

Prime Farmland

In this section, prime farmland is defined and the soils in the survey area that are considered prime farmland are listed.

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 are favorable for the economic production of sustained high yields of crops. The soils need only to be irrigated 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, or woodland or for other purposes. They either are used for food and fiber or are available for these uses. Urban or built-up land, public land, and water areas cannot be considered prime farmland. Urban or built-up land is any contiguous unit of land 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. Public land is land not available for farming in National forests, National parks, military reservations, and State parks.

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 is acceptable. The soils have few, if any, rocks and are permeable to water and air. They are not excessively erodible nor saturated with water for long periods and are not frequently flooded during the

growing season. The slope ranges mainly from 0 to 6 percent.

Within these guidelines, the criteria for prime farmland are more restrictive in Wyoming if:

1. The soils are more than 40 inches deep to bedrock or other root-restricting layers.
2. The soil has an available water-holding capacity of 5 inches or more to a depth of 60 inches or to bedrock if it is shallower than 60 inches.
3. The soil is in an area that has a 32 degrees F frost-free period of 90 days or more.
4. The soil must be irrigated and have adequate water for irrigation in 8 out of 10 years.

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 systems, 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.

The following map units meet the soil requirements for prime farmland where irrigated. The location of each map unit is shown on the detailed soil maps at the back of this publication. The soil qualities that affect use and management are described in the section "Detailed Soil Map Units." This list does not constitute a recommendation for a particular land use.

- 175—Moskee sandy loam, 0 to 3 percent slopes
- 176—Moskee sandy loam, 3 to 6 percent slopes
- 181—Moskee-Nuncho complex, 0 to 3 percent slopes
- 182—Moskee-Nuncho complex, 3 to 6 percent slopes
- 192—Nuncho loam, 0 to 3 percent slopes
- 193—Nuncho loam, 3 to 6 percent slopes

195—Nuncho clay loam, 0 to 3 percent slopes

196—Nuncho clay loam, 3 to 6 percent slopes

212—Platmak loam, 0 to 3 percent slopes

213—Platmak loam, 3 to 6 percent slopes

223—Recluse loam, 0 to 3 percent slopes

224—Recluse loam, 3 to 6 percent slopes

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as rangeland and 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.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the soil.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can also use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

Crops and Pasture

Keith Covington, district conservationist, Natural Resources Conservation Service, Sheridan, Wyoming, helped prepare this section.

Most of the nearly level to strongly sloping,

moderately deep, deep, and very deep soils in the survey area are suitable for irrigated and nonirrigated crops. These soils have a moderate and high available water capacity and a moderate rate of water intake, are free of excessive salts, and do not have a restrictive high water table. In some areas, however, slope, stoniness, drainage, salinity, or alkalinity are limitations.

The major management concerns affecting irrigated cropland are maintaining fertility and controlling erosion. Maintaining soil structure influences these management concerns. A good soil structure aids tilth or workability and has a desirable influence on the rate of water intake and soil aeration. The soils, especially those that are clayey, should not be tilled when the moisture content is high because a tillage pan could form. Organic matter promotes good soil structure. Leaving crop residue on or near the surface helps to maintain the content of organic matter and tilth. It also controls the loss of soil from water erosion or soil blowing. The addition of legumes, grasses, or manure plowed into the soil also helps to maintain a desirable content of organic matter. Burning crop residue destroys organic matter and consequently results in the loss of nutrients, lowers the available water capacity, and increases the potential for erosion in the field.

If the soil is properly managed, fertility can be maintained. In the Sheridan County Area, nitrogen fertilizer improves grass hay and small grain yields, and phosphorus fertilizer improves alfalfa hay yields. The amount of potassium and the minor elements in local soils is generally adequate. Recommendations on fertilizer can be obtained from the University of Wyoming Research Station at Sheridan or from local fertilizer dealers.

Proper water management is an important aspect of irrigation. Since the object of irrigation is to keep the soil moisture content adequate for plant growth, water that penetrates beyond the rooting depth is lost. Also, expensive fertilizers are leached from the soil and can contaminate ground water or surface water supplies. Overirrigation also can result in unnecessary surface runoff, which leads to the loss of valuable topsoil that often fills in ditches or clouds local streams. Because

of poor irrigation water management, the formation of artificially high water tables is a problem in the survey area. This is most common on and below the terraces west of Sheridan and Rancheater. These terraces are often underlain by gravelly strata, into which the excess irrigation water moves and then concentrates in low-lying positions downslope from the point of application. The result is areas that have a water table that is so high that crop production in these areas is adversely affected.

Because the amount of annual precipitation in the western two-thirds of the county is 15 inches or more, irrigating newly seeded areas is commonly unnecessary before the middle to end of May. In the parts of the county that have annual precipitation of 14 inches or less, irrigation is often necessary by late March or early April to ensure adequate seed germination.

Guidelines and recommendations to manage irrigation water are available through the local office of the Natural Resources Conservation Service.

Yields per Acre

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 5. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The yields are based mainly on the experience and records of local farmers, conservationists, and extension agents. The land capability classification also is shown in the table.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green-manure crops; and harvesting that ensures the smallest possible loss.

For yields of irrigated crops, it is assumed that the irrigation system is adapted to the soils and to the crops grown, that good-quality irrigation water is uniformly applied as needed, and that tillage is kept to a minimum.

The estimated yields reflect the productive capacity of each soil for each of the principal crops. Yields are likely to increase as new production technology is

developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

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 (*U.S. Dep. Agric., 1961*).

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit. 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. The classes are defined as follows:

Class I soils have few limitations that restrict their use.

Class II soils have some limitations that reduce the choice of plants or that require moderate conservation practices.

There are no Class I or Class II soils in this survey area. The main limitations are the length of the growing season, or in the drier areas, the amount of annual precipitation.

Class III soils have limitations that reduce the choice of plants because of climatic factors or require special conservation practices because of slope, drainage, and coarse fragments.

Class IV soils have limitations that reduce the choice of plants or that require very careful management, or both.

Class V soils are not likely to erode but have other limitations, impractical to remove, that limit their use.

Class VI soils have limitations that make them generally unsuitable for cultivation.

Class VII soils have severe limitations that make them unsuitable for cultivation.

Class VIII soils and miscellaneous areas have limitations that preclude their use for commercial crop production.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e*, *w*, *s*, or *c*, to the class numeral, for example, IIe. The letter *e* shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); and *s* shows that the soil is limited mainly because it is saline, alkaline, shallow, droughty, or stony.

In class I there are no subclasses 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 to pasture, rangeland, woodland, wildlife habitat, or recreation.

The capability classification of each map unit is given in the section "Detailed Soil Map Units" and in table 5.

Water Quality in Agriculture

The potential for impacting the quality of surface water or ground water should be considered in the planning and management phases of all agricultural operations. Water quality can be impacted in areas where pesticides and fertilizers are used and in areas that have the potential for surface runoff and where the soils are leached by water.

Impairment by Pesticides

The quality of water can be impaired if pesticides are leached below the root zone or enter a body of water as suspended sediment or are in solution of runoff waters. The potential loss of pesticides by surface water runoff or by leaching is a combined function of soil and pesticide properties, climatic factors, the kind of crop, and the method of application.

To minimize the potential for impairment of surface or ground water quality by pesticides, the use of a Pest Management System is recommended. Such systems manage pest infestations, including weeds, insects, and diseases, to reduce the adverse effects on plant growth and crop production while minimizing the adverse effects on the environmental resources. These systems utilize the most appropriate measures or a combination of measures, including biological, cultural, and chemical methods for pest control, while considering environmental effects, health hazards, and economic benefits. Field scouting and economic

thresholds are used to determine when and if pesticides should be used. Only necessary and properly timed applications of pesticides are used. The application of pesticides is timed in relation to the present soil moisture, anticipated weather conditions, and irrigation schedules to minimize the potential for loss by leaching or transport in surface runoff. Erosion control practices would be used to minimize soil loss and runoff that can carry adsorbed or dissolved pesticides to surface waters. The selection of pesticide is based on such characteristics as solubility, toxicity, degradation, and absorption and site characteristics, such as soil, geology, depth to the water table, the proximity to surface water, topography, and climate. The pesticide properties and soil and site information are considered when selecting pesticides to minimize the potential impairment of surface and ground water quality by pesticides.

In table 6, the soils in the survey area have been rated according to the relative potential for pesticide loss to leaching and the relative potential for pesticide loss from runoff. These ratings can be used to determine the potential for water quality impairment when they are used along with the information on pesticide properties, climate, kind of crop, and the method of application.

The ratings for potential loss to soil leaching and runoff given in table 6 were developed from information on soil parameters. These ratings are the capacity of a soil to retain a pesticide at the point of application, regardless of management or climatic inputs. The properties of pesticides, climatic factors, the kind of crop, and the method of application were not considered in the development of these ratings.

The soil properties and features used in the development of the soil leaching potential ratings are those that affect the pesticide attenuation capacity, infiltration, and permeability of the soil. These properties are texture, thickness of the surface layer, content of organic matter, structure, bulk density, permeability of the soil or bedrock, shrink-swell potential, depth to bedrock, depth to a water table, and slope. The infiltration rate is interpreted from the hydrologic soil group and slope.

The soil properties and features considered in the pesticide runoff loss ratings are those that affect rates of runoff and erosion. They include texture, content of organic matter, structure, particle-size distribution, permeability, restricting layers, depth of the soil, depth to the water table, flooding, slope, and shrinking and swelling.

A rating of *slight* indicates a slight probability for loss of pesticides if pesticides that have a very small, small, or medium loss potential are used, and a

possibility of pesticide loss if pesticides that have a large potential for loss are used. A rating of *moderate* indicates a slight probability for loss of pesticides if pesticides that have a very small or small loss potential are used and a moderate probability of pesticide loss if pesticides that have a medium or large potential for loss are used. A rating of *severe* indicates a moderate probability for loss of pesticides if pesticides that have a very small or small loss potential are used and a high probability of pesticide loss if pesticides that have a medium or large potential for loss are used. In these ratings, the pesticides are considered to be applied to bare soil either on the surface or from the air. If the pesticide is applied onto a field that has a growing crop or weeds, the potential for pesticide loss is lower than that indicated above. Information on pesticide properties can be obtained from the local office of the Natural Resources Conservation Service or the University of Wyoming Cooperative Extension Service or from pesticide dealers.

Onsite evaluation generally is necessary to determine the potential impacts on water quality when a possibility exists that a pesticide will be lost by soil leaching or surface runoff. If water quality will be affected, the land user should consider alternative pesticides, alternative management practices to reduce the possibility of leaching or surface runoff, alternative application methods, or cultural or biological pest control methods.

Impairment by Nutrients

An adequate and timely supply of nutrients is necessary for maximum crop production. These nutrients should be used as efficiently as possible, since amounts of nutrients that exceed the needs of the crop can become a potential pollutant.

Nutrient management consists of measures used to minimize the amount of nutrients available for potential impairment of surface and ground water quality while providing optimum amounts for crop production. It is the most important practice in minimizing the impairment of water quality by nutrients from cropland.

The rate of application of fertilizer is also important in minimizing the losses by leaching. The amount of fertilizer applied should be based on realistic yield goals. A proper balance of essential nutrients and soil moisture is needed as a deficiency of one element may reduce the uptake of other nutrients, making them available for offsite transport. Soil tests are an important guide to the proper use of fertilizers. These tests, along with information about the type of soil,

previous cropping history, and the anticipated soil moisture level, should be used to estimate fertilizer requirements. The use of crops, such as legumes, that require small amounts of nitrogen in rotation with crops that require large amounts of nitrogen reduces the potential for the loss of nutrients. Ammonium fertilizers, such as anhydrous ammonia, can be used to help minimize the leaching of nitrates. If practical, all fertilizer should be incorporated into the soil to minimize losses by volatilization and surface runoff.

Applying fertilizer at the proper time can be effective in reducing the potential loss of nutrients. Nitrogen should be applied as close as possible to the periods when the plant needs it. Split applications of nitrogen, especially on sandy soils, helps to minimize leaching. Half of the required amount of fertilizer should be applied at planting time, and the other half should be applied at the critical growth stage of the crop.

Management of irrigation water is very effective in minimizing the amount of nitrogen leached from irrigated fields. Irrigation efficiency must be kept at a high level to minimize the amount of leaching that takes place as a result of deep percolation.

The use of erosion control practices can minimize the loss of soil and runoff that can carry high levels of nitrogen or phosphorus to surface waters. Maintaining adequate amounts of crop residue on the surface and good tillage increases the rate of water infiltration and reduces the potential for nutrient loss by surface water runoff.

Rangeland

Glen Mitchell, area range conservationist, Natural Resources Conservation Service, Sheridan, Wyoming, helped prepare this section.

About 62 percent of the Sheridan County Area is rangeland. Ranches that stock cattle generally are cow-calf enterprises. The average size of ranches is 2,800 acres. Several large ranches of as much as 150,000 acres are in the survey area. Most ranches are family owned and operated.

The survey area is within the 10- to 14-inch Northern Plains and the 15- to 19-inch Northern Plains precipitation zones. Most of the range is grazed in spring, summer, and fall. Some areas in the eastern part are grazed throughout the year. Many livestock operators have summer range in the Big Horn Mountains on private, State, and Federal lands. Additional grazing is provided by small grain stubble and hay aftermath in irrigated areas.

In areas that have similar climate and topography, differences in the kind and amount of vegetation

produced on rangeland are closely related to the kind of soil. Effective management is based on the interrelationship of soils, vegetation, and water.

The detailed map unit descriptions and table 7 give the range site; the total annual production of vegetation in favorable, normal, and unfavorable years; and the characteristic potential natural vegetation.

A *range site* is a distinctive kind of rangeland that produces a characteristic natural plant community that differs from natural plant communities on other range sites in kind, amount, and proportion of range plants. The relationship between soils and vegetation was ascertained during this survey; thus, range sites generally can be determined directly from the soil map. Soil properties that affect moisture supply and plant nutrients have the greatest influence on the productivity of range plants. Soil reaction, salt content, and a seasonal high water table are also important.

A major part of the survey area is dominated by loam and clay loam soils underlain predominantly by soft shales and a minor part underlain by sandstones. These soils support short and mid grasses. The less productive shallow soils are dominant on very steep escarpments, ridges, and slopes. The most productive soils are on flood plains.

In the central part of the survey area, from Ash Creek south through the Prairie Dog Creek, Dutch Creek, and SR Divide areas to Jim Creek Divide, the soils have a shallow and moderately deep rooting depth. These soils support mid and tall grasses.

In the extreme western part of the survey area on the flank of the Big Horn Mountains, soils that have a shallow and moderately deep rooting depth are common. Ponderosa pine is the dominant vegetation on these soils.

Total production is the amount of vegetation that can be expected to grow annually on well managed rangeland that is supporting the potential natural plant community. It includes all vegetation, whether or not it is palatable to grazing animals. It includes the current year's growth of leaves, twigs, and fruits of woody plants. It does not include the increase in stem diameter of trees and shrubs. It is expressed in pounds per acre of air-dry vegetation for favorable, normal, and unfavorable years. In a favorable year, the amount and distribution of precipitation and the temperatures make growing conditions substantially better than average. In a normal year, growing conditions are about average. In an unfavorable year, growing conditions are well below average, generally because of low available soil moisture.

Dry weight is the total annual yield per acre of air-dry vegetation. Yields are adjusted to a common percent of air-dry moisture content. The relationship of green weight to air-dry weight varies according to such factors as exposure, amount of shade, recent rains, and unseasonable dry periods.

Range management requires a knowledge of the kinds of soil and of the potential natural plant community. It also requires an evaluation of the present range condition. Range condition is determined by comparing the present plant community with the potential natural plant community on a particular range site. The more closely the existing community resembles the potential community, the better the range condition. Range condition is an ecological rating only. It does not have a specific meaning that pertains to the present plant community in a given use.

The objective in range management is to control grazing so that the plants growing on a site are about the same in kind and amount as the potential natural plant community for that site. Such management generally results in the optimum production of vegetation, control of undesirable brush species, conservation of water, and control of erosion. Sometimes, however, a range condition somewhat below the potential meets grazing needs, provides wildlife habitat, and protects soil and water resources.

Range management practices that are important to maintain productivity are proper grazing use and planned grazing systems that include proper distribution of livestock, proper season of use, and deferred grazing. Such practices as watering facilities, fences, and proper salt placement are needed to obtain proper grazing use and distribution of livestock. Such improvements as brush management, range seeding, and range renovation may be appropriate depending on the soil and climate of a given site.

Woodland Understory Vegetation

Understory vegetation consists of grasses, forbs, shrubs, and other plants. If well managed, some woodland can produce enough understory vegetation to support grazing of livestock or wildlife, or both, without damage to the trees.

The quantity and quality of understory vegetation vary with the kind of soil, the age and kind of trees in the canopy, the density of the canopy, and the depth and condition of the litter. The density of the canopy determines the amount of light that understory plants receive.

The understory vegetation for woodland soils is given in the section "Detailed Soil Map Units."

Windbreaks and Environmental Plantings

Richard Rintamaki, state biologist, Natural Resources Conservation Service, Casper, Wyoming, helped prepare this section.

Windbreaks protect livestock, buildings, and yards from wind and snow. They also protect fruit trees and gardens, and they furnish habitat for wildlife. Several rows of low- and high-growing broadleaf and coniferous trees and shrubs provide the most protection.

Field windbreaks are narrow plantings made at right angles to the prevailing wind and at specific intervals across the field. The interval depends on the erodibility of the soil and snow management objectives. Field windbreaks protect cropland and crops from wind, hold snow on the fields, and provide food and cover for wildlife.

Environmental plantings help to beautify and screen houses and other buildings, reduce building heating and cooling costs, and reduce noise. Tree and shrub plantings can also reduce wave action on ponds and harvest snow for stock water, wildlife water, and irrigation water.

The windbreak suitability groups and planting zones for each soil are listed in table 8. Tables 9a and 9b show the height that selected adaptable trees and shrubs are expected to reach, given adequate care, in 20 years for various soil suitability groups in each planting zone. The adaptability for planting trees and shrubs in the survey area was based on the tolerance of each plant species for the minimum and maximum air temperatures, soil temperatures in an area, and data and observations collected from woody plant material trials and existing windbreaks. Definitions of soil groups and planting zones are given below. This information can be used as a guide in planning the establishment of windbreaks and screens.

The windbreak suitability groups in this survey area are described in the following paragraphs.

Windbreak suitability group 1.—The soils in this group are loamy or clayey and have less than 35 percent clay. They have a seasonal high water table. The upper 12 inches is free of carbonates, has a pH of less than 7.8, and is nonsaline.

This group is suitable for farmstead, feedlot, and field windbreaks. Planting may be delayed for a short period in spring because of wetness. Competition from weeds and grasses is the main limitation affecting the establishment of trees and shrubs.

Windbreak suitability group 1K.—The soils in this group are loamy or clayey and have less than 35

percent clay. They are subject to frequent flooding or have a seasonal high water table. In the upper 12 inches, they have free carbonates, have a pH of 7.8 to 9.0, or have an electrical conductivity of less than 4 millimhos per centimeter.

This group is suitable for farmstead, feedlot, and field windbreaks. Planting may be delayed for a short period in spring because of wetness. Competition from weeds and grasses is an important limitation affecting the establishment of trees and shrubs. The free carbonates, high reaction, and low electrical conductivity affect the selection and rate of growth of plants.

Windbreak suitability group 3.—The soils in this group are loamy or clayey and have less than 35 percent clay throughout or are loamy in the upper 20 inches and clayey in the lower part. They are moderately well drained or well drained. Available water capacity to a depth of 60 inches or more is more than 7.5 inches. In the upper 12 inches, these soils do not have free carbonates, have a pH of less than 7.8, and are nonsaline.

This group is well suited to farmstead, feedlot, and field windbreaks. Competition from weeds and grasses is an important limitation affecting the establishment of trees and shrubs.

Windbreak suitability group 4.—The soils in this group are loamy or they are clayey and have less than 35 percent clay in the upper 8 to 20 inches and are clayey in the lower part. They are somewhat poorly drained, moderately well drained, or well drained.

This group is suitable for farmstead, feedlot, and field windbreaks. A high content of clay in the lower part of the soils affects the selection and growth of trees and shrubs. Competition from weeds and grasses is an important limitation affecting the establishment and management of trees and shrubs.

Windbreak suitability group 4C.—The soils in this group have more than 35 percent clay throughout when mixed to a depth of 8 inches and are somewhat poorly drained, moderately well drained, or well drained.

This group is suitable for farmstead, feedlot, and field windbreaks. The high content of clay affects the selection and growth of trees and shrubs. Competition from weeds and grasses is an important limitation affecting the establishment and management of trees and shrubs. Because of high content of clay, extra care is needed to ensure that the soil is firmly packed around the roots when trees and shrubs are planted.

Windbreak suitability group 5.—The soils in this group are loamy and have a moderate available water capacity. They are moderately well drained or well drained. In the upper 12 inches, they do not have free

carbonates, have a pH of less than 7.8, and are nonsaline.

This group is suitable for farmstead, feedlot, and field windbreaks. Competition from weeds and grasses is an important limitation affecting the establishment and management of trees and shrubs.

Windbreak suitability group 5K.—The soils in this group are loamy and have a moderate available water capacity. They are moderately well drained or well drained. In the upper 12 inches, they have free carbonates, have a pH of 7.8 to 9.0, or have an electrical conductivity of less than 4 millimhos per centimeter.

This group is suitable for farmstead, feedlot, and field windbreaks. The free carbonates and high reaction in the upper 12 inches affect the selection of trees and shrubs. Competition from weeds and grasses is an important limitation affecting the establishment and management of trees and shrubs.

Windbreak suitability group 6G.—The soils in this group are loamy or sandy, have more than 35 percent rock fragments, and are moderately well drained to excessively drained. Available water capacity to a depth of 60 inches is less than 5 inches.

This group is suitable for farmstead, feedlot, and field windbreaks. Competition from weeds and grasses is an important limitation affecting the establishment and management of trees and shrubs. A very low or low available water capacity affects the selection and growth of trees and shrubs.

Windbreak suitability group 6R.—The soils in this group are moderately deep over bedrock. Available water capacity is less than 5 inches.

This group is suitable for farmstead, feedlot, and field windbreaks. A low or moderate available water capacity affects the selection and growth of trees and shrubs. Competition from weeds and grasses is an important limitation affecting the establishment and management of trees and shrubs.

Windbreak suitability group 7.—The soils in this group are very deep or deep, are sandy throughout, and have less than 35 percent rock fragments.

This group is poorly suited to farmstead, feedlot, and field windbreaks. A low or moderate available water capacity affects the selection and growth of trees and shrubs. Wind erosion at or near the planting site can adversely affect the health and vigor of developing windbreaks. Optimum growth and survival rates are not expected.

Windbreak suitability group 8.—The soils in this group are loamy or clayey and have less than 35 percent clay. Available water capacity to a depth of 60 inches or more is more than 7.5 inches. These soils are moderately well drained or well drained. In

the upper 12 inches, they have free carbonates, have a pH of 7.8 to 9.0, or have an electrical conductivity of less than 4 millimhos per centimeter.

This group is suitable for farmstead, feedlot, and field windbreaks. The free carbonates and a high reaction affect the selection and growth of trees and shrubs. Competition from weeds and grasses is an important limitation affecting the establishment and management of trees and shrubs.

Windbreak suitability group 9G.—The soils in this group are very deep or deep and have a water table within 5 feet of the surface. In some areas they are subject to flooding or ponding. In the upper 12 inches, they have a pH of more than 7.8 and an electrical conductivity of 4 to 16 millimhos per centimeter.

This group is suitable for farmstead, feedlot, and field windbreaks. The high reaction and low or moderate salinity in the upper 12 inches affect the selection and growth of trees and shrubs. Competition from weeds and grasses is an important limitation affecting the establishment and management of trees and shrubs. Planting may be delayed for a short period in spring because of wetness.

Windbreak suitability group 9N.—The soils in this group are very deep or deep, do not have a water table within 5 feet of the surface, and are not subject to flooding or ponding. In the upper 12 inches, they have a pH of more than 7.8 and an electrical conductivity of 4 to 16 millimhos per centimeter.

This group is suitable for farmstead, feedlot, and field windbreaks. The high reaction, low or moderate salinity, and competition from weeds and grasses are important limitations affecting the establishment and management of trees and shrubs.

Windbreak suitability group 10.—The soils in this group have one or more characteristics that severely limit the planting, survival, or growth of trees and shrubs. Examples are shallow or very shallow soils, soils that have a very low available water capacity, poorly drained or very poorly drained soils that are saturated or ponded throughout the growing season, and toxic soils.

The soils in this group generally are not recommended for farmstead, feedlot, and field windbreaks. However, onsite investigation may indicate that some trees and shrubs can be established if special management is applied. The selection of species should be adapted to the soil conditions at the altered site.

Planting Zone I is in the warmest parts of the survey area. It includes areas of soils that have a mean annual soil temperature from 47 to 59 degrees F.

Planting Zone III is in the cool foothill and cold, mountainous parts of the survey area. It includes areas of soils that have a mean annual soil temperature of less than 47 degrees F and precipitation of more than 10 inches. This zone is also characterized by a snowpack throughout most of the winter.

Additional information on planning windbreaks and screens and planting and caring for trees and shrubs can be obtained from the local office of the Natural Resources Conservation Service, the University of Wyoming Cooperative Extension Service, or from a commercial nursery.

Wildlife Habitat

Richard Rintamaki, state biologist, Natural Resources Conservation Service, Casper, Wyoming, helped prepare this section.

Soils influence wildlife populations primarily through the kinds of habitat they produce. Studies dating back to the 1940's show that wildlife populations are directly related to soil fertility. Abundant populations of wildlife were encountered by early settlers and planners in areas of the best soils in a given ecological zone. While some species of wildlife can inhabit areas of all of the soils, wildlife productivity generally is a function of the biotic potential of the soil. The quantity and quality of most of the vegetative elements of wildlife habitat do not exceed the capability of the soil, unless artificially supplied through intensive management systems.

Most wildlife habitats are created, improved, or maintained by planting suitable vegetation, by manipulating existing vegetation, by inducing the natural establishment of desired plants, or by applying combinations of such measures. The behavior of the soils can be predicted from knowledge of their properties. The growth patterns and characteristics of plants that make up an area of wildlife habitat are affected by such behavior. From an appraisal of these elements of vegetative habitat, the suitability of a site for various kinds of wildlife can be estimated.

The descriptions of the general soil map units include a list of representative wildlife species known to inhabit the particular map unit. Information about seasonal habitats for big game was taken from the herd unit maps produced by the Game Division, Wyoming Game and Fish Department.

This survey also provides information on the capability of the soils to support irrigated and nonirrigated cultivated crops and native range plants and interpretations for soil windbreaks and woodland. All of the information about existing and potential plant

communities can enable the user who has data on wildlife habitat requirements to select sites for the management of wildlife habitat and to determine the intensity of plant community management needed to produce satisfactory results.

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 10 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 are generally 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 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, 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 are generally limited to less than 6 feet. The ratings are based on soil properties, site features, and observed performance of the soils. Depth to bedrock, 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, 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 11 shows the degree and the kind of soil limitations that affect septic tank absorption fields, sewage lagoons, and sanitary landfills. The limitations are considered *slight* if soil properties and site features are generally 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.

Table 11 also shows the suitability of the soils for use as daily cover for landfill. A rating of *good* indicates that soil properties and site features are favorable for the use and good performance and low maintenance can be expected; *fair* indicates that soil properties and site features are moderately favorable for the use and one or more soil properties or site features make the soil less desirable than the soils rated good; and *poor* indicates that one or more soil properties or site features are unfavorable for the use and overcoming the unfavorable properties requires special design, extra maintenance, or costly alteration.

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 72 inches is evaluated. The ratings are based on soil properties, site features, and observed performance of the soils. Permeability, a high water table, depth to bedrock, and flooding affect absorption of the effluent. Large stones and bedrock 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 of 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 soil. Lagoons generally are designed to hold the sewage within a depth of 2 to 5 feet. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water.

Table 11 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, 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 and bedrock can cause construction problems, and large stones can hinder compaction of the lagoon floor.

Sanitary landfills are areas where solid waste is disposed of by burying it in soil. There are two types of landfill—trench and area. In a trench landfill, waste is placed in a trench. It is spread, compacted, and covered daily with a thin layer of soil excavated at the site. In an area landfill, the waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site.

Both types of landfill must be able to bear heavy vehicular traffic. Both types involve a risk of groundwater pollution. Ease of excavation and revegetation should be considered.

The ratings in table 11 are based on soil properties, site features, and observed performance of the soils. Permeability, depth to bedrock, 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 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.

Soil texture, wetness, coarse 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 wind erosion.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. 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.

Construction Materials

Table 12 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. The ratings are based on soil properties and site features that affect the removal of the soil and its use as construction material. Normal compaction, minor processing, and other standard construction practices are assumed. Each soil is evaluated to a depth of 5 or 6 feet.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the 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. The table showing 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 a plasticity index of more than 10, a high shrink-swell potential, many stones, or slopes of more than 25 percent. They are wet and have 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 12, only the probability of finding material in suitable quantity is evaluated. The suitability of the material for specific

purposes is not evaluated, nor are factors that affect excavation of the material.

The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (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 the table on 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 is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Water Management

Table 13 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 are generally favorable for the indicated use and limitations are minor and are easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increase in construction costs, and possibly increased maintenance are required.

This table also gives for each soil the restrictive features that affect 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 this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable

compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

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. 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 wind erosion 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 affect the construction of grassed waterways. A hazard of wind erosion, 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 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 14 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 for each soil series under the heading "Soil Series and Their Morphology."

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 (AASHTO, 1986) and the Unified soil classification system (ASTM, 1993).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to grain-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, SP-SM.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of grain-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an oven-dry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and plasticity index (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of grain-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is omitted in the table.

Physical and Chemical Properties

Table 15 shows 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 for each soil series under "Soil Series and Their Morphology."

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, 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, and plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (oven-dry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at $\frac{1}{3}$ -bar moisture tension. Weight is determined after drying the soil at 105 degrees C. In this table, 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.

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.

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.

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*, greater than 9 percent, is sometimes used.

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, very fine sand, sand, and organic matter (up to 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 by water.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their resistance to wind erosion in cultivated areas. The groups indicate the susceptibility of soil to wind erosion. Soils are grouped according to the following distinctions:

1. Coarse sands, sands, fine sands, and very fine sands. These soils are generally 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 wind erosion 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 wind erosion are used.

4L. Calcareous loams, silt loams, clay loams, and silty clay loams. These soils are erodible. Crops can be grown if intensive measures to control wind erosion 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 wind erosion 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 are slightly erodible. Crops can be grown if measures to control wind erosion 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 are very slightly erodible. Crops can be grown if ordinary measures to control wind erosion are used.

7. Silts, noncalcareous silty clay loams that are less than 35 percent clay, and fibric soil material. These soils are very slightly erodible. Crops can be grown if ordinary measures to control wind erosion are used.

8. Soils that are not subject to wind erosion because of rock fragments on the surface or because of surface wetness.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In table 15, 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.

Soil and Water Features

Table 16 gives estimates of various soil and water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are used to estimate runoff from precipitation. Soils not protected by vegetation are assigned to one of four groups. They are grouped according to the infiltration of water when the soils are thoroughly wet and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep or 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, deep, or very deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a 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 inundation of an area, is caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, nor is water in swamps and marshes.

Table 16 gives the frequency and duration of flooding and the time of year when flooding is most likely.

Frequency, duration, and probable dates of occurrence are estimated. Frequency is expressed as none, rare, occasional, and frequent. *None* means that flooding is not probable; *rare* that it is unlikely but possible under unusual weather conditions; *occasional* that it occurs, on the average, no more than once in 2 years; and *frequent* that it occurs, on the average, more than once in 2 years. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, and *long* if more than 7 days. Probable dates are expressed in months.

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

High water table (seasonal) is the highest level of a saturated zone in the soil in most years. The estimates are based mainly on the evidence of a saturated zone, namely grayish colors or mottles in the soil. Indicated in table 16 are the depth to the seasonal high water table, the kind of water table, and the months of the year that the water table commonly is high. A water table that is seasonally high for less than 1 month is not indicated in the table. An apparent water table is a thick zone of free water in the soil. It is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil. Only saturated zones within a depth of about 6 feet are indicated.

Depth to bedrock is given if bedrock is within a depth of 5 feet. 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.

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.

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.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (U.S. Dep. Agric., 1975). 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 17 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 Aridisols.

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Argid (*Arg*, meaning argillic, plus *id*, from Aridisols).

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 Haplargids (*Hapl*, meaning minimal horizonation, plus *argids*, the suborder of the Aridisols that have moderately developed subsoil horizons).

SUBGROUP. Each great group has a typical subgroup. Other subgroups are intergrades or extragrades. The typical is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other known kind of soil. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Ustollic* identifies a subgroup that typifies an intergrade to the great group. An example is Ustollic Haplargids.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineral content, temperature regime, depth 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 fine-loamy, mixed, mesic Ustollic Haplargids.

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 underlying material can differ within a series.

Soil Series and Their Morphology

In this section, each soil series 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 series. A pedon, a three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the "Soil Survey Manual" (*U.S. Dep. Agric., 1993*). Many of the technical terms used in the descriptions are defined in "Soil Taxonomy" (*U.S. Dep. Agric., 1975*). Unless otherwise stated, matrix colors in the descriptions are for dry soil. Following the pedon description is the range of important characteristics of the soils in the series.

The map units of each soil series are described in the section "Detailed Soil Map Units."

Abac Series

The Abac series consists of shallow, well drained soils that formed in residuum derived from interbedded shale and sandstone. These soils are on hills and dip slopes. Slopes are 9 to 50 percent. Elevation is 4,000 to 6,000 feet. The average annual precipitation is 15 to 19 inches, and the average annual temperature is 43 to 45 degrees F. The frost-free period is 80 to 100 days.

These soils are loamy, mixed (calcareous), frigid, shallow Typic Ustorthents.

Typical pedon of Abac silt loam, in an area of Peritsa-Abac association, 9 to 35 percent slopes, NE¹/₄, SW¹/₄ sec. 26, T. 58 N., R. 89 W.

A—0 to 2 inches; reddish brown (2.5YR 5/4) silt loam, dark reddish brown (2.5YR 3/4) moist; moderate fine granular structure; soft, very friable, slightly sticky and slightly plastic; common fine and very fine roots; strongly effervescent; moderately alkaline; clear smooth boundary.

AC—2 to 9 inches; red (2.5YR 5/6) silt loam, dark reddish brown (2.5YR 3/4) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and very fine roots; disseminated calcium

carbonate and few threads and seams of calcium carbonate; strongly effervescent; 10 percent soft shale fragments and 5 percent limestone fragments; moderately alkaline; clear wavy boundary.

C—9 to 18 inches; light red (2.5YR 6/6) gravelly loam, red (2.5YR 4/6) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few fine and very fine roots; common threads of calcium carbonate and disseminated calcium carbonate; strongly effervescent; 40 percent soft shale fragments and 25 percent gravel; moderately alkaline; clear irregular boundary.

Cr—18 inches; effervescent shale.

The depth to bedrock ranges from 10 to 20 inches. The content of rock fragments in the control section ranges from 15 to 35 percent. Hue is 2.5YR or 5YR throughout the profile. Reaction is mildly alkaline or moderately alkaline throughout the profile.

Absted Series

The Absted series consists of very deep, well drained soils that formed in alluvium derived from alkaline shale. These soils are on alluvial fans and terraces. Slopes are 0 to 6 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are fine, montmorillonitic, mesic Haplustollic Natrargids.

Typical pedon of the Absted fine sandy loam, in an area of Absted-Slickspots complex, 0 to 6 percent slopes, SE¹/₄, NE¹/₄ sec. 32, T. 55 N., R. 79 W., in the Buffalo Creek area:

E—0 to 2 inches; light gray (10YR 7/2) fine sandy loam, very dark grayish brown (10YR 3/2) moist; strong thick platy structure parting to strong thin platy; slightly hard, very friable, slightly sticky and nonplastic; common fine and very fine roots; mildly alkaline; abrupt smooth boundary.

Bt—2 to 8 inches; brown (10YR 5/3) clay, dark grayish brown (10YR 4/2) moist; strong medium columnar structure parting to strong medium and fine angular blocky; very hard, firm, sticky and plastic; few fine and medium roots; many prominent clay films on faces of peds; moderately alkaline; clear smooth boundary.

Btkn—8 to 13 inches; brown (10YR 5/3) clay, dark grayish brown (10YR 4/2) moist; strong medium angular blocky structure; very hard, friable, sticky and plastic; few fine and medium roots; common distinct clay films on faces of peds; common fine threads of secondary calcium carbonate and gypsum; strongly effervescent; strongly alkaline; clear smooth boundary.

Bkn—13 to 60 inches; pale brown (10YR 6/3) clay loam, dark grayish brown (10YR 4/2) moist; moderate coarse subangular blocky structure; very hard, firm, sticky and plastic; many medium and fine threads of secondary calcium carbonate and gypsum; strongly effervescent; very strongly alkaline.

The content of exchangeable sodium ranges from less than 1 percent to 15 percent in the Bt horizon and from 15 to 30 percent in the Btkn and Bkn horizons. The content of rock fragments throughout the profile generally is less than 3 percent but ranges from 0 to 15 percent.

The E or A horizon is very fine sandy loam, fine sandy loam, or clay loam. It is neutral or mildly alkaline.

The Bt and Btkn horizons have hue of 2.5Y or 10YR. They are silty clay loam, clay, silty clay, or clay loam. The electrical conductivity is 2 to 8 millimhos per centimeter. Reaction is mildly alkaline or moderately alkaline in the Bt horizon and moderately alkaline or strongly alkaline in the Btkn horizon.

The Bkn horizon has hue of 2.5Y or 10YR. It is clay, clay loam, or silty clay loam. It is strongly alkaline or very strongly alkaline. The calcium carbonate equivalent is typically about 10 percent but ranges from 6 to 15 percent. The electrical conductivity is 2 to 8 millimhos per centimeter.

Agneston Series

The Agneston series consists of moderately deep, well drained soils that formed in residuum and colluvium derived from granite. These soils are on mountain slopes. Slopes are 10 to 50 percent. Elevation is 5,000 to 7,000 feet. The average annual precipitation is about 20 to 30 inches, and the average annual temperature is 39 to 42 degrees F. The frost-free period is 50 to 80 days.

These soils are loamy-skeletal, mixed Typic Cryoboralfs.

Typical pedon of Agneston gravelly coarse sandy loam, in an area of Agneston-Granite-Rock outcrop association, 10 to 50 percent slopes, SE¹/₄, NW¹/₄ sec. 2, T. 53 N., R. 84 W.

Oi—3 inches to 1 inch; undecomposed organic material, mainly needles, bark, and twigs.

Oe—1 inch to 0; partly decomposed organic material.

A—0 to 6 inches; brown (10YR 5/3) gravelly coarse sandy loam, dark brown (10YR 4/3) moist; weak thin platy structure; soft, very friable, nonsticky and nonplastic; few coarse roots; 25 percent gravel; moderately acid; clear smooth boundary.

Bt—6 to 22 inches; yellowish brown (10YR 5/6) very gravelly sandy clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium and fine subangular blocky structure; hard, friable, slightly sticky and slightly plastic; few faint clay films on faces of peds; 40 percent fine angular pebbles; strongly acid; gradual wavy boundary.

BC—22 to 29 inches; yellowish brown (10YR 5/4) very gravelly sandy clay loam, dark brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, friable, slightly sticky and slightly plastic; 55 percent fine angular pebbles; strongly acid; gradual wavy boundary.

R—29 inches; hard, granitic bedrock.

The depth to bedrock ranges from 20 to 40 inches. The content of rock fragments in the control section ranges from 35 to 60 percent.

The A horizon is gravelly coarse sandy loam or sandy loam. It is strongly acid or moderately acid.

The BC or C horizon is very gravelly sandy loam or very gravelly sandy clay loam.

Arnegard Series

The Arnegard series consists of very deep, well drained soils that formed in alluvium derived from sedimentary rock. These soils are on alluvial fans, hillslopes, and terraces. Slopes are 0 to 20 percent. Elevation is 3,500 to 5,000 feet. The average annual precipitation is 15 to 19 inches, and the average annual temperature is 43 to 45 degrees F. The frost-free period is 80 to 100 days.

These soils are fine-loamy, mixed Pachic Haploborolls.

Typical pedon of Arnegard loam, in an area of Arnegard-Farnuf association, 6 to 25 percent slopes, NE¹/₄, SW¹/₄ sec. 26, T. 58 N., R. 89 W.

A—0 to 7 inches; very dark grayish brown (10YR 3/2) loam, very dark brown (10YR 2/2) moist; weak coarse and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; neutral; clear smooth boundary.

Bw1—7 to 15 inches; dark brown (10YR 3/3) loam, very dark brown (10YR 2/2) moist; weak medium prismatic structure; soft, very friable, slightly sticky and slightly plastic; neutral; clear smooth boundary.

Bw2—15 to 21 inches; dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2) moist; moderate medium prismatic structure parting to moderate medium and fine subangular blocky; hard, very friable, slightly sticky and plastic; neutral; clear smooth boundary.

Bw3—21 to 39 inches; grayish brown (10YR 5/2) loam, dark brown (10YR 3/3) moist; weak coarse prismatic structure parting to weak medium subangular blocky; hard, very friable, slightly sticky and slightly plastic; mildly alkaline; clear smooth boundary.

Bk—39 to 60 inches; light brownish gray (10YR 6/2) loam, dark grayish brown (10YR 4/2) moist; weak medium and coarse subangular blocky structure; hard, very friable, slightly sticky and slightly plastic; common fine threads and few fine and medium seams of secondary calcium carbonate; strongly effervescent; moderately alkaline.

The A horizon is loam or silt loam. It is slightly acid or neutral.

The Bw horizon is loam, silt loam, or clay loam. It is neutral or mildly alkaline.

The Bk horizon has hue of 2.5Y or 10YR. It is loam or clay loam. It is mildly alkaline or moderately alkaline.

Arvada Series

The Arvada series consists of very deep, well drained soils that formed in alluvium derived from sodic shale. These soils are on alluvial fans and terraces. Slopes are 0 to 6 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are fine, montmorillonitic, mesic Ustollic Natrargids.

Typical pedon of Arvada fine sandy loam, in an area of Bidman-Arvada fine sandy loams, 0 to 6 percent slopes, NE¹/₄, NE¹/₄ sec. 29, T. 55 N., R. 78 W., in the Leiter area:

E—0 to 4 inches; light gray (10YR 7/2) fine sandy loam, grayish brown (10YR 5/2) moist; moderate very thin platy structure parting to moderate very fine granular; soft, very friable, nonsticky and nonplastic; many fine and very fine roots; mildly alkaline; abrupt smooth boundary.

Btn—4 to 14 inches; brown (10YR 5/3) clay, dark brown (10YR 4/3) moist; moderate medium columnar structure parting to moderate medium angular blocky; extremely hard, firm, sticky and very plastic; common medium roots; many prominent clay films on faces of peds and in root channels; very strongly alkaline; 20 percent exchangeable sodium; clear smooth boundary.

Btkn—14 to 20 inches; brown (10YR 5/3) clay loam, dark brown (10YR 4/3) moist; weak medium subangular blocky structure; extremely hard, firm, sticky and very plastic; few fine roots; few faint clay films on faces of peds and in root channels; few fine seams, threads, and crystals of secondary calcium carbonate; strongly effervescent; strongly alkaline; gradual smooth boundary.

Bkny—20 to 60 inches; light yellowish brown (2.5Y 6/3) clay loam, light olive brown (2.5Y 5/3) moist; massive; hard, friable, sticky and plastic; common medium seams, threads, and crystals of secondary calcium carbonate, gypsum, and other salts; violently effervescent; strongly alkaline.

The Btn horizon has 15 to 34 percent exchangeable sodium.

The Bkny horizon has hue of 2.5Y or 10YR. It is strongly alkaline or very strongly alkaline. It has 10 to 30 percent exchangeable sodium. The content of exchangeable sodium decreases with increasing depth. The reaction is buffered by gypsum in some pedons. The electrical conductivity ranges from 4 to 8 millimhos per centimeter.

Assiniboine Series

The Assiniboine series consists of very deep, well drained soils that formed in alluvium derived from sandstone. These soils are on hillslopes. Slopes are 3 to 45 percent. Elevation is 4,000 to 4,700 feet. The average annual precipitation is 15 to 19 inches, and the average annual temperature is 43 to 45 degrees F. The frost-free period is 80 to 100 days.

These soils are fine-loamy, mixed Aridic Argiborolls.

Typical pedon of Assiniboine fine sandy loam, in an area of Assiniboine-Dast association, 3 to 65

percent slopes, NW¹/₄, NE¹/₄ sec. 34, T. 58 N., R. 87 W.

A—0 to 4 inches; dark grayish brown (10YR 4/2) fine sandy loam, very dark grayish brown (10YR 3/2) moist; weak very fine granular structure; soft, very friable, nonsticky and nonplastic; many fine and very fine roots; mildly alkaline; clear smooth boundary.

Bt1—4 to 14 inches; dark grayish brown (10YR 4/2) sandy clay loam, very dark grayish brown (10YR 3/2) moist; moderate medium prismatic structure parting to moderate medium subangular blocky; hard, very friable, slightly sticky and slightly plastic; common fine and very fine roots; common distinct clay films on faces of peds; mildly alkaline; clear smooth boundary.

Bt2—14 to 23 inches; light brownish gray (10YR 6/2) sandy clay loam, dark brown (10YR 4/3) moist; moderate coarse prismatic structure parting to moderate medium subangular blocky; hard, very friable, slightly sticky and slightly plastic; common distinct clay films on faces of peds; mildly alkaline; clear smooth boundary.

Btk—23 to 38 inches; light yellowish brown (10YR 6/4) sandy loam, dark yellowish brown (10YR 4/4) moist; weak coarse prismatic structure parting to moderate coarse subangular blocky; hard, very friable, slightly sticky and slightly plastic; common distinct clay films on faces of peds; common fine threads of secondary calcium carbonate; strongly effervescent; moderately alkaline; clear smooth boundary.

Bk—38 to 60 inches; pale brown (10YR 6/3) sandy loam, yellowish brown (10YR 5/4) moist; weak coarse subangular blocky structure; hard, very friable, nonsticky and slightly plastic; many fine threads and few medium and fine seams of secondary calcium carbonate; strongly effervescent; moderately alkaline.

The A horizon is neutral or mildly alkaline. The Bt horizon is sandy loam or sandy clay loam. The content of clay in this horizon is 18 to 27 percent. The Bk horizon is sandy loam or fine sandy loam.

Assinniboine Variant

The Assinniboine Variant consists of very deep, somewhat poorly drained soils that formed in alluvium derived from shale over alluvium derived from granite. These soils are on terraces. Slopes are 0 to 6 percent. Elevation is 4,900 to 5,500 feet. The

average annual precipitation is 15 to 19 inches, and the average annual temperature is 43 to 45 degrees F. The frost-free period is 80 to 100 days.

These soils are fine-loamy over sandy or sandy-skeletal, mixed Pachic Argiborolls.

Typical pedon of Assinniboine Variant sandy loam, in an area of Worthenton Variant-Assinniboine Variant association, 0 to 6 percent slopes, NE¹/₄, SW¹/₄ sec. 13, T. 53 N., R. 84 W., in the Story area:

A—0 to 3 inches; dark gray (10YR 4/1) sandy loam, very dark brown (10YR 2/2) moist; few fine distinct strong brown (7.5YR 5/8) mottles; weak fine granular structure; slightly hard, friable, slightly sticky and nonplastic; common fine and very fine roots; neutral; clear smooth boundary.

Bt—3 to 35 inches; dark gray (10YR 4/1) sandy clay loam, very dark brown (10YR 2/2) moist; common fine distinct strong brown (7.5YR 5/8) mottles; moderate coarse angular blocky structure parting to moderate medium subangular and angular blocky; hard, friable, slightly sticky and slightly plastic; few very fine roots to a depth of 20 inches; many distinct clay films on faces of peds; a water table at a depth of 26 inches; slightly acid; gradual wavy boundary.

2C—35 to 60 inches; light yellowish brown (10YR 6/4) extremely bouldery coarse sand, yellowish brown (10YR 5/4) moist; single grain; loose, nonsticky and nonplastic; 10 percent gravel, 15 percent cobbles, and 55 percent stones and boulders; neutral.

The depth to the contrasting 2C horizon ranges from 20 to 40 inches. The depth to a water table ranges from 2 to 3 feet. Reaction is slightly acid or neutral throughout the profile.

The A and Bt horizons have hue of 2.5Y to 7.5YR. The 2C horizon has 65 to 80 percent rock fragments, mainly granitic stones and boulders ranging from 10 inches to many feet in diameter.

Bahl Series

The Bahl series consists of very deep, well drained soils that formed in alluvium derived from shale. These soils are on alluvial fans and hillslopes. Slopes are 6 to 15 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are fine, montmorillonitic (calcareous), mesic Ustertic Torriorthents.

Typical pedon of Bahl clay loam, in an area of Gayhart-Bahl association, 6 to 30 percent slopes, NE¹/₄, NW¹/₄ sec. 4, T. 57 N., R. 85 W.

A—0 to 3 inches; light brownish gray (2.5Y 6/2) clay loam, grayish brown (2.5Y 5/2) moist; moderate fine and very fine angular blocky structure parting to moderate coarse granular; hard, very friable, sticky and plastic; many fine roots; slightly effervescent; moderately alkaline; clear smooth boundary.

AC—3 to 10 inches; light brownish gray (2.5Y 6/2) clay, grayish brown (2.5Y 5/2) moist; moderate coarse angular blocky structure; hard, firm, sticky and plastic; few fine roots; strongly effervescent; moderately alkaline; gradual wavy boundary.

C—10 to 60 inches; light gray (2.5Y 7/2) clay, grayish brown (2.5Y 5/2) moist; massive; extremely hard, very firm, sticky and plastic; few fine concretions and seams of calcium carbonate and gypsum; strongly effervescent; moderately alkaline.

The A horizon has hue of 2.5Y or 10YR. It is mildly alkaline or moderately alkaline.

The C horizon has a calcium carbonate equivalent of 1 to about 5 percent. Visible secondary calcium carbonate occurs inconsistently. A few crystals of calcium sulfate are in some pedons. Reaction is moderately alkaline or strongly alkaline.

Baux Series

The Baux series consists of very deep, well drained soils that formed in residuum and colluvium derived from porcellanite. These soils are on ridges and escarpments. Slopes are 0 to 65 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are loamy-skeletal over fragmental, mixed, mesic Aridic Haplustolls.

Typical pedon of Baux loam, in an area of Baux-Bauxson-Kirtley association, 3 to 60 percent slopes, SE¹/₄, NE¹/₄ sec. 33, T. 54 N., R. 82 W.

A1—0 to 1 inch; reddish gray (5YR 5/2) loam, dark reddish brown (5YR 3/2) moist; weak very fine granular structure; soft, friable, slightly sticky and slightly plastic; common fine and very fine roots; mildly alkaline; clear smooth boundary.

A2—1 to 12 inches; reddish gray (5YR 5/2) very channery loam, dark reddish brown (5YR 3/2) moist; weak very fine granular structure; soft, friable, slightly sticky and slightly plastic; common

very fine and few fine roots; 50 percent fine and medium channers; mildly alkaline; gradual smooth boundary.

2C—12 to 60 inches; fractured and displaced porcellanite fragments and many interstices larger than 3 millimeters void of fine earth; thin discontinuous coatings of calcium carbonate on the undersides of rock fragments; 75 percent channers, 20 percent angular cobbles, and 3 percent angular stones and boulders.

Depth to the 2C horizon ranges from 12 to 20 inches.

The A horizon has hue of 7.5YR to 2.5YR. The content of rock fragments is 0 to 30 percent in the A1 horizon and 35 to 60 percent in the A2 horizon. The A1 horizon is loam or channery loam, and the A2 horizon is very channery silt loam or very channery loam. Reaction is neutral or mildly alkaline.

Some pedons have a C horizon directly above the 2C horizon. The C horizon is 5 to 8 inches thick.

The 2C horizon consists of red, yellowish red, and brown, fractured and displaced porcellanite material. The content of porcellanite rock fragments ranges from 60 to 80 percent coarse channers, 15 to 35 percent angular cobbles, and 0 to 5 percent stones. Only a few interstices in the upper few inches are partly filled with fine-earth material, and the rest are void. In about half of the pedons thin, discontinuous calcium carbonate coatings are on the rock fragments in the deepest parts of the horizon.

Bauxson Series

The Bauxson series consists of very deep, well drained soils that formed in residuum and colluvium derived from porcellanite. These soils are on ridges, shoulders, and back slopes. Slopes are 0 to 75 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are fine-loamy over fragmental, mixed, mesic Aridic Argiustolls.

Typical pedon of Bauxson channery loam, in an area of Baux-Bauxson-Kirtley association, 3 to 60 percent slopes, SE¹/₄, SE¹/₄ sec. 27, T. 54 N., R. 82 W.

A—0 to 2 inches; reddish gray (5YR 5/2) channery loam, dark reddish brown (5YR 3/3) moist; weak fine granular structure; soft, friable, slightly sticky and slightly plastic; many fine and very fine roots; 20 percent fine porcellanite channers; mildly alkaline; clear smooth boundary.

Bt—2 to 13 inches; brown (7.5YR 5/2) clay loam, dark brown (7.5YR 3/2) moist; moderate coarse subangular blocky structure parting to moderate medium and fine subangular blocky; slightly hard, friable, sticky and plastic; many fine roots to a depth of 5 inches and few fine roots between a depth of 5 and 13 inches; common distinct clay films on faces of peds; 10 percent fine porcellanite channers; mildly alkaline; gradual smooth boundary.

BC—13 to 18 inches; reddish brown (5YR 5/4) very channery clay loam, dark reddish brown (5YR 3/4) moist; weak coarse subangular blocky structure parting to moderate very fine subangular blocky; soft, friable, sticky and plastic; few fine roots; 40 percent fine porcellanite channers; moderately alkaline; clear smooth boundary.

2C—18 to 60 inches; fractured, displaced porcellanite and many interstices larger than 5 millimeters that contain little or no fine-earth material; common moderately thick coatings of secondary calcium carbonate on the undersides of the rock fragments in the upper 20 inches.

The depth to the 2C horizon ranges from 10 to 20 inches.

The A horizon has hue of 7.5YR to 2.5YR. It is silt loam or channery loam. The content of rock fragments ranges from 0 to 20 percent. The rock fragments are dominantly fine channers and a few angular cobbles. Reaction is neutral or mildly alkaline.

The Bt horizon has hue of 7.5YR to 2.5YR. It is clay loam or silty clay loam. The content of fine porcellanite channers is typically less than 10 percent but ranges from 0 to 15 percent. Reaction is mildly alkaline or moderately alkaline.

The 2C horizon consists of red, yellowish red, and brown, fractured porcellanite material. Only a few interstices in the upper few inches are partly filled with soil material. Clinkers are common in some strata. Calcium carbonate coatings are common on the rock fragments in the upper part of the horizon, but the number of coatings typically decreases with increasing depth.

Beeno Series

The Beeno series consists of moderately deep, well drained soils that formed in residuum and colluvium derived from shale and sandstone. These soils are on mountain dip slopes. Slopes are 5 to 45 percent. Elevation is 5,000 to 7,000 feet. The average

annual precipitation is 15 to 19 inches, and the average annual temperature is 41 to 43 degrees F. The frost-free period is 80 to 100 days.

These soils are fine-loamy, mixed Typic Argiborolls.

Typical pedon of Beeno silt loam, in an area of Tolman-Beeno-Beenom complex, 5 to 45 percent slopes, NE¹/₄, SW¹/₄ sec. 2, T. 58 N., R. 89 W.

A—0 to 4 inches; very dark grayish brown (10YR 3/2) silt loam, very dark brown (10YR 2/2) moist; moderate medium and fine granular structure; slightly hard, very friable, slightly sticky and slightly plastic; many fine and very fine roots; neutral; clear smooth boundary.

Bt1—4 to 11 inches; dark brown (10YR 4/3) gravelly silty clay loam, very dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure parting to moderate fine subangular blocky; hard, friable, slightly sticky and plastic; common fine and medium roots; common prominent clay films on faces of peds; 20 percent gravel; neutral; clear smooth boundary.

Bt2—11 to 18 inches; brown (10YR 5/3) gravelly silty clay loam, dark brown (10YR 4/3) moist; weak fine prismatic structure parting to moderate medium subangular blocky; hard, friable, slightly sticky and plastic; many prominent clay films on faces of peds; 20 percent gravel; neutral; clear wavy boundary.

Btk—18 to 26 inches; light yellowish brown (10YR 6/4) gravelly silty clay loam, yellowish brown (10YR 5/4) moist; moderate medium subangular blocky structure; hard, friable, slightly sticky and plastic; common prominent clay films on vertical faces of peds; strongly effervescent; few very fine and fine threads and common prominent coatings of secondary calcium carbonate on the undersides of pebbles; 25 percent gravel; moderately alkaline; clear smooth boundary.

Cr—26 inches; weakly consolidated shale interbedded with lenses of sandstone.

The depth to weakly consolidated bedrock ranges from 20 to 40 inches. The content of rock fragments in the control section ranges from 0 to 35 percent. The rock fragments are mainly angular shale or sandstone channers or semirounded gravel.

The A and Bt horizons are neutral or mildly alkaline. The Bt horizon has a fine-earth texture of silty clay loam or clay loam.

The Btk or Bk horizon has a fine-earth texture of silty clay loam, clay loam, or loam. The content of rock fragments ranges from 10 to 35 percent. The calcium carbonate equivalent ranges from 5 to 15

percent. Reaction is mildly alkaline or moderately alkaline.

Beenom Series

The Beenom series consists of shallow, well drained soils that formed in residuum derived from limestone and sandstone. These soils are on mountain dip slopes. Slopes are 5 to 45 percent. Elevation is 5,000 to 7,000 feet. The average annual precipitation is 15 to 19 inches, and the average annual temperature is 41 to 43 degrees F. The frost-free period is 80 to 100 days.

These soils are loamy, mixed Lithic Argiborolls.

Typical pedon of Beenom loam, in an area of Tolman-Beeno-Beenom complex, 5 to 45 percent slopes, NW¹/₄, NE¹/₄ sec. 2, T. 57 N., R. 89 W.

A—0 to 3 inches; dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2) moist; moderate fine granular structure; soft, very friable, slightly sticky and slightly plastic; many fine and very fine roots; 5 percent limestone fragments; neutral; clear wavy boundary.

Bt—3 to 9 inches; dark brown (10YR 4/3) clay loam, very dark grayish brown (10YR 3/2) moist; moderate medium and fine subangular blocky structure; hard, friable, sticky and plastic; common fine and very fine roots; common distinct clay films on faces of peds; slightly effervescent; 10 percent limestone fragments; mildly alkaline; clear smooth boundary.

Btk—9 to 18 inches; yellowish brown (10YR 5/4) gravelly clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few faint clay films on faces of peds; common fine threads and seams of secondary calcium carbonate; violently effervescent; 30 percent limestone gravel; moderately alkaline; clear wavy boundary.

R—18 inches; hard, platy limestone.

The depth to bedrock ranges from 10 to 20 inches. The content of rock fragments in the control section ranges from 5 to 30 percent.

The Bt horizon typically is clay loam but is gravelly clay loam in some pedons. It is neutral or mildly alkaline.

The Btk horizon has hue of 7.5YR or 10YR. It is mildly alkaline or moderately alkaline.

The Beenom soils in this survey area are taxadjuncts to the Beenom series because they are effervescent throughout the argillic horizon.

Bidman Series

The Bidman series consists of very deep, well drained soils that formed in alluvium derived from shale. These soils are on terraces, hillslopes, and alluvial fans. Slopes are 0 to 15 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are fine, montmorillonitic, mesic Ustollic Paleargids.

Typical pedon of Bidman loam, in an area of Bidman, moist-Ulm loams, 0 to 6 percent slopes, SE¹/₄, NW¹/₄ sec. 30, T. 57 N., R. 83 W.

E—0 to 2 inches; pale brown (10YR 6/3) loam, dark grayish brown (10YR 4/2) moist; moderate very fine granular structure; soft, very friable, slightly sticky and slightly plastic; many fine and very fine roots; neutral; abrupt smooth boundary.

Bt1—2 to 6 inches; yellowish brown (10YR 5/4) clay loam, dark brown (10YR 4/3) moist; strong medium angular blocky structure parting to strong very fine angular blocky; hard, firm, slightly sticky and plastic; many fine and medium roots; many prominent clay films on faces of peds; 5 percent lignite and porcellanite fragments; mildly alkaline; clear smooth boundary.

Bt2—6 to 13 inches; brown (10YR 5/3) clay loam, dark brown (10YR 4/3) moist; strong medium prismatic structure parting to strong medium and fine angular blocky; extremely hard, firm, slightly sticky and plastic; common fine and medium roots; many prominent clay films on faces of peds; 5 percent lignite and porcellanite fragments; mildly alkaline; clear smooth boundary.

Btk—13 to 22 inches; light yellowish brown (10YR 6/4) clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium angular blocky structure; hard, friable, sticky and plastic; few distinct clay films on faces of peds; common fine threads and few coarse masses of secondary calcium carbonate; strongly effervescent; 10 percent lignite fragments; strongly alkaline; clear smooth boundary.

Bk—22 to 60 inches; pale brown (10YR 6/3) clay loam, brown (10YR 5/3) moist; moderate coarse angular blocky structure; hard, friable, sticky and plastic; many medium and coarse masses of secondary calcium carbonate; strongly effervescent; 10 percent fine lignite and 5 percent fine porcellanite fragments; strongly alkaline.

The content of rock fragments ranges from 0 to 15 percent throughout the profile.

The E horizon has hue of 2.5Y or 10YR. It is loam or fine sandy loam. It is slightly acid or neutral. Some pedons have a thin A horizon above the E horizon.

The Bt horizon has hue of 2.5Y to 7.5YR. It is clay or clay loam. Reaction is neutral or mildly alkaline in the Bt horizon and moderately alkaline or strongly alkaline in the Btk horizon.

The Bk horizon has hue of 5Y to 10YR. It is clay loam or loam. It is moderately alkaline or strongly alkaline. The calcium carbonate equivalent is 6 to 14 percent.

Big Horn Series

The Big Horn series consists of very deep, well drained soils that formed in alluvium derived from shale and in the underlying outwash deposits. These soils are on outwash terraces and fan terraces. Slopes are 0 to 6 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 14 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are fine, montmorillonitic, mesic Ustollic Paleargids.

Typical pedon of Big Horn loam, in an area of Big Horn-Wolf, dry, loams, 0 to 6 percent slopes, SW¹/₄ sec. 6, T. 57 N., R. 83 W., in the Tongue River area:

A—0 to 5 inches; grayish brown (10YR 5/2) loam, dark brown (10YR 3/3) moist; weak very fine granular structure; soft, very friable, slightly sticky and slightly plastic; many fine and medium roots; mildly alkaline; clear smooth boundary.

Bt—5 to 17 inches; pale brown (10YR 6/3) clay, brown (10YR 5/3) moist; strong medium prismatic structure parting to strong medium angular blocky; very hard, firm, sticky and plastic; few medium roots; many prominent clay films on faces of peds; mildly alkaline; clear smooth boundary.

Btk—17 to 30 inches; light brownish gray (10YR 6/2) clay, grayish brown (10YR 5/2) moist; strong medium angular blocky structure; very hard, firm, sticky and plastic; few medium roots; few distinct clay films on faces of peds; many medium and coarse masses of secondary calcium carbonate; strongly effervescent; moderately alkaline; clear smooth boundary.

2Bk1—30 to 47 inches; white (10YR 8/2) gravelly clay loam, pale brown (10YR 6/3) moist; moderate fine subangular blocky structure; soft,

friable, slightly sticky and slightly plastic; many medium and coarse masses of secondary calcium carbonate; violently effervescent; 20 percent gravel; strongly alkaline; clear smooth boundary.

2Bk2—47 to 60 inches; white (10YR 8/2) gravelly loam, light gray (10YR 7/2) moist; weak fine granular structure; soft, friable, slightly sticky and slightly plastic; many medium and coarse masses of secondary calcium carbonate; violently effervescent; 30 percent gravel; strongly alkaline.

The content of rock fragments in the control section ranges from 0 to 15 percent. In some pedons a layer of gravelly sandy loam or gravelly sand is below a depth of 40 inches.

The A and Bt horizons are neutral or mildly alkaline. The Bt horizon has hue of 2.5Y to 7.5YR. It is clay or clay loam.

The 2Bk horizon has hue of 5Y to 10YR. It is gravelly clay loam or gravelly loam. It is moderately alkaline or strongly alkaline. The calcium carbonate equivalent is 15 to 25 percent. The content of rock fragments ranges from 15 to 35 percent.

Bowbac Series

The Bowbac series consists of moderately deep, well drained soils that formed in residuum and alluvium derived from sandstone. These soils are on hills. Slopes are 6 to 15 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are fine-loamy, mixed, mesic Ustollic Haplargids.

Typical pedon of Bowbac sandy loam, in an area of Hiland-Bowbac association, moist, 3 to 15 percent slopes, SW¹/₄, SE¹/₄ sec. 10, T. 56 N., R. 83 W., in the Wyarno area:

Ap—0 to 7 inches; dark yellowish brown (10YR 4/4) sandy loam, dark yellowish brown (10YR 3/4) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common very fine roots; mildly alkaline; diffuse wavy boundary.

Bt1—7 to 14 inches; yellowish brown (10YR 5/4) sandy clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine roots; few faint

clay films on faces of peds; neutral; clear smooth boundary.

Bt2—14 to 25 inches; yellowish brown (10YR 5/4) sandy clay loam, dark yellowish brown (10YR 4/4) moist; strong medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine roots; many distinct clay films on faces of peds; mildly alkaline; clear smooth boundary.

Bt3—25 to 30 inches; yellowish brown (10YR 5/4) sandy clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; common distinct clay films on faces of peds; mildly alkaline; clear wavy boundary.

Bk—30 to 39 inches; light olive brown (2.5Y 5/4) sandy loam, olive brown (2.5Y 4/4) moist; massive; soft, very friable, slightly sticky and slightly plastic; many coarse soft masses of secondary calcium carbonate; violently effervescent; 10 percent sandstone gravel; moderately alkaline; abrupt smooth boundary.

Cr—39 inches; soft, effervescent sandstone.

The depth to bedrock ranges from 20 to 40 inches.

The A and Bt horizons are neutral or mildly alkaline. The Bt horizon has hue of 10YR or 7.5YR.

The Bk horizon has hue of 2.5Y or 10YR. It is sandy loam or fine sandy loam. The content of rock fragments in the control section ranges from 0 to 15 percent. The rock fragments generally are sandstone gravel or channers. Reaction is moderately alkaline or strongly alkaline.

Burgess Series

The Burgess series consists of moderately deep, well drained soils that formed in residuum and colluvium derived from granite. These soils are on mountain slopes. Slopes are 8 to 20 percent. Elevation is 6,000 to 7,500 feet. The average annual precipitation is 20 to 25 inches, and the average annual temperature is 41 to 43 degrees F. The frost-free period is 50 to 80 days.

These soils are coarse-loamy, mixed Argic Cryoborolls.

Typical pedon of Burgess gravelly sandy loam, in an area of Lucky-Burgess-Hazton association, 8 to 30 percent slopes, SW¹/₄, NW¹/₄ sec. 9, T. 53 N., R. 84 W.

A—0 to 4 inches; dark brown (10YR 3/3) gravelly sandy loam, very dark brown (10YR 2/2) moist; weak medium granular structure; soft, friable, slightly sticky and slightly plastic; common fine

roots; 15 percent gravel; neutral; clear wavy boundary.

Bt1—4 to 9 inches; dark yellowish brown (10YR 4/4) gravelly sandy loam, dark brown (10YR 3/3) moist; moderate coarse subangular blocky structure parting to moderate medium subangular blocky; soft, friable, nonsticky and nonplastic; few fine and very fine roots; common faint clay films on faces of peds; 20 percent gravel; slightly acid; clear wavy boundary.

Bt2—9 to 13 inches; brown (10YR 5/3) gravelly sandy loam, dark brown (10YR 4/3) moist; moderate coarse subangular blocky structure parting to moderate medium subangular blocky; soft, friable, nonsticky and nonplastic; few fine and very fine roots; common faint and few distinct clay films on faces of peds; 20 percent gravel; slightly acid; clear wavy boundary.

C—13 to 34 inches; yellowish brown (10YR 5/4) gravelly sandy loam, dark yellowish brown (10YR 4/4) moist; single grain; loose, nonsticky and nonplastic; 25 percent gravel; slightly acid; gradual wavy boundary.

R—34 inches; hard, fractured granite.

The depth to bedrock ranges from 20 to 40 inches. The content of rock fragments in the control section ranges from 15 to 35 percent.

The A horizon has hue of 10YR or 7.5YR. It is moderately acid to neutral. The Bt and C horizons have hue of 2.5Y to 7.5YR.

Bynum Series

The Bynum series consists of moderately deep, well drained soils that formed in residuum and colluvium derived from interbedded shale and sandstone. These soils are on mountain slopes. Slopes are 15 to 30 percent. Elevation is 7,000 to 8,000 feet. The average annual precipitation is 18 to 22 inches, and the average annual temperature is 40 to 42 degrees F. The frost-free period is 50 to 80 days.

These soils are fine-loamy, mixed Typic Cryoborolls.

Typical pedon of Bynum silt loam, in an area of Owen Creek-Echemoor-Bynum association, 9 to 30 percent slopes, NW¹/₄, SW¹/₄ sec. 34, T. 55 N., R. 86 W.

A1—0 to 6 inches; dark grayish brown (10YR 4/2) silt loam, very dark brown (10YR 2/2) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common fine and very fine roots; neutral; clear smooth boundary.

A2—6 to 10 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; hard, friable, slightly sticky and slightly plastic; common fine and very fine roots; 5 percent gravel; neutral; gradual wavy boundary.

Bw—10 to 16 inches; light yellowish brown (2.5Y 6/3) channery clay loam, olive (5Y 5/3) moist; moderate medium subangular blocky structure; hard, friable, sticky and plastic; few fine and very fine roots; disseminated carbonates; strongly effervescent; 25 percent channers; moderately alkaline; gradual wavy boundary.

Bk—16 to 28 inches; light brownish gray (2.5Y 6/2) channery clay loam, grayish brown (2.5Y 5/2) moist; moderate medium subangular blocky structure; hard, friable, sticky and plastic; many fine threads and common medium soft masses of secondary calcium carbonate; violently effervescent; 35 percent channers; moderately alkaline; gradual wavy boundary.

Cr—28 inches; soft, strongly effervescent shale.

The depth to bedrock ranges from 20 to 40 inches.

The A horizon is neutral or mildly alkaline.

The Bw horizon has hue of 10YR or 2.5Y. It is mildly alkaline or moderately alkaline. It has 15 to 35 percent channers.

The Bk horizon has hue of 2.5Y or 5Y. It has 15 to 35 percent channers.

Cambria Series

The Cambria series consists of very deep, well drained soils that formed in alluvium and colluvium derived from interbedded sedimentary rock. These soils are on hillslopes, terraces, and alluvial fans. Slopes are 0 to 15 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is about 110 to 120 days.

These soils are fine-loamy, mixed, mesic Ustollic Haplargids.

Typical pedon of Cambria loam, in an area of Zigweid-Kishona-Cambria loams, moist, 6 to 9 percent slopes, NW¹/₄, SE¹/₄ sec. 3, T. 55 N., R. 83 W., in the Wildcat Creek area:

A—0 to 2 inches; pale brown (10YR 6/3) loam, dark brown (10YR 3/3) moist; weak fine granular structure; soft, friable, slightly sticky and slightly plastic; many very fine, common fine, and few medium roots; neutral; clear smooth boundary.

Bt—2 to 8 inches; yellowish brown (10YR 5/4) clay

loam, dark brown (10YR 4/3) moist; moderate medium prismatic structure; soft, friable, slightly sticky and slightly plastic; common very fine and fine and few medium roots; few prominent clay films on faces of peds; mildly alkaline; clear smooth boundary.

Btk—8 to 16 inches; light yellowish brown (10YR 6/4) loam, dark brown (10YR 4/3) moist; weak medium prismatic structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine and few medium roots; few faint clay films on faces of peds; common fine filaments and threads of secondary calcium carbonate; violently effervescent; moderately alkaline; abrupt smooth boundary.

Bk—16 to 60 inches; pale brown (10YR 6/3) loam, dark brown (10YR 4/3) moist; moderate medium subangular blocky structure parting to weak medium subangular blocky; soft, friable, slightly sticky and slightly plastic; few very fine roots; common fine filaments and threads of secondary calcium carbonate; violently effervescent; moderately alkaline.

Hue is 2.5Y to 10YR throughout the profile.

The A horizon is loam or very fine sandy loam. It is neutral or mildly alkaline.

The Bt horizon is clay loam or silty clay loam. It is mildly alkaline or moderately alkaline.

The Bk horizon is loam, clay loam, or silty clay loam. It is moderately alkaline or strongly alkaline.

The calcium carbonate equivalent is 8 to 14 percent.

Cedak Series

The Cedak series consists of moderately deep, well drained soils that formed in alluvium and residuum derived from interbedded sedimentary rock. These soils are on hills and alluvial fans. Slopes are 3 to 15 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are fine-loamy, mixed, mesic Aridic Argiustolls.

Typical pedon of Cedak loam, in an area of Cedak-Recluse association, 9 to 15 percent slopes, SW¹/₄, NW¹/₄ sec. 15, T. 54 N., R. 82 W.

A—0 to 1 inch; brown (10YR 5/3) loam, very dark grayish brown (10YR 3/2) moist; moderate medium platy structure parting to moderate fine granular; slightly hard, very friable, slightly sticky and slightly plastic; many fine and very fine roots; neutral; abrupt smooth boundary.

Bt—1 to 16 inches; dark brown (10YR 4/3) clay loam, very dark grayish brown (10YR 3/2) moist; moderate medium and coarse prismatic structure parting to strong medium angular blocky; hard, friable, sticky and plastic; common fine roots to a depth of 6 inches and few fine roots between a depth of 6 and 14 inches; common distinct clay films on faces of peds; mildly alkaline; clear smooth boundary.

Bk1—16 to 20 inches; very pale brown (10YR 7/3) loam, yellowish brown (10YR 5/4) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine seams and soft masses of secondary calcium carbonate; strongly effervescent; moderately alkaline; clear smooth boundary.

Bk2—20 to 31 inches; light gray (10YR 7/2) very fine sandy loam, yellowish brown (10YR 5/4) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; many fine and medium soft masses and seams of secondary calcium carbonate; violently effervescent; moderately alkaline; clear smooth boundary.

Cr—31 inches; weakly consolidated, effervescent, fine grained sandstone.

The depth to bedrock ranges from 20 to 40 inches.

The A horizon is loam or fine sandy loam. It is neutral or mildly alkaline.

The Bt horizon is loam or clay loam. It is neutral or mildly alkaline.

The Bk horizon has hue of 10YR or 2.5Y. It is very fine sandy loam, loam, clay loam, or silty clay loam.

The calcium carbonate equivalent ranges from 15 to 25 percent. Reaction is moderately alkaline or strongly alkaline.

Clarkelen Series

The Clarkelen series consists of very deep, somewhat excessively drained soils that formed in alluvium derived from sedimentary rock. These soils are on flood plains and low terraces. Slopes are 0 to 3 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are coarse-loamy, mixed (calcareous), mesic Ustic Torrifuvents.

Typical pedon of Clarkelen loam, 0 to 3 percent slopes, SW¹/₄, SE¹/₄ sec. 15, T. 55 N., R. 78 W.

Ap1—0 to 1 inch; yellowish brown (10YR 5/4) loam, dark brown (10YR 3/3) moist; weak medium granular structure; soft, friable, slightly sticky and slightly plastic; few fine and medium roots; slightly effervescent; moderately alkaline; clear smooth boundary.

Ap2—1 to 9 inches; pale brown (10YR 6/3) loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few medium and coarse roots; strongly effervescent; 5 percent fine lignite fragments; moderately alkaline; abrupt smooth boundary.

C1—9 to 20 inches; pale brown (10YR 6/3) fine sandy loam thinly stratified with textures ranging from loamy sand to clay loam, dark brown (10YR 4/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few medium and coarse roots; strongly effervescent; 10 percent fine lignite fragments; strongly alkaline; clear smooth boundary.

C2—20 to 26 inches; pale brown (10YR 6/3) fine sandy loam thinly stratified with textures ranging from loamy sand to clay loam, brown (10YR 5/3) moist; massive; soft, friable, slightly sticky and nonplastic; strongly effervescent; 10 percent very fine lignite fragments; strongly alkaline; abrupt smooth boundary.

C3—26 to 60 inches; brown (10YR 5/3) loamy coarse sand thinly stratified with textures ranging from loamy sand to clay loam, dark yellowish brown (10YR 4/4) moist; single grain; loose, nonsticky and nonplastic; strongly effervescent; 5 percent gravel; strongly alkaline.

The content of rock fragments in the horizons within a depth of 40 inches is commonly less than 5 percent but ranges from 0 to 15 percent. The control section ranges from 8 to 18 percent clay.

The A horizon has hue of 2.5Y or 10YR. It is loam or fine sandy loam. It is mildly alkaline or moderately alkaline.

The C horizon has hue of 2.5Y or 10YR. The C1 and C2 horizons are mainly fine sandy loam stratified with thin layers of loamy sand, loam, sandy clay loam, or clay loam. The C3 horizon is mainly loamy sand, loamy coarse sand, or sand and may contain thin strata of sandy loam, loam, sandy clay loam, or clay loam. Reaction is moderately alkaline or strongly alkaline. In some pedons strata that have a few porcellanite and lignite fragments are common. In some pedons below a depth of 40 inches the content of gravel and cobbles is 15 to 35 percent.

Cloud Peak Series

The Cloud Peak series consists of moderately deep, well drained soils that formed in residuum and colluvium derived from limestone. These soils are on mountain slopes and ridges. Slopes are 10 to 75 percent. Elevation is 5,400 to 7,000 feet. The average annual precipitation is 18 to 20 inches, and the average annual temperature is 41 to 43 degrees F. The frost-free period is 50 to 80 days.

These soils are loamy-skeletal, mixed Typic Cryoboralfs.

Typical pedon of Cloud Peak gravelly silt loam, in an area of Cloud Peak-Tolman complex, 10 to 75 percent slopes, NE¹/₄, NW¹/₄ sec. 34, T. 54 N., R. 85 W.

Oi—3 inches to 0; needles and partly decomposed organic matter.

E—0 to 2 inches; brown (10YR 5/3) gravelly silt loam, dark yellowish brown (10YR 4/4) moist; moderate fine platy structure; soft, very friable, slightly sticky and slightly plastic; few fine and very fine roots; 18 percent gravel; slightly acid; clear wavy boundary.

Bt—2 to 14 inches; light yellowish brown (10YR 6/4) very gravelly silty clay loam, dark brown (10YR 4/3) moist; moderate coarse and medium subangular blocky structure; very hard, friable, sticky and plastic; few fine and medium roots; common faint clay films on faces of peds; 40 percent gravel; slightly acid; gradual wavy boundary.

Btk—14 to 21 inches; pale brown (10YR 6/3) very cobbly silty clay loam, yellowish brown (10YR 5/4) moist; moderate fine and medium subangular blocky structure; hard, friable, sticky and plastic; few faint clay films on faces of peds; many fine seams of secondary calcium carbonate and many medium coatings of secondary calcium carbonate on the undersides of pebbles; strongly effervescent; 30 percent gravel and 30 percent cobbles; moderately alkaline; gradual wavy boundary.

Bk—21 to 37 inches; very pale brown (10YR 7/4) extremely cobbly silt loam, yellowish brown (10YR 5/4) moist; massive; hard, friable, slightly sticky and slightly plastic; many fine and medium seams and coarse masses of secondary calcium carbonate and many medium coatings of calcium carbonate on the undersides of cobbles and gravel; violently effervescent; 45 percent cobbles

and 20 percent gravel; moderately alkaline; abrupt irregular boundary.

R—37 inches; hard, fractured, limestone bedrock.

The depth to bedrock ranges from 20 to 40 inches. The E horizon is slightly acid or neutral. The Bt horizon is neutral or mildly alkaline.

Cloud Peak Variant

The Cloud Peak Variant consists of very deep, well drained soils that formed in alluvium derived from shale over alluvium derived from granite. These soils are on terraces in the Story area. Slopes are 0 to 6 percent. Elevation is 4,900 to 5,500 feet. The average annual precipitation is 15 to 19 inches, and the average annual temperature is 43 to 45 degrees F. The frost-free period is 80 to 100 days.

These soils are fine-loamy over sandy or sandy-skeletal, mixed Mollic Eutroboralfs.

Typical pedon of Cloud Peak Variant very fine sandy loam, in an area of Farnuf Variant-Cloud Peak Variant complex, 0 to 6 percent slopes, SE¹/₄, NW¹/₄ sec. 13, T. 53 N., R. 84 W., in the Story area:

Oe—1 inch to 0; partly decomposed pine needles.

A—0 to 4 inches; dark grayish brown (10YR 4/2) very fine sandy loam, very dark brown (10YR 2/2) moist; weak very fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common fine and very fine and few medium and coarse roots; neutral; clear smooth boundary.

E—4 to 11 inches; pale brown (10YR 6/3) loamy sand, dark yellowish brown (10YR 4/4) moist; weak coarse subangular blocky structure; soft, very friable, nonsticky and nonplastic; few fine and very fine roots; 5 percent granitic gravel; neutral; clear wavy boundary.

Bt—11 to 24 inches; brown (10YR 5/3) sandy clay loam, dark yellowish brown (10YR 4/4) moist; moderate coarse subangular blocky structure parting to moderate medium angular and subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; common coarse roots; common distinct clay films on faces of peds; neutral; gradual wavy boundary.

2C—24 to 60 inches; light yellowish brown (10YR 6/4) extremely bouldery coarse sand, yellowish brown (10YR 5/4) moist; single grain; loose, nonsticky and nonplastic; 40 percent stones and

boulders, 15 percent cobbles, and 15 percent gravel; neutral.

Depth to the 2C horizon ranges from 20 to 40 inches. The content of rock fragments in the A, E, and Bt horizons ranges from 0 to 15 percent.

The 2C horizon has 60 to 75 percent rock fragments, mainly granitic stones and boulders ranging from 10 inches to several feet in diameter.

Coaliams Series

The Coaliams series consists of very deep, moderately well drained soils that formed in alluvium derived from sedimentary rock. These soils are on flood plains and low terraces. Slopes are 0 to 3 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 15 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are fine-loamy, mixed, mesic Torrifuventic Haplustolls.

Typical pedon of Coaliams loam, in an area of Coaliams-Worthenton, moist, complex, 0 to 3 percent slopes, SE¹/₄, SE¹/₄ sec. 3, T. 54 N., R. 83 W., in the Murphy Gulch area:

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) loam, very dark brown (10YR 2/2) moist; weak medium granular structure; slightly hard, very friable, slightly sticky and slightly plastic; many fine and very fine roots; slightly effervescent; mildly alkaline; abrupt wavy boundary.

Bw—8 to 24 inches; brown (10YR 5/3) loam stratified with sandy loam and clay loam, dark brown (10YR 4/3) moist; weak medium prismatic structure; hard, friable, slightly sticky and slightly plastic; common fine and very fine roots; strongly effervescent; moderately alkaline; abrupt wavy boundary.

Bk—24 to 60 inches; grayish brown (2.5Y 5/2) loam stratified with sandy loam and clay loam, very dark grayish brown (2.5Y 3/2) moist; common fine and medium distinct dark yellowish brown (10YR 4/6) moist, relict mottles; massive; hard, friable, slightly sticky and slightly plastic; few fine roots; common fine seams and masses of secondary calcium carbonate; strongly effervescent; moderately alkaline.

A fluctuating water table is at a depth of 3.5 to 6.0 feet from May through September.

The Bw and Bk horizons have hue of 10YR or 2.5Y. They are loam stratified with sandy loam, clay loam, or silty clay loam. The calcium carbonate

equivalent ranges from 4 to 10 percent in the Bk horizon. Reaction is moderately alkaline or strongly alkaline.

Cushman Series

The Cushman series consists of moderately deep, well drained soils that formed in residuum and alluvium derived from interbedded sedimentary rock. These soils are on terraces and hills. Slopes are 3 to 15 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are fine-loamy, mixed, mesic Ustollic Haplargids.

Typical pedon of Cushman very fine sandy loam, in an area of Cushman-Forkwood association, 3 to 15 percent slopes, SE¹/₄, NE¹/₄ sec. 2, T. 57 N., R. 84 W.

A—0 to 2 inches; light brownish gray (10YR 6/2) very fine sandy loam, dark brown (10YR 3/3) moist; moderate medium granular structure; soft, friable, slightly sticky and slightly plastic; common very fine and fine and few medium roots; mildly alkaline; clear smooth boundary.

Bt1—2 to 8 inches; brown (10YR 5/3) clay loam, dark yellowish brown (10YR 3/4) moist; weak medium prismatic structure parting to moderate medium subangular blocky; slightly hard, friable, sticky and plastic; common fine and very fine and few medium roots; few faint clay films on faces of peds and lining pores; moderately alkaline; clear smooth boundary.

Bt2—8 to 14 inches; yellowish brown (10YR 5/4) clay loam, dark yellowish brown (10YR 4/4) moist; moderate coarse prismatic structure parting to strong medium angular blocky; hard, firm, sticky and plastic; few fine, medium, and coarse roots; common distinct clay films on faces of peds, lining pores, and in root channels; 5 percent porcellanite fragments; mildly alkaline; clear wavy boundary.

Btk—14 to 21 inches; pale brown (10YR 6/3) clay loam, yellowish brown (10YR 5/4) moist; moderate coarse prismatic structure parting to moderate very fine and fine subangular blocky; hard, firm, sticky and plastic; few fine roots; few faint clay films on faces of peds; calcium carbonate on faces of peds; common distinct irregularly shaped soft masses and filaments of calcium carbonate in pores; strongly effervescent; moderately alkaline; clear smooth boundary.

Bk2—21 to 32 inches; white (10YR 8/2) loam, pale brown (10YR 6/3) moist; weak coarse subangular blocky structure; slightly hard, friable, sticky and plastic; strongly effervescent; calcium carbonate on faces of peds; common prominent irregularly shaped soft masses and many fine filaments of calcium carbonate in pores; strongly alkaline; clear smooth boundary.

Cr—32 to 60 inches; soft, stratified gray and brown effervescent shale; strongly alkaline when crushed.

The depth to bedrock ranges from 20 to 40 inches.

The A horizon is loam or very fine sandy loam. It is neutral or mildly alkaline.

The Bt horizon is clay loam or loam. It is mildly alkaline or moderately alkaline.

The Bk horizon has hue of 10YR or 2.5Y. It is clay loam or loam. The calcium carbonate equivalent ranges from 5 to 12 percent. Reaction is moderately alkaline or strongly alkaline.

Dast Series

The Dast series consists of moderately deep, well drained soils that formed in residuum and alluvium derived from sandstone. These soils are on hillcrests. Slopes are 3 to 65 percent. Elevation is 4,000 to 4,700 feet. The average annual precipitation is 15 to 19 inches, and the average annual temperature is 43 to 45 degrees F. The frost-free period is 80 to 100 days.

These soils are coarse-loamy, mixed, frigid Typic Ustochrepts.

Typical pedon of Dast fine sandy loam, in an area of Assinniboine-Dast association, 3 to 65 percent slopes, SW¹/₄, NE¹/₄ sec. 34, T. 58 N., R. 87 W.

A1—0 to 1 inch; dark brown (10YR 4/3) fine sandy loam, dark brown (10YR 3/3) moist; weak very fine granular structure; soft, very friable, nonsticky and nonplastic; many fine and very fine roots; slightly effervescent; moderately alkaline; clear smooth boundary.

A2—1 to 4 inches; dark brown (10YR 4/3) fine sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; many fine and very fine roots; disseminated calcium carbonate; strongly effervescent; moderately alkaline; clear smooth boundary.

Bw—4 to 25 inches; light yellowish brown (2.5Y 6/4) fine sandy loam, light olive brown (2.5Y 5/4) moist; weak medium subangular blocky structure;

slightly hard, very friable, slightly sticky and slightly plastic; disseminated calcium carbonate; strongly effervescent; 5 percent sandstone channers coated with calcium carbonate; moderately alkaline; clear smooth boundary.

Bk—25 to 40 inches; light olive brown (2.5Y 5/4) fine sandy loam, olive brown (2.5Y 4/4) moist; weak coarse subangular blocky structure; slightly hard, very friable, slight sticky and nonplastic; few fine seams of secondary calcium carbonate; strongly effervescent; moderately alkaline; clear smooth boundary.

Cr—40 inches; soft, strongly effervescent sandstone.

The depth to bedrock ranges from 20 to 40 inches.

The content of rock fragments is typically less than 5 percent but ranges from 0 to 15 percent.

The A and Bw horizons are mildly alkaline or moderately alkaline.

Dast Variant

The Dast Variant consists of shallow, excessively drained soils that formed in residuum derived from sandstone. These soils are on ridges. Slopes are 30 to 65 percent. Elevation is 4,000 to 5,000 feet. The average annual precipitation is 15 to 19 inches, and the average annual temperature is 43 to 45 degrees F. The frost-free period is 80 to 100 days.

These soils are mixed, frigid Lithic Ustipsamments.

Typical pedon of Dast Variant loamy fine sand, 30 to 65 percent slopes, NW¹/₄, NW¹/₄ sec. 35, T. 57 N., R. 87 W., in the Elk Pasture area:

O—1 inch to 0; undecomposed forest litter.

A—0 to 9 inches; brown (7.5YR 5/2) loamy fine sand, dark brown (7.5YR 3/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common fine and few medium roots; neutral; clear smooth boundary.

AC—9 to 15 inches; brown (7.5YR 5/3) loamy fine sand, dark brown (7.5YR 4/3) moist; weak medium subangular blocky structure; soft, friable, nonsticky and nonplastic; few very fine roots and few coarse pine tree roots; neutral; gradual wavy boundary.

C—15 to 20 inches; brown (7.5YR 5/4) loamy fine sand, dark brown (7.5YR 4/4) moist; massive; soft, friable, nonsticky and nonplastic; few fine and medium roots; neutral; abrupt wavy boundary.

R—20 inches; hard, fractured sandstone.

The depth to bedrock ranges from 10 to 20 inches.

The content of rock fragments throughout the profile

typically is 0 to 15 percent but ranges to 35 percent in the C horizon. Reaction is slightly acid or neutral.

Decolney Series

The Decolney series consists of very deep, well drained soils that formed in alluvium and eolian deposits derived from sandstone. These soils are on alluvial fans and hillslopes. Slopes are 3 to 15 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 14 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are fine-loamy, mixed, mesic Ustollic Haplargids.

Typical pedon of Decolney loamy sand, in an area of Hiland-Decolney complex, 3 to 15 percent slopes, SE¹/₄, SE¹/₄ sec. 19, T. 57 N., R. 78 W., in the Hanging Woman Creek area:

A—0 to 2 inches; dark brown (10YR 4/3) loamy sand, dark brown (10YR 3/3) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many fine and very fine roots; mildly alkaline; clear smooth boundary.

Bt—2 to 11 inches; dark brown (10YR 4/3) sandy clay loam, dark yellowish brown (10YR 3/4) moist; moderate coarse prismatic structure parting to moderate medium subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; few faint clay films on faces of peds; mildly alkaline; clear smooth boundary.

C—11 to 60 inches; yellowish brown (10YR 5/4) sandy loam, dark brown (10YR 4/3) moist; moderate coarse subangular blocky structure; soft, friable, slightly sticky and slightly plastic; mildly alkaline.

The A horizon is neutral or mildly alkaline.

The Bt horizon is mildly alkaline or moderately alkaline.

The C horizon is sandy loam or sandy clay loam. It is mildly alkaline or moderately alkaline.

Doney Series

The Doney series consists of moderately deep, well drained soils that formed in residuum and colluvium derived from sedimentary rock. These soils are on terrace escarpments, ridges, and hillslopes. Slopes are 6 to 90 percent. Elevation is 4,000 to 5,000 feet. The average annual precipitation is 15 to 19 inches, and the average annual temperature is 43

to 45 degrees F. The frost-free period is 80 to 100 days.

These soils are fine-loamy, mixed, frigid Typic Ustochrepts.

Typical pedon of Doney silt loam, in an area of Doney-Doney Variant complex, 6 to 75 percent slopes, SW¹/₄, NE¹/₄ sec. 35, T. 58 N., R. 87 W.

A1—0 to 1 inch; pale brown (10YR 6/3) silt loam, dark brown (10YR 4/3) moist; moderate very fine granular structure; soft, very friable, sticky and plastic; common fine and very fine roots; slightly effervescent; moderately alkaline; clear smooth boundary.

A2—1 to 3 inches; brown (10YR 5/3) silt loam, dark brown (10YR 3/3) moist; weak very fine subangular blocky structure; slightly hard, very friable, sticky and plastic; common fine and very fine roots; strongly effervescent; moderately alkaline; clear smooth boundary.

Bw—3 to 16 inches; pale brown (10YR 6/3) silty clay loam, brown (10YR 5/3) moist; weak medium subangular blocky structure; hard, friable, sticky and plastic; common fine and very fine roots to a depth of 7 inches and few fine roots between a depth of 7 and 16 inches; strongly effervescent; moderately alkaline; clear smooth boundary.

Bk—16 to 23 inches; light brownish gray (2.5Y 6/2) silty clay loam, grayish brown (2.5Y 5/2) moist; massive; hard, friable, sticky and plastic; few fine roots; common fine and medium seams of secondary calcium carbonate; strongly effervescent; 10 percent soft shale fragments; moderately alkaline; clear wavy boundary.

Cr—23 inches; soft, strongly effervescent shale.

The depth to bedrock ranges from 20 to 40 inches. The content of rock fragments throughout the profile is typically less than 5 percent but ranges from 0 to 15 percent.

The A horizon is loam or silt loam. It is mildly alkaline or moderately alkaline.

The Bw and Bk horizons have hue of 2.5Y or 10YR. They are loam, silty clay loam, or clay loam. Reaction is mildly alkaline or moderately alkaline in the Bw horizon and moderately alkaline or strongly alkaline in the Bk horizon.

Doney Variant

The Doney Variant consists of shallow, well drained soils that formed in residuum derived from shale. These soils are on hillslopes and ridges. Slopes are 8 to 75 percent. Elevation is 4,000 to 5,000 feet.

The average annual precipitation is 15 to 19 inches, and the average annual temperature is 43 to 45 degrees F. The frost-free period is 80 to 100 days.

These soils are loamy, mixed (calcareous), frigid, shallow Typic Ustorthents.

Typical pedon of Doney Variant loam, in an area of Doney-Doney Variant complex, 6 to 75 percent slopes, SW¹/₄, NE¹/₄ sec. 1, T. 57 N., R. 87 W.

A—0 to 1 inch; pale brown (10YR 6/3) loam, dark brown (10YR 4/3) moist; moderate very fine granular structure; soft, very friable, slightly sticky and plastic; many fine and very fine roots; slightly effervescent; moderately alkaline; clear smooth boundary.

Bw—1 to 9 inches; brown (10YR 5/3) loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and plastic; common fine and very fine roots; common fine threads of calcium carbonate; strongly effervescent; moderately alkaline; clear smooth boundary.

Bk—9 to 17 inches; yellowish brown (10YR 5/6) silt loam, dark yellowish brown (10YR 4/6) moist; weak medium subangular blocky structure; hard, friable, slightly sticky and plastic; common fine threads and fine and medium masses of secondary calcium carbonate; strongly effervescent; moderately alkaline; clear smooth boundary.

Cr—17 inches; soft, interbedded, strongly effervescent shale.

The depth to bedrock ranges from 10 to 20 inches. The content of rock fragments throughout the profile is typically less than 5 percent but ranges from 0 to 15 percent.

The A horizon is mildly alkaline or moderately alkaline. The Bw and Bk horizons are loam or silt loam. They are moderately alkaline or strongly alkaline.

Draknab Series

The Draknab series consists of very deep, excessively drained soils that formed in alluvium derived from sedimentary rock. These soils are on flood plains and low terraces. Slopes are 0 to 3 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are sandy, mixed, mesic Ustic Torrfluvents.

Typical pedon of Draknab loamy fine sand, 0 to 3 percent slopes, NW¹/₄, SW¹/₄ sec. 1, T. 57 N., R. 84 W.

Ap1—0 to 3 inches; brown (10YR 5/3) loamy fine sand, dark yellowish brown (10YR 4/4) moist; weak very fine granular structure; soft, very friable, nonsticky and nonplastic; common fine roots; slightly effervescent; mildly alkaline; clear smooth boundary.

Ap2—3 to 10 inches; brown (10YR 5/3) loamy sand, dark yellowish brown (10YR 4/4) moist; weak medium and coarse subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine roots; slightly effervescent; mildly alkaline; abrupt smooth boundary.

C—10 to 60 inches; pale brown (10YR 6/3) sand stratified with very thin lenses of sandy loam, dark yellowish brown (10YR 4/4) moist; single grain; loose, nonsticky and nonplastic; strongly effervescent; 5 percent very fine fragments of porcellanite and lignite; moderately alkaline.

The A horizon has hue of 2.5Y or 10YR. It is fine sandy loam or loamy fine sand. It is mildly alkaline or moderately alkaline.

The C horizon has hue of 2.5Y or 10YR. It is moderately alkaline or strongly alkaline.

Echemoor Series

The Echemoor series consists of moderately deep, well drained soils that formed in residuum and alluvium derived from interbedded shale and limestone. These soils are on mountain foot slopes. Slopes are 9 to 25 percent. Elevation is 7,000 to 8,000 feet. The average annual precipitation is 18 to 22 inches, and the average annual temperature is 40 to 42 degrees F. The frost-free period is 50 to 80 days.

These soils are fine-loamy, mixed Argic Pachic Cryoborolls.

Typical pedon of Echemoor silt loam, in an area of Owen Creek-Echemoor-Bynum association, 9 to 30 percent slopes, NW¹/₄, NW¹/₄ sec. 33, T. 54 N., R. 85 W.

A1—0 to 2 inches; dark brown (10YR 4/3) silt loam, very dark brown (10YR 2/2) moist; moderate fine and very fine granular structure; soft, very friable, slightly sticky and slightly plastic; many fine and

very fine roots; slightly acid; clear smooth boundary.

A2—2 to 12 inches; dark yellowish brown (10YR 4/4) silt loam, very dark brown (10YR 2/2) moist; moderate fine granular structure; soft, very friable, slightly sticky and slightly plastic; common fine and very fine roots; slightly acid; clear smooth boundary.

Bt1—12 to 17 inches; grayish brown (10YR 5/2) silty clay loam, very dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure; hard, friable, sticky and plastic; common prominent clay films on faces of peds; slightly acid; clear wavy boundary.

Bt2—17 to 29 inches; light yellowish brown (10YR 6/4) silty clay loam, dark brown (10YR 4/3) moist; moderate coarse subangular blocky structure; hard, friable, sticky and plastic; common faint and few distinct clay films on faces of peds; neutral; clear wavy boundary.

Cr—29 inches; soft, strongly effervescent shale.

The depth to bedrock ranges from 20 to 40 inches. The Bt horizon is slightly acid or neutral.

Eltzac Series

The Eltzac series consists of moderately deep, well drained soils that formed in residuum derived from shale. These soils are on dissected ridges and hillslopes. Slopes are 15 to 35 percent. Elevation is 3,500 to 5,000 feet. The average annual precipitation is 15 to 19 inches, and the average annual temperature is 43 to 45 degrees F. The frost-free period is 80 to 100 days.

These soils are very fine, montmorillonitic, frigid Udothentic Chromusterts.

Typical pedon of Eltzac silty clay, in an area of Norbert-Eltzac complex, 15 to 35 percent slopes, NW¹/₄, NW¹/₄ sec. 28, T. 58 N., R. 86 W.

A—0 to 1 inch; light brownish gray (2.5Y 6/2) silty clay, dark grayish brown (2.5Y 4/2) moist; moderate fine granular structure; soft, very friable, sticky and plastic; common fine and medium roots; moderately alkaline; clear smooth boundary.

Bw—1 to 16 inches; light gray (2.5Y 7/2) clay, dark grayish brown (2.5Y 4/2) moist; weak coarse prismatic structure parting to moderate medium subangular blocky; extremely hard, very firm, very sticky and very plastic; few fine and medium roots; cracks 1/2-inch wide; slightly effervescent; moderately alkaline; clear smooth boundary.

Bk1—16 to 29 inches; light brownish gray (2.5Y 6/2) clay, grayish brown (2.5Y 5/2) moist; weak coarse subangular blocky structure; extremely hard, very firm, very sticky and very plastic; cracks 1/2-inch wide; few fine threads of calcium carbonate; strongly effervescent; moderately alkaline; clear smooth boundary.

Bk2—29 to 39 inches; light brownish gray (2.5Y 6/2) clay, grayish brown (2.5Y 5/2) moist; massive; extremely hard, very firm, very sticky and very plastic; common fine and few coarse seams of secondary calcium carbonate; strongly effervescent; moderately alkaline; clear smooth boundary.

Cr—39 inches; soft, strongly effervescent, platy shale.

The depth to bedrock ranges from 20 to 40 inches. Typically, these soils are effervescent at or near the surface, but in some pedons they are noneffervescent to a depth of 5 inches. When the soils are dry, cracks are common. They extend from the surface to a depth of 30 inches or more. The content of rock fragments throughout the profile generally is less than 5 percent but ranges from 0 to 15 percent.

Emigrant Series

The Emigrant series consists of moderately deep, well drained soils that formed in residuum and alluvium derived from shale. These soils are on hillslopes. Slopes are 3 to 15 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 15 to 17 inches, and the average annual temperature is 45 to 47 degrees. The frost-free period is 110 to 120 days.

These soils are fine, montmorillonitic, mesic Aridic Argiustolls.

Typical pedon of Emigrant clay loam, in an area of Nuncho-Emigrant association, 3 to 9 percent slopes, SW¹/₄, SE¹/₄ sec. 29, T. 58 N., R. 81 W., in the Badger Hills area:

A—0 to 1 inch; dark grayish brown (10YR 4/2) clay loam, very dark grayish brown (10YR 3/2) moist; moderate medium granular structure; slightly hard, friable, slightly sticky and plastic; many fine and medium roots; mildly alkaline; abrupt smooth boundary.

Bt—1 to 9 inches; dark grayish brown (10YR 4/2) clay, very dark grayish brown (10YR 3/2) moist; strong coarse subangular blocky structure parting to strong medium angular blocky; very hard, firm, sticky and plastic; many fine and medium roots;

continuous prominent clay films on faces of peds; mildly alkaline; clear smooth boundary.

Btk—9 to 13 inches; brown (10YR 5/3) clay, dark brown (10YR 4/3) moist; strong coarse subangular blocky structure parting to strong medium subangular blocky; very hard, firm, sticky and plastic; common fine roots; many prominent clay films on faces of peds; few fine seams of secondary calcium carbonate; strongly effervescent; moderately alkaline; clear smooth boundary.

Bk—13 to 36 inches; light brownish gray (10YR 6/2) clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; very hard, friable, sticky and plastic; common fine roots; many medium seams and threads of secondary calcium carbonate; strongly effervescent; moderately alkaline; clear smooth boundary.

Cr—36 inches; strongly effervescent, interbedded, soft shale and lignite.

The depth to bedrock ranges from 20 to 40 inches. The content of rock fragments throughout the profile ranges from 0 to 15 percent but is typically less than 5 percent. Hue is 10YR or 2.5Y throughout the profile.

The A horizon is clay loam or loam. It is neutral or mildly alkaline.

The Bt horizon is clay or clay loam. It is moderately alkaline.

The Btk or Bk horizon is clay loam or clay.

Farnuf Series

The Farnuf series consists of very deep, well drained soils that formed in alluvium derived from sedimentary rock. These soils are on alluvial fans, terraces, and hillslopes. Slopes are 0 to 25 percent. Elevation is 3,500 to 5,000 feet. The average annual precipitation is 15 to 19 inches, and the average annual temperature is 43 to 45 degrees F. The frost-free period is 80 to 100 days.

These soils are fine-loamy, mixed Typic Argiborolls.

Typical pedon of Farnuf silt loam, in an area of Reeder-Farnuf association, 3 to 9 percent slopes, NE¹/₄, SW¹/₄ sec. 25, T. 58 N., R. 87 W., in the Parkman area:

A—0 to 2 inches; grayish brown (10YR 5/2) silt loam, very dark brown (10YR 2/2) moist; moderate fine platy structure; soft, very friable, slightly sticky and plastic; many fine and very fine roots; neutral; clear smooth boundary.

AB—2 to 11 inches; dark grayish brown (10YR 4/2) silt loam, very dark grayish brown (10YR 3/2)

moist; moderate medium prismatic structure parting to moderate fine subangular blocky; slightly hard, very friable, slightly sticky and plastic; common fine and very fine roots; few faint clay films on faces of peds; neutral; clear smooth boundary.

Bt—11 to 16 inches; dark yellowish brown (10YR 4/4) clay loam, dark yellowish brown (10YR 3/4) moist; moderate medium prismatic structure parting to moderate medium subangular blocky; hard, friable, slightly sticky and plastic; common distinct clay films on faces of peds; mildly alkaline; clear smooth boundary.

Btk—16 to 21 inches; brown (10YR 5/3) clay loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; hard, friable, slightly sticky and plastic; few faint clay films on faces of peds; few fine threads of secondary calcium carbonate; slightly effervescent; moderately alkaline; clear smooth boundary.

Bk—21 to 60 inches; pale brown (10YR 6/3) loam, dark brown (10YR 4/3) moist; weak coarse subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine threads and few medium seams of secondary calcium carbonate; strongly effervescent; strongly alkaline.

The A horizon is silt loam or loam. It is slightly acid to mildly alkaline.

The Bt horizon has hue of 2.5Y or 10YR. It is loam, clay loam, or silty clay loam. It is neutral or mildly alkaline.

The Bk horizon has hue of 2.5Y or 10YR. It is loam, silt loam, or clay loam. It is moderately alkaline or strongly alkaline.

The Farnuf soil in Savage-Farnuf silt loams, gravelly substratum, 0 to 6 percent slopes, is a taxadjunct to the Farnuf series because the Bk horizon has a calcium carbonate equivalent of 15 to 30 percent and has 15 to 30 percent rock fragments.

Farnuf Variant

The Farnuf Variant consists of very deep, well drained or somewhat poorly drained soils that formed in alluvium derived from shale over alluvium derived from granite. These soils are on alluvial fans and terraces in the Story area. Slopes are 0 to 6 percent. Elevation is 4,900 to 5,500 feet. The average annual precipitation is 15 to 19 inches, and the average annual temperature is 43 to 45 degrees F. The frost-free period is 80 to 100 days.

These soils are fine-loamy, mixed Typic Argiborolls.

Typical pedon of Farnuf Variant silt loam, in an area of Farnuf Variant-Cloud Peak Variant complex, 0 to 6 percent slopes, SW¹/₄, NW¹/₄ sec. 13, T. 53 N., R. 84 W., in the Story area:

- A1—0 to 2 inches; dark gray (10YR 4/1) silt loam, very dark brown (10YR 2/2) moist; moderate medium and fine granular structure; soft, very friable, slightly sticky and slightly plastic; many fine and very fine roots; slightly acid; clear smooth boundary.
- A2—2 to 10 inches; dark gray (10YR 4/1) silt loam, very dark brown (10YR 2/2) moist; weak coarse prismatic structure parting to medium and fine angular and subangular blocky; soft, very friable, slightly sticky and slightly plastic; common fine and very fine roots; neutral; clear smooth boundary.
- Bt1—10 to 24 inches; brown (10YR 5/3) clay loam, dark yellowish brown (10YR 3/4) moist; moderate coarse prismatic structure parting to moderate medium angular blocky; hard, very friable, sticky and plastic; few very fine roots; common distinct clay films on faces of peds; neutral; clear smooth boundary.
- Bt2—24 to 40 inches; brown (10YR 5/3) clay loam, dark yellowish brown (10YR 3/4) moist; moderate coarse angular blocky structure parting to moderate medium and fine angular and subangular blocky; hard, very friable, sticky and plastic; few very fine roots; common distinct clay films on faces of peds; neutral; diffuse broken boundary.
- 2C—40 to 60 inches; light yellowish brown (10YR 6/4) extremely bouldery coarse sand, yellowish brown (10YR 5/4) moist; single grain; loose, nonsticky and nonplastic; 40 percent stones and boulders, 15 percent cobbles, and 15 percent gravel; neutral.

The depth to the 2C horizon ranges from 40 to 60 inches. Some pedons have a fluctuating water table at a depth of 1 foot to 3 feet from May through October.

The A horizon is silt loam or loam. It is slightly acid or neutral.

The B horizon is slightly acid or neutral. The content of rock fragments is typically less than 5 percent but ranges from 0 to 15 percent.

The 2C horizon has 60 to 75 percent rock fragments, mainly granitic stones and boulders ranging from 10 inches to several feet in diameter.

Forkwood Series

The Forkwood series consists of very deep, well drained soils that formed in alluvium derived from sedimentary rock. These soils are on terraces, alluvial fans, and hillslopes. Slopes are 0 to 15 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are fine-loamy, mixed, mesic Ustollic Haplargids.

Typical pedon of Forkwood loam, 3 to 6 percent slopes, NW¹/₄, SE¹/₄ sec. 26, T. 55 N., R. 79 W., in the Clearmont area:

- A1—0 to 1 inch; brown (10YR 5/3) loam, dark brown (10YR 3/3) moist; weak very fine granular structure; soft, very friable, slightly sticky and slightly plastic; common fine and very fine roots; mildly alkaline; clear smooth boundary.
- A2—1 to 3 inches; pale brown (10YR 6/3) loam, dark yellowish brown (10YR 3/4) moist; moderate coarse platy structure; slightly hard, very friable, slightly sticky and slightly plastic; common fine and very fine roots; mildly alkaline; abrupt smooth boundary.
- Bt—3 to 13 inches; brown (10YR 5/3) clay loam, dark yellowish brown (10YR 4/4) moist; moderate coarse prismatic structure parting to moderate medium and fine subangular blocky; hard, very friable, sticky and plastic; few fine and very fine roots; common distinct clay films on faces of peds; 5 percent shale fragments; mildly alkaline; clear smooth boundary.
- Btk—13 to 18 inches; light brownish gray (10YR 6/2) clay loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; hard, very friable, sticky and plastic; few fine and very fine roots; few faint clay films on faces of peds; common fine threads of secondary calcium carbonate; strongly effervescent; moderately alkaline; clear smooth boundary.
- Bk—18 to 60 inches; pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; moderate coarse subangular blocky structure; hard, very friable, sticky and plastic; many coarse seams of secondary calcium carbonate; violently effervescent; moderately alkaline.

Hue is 10YR or 2.5Y throughout the profile.

The A horizon is loam or fine sandy loam. It is neutral or mildly alkaline.

The Bt horizon is loam or clay loam. It is neutral or mildly alkaline.

The Btk horizon is clay loam or loam. It is mildly alkaline to strongly alkaline.

The Bk horizon is loam or clay loam. It is moderately alkaline or strongly alkaline. The calcium carbonate equivalent ranges from 5 to 14 percent.

Gayhart Series

The Gayhart series consists of moderately deep, well drained soils that formed in residuum, alluvium, and colluvium derived from shale. These soils are on hillslopes and ridge crests. Slopes are 2 to 60 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are fine, montmorillonitic (calcareous), mesic Ustic Torriorthents.

Typical pedon of Gayhart clay loam, in an area of Gayhart-Bahl association, 6 to 30 percent slopes, SW¹/₄, SE¹/₄ sec. 4, T. 57 N., R. 85 W.

A—0 to 2 inches; light olive brown (2.5Y 5/4) clay loam, olive brown (2.5Y 4/4) moist; strong fine granular structure; slightly hard, friable, sticky and plastic; many fine and very fine roots; strongly effervescent; disseminated calcium carbonate; moderately alkaline; clear smooth boundary.

AC—2 to 10 inches; light olive brown (2.5Y 5/4) clay loam, olive brown (2.5Y 4/4) moist; weak medium subangular blocky structure; extremely hard, firm, sticky and plastic; common fine and medium roots; strongly effervescent; disseminated calcium carbonate; moderately alkaline; gradual smooth boundary.

C—10 to 36 inches; light yellowish brown (2.5Y 6/4) clay, light olive brown (2.5Y 5/4) moist; massive; extremely hard, firm, sticky and plastic; common distinct fine crystals of calcium sulfate; disseminated calcium carbonate; violently effervescent; moderately alkaline; gradual wavy boundary.

Cr—36 inches; soft, effervescent shale.

The depth to bedrock ranges from 20 to 40 inches. The control section contains 35 to 55 percent clay.

The A horizon has hue of 10YR or 2.5Y. It is mildly alkaline or strongly alkaline.

The C horizon is clay loam, silty clay, or clay. It is moderately alkaline or strongly alkaline.

Granile Series

The Granile series consists of very deep, well drained soils that formed in residuum and colluvium derived from granite. These soils are on mountain foot slopes. Slopes are 10 to 20 percent. Elevation is 6,000 to 7,000 feet. The average annual precipitation is 20 to 30 inches, and the average annual temperature is 39 to 41 degrees F. The frost-free period is 50 to 80 days.

These soils are loamy-skeletal, mixed Typic Cryoboralfs.

Typical pedon of Granile gravelly sandy loam, in an area of Agneston-Granile-Rock outcrop association, 10 to 50 percent slopes, SW¹/₄, NW¹/₄ sec. 2, T. 53 N., R. 84 W., west of the Story area:

Oi—2 inches to 0; partly decomposed needles and twigs.

A1—0 to 3 inches; brown (10YR 5/3) gravelly sandy loam, dark yellowish brown (10YR 4/4) moist; moderate medium granular structure; soft, very friable, slightly sticky and nonplastic; few fine and very fine roots; 15 percent gravel; moderately acid; clear smooth boundary.

A2—3 to 8 inches; pale brown (10YR 6/3) gravelly sandy loam, dark brown (10YR 4/3) moist; moderate medium subangular blocky structure; soft, friable, slightly sticky and nonplastic; few fine and very fine roots; 25 percent gravel; moderately acid; gradual wavy boundary.

Bt1—8 to 14 inches; pale brown (10YR 6/3) very gravelly sandy clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common faint clay films on faces of peds; 35 percent gravel; moderately acid; gradual wavy boundary.

Bt2—14 to 19 inches; light yellowish brown (10YR 6/4) very gravelly sandy clay loam, yellowish brown (10YR 5/4) moist; moderate medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common faint and few distinct clay films on faces of peds; 55 percent gravel; moderately acid; clear wavy boundary.

C—19 to 60 inches; yellowish brown (10YR 5/6) very gravelly sandy loam, yellowish brown (10YR 5/4) moist; massive; hard, friable, slightly sticky and nonplastic; 60 percent gravel; moderately acid.

The C horizon is very gravelly sandy loam or very gravelly sandy clay loam.

Hardhart Series

The Hardhart series consists of moderately deep, well drained soils that formed in residuum and colluvium derived from limestone. These soils are on dip slopes and hills. Slopes are 10 to 50 percent. Elevation is 5,500 to 7,500 feet. The average annual precipitation is 19 to 25 inches, and the average annual temperature is 40 to 42 degrees F. The frost-free period is 50 to 80 days.

These soils are loamy-skeletal, carbonatic Calcic Cryoborolls.

Typical pedon of Hardhart very gravelly silt loam, in an area of Hardhart-Starley association, 10 to 60 percent slopes, SW¹/₄, NE¹/₄ sec. 8, T. 57 N., R. 88 W.

A—0 to 8 inches; dark brown (10YR 4/3) very gravelly silt loam, very dark grayish brown (10YR 3/2) moist; weak medium granular structure; soft, very friable, slightly sticky and slightly plastic; many fine and very fine roots; disseminated calcium carbonate; slightly effervescent near gravel; 40 percent fine gravel; neutral; clear wavy boundary.

Bk1—8 to 17 inches; light yellowish brown (10YR 6/4) very gravelly loam, dark yellowish brown (10YR 4/4) moist; moderate coarse subangular blocky structure; slightly hard, very friable, sticky and slightly plastic; many thick coatings and pendants of secondary calcium carbonate disseminated on rock fragments; violently effervescent; 45 percent fine gravel; moderately alkaline; clear smooth boundary.

Bk2—17 to 27 inches; very pale brown (10YR 7/3) very gravelly loam, brown (10YR 5/3) moist; moderate fine subangular blocky structure; slightly hard, friable, sticky and slightly plastic; many medium soft masses, threads, and thick pendants of secondary calcium carbonate on the undersides of rock fragments; violently effervescent; 50 percent fine gravel; moderately alkaline; abrupt irregular boundary.

R—27 inches; hard limestone; fractured in the upper few inches with no displacement.

The depth to bedrock ranges from 20 to 40 inches. Rock fragments range from 35 to 75 percent throughout the profile.

The A horizon is neutral or mildly alkaline.

The Bk horizon has a fine-earth texture of loam or silt loam. The content of rock fragments ranges from 35 to 75 percent. The rock fragments are mainly gravel or channers and 0 to 20 percent cobbles. The calcium carbonate equivalent ranges from 40 to 60 percent in the fraction of the soil that is 20 millimeters

or less in diameter. Reaction is moderately alkaline or strongly alkaline.

Hargreave Series

The Hargreave series consists of moderately deep, well drained soils that formed in residuum and alluvium derived from sandstone. These soils are on hills. Slopes are 3 to 15 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are fine-loamy, mixed, mesic Aridic Argiustolls.

Typical pedon of Hargreave fine sandy loam, in an area of Lambman-Hargreave association, 3 to 15 percent slopes, NE¹/₄, NW¹/₄ sec. 21, T. 54 N., R. 82 W.

A—0 to 2 inches; dark brown (10YR 4/3) fine sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium and fine subangular blocky structure parting to weak fine granular; soft, very friable, slightly sticky and nonplastic; many fine and very fine roots; neutral; clear smooth boundary.

Bt1—2 to 15 inches; dark brown (10YR 4/3) sandy clay loam, dark brown (10YR 3/3) moist; moderate coarse prismatic structure parting to moderate coarse and medium subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; few fine and very fine roots; common faint clay films on faces of peds; mildly alkaline; clear smooth boundary.

Bt2—15 to 23 inches; yellowish brown (10YR 5/4) sandy clay loam, dark brown (10YR 4/3) moist; moderate coarse prismatic structure parting to moderate coarse and medium subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; common faint clay films on faces of peds; mildly alkaline; gradual smooth boundary.

Btk—23 to 32 inches; pale brown (10YR 6/3) sandy clay loam, brown (10YR 5/3) moist; moderate coarse and medium subangular blocky structure; slightly hard, friable, sticky and plastic; many distinct clay films on faces of peds; common fine threads of calcium carbonate; strongly effervescent; 5 percent soft shale fragments; moderately alkaline; gradual smooth boundary.

Cr—32 inches; soft, effervescent, interbedded sandstone and shale.

The depth to bedrock ranges from 20 to 40 inches.

The A horizon is fine sandy loam or sandy loam.

The Bt horizon has hue of 10YR or 7.5YR.

The Btk or Bk horizon is sandy clay loam, sandy loam, or fine sandy loam. The content of rock fragments ranges from 0 to 15 percent but is commonly less than 10 percent. Reaction is mildly alkaline or moderately alkaline.

The Hargreave soils in this survey area are taxadjuncts to the Hargreave series because the Btk or Bk horizon has accumulations of secondary calcium carbonate.

Harlan Series

The Harlan series consists of very deep, well drained soils that formed in alluvium derived from interbedded shale and porcellanite. These soils are on alluvial fans, toe slopes, valley sides, and hillslopes. Slopes are 0 to 15 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are fine-loamy, mixed, mesic Aridic Argiustolls.

Typical pedon of Harlan loam, dry, 0 to 15 percent slopes, NE¹/₄, SW¹/₄ sec. 2, T. 57 N., R. 84 W.

A—0 to 3 inches; reddish brown (5YR 5/3) loam, dark reddish brown (5YR 3/3) moist; moderate very fine granular structure; soft, very friable, slightly sticky and plastic; many fine and medium roots; mildly alkaline; clear smooth boundary.

Bt1—3 to 7 inches; reddish brown (5YR 5/3) clay loam, dark reddish brown (5YR 3/3) moist; moderate coarse subangular blocky structure parting to moderate medium and fine subangular blocky; slightly hard, friable, slightly sticky and plastic; many fine and medium roots; few faint clay films on faces of peds; 5 percent fragments of porcellanite 5 to 35 millimeters in size; mildly alkaline; clear smooth boundary.

Bt2—7 to 13 inches; reddish brown (5YR 5/4) clay loam, dark reddish brown (5YR 3/4) moist; strong coarse subangular blocky structure parting to strong medium and fine subangular blocky; slightly hard, friable, sticky and plastic; common medium and fine roots; many distinct clay films on faces of peds; 5 percent fragments of porcellanite 5 to 35 millimeters in size; mildly alkaline; clear wavy boundary.

Bk1—13 to 17 inches; reddish brown (5YR 5/3) loam, yellowish red (5YR 4/6) moist; weak medium

subangular blocky structure; slightly hard, friable, sticky and plastic; few fine roots; common fine seams and nodules of secondary calcium carbonate; slightly effervescent; strongly alkaline; clear wavy boundary.

Bk2—17 to 60 inches; light reddish brown (5YR 6/4) loam, yellowish red (5YR 4/8) moist; massive; soft, friable, slightly sticky and slightly plastic; many fine and coarse seams and nodules of secondary calcium carbonate; slightly effervescent; 10 percent porcellanite fragments; strongly alkaline.

The content of rock fragments throughout the profile ranges from 0 to 15 percent but is typically less than 10 percent.

The A horizon is loam or silt loam. It is neutral or mildly alkaline.

The Bt horizon has hue of 5YR or 2.5YR. It is clay loam or loam. It is neutral or mildly alkaline.

The Bk horizon has hue of 5YR or 2.5YR. It is moderately alkaline or strongly alkaline. Thin strata containing porcellanite fragments are common.

Haverdad Series

The Haverdad series consists of very deep, well drained soils that formed in alluvium derived from sedimentary rock. These soils are on flood plains, drainageways, and low terraces. Slopes are 0 to 6 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are fine-loamy, mixed (calcareous), mesic Ustic Torrifuvents.

Typical pedon of Haverdad very fine sandy loam, 0 to 3 percent slopes, SW¹/₄, NE¹/₄ sec. 2, T. 57 N., R. 86 W., in the Ash Creek area:

A—0 to 2 inches; light brownish gray (2.5Y 6/2) very fine sandy loam, dark grayish brown (2.5Y 4/2) moist; thin platy structure; slightly hard, friable, nonsticky and nonplastic; common fine and medium roots; mildly alkaline; abrupt smooth boundary.

C—2 to 60 inches; yellowish brown (10YR 5/4) loam stratified with silt loam, sandy loam, and clay loam, dark brown (10YR 4/3) moist; massive; soft, very friable, slightly sticky and slightly plastic; slightly effervescent; 10 percent gravel; moderately alkaline.

Hue is 10YR or 2.5Y throughout the profile.

The A horizon is very fine sandy loam, loam, or silt loam. It is mildly alkaline or moderately alkaline.

The C horizon is stratified. The strata are commonly loam, silt loam, clay loam, or silty clay loam, but a few thin lenses of loamy sand, sandy loam, or fine sandy loam are also present in many pedons. It is moderately alkaline or strongly alkaline. The electrical conductivity ranges from 0 to 4 millimhos per centimeter. Thin strata that have 10 to 25 percent gravel are in some pedons.

Haverdad silt loam, saline, 0 to 3 percent slopes, and Haverdad loam, moist, saline, 0 to 3 percent slopes, are taxadjuncts to the Haverdad series because they are somewhat poorly drained, have a high water table at a depth of 1.5 to 3.0 feet from May through August, and have an electrical conductivity of 4 to 16 millimhos per centimeter in the C horizon.

Havertel Series

The Havertel series consists of very deep, moderately well drained soils that formed in alluvium derived from sedimentary rock. These soils are on flood plains and low terraces. Slopes are 0 to 3 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 15 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are fine-silty over sandy or sandy-skeletal, mixed, mesic Fluventic Haplustolls.

Typical pedon of Havertel silt loam, 0 to 3 percent slopes, NE¹/₄, NE¹/₄ sec. 32, T. 57 N., R. 86 W.

Ap—0 to 9 inches; dark brown (10YR 4/3) silt loam, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; few fine and very fine roots; disseminated calcium carbonate; slightly effervescent; moderately alkaline; abrupt smooth boundary.

Bw—9 to 17 inches; brown (10YR 5/3) silt loam stratified with a few thin lenses of very fine sand, dark brown (10YR 3/3) moist; moderate fine and medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; few fine and very fine roots; disseminated calcium carbonate; strongly effervescent; moderately alkaline; clear wavy boundary.

2C1—17 to 29 inches; grayish brown (10YR 5/2) gravelly loamy sand, dark yellowish brown (10YR 3/4) moist; single grain; loose, nonsticky and nonplastic; disseminated calcium carbonate;

strongly effervescent; 30 percent gravel; moderately alkaline; clear wavy boundary.
2C2—29 to 60 inches; pale brown (10YR 6/3) very gravelly sand, yellowish brown (10YR 5/4) moist; single grain; loose, nonsticky and nonplastic; mainly granitic sands; 50 percent gravel; mildly alkaline.

The depth to the 2C horizon ranges from 14 to 34 inches. The depth to a fluctuating seasonal high water table is 3 to 5 feet. Some pedons do not have a Bw horizon.

The A and Bw horizons are mildly alkaline or moderately alkaline.

The 2C1 horizon is gravelly loamy sand or gravelly sand. The content of rock fragments ranges from 15 to 35 percent. The rock fragments are predominantly gravel. Sands are predominantly arkosic. Common or many mottles are in some irrigated areas. Reaction is moderately alkaline or strongly alkaline.

The 2C2 horizon is very gravelly sand or extremely gravelly sand. The content of rock fragments ranges from 35 to 70 percent. The rock fragments are predominantly gravel. This horizon is commonly noneffervescent, but in some pedons it is slightly effervescent. It is mildly alkaline or moderately alkaline.

Hazton Series

The Hazton series consists of shallow, well drained soils that formed in residuum derived from granite. These soils are on mountain slopes and ridges. Slopes are 10 to 30 percent. Elevation is 6,000 to 7,500 feet. The average annual precipitation is 20 to 25 inches, and the average annual temperature is 41 to 43 degrees F. The frost-free period is 50 to 80 days.

These soils are loamy, mixed Lithic Cryoborolls.

Typical pedon of Hazton gravelly sandy loam, in an area of Lucky-Burgess-Hazton association, 8 to 30 percent slopes, SE¹/₄, NW¹/₄ sec. 9, T. 53 N., R. 84 W.

A—0 to 8 inches; dark brown (10YR 3/3) gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; moderate fine granular structure; soft, very friable, nonsticky and nonplastic; common fine and very fine roots; 20 percent gravel; neutral; clear smooth boundary.

C—8 to 14 inches; brown (10YR 5/3) gravelly sandy loam, dark brown (10YR 4/3) moist; weak medium granular structure; soft, very friable,

nonsticky and nonplastic; 30 percent gravel; neutral; abrupt smooth boundary.

R—14 inches; hard granite.

The depth to bedrock ranges from 10 to 20 inches. The content of rock fragments throughout the profile ranges from 15 to 35 percent. Reaction is slightly acid or neutral throughout the profile.

The C horizon is gravelly sandy loam or gravelly coarse sandy loam.

Hesperus Variant

The Hesperus Variant consists of very deep, somewhat poorly drained soils that formed in alluvium derived from sedimentary rock. These soils are in narrow, elongated drainageways. Slopes are 10 to 25 percent. Elevation is 4,000 to 5,500 feet. The average annual precipitation is 15 to 19 inches, and the average annual temperature is 43 to 45 degrees F. The frost-free period is 80 to 100 days.

These soils are fine-loamy, mixed Pachic Argiborolls.

Typical pedon of Hesperus Variant silt loam, in an area of Hesperus Variant-Reget association, 10 to 65 percent slopes, SE¹/₄, SW¹/₄ sec. 32, T. 53 N., R. 84 W., in the Banner area:

A—0 to 3 inches; very dark grayish brown (10YR 3/2) silt loam, very dark brown (10YR 2/2) moist; weak fine granular structure; soft, very friable, slightly sticky and plastic; many fine and very fine roots; neutral; clear smooth boundary.

Bt1—3 to 8 inches; dark grayish brown (10YR 4/2) silty clay loam, very dark brown (10YR 2/2) moist; moderate medium subangular blocky structure parting to moderate fine subangular blocky; slightly hard, very friable, slightly sticky and plastic; common fine and medium roots; few faint clay films on faces of peds; 5 percent coarse arkosic sand grains; neutral; clear smooth boundary.

Bt2—8 to 12 inches; dark brown (10YR 4/3) silty clay loam, very dark grayish brown (10YR 3/2) moist; moderate fine prismatic structure parting to moderate medium subangular blocky; slightly hard, very friable, slightly sticky and plastic; common fine and medium roots; few faint clay films on faces of peds; neutral; clear smooth boundary.

Bt3—12 to 18 inches; dark yellowish brown (10YR 4/4) clay loam, dark brown (10YR 3/3) moist; moderate medium subangular blocky structure parting to moderate fine subangular blocky; hard, friable, slightly sticky and plastic; common

distinct clay films on faces of peds; neutral; clear smooth boundary.

Bt4—18 to 31 inches; yellowish brown (10YR 5/4) clay loam, dark brown (10YR 4/3) moist; common medium distinct gray (10YR 5/1) mottles; moderate coarse prismatic structure parting to moderate medium angular blocky; hard, friable, slightly sticky and plastic; common distinct clay films on faces of peds; neutral; clear smooth boundary.

Bt5—31 to 49 inches; yellowish brown (10YR 5/4) sandy clay loam, dark yellowish brown (10YR 4/4) moist; few fine faint yellowish brown (10YR 5/6) mottles; strong medium prismatic structure parting to strong medium subangular blocky; extremely hard, firm, slightly sticky and plastic; many distinct clay films on faces of peds; neutral; clear smooth boundary.

C1—49 to 57 inches; light yellowish brown (10YR 6/4) sandy loam, yellowish brown (10YR 5/4) moist; moderