ATCA2 | --- | --- | --- | --- | 2-5 |
| green ephedra | EPVI | X | --- | --- | --- | --- |
| littleleaf mountainmahogany | CEIN7 | --- | 60-70 | --- | --- | --- |
| mountain big sagebrush | ARVA2 | --- | --- | --- | X | --- |
| singleleaf pinyon | PIMO | X | --- | --- | X | --- |
| Range site number | | 029XY069NV | 029XY040NV | none | 029XY065NV | 029XY006NV |
| Potential production (lb/acre): | | | | | | |
| Favorable years | | 400 | 600 | | 500 | 800 |
| Normal years | | 300 | 450 | | 300 | 600 |
| Unfavorable years | | 150 | 300 | | 200 | 300 |

1100--GETA-ARIZO 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-- | | | | |
| | | GETA | GETA | ARIZO | Inclusion 1 | Inclusion 2 |
| Indian ricegrass | ORRY | 5-15 | 5-15 | --- | 5-15 | --- |
| big galleta | HIRI | 60-75 | 30-50 | 5-10 | 30-50 | --- |
| bush muhly | MUPO2 | 10-20 | --- | 1-5 | --- | --- |
| dropseed | SPORO | 2-5 | 5-10 | --- | 5-10 | --- |
| Nevada ephedra | EPNE | --- | --- | 1-5 | 1-5 | --- |
| baccharis | BACCE | --- | --- | 5-15 | --- | --- |
| bursage | FRANS* | --- | --- | 5-20 | --- | --- |
| cattle saltbush | ATPO | --- | 2-5 | --- | 2-5 | --- |
| creosotebush | LATR2 | --- | --- | 5-20 | --- | --- |
| erigonum | ERIOG | --- | --- | 1-5 | --- | --- |
| fourwing saltbush | ATCA2 | --- | 10-20 | --- | 10-20 | --- |
| white burrobrush | HYSA | --- | --- | 2-5 | --- | --- |
| Range site number | | 030XB034NV | 030XB032NV | 030XB028NV | 030XB032NV | none |
| Potential production (lb/acre): | | | | | | |
| Favorable years | | 1800 | 1000 | 500 | 1000 | |
| Normal years | | 1300 | 700 | 350 | 700 | |
| Unfavorable years | | 900 | 450 | 200 | 450 | |

1101--GETA GRAVELLY SANDY LOAM, 2 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-- | | | | |
| | | GETA | Inclusion 1 | Inclusion 2 | Inclusion 3 | Inclusion 4 |
| Indian ricegrass | ORRY | 5-15 | 2-8 | 5-15 | --- | --- |
| big galleta | HIRI | 60-75 | 40-65 | 30-50 | 5-10 | --- |
| bush muhly | MUPO2 | 10-20 | 5-15 | --- | 1-5 | --- |
| dropseed | SPORO | 2-5 | --- | 5-10 | --- | --- |
| Nevada ephedra | EPNE | --- | --- | 1-5 | 1-5 | --- |
| baccharis | BACCH | --- | --- | --- | 5-15 | --- |
| bursage | FRANS* | --- | --- | --- | 5-20 | --- |
| cattle saltbush | ATPO | --- | --- | 2-5 | --- | --- |
| creosotebush | LATR2 | --- | 2-5 | --- | 5-20 | --- |
| erigonum | ERIOG | --- | --- | --- | 1-5 | --- |
| fourwing saltbush | ATCA2 | --- | --- | 10-20 | --- | --- |
| white burrobrush | HYSA | --- | --- | --- | 2-5 | --- |
| white bursage | AMDU2 | --- | T-5 | --- | --- | --- |
| Range site number | | 030XB034NV | 030XB039NV | 030XB032NV | 030XB028NV | none |
| Potential production (lb/acre): | | | | | | |
| Favorable years | | 1800 | 1400 | 1000 | 500 | |
| Normal years | | 1300 | 1000 | 700 | 350 | |
| Unfavorable years | | 900 | 700 | 450 | 200 | |

1102--GETA-BLUEPOINT-ARIZO 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-- | | | | | |
| | | GETA | BLUEPOINT | ARIZO | Inclusion 1 | Inclusion 2 | Inclusion 3 |
| Indian ricegrass | OREY | 5-15 | 2-5 | --- | --- | 2-15 | --- |
| alkali sacaton | SPAI | --- | --- | --- | 5-10 | --- | --- |
| big galleta | HIRI | 30-50 | --- | 5-10 | --- | --- | --- |
| bush muhly | MUPO2 | --- | --- | 1-5 | --- | --- | --- |
| dropseed | SPORO | 5-10 | --- | --- | 2-5 | --- | --- |
| rush | JUNCU | --- | --- | --- | --- | --- | --- |
| Nevada ephedra | EPNE | 1-5 | --- | 1-5 | --- | --- | --- |
| arrowweed pluchea | PLSE | --- | --- | --- | 5-10 | --- | --- |
| baccharis | BACCH | --- | --- | 5-15 | 3-5 | --- | --- |
| big saltbush | ATLE | --- | --- | --- | 1-5 | --- | --- |
| bursage | FRANS* | --- | --- | 5-20 | --- | --- | --- |
| catclaw | ACGR | --- | --- | --- | --- | 1-10 | --- |
| cattle saltbush | ATPO | 2-5 | 25-45 | --- | --- | --- | --- |
| creosotebush | LATR2 | --- | 5-15 | 5-20 | --- | --- | --- |
| desertwillow | CHLI2 | --- | --- | --- | 5-15 | --- | --- |
| eriogonum | ERIOG | --- | --- | 1-5 | --- | --- | --- |
| fourwing saltbush | ATCA2 | 10-20 | --- | --- | --- | 25-40 | --- |
| mesquite | PROSO | --- | --- | --- | 5-15 | 25-45 | --- |
| screwbean mesquite | PRPU | --- | --- | --- | 5-10 | --- | --- |
| white burrobrush | HYSA | --- | --- | 2-5 | --- | --- | --- |
| white bursage | AMDU2 | --- | 10-20 | --- | --- | --- | --- |
| willow | SALIX | --- | --- | --- | 5-10 | --- | --- |
| Range site number | | 030XB032NV | 030XY046NV | 030XB028NV | 030XB021NV | 030XY045NV | none |
| Potential production (lb/acre): | | | | | | | |
| Favorable years | | 1000 | 450 | 500 | 2500 | 1500 | |
| Normal years | | 700 | 300 | 350 | 1000 | 900 | |
| Unfavorable years | | 450 | 100 | 200 | 450 | 500 | |

1110--KANESPRINGS-KANACKEY-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-- | | | | | | |
| | | KANESPRINGS | KANACKEY | ROCK OUTCROP | Inclusion 1 | Inclusion 2 | Inclusion 3 | Inclusion 4 |
| Indian ricegrass | ORHY | 2-5 | 2-5 | --- | 10-15 | 2-5 | --- | --- |
| big galleta | HIRI | 5-15 | 5-15 | --- | --- | 5-15 | 5-10 | --- |
| blue grama | BOGR2 | --- | --- | --- | 2-5 | --- | --- | --- |
| bush muhly | MUPO2 | --- | --- | --- | --- | --- | 1-5 | --- |
| galleta | HIJA | --- | --- | --- | 2-8 | --- | --- | --- |
| needleandthread | STCO4 | --- | --- | --- | 10-20 | --- | --- | --- |
| Nevada ephedra | EPNE | --- | --- | --- | --- | --- | 1-5 | --- |
| Stansbury cliffrose | COMES | --- | --- | --- | 2-10 | --- | --- | --- |
| baccharis | BACCH | --- | --- | --- | --- | --- | 5-15 | --- |
| big sagebrush | ARTR2 | --- | --- | --- | 20-30 | --- | --- | --- |
| blackbrush | CORA | 60-70 | 60-70 | --- | --- | 60-70 | --- | --- |
| bursage | FRANS* | --- | --- | --- | --- | --- | 5-20 | --- |
| creosotebush | LATR2 | 2-5 | 2-5 | --- | --- | 2-5 | 5-20 | --- |
| ephedra | EPHED | --- | --- | --- | 5-10 | --- | --- | --- |
| erigonum | ERIOG | --- | --- | --- | --- | --- | 1-5 | --- |
| fourwing saltbush | ATCA2 | --- | --- | --- | 2-5 | --- | --- | --- |
| white burrobrush | HYSA | --- | --- | --- | --- | --- | 2-5 | --- |
| white bursage | AMDU2 | T-8 | T-8 | --- | --- | T-8 | --- | --- |
| Range site number | | 030XB029NV | 030XB029NV | none | 029XY075NV | 030XB029NV | 030XB028NV | none |
| Potential production (lb/acre): | | | | | | | | |
| Favorable years | | 500 | 500 | | 700 | 500 | 500 | |
| Normal years | | 350 | 350 | | 500 | 350 | 350 | |
| Unfavorable years | | 250 | 250 | | 300 | 250 | 200 | |

1113--KANESPRINGS-GABEVALLY 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-- | | | | |
| | | KANESPRINGS | GABEVALLY | Inclusion 1 | Inclusion 2 | Inclusion 3 |
| Indian ricegrass | ORHY | 2-5 | 10-15 | 10-15 | 5-10 | 2-10 |
| Sandberg bluegrass | POSE | --- | 2-5 | --- | --- | 2-10 |
| big galleta | HIRI | 5-15 | --- | --- | 2-5 | --- |
| blue grama | BOGR2 | --- | --- | 2-5 | --- | --- |
| bush muhly | MUPO2 | --- | --- | --- | 2-5 | --- |
| desert needlegrass | STSP3 | --- | 2-8 | --- | 40-50 | --- |
| galleta | HIJA | --- | 2-8 | 2-8 | --- | 1-5 |
| needleandthread | STCO4 | --- | 15-25 | 10-20 | --- | --- |
| Fremont dalea | PSFR | --- | --- | --- | 2-5 | --- |
| Nevada ephedra | EPNE | --- | --- | --- | 10-15 | --- |
| Stansbury cliffrose | COMES | --- | --- | 2-10 | --- | --- |
| Wyoming big sagebrush | ARTRM | --- | 30-35 | --- | --- | --- |
| big sagebrush | ARTR2 | --- | --- | 20-30 | --- | 25-35 |
| blackbrush | CORA | 60-70 | --- | --- | --- | --- |
| creosotebush | LATR2 | 2-5 | --- | --- | --- | --- |
| desert peachbrush | PRFA | --- | --- | --- | --- | 10-20 |
| ephedra | EPHE2 | --- | 2-8 | 5-10 | --- | --- |
| fourwing saltbush | ATCA2 | --- | 2-5 | --- | --- | --- |
| rubber rabbitbrush | CENA2 | --- | --- | --- | --- | 5-15 |
| shadscale | ATCO | --- | --- | --- | 10-15 | --- |
| white bursage | AMDU2 | T-8 | --- | --- | --- | --- |
| winterfat | KULA5 | --- | --- | --- | 2-5 | --- |

| Range site number | 030XB029NV | 029XY010NV | 029XY075NV | 030XB010NV | 029XY009NV |
|---------------------------------|------------|------------|------------|------------|------------|
| Potential production (lb/acre): | | | | | |
| Favorable years | 500 | 500 | 700 | 800 | 1000 |
| Normal years | 350 | 350 | 500 | 600 | 700 |
| Unfavorable years | 250 | 250 | 300 | 400 | 500 |

1160--SILENT-KOYEN 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-- | | | |
| | | SILENT | KOYEN | Inclusion 1 | Inclusion 2 |
| Indian ricegrass | ORHY | 15-25 | 15-25 | 15-25 | --- |
| bottlebrush squirreltail | SIHY | 2-5 | --- | --- | --- |
| bush muhly | MUPO2 | --- | 2-8 | 2-8 | --- |
| desert needlegrass | STSP3 | --- | 10-20 | 10-20 | --- |
| galleta | HIJA | 2-10 | 2-5 | 2-5 | --- |
| Anderson wolfberry | LYAN | --- | 1-5 | 1-5 | --- |
| Bailey greasewood | SAVEB | 0-10 | --- | --- | --- |
| Nevada ephedra | EFNE | 1-5 | 5-15 | 5-15 | --- |
| banana yucca | YUBA | --- | 1-3 | 1-3 | --- |
| bud sagebrush | ARSP5 | 5-15 | 1-5 | 1-5 | --- |
| fourwing saltbush | ATCA2 | --- | 2-5 | 2-5 | --- |
| shadscale | ATCO | 25-35 | --- | --- | --- |
| spiny hopsage | GRSP | --- | 15-25 | 15-25 | --- |
| winterfat | EULA5 | 5-10 | 1-5 | 1-5 | --- |
| Range site number | | 029XY017NV | 029XY079NV | 029XY079NV | none |
| Potential production (lb/acre): | | | | | |
| Favorable years | | 500 | 900 | 900 | |
| Normal years | | 350 | 700 | 700 | |
| Unfavorable years | | 150 | 450 | 450 | |

1170--ALKO-ARIZO 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-- | | | | | | |
| | | ALKO | ALKO | ARIZO | Inclusion 1 | Inclusion 2 | Inclusion 3 | Inclusion 4 |
| Indian ricegrass | ORHY | 5-15 | 2-8 | --- | --- | --- | 5-15 | --- |
| big galleta | HIRI | 2-8 | 2-5 | 5-10 | --- | T-8 | 2-8 | T-8 |
| bush muhly | MUPO2 | --- | --- | 1-5 | --- | --- | --- | --- |
| desert needlegrass | STSP3 | 2-5 | 2-5 | --- | --- | --- | 2-5 | --- |
| Nevada ephedra | EPNE | --- | 2-5 | 1-5 | --- | T-5 | --- | T-5 |
| baccharis | BACCH | --- | --- | 5-15 | --- | --- | --- | --- |
| bud sagebrush | ARSP5 | 5-10 | 2-5 | --- | --- | --- | 5-10 | --- |
| bursage | FRANS* | --- | --- | 5-20 | --- | --- | --- | --- |
| creosotebush | LATR2 | --- | 2-5 | 5-20 | --- | 10-25 | --- | 10-25 |
| ephedra | EPHED | 2-8 | --- | --- | --- | --- | 2-8 | --- |
| eriogonum | ERIOG | --- | --- | 1-5 | --- | --- | --- | --- |
| range ratany | KRPA | --- | --- | --- | --- | 2-5 | --- | 2-5 |
| shadscale | ATCO | 35-50 | 15-30 | --- | --- | --- | 35-50 | --- |
| spiny menodora | MESP2 | --- | 10-20 | --- | --- | --- | --- | --- |
| white burrobrush | EYSA | --- | --- | 2-5 | --- | --- | --- | --- |
| white bursage | AMDU2 | 5-10 | 5-10 | --- | --- | 25-50 | 5-10 | 25-50 |
| wolfberry | LYCIU | --- | 2-5 | --- | --- | --- | --- | --- |

| Range site number | 030XB006NV | 030XB031NV | 030XB028NV | none | 030XB005NV | 030XB006NV | 030XB005NV |
|---------------------------------|------------|------------|------------|------|------------|------------|------------|
| Potential production (lb/acre): | | | | | | | |
| Favorable years | 350 | 500 | 500 | | 500 | 350 | 500 |
| Normal years | 250 | 300 | 350 | | 300 | 250 | 300 |
| Unfavorable years | 100 | 150 | 200 | | 200 | 100 | 200 |

1172--ALKO-GETA 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-- | | |
| | | ALKO | GETA | Inclusion 1 |
| Indian ricegrass | ORFY | 10-15 | 10-15 | --- |
| big galleta | HIRI | 10-15 | 25-35 | --- |
| bush muhly | MUPO2 | 2-5 | 5-10 | --- |
| desert needlegrass | STSP3 | 2-10 | --- | --- |
| fluffgrass | ERPU8 | --- | --- | 2-5 |
| Anderson wolfberry | LYAN | 2-5 | 2-10 | --- |
| Nevada ephedra | EPNE | 5-10 | 10-15 | --- |
| bud sagebrush | ARSP5 | 1-5 | --- | --- |
| creosotebush | LATR2 | --- | --- | 75-90 |
| spiny hopsage | GRSP | 15-25 | 15-25 | --- |
| spiny menodora | MEESP2 | 10-20 | --- | --- |
| white bursage | AMDU2 | 2-5 | --- | 2-15 |

| Range site number | 030XB041NV | 030XB036NV | 030XB017NV |
|---------------------------------|------------|------------|------------|
| Potential production (lb/acre): | | | |
| Favorable years | 800 | 1300 | 125 |
| Normal years | 600 | 1000 | 75 |
| Unfavorable years | 400 | 800 | 25 |

1180--ACOMA-DECAN-CATH 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-- | | | |
| | | ACOMA | DECAN | CATH | Inclusion 1 |
| Canby bluegrass | POCA | X | X | --- | --- |
| Indian ricegrass | ORRY | --- | --- | 20-35 | 2-10 |
| Sandberg bluegrass | POSE | X | X | --- | 2-10 |
| desert needlegrass | STSP3 | --- | --- | 2-8 | --- |
| galleta | HIJA | --- | --- | --- | 1-5 |
| muttongrass | POFE | X | X | --- | --- |
| needleandthread | STCO4 | --- | --- | 5-15 | --- |
| prairie junegrass | KOPY | X | X | --- | --- |
| erigonum | ERIOG | X | X | --- | --- |
| Nevada ephedra | EPNE | --- | --- | 2-5 | --- |
| Wyoming big sagebrush | ARTRW | X | X | 25-35 | --- |
| big sagebrush | ARTR2 | --- | --- | --- | 25-35 |
| desert bitterbrush | PUGL2 | X | X | --- | --- |
| desert peachbrush | PRFA | --- | --- | --- | 10-20 |
| fourwing saltbush | ATCA2 | --- | --- | 2-5 | --- |
| mountain big sagebrush | ARVA2 | X | X | --- | --- |
| rubber rabbitbrush | CHNA2 | --- | --- | --- | 5-15 |
| singleleaf pinyon | PIMO | X | X | --- | --- |
| Range site number | | 029XY065NV | 029XY065NV | 029XY006NV | 029XY009NV |
| Potential production (lb/acre): | | | | | |
| Favorable years | | 500 | 500 | 800 | 1000 |
| Normal years | | 300 | 300 | 600 | 700 |
| Unfavorable years | | 200 | 200 | 300 | 500 |

1190--MINU-SHROE-ACOMA 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-- | | | | |
| | | MINU | SHROE | ACOMA | Inclusion 1 | Inclusion 2 |
| Indian ricegrass | OREY | --- | --- | --- | --- | 20-35 |
| bluegrass | POA++ | X | --- | --- | --- | --- |
| bottlebrush squirreltail | SIBY | X | --- | --- | --- | --- |
| desert needlegrass | STSP3 | --- | --- | --- | --- | 2-8 |
| muttongrass | POFE | X | --- | --- | --- | --- |
| needleandthread | STCO4 | --- | --- | --- | --- | 5-15 |
| King's birdbeak | COXI | --- | X | X | X | --- |
| Nevada sphedra | EPNE | --- | --- | --- | --- | 2-5 |
| Stansbury cliffrose | COMES | X | X | X | X | --- |
| Wyoming big sagebrush | ARTRW | --- | X | X | X | 25-35 |
| black sagebrush | ARARN | X | --- | --- | --- | --- |
| desert bitterbrush | PUGL2 | --- | X | X | X | --- |
| fourwing saltbush | ATCA2 | --- | --- | --- | --- | 2-5 |
| green sphedra | EPVI | X | --- | --- | --- | --- |
| mountain big sagebrush | ARVA2 | --- | X | X | X | --- |
| singleleaf pinyon | PIMO | X | --- | --- | --- | --- |
| Range site number | | 029XY069NV | 029XY070NV | 029XY070NV | 029XY070NV | 029XY006NV |
| Potential production (lb/acre): | | | | | | |
| Favorable years | | 400 | 450 | 450 | 450 | 800 |
| Normal years | | 300 | 300 | 300 | 300 | 600 |
| Unfavorable years | | 150 | 100 | 100 | 100 | 300 |

1210--BRIER-ACOMA-BELLEHELEN 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-- | | | | |
| | | BRIER | ACOMA | BELLEHELEN | Inclusion 1 | Inclusion 2 |
| Canby bluegrass | POCA | X | --- | --- | --- | --- |
| Indian ricegrass | ORRY | --- | --- | X | --- | --- |
| Sandberg bluegrass | POSE | X | --- | X | --- | --- |
| bottlebrush squirreltail | SIHY | --- | --- | X | --- | --- |
| green ephedra | EPVI | --- | --- | X | --- | --- |
| muttongrass | POFE | X | --- | --- | --- | --- |
| prairie junegrass | KOPY | X | --- | --- | --- | --- |
| King's birdbeak | COKI | --- | X | --- | X | --- |
| erigonum | ERIOG | X | --- | --- | --- | --- |
| Stansbury cliffrose | COMES | --- | X | --- | X | --- |
| Wyoming big sagebrush | ARTRW | X | X | --- | X | --- |
| black sagebrush | ARARN | --- | --- | X | --- | --- |
| desert bitterbrush | PUGL2 | X | X | --- | X | --- |
| mountain big sagebrush | ARVA2 | X | X | --- | X | --- |
| singleleaf pinyon | PIMO | X | --- | --- | --- | --- |
| Range site number | | 029XY065NV | 029XY070NV | 029XY071NV | 029XY070NV | none |
| Potential production (lb/acre): | | | | | | |
| Favorable years | | 500 | 450 | 400 | 450 | |
| Normal years | | 300 | 300 | 250 | 300 | |
| Unfavorable years | | 200 | 100 | 150 | 100 | |

1211--BRIER-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-- | | | |
| | | BRIER | ROCK OUTCROP | Inclusion 1 | Inclusion 2 |
| Indian ricegrass | ORRY | --- | --- | 10-15 | --- |
| Sandberg bluegrass | POSE | 1-5 | --- | --- | --- |
| blue grama | BOGR2 | --- | --- | 2-5 | --- |
| bottlebrush squirreltail | SIHY | 1-5 | --- | --- | --- |
| galleta | HIJA | --- | --- | 2-8 | --- |
| mountain brome | BRCAS | --- | --- | --- | 2-5 |
| muttongrass | POFE | 1-5 | --- | --- | 2-8 |
| needleandthread | STCO4 | --- | --- | 10-20 | --- |
| needlegrass | STIPA | --- | --- | --- | 20-30 |
| slender wheatgrass | AGTR | --- | --- | --- | 5-10 |
| spike fescue | LEKI2 | --- | --- | --- | 2-5 |
| milkvetch | ASTRA | 1-5 | --- | --- | --- |
| Stansbury cliffrose | COMES | 1-5 | --- | 2-10 | --- |
| big sagebrush | ARTR2 | --- | --- | 20-30 | --- |
| ephedra | EPHED | --- | --- | 5-10 | --- |
| fourwing saltbush | ATCA2 | --- | --- | 2-5 | --- |
| green ephedra | EPVI | 1-5 | --- | --- | --- |
| mountain big sagebrush | ARVA2 | 1-5 | --- | --- | 15-25 |
| snowberry | SYMPH | --- | --- | --- | 2-8 |
| singleleaf pinyon | PIMO | 1-5 | --- | --- | --- |

| Range site number | 029XY095NV | none | 029XY075NV | 029XY050NV |
|---------------------------------|------------|------|------------|------------|
| Potential production (lb/acre): | | | | |
| Favorable years | 350 | | 700 | 1800 |
| Normal years | 200 | | 500 | 1500 |
| Unfavorable years | 150 | | 300 | 1000 |

1220--LIEN-VEET 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-- | | |
| | | LIEN | VEET | Inclusion 1 |
| Indian ricegrass | ORHY | --- | 15-25 | --- |
| bluegrass | POA++ | X | --- | --- |
| bottlebrush squirreltail | SIHY | X | --- | --- |
| muttongrass | POFE | X | --- | --- |
| needleandthread | STCO4 | --- | 15-25 | --- |
| thickspike wheatgrass | AGDA | --- | 5-15 | --- |
| Stansbury cliffrose | COMES | X | --- | --- |
| big sagebrush | ARTR2 | --- | 15-25 | --- |
| black sagebrush | ARARN | X | --- | --- |
| fourwing saltbush | ATCA2 | --- | 2-8 | --- |
| green ephedra | EPVI | X | --- | --- |
| rabbitbrush | CHRY9 | --- | 2-5 | --- |
| winterfat | EULA5 | --- | 2-5 | --- |
| singleleaf pinyon | PIMO | X | --- | --- |
| Range site number | | 029XY069NV | 028BY005NV | none |
| Potential production (lb/acre): | | 400 | 800 | |
| Favorable years | | 300 | 600 | |
| Normal years | | 150 | 400 | |
| Unfavorable years | | | | |

1230--PAHRANAGAT 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-- | | | |
| | | PAHRANAGAT | PAHRANAGAT | Inclusion 1 | Inclusion 2 |
| Baltic rush | JUBA | --- | 5-15 | 5-15 | 1-5 |
| alkali cordgrass | SPGR | --- | 2-5 | 2-5 | --- |
| alkali sacaton | SPAI | 1-5 | 25-40 | 25-40 | 20-40 |
| basin wildrye | ELCI2 | 45-65 | 2-5 | 2-5 | 25-35 |
| creeping wildrye | ELTR3 | 5-15 | --- | --- | --- |
| giantreed | ARDO4 | --- | 2-5 | 2-5 | --- |
| inland saltgrass | DISPS2 | --- | 10-15 | 10-15 | 2-10 |
| western wheatgrass | AGSM | 5-15 | --- | --- | --- |
| basin big sagebrush | ARTRT | 5-10 | --- | --- | --- |
| black greasewood | SAVE4 | --- | --- | --- | 5-15 |
| rabbitbrush | CHRS9 | --- | --- | --- | 1-5 |

| Range site number | 029XY003NV | 029XY002NV | 029XY002NV | 029XY004NV |
|---------------------------------|------------|------------|------------|------------|
| Potential production (lb/acre): | | | | |
| Favorable years | 3000 | 3300 | 3300 | 1600 |
| Normal years | 2000 | 2200 | 2200 | 1100 |
| Unfavorable years | 800 | 1000 | 1000 | 800 |

1250--PATTER-HEIST 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-- | | |
| | | PATTER | HEIST | Inclusion 1 |
| Indian ricegrass | ORHY | 20-35 | 20-35 | 2-10 |
| Sandberg bluegrass | POSE | --- | --- | 2-10 |
| desert needlegrass | STSP3 | 2-8 | 2-8 | --- |
| galleta | HIJA | --- | --- | 1-5 |
| needleandthread | STCO4 | 5-15 | 5-15 | --- |
| Nevada ephedra | EPNE | 2-5 | 2-5 | --- |
| Wyoming big sagebrush | ARTRW | 25-35 | 25-35 | --- |
| big sagebrush | ARTR2 | --- | --- | 25-35 |
| desert peachbrush | PRFA | --- | --- | 10-20 |
| fourwing saltbush | ATCA2 | 2-5 | 2-5 | --- |
| rubber rabbitbrush | CHNA2 | --- | --- | 5-15 |
| Range site number | | 029XY006NV | 029XY006NV | 029XY009NV |
| Potential production (lb/acre): | | | | |
| Favorable years | | 800 | 800 | 1000 |
| Normal years | | 600 | 600 | 700 |
| Unfavorable years | | 300 | 300 | 500 |

1260--HOLLACE-GABBVALLY 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-- | | | | | |
| | | HOLLACE | GABBVALLY | Inclusion 1 | Inclusion 2 | Inclusion 3 | Inclusion 4 |
| Indian ricegrass | ORHY | 1-3 | 10-15 | 1-3 | --- | 2-10 | --- |
| Sandberg bluegrass | POSE | --- | 2-5 | --- | --- | 2-10 | --- |
| desert needlegrass | STSP3 | 2-8 | 2-8 | 2-8 | --- | --- | --- |
| galleta | HIJA | --- | 2-8 | --- | --- | 1-5 | --- |
| needleandthread | STCO4 | --- | 15-25 | --- | --- | --- | --- |
| Nevada ephedra | EPNE | 2-5 | --- | 2-5 | --- | --- | --- |
| Stansbury cliffrose | COMES | T-8 | --- | T-8 | --- | --- | --- |
| Wyoming big sagebrush | ARTRW | --- | 30-35 | --- | --- | --- | --- |
| big sagebrush | ARTR2 | --- | --- | --- | --- | 25-35 | --- |
| blackbrush | CORA | 60-75 | --- | 60-75 | --- | --- | --- |
| desert bitterbrush | PUGL2 | 2-8 | --- | 2-8 | --- | --- | --- |
| desert peachbrush | PRFA | --- | --- | --- | --- | 10-20 | --- |
| ephedra | EPHED | 2-5 | 2-8 | 2-5 | --- | --- | --- |
| fourwing saltbush | ATCA2 | --- | 2-5 | --- | --- | --- | --- |
| rubber rabbitbrush | CHNA2 | --- | --- | --- | --- | 5-15 | --- |
| Range site number | | 029XY077NV | 029XY010NV | 029XY077NV | none | 029XY009NV | none |
| Potential production (lb/acre): | | | | | | | |
| Favorable years | | 700 | 500 | 700 | | 1000 | |
| Normal years | | 500 | 350 | 500 | | 700 | |
| Unfavorable years | | 300 | 250 | 300 | | 500 | |

1261--HOLLACE-ROCEPAH-WYVA 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-- | | | | | |
| | | HOLLACE | ROCEPAH | WYVA | Inclusion 1 | Inclusion 2 | Inclusion 3 |
| Indian ricegrass | ORHY | 1-3 | 5-10 | 10-15 | --- | 1-3 | 2-10 |
| Sandberg bluegrass | POSE | --- | --- | --- | --- | --- | 2-10 |
| blue grama | BOGR2 | --- | --- | 2-5 | --- | --- | --- |
| desert needlegrass | STSP3 | 2-8 | --- | --- | --- | 2-8 | --- |
| galleta | HIJA | --- | --- | 2-8 | --- | --- | 1-5 |
| needleandthread | STCO4 | --- | --- | 10-20 | --- | --- | --- |
| Nevada ephedra | EPNE | 2-5 | 2-5 | --- | --- | 2-5 | --- |
| Stansbury cliffrose | COMES | T-8 | --- | 2-10 | --- | T-8 | --- |
| big sagebrush | ARTR2 | --- | --- | 20-30 | --- | --- | 25-35 |
| blackbrush | CORA | 60-75 | 60-70 | --- | --- | 60-75 | --- |
| bud sagebrush | ARSP5 | --- | 1-5 | --- | --- | --- | --- |
| desert bitterbrush | PUGL2 | 2-8 | --- | --- | --- | 2-8 | --- |
| desert peachbrush | PRFA | --- | --- | --- | --- | --- | 10-20 |
| ephedra | EPHED | 2-5 | --- | 5-10 | --- | 2-5 | --- |
| fourwing saltbush | ATCA2 | --- | 1-3 | 2-5 | --- | --- | 5-15 |
| rubber rabbitbrush | CENA2 | --- | --- | --- | --- | --- | --- |
| Range site number | | 029XY077NV | 029XY013NV | 029XY075NV | none | 029XY077NV | 029XY009NV |
| Potential production (lb/acre): | | | | | | | |
| Favorable years | | 700 | 350 | 700 | | 700 | 1000 |
| Normal years | | 500 | 250 | 500 | | 500 | 700 |
| Unfavorable years | | 300 | 100 | 300 | | 300 | 500 |

1262--HOLLACE-WINKLO-WYVA 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-- | | | | | |
| | | HOLLACE | WINKLO | WYVA | Inclusion 1 | Inclusion 2 | Inclusion 3 |
| Indian ricegrass | OREY | 1-3 | 1-3 | 10-15 | 2-10 | --- | --- |
| Sandberg bluegrass | POSE | --- | --- | --- | 2-10 | --- | --- |
| blue grama | BOGR2 | --- | --- | 2-5 | --- | --- | --- |
| desert needlegrass | STSP3 | 2-8 | 2-8 | --- | --- | --- | --- |
| galleta | HIJA | --- | --- | 2-8 | 1-5 | --- | --- |
| needleandthread | STCO4 | --- | --- | 10-20 | --- | --- | --- |
| Nevada ephedra | EPNE | 2-5 | 2-5 | --- | --- | --- | --- |
| Stansbury cliffrose | COMES | T-8 | T-8 | 2-10 | --- | --- | --- |
| big sagebrush | ARTR2 | --- | --- | 20-30 | 25-35 | --- | --- |
| blackbrush | CORA | 60-75 | 60-75 | --- | --- | --- | --- |
| desert bitterbrush | PUGL2 | 2-8 | 2-8 | --- | --- | --- | --- |
| desert peachbrush | PRFA | --- | --- | --- | 10-20 | --- | --- |
| ephedra | EPHE2 | 2-5 | 2-5 | 5-10 | --- | --- | --- |
| fourwing saltbush | ATCA2 | --- | --- | 2-5 | --- | --- | --- |
| rubber rabbitbrush | CHNA2 | --- | --- | --- | 5-15 | --- | --- |
| Range site number | | 029XY077NV | 029XY077NV | 029XY075NV | 029XY009NV | none | none |
| Potential production (lb/acre): | | | | | | | |
| Favorable years | | 700 | 700 | 700 | 1000 | | |
| Normal years | | 500 | 500 | 500 | 700 | | |
| Unfavorable years | | 300 | 300 | 300 | 500 | | |

1270--LAROSS-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-- | | | |
| | | LAROSS | ROCK OUTCROP | Inclusion 1 | Inclusion 2 |
| Canby bluegrass | POCA | X | --- | 2-5 | --- |
| Indian ricegrass | OREY | X | --- | --- | X |
| Sandberg bluegrass | POSE | X | --- | --- | X |
| blue grama | BOGR2 | X | --- | --- | X |
| muttongrass | POFE | X | --- | 15-25 | X |
| needleandthread | STCO4 | --- | --- | --- | X |
| Utah serviceberry | AMUT | X | --- | 15-25 | --- |
| antelope bitterbrush | PUTR2 | --- | --- | --- | X |
| desert bitterbrush | PUGL2 | --- | --- | 5-15 | --- |
| green ephedra | EPVI | --- | --- | 2-5 | X |
| mountain big sagebrush | ARVA2 | X | --- | 10-20 | X |
| ponderosa pine | PIPO | --- | --- | --- | X |
| Range site number | | 029XY100NV | none | 029XY098NV | 029XY097NV |
| Potential production (lb/acre): | | | | | |
| Favorable years | | 1300 | | 1200 | 800 |
| Normal years | | 900 | | 1000 | 600 |
| Unfavorable years | | 600 | | 800 | 500 |

1300--MORMOUNT-ARIZO 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-- | | | | | |
| | | MORMOUNT | ARIZO | Inclusion 1 | Inclusion 2 | Inclusion 3 | Inclusion 4 |
| Indian ricegrass | ORHY | 2-5 | --- | 2-5 | 2-8 | 2-5 | --- |
| big galleta | HIRI | 5-15 | 5-10 | 20-35 | 40-65 | 5-15 | --- |
| bush muhly | MUPO2 | --- | 1-5 | 5-15 | 5-15 | --- | --- |
| Nevada ephedra | EPNE | --- | 1-5 | 2-5 | --- | --- | --- |
| baccharis | BACCH | --- | 5-15 | --- | --- | --- | --- |
| blackbrush | CORA | 60-70 | --- | --- | --- | 60-70 | --- |
| bursage | FRANS* | --- | 5-20 | --- | --- | --- | --- |
| creosotebush | LATR2 | 2-5 | 5-20 | 5-15 | 2-5 | 2-5 | --- |
| erigonum | ERIOG | --- | 1-5 | --- | --- | --- | --- |
| ratany | KRAME | --- | --- | 2-5 | --- | --- | --- |
| spiny hopsage | GRSP | --- | --- | 2-8 | --- | --- | --- |
| white burrobrush | HISA | --- | 2-5 | --- | --- | --- | --- |
| white bursage | AMDU2 | T-8 | --- | T-8 | T-5 | T-8 | --- |
| winterfat | EULAS | --- | --- | 2-8 | --- | --- | --- |
| Range site number | | 030XB029NV | 030XB028NV | 030XB043NV | 030XB039NV | 030XB029NV | none |
| Potential production (lb/acre): | | | | | | | |
| Favorable years | | 500 | 500 | 1000 | 1400 | 500 | |
| Normal years | | 350 | 350 | 700 | 1000 | 350 | |
| Unfavorable years | | 250 | 200 | 450 | 700 | 250 | |

1302--MORMOUNT VERY GRAVELLY SANDY LOAM, 2 TO 8 PERCENT SLOPE S

(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-- | | | |
| | | MORMOUNT | Inclusion 1 | Inclusion 2 | Inclusion 3 |
| Indian ricegrass | ORRY | 2-5 | 2-5 | 2-5 | --- |
| big galleta | HIRI | 5-15 | 5-15 | 5-15 | 5-10 |
| bush muhly | MUPO2 | --- | --- | --- | 1-5 |
| Nevada ephedra | EFNE | --- | --- | --- | 1-5 |
| baccharis | BACCH | --- | --- | --- | 5-15 |
| blackbrush | CORA | 60-70 | 60-70 | 60-70 | --- |
| bursage | FRANS* | --- | --- | --- | 5-20 |
| creosotebush | LATR2 | 2-5 | 2-5 | 2-5 | 5-20 |
| erigonum | ERIOG | --- | --- | --- | 1-5 |
| white burrobrush | HYSA | --- | --- | --- | 2-5 |
| white bursage | AMDU2 | T-8 | T-8 | T-8 | --- |

| Range site number | 030XB029NV | 030XB029NV | 030XB029NV | 030XB028NV |
|---------------------------------|------------|------------|------------|------------|
| Potential production (lb/acre): | 500 | 500 | 500 | 500 |
| Favorable years | 350 | 350 | 350 | 350 |
| Normal years | 250 | 250 | 250 | 200 |
| Unfavorable years | | | | |

1303--MORMOUNT-CANUTIO 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-- | | | | | |
| | | MORMOUNT | CANUTIO | Inclusion 1 | Inclusion 2 | Inclusion 3 | Inclusion 4 |
| Indian ricegrass | ORRY | 2-5 | 2-8 | --- | 2-5 | 2-5 | --- |
| big galleta | HIRI | 5-15 | 40-65 | 5-10 | 5-15 | 20-35 | --- |
| bush muhly | MUPO2 | --- | 5-15 | 1-5 | --- | 5-15 | --- |
| Nevada ephedra | EPNE | --- | --- | 1-5 | --- | 2-5 | --- |
| baccharis | BACCH | --- | --- | 5-15 | --- | --- | --- |
| blackbrush | CORA | 60-70 | --- | --- | 60-70 | --- | --- |
| bursage | FRANS* | --- | --- | 5-20 | --- | --- | --- |
| creosotebush | LATR2 | 2-5 | 2-5 | 5-20 | 2-5 | 5-15 | --- |
| eriogonum | ERIOG | --- | --- | 1-5 | --- | --- | --- |
| ratany | KRAME | --- | --- | --- | --- | 2-5 | --- |
| spiny hopsage | GRSP | --- | --- | --- | --- | 2-8 | --- |
| white burrobrush | HYSA | --- | --- | 2-5 | --- | --- | --- |
| white bursage | AMDU2 | T-8 | T-5 | --- | T-8 | T-8 | --- |
| winterfat | EULA5 | --- | --- | --- | --- | 2-8 | --- |
| Range site number | | 030XB029NV | 030XB039NV | 030XB028NV | 030XB029NV | 030XB043NV | none |
| Potential production (lb/acre): | | | | | | | |
| Favorable years | | 500 | 1400 | 500 | 500 | 1000 | |
| Normal years | | 350 | 1000 | 350 | 350 | 700 | |
| Unfavorable years | | 250 | 700 | 200 | 250 | 450 | |

1340--AYMATE-CANUTIO 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-- | | | | |
| | | AYMATE | CANUTIO | Inclusion 1 | Inclusion 2 | Inclusion 3 |
| Indian ricegrass | OREY | 2-5 | 2-8 | --- | 2-8 | 2-5 |
| big galleta | HIRI | 20-35 | 40-65 | 5-10 | 40-65 | 5-15 |
| bush muhly | MUPO2 | 5-15 | 5-15 | 1-5 | 5-15 | --- |
| Nevada sphedra | EPNE | 2-5 | --- | 1-5 | --- | --- |
| baccharis | BACCE | --- | --- | 5-15 | --- | --- |
| blackbrush | CORA | --- | --- | --- | --- | 60-70 |
| bursage | FRANS* | --- | --- | 5-20 | --- | --- |
| creosotebush | LATR2 | 5-15 | 2-5 | 5-20 | 2-5 | 2-5 |
| erigonum | ERIOG | --- | --- | 1-5 | --- | --- |
| ratany | KRAME | 2-5 | --- | --- | --- | --- |
| spiny hopsage | GRSP | 2-8 | --- | --- | --- | --- |
| white burrobrush | HYSA | --- | --- | 2-5 | --- | --- |
| white bursage | AMDU2 | T-8 | T-5 | --- | T-5 | T-8 |
| winterfat | EULAS | 2-8 | --- | --- | --- | --- |
| Range site number | | 030XB043NV | 030XB039NV | 030XB028NV | 030XB039NV | 030XB029NV |
| Potential production (lb/acre): | | | | | | |
| Favorable years | | 1000 | 1400 | 500 | 1400 | 500 |
| Normal years | | 700 | 1000 | 350 | 1000 | 350 |
| Unfavorable years | | 450 | 700 | 200 | 700 | 250 |

1341--AYMATE SANDY 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-- | | | |
| | | AYMATE | Inclusion 1 | Inclusion 2 | Inclusion 3 |
| Indian ricegrass | ORRY | 5-15 | 2-8 | --- | --- |
| big galleta | HIRI | 5-15 | 40-65 | 5-10 | --- |
| bush muhly | MUPO2 | 2-5 | 5-15 | 1-5 | --- |
| dropseed | SPORO | 2-5 | --- | --- | --- |
| Anderson wolfberry | LYAN | 2-5 | --- | --- | --- |
| Nevada ephedra | EPNE | 2-5 | --- | 1-5 | --- |
| baccharis | BACCH | --- | --- | 5-15 | --- |
| bursage | FRANS* | --- | --- | 5-20 | --- |
| creosotebush | LATR2 | --- | 2-5 | 5-20 | --- |
| eriogonum | ERIOG | --- | --- | 1-5 | --- |
| fourwing saltbush | ATCA2 | 15-30 | --- | --- | --- |
| spiny hopsage | GRSP | 5-10 | --- | --- | --- |
| white burrobrush | HYSA | --- | --- | 2-5 | --- |
| white bursage | AMDU2 | --- | T-5 | --- | --- |
| winterfat | EULA5 | 5-10 | --- | --- | --- |
| Range site number | | 030XB035NV | 030XB039NV | 030XB028NV | none |
| Potential production (lb/acre): | | | | | |
| Favorable years | | 1000 | 1400 | 500 | |
| Normal years | | 700 | 1000 | 350 | |
| Unfavorable years | | 450 | 700 | 200 | |

1342--AYMATE-MORMOUNT-ARIZO 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-- | | | | | |
| | | AYMATE | MORMOUNT | ARIZO | Inclusion 1 | Inclusion 2 | Inclusion 3 |
| Indian ricegrass | ORHY | 2-5 | 2-5 | --- | 2-8 | 2-5 | --- |
| big galleta | HIRI | 20-35 | 5-15 | 5-10 | 40-65 | 5-15 | --- |
| bush muhly | MUPO2 | 5-15 | --- | 1-5 | 5-15 | --- | --- |
| Nevada ephedra | EPNE | 2-5 | --- | 1-5 | --- | --- | --- |
| baccharis | BACCH | --- | --- | 5-15 | --- | --- | --- |
| blackbrush | CORA | --- | 60-70 | --- | --- | 60-70 | --- |
| bursage | FRANS* | --- | --- | 5-20 | --- | --- | --- |
| creosotebush | LATR2 | 5-15 | 2-5 | 5-20 | 2-5 | 2-5 | --- |
| erigonum | ERIOG | --- | --- | 1-5 | --- | --- | --- |
| ratany | KRAME | 2-5 | --- | --- | --- | --- | --- |
| spiny hopsage | GRSP | 2-8 | --- | --- | --- | --- | --- |
| white burrobrush | HYSA | --- | --- | 2-5 | --- | --- | --- |
| white bursage | AMDU2 | T-8 | T-8 | --- | T-5 | T-8 | --- |
| winterfat | EULA5 | 2-8 | --- | --- | --- | --- | --- |
| Range site number | | 030XB043NV | 030XB029NV | 030XB028NV | 030XB039NV | 030XB029NV | none |
| Potential production (lb/acre): | | | | | | | |
| Favorable years | | 1000 | 500 | 500 | 1400 | 500 | |
| Normal years | | 700 | 350 | 350 | 1000 | 350 | |
| Unfavorable years | | 450 | 250 | 200 | 700 | 250 | |

1350--BARD GRAVELLY 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-- | |
| | | BARD | Inclusion 1 |
| big galleta | HIRI | T-8 | T-8 |
| Nevada sphedra | EPNE | T-5 | T-5 |
| creosotebush | LATR2 | 10-25 | 10-25 |
| range ratany | KRPA | 2-5 | 2-5 |
| white bursage | AMDU2 | 25-50 | 25-50 |
| Range site number | | 030XB005NV | 030XB005NV |
| Potential production (lb/acre): | | | |
| Favorable years | | 500 | 500 |
| Normal years | | 300 | 300 |
| Unfavorable years | | 200 | 200 |

1360--CANUTIO-ARIZO 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-- | | | | |
| | | CANUTIO | ARIZO | Inclusion 1 | Inclusion 2 | Inclusion 3 |
| Indian ricegrass | ORHY | 2-8 | --- | 2-5 | --- | 2-8 |
| big galleta | HIRI | 40-65 | 5-10 | 5-15 | --- | 40-65 |
| bush muhly | MUPO2 | 5-15 | 1-5 | --- | --- | 5-15 |
| Nevada sphadra | EPNE | --- | 1-5 | --- | --- | --- |
| baccharis | BACCH | --- | 5-15 | --- | --- | --- |
| blackbrush | CORA | --- | --- | 60-70 | --- | --- |
| bursage | FRANS* | --- | 5-20 | --- | --- | --- |
| creosotebush | LATR2 | 2-5 | 5-20 | 2-5 | --- | 2-5 |
| erigonum | ERIOG | --- | 1-5 | --- | --- | --- |
| white burrobrush | HYSA | --- | 2-5 | --- | --- | --- |
| white bursage | AMDU2 | T-5 | --- | T-8 | --- | T-5 |
| Range site number | | 030XB039NV | 030XB028NV | 030XB029NV | none | 030XB039NV |
| Potential production (lb/acre): | | | | | | |
| Favorable years | | 1400 | 500 | 500 | | 1400 |
| Normal years | | 1000 | 350 | 350 | | 1000 |
| Unfavorable years | | 700 | 200 | 250 | | 700 |

1370--MORMON MESA 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-- | | | | | |
| | | MORMON MESA | MORMON MESA | Inclusion 1 | Inclusion 2 | Inclusion 3 | Inclusion 4 |
| big galleta | HIRI | T-8 | T-8 | 5-10 | T-8 | T-8 | --- |
| bush muhly | MUPO2 | --- | --- | 1-5 | --- | --- | --- |
| Nevada ephedra | EPNE | T-5 | T-5 | 1-5 | T-5 | T-5 | --- |
| baccharis | BACCH | --- | --- | 5-15 | --- | --- | --- |
| bursage | FRANS* | --- | --- | 5-20 | --- | --- | --- |
| creosotebush | LATR2 | 10-25 | 10-25 | 5-20 | 10-25 | 10-25 | --- |
| erigonum | ERIOG | --- | --- | 1-5 | --- | --- | --- |
| range ratany | KRPA | 2-5 | 2-5 | --- | 2-5 | 2-5 | --- |
| white burrobrush | HYSA | --- | --- | 2-5 | --- | --- | --- |
| white bursage | AMDU2 | 25-50 | 25-50 | --- | 25-50 | 25-50 | --- |
| Range site number | | 030XB005NV | 030XB005NV | 030XB028NV | 030XB005NV | 030XB005NV | none |
| Potential production (lb/acre): | | | | | | | |
| Favorable years | | 500 | 500 | 500 | 500 | 500 | |
| Normal years | | 300 | 300 | 350 | 300 | 300 | |
| Unfavorable years | | 200 | 200 | 200 | 200 | 200 | |

1371--MORMON MESA-NAYE-DALIAN 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-- | | | | | | |
| | | MORMON MESA | NAYE | DALIAN | Inclusion 1 | Inclusion 2 | Inclusion 3 | Inclusion 4 |
| big galleta | HIRI | T-8 | T-8 | T-8 | 2-5 | T-8 | 5-10 | --- |
| bush muhly | MUPO2 | --- | --- | --- | --- | --- | 1-5 | --- |
| desert needlegrass | STSP3 | --- | --- | --- | 2-5 | --- | --- | --- |
| Nevada ephedra | EPNE | T-5 | T-5 | T-5 | 2-5 | T-5 | 1-5 | --- |
| baccharis | BACCE | --- | --- | --- | --- | --- | 5-15 | --- |
| blackbrush | CORA | --- | --- | --- | 60-85 | --- | --- | --- |
| bursage | FRANS* | --- | --- | --- | --- | --- | 5-20 | --- |
| creosotebush | LATR2 | 10-25 | 10-25 | 10-25 | --- | 10-25 | 5-20 | --- |
| erigonum | ERIOG | --- | --- | --- | --- | --- | 1-5 | --- |
| range ratany | KRPA | 2-5 | 2-5 | 2-5 | --- | 2-5 | --- | --- |
| white burrobrush | HYSA | --- | --- | --- | --- | --- | 2-5 | --- |
| white bursage | AMDU2 | 25-50 | 25-50 | 25-50 | --- | 25-50 | --- | --- |
| Range site number | | 030XB005NV | 030XB005NV | 030XB005NV | 030XB030NV | 030XB005NV | 030XB028NV | none |
| Potential production (lb/acre): | | | | | | | | |
| Favorable years | | 500 | 500 | 500 | 300 | 500 | 500 | |
| Normal years | | 300 | 300 | 300 | 200 | 300 | 350 | |
| Unfavorable years | | 200 | 200 | 200 | 150 | 200 | 200 | |

1372--MORMON MESA-TONOPAH-ARADA 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-- | | | | |
| | | MORMON MESA | TONOPAH | ARADA | Inclusion 1 | Inclusion 2 |
| big galleta | HIRI | T-8 | T-8 | T-8 | T-8 | |
| bush muhly | MUPO2 | --- | --- | --- | T-8 | 5-10 |
| Nevada ephedra | EPNE | T-5 | T-5 | T-5 | --- | 1-5 |
| baccharis | BACCH | --- | --- | --- | T-5 | 1-5 |
| bursage | FRANS* | --- | --- | --- | --- | 5-15 |
| creosotebush | LATR2 | 10-25 | 10-25 | --- | --- | 5-20 |
| erigonum | ERIOG | --- | --- | 10-25 | 10-25 | 5-20 |
| range ratany | KRPA | 2-5 | 2-5 | --- | --- | 1-5 |
| white burrobrush | HYSA | --- | --- | 2-5 | 2-5 | --- |
| white bursage | AMDU2 | 25-50 | 25-50 | 25-50 | 25-50 | 2-5 |
| | | | | | | --- |
| Range site number | | 030XB005NV | 030XB005NV | 030XB005NV | 030XB005NV | 030XB028NV |
| Potential production (lb/acre): | | | | | | |
| Favorable years | | 500 | 500 | 500 | 500 | 500 |
| Normal years | | 300 | 300 | 300 | 300 | 350 |
| Unfavorable years | | 200 | 200 | 200 | 200 | 200 |

1180--BRACKEN GRAVELLY 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-- | | | | |
| | | BRACKEN | Inclusion 1 | Inclusion 2 | Inclusion 3 | Inclusion 4 |
| big galleta | HIRI | --- | --- | --- | 5-10 | --- |
| bush muhly | MUPO2 | --- | --- | --- | 1-5 | --- |
| Fremont dalea | PSFR | 25-35 | --- | --- | --- | --- |
| Nevada ephedra | EPNE | --- | --- | --- | 1-5 | --- |
| Torrey ephedra | EPTO | 2-8 | --- | --- | --- | --- |
| Virgin River encelia | ENFRV | 5-15 | --- | --- | --- | --- |
| baccharis | BACCH | --- | --- | --- | 5-15 | --- |
| bursage | FRANS* | --- | --- | --- | 5-20 | --- |
| creosotebush | LATR2 | --- | 65-80 | --- | 5-20 | --- |
| desert pepperweed | LEFR2 | 15-25 | --- | --- | --- | --- |
| erigonum | ERIOG | --- | --- | --- | 1-5 | --- |
| ratany | KRAME | --- | T-5 | --- | --- | --- |
| sandpaper plant | PETAL | 10-20 | --- | --- | --- | --- |
| white burrobrush | HYSA | --- | --- | --- | 2-5 | --- |
| white bursage | AMDU2 | --- | 5-25 | --- | --- | --- |
| white ratany | KRGR | 2-8 | --- | --- | --- | --- |
| Range site number | | 030XB003NV | 030XB019NV | none | 030XB028NV | none |
| Potential production (lb/acre): | | | | | | |
| Favorable years | | 500 | 225 | | 500 | |
| Normal years | | 350 | 150 | | 350 | |
| Unfavorable years | | 250 | 100 | | 200 | |

1390--SHANKBA-CHINKLE-KANACKY 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-- | | | | | | |
| | | SHANKBA | CHINKLE | KANACKY | Inclusion 1 | Inclusion 2 | Inclusion 3 | Inclusion 4 |
| Indian ricegrass | ORRY | 2-5 | --- | 2-5 | --- | --- | 2-8 | --- |
| big galleta | HIRI | 5-15 | T-5 | 5-15 | T-8 | T-8 | 40-65 | --- |
| bush muhly | MUPO2 | --- | --- | --- | --- | --- | 5-15 | --- |
| fluffgrass | ERPUS | --- | 2-5 | --- | --- | --- | --- | --- |
| Nevada ephedra | EPNE | --- | --- | --- | T-5 | T-5 | --- | --- |
| blackbrush | CORA | 60-70 | --- | 60-70 | --- | --- | --- | --- |
| creosotebush | LATR2 | 2-5 | 5-20 | 2-5 | 10-25 | 10-25 | 2-5 | --- |
| desert pepperweed | LEPR2 | --- | T-5 | --- | --- | --- | --- | --- |
| ephedra | EPHED | --- | T-10 | --- | --- | --- | --- | --- |
| range ratany | KRPA | --- | 2-5 | --- | 2-5 | 2-5 | --- | --- |
| white bursage | AMDU2 | T-8 | 50-60 | T-8 | 25-50 | 25-50 | T-5 | --- |
| Range site number | | 030XB029NV | 030XB001NV | 030XB029NV | 030XB005NV | 030XB005NV | 030XB039NV | none |
| Potential production (lb/acre): | | | | | | | | |
| Favorable years | | 500 | 350 | 500 | 500 | 500 | 1400 | |
| Normal years | | 350 | 250 | 350 | 300 | 300 | 1000 | |
| Unfavorable years | | 250 | 100 | 250 | 200 | 200 | 700 | |

1400--CAVE-CANUTIO 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-- | | | | |
| | | CAVE | CANUTIO | Inclusion 1 | Inclusion 2 | Inclusion 3 |
| Indian ricegrass | ORRY | 2-5 | 2-8 | --- | 2-5 | 2-8 |
| big galleta | HIRI | 5-15 | 40-65 | 5-10 | 5-15 | 40-65 |
| bush muhly | MUPO2 | --- | 5-15 | 1-5 | --- | 5-15 |
| Nevada ephedra | EPNE | --- | --- | 1-5 | --- | --- |
| baccharis | BACCH | --- | --- | 5-15 | --- | --- |
| blackbrush | CORA | 60-70 | --- | --- | 60-70 | --- |
| bursage | FRANS* | --- | --- | 5-20 | --- | --- |
| creosotebush | LATR2 | 2-5 | 2-5 | 5-20 | 2-5 | 2-5 |
| erigonum | ERIOG | --- | --- | 1-5 | --- | --- |
| white burrobrush | HYSA | --- | --- | 2-5 | --- | --- |
| white bursage | AMDU2 | T-8 | T-5 | --- | T-8 | T-5 |
| Range site number | | 030XB029NV | 030XB039NV | 030XB028NV | 030XB029NV | 030XB039NV |
| Potential production (lb/acre): | | | | | | |
| Favorable years | | 500 | 1400 | 500 | 500 | 1400 |
| Normal years | | 350 | 1000 | 350 | 350 | 1000 |
| Unfavorable years | | 250 | 700 | 200 | 250 | 700 |

1401--CAVE-ARIZO 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-- | | | | |
| | | CAVE | ARIZO | Inclusion 1 | Inclusion 2 | Inclusion 3 |
| Indian ricegrass | ORRY | 2-5 | --- | 2-5 | 2-8 | 2-8 |
| big galleta | HIRI | 5-15 | 5-10 | 5-15 | 40-65 | 40-65 |
| bush muhly | MUPO2 | --- | 1-5 | --- | 5-15 | 5-15 |
| Nevada ephedra | EPNE | --- | 1-5 | --- | --- | --- |
| baccharis | BACCH | --- | 5-15 | --- | --- | --- |
| blackbrush | CORA | 60-70 | --- | 60-70 | --- | --- |
| bursage | FRANS* | --- | 5-20 | --- | --- | --- |
| creosotebush | LATR2 | 2-5 | 5-20 | 2-5 | 2-5 | 2-5 |
| erigonum | ERIOG | --- | 1-5 | --- | --- | --- |
| white burrobrush | HYSA | --- | 2-5 | --- | --- | --- |
| white bursage | AMDU2 | T-8 | --- | T-8 | T-5 | T-5 |
| Range site number | | 030XB029NV | 030XB028NV | 030XB029NV | 030XB039NV | 030XB039NV |
| Potential production (lb/acre): | | | | | | |
| Favorable years | | 500 | 500 | 500 | 1400 | 1400 |
| Normal years | | 350 | 350 | 350 | 1000 | 1000 |
| Unfavorable years | | 250 | 200 | 250 | 700 | 700 |

1403--CAVE-TENCEE 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-- | | | | | |
| | | CAVE | TENCEE | Inclusion 1 | Inclusion 2 | Inclusion 3 | Inclusion 4 |
| Indian ricegrass | ORHY | 2-5 | --- | --- | 2-5 | --- | --- |
| big galleta | HIRI | 5-15 | --- | 5-10 | 5-15 | --- | --- |
| bush muhly | MUPO2 | --- | --- | 1-5 | --- | --- | --- |
| fluffgrass | ERPUS | --- | --- | --- | --- | 2-5 | --- |
| Nevada ephedra | EPNE | --- | --- | 1-5 | --- | --- | --- |
| baccharis | BACCH | --- | --- | 5-15 | --- | --- | --- |
| blackbrush | CORA | 60-70 | --- | --- | 60-70 | --- | --- |
| bursage | FRANS* | --- | --- | 5-20 | --- | --- | --- |
| creosotebush | LATR2 | 2-5 | 65-80 | 5-20 | 2-5 | 75-90 | --- |
| erigonum | ERIOG | --- | --- | 1-5 | --- | --- | --- |
| ratany | KRAME | --- | T-5 | --- | --- | --- | --- |
| white burrobrush | HYSA | --- | --- | 2-5 | --- | --- | --- |
| white bursage | AMDU2 | T-8 | 5-25 | --- | T-8 | 2-15 | --- |
| Range site number | | 030XB029NV | 030XB019NV | 030XB028NV | 030XB029NV | 030XB017NV | none |
| Potential production (lb/acre): | | | | | | | |
| Favorable years | | 500 | 225 | 500 | 500 | 125 | |
| Normal years | | 350 | 150 | 350 | 350 | 75 | |
| Unfavorable years | | 250 | 100 | 200 | 250 | 25 | |

1404--CAVE-MORMOUNT-CANUTIO 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-- | | | | | |
| | | CAVE | MORMOUNT | CANUTIO | Inclusion 1 | Inclusion 2 | Inclusion 3 |
| Indian ricegrass | ORRY | 2-5 | 2-5 | 2-8 | 2-5 | --- | --- |
| big galleta | HIRI | 5-15 | 5-15 | 40-65 | 5-15 | 5-10 | --- |
| bush muhly | MUPO2 | --- | --- | 5-15 | --- | 1-5 | --- |
| Nevada ephedra | EPNE | --- | --- | --- | --- | 1-5 | --- |
| baccharis | BACCH | --- | --- | --- | --- | 5-15 | --- |
| blackbrush | CORA | 60-70 | 60-70 | --- | 60-70 | --- | --- |
| bursage | FRANS* | --- | --- | --- | --- | 5-20 | --- |
| creosotebush | LATR2 | 2-5 | 2-5 | 2-5 | 2-5 | 5-20 | 65-80 |
| eriogonum | ERIOG | --- | --- | --- | --- | 1-5 | --- |
| ratany | KRAME | --- | --- | --- | --- | --- | T-5 |
| white burrobrush | HYSA | --- | --- | --- | --- | 2-5 | --- |
| white bursage | AMDU2 | T-8 | T-8 | T-5 | T-8 | --- | 5-25 |

| Range site number | 030XB029NV | 030XB029NV | 030XB039NV | 030XB029NV | 030XB028NV | 030XB019NV |
|---------------------------------|------------|------------|------------|------------|------------|------------|
| Potential production (lb/acre): | | | | | | |
| Favorable years | 500 | 500 | 1400 | 500 | 500 | 225 |
| Normal years | 350 | 350 | 1000 | 350 | 350 | 150 |
| Unfavorable years | 250 | 250 | 700 | 250 | 200 | 100 |

1405--CAVE-ZEHEME 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-- | | | | | |
| | | CAVE | ZEHEME | Inclusion 1 | Inclusion 2 | Inclusion 3 | Inclusion 4 |
| Indian ricegrass | OREY | 2-5 | --- | 2-5 | 2-5 | 2-5 | --- |
| big galleta | HIRI | 5-15 | 2-5 | 5-15 | 5-15 | 5-15 | 5-10 |
| bush muhly | MUPO2 | --- | --- | --- | --- | --- | 1-5 |
| desert needlegrass | STSP3 | --- | 2-5 | --- | --- | --- | --- |
| Nevada ephedra | EPNE | --- | 2-5 | --- | --- | --- | 1-5 |
| Baccharis | BACCH | --- | --- | --- | --- | --- | 5-15 |
| blackbrush | CORA | 60-70 | 60-85 | 60-70 | 60-70 | 60-70 | --- |
| bursage | FRANS* | --- | --- | --- | --- | --- | 5-20 |
| creosotebush | LATR2 | 2-5 | --- | 2-5 | 2-5 | 2-5 | 5-20 |
| erigonum | ERIOG | --- | --- | --- | --- | --- | 1-5 |
| white burrobrush | HYSA | --- | --- | --- | --- | --- | 2-5 |
| white bursage | AMDU2 | T-8 | --- | T-8 | T-8 | T-8 | --- |

| Range site number | 030XB029NV | 030XB030NV | 030XB029NV | 030XB029NV | 030XB029NV | 030XB028NV |
|---------------------------------|------------|------------|------------|------------|------------|------------|
| Potential production (lb/acre): | | | | | | |
| Favorable years | 500 | 300 | 500 | 500 | 500 | 500 |
| Normal years | 350 | 200 | 350 | 350 | 350 | 350 |
| Unfavorable years | 250 | 150 | 250 | 250 | 250 | 200 |

1406--CAVE VERY GRAVELLY SANDY LOAM, 4 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-- | | | | |
| | | CAVE | Inclusion 1 | Inclusion 2 | Inclusion 3 | Inclusion 4 |
| Indian ricegrass | OREY | 2-5 | 2-5 | 2-5 | 2-5 | --- |
| big galleta | HIRI | 5-15 | 5-15 | 5-15 | 5-15 | 5-10 |
| bush muhly | MUPO2 | --- | --- | --- | --- | 1-5 |
| Nevada sphedra | EPNE | --- | --- | --- | --- | 1-5 |
| baccharis | BACCH | --- | --- | --- | --- | 5-15 |
| blackbrush | CORA | 60-70 | 60-70 | 60-70 | 60-70 | --- |
| bursage | FRANS* | --- | --- | --- | --- | 5-20 |
| creosotebush | LATR2 | 2-5 | 2-5 | 2-5 | 2-5 | 5-20 |
| erigonum | ERIOG | --- | --- | --- | --- | 1-5 |
| white burrobrush | HYSA | --- | --- | --- | --- | 2-5 |
| white bursage | AMDU2 | T-8 | T-8 | T-8 | T-8 | --- |
| Range site number | | 030XB029NV | 030XB029NV | 030XB029NV | 030XB029NV | 030XB028NV |
| Potential production (lb/acre): | | | | | | |
| Favorable years | | 500 | 500 | 500 | 500 | 500 |
| Normal years | | 350 | 350 | 350 | 350 | 350 |
| Unfavorable years | | 250 | 250 | 250 | 250 | 200 |

1420--KANACKY-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-- | | | | |
| | | KANACKY | ROCK OUTCROP | Inclusion 1 | Inclusion 2 | Inclusion 3 |
| Indian ricegrass | ORRY | 2-5 | --- | 2-5 | 2-5 | --- |
| big galleta | HIRI | 5-15 | --- | 5-15 | 5-15 | T-5 |
| fluffgrass | ERPUS | --- | --- | --- | --- | 2-5 |
| blackbrush | CORA | 60-70 | --- | 60-70 | 60-70 | --- |
| creosotebush | LATR2 | 2-5 | --- | 2-5 | 2-5 | 5-20 |
| desert pepperweed | LEFR2 | --- | --- | --- | --- | T-5 |
| ephedra | EPHED | --- | --- | --- | --- | T-10 |
| range ratany | KRPA | --- | --- | --- | --- | 2-5 |
| white bursage | AMDU2 | T-8 | --- | T-8 | T-8 | 50-60 |
| Range site number | | 030XB029NV | none | 030XB029NV | 030XB029NV | 030XB001NV |
| Potential production (lb/acre): | | | | | | |
| Favorable years | | 500 | | 500 | 500 | 350 |
| Normal years | | 350 | | 350 | 350 | 250 |
| Unfavorable years | | 250 | | 250 | 250 | 100 |

1430--TYPIC TORRIORTMENTS-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-- | | | | | |
| | | TYPIC TORRIO | BADLAND | Inclusion 1 | Inclusion 2 | Inclusion 3 | Inclusion 4 |
| big galleta | HIRI | --- | --- | T-5 | T-5 | T-5 | 5-10 |
| bush muhly | MUPO2 | --- | --- | --- | --- | --- | 1-5 |
| fluffgrass | ERPUS | 2-5 | --- | 2-5 | 2-5 | 2-5 | --- |
| Nevada ephedra | EPNE | --- | --- | --- | --- | --- | 1-5 |
| baccharis | BACCH | --- | --- | --- | --- | --- | 5-15 |
| bursage | FRANS* | --- | --- | --- | --- | --- | 5-20 |
| creosotebush | LATR2 | 75-90 | --- | 5-20 | 5-20 | 5-20 | 5-20 |
| desert pepperweed | LEPR2 | --- | --- | T-5 | T-5 | T-5 | --- |
| ephedra | EPHED | --- | --- | T-10 | T-10 | T-10 | --- |
| erigonum | ERIOG | --- | --- | --- | --- | --- | 1-5 |
| range ratany | KRPA | --- | --- | 2-5 | 2-5 | 2-5 | --- |
| white burrobrush | HYSA | --- | --- | --- | --- | --- | 2-5 |
| white bursage | AMDU2 | 2-15 | --- | 50-60 | 50-60 | 50-60 | --- |

| Range site number | 030XB017NV | none | 030XB001NV | 030XB001NV | 030XB001NV | 030XB028NV |
|---------------------------------|------------|------|------------|------------|------------|------------|
| Potential production (lb/acre): | | | | | | |
| Favorable years | 125 | | 350 | 350 | 350 | 500 |
| Normal years | 75 | | 250 | 250 | 250 | 350 |
| Unfavorable years | 25 | | 100 | 100 | 100 | 200 |

1460--PINTWATER-ROCHPAH 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-- | | | | | |
| | | PINTWATER | ROCHPAH | Inclusion 1 | Inclusion 2 | Inclusion 3 | Inclusion 4 |
| Indian ricegrass | ORHY | 2-5 | 5-10 | 15-25 | 15-25 | 10-15 | --- |
| Sandberg bluegrass | POSE | --- | --- | --- | --- | 2-5 | --- |
| bottlebrush squirreltail | SIBY | --- | --- | --- | 2-5 | --- | --- |
| bush muhly | MUPO2 | --- | --- | 2-8 | --- | --- | --- |
| desert needlegrass | STSP3 | --- | --- | 10-20 | --- | 2-8 | --- |
| galleta | HIJA | --- | --- | 2-5 | 2-10 | 2-8 | --- |
| needleandthread | STCO4 | --- | --- | --- | --- | 15-25 | --- |
| Anderson wolfberry | LYAN | --- | --- | 1-5 | --- | --- | --- |
| Bailey greasewood | SAVEB | --- | --- | --- | 0-10 | --- | --- |
| Heermann buckwheat | ERHE | 1-5 | --- | --- | --- | --- | --- |
| Nevada ephedra | EPNE | --- | 2-5 | 5-15 | 1-5 | --- | --- |
| Wyoming big sagebrush | ARTRW | --- | --- | --- | --- | 30-35 | --- |
| banana yucca | YUBA | --- | --- | 1-3 | --- | --- | --- |
| blackbrush | CORA | --- | 60-70 | --- | --- | --- | --- |
| bud sagebrush | ARSP5 | --- | 1-5 | 1-5 | 5-15 | --- | --- |
| ephedra | KPHED | --- | --- | --- | --- | 2-8 | --- |
| fourwing saltbush | ATCA2 | 2-5 | 1-3 | 2-5 | --- | 2-5 | --- |
| green ephedra | EPVI | 20-30 | --- | --- | --- | --- | --- |
| shadscale | ATCO | --- | --- | --- | 25-35 | --- | --- |
| spiny hopsage | GRSP | --- | --- | 15-25 | --- | --- | --- |
| winterfat | EULA5 | --- | --- | 1-5 | 5-10 | --- | --- |
| yellow buckwheat | ERFA2 | 5-10 | --- | --- | --- | --- | --- |

| Range site number | 029XY085NV | 029XY013NV | 029XY079NV | 029XY017NV | 029XY010NV | none |
|---------------------------------|------------|------------|------------|------------|------------|------|
| Potential production (lb/acre): | | | | | | |
| Favorable years | 700 | 350 | 900 | 500 | 500 | |
| Normal years | 500 | 250 | 700 | 350 | 350 | |
| Unfavorable years | 300 | 100 | 450 | 150 | 250 | |

1470--TYBO-KEEFA-KOYEN 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-- | | | | | |
| | | TYBO | KEEFA | KOYEN | Inclusion 1 | Inclusion 2 | Inclusion 3 |
| Indian ricegrass | ORHY | 15-25 | 15-25 | 15-25 | 15-25 | --- | 15-25 |
| bottlebrush squirreltail | SIEY | --- | 2-5 | --- | --- | --- | --- |
| bush muhly | MUPO2 | 2-8 | --- | 2-8 | 2-8 | --- | 2-8 |
| desert needlegrass | STSP3 | 10-20 | --- | 10-20 | 10-20 | --- | 10-20 |
| galleta | HIJA | 2-5 | 2-10 | 2-5 | 2-5 | --- | 2-5 |
| Anderson wolfberry | LYAN | 1-5 | --- | 1-5 | 1-5 | --- | 1-5 |
| Bailey greasewood | SAVEB | --- | 0-10 | --- | --- | --- | --- |
| Nevada ephedra | EPNE | 5-15 | 1-5 | 5-15 | 5-15 | --- | 5-15 |
| banana yucca | YUBA | 1-3 | --- | 1-3 | 1-3 | --- | 1-3 |
| bud sagebrush | ARSP5 | 1-5 | 5-15 | 1-5 | 1-5 | --- | 1-5 |
| fourwing saltbush | ATCA2 | 2-5 | --- | 2-5 | 2-5 | --- | 2-5 |
| shadscale | ATCO | --- | 25-35 | --- | --- | --- | --- |
| spiny hopsage | GRSP | 15-25 | --- | 15-25 | 15-25 | --- | 15-25 |
| winterfat | EULA5 | 1-5 | 5-10 | 1-5 | 1-5 | --- | 1-5 |
| Range site number | | 029XY079NV | 029XY017NV | 029XY079NV | 029XY079NV | none | 029XY079NV |
| Potential production (lb/acre): | | | | | | | |
| Favorable years | | 900 | 500 | 900 | 900 | | 900 |
| Normal years | | 700 | 350 | 700 | 700 | | 700 |
| Unfavorable years | | 450 | 150 | 450 | 450 | | 450 |

1471--TYBO-KOYEN 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-- | | | | | |
| | | TYBO | KOYEN | Inclusion 1 | Inclusion 2 | Inclusion 3 | Inclusion 4 |
| Indian ricegrass | OREY | 15-25 | 15-25 | 40-50 | 15-25 | 15-25 | --- |
| bottlebrush squirreltail | SIEY | --- | --- | 2-5 | --- | --- | --- |
| bush muhly | MUPO2 | 2-8 | 2-8 | --- | 2-8 | 2-8 | --- |
| desert needlegrass | STSP3 | 10-20 | 10-20 | --- | 10-20 | 10-20 | --- |
| galleta | HIJA | 2-5 | 2-5 | 2-8 | 2-5 | 2-5 | --- |
| globemallow | SPRAE | --- | --- | 1-3 | --- | --- | --- |
| Anderson wolfberry | LYAN | 1-5 | 1-5 | --- | 1-5 | 1-5 | --- |
| Nevada ephedra | EPNE | 5-15 | 5-15 | --- | 5-15 | 5-15 | --- |
| banana yucca | YUBA | 1-3 | 1-3 | --- | 1-3 | 1-3 | --- |
| bud sagebrush | ARSP5 | 1-5 | 1-5 | 5-15 | 1-5 | 1-5 | --- |
| fourwing saltbush | ATCA2 | 2-5 | 2-5 | 1-5 | 2-5 | 2-5 | --- |
| spiny hopsage | GRSP | 15-25 | 15-25 | --- | 15-25 | 15-25 | --- |
| winterfat | EULA5 | 1-5 | 1-5 | 25-30 | 1-5 | 1-5 | --- |

| Range site number | 029XY079NV | 029XY079NV | 029XY042NV | 029XY079NV | 029XY079NV | none |
|---------------------------------|------------|------------|------------|------------|------------|------|
| Potential production (lb/acre): | | | | | | |
| Favorable years | 900 | 900 | 700 | 900 | 900 | |
| Normal years | 700 | 700 | 500 | 700 | 700 | |
| Unfavorable years | 450 | 450 | 350 | 450 | 450 | |

1472--TYBO-GEER 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-- | | | | |
| | | TYBO | GEER | Inclusion 1 | Inclusion 2 | Inclusion 3 |
| Indian ricegrass | OREY | 15-25 | 40-50 | 15-25 | 5-15 | --- |
| bottlebrush squirreltail | SIHY | --- | 2-5 | --- | 5-10 | --- |
| bush muhly | MUPO2 | 2-8 | --- | 2-8 | --- | --- |
| desert needlegrass | STSP3 | 10-20 | --- | 10-20 | --- | --- |
| galleta | HIJA | 2-5 | 2-8 | 2-5 | --- | --- |
| globemallow | SPEAE | --- | 1-3 | --- | --- | --- |
| Anderson wolfberry | LYAN | 1-5 | --- | 1-5 | --- | --- |
| Nevada ephedra | EPNE | 5-15 | --- | 5-15 | --- | --- |
| banana yucca | YUBA | 1-3 | --- | 1-3 | --- | --- |
| bud sagebrush | ARSP5 | 1-5 | 5-15 | 1-5 | 2-8 | --- |
| fourwing saltbush | ATCA2 | 2-5 | 1-5 | 2-5 | --- | --- |
| spiny hopsage | GRSP | 15-25 | --- | 15-25 | --- | --- |
| winterfat | EULAS | 1-5 | 25-30 | 1-5 | 60-70 | --- |
| Range site number | | 029XY079NV | 029XY042NV | 029XY079NV | 029XY020NV | none |
| Potential production (lb/acre): | | | | | | |
| Favorable years | | 900 | 700 | 900 | 500 | |
| Normal years | | 700 | 500 | 700 | 350 | |
| Unfavorable years | | 450 | 350 | 450 | 200 | |

1473--TYBO-LEO 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-- | | | | |
| | | TYBO | LEO | Inclusion 1 | Inclusion 2 | Inclusion 3 |
| Indian ricegrass | ORHY | 15-25 | 15-25 | 15-25 | --- | 15-25 |
| bush muhly | MUPO2 | 2-8 | 2-8 | 2-8 | --- | 2-8 |
| desert needlegrass | STSP3 | 10-20 | 10-20 | 10-20 | --- | 10-20 |
| galleta | HIJA | 2-5 | 2-5 | 2-5 | --- | 2-5 |
| Anderson wolfberry | LYAN | 1-5 | 1-5 | 1-5 | --- | 1-5 |
| Nevada ephedra | EPNE | 5-15 | 5-15 | 5-15 | --- | 5-15 |
| banana yucca | YUBA | 1-3 | 1-3 | 1-3 | --- | 1-3 |
| bud sagebrush | ARSP5 | 1-5 | 1-5 | 1-5 | --- | 1-5 |
| fourwing saltbush | ATCA2 | 2-5 | 2-5 | 2-5 | --- | 2-5 |
| spiny hopsage | GRSP | 15-25 | 15-25 | 15-25 | --- | 15-25 |
| winterfat | EULA5 | 1-5 | 1-5 | 1-5 | --- | 1-5 |
| Range site number | | 029XY079NV | 029XY079NV | 029XY079NV | none | 029XY079NV |
| Potential production (lb/acre): | | | | | | |
| Favorable years | | 900 | 900 | 900 | | 900 |
| Normal years | | 700 | 700 | 700 | | 700 |
| Unfavorable years | | 450 | 450 | 450 | | 450 |

1474--TYBO-DELAMAR 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-- | | | |
| | | TYBO | DELAMAR | Inclusion 1 | Inclusion 2 |
| Indian ricegrass | OREY | 10-20 | 10-20 | 15-25 | --- |
| bush muhly | MUPO2 | 1-5 | 1-5 | 2-8 | --- |
| desert needlegrass | STSP3 | 2-10 | 2-10 | 10-20 | --- |
| galleta | HIJA | 2-5 | 2-5 | 2-5 | --- |
| Anderson wolfberry | LYAN | 2-5 | 2-5 | 1-5 | --- |
| Nevada ephedra | EPNE | 5-10 | 5-10 | 5-15 | --- |
| banana yucca | YUBA | 1-3 | 1-3 | 1-3 | --- |
| bud sagebrush | ARSP5 | 1-5 | 1-5 | 1-5 | --- |
| fourwing saltbush | ATCA2 | --- | --- | 2-5 | --- |
| spiny hopsage | GRSP | 15-25 | 15-25 | 15-25 | --- |
| spiny menodora | MESP2 | 10-20 | 10-20 | --- | --- |
| winterfat | EULA5 | 1-5 | 1-5 | 1-5 | --- |
| Range site number | | 029XY031NV | 029XY031NV | 029XY079NV | none |
| Potential production (lb/acre): | | | | | |
| Favorable years | | 700 | 700 | 900 | |
| Normal years | | 500 | 500 | 700 | |
| Unfavorable years | | 300 | 300 | 450 | |

1490--KKEFA-PENOYER 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-- | | | | |
| | | KKEFA | PENOYER | Inclusion 1 | Inclusion 2 | Inclusion 3 |
| Indian ricegrass | ORHY | 15-25 | 5-15 | 15-25 | 15-25 | 20-30 |
| bottlebrush squirreltail | SIFY | 2-5 | 5-10 | 2-5 | 2-5 | --- |
| galleta | HIJA | 2-10 | --- | 2-10 | 2-10 | 2-8 |
| sand dropseed | SPCR | --- | --- | --- | --- | 2-8 |
| globemallow | SPHA | --- | --- | --- | --- | 1-3 |
| Bailey greasewood | SAVE | 0-10 | --- | 0-10 | 0-10 | --- |
| Nevada ephedra | EPNE | 1-5 | --- | 1-5 | 1-5 | --- |
| bud sagebrush | ARSP5 | 5-15 | 2-8 | 5-15 | 5-15 | 2-8 |
| fourwing saltbush | ATCA2 | --- | --- | --- | --- | 20-30 |
| shadscale | ATCO | 25-35 | --- | 25-35 | 25-35 | --- |
| spiny hopsage | GRSP | --- | --- | --- | --- | 2-5 |
| winterfat | EULA5 | 5-10 | 60-70 | 5-10 | 5-10 | 10-20 |
| Range site number | | 029XY017NV | 029XY020NV | 029XY017NV | 029XY017NV | 029XY046NV |
| Potential production (lb/acre): | | | | | | |
| Favorable years | | 500 | 500 | 500 | 500 | 500 |
| Normal years | | 350 | 350 | 350 | 350 | 400 |
| Unfavorable years | | 150 | 200 | 150 | 150 | 300 |

1491--KEEFA, WARM-PENOYER 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-- | | |
| | | KEEFA | PENOYER | Inclusion 1 |
| Indian ricegrass | ORHY | 35-40 | 5-15 | 15-25 |
| bottlebrush squirreltail | SIRY | --- | 5-10 | 2-5 |
| galleta | HIJA | 2-5 | --- | 2-10 |
| Bailey greasewood | SAVEB | 5-15 | --- | 0-10 |
| Cooper wolfberry | LYCO2 | 2-8 | --- | --- |
| Nevada ephedra | EPNE | --- | --- | 1-5 |
| bud sagebrush | ARSP5 | --- | 2-8 | 5-15 |
| shadscale | ATCO | 20-30 | --- | 25-35 |
| white bursage | AMDU2 | 5-15 | --- | --- |
| winterfat | EULA5 | --- | 60-70 | 5-10 |
| Range site number | | 029XY039NV | 029XY020NV | 029XY017NV |
| Potential production (lb/acre): | | | | |
| Favorable years | | 500 | 500 | 500 |
| Normal years | | 350 | 350 | 350 |
| Unfavorable years | | 200 | 200 | 150 |

1510--KOYEN GRAVELLY SANDY LOAM, 2 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-- | | |
| | | KOYEN | Inclusion 1 | Inclusion 2 |
| Indian ricegrass | ORHY | 15-25 | 40-50 | 20-30 |
| bottlebrush squirreltail | SIRY | --- | 2-5 | --- |
| bush muhly | MUPO2 | 2-8 | --- | --- |
| desert needlegrass | STSP3 | 10-20 | --- | --- |
| galleta | HIJA | 2-5 | 2-8 | 2-8 |
| sand dropseed | SPCR | --- | --- | 2-8 |
| globemallow | SPHAE | --- | 1-3 | 1-3 |
| Anderson wolfberry | LYAN | 1-5 | --- | --- |
| Nevada ephedra | EPNE | 5-15 | --- | --- |
| banana yucca | YUBA | 1-3 | --- | --- |
| bud sagebrush | ARSF5 | 1-5 | 5-15 | 2-8 |
| fourwing saltbush | ATCA2 | 2-5 | 1-5 | 20-30 |
| spiny hopsage | GRSP | 15-25 | --- | 2-5 |
| winterfat | EULA5 | 1-5 | 25-30 | 10-20 |
| Range site number | | 029XY079NV | 029XY042NV | 029XY046NV |
| Potential production (lb/acre): | | | | |
| Favorable years | | 900 | 700 | 500 |
| Normal years | | 700 | 500 | 400 |
| Unfavorable years | | 450 | 350 | 300 |

1512--KOYEN-PENOYER 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-- | | | |
| | | KOYEN | PENOYER | Inclusion 1 | Inclusion 2 |
| Indian ricegrass | ORRY | 20-30 | 5-15 | 15-25 | --- |
| bottlebrush squirreltail | SIRY | --- | 5-10 | --- | --- |
| bush muhly | MUPO2 | --- | --- | 2-8 | --- |
| desert needlegrass | STSP3 | --- | --- | 10-20 | --- |
| galleta | HIJA | 2-8 | --- | 2-5 | --- |
| sand dropseed | SPCR | 2-8 | --- | --- | --- |
| globemallow | SPHA | 1-3 | --- | --- | --- |
| Anderson wolfberry | LYAN | --- | --- | 1-5 | --- |
| Nevada ephedra | EPNE | --- | --- | 5-15 | --- |
| banana yucca | YUBA | --- | --- | 1-3 | --- |
| bud sagebrush | ARSP5 | 2-8 | 2-8 | 1-5 | --- |
| fourwing saltbush | ATCA2 | 20-30 | --- | 2-5 | --- |
| spiny hopsage | GRSP | 2-5 | --- | 15-25 | --- |
| winterfat | EULA5 | 10-20 | 60-70 | 1-5 | --- |
| Range site number | | 029XY046NV | 029XY020NV | 029XY079NV | none |
| Potential production (lb/acre): | | | | | |
| Favorable years | | 500 | 500 | 900 | |
| Normal years | | 400 | 350 | 700 | |
| Unfavorable years | | 300 | 200 | 450 | |

1520--GEER-PENOYER 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-- | | |
| | | GEER | PENOYER | Inclusion 1 |
| Indian ricegrass | ORRY | 40-50 | 5-15 | 15-25 |
| bottlebrush squirreltail | SIHY | 2-5 | 5-10 | --- |
| bush muhly | MUPO2 | --- | --- | 2-8 |
| desert needlegrass | STSP3 | --- | --- | 10-20 |
| galleta | HIJA | 2-8 | --- | 2-5 |
| globemallow | SPHAE | 1-3 | --- | --- |
| Anderson wolfberry | LYAN | --- | --- | 1-5 |
| Nevada ephedra | EPNE | --- | --- | 5-15 |
| banana yucca | YUBA | --- | --- | 1-3 |
| bud sagebrush | ARSP5 | 5-15 | 2-8 | 1-5 |
| fourwing saltbush | ATCA2 | 1-5 | --- | 2-5 |
| spiny hopsage | GRSP | --- | --- | 15-25 |
| winterfat | EULA5 | 25-30 | 60-70 | 1-5 |

| Range site number | 029XY042NV | 029XY020NV | 029XY079NV |
|---------------------------------|------------|------------|------------|
| Potential production (lb/acre): | | | |
| Favorable years | 700 | 500 | 900 |
| Normal years | 500 | 350 | 700 |
| Unfavorable years | 350 | 200 | 450 |

1530--DELAMAR-LEO 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-- | | | |
| | | DELAMAR | LEO | Inclusion 1 | Inclusion 2 |
| Indian ricegrass | ORRY | 15-25 | 15-25 | --- | 15-25 |
| bush muhly | MUPO2 | 2-8 | 2-8 | --- | 2-8 |
| desert needlegrass | STSP3 | 10-20 | 10-20 | --- | 10-20 |
| galleta | HIJA | 2-5 | 2-5 | --- | 2-5 |
| Anderson wolfberry | LYAN | 1-5 | 1-5 | --- | 1-5 |
| Nevada ephedra | EPNE | 5-15 | 5-15 | --- | 5-15 |
| banana yucca | YUBA | 1-3 | 1-3 | --- | 1-3 |
| bud sagebrush | ARSP5 | 1-5 | 1-5 | --- | 1-5 |
| fourwing saltbush | ATCA2 | 2-5 | 2-5 | --- | 2-5 |
| spiny hopsage | GRSP | 15-25 | 15-25 | --- | 15-25 |
| winterfat | EOLA5 | 1-5 | 1-5 | --- | 1-5 |
| Range site number | | 029XY079NV | 029XY079NV | none | 029XY079NV |
| Potential production (lb/acre): | | | | | |
| Favorable years | | 900 | 900 | | 900 |
| Normal years | | 700 | 700 | | 700 |
| Unfavorable years | | 450 | 450 | | 450 |

1531--DELAMAR-VEET 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-- | | | | |
| | | DELAMAR | VEET | Inclusion 1 | Inclusion 2 | Inclusion 3 |
| Indian ricegrass | OREY | 15-25 | 10-25 | 20-35 | 15-25 | 20-35 |
| bush muhly | MUPO2 | 2-8 | --- | --- | 2-8 | --- |
| desert needlegrass | STSP3 | 10-20 | 10-20 | 2-8 | 10-20 | 2-8 |
| galleta | HIJA | 2-5 | 2-8 | --- | 2-5 | --- |
| needleandthread | STCO4 | --- | 2-8 | 5-15 | --- | 5-15 |
| globemallow | SPHAE | --- | 1-4 | --- | --- | --- |
| Anderson wolfberry | LYAN | 1-5 | --- | --- | 1-5 | --- |
| Nevada ephedra | EPNE | 5-15 | 2-5 | 2-5 | 5-15 | 2-5 |
| Wyoming big sagebrush | ARTRW | --- | 25-30 | 25-35 | --- | 25-35 |
| banana yucca | YUBA | 1-3 | --- | --- | 1-3 | --- |
| bud sagebrush | ARSP5 | 1-5 | 2-5 | --- | 1-5 | --- |
| fourwing saltbush | ATCA2 | 2-5 | 2-5 | 2-5 | 2-5 | 2-5 |
| spiny hopsage | GRSP | 15-25 | 5-10 | --- | 15-25 | --- |
| winterfat | EULA5 | 1-5 | 2-8 | --- | 1-5 | --- |
| Range site number | | 029XY079NV | 029XY049NV | 029XY006NV | 029XY079NV | 029XY006NV |
| Potential production (lb/acre): | | | | | | |
| Favorable years | | 900 | 1100 | 800 | 900 | 800 |
| Normal years | | 700 | 800 | 600 | 700 | 600 |
| Unfavorable years | | 450 | 500 | 300 | 450 | 300 |

1533--DELAMAR-TYBO-KOYEN 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-- | | | | | |
| | | DELAMAR | TYBO | KOYEN | Inclusion 1 | Inclusion 2 | Inclusion 3 |
| Indian ricegrass | ORRY | 15-25 | 15-25 | 15-25 | 20-35 | 2-5 | --- |
| bush muhly | MUPO2 | 2-8 | 2-8 | 2-8 | --- | --- | --- |
| desert needlegrass | STSP3 | 10-20 | 10-20 | 10-20 | 2-8 | --- | --- |
| galleta | HIJA | 2-5 | 2-5 | 2-5 | --- | --- | --- |
| needleandthread | STCO4 | --- | --- | --- | 5-15 | --- | --- |
| blazingstar mentzelia | MELA2 | --- | --- | --- | --- | 1-3 | --- |
| Anderson wolfberry | LYAN | 1-5 | 1-5 | 1-5 | --- | --- | --- |
| Nevada ephedra | EPNE | 5-15 | 5-15 | 5-15 | 2-5 | 2-8 | --- |
| Wyoming big sagebrush | ARTRW | --- | --- | --- | 25-35 | --- | --- |
| banana yucca | YUBA | 1-3 | 1-3 | 1-3 | --- | --- | --- |
| broom snakeweed | GUSA2 | --- | --- | --- | --- | 1-3 | --- |
| bud sagebrush | ARSP5 | 1-5 | 1-5 | 1-5 | --- | --- | --- |
| downy rabbitbrush | CHVIP4 | --- | --- | --- | --- | 5-15 | --- |
| fourwing saltbush | ATCA2 | 2-5 | 2-5 | 2-5 | 2-5 | 30-40 | --- |
| hollyleaf bursage | AMKR | --- | --- | --- | --- | 20-30 | --- |
| purple sage | SADOC2 | --- | --- | --- | --- | 1-5 | --- |
| spiny hopsage | GRSP | 15-25 | 15-25 | 15-25 | --- | --- | --- |
| winterfat | EULA5 | 1-5 | 1-5 | 1-5 | --- | --- | --- |

| Range site number | 029XY079NV | 029XY079NV | 029XY079NV | 029XY006NV | 029XY072NV | none |
|---------------------------------|------------|------------|------------|------------|------------|------|
| Potential production (lb/acre): | | | | | | |
| Favorable years | 900 | 900 | 900 | 800 | 700 | |
| Normal years | 700 | 700 | 700 | 600 | 500 | |
| Unfavorable years | 450 | 450 | 450 | 300 | 200 | |

1534--DELAMAR-KOYEN 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-- | | | | |
| | | DELAMAR | KOYEN | Inclusion 1 | Inclusion 2 | Inclusion 3 |
| Indian ricegrass | ORHY | 15-25 | 15-25 | 40-50 | 15-25 | 2-5 |
| bottlebrush squirreltail | SIRY | --- | --- | 2-5 | --- | --- |
| bush muhly | MUPO2 | 2-8 | 2-8 | --- | 2-8 | --- |
| desert needlegrass | STSP3 | 10-20 | 10-20 | --- | 10-20 | --- |
| galleta | HIJA | 2-5 | 2-5 | 2-8 | 2-5 | --- |
| blazingstar mentzelia | MELA2 | --- | --- | --- | --- | 1-3 |
| globemallow | SPHAE | --- | --- | 1-3 | --- | --- |
| Anderson wolfberry | LYAN | 1-5 | 1-5 | --- | 1-5 | --- |
| Nevada ephedra | EPNE | 5-15 | 5-15 | --- | 5-15 | 2-8 |
| banana yucca | YUBA | 1-3 | 1-3 | --- | 1-3 | --- |
| broom snakeweed | GUSA2 | --- | --- | --- | --- | 1-3 |
| bud sagebrush | ARSP5 | 1-5 | 1-5 | 5-15 | 1-5 | --- |
| downy rabbitbrush | CHVIP4 | --- | --- | --- | --- | 5-15 |
| fourwing saltbush | ATCA2 | 2-5 | 2-5 | 1-5 | 2-5 | 30-40 |
| hollyleaf bursage | AMER | --- | --- | --- | --- | 20-30 |
| purple sage | SADOC2 | --- | --- | --- | --- | 1-5 |
| spiny hopsage | GRSP | 15-25 | 15-25 | --- | 15-25 | --- |
| winterfat | EULA5 | 1-5 | 1-5 | 25-30 | 1-5 | --- |
| Range site number | | 029XY079NV | 029XY079NV | 029XY042NV | 029XY079NV | 029XY072NV |
| Potential production (lb/acre): | | | | | | |
| Favorable years | | 900 | 900 | 700 | 900 | 700 |
| Normal years | | 700 | 700 | 500 | 700 | 500 |
| Unfavorable years | | 450 | 450 | 350 | 450 | 200 |

1535--DELAMAR 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-- | | |
| | | DELAMAR | Inclusion 1 | Inclusion 2 |
| Indian ricegrass | ORHY | 10-20 | 10-20 | 2-5 |
| bush muhly | MUPO2 | 1-5 | 1-5 | --- |
| desert needlegrass | STSP3 | 2-10 | 2-10 | --- |
| galleta | HIJA | 2-5 | 2-5 | --- |
| blazingstar mentzelia | MELA2 | --- | --- | 1-3 |
| Anderson wolfberry | LYAN | 2-5 | 2-5 | --- |
| Nevada ephedra | EPNE | 5-10 | 5-10 | 2-8 |
| banana yucca | YUBA | 1-3 | 1-3 | --- |
| broom snakeweed | GUSA2 | --- | --- | 1-3 |
| bud sagebrush | ARSP5 | 1-5 | 1-5 | --- |
| downy rabbitbrush | CEVIP4 | --- | --- | 5-15 |
| fourwing saltbush | ATCA2 | --- | --- | 30-40 |
| hollyleaf bursage | AMER | --- | --- | 20-30 |
| purple sage | SADOC2 | --- | --- | 1-5 |
| spiny hopsage | GRSP | 15-25 | 15-25 | --- |
| spiny menodora | MESP2 | 10-20 | 10-20 | --- |
| winterfat | EULA5 | 1-5 | 1-5 | --- |
| Range site number | | 029XY031NV | 029XY031NV | 029XY072NV |
| Potential production (lb/acre): | | | | |
| Favorable years | | 700 | 700 | 700 |
| Normal years | | 500 | 500 | 500 |
| Unfavorable years | | 300 | 300 | 200 |

1540--OLEMAN-LEO 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-- | | | | |
| | | OLEMAN | LEO | Inclusion 1 | Inclusion 2 | Inclusion 3 |
| Indian ricegrass | ORRY | 1-3 | 15-25 | 1-3 | --- | 2-10 |
| Sandberg bluegrass | POSE | --- | --- | --- | --- | 2-10 |
| bush muhly | MUPO2 | --- | 2-8 | --- | --- | --- |
| desert needlegrass | STSP3 | 2-8 | 10-20 | 2-8 | --- | --- |
| galleta | HIJA | --- | 2-5 | --- | --- | 1-5 |
| Anderson wolfberry | LYAN | --- | 1-5 | --- | --- | --- |
| Nevada ephedra | EPNE | 2-5 | 5-15 | 2-5 | --- | --- |
| Stansbury cliffrose | COMES | T-8 | --- | T-8 | --- | --- |
| banana yucca | YUBA | --- | 1-3 | --- | --- | --- |
| big sagebrush | ARTR2 | --- | --- | --- | --- | 25-35 |
| blackbrush | CORA | 60-75 | --- | 60-75 | --- | --- |
| bud sagebrush | ARSP5 | --- | 1-5 | --- | --- | --- |
| desert bitterbrush | FUGL2 | 2-8 | --- | 2-8 | --- | --- |
| desert peachbrush | PRFA | --- | --- | --- | --- | 10-20 |
| ephedra | EPHEK | 2-5 | --- | 2-5 | --- | --- |
| fourwing saltbush | ATCA2 | --- | 2-5 | --- | --- | --- |
| rubber rabbitbrush | CHNA2 | --- | --- | --- | --- | 5-15 |
| spiny hopsage | GRSP | --- | 15-25 | --- | --- | --- |
| winterfat | EULA5 | --- | 1-5 | --- | --- | --- |
| Range site number | | 029XY077NV | 029XY079NV | 029XY077NV | none | 029XY009NV |
| Potential production (lb/acre): | | | | | | |
| Favorable years | | 700 | 900 | 700 | | 1000 |
| Normal years | | 500 | 700 | 500 | | 700 |
| Unfavorable years | | 300 | 450 | 300 | | 500 |

1541--OLEMAN-CAVE 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-- | | | | |
| | | OLEMAN | CAVE | Inclusion 1 | Inclusion 2 | Inclusion 3 |
| Indian ricegrass | OREY | 1-3 | 2-5 | 1-3 | 1-3 | 2-10 |
| Sandberg bluegrass | POSE | --- | --- | --- | --- | 2-10 |
| big galleta | HIRI | --- | 5-15 | --- | --- | --- |
| desert needlegrass | STSP3 | 2-8 | --- | 2-8 | 2-8 | --- |
| galleta | HIJA | --- | --- | --- | --- | 1-5 |
| Nevada ephedra | EPNE | 2-5 | --- | 2-5 | 2-5 | --- |
| Stansbury cliffrose | COMES | T-8 | --- | T-8 | T-8 | --- |
| big sagebrush | ARTR2 | --- | --- | --- | --- | 25-35 |
| blackbrush | CORA | 60-75 | 60-70 | 60-75 | 60-75 | --- |
| creosotabush | LATR2 | --- | 2-5 | --- | --- | --- |
| desert bitterbrush | PUGL2 | 2-8 | --- | 2-8 | 2-8 | --- |
| desert peachbrush | PRFA | --- | --- | --- | --- | 10-20 |
| ephedra | EPHE | 2-5 | --- | 2-5 | 2-5 | --- |
| rubber rabbitbrush | CHNA2 | --- | --- | --- | --- | 5-15 |
| white bursage | AMDU2 | --- | T-8 | --- | --- | --- |
| Range site number | | 029XY077NV | 030XB029NV | 029XY077NV | 029XY077NV | 029XY009NV |
| Potential production (lb/acre): | | | | | | |
| Favorable years | | 700 | 500 | 700 | 700 | 1000 |
| Normal years | | 500 | 350 | 500 | 500 | 700 |
| Unfavorable years | | 300 | 250 | 300 | 300 | 500 |

1542--OLEMAN GRAVELLY 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-- | | | | |
| | | OLEMAN | Inclusion 1 | Inclusion 2 | Inclusion 3 | Inclusion 4 |
| Indian ricegrass | ORHY | 1-3 | 2-5 | 1-3 | --- | --- |
| big galleta | HIRI | --- | 5-15 | --- | 5-10 | --- |
| bush muhly | MUPO2 | --- | --- | --- | 1-5 | --- |
| desert needlegrass | STSP3 | 2-8 | --- | 2-8 | --- | --- |
| Nevada ephedra | EPNE | 2-5 | --- | 2-5 | 1-5 | --- |
| Stansbury cliffrose | COMES | T-8 | --- | T-8 | --- | --- |
| baccharis | BACCH | --- | --- | --- | 5-15 | --- |
| blackbrush | CORA | 60-75 | 60-70 | 60-75 | --- | --- |
| bursage | FRANS* | --- | --- | --- | 5-20 | --- |
| creosotebush | LATR2 | --- | 2-5 | --- | 5-20 | --- |
| desert bitterbrush | PUGL2 | 2-8 | --- | 2-8 | --- | --- |
| ephedra | EPHEd | 2-5 | --- | 2-5 | --- | --- |
| erigonum | ERIOG | --- | --- | --- | 1-5 | --- |
| white burrobrush | HYSa | --- | --- | --- | 2-5 | --- |
| white bursage | AMDU2 | --- | T-8 | --- | --- | --- |
| Range site number | | 029XY077NV | 030XB029NV | 029XY077NV | 030XB028NV | none |
| Potential production (lb/acre): | | | | | | |
| Favorable years | | 700 | 500 | 700 | 500 | |
| Normal years | | 500 | 350 | 500 | 350 | |
| Unfavorable years | | 300 | 250 | 300 | 200 | |

1550--PAHROC-LEO 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-- | | | | | |
| | | PAHROC | LEO | Inclusion 1 | Inclusion 2 | Inclusion 3 | Inclusion 4 |
| Indian ricegrass | ORHY | 2-10 | 15-25 | 1-3 | 20-30 | 2-10 | --- |
| Sandberg bluegrass | POSE | --- | --- | --- | --- | 2-10 | --- |
| bush muhly | MUPO2 | --- | 2-8 | --- | --- | --- | --- |
| desert needlegrass | STSP3 | 2-10 | 10-20 | 2-8 | --- | --- | --- |
| galleta | HIJA | 1-5 | 2-5 | --- | 2-8 | 1-5 | --- |
| sand dropseed | SPCR | --- | --- | --- | 2-8 | --- | --- |
| globemallow | SPHAE | --- | --- | --- | 1-3 | --- | --- |
| Anderson wolfberry | LYAN | --- | 1-5 | --- | --- | --- | --- |
| Nevada ephedra | EPNE | 2-8 | 5-15 | 2-5 | --- | --- | --- |
| Stansbury cliffrose | COMES | --- | --- | T-8 | --- | --- | --- |
| banana yucca | YUBA | --- | 1-3 | --- | --- | --- | --- |
| big sagebrush | ARTR2 | --- | --- | --- | --- | 25-35 | --- |
| blackbrush | CORA | 50-60 | --- | 60-75 | --- | --- | --- |
| bud sagebrush | ARSP5 | --- | 1-5 | --- | 2-8 | --- | --- |
| desert bitterbrush | PUGL2 | --- | --- | 2-8 | --- | --- | --- |
| desert peachbrush | PRFA | --- | --- | --- | --- | 10-20 | --- |
| ephedra | EPHED | --- | --- | 2-5 | --- | --- | --- |
| fourwing saltbush | ATCA2 | --- | 2-5 | --- | 20-30 | --- | --- |
| rubber rabbitbrush | CHNA2 | --- | --- | --- | --- | 5-15 | --- |
| spiny hopsage | GRSP | --- | 15-25 | --- | 2-5 | --- | --- |
| winterfat | EULA5 | --- | 1-5 | --- | 10-20 | --- | --- |

| Range site number | 029XY019NV | 029XY079NV | 029XY077NV | 029XY046NV | 029XY009NV | none |
|---------------------------------|------------|------------|------------|------------|------------|------|
| Potential production (lb/acre): | | | | | | |
| Favorable years | 500 | 900 | 700 | 500 | 1000 | |
| Normal years | 350 | 700 | 500 | 400 | 700 | |
| Unfavorable years | 200 | 450 | 300 | 300 | 500 | |

1551--PAHROC VERY GRAVELLY 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-- | | | |
| | | PAHROC | Inclusion 1 | Inclusion 2 | Inclusion 3 |
| Indian ricegrass | ORRY | 2-10 | 1-3 | 1-3 | --- |
| desert needlegrass | STSP3 | 2-10 | 2-8 | 2-8 | --- |
| galleta | HIJA | 1-5 | --- | --- | --- |
| Nevada ephedra | EPNE | 2-8 | 2-5 | 2-5 | --- |
| Stansbury cliffrose | COMES | --- | T-8 | T-8 | --- |
| blackbrush | CORA | 50-60 | 60-75 | 60-75 | --- |
| desert bitterbrush | FUGL2 | --- | 2-8 | 2-8 | --- |
| ephedra | EPRED | --- | 2-5 | 2-5 | --- |
| Range site number | | 029XY019NV | 029XY077NV | 029XY077NV | none |
| Potential production (lb/acre): | | | | | |
| Favorable years | | 500 | 700 | 700 | |
| Normal years | | 350 | 500 | 500 | |
| Unfavorable years | | 200 | 300 | 300 | |

1570--KYLER-EAGLEPASS-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-- | | | | | |
| | | KYLER | EAGLEPASS | ROCK OUTCROP | Inclusion 1 | Inclusion 2 | Inclusion 3 |
| Indian ricegrass | ORHY | 20-35 | 2-5 | --- | 20-35 | 2-10 | --- |
| Sandberg bluegrass | POSE | 2-5 | --- | --- | 2-5 | 2-10 | --- |
| galleta | HIJA | 2-8 | --- | --- | 2-8 | 1-5 | --- |
| needleandthread | STCO4 | 5-15 | 5-15 | --- | 5-15 | --- | --- |
| needlegrass | STIPA | --- | 2-8 | --- | --- | --- | --- |
| Nevada ephedra | EPNE | 2-5 | --- | --- | 2-5 | --- | --- |
| Nevada greasbrush | FONE2 | --- | 1-3 | --- | --- | --- | --- |
| big sagebrush | ARTR2 | --- | --- | --- | --- | 25-35 | --- |
| black sagebrush | ARARN | 25-35 | 5-15 | --- | 25-35 | --- | --- |
| desert peachbrush | PRFA | --- | --- | --- | --- | 10-20 | --- |
| ephedra | EPHE2 | --- | 2-5 | --- | --- | --- | --- |
| fourwing saltbush | ATCA2 | 1-5 | --- | --- | 1-5 | --- | --- |
| littleleaf mountainmahogany | CEIN7 | --- | 60-70 | --- | --- | --- | --- |
| rubber rabbitbrush | CHNA2 | --- | --- | --- | --- | 5-15 | --- |
| winterfat | EULA5 | 1-5 | --- | --- | 1-5 | --- | --- |
| Range site number | | 029XY008NV | 029XY040NV | none | 029XY008NV | 029XY009NV | none |
| Potential production (lb/acre): | | | | | | | |
| Favorable years | | 700 | 600 | | 700 | 1000 | |
| Normal years | | 500 | 450 | | 500 | 700 | |
| Unfavorable years | | 250 | 300 | | 250 | 500 | |

1571--KYLER-LOGRING-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-- | | | |
| | | KYLER | LOGRING | ROCK OUTCROP | Inclusion 1 |
| Indian ricegrass | ORHY | 10-20 | --- | --- | 2-10 |
| Sandberg bluegrass | POSE | --- | --- | --- | 2-10 |
| bluegrass | POA++ | --- | X | --- | --- |
| bottlebrush squirreltail | SIEY | --- | X | --- | --- |
| galleta | HIJA | 2-8 | --- | --- | 1-5 |
| muttongrass | POFE | --- | X | --- | --- |
| needleandthread | STCO4 | 5-15 | --- | --- | --- |
| Nevada ephedra | EPNE | 2-8 | --- | --- | --- |
| Stansbury cliffrose | COMES | --- | X | --- | --- |
| big sagebrush | ARTR2 | --- | --- | --- | 25-35 |
| black sagebrush | ARARN | 35-45 | X | --- | --- |
| desert peachbrush | PRFA | --- | --- | --- | 10-20 |
| green ephedra | EPVI | --- | X | --- | --- |
| rubber rabbitbrush | CHNA2 | --- | --- | --- | 5-15 |
| shadscale | ATCO | 1-5 | --- | --- | --- |
| singleleaf pinyon | PIMO | --- | X | --- | --- |
| Range site number | | 029XY014NV | 029XY069NV | none | 029XY009NV |
| Potential production (lb/acre): | | | | | |
| Favorable years | | 350 | 400 | | 1000 |
| Normal years | | 200 | 300 | | 700 |
| Unfavorable years | | 75 | 150 | | 500 |

1590--WINKLO-WYVA 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-- | | | | | |
| | | WINKLO | WYVA | Inclusion 1 | Inclusion 2 | Inclusion 3 | Inclusion 4 |
| Indian ricegrass | ORRY | 1-3 | 10-15 | --- | 1-3 | 2-10 | 1-3 |
| Sandberg bluegrass | POSE | --- | --- | --- | --- | 2-10 | --- |
| blue grama | BOGR2 | --- | 2-5 | --- | --- | --- | --- |
| desert needlegrass | STSP3 | 2-8 | --- | --- | 2-8 | --- | 2-8 |
| galleta | HIJA | --- | 2-8 | --- | --- | 1-5 | --- |
| needleandthread | STCO4 | --- | 10-20 | --- | --- | --- | --- |
| Nevada ephedra | EPNE | 2-5 | --- | --- | 2-5 | --- | 2-5 |
| Stansbury cliffrose | COMES | T-8 | 2-10 | --- | T-8 | --- | T-8 |
| big sagebrush | ARTR2 | --- | 20-30 | --- | --- | 25-35 | --- |
| blackbrush | CORA | 60-75 | --- | --- | 60-75 | --- | 60-75 |
| desert bitterbrush | PUGL2 | 2-8 | --- | --- | 2-8 | --- | 2-8 |
| desert peachbrush | PRFA | --- | --- | --- | --- | 10-20 | --- |
| ephedra | EPHEO | 2-5 | 5-10 | --- | 2-5 | --- | 2-5 |
| fourwing saltbush | ATCA2 | --- | 2-5 | --- | --- | --- | --- |
| rubber rabbitbrush | CHNA2 | --- | --- | --- | --- | 5-15 | --- |
| Range site number | | 029XY077NV | 029XY075NV | none | 029XY077NV | 029XY009NV | 029XY077NV |
| Potential production (lb/acre): | | | | | | | |
| Favorable years | | 700 | 700 | | 700 | 1000 | 700 |
| Normal years | | 500 | 500 | | 500 | 700 | 500 |
| Unfavorable years | | 300 | 300 | | 300 | 500 | 300 |

1591--WINKLO-ROCHPAH-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-- | | | | | | |
| | | WINKLO | ROCHPAH | ROCK OUTCROP | Inclusion 1 | Inclusion 2 | Inclusion 3 | Inclusion 4 |
| Indian ricegrass | ORRY | 1-3 | 5-10 | --- | 10-15 | 2-5 | --- | --- |
| Sandberg bluegrass | POSE | --- | --- | --- | 2-5 | --- | --- | --- |
| big galleta | HIRI | --- | --- | --- | --- | 5-15 | 5-10 | --- |
| bush muhly | MUPO2 | --- | --- | --- | --- | --- | 1-5 | --- |
| desert needlegrass | STSP3 | 2-8 | --- | --- | 2-8 | --- | --- | --- |
| galleta | HIJA | --- | --- | --- | 2-8 | --- | --- | --- |
| needleandthread | STCO4 | --- | --- | --- | 15-25 | --- | --- | --- |
| Nevada ephedra | EPNE | 2-5 | 2-5 | --- | --- | --- | 1-5 | --- |
| Stansbury cliffrose | COMES | T-8 | --- | --- | --- | --- | --- | --- |
| Wyoming big sagebrush | ARTRW | --- | --- | --- | 30-35 | --- | --- | --- |
| baccharis | BACCH | --- | --- | --- | --- | --- | 5-15 | --- |
| blackbrush | CORA | 60-75 | 60-70 | --- | --- | 60-70 | --- | --- |
| bud sagebrush | ARSP5 | --- | 1-5 | --- | --- | --- | --- | --- |
| bursage | FRANS* | --- | --- | --- | --- | --- | 5-20 | --- |
| creosotebush | LATR2 | --- | --- | --- | --- | 2-5 | 5-20 | --- |
| desert bitterbrush | PUGL2 | 2-8 | --- | --- | --- | --- | --- | --- |
| ephedra | EPHE2 | 2-5 | --- | --- | 2-8 | --- | 1-5 | --- |
| eriogonum | ERIOG | --- | --- | --- | --- | --- | --- | --- |
| fourwing saltbush | ATCA2 | --- | 1-3 | --- | 2-5 | --- | --- | --- |
| white burrobrush | HYSA | --- | --- | --- | --- | --- | 2-5 | --- |
| white bursage | AMDU2 | --- | --- | --- | --- | T-8 | --- | --- |
| Range site number | | 029XY077NV | 029XY013NV | none | 029XY010NV | 030XB029NV | 030XB028NV | none |
| Potential production (lb/acre): | | | | | | | | |
| Favorable years | | 700 | 350 | | 500 | 500 | 500 | |
| Normal years | | 500 | 250 | | 350 | 350 | 350 | |
| Unfavorable years | | 300 | 100 | | 250 | 250 | 200 | |

1650--HANDPAH-VEET 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-- | | |
| | | HANDPAH | VEET | Inclusion 1 |
| Indian ricegrass | ORHY | 20-35 | 10-25 | 20-35 |
| desert needlegrass | STSP3 | 2-8 | 10-20 | 2-8 |
| galleta | HIJA | --- | 2-8 | --- |
| needleandthread | STCO4 | 5-15 | 2-8 | 5-15 |
| globemallow | SPHAE | --- | 1-4 | --- |
| Nevada ephedra | EPNE | 2-5 | 2-5 | 2-5 |
| Wyoming big sagebrush | ARTRW | 25-35 | 25-30 | 25-35 |
| bud sagebrush | ARSP5 | --- | 2-5 | --- |
| fourwing saltbush | ATCA2 | 2-5 | 2-5 | 2-5 |
| spiny hopsage | GRSP | --- | 5-10 | --- |
| winterfat | EULAS | --- | 2-8 | --- |
| Range site number | | 029XY006NV | 029XY049NV | 029XY006NV |
| Potential production (lb/acre): | | | | |
| Favorable years | | 800 | 1100 | 800 |
| Normal years | | 600 | 800 | 600 |
| Unfavorable years | | 300 | 500 | 300 |

1660--DEWRUST-VEET 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-- | | | | |
| | | DEWRUST | VEET | Inclusion 1 | Inclusion 2 | Inclusion 3 |
| Indian ricegrass | OREY | 1-3 | 2-10 | 1-3 | 1-3 | --- |
| Sandberg bluegrass | POSE | --- | 2-10 | --- | --- | --- |
| desert needlegrass | STSP3 | 2-8 | --- | 2-8 | 2-8 | --- |
| galleta | HIJA | --- | 1-5 | --- | --- | --- |
| Nevada ephedra | EPNE | 2-5 | --- | 2-5 | 2-5 | --- |
| Stansbury cliffrose | COMES | T-8 | --- | T-8 | T-8 | --- |
| big sagebrush | ARTR2 | --- | 25-35 | --- | --- | --- |
| blackbrush | CORA | 60-75 | --- | 60-75 | 60-75 | --- |
| desert bitterbrush | PUGL2 | 2-8 | --- | 2-8 | 2-8 | --- |
| desert peachbrush | PRPA | --- | 10-20 | --- | --- | --- |
| ephedra | EPHE2 | 2-5 | --- | 2-5 | 2-5 | --- |
| rubber rabbitbrush | CHNA2 | --- | 5-15 | --- | --- | --- |
| Range site number | | 029XY077NV | 029XY009NV | 029XY077NV | 029XY077NV | none |
| Potential production (lb/acre): | | | | | | |
| Favorable years | | 700 | 1000 | 700 | 700 | |
| Normal years | | 500 | 700 | 500 | 500 | |
| Unfavorable years | | 300 | 500 | 300 | 300 | |

1680--ROCHPAH-HOLLACE-GABBVALLY 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-- | | | | |
| | | ROCHPAH | HOLLACE | GABBVALLY | Inclusion 1 | Inclusion 2 |
| Indian ricegrass | ORBY | 5-10 | 1-3 | 10-15 | 10-15 | 15-25 |
| Sandberg bluegrass | POSE | --- | --- | 2-5 | 2-5 | --- |
| bush muhly | MUPO2 | --- | --- | --- | --- | 2-8 |
| desert needlegrass | STSP3 | --- | 2-8 | 2-8 | 2-8 | 10-20 |
| galleta | HIJA | --- | --- | 2-8 | 2-8 | 2-5 |
| needleandthread | STCO4 | --- | --- | 15-25 | 15-25 | --- |
| Anderson wolfberry | LYAN | --- | --- | --- | --- | 1-5 |
| Nevada ephedra | EPNE | 2-5 | 2-5 | --- | --- | 5-15 |
| Stansbury cliffrose | COMES | --- | T-8 | --- | --- | --- |
| Wyoming big sagebrush | ARTRW | --- | --- | 30-35 | 30-35 | --- |
| banana yucca | YUBA | --- | --- | --- | --- | 1-3 |
| blackbrush | CORA | 60-70 | 60-75 | --- | --- | --- |
| bud sagebrush | ARSP5 | 1-5 | --- | --- | --- | 1-5 |
| desert bitterbrush | PUGL2 | --- | 2-8 | --- | --- | --- |
| ephedra | EPHE | --- | 2-5 | 2-8 | 2-8 | --- |
| fourwing saltbush | ATCA2 | 1-3 | --- | 2-5 | 2-5 | 2-5 |
| spiny hopsage | GRSP | --- | --- | --- | --- | 15-25 |
| winterfat | EULA5 | --- | --- | --- | --- | 1-5 |

| Range site number | 029XY013NV | 029XY077NV | 029XY010NV | 029XY010NV | 029XY079NV |
|---------------------------------|------------|------------|------------|------------|------------|
| Potential production (lb/acre): | | | | | |
| Favorable years | 350 | 700 | 500 | 500 | 900 |
| Normal years | 250 | 500 | 350 | 350 | 700 |
| Unfavorable years | 100 | 300 | 250 | 250 | 450 |

1681--ROCHPAH-VEET 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-- | | | | | |
| | | ROCHPAH | VEET | Inclusion 1 | Inclusion 2 | Inclusion 3 | Inclusion 4 |
| Indian ricegrass | ORRY | 5-10 | 10-25 | 20-35 | 2-10 | 1-3 | --- |
| Sandberg bluegrass | POSE | --- | --- | --- | 2-10 | --- | --- |
| desert needlegrass | STSP3 | --- | 10-20 | 2-8 | --- | 2-8 | --- |
| galleta | HIJA | --- | 2-8 | --- | 1-5 | --- | --- |
| needleandthread | STCO4 | --- | 2-8 | 5-15 | --- | --- | --- |
| globemallow | SPHAK | --- | 1-4 | --- | --- | --- | --- |
| Nevada ephedra | EPNE | 2-5 | 2-5 | 2-5 | --- | 2-5 | --- |
| Stansbury cliffrose | COMES | --- | --- | --- | --- | T-8 | --- |
| Wyoming big sagebrush | ARTRW | --- | 25-30 | 25-35 | --- | --- | --- |
| big sagebrush | ARTR2 | --- | --- | --- | 25-35 | --- | --- |
| blackbrush | CORA | 60-70 | --- | --- | --- | 60-75 | --- |
| bud sagebrush | ARSP5 | 1-5 | 2-5 | --- | --- | --- | --- |
| desert bitterbrush | PUGL2 | --- | --- | --- | --- | 2-8 | --- |
| desert peachbrush | PRPA | --- | --- | --- | 10-20 | --- | --- |
| ephedra | EPHED | --- | --- | --- | --- | 2-5 | --- |
| fourwing saltbush | ATCA2 | 1-3 | 2-5 | 2-5 | --- | --- | --- |
| rubber rabbitbrush | CHNA2 | --- | --- | --- | 5-15 | --- | --- |
| spiny hopsage | GRSP | --- | 5-10 | --- | --- | --- | --- |
| winterfat | EULAS | --- | 2-8 | --- | --- | --- | --- |

| Range site number | 029XY013NV | 029XY049NV | 029XY006NV | 029XY009NV | 029XY077NV | none |
|---------------------------------|------------|------------|------------|------------|------------|------|
| Potential production (lb/acre): | | | | | | |
| Favorable years | 350 | 1100 | 800 | 1000 | 700 | |
| Normal years | 250 | 800 | 600 | 700 | 500 | |
| Unfavorable years | 100 | 500 | 300 | 500 | 300 | |

1683--ROCHPAH-ROCK OUTCROP-LEO 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-- | | | |
| | | ROCHPAH | ROCK OUTCROP | LEO | Inclusion 1 |
| Indian ricegrass | ORHY | 5-10 | --- | 15-25 | --- |
| bush muhly | MUPO2 | --- | --- | 2-8 | --- |
| desert needlegrass | STSP3 | --- | --- | 10-20 | --- |
| galleta | HIJA | --- | --- | 2-5 | --- |
| Anderson wolfberry | LYAN | --- | --- | 1-5 | --- |
| Nevada ephedra | EPNE | 2-5 | --- | 5-15 | --- |
| banana yucca | YUBA | --- | --- | 1-3 | --- |
| blackbrush | CORA | 60-70 | --- | --- | --- |
| bud sagebrush | ARSP5 | 1-5 | --- | 1-5 | --- |
| fourwing saltbush | ATCA2 | 1-3 | --- | 2-5 | --- |
| spiny hopsage | GRSP | --- | --- | 15-25 | --- |
| winterfat | EULA5 | --- | --- | 1-5 | --- |
| Range site number | | 029XY013NV | none | 029XY079NV | none |
| Potential production (lb/acre): | | | | | |
| Favorable years | | 350 | | 900 | |
| Normal years | | 250 | | 700 | |
| Unfavorable years | | 100 | | 450 | |

1690--JOLAN-GEER 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-- | | |
| | | JOLAN | GEER | Inclusion 1 |
| Indian ricegrass | ORHY | 40-50 | 40-50 | 5-15 |
| bottlebrush squirreltail | SIRY | 2-5 | 2-5 | 5-10 |
| galleta | HIJA | 2-8 | 2-8 | --- |
| globemallow | SPEAE | 1-3 | 1-3 | --- |
| bud sagebrush | ARSP5 | 5-15 | 5-15 | 2-8 |
| fourwing saltbush | ATCA2 | 1-5 | 1-5 | --- |
| winterfat | EULA5 | 25-30 | 25-30 | 60-70 |
| Range site number | | 029XY042NV | 029XY042NV | 029XY020NV |
| Potential production (lb/acre): | | | | |
| Favorable years | | 700 | 700 | 500 |
| Normal years | | 500 | 500 | 350 |
| Unfavorable years | | 350 | 350 | 200 |

1700--SIEROCLIFF-VEET 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-- | | | |
| | | SIEROCLIFF | VEET | Inclusion 1 | Inclusion 2 |
| Indian ricegrass | ORRY | 20-35 | 10-25 | 20-35 | 20-35 |
| Sandberg bluegrass | POSE | 2-5 | --- | 2-5 | 2-5 |
| desert needlegrass | STSP3 | --- | 10-20 | --- | --- |
| galleta | HIJA | 2-8 | 2-8 | 2-8 | 2-8 |
| needleandthread | STCO4 | 5-15 | 2-8 | 5-15 | 5-15 |
| globemallow | SPHAE | --- | 1-4 | --- | --- |
| Nevada ephedra | EPNE | 2-5 | 2-5 | 2-5 | 2-5 |
| Wyoming big sagebrush | ARTRW | --- | 25-30 | --- | --- |
| black sagebrush | ARARN | 25-35 | --- | 25-35 | 25-35 |
| bud sagebrush | ARSP5 | --- | 2-5 | --- | --- |
| fourwing saltbush | ATCA2 | 1-5 | 2-5 | 1-5 | 1-5 |
| spiny hopsage | GRSP | --- | 5-10 | --- | --- |
| winterfat | EULA5 | 1-5 | 2-8 | 1-5 | 1-5 |

| Range site number | 029XY008NV | 029XY049NV | 029XY008NV | 029XY008NV |
|---------------------------------|------------|------------|------------|------------|
| Potential production (lb/acre): | | | | |
| Favorable years | 700 | 1100 | 700 | 700 |
| Normal years | 500 | 800 | 500 | 500 |
| Unfavorable years | 250 | 500 | 250 | 250 |

1710--CLIFFDOWN GRAVELLY SANDY LOAM, 4 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-- | | |
| | | CLIFFDOWN | Inclusion 1 | Inclusion 2 |
| Indian ricegrass | ORHY | 40-50 | 15-25 | 5-15 |
| bottlebrush squirreltail | SIEY | 2-5 | --- | 5-10 |
| bush muhly | MUPO2 | --- | 2-8 | --- |
| desert needlegrass | STSP3 | --- | 10-20 | --- |
| galleta | HIJA | 2-8 | 2-5 | --- |
| globemallow | SPHA | 1-3 | --- | --- |
| Anderson wolfberry | LYAN | --- | 1-5 | --- |
| Nevada ephedra | EPNE | --- | 5-15 | --- |
| banana yucca | YUBA | --- | 1-3 | --- |
| bud sagebrush | ARSP5 | 5-15 | 1-5 | 2-8 |
| fourwing saltbush | ATCA2 | 1-5 | 2-5 | --- |
| spiny hopsage | GRSP | --- | 15-25 | --- |
| winterfat | EULA5 | 25-30 | 1-5 | 60-70 |

| Range site number | 029XY042NV | 029XY079NV | 029XY020NV |
|---------------------------------|------------|------------|------------|
| Potential production (lb/acre): | | | |
| Favorable years | 700 | 900 | 500 |
| Normal years | 500 | 700 | 350 |
| Unfavorable years | 350 | 450 | 200 |

1730--CATE-VEET 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-- | | |
| | | CATE | VEET | Inclusion 1 |
| Indian ricegrass | OREY | 20-35 | 10-25 | 20-35 |
| desert needlegrass | STSP3 | 2-8 | 10-20 | 2-8 |
| galleta | HIJA | --- | 2-8 | --- |
| needleandthread | STCO4 | 5-15 | 2-8 | 5-15 |
| globemallow | SPEAE | --- | 1-4 | --- |
| Nevada ephedra | EPNE | 2-5 | 2-5 | 2-5 |
| Wyoming big sagebrush | ARTRW | 25-35 | 25-30 | 25-35 |
| bud sagebrush | ARSP5 | --- | 2-5 | --- |
| fourwing saltbush | ATCA2 | 2-5 | 2-5 | 2-5 |
| spiny hopsage | GRSP | --- | 5-10 | --- |
| winterfat | EULA5 | --- | 2-8 | --- |
| Range site number | | 029XY006NV | 029XY049NV | 029XY006NV |
| Potential production (lb/acre): | | | | |
| Favorable years | | 800 | 1100 | 800 |
| Normal years | | 600 | 800 | 600 |
| Unfavorable years | | 300 | 500 | 300 |

1740--SLAW-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-- | | | |
| | | SLAW | PLAYAS | Inclusion 1 | Inclusion 2 |
| Indian ricegrass | ORRY | --- | --- | 2-10 | 15-25 |
| alkali sacaton | SPAI | 2-8 | --- | --- | --- |
| bottlebrush squirreltail | SIEY | --- | --- | 2-5 | 2-5 |
| galleta | HIJA | --- | --- | --- | 2-10 |
| inland saltgrass | DISPS2 | 5-15 | --- | --- | --- |
| Bailey greasewood | SAVEB | --- | --- | --- | 0-10 |
| Nevada ephedra | EPNE | --- | --- | --- | 1-5 |
| Parry saltbush | ATPA3 | 2-10 | --- | --- | --- |
| black greasewood | SAVE4 | 50-65 | --- | 20-35 | --- |
| bud sagebrush | ARSP5 | --- | --- | 5-15 | 5-15 |
| fourwing saltbush | ATCA2 | --- | --- | 2-5 | --- |
| seepweed | SUAED | 2-5 | --- | --- | --- |
| shadscale | ATCO | 2-10 | --- | 30-50 | 25-35 |
| winterfat | EULAS | --- | --- | --- | 5-10 |
| Range site number | | 029XY076NV | none | 029XY024NV | 029XY017NV |
| Potential production (lb/acre): | | | | 700 | 500 |
| Favorable years | | 450 | | 500 | 350 |
| Normal years | | 250 | | 300 | 150 |
| Unfavorable years | | 100 | | | |

1741--SLAW 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-- | |
| | | SLAW | Inclusion 1 |
| Indian ricegrass | ORHY | 2-8 | 15-25 |
| bottlebrush squirreltail | SIRY | 2-5 | 2-5 |
| galleta | HIJA | --- | 2-10 |
| Bailey greasewood | SAVEB | --- | 0-10 |
| Nevada ephedra | EPNE | --- | 1-5 |
| bud sagebrush | ARSP5 | --- | 5-15 |
| shadscale | ATCO | 70-85 | 25-35 |
| winterfat | EULA5 | --- | 5-10 |

| Range site number | 029XY059NV | 029XY017NV |
|---------------------------------|------------|------------|
| Potential production (lb/acre): | | |
| Favorable years | 500 | 500 |
| Normal years | 375 | 350 |
| Unfavorable years | 200 | 150 |

1750--CHANYBUCK-BRIER-ROCK OUTCROP

(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-- | | | | |
| | | CHANYBUCK | BRIER | ROCK OUTCROP | Inclusion 1 | Inclusion 2 |
| Indian ricegrass | ORHY | --- | --- | --- | 10-20 | --- |
| Sandberg bluegrass | POSE | 1-5 | 1-5 | --- | --- | --- |
| Thurber needlegrass | STH2 | --- | --- | --- | 2-8 | --- |
| bottlebrush squirreltail | SIHY | 1-5 | 1-5 | --- | --- | --- |
| mountain brome | BRCAS | --- | --- | --- | --- | 2-5 |
| muttongrass | POFE | 1-5 | 1-5 | --- | 2-8 | 2-8 |
| needleandthread | STCO4 | --- | --- | --- | 20-30 | --- |
| needlegrass | STIPA | --- | --- | --- | --- | 20-30 |
| slender wheatgrass | AGTR | --- | --- | --- | --- | 5-10 |
| spike fescue | LEKI2 | --- | --- | --- | --- | 2-5 |
| milkvetch | ASTRA | --- | 1-5 | --- | --- | --- |
| Stansbury cliffrose | COMES | --- | 1-5 | --- | 2-8 | --- |
| antelope bitterbrush | PUTR2 | --- | --- | --- | 2-8 | --- |
| big sagebrush | ARTR2 | --- | --- | --- | 15-25 | --- |
| fourwing saltbush | ATCA2 | --- | --- | --- | 2-5 | --- |
| green ephedra | EPVI | 1-5 | 1-5 | --- | 2-5 | --- |
| mountain big sagebrush | ARVA2 | --- | 1-5 | --- | --- | 15-25 |
| snowberry | SYMPE | --- | --- | --- | --- | 2-8 |
| singleleaf pinyon | PIMO | 1-5 | 1-5 | --- | --- | --- |
| white fir | ABCO | 1-5 | --- | --- | --- | --- |

| Range site number | 029XY096NV | 029XY095NV | none | 029XY029NV | 029XY050NV |
|---------------------------------|------------|------------|------|------------|------------|
| Potential production (lb/acre): | | | | | |
| Favorable years | 300 | 350 | | 1100 | 1800 |
| Normal years | 200 | 200 | | 800 | 1500 |
| Unfavorable years | 150 | 150 | | 600 | 1000 |

1761--WYVA-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-- | | | |
| | | WYVA | ROCK OUTCROP | Inclusion 1 | Inclusion 2 |
| Indian ricegrass | OREY | 10-15 | --- | 10-15 | 2-10 |
| Sandberg bluegrass | POSE | --- | --- | --- | 2-10 |
| blue grama | BOGR2 | 2-5 | --- | 2-5 | --- |
| galleta | HIJA | 2-8 | --- | 2-8 | 1-5 |
| needleandthread | STCO4 | 10-20 | --- | 10-20 | --- |
| Stansbury cliffrose | COMES | 2-10 | --- | 2-10 | --- |
| big sagebrush | ARTR2 | 20-30 | --- | 20-30 | 25-35 |
| desert peachbrush | PRFA | --- | --- | --- | 10-20 |
| ephedra | EPHED | 5-10 | --- | 5-10 | --- |
| fourwing saltbush | ATCA2 | 2-5 | --- | 2-5 | --- |
| rubber rabbitbrush | CHNA2 | --- | --- | --- | 5-15 |
| Range site number | | 029XY075NV | none | 029XY075NV | 029XY009NV |
| Potential production (lb/acre): | | | | | |
| Favorable years | | 700 | | 700 | 1000 |
| Normal years | | 500 | | 500 | 700 |
| Unfavorable years | | 300 | | 300 | 500 |

1762--WYVA-SLIDYMTN 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-- | | |
| | | WYVA | SLIDYMTN | Inclusion 1 |
| Indian ricegrass | ORRY | 10-15 | --- | 20-35 |
| blue grama | BOGR2 | 2-5 | 1-5 | --- |
| bluegrass | POA++ | --- | 1-5 | --- |
| desert needlegrass | STSP3 | --- | --- | 2-8 |
| galleta | HIJA | 2-8 | --- | --- |
| muttongrass | POFE | --- | 1-5 | --- |
| needleandthread | STCO4 | 10-20 | --- | 5-15 |
| Gambel oak | QUGA | --- | 1-5 | --- |
| Nevada ephedra | EPNE | --- | --- | 2-5 |
| Stansbury cliffrose | COMES | 2-10 | --- | --- |
| Utah serviceberry | AMUT | --- | 1-5 | --- |
| Wyoming big sagebrush | ARTRW | --- | 1-5 | 25-35 |
| big sagebrush | ARTR2 | 20-30 | --- | --- |
| ephedra | EPHED | 5-10 | --- | --- |
| fourwing saltbush | ATCA2 | 2-5 | --- | 2-5 |
| mountain big sagebrush | ARVA2 | --- | 1-5 | --- |
| singleleaf pinyon | PIMO | --- | 1-5 | --- |
| Range site number | | 029XY075NV | 029XY084NV | 029XY006NV |
| Potential production (lb/acre): | | | | |
| Favorable years | | 700 | 500 | 800 |
| Normal years | | 500 | 300 | 600 |
| Unfavorable years | | 300 | 200 | 300 |

1770--VEET-MOSIDA 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-- | | | |
| | | VEET | MOSIDA | Inclusion 1 | Inclusion 2 |
| Indian ricegrass | ORRY | 10-25 | --- | 10-20 | --- |
| Nevada bluegrass | PONE3 | --- | --- | --- | 10-20 |
| Thurber needlegrass | STTR2 | --- | --- | 2-8 | --- |
| basin wildrye | ELCI2 | --- | 10-15 | --- | --- |
| desert needlegrass | STSP3 | 10-20 | --- | --- | --- |
| galleta | HIJA | 2-8 | --- | --- | --- |
| meadow barley | HOBR2 | --- | --- | --- | 5-10 |
| muttongrass | POPE | --- | --- | 2-8 | --- |
| needleandthread | STCO4 | 2-8 | 2-5 | 20-30 | --- |
| rush | JUNCU | --- | --- | --- | 10-20 |
| sedge | CAREX | --- | --- | --- | 20-35 |
| wheatgrass | AGROP2 | --- | 5-10 | --- | --- |
| globemallow | SPHAE | 1-4 | --- | --- | --- |
| Nevada ephedra | EPNE | 2-5 | 2-5 | --- | --- |
| Stansbury cliffrose | COMES | --- | --- | 2-8 | --- |
| Wyoming big sagebrush | ARTRW | 25-30 | --- | --- | --- |
| antelope bitterbrush | PUTR2 | --- | --- | 2-8 | --- |
| basin big sagebrush | ARTRT | --- | 20-25 | --- | --- |
| big sagebrush | ARTR2 | --- | --- | 15-25 | --- |
| bud sagebrush | ARSP5 | 2-5 | --- | --- | --- |
| fourwing saltbush | ATCA2 | 2-5 | --- | 2-5 | --- |
| green ephedra | EPVI | --- | --- | 2-5 | --- |
| rubber rabbitbrush | CBNA2 | --- | 5-10 | --- | --- |
| spiny hopsage | GRSP | 5-10 | --- | --- | --- |
| winterfat | EULA5 | 2-8 | --- | --- | --- |
| Range site number | | 029XY049NV | 029XY025NV | 029XY029NV | 029XY001NV |
| Potential production (lb/acre): | | | | | |
| Favorable years | | 1100 | 900 | 1100 | 4000 |
| Normal years | | 800 | 700 | 800 | 3000 |
| Unfavorable years | | 500 | 400 | 600 | 1200 |

1810--BOXSPRING-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-- | | | | | |
| | | BOXSPRING | ROCK OUTCROP | Inclusion 1 | Inclusion 2 | Inclusion 3 | Inclusion 4 |
| Indian ricegrass | ORHY | 1-3 | --- | 10-15 | 2-5 | 1-3 | 1-3 |
| big galleta | HIRI | --- | --- | --- | 5-15 | --- | --- |
| blue grama | BOGR2 | --- | --- | 2-5 | --- | --- | --- |
| desert needlegrass | STSP3 | 2-8 | --- | --- | --- | 2-8 | 2-8 |
| galleta | HIJA | --- | --- | 2-8 | --- | --- | --- |
| needleandthread | STCO4 | --- | --- | 10-20 | --- | --- | --- |
| Nevada ephedra | EPNE | 2-5 | --- | --- | --- | 2-5 | 2-5 |
| Stansbury cliffrose | COMES | T-8 | --- | 2-10 | --- | T-8 | T-8 |
| big sagebrush | ARTR2 | --- | --- | 20-30 | --- | --- | --- |
| blackbrush | CORA | 60-75 | --- | --- | 60-70 | 60-75 | 60-75 |
| creosotebush | LATR2 | --- | --- | --- | 2-5 | --- | --- |
| desert bitterbrush | PUGL2 | 2-8 | --- | --- | --- | 2-8 | 2-8 |
| ephedra | EPHE2 | 2-5 | --- | 5-10 | --- | 2-5 | 2-5 |
| fourwing saltbush | ATCA2 | --- | --- | 2-5 | --- | --- | --- |
| white bursage | AMDU2 | --- | --- | --- | T-8 | --- | --- |
| Range site number | | 029XY077NV | none | 029XY075NV | 030XB029NV | 029XY077NV | 029XY077NV |
| Potential production (lb/acre): | | | | | | | |
| Favorable years | | 700 | | 700 | 500 | 700 | 700 |
| Normal years | | 500 | | 500 | 350 | 500 | 500 |
| Unfavorable years | | 300 | | 300 | 250 | 300 | 300 |

1811--BOXSPRING-THERIOT-ROCK OUTCROP

(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-- | | | | |
| | | BOXSPRING | THERIOT | ROCK OUTCROP | Inclusion 1 | Inclusion 2 |
| Indian ricegrass | ORRY | 1-3 | 2-5 | --- | 10-20 | 2-5 |
| desert needlegrass | STSP3 | 2-8 | 50-60 | --- | --- | 50-60 |
| galleta | HIJA | --- | --- | --- | 2-8 | --- |
| needleandthread | STCO4 | --- | --- | --- | 5-15 | --- |
| purple threeawn | ARPU9 | --- | 2-5 | --- | --- | 2-5 |
| Bigelow sagebrush | ARBI3 | --- | 2-8 | --- | --- | 2-8 |
| Nevada ephedra | EPNE | 2-5 | --- | --- | 2-8 | --- |
| Stansbury cliffrose | COMES | T-8 | --- | --- | --- | --- |
| banana yucca | YUBA | --- | 1-3 | --- | --- | 1-3 |
| black sagebrush | ARARN | --- | --- | --- | 35-45 | --- |
| blackbrush | CORA | 60-75 | --- | --- | --- | --- |
| desert bitterbrush | PUGL2 | 2-8 | --- | --- | --- | --- |
| ephedra | EPHEE | 2-5 | 5-10 | --- | --- | 5-10 |
| fourwing saltbush | ATCA2 | --- | 1-3 | --- | --- | 1-3 |
| shadscale | ATCO | --- | 5-15 | --- | 1-5 | 5-15 |
| winterfat | EULA5 | --- | 1-3 | --- | --- | 1-3 |
| Range site number | | 029XY077NV | 029XY064NV | none | 029XY014NV | 029XY064NV |
| Potential production (lb/acre): | | | | | | |
| Favorable years | | 700 | 900 | | 350 | 900 |
| Normal years | | 500 | 700 | | 200 | 700 |
| Unfavorable years | | 300 | 500 | | 75 | 500 |

1821--TURBA-ACTI 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-- | | | | |
| | | TURBA | ACTI | Inclusion 1 | Inclusion 2 | Inclusion 3 |
| Indian ricegrass | OREY | X | X | X | X | --- |
| muttongrass | POFE | X | X | X | X | --- |
| needleandthread | STCO4 | X | X | X | X | --- |
| prairie junegrass | KOPY | X | X | X | X | --- |
| Gambel oak | QUGA | X | X | X | X | --- |
| Utah serviceberry | AMUT | X | X | X | X | --- |
| mountain big sagebrush | ARVA2 | X | X | X | X | --- |
| turbinella oak | QUTU2 | X | X | X | X | --- |
| yellowleaf siltassel | GAFL2 | X | X | X | X | --- |
| singleleaf pinyon | PIMO | X | X | X | X | --- |
| Range site number | | 029XY078NV | 029XY078NV | 029XY078NV | 029XY078NV | none |
| Potential production (lb/acre): | | | | | | |
| Favorable years | | 1000 | 1000 | 1000 | 1000 | |
| Normal years | | 900 | 900 | 900 | 900 | |
| Unfavorable years | | 600 | 600 | 600 | 600 | |

1830--ZAQUA-WINKLO 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-- | | | | | |
| | | ZAQUA | WINKLO | Inclusion 1 | Inclusion 2 | Inclusion 3 | Inclusion 4 |
| Indian ricegrass | ORHY | 1-3 | 1-3 | --- | 1-3 | 10-15 | 2-10 |
| Sandberg bluegrass | POSE | --- | --- | --- | --- | --- | 2-10 |
| blue grama | BOGR2 | --- | --- | --- | --- | 2-5 | --- |
| desert needlegrass | STSP3 | 2-8 | 2-8 | --- | 2-8 | --- | --- |
| galleta | HIJA | --- | --- | --- | --- | 2-8 | 1-5 |
| needleandthread | STCO4 | --- | --- | --- | --- | 10-20 | --- |
| Nevada ephedra | EPNE | 2-5 | 2-5 | --- | 2-5 | --- | --- |
| Stansbury cliffrose | COMES | T-8 | T-8 | --- | T-8 | 2-10 | --- |
| big sagebrush | ARTR2 | --- | --- | --- | --- | 20-30 | 25-35 |
| blackbrush | CORA | 60-75 | 60-75 | --- | 60-75 | --- | --- |
| desert bitterbrush | FUGL2 | 2-8 | 2-8 | --- | 2-8 | --- | --- |
| desert peachbrush | PRFA | --- | --- | --- | --- | --- | 10-20 |
| ephedra | EPHED | 2-5 | 2-5 | --- | 2-5 | 5-10 | --- |
| fourwing saltbush | ATCA2 | --- | --- | --- | --- | 2-5 | --- |
| rubber rabbitbrush | CHNA2 | --- | --- | --- | --- | --- | 5-15 |
| Range site number | | 029XY077NV | 029XY077NV | none | 029XY077NV | 029XY075NV | 029XY009NV |
| Potential production (lb/acre): | | | | | | | |
| Favorable years | | 700 | 700 | | 700 | 700 | 1000 |
| Normal years | | 500 | 500 | | 500 | 500 | 700 |
| Unfavorable years | | 300 | 300 | | 300 | 300 | 500 |

1831--ZAQUA-BOXSPRING 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-- | | | | | |
| | | ZAQUA | BOXSPRING | Inclusion 1 | Inclusion 2 | Inclusion 3 | Inclusion 4 |
| Indian ricegrass | ORHY | 1-3 | 1-3 | 1-3 | --- | 1-3 | 10-15 |
| blue grama | BOGR2 | --- | --- | --- | --- | --- | 2-5 |
| desert needlegrass | STSP3 | 2-8 | 2-8 | 2-8 | --- | 2-8 | --- |
| galleta | HIJA | --- | --- | --- | --- | --- | 2-8 |
| needleandthread | STCO4 | --- | --- | --- | --- | --- | 10-20 |
| Nevada ephedra | EPNE | 2-5 | 2-5 | 2-5 | --- | 2-5 | --- |
| Stansbury cliffrose | COMES | T-8 | T-8 | T-8 | --- | T-8 | 2-10 |
| big sagebrush | ARTR2 | --- | --- | --- | --- | --- | 20-30 |
| blackbrush | CORA | 60-75 | 60-75 | 60-75 | --- | 60-75 | --- |
| desert bitterbrush | PUGL2 | 2-8 | 2-8 | 2-8 | --- | 2-8 | --- |
| ephedra | EPHE2 | 2-5 | 2-5 | 2-5 | --- | 2-5 | 5-10 |
| fourwing saltbush | ATCA2 | --- | --- | --- | --- | --- | 2-5 |

| Range site number | 029XY077NV | 029XY077NV | 029XY077NV | none | 029XY077NV | 029XY075NV |
|---------------------------------|------------|------------|------------|------|------------|------------|
| Potential production (lb/acre): | | | | | | |
| Favorable years | 700 | 700 | 700 | | 700 | 700 |
| Normal years | 500 | 500 | 500 | | 500 | 500 |
| Unfavorable years | 300 | 300 | 300 | | 300 | 300 |

1832--ZAQUA-WINKLO-KANESPRINGS 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-- | | | | | | |
| | | ZAQUA | WINKLO | KANESPRINGS | Inclusion 1 | Inclusion 2 | Inclusion 3 | Inclusion 4 |
| Indian ricegrass | ORHY | 1-3 | 1-3 | 2-5 | 10-15 | --- | 2-10 | --- |
| Sandberg bluegrass | POSE | --- | --- | --- | --- | --- | 2-10 | --- |
| big galleta | HIRI | --- | --- | 5-15 | --- | --- | --- | --- |
| blue grama | BOGR2 | --- | --- | --- | 2-5 | --- | --- | --- |
| desert needlegrass | STSP3 | 2-8 | 2-8 | --- | --- | --- | --- | --- |
| galleta | HIJA | --- | --- | --- | 2-8 | --- | 1-5 | --- |
| needleandthread | STCO4 | --- | --- | --- | 10-20 | --- | --- | --- |
| Nevada ephedra | EPNE | 2-5 | 2-5 | --- | --- | --- | --- | --- |
| Stansbury cliffrose | COMES | T-8 | T-8 | --- | 2-10 | --- | --- | --- |
| big sagebrush | ARTR2 | --- | --- | --- | 20-30 | --- | 25-35 | --- |
| blackbrush | CORA | 60-75 | 60-75 | 60-70 | --- | --- | --- | --- |
| creosotebush | LATR2 | --- | --- | 2-5 | --- | --- | --- | --- |
| desert bitterbrush | PUGL2 | 2-8 | 2-8 | --- | --- | --- | --- | --- |
| desert peachbrush | PRFA | --- | --- | --- | --- | --- | 10-20 | --- |
| ephedra | EPHED | 2-5 | 2-5 | --- | 5-10 | --- | --- | --- |
| fourwing saltbush | ATCA2 | --- | --- | --- | 2-5 | --- | --- | --- |
| rubber rabbitbrush | CHNA2 | --- | --- | --- | --- | --- | 5-15 | --- |
| white bursage | AMDU2 | --- | --- | T-8 | --- | --- | --- | --- |

| Range site number | 029XY077NV | 029XY077NV | 030XB029NV | 029XY075NV | none | 029XY009NV | none |
|---------------------------------|------------|------------|------------|------------|------|------------|------|
| Potential production (lb/acre): | | | | | | | |
| Favorable years | 700 | 700 | 500 | 700 | | 1000 | |
| Normal years | 500 | 500 | 350 | 500 | | 700 | |
| Unfavorable years | 300 | 300 | 250 | 300 | | 500 | |

1833--ZAQUA-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-- | | | |
| | | ZAQUA | ROCK OUTCROP | Inclusion 1 | Inclusion 2 |
| Indian ricegrass | ORHY | 1-3 | --- | 1-3 | 1-5 |
| desert needlegrass | STSP3 | 2-8 | --- | 2-8 | --- |
| muttongrass | POFE | --- | --- | --- | 1-5 |
| Mojave ceanothus | CEGRV | --- | --- | --- | 1-5 |
| Nevada ephedra | EPNE | 2-5 | --- | 2-5 | --- |
| Stansbury cliffrose | COMES | T-8 | --- | T-8 | --- |
| blackbrush | CORA | 60-75 | --- | 60-75 | --- |
| desert bitterbrush | PUGL2 | 2-8 | --- | 2-8 | 1-5 |
| ephedra | EPHED | 2-5 | --- | 2-5 | --- |
| turbinella oak | QUTU2 | --- | --- | --- | 1-5 |
| Range site number | | 029XY077NV | none | 029XY077NV | 029XY089NV |
| Potential production (lb/acre): | | | | | |
| Favorable years | | 700 | | 700 | 700 |
| Normal years | | 500 | | 500 | 500 |
| Unfavorable years | | 300 | | 300 | 200 |

1850--RAPADO-OLEMAN 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-- | | | | | |
| | | RAPADO | OLEMAN | Inclusion 1 | Inclusion 2 | Inclusion 3 | Inclusion 4 |
| Indian ricegrass | ORHY | 1-3 | 1-3 | 1-3 | 1-3 | 2-10 | --- |
| Sandberg bluegrass | POSE | --- | --- | --- | --- | 2-10 | --- |
| desert needlegrass | STSP3 | 2-8 | 2-8 | 2-8 | 2-8 | --- | --- |
| galleta | HIJA | --- | --- | --- | --- | 1-5 | --- |
| Nevada ephedra | EPNE | 2-5 | 2-5 | 2-5 | 2-5 | --- | --- |
| Stansbury cliffrose | COMES | T-8 | T-8 | T-8 | T-8 | --- | --- |
| big sagebrush | ARTR2 | --- | --- | --- | --- | 25-35 | --- |
| blackbrush | CORA | 60-75 | 60-75 | 60-75 | 60-75 | --- | --- |
| desert bitterbrush | PUGL2 | 2-8 | 2-8 | 2-8 | 2-8 | --- | --- |
| desert peachbrush | PRFA | --- | --- | --- | --- | 10-20 | --- |
| ephedra | EPHED | 2-5 | 2-5 | 2-5 | 2-5 | --- | --- |
| rubber rabbitbrush | CHNA2 | --- | --- | --- | --- | 5-15 | --- |
| Range site number | | 029XY077NV | 029XY077NV | 029XY077NV | 029XY077NV | 029XY009NV | none |
| Potential production (lb/acre): | | | | | | | |
| Favorable years | | 700 | 700 | 700 | 700 | 1000 | |
| Normal years | | 500 | 500 | 500 | 500 | 700 | |
| Unfavorable years | | 300 | 300 | 300 | 300 | 500 | |

1851--RAPADO-VEET 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-- | | | | |
| | | RAPADO | VEET | Inclusion 1 | Inclusion 2 | Inclusion 3 |
| Indian ricegrass | ORRY | 1-3 | 2-10 | 1-3 | 1-3 | --- |
| Sandberg bluegrass | POSE | --- | 2-10 | --- | --- | --- |
| desert needlegrass | STSP3 | 2-8 | --- | 2-8 | 2-8 | --- |
| galleta | HIJA | --- | 1-5 | --- | --- | --- |
| Nevada ephedra | EPNE | 2-5 | --- | 2-5 | 2-5 | --- |
| Stansbury cliffrose | COMES | T-8 | --- | T-8 | T-8 | --- |
| big sagebrush | ARTR2 | --- | 25-35 | --- | --- | --- |
| blackbrush | CORA | 60-75 | --- | 60-75 | 60-75 | --- |
| desert bitterbrush | FUGL2 | 2-8 | --- | 2-8 | 2-8 | --- |
| desert peachbrush | PRFA | --- | 10-20 | --- | --- | --- |
| ephedra | EPHED | 2-5 | --- | 2-5 | 2-5 | --- |
| rubber rabbitbrush | CHNA2 | --- | 5-15 | --- | --- | --- |
| Range site number | | 029XY077NV | 029XY009NV | 029XY077NV | 029XY077NV | none |
| Potential production (lb/acre): | | | | | | |
| Favorable years | | 700 | 1000 | 700 | 700 | |
| Normal years | | 500 | 700 | 500 | 500 | |
| Unfavorable years | | 300 | 500 | 300 | 300 | |

1870--FALERIA-LAROSS 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-- | | | | | |
| | | FALERIA | LAROSS | Inclusion 1 | Inclusion 2 | Inclusion 3 | Inclusion 4 |
| Canby bluegrass | POCA | X | X | --- | X | --- | --- |
| Indian ricegrass | ORRY | --- | X | X | --- | --- | --- |
| bluegrass | POA++ | --- | --- | --- | --- | 1-5 | --- |
| bottlebrush squirreltail | SIBY | X | --- | --- | X | --- | --- |
| muttongrass | POFE | X | X | X | X | 1-5 | --- |
| needleandthread | STCO4 | --- | --- | X | --- | --- | --- |
| prairie junegrass | KOPY | --- | X | X | --- | --- | --- |
| Gambel oak | QUGA | X | --- | X | X | 1-5 | --- |
| Utah serviceberry | AMUT | X | X | X | X | --- | --- |
| black sagebrush | ARARN | --- | --- | --- | --- | 1-5 | --- |
| greenleaf manzanita | ARPA6 | X | X | --- | X | --- | --- |
| mountain big sagebrush | ARVA2 | X | X | X | X | --- | --- |
| turbinella oak | QUTU2 | --- | X | X | --- | --- | --- |
| yellowleaf silktassel | GAPL2 | --- | X | X | --- | --- | --- |
| ponderosa pine | PIPO | X | --- | --- | X | --- | --- |
| singleleaf pinyon | PIMO | --- | X | X | --- | --- | --- |
| Range site number | | 029XY086NV | 029XY100NV | 029XY078NV | 029XY086NV | 029XY083NV | none |
| Potential production (lb/acre): | | | | | | | |
| Favorable years | | 700 | 1300 | 1000 | 700 | 500 | |
| Normal years | | 500 | 900 | 900 | 500 | 300 | |
| Unfavorable years | | 300 | 600 | 600 | 300 | 200 | |

1880--TEJABE-PINTWATER-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-- | | | | |
| | | TEJABE | PINTWATER | ROCK OUTCROP | Inclusion 1 | Inclusion 2 |
| Canby bluegrass | POCA | --- | --- | --- | --- | X |
| Indian ricegrass | ORHY | 2-5 | 2-5 | --- | 10-15 | --- |
| Sandberg bluegrass | POSE | --- | --- | --- | --- | X |
| bottlebrush squirreltail | SIHY | 1-3 | --- | --- | --- | --- |
| desert needlegrass | STSP3 | 30-50 | --- | --- | 25-35 | --- |
| galleta | HIJA | 1-3 | --- | --- | 2-8 | --- |
| muttongrass | POFE | --- | --- | --- | --- | X |
| needleandthread | STCO4 | 2-5 | --- | --- | --- | --- |
| prairie junegrass | KOPY | --- | --- | --- | --- | X |
| erigonum | ERIOG | --- | --- | --- | --- | --- |
| Heermann buckwheat | ERBE | --- | 1-5 | --- | --- | --- |
| Stansbury cliffrose | COMES | 5-10 | --- | --- | 1-3 | --- |
| Wyoming big sagebrush | ARTRW | --- | --- | --- | --- | X |
| big sagebrush | ARTR2 | 15-25 | --- | --- | --- | --- |
| black sagebrush | ARARN | --- | --- | --- | 25-35 | --- |
| desert bitterbrush | PUGL2 | --- | --- | --- | 2-5 | X |
| ephedra | EPHE2 | --- | --- | --- | --- | --- |
| fourwing saltbush | ATCA2 | --- | 2-5 | --- | --- | --- |
| green ephedra | EPVI | 5-10 | 20-30 | --- | --- | X |
| mountain big sagebrush | ARVA2 | --- | --- | --- | --- | --- |
| yellow buckwheat | ERFA2 | --- | 5-10 | --- | --- | --- |
| singleleaf pinyon | PIMO | --- | --- | --- | --- | X |
| Range site number | | 029XY073NV | 029XY085NV | none | 029XY045NV | 029XY065NV |
| Potential production (lb/acre): | | | | | | |
| Favorable years | | 800 | 700 | | 700 | 500 |
| Normal years | | 600 | 500 | | 500 | 300 |
| Unfavorable years | | 400 | 300 | | 300 | 200 |

1890--WELRING-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-- | | | | | |
| | | WELRING | ROCK OUTCROP | Inclusion 1 | Inclusion 2 | Inclusion 3 | Inclusion 4 |
| Canby bluegrass | POCA | --- | --- | --- | --- | X | --- |
| Indian ricegrass | ORHY | --- | --- | 10-15 | 1-3 | --- | --- |
| Sandberg bluegrass | POSE | --- | --- | --- | --- | X | --- |
| blue grama | BOGR2 | --- | --- | 2-5 | --- | --- | --- |
| desert needlegrass | STSP3 | --- | --- | --- | 2-8 | --- | --- |
| galleta | HIJA | --- | --- | 2-8 | --- | --- | --- |
| muttongrass | POFE | X | --- | --- | --- | X | --- |
| needleandthread | STCO4 | --- | --- | 10-20 | --- | --- | --- |
| prairie junegrass | KOPY | --- | --- | --- | --- | X | --- |
| erigonum | ERIOG | --- | --- | --- | --- | X | --- |
| Nevada ephedra | EPNE | --- | --- | --- | 2-5 | --- | --- |
| Stansbury cliffrose | COMES | --- | --- | 2-10 | T-8 | --- | --- |
| Wyoming big sagebrush | ARTW | --- | --- | --- | --- | X | --- |
| big sagebrush | ARTR2 | --- | --- | 20-30 | --- | --- | --- |
| blackbrush | CORA | --- | --- | --- | 60-75 | --- | --- |
| desert bitterbrush | PUGL2 | --- | --- | --- | 2-8 | X | --- |
| ephedra | EPHE2 | --- | --- | 5-10 | 2-5 | --- | --- |
| fourwing saltbush | ATCA2 | --- | --- | 2-5 | --- | --- | --- |
| goldenweed | HAPLO2 | X | --- | --- | --- | --- | --- |
| mountain big sagebrush | ARVA2 | X | --- | --- | --- | X | --- |
| yellowleaf silktassel | GAFL2 | X | --- | --- | --- | --- | --- |
| singleleaf pinyon | PIMO | X | --- | --- | --- | X | --- |
| Range site number | | 029XY067NV | none | 029XY075NV | 029XY077NV | 029XY065NV | none |
| Potential production (lb/acre): | | | | | | | |
| Favorable years | | 500 | | 700 | 700 | 500 | |
| Normal years | | 400 | | 500 | 500 | 300 | |
| Unfavorable years | | 200 | | 300 | 300 | 200 | |

1900--GLENDALE-BLUEPOINT 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-- | | | | |
| | | GLENDALE | BLUEPOINT | Inclusion 1 | Inclusion 2 | Inclusion 3 |
| Indian ricegrass | ORHY | 2-5 | 2-5 | --- | --- | --- |
| big galleta | HIRI | --- | --- | T-8 | 5-10 | --- |
| bush muhly | MUPO2 | --- | --- | --- | 1-5 | --- |
| Nevada sphedra | EPNE | --- | --- | T-5 | 1-5 | --- |
| baccharis | BACCH | --- | --- | --- | 5-15 | --- |
| bursage | FRANS* | --- | --- | --- | 5-20 | --- |
| cattle saltbush | ATPO | 25-45 | 25-45 | --- | --- | --- |
| creosotebush | LATR2 | 5-15 | 5-15 | 10-25 | 5-20 | --- |
| erigonum | ERIOG | --- | --- | --- | 1-5 | --- |
| range ratany | KRPA | --- | --- | 2-5 | --- | --- |
| white burrobrush | HYSA | --- | --- | --- | 2-5 | --- |
| white bursage | AMDU2 | 10-20 | 10-20 | 25-50 | --- | --- |
| Range site number | | 030XY046NV | 030XY046NV | 030XB005NV | 030XB028NV | none |
| Potential production (lb/acre): | | | | | | |
| Favorable years | | 450 | 450 | 500 | 500 | |
| Normal years | | 300 | 300 | 300 | 350 | |
| Unfavorable years | | 100 | 100 | 200 | 200 | |

1910--LAND 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-- | | |
| | | LAND | Inclusion 1 | Inclusion 2 |
| Baltic rush | JUBA | 2-10 | --- | --- |
| Indian ricegrass | ORHY | --- | 2-5 | --- |
| alkali sacaton | SPAI | 20-40 | --- | --- |
| big galleta | HIRI | --- | --- | 5-10 |
| bush muhly | MUPO2 | --- | --- | 1-5 |
| inland saltgrass | DISPS2 | 5-15 | --- | --- |
| sedge | CAREX | 1-5 | --- | --- |
| Nevada ephedra | EPNE | --- | --- | 1-5 |
| baccharis | BACCH | --- | --- | 5-15 |
| big saltbush | ATLE | 5-15 | --- | --- |
| bursage | FRANS* | --- | --- | 5-20 |
| cattle saltbush | ATPO | --- | 25-45 | --- |
| creosotabush | LATR2 | --- | 5-15 | 5-20 |
| erigonum | ERIOG | --- | --- | 1-5 |
| fourwing saltbush | ATCA2 | 2-5 | --- | --- |
| rubber rabbitbrush | CHNA2 | 2-5 | --- | --- |
| white burrobrush | EYSA | --- | --- | 2-5 |
| white bursage | AMDU2 | --- | 10-20 | --- |
| wolfberry | LYCIU | 2-5 | --- | --- |

| Range site number | 030XY024NV | 030XY046NV | 030XB028NV |
|---------------------------------|------------|------------|------------|
| Potential production (lb/acre): | | | |
| Favorable years | 1600 | 450 | 500 |
| Normal years | 900 | 300 | 350 |
| Unfavorable years | 300 | 100 | 200 |

1920--MOTOQUA-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-- | | | |
| | | MOTOQUA | ROCK OUTCROP | Inclusion 1 | Inclusion 2 |
| Indian ricegrass | ORHY | 1-5 | --- | 1-5 | 1-5 |
| muttongrass | POFE | 1-5 | --- | 1-5 | 1-5 |
| Mojave ceanothus | CEGRV | 1-5 | --- | 1-5 | 1-5 |
| desert bitterbrush | PUGL2 | 1-5 | --- | 1-5 | 1-5 |
| turbinella oak | QUTU2 | 1-5 | --- | 1-5 | 1-5 |
| Range site number | | 029XY089NV | none | 029XY089NV | 029XY089NV |
| Potential production (lb/acre): | | | | | |
| Favorable years | | 700 | | 700 | 700 |
| Normal years | | 500 | | 500 | 500 |
| Unfavorable years | | 200 | | 200 | 200 |

1921--MOTOQUA-THUNDERBIRD 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-- | | | | | |
| | | MOTOQUA | THUNDERBIRD | Inclusion 1 | Inclusion 2 | Inclusion 3 | Inclusion 4 |
| Indian ricegrass | ORHY | 1-5 | X | --- | 1-3 | X | X |
| desert needlegrass | STSP3 | --- | --- | --- | 2-8 | --- | --- |
| muttongrass | POFE | 1-5 | X | --- | --- | X | X |
| needleandthread | STCO4 | --- | X | --- | --- | X | X |
| prairie junegrass | KOPY | --- | X | --- | --- | X | X |
| Gambel oak | QUGA | --- | X | --- | --- | X | X |
| Mojave ceanothus | CRGRV | 1-5 | --- | --- | --- | --- | --- |
| Nevada ephedra | EPNE | --- | --- | --- | 2-5 | --- | --- |
| Stansbury cliffrose | COMES | --- | --- | --- | T-8 | --- | --- |
| Utah serviceberry | AMUT | --- | X | --- | --- | X | X |
| blackbrush | CORA | --- | --- | --- | 60-75 | --- | --- |
| desert bitterbrush | FUGL2 | 1-5 | --- | --- | 2-8 | --- | --- |
| ephedra | EPHEd | --- | --- | --- | 2-5 | --- | --- |
| mountain big sagebrush | ARVA2 | --- | X | --- | --- | X | X |
| turbinella oak | QUTU2 | 1-5 | X | --- | --- | X | X |
| yellowleaf silktassel | GAF2 | --- | X | --- | --- | X | X |
| singleleaf pinyon | PIMO | --- | X | --- | --- | X | X |

| Range site number | 029XY089NV | 029XY078NV | none | 029XY077NV | 029XY078NV | 029XY078NV |
|---------------------------------|------------|------------|------|------------|------------|------------|
| Potential production (lb/acre): | | | | | | |
| Favorable years | 700 | 1000 | | 700 | 1000 | 1000 |
| Normal years | 500 | 900 | | 500 | 900 | 900 |
| Unfavorable years | 200 | 600 | | 300 | 600 | 600 |

1941--SLIDYMTN-CAPSUS 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-- | | | |
| | | SLIDYMTN | CAPSUS | Inclusion 1 | Inclusion 2 |
| Canby bluegrass | POCA | --- | --- | X | --- |
| Sandberg bluegrass | POSE | --- | --- | X | --- |
| blue grama | BOGR2 | 1-5 | 1-5 | --- | --- |
| bluegrass | POA++ | 1-5 | 1-5 | --- | --- |
| muttongrass | POPE | 1-5 | 1-5 | X | --- |
| prairie junegrass | KOPY | --- | --- | X | --- |
| erigonum | ERIOG | --- | --- | X | --- |
| Gambel oak | QUGA | 1-5 | 1-5 | --- | --- |
| Utah serviceberry | AMUT | 1-5 | 1-5 | --- | --- |
| Wyoming big sagebrush | ARTRW | 1-5 | 1-5 | X | --- |
| desert bitterbrush | PUGL2 | --- | --- | X | --- |
| mountain big sagebrush | ARVA2 | 1-5 | 1-5 | X | --- |
| singleleaf pinyon | PIMO | 1-5 | 1-5 | X | --- |
| Range site number | | 029XY084NV | 029XY084NV | 029XY065NV | none |
| Potential production (lb/acre): | | | | | |
| Favorable years | | 500 | 500 | 500 | |
| Normal years | | 300 | 300 | 300 | |
| Unfavorable years | | 200 | 200 | 200 | |

1950--URSINE-LOMOINE 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-- | | | | | |
| | | URSINE | LOMOINE | URSINE | Inclusion 1 | Inclusion 2 | Inclusion 3 |
| Canby bluegrass | POCA | --- | --- | --- | --- | X | --- |
| Indian ricegrass | ORHY | 20-35 | 5-15 | 20-35 | --- | --- | --- |
| Sandberg bluegrass | POSE | 2-5 | --- | 2-5 | --- | X | --- |
| galleta | HIJA | 2-8 | 2-5 | 2-8 | --- | --- | --- |
| muttongrass | POPE | --- | --- | --- | --- | X | --- |
| needleandthread | STCO4 | 5-15 | 2-5 | 5-15 | --- | --- | --- |
| prairie junegrass | KOPY | --- | --- | --- | --- | X | --- |
| erigonum | ERIOG | --- | --- | --- | --- | X | --- |
| Nevada ephedra | EPNE | 2-5 | --- | 2-5 | --- | --- | --- |
| Stansbury cliffrose | COMES | --- | 25-35 | --- | --- | --- | --- |
| Wyoming big sagebrush | ARTRW | --- | --- | --- | --- | X | --- |
| black sagebrush | ARARN | 25-35 | 15-25 | 25-35 | --- | --- | --- |
| desert bitterbrush | PUGL2 | --- | --- | --- | --- | X | --- |
| ephedra | EPHE | --- | 2-8 | --- | --- | --- | --- |
| fourwing saltbush | ATCA2 | 1-5 | --- | 1-5 | --- | --- | --- |
| mountain big sagebrush | ARVA2 | --- | --- | --- | --- | X | --- |
| rubber rabbitbrush | CHNA2 | --- | 2-8 | --- | --- | --- | --- |
| winterfat | EULA5 | 1-5 | --- | 1-5 | --- | --- | --- |
| singleleaf pinyon | PIMO | --- | --- | --- | --- | X | --- |

| | | | | | | |
|---------------------------------|------------|------------|------------|------|------------|------|
| Range site number | 029XY008NV | 029XY015NV | 029XY008NV | none | 029XY065NV | none |
| Potential production (lb/acre): | | | | | | |
| Favorable years | 700 | 350 | 700 | | 500 | |
| Normal years | 500 | 200 | 500 | | 300 | |
| Unfavorable years | 250 | 100 | 250 | | 200 | |

1951--URSINE 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-- | | | | |
| | | URSINE | URSINE | Inclusion 1 | Inclusion 2 | Inclusion 3 |
| Indian ricegrass | ORHY | 20-35 | 10-20 | 10-20 | --- | 20-35 |
| Sandberg bluegrass | POSE | 2-5 | --- | --- | --- | --- |
| desert needlegrass | STSP3 | --- | --- | --- | --- | 2-8 |
| galleta | HIJA | 2-8 | 2-8 | 2-8 | --- | --- |
| needleandthread | STCO4 | 5-15 | 5-15 | 5-15 | --- | 5-15 |
| King's birdbeak | COKI | --- | --- | --- | X | --- |
| Nevada ephedra | EPNE | 2-5 | 2-8 | 2-8 | --- | 2-5 |
| Stansbury cliffrose | COMES | --- | --- | --- | X | --- |
| Wyoming big sagebrush | ARTRW | --- | --- | --- | X | 25-35 |
| black sagebrush | ARARN | 25-35 | 35-45 | 35-45 | --- | --- |
| desert bitterbrush | PUGL2 | --- | --- | --- | X | --- |
| fourwing saltbush | ATCA2 | 1-5 | --- | --- | --- | 2-5 |
| mountain big sagebrush | ARVA2 | --- | --- | --- | X | --- |
| shadscale | ATCO | --- | 1-5 | 1-5 | --- | --- |
| winterfat | EULA5 | 1-5 | --- | --- | --- | --- |
| Range site number | | 029XY008NV | 029XY014NV | 029XY014NV | 029XY070NV | 029XY006NV |
| Potential production (lb/acre): | | | | | | |
| Favorable years | | 700 | 350 | 350 | 450 | 800 |
| Normal years | | 500 | 200 | 200 | 300 | 600 |
| Unfavorable years | | 250 | 75 | 75 | 100 | 300 |

1952--URSINE-GEER 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-- | | | |
| | | URSINE | URSINE | GEER | Inclusion 1 |
| Indian ricegrass | ORHY | 10-20 | 20-35 | 40-50 | --- |
| Sandberg bluegrass | POSE | --- | 2-5 | --- | --- |
| bottlebrush squirreltail | SIHY | --- | --- | 2-5 | --- |
| galleta | HIJA | 2-8 | 2-8 | 2-8 | --- |
| needleandthread | STCO4 | 5-15 | 5-15 | --- | --- |
| globemallow | SPHA | --- | --- | 1-3 | --- |
| Nevada ephedra | EPNE | 2-8 | 2-5 | --- | --- |
| black sagebrush | ARARN | 35-45 | 25-35 | --- | --- |
| bud sagebrush | ARSP5 | --- | --- | 5-15 | --- |
| fourwing saltbush | ATCA2 | --- | 1-5 | 1-5 | --- |
| shadscale | ATCO | 1-5 | --- | --- | --- |
| winterfat | EULA5 | --- | 1-5 | 25-30 | --- |
| Range site number | | 029XY014NV | 029XY008NV | 029XY042NV | none |
| Potential production (lb/acre): | | | | | |
| Favorable years | | 350 | 700 | 700 | |
| Normal years | | 200 | 500 | 500 | |
| Unfavorable years | | 75 | 250 | 350 | |

1960--CRYSTAL SPRINGS GRAVELLY SANDY LOAM, 2 TO 8 PERCENT SLO PES

(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-- | | | |
| | | CRYSTAL SPRI | Inclusion 1 | Inclusion 2 | Inclusion 3 |
| Indian ricegrass | ORHY | 30-40 | 10-20 | 1-5 | --- |
| basin wildrye | ELCI2 | --- | --- | 10-20 | --- |
| bottlebrush squirreltail | SIHY | 2-5 | --- | 2-5 | --- |
| bush muhly | MUPO2 | --- | 1-5 | --- | --- |
| desert needlegrass | STSP3 | 2-5 | 2-10 | --- | --- |
| galleta | HIJA | 1-5 | 2-5 | --- | --- |
| globemallow | SPHA | 2-4 | --- | --- | --- |
| Anderson wolfberry | LYAN | 2-5 | 2-5 | --- | --- |
| Nevada ephedra | EPNE | 5-15 | 5-10 | --- | --- |
| banana yucca | YUBA | --- | 1-3 | --- | --- |
| bud sagebrush | ARSP5 | --- | 1-5 | 2-5 | --- |
| fourwing saltbush | ATCA2 | 15-25 | --- | 50-60 | --- |
| green molly kochia | KOAM | --- | --- | 1-3 | --- |
| spiny hopsage | GRSP | --- | 15-25 | --- | --- |
| spiny menodora | MESP2 | 10-20 | 10-20 | --- | --- |
| winterfat | EULA5 | --- | 1-5 | 2-5 | --- |
| Range site number | | 029XY080NV | 029XY031NV | 029XY048NV | none |
| Potential production (lb/acre): | | | | | |
| Favorable years | | 600 | 700 | 1000 | |
| Normal years | | 400 | 500 | 800 | |
| Unfavorable years | | 250 | 300 | 400 | |

1980--LONGJIM-ARIZO 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-- | | |
| | | LONGJIM | ARIZO | Inclusion 1 |
| Indian ricegrass | OREY | 2-5 | --- | --- |
| big galleta | HIRI | 5-15 | 5-10 | --- |
| bush muhly | MUPO2 | --- | 1-5 | --- |
| Nevada ephedra | EPNE | --- | 1-5 | --- |
| baccharis | BACCH | --- | 5-15 | --- |
| blackbrush | CORA | 60-70 | --- | --- |
| bursage | FRANS* | --- | 5-20 | --- |
| creosotebush | LATR2 | 2-5 | 5-20 | --- |
| erigonum | ERIOG | --- | 1-5 | --- |
| white burrobrush | HYSA | --- | 2-5 | --- |
| white bursage | AMDU2 | T-8 | --- | --- |
| Range site number | | 030XB029NV | 030XB028NV | none |
| Potential production (lb/acre): | | | | |
| Favorable years | | 500 | 500 | |
| Normal years | | 350 | 350 | |
| Unfavorable years | | 250 | 200 | |

1990--GABVALLY-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-- | | | | | |
| | | GABVALLY | ROCK OUTCROP | Inclusion 1 | Inclusion 2 | Inclusion 3 | Inclusion 4 |
| Indian ricegrass | ORRY | 10-15 | --- | 10-15 | 20-35 | 2-10 | --- |
| Sandberg bluegrass | POSE | 2-5 | --- | 2-5 | 2-5 | 2-10 | --- |
| desert needlegrass | STSP3 | 2-8 | --- | 2-8 | --- | --- | --- |
| galleta | HIJA | 2-8 | --- | 2-8 | 2-8 | 1-5 | --- |
| needleandthread | STCO4 | 15-25 | --- | 15-25 | 5-15 | --- | --- |
| Nevada ephedra | EPNE | --- | --- | --- | 2-5 | --- | --- |
| Wyoming big sagebrush | ARTRW | 30-35 | --- | 30-35 | --- | --- | --- |
| big sagebrush | ARTR2 | --- | --- | --- | --- | 25-35 | --- |
| black sagebrush | ARARN | --- | --- | --- | 25-35 | --- | --- |
| desert peachbrush | PRFA | --- | --- | --- | --- | 10-20 | --- |
| ephedra | EPHED | 2-8 | --- | 2-8 | --- | --- | --- |
| fourwing saltbush | ATCA2 | 2-5 | --- | 2-5 | 1-5 | --- | --- |
| rubber rabbitbrush | CHNA2 | --- | --- | --- | --- | 5-15 | --- |
| winterfat | EULA5 | --- | --- | --- | 1-5 | --- | --- |
| Range site number | | 029XY010NV | none | 029XY010NV | 029XY008NV | 029XY009NV | none |
| Potential production (lb/acre): | | | | 500 | 700 | 1000 | |
| Favorable years | | 500 | | 350 | 500 | 700 | |
| Normal years | | 350 | | 250 | 250 | 500 | |
| Unfavorable years | | 250 | | | | | |

1991--GABEVALLY-HOLLACE 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-- | | | | |
| | | GABEVALLY | HOLLACE | Inclusion 1 | Inclusion 2 | Inclusion 3 |
| Indian ricegrass | ORRY | 10-15 | 1-3 | 10-15 | 10-15 | 2-10 |
| Sandberg bluegrass | POSE | 2-5 | --- | --- | 2-5 | 2-10 |
| blue grama | BOGR2 | --- | --- | 2-5 | --- | --- |
| desert needlegrass | STSP3 | 2-8 | 2-8 | --- | 2-8 | --- |
| galleta | HIJA | 2-8 | --- | 2-8 | 2-8 | 1-5 |
| needleandthread | STCO4 | 15-25 | --- | 10-20 | 15-25 | --- |
| Nevada ephedra | EPNE | --- | 2-5 | --- | --- | --- |
| Stansbury cliffrose | COMES | --- | T-8 | 2-10 | --- | --- |
| Wyoming big sagebrush | ARTRW | 30-35 | --- | --- | 30-35 | --- |
| big sagebrush | ARTR2 | --- | --- | 20-30 | --- | 25-35 |
| blackbrush | CORA | --- | 60-75 | --- | --- | --- |
| desert bitterbrush | PUGL2 | --- | 2-8 | --- | --- | --- |
| desert peachbrush | PRFA | --- | --- | --- | --- | 10-20 |
| ephedra | EPHE2 | 2-8 | 2-5 | 5-10 | 2-8 | --- |
| fourwing saltbush | ATCA2 | 2-5 | --- | 2-5 | 2-5 | --- |
| rubber rabbitbrush | CHNA2 | --- | --- | --- | --- | 5-15 |

| Range site number | 029XY010NV | 029XY077NV | 029XY075NV | 029XY010NV | 029XY009NV |
|---------------------------------|------------|------------|------------|------------|------------|
| Potential production (lb/acre): | | | | | |
| Favorable years | 500 | 700 | 700 | 500 | 1000 |
| Normal years | 350 | 500 | 500 | 350 | 700 |
| Unfavorable years | 250 | 300 | 300 | 250 | 500 |

1992--GABBVALLY-BRIER-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-- | | | | |
| | | GABBVALLY | BRIER | ROCK OUTCROP | Inclusion 1 | Inclusion 2 |
| Canby bluegrass | POCA | --- | X | --- | X | --- |
| Indian ricegrass | ORHY | 10-15 | --- | --- | --- | 2-10 |
| Sandberg bluegrass | POSE | 2-5 | X | --- | X | 2-10 |
| desert needlegrass | STSP3 | 2-8 | --- | --- | --- | --- |
| galleta | HIJA | 2-8 | --- | --- | --- | 1-5 |
| muttongrass | POPE | --- | X | --- | X | --- |
| needleandthread | STCO4 | 15-25 | --- | --- | --- | --- |
| prairie junegrass | KOPY | --- | X | --- | X | --- |
| erigonum | ERIOG | --- | X | --- | X | --- |
| Wyoming big sagebrush | ARTRW | 30-35 | X | --- | X | --- |
| big sagebrush | ARTR2 | --- | --- | --- | --- | 25-35 |
| desert bitterbrush | PUGL2 | --- | X | --- | X | --- |
| desert peachbrush | PRFA | --- | --- | --- | --- | 10-20 |
| ephedra | EPHED | 2-8 | --- | --- | --- | --- |
| fourwing saltbush | ATCA2 | 2-5 | --- | --- | --- | --- |
| mountain big sagebrush | ARVA2 | --- | X | --- | X | --- |
| rubber rabbitbrush | CENA2 | --- | --- | --- | --- | 5-15 |
| singleleaf pinyon | PIMO | --- | X | --- | X | --- |
| Range site number | | 029XY010NV | 029XY065NV | none | 029XY065NV | 029XY009NV |
| Potential production (lb/acre): | | | | | | |
| Favorable years | | 500 | 500 | | 500 | 1000 |
| Normal years | | 350 | 300 | | 300 | 700 |
| Unfavorable years | | 250 | 200 | | 200 | 500 |

2010--STEWVAL-GABBVALLY 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-- | | | | | |
| | | STEWVAL | GABBVALLY | Inclusion 1 | Inclusion 2 | Inclusion 3 | Inclusion 4 |
| Indian ricegrass | ORHY | 20-35 | 10-15 | 10-20 | 10-20 | --- | --- |
| Sandberg bluegrass | POSE | 2-5 | 2-5 | --- | --- | --- | --- |
| Thurber needlegrass | STTH2 | --- | --- | 2-8 | --- | --- | --- |
| desert needlegrass | STSP3 | --- | 2-8 | --- | --- | --- | --- |
| galleta | HIJA | 2-8 | 2-8 | --- | 2-8 | --- | --- |
| muttongrass | POFE | --- | --- | 2-8 | --- | --- | --- |
| needleandthread | STCO4 | 5-15 | 15-25 | 20-30 | 5-15 | --- | --- |
| Nevada ephedra | EPNE | 2-5 | --- | --- | 2-8 | --- | --- |
| Stansbury cliffrose | COMES | --- | --- | 2-8 | --- | --- | --- |
| Wyoming big sagebrush | ARTW | --- | 30-35 | --- | --- | --- | --- |
| antelope bitterbrush | PUTR2 | --- | --- | 2-8 | --- | --- | --- |
| big sagebrush | ARTR2 | --- | --- | 15-25 | --- | --- | --- |
| black sagebrush | ARARN | 25-35 | --- | --- | 35-45 | --- | --- |
| ephedra | EPHE2 | --- | 2-8 | --- | --- | --- | --- |
| fourwing saltbush | ATCA2 | 1-5 | 2-5 | 2-5 | --- | --- | --- |
| green ephedra | EPVI | --- | --- | 2-5 | --- | --- | --- |
| shadscale | ATCO | --- | --- | --- | 1-5 | --- | --- |
| winterfat | EULA5 | 1-5 | --- | --- | --- | --- | --- |

| Range site number | 029XY008NV | 029XY010NV | 029XY029NV | 029XY014NV | none | none |
|---------------------------------|------------|------------|------------|------------|------|------|
| Potential production (lb/acre): | | | | | | |
| Favorable years | 700 | 500 | 1100 | 350 | | |
| Normal years | 500 | 350 | 800 | 200 | | |
| Unfavorable years | 250 | 250 | 600 | 75 | | |

2011--STENVAL-LOMOINE-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-- | | | | |
| | | STENVAL | LOMOINE | ROCK OUTCROP | Inclusion 1 | Inclusion 2 |
| Indian ricegrass | ORHY | 20-35 | 5-15 | --- | 20-35 | --- |
| Sandberg bluegrass | POSE | 2-5 | --- | --- | --- | --- |
| desert needlegrass | STSP3 | --- | --- | --- | 2-8 | --- |
| galleta | HIJA | 2-8 | 2-5 | --- | --- | --- |
| needleandthread | STCO4 | 5-15 | 2-5 | --- | 5-15 | --- |
| Nevada ephedra | EPNE | 2-5 | --- | --- | 2-5 | --- |
| Stansbury cliffrose | COMES | --- | 25-35 | --- | --- | --- |
| Wyoming big sagebrush | ARTRW | --- | --- | --- | 25-35 | --- |
| black sagebrush | ARARN | 25-35 | 15-25 | --- | --- | --- |
| ephedra | EPHEd | --- | 2-8 | --- | --- | --- |
| fourwing saltbush | ATCAL | 1-5 | --- | --- | 2-5 | --- |
| rubber rabbitbrush | CHNA2 | --- | 2-8 | --- | --- | --- |
| winterfat | EULA5 | 1-5 | --- | --- | --- | --- |
| Range site number | | 029XY008NV | 029XY015NV | none | 029XY006NV | none |
| Potential production (lb/acre): | | | | | | |
| Favorable years | | 700 | 350 | | 800 | |
| Normal years | | 500 | 200 | | 600 | |
| Unfavorable years | | 250 | 100 | | 300 | |

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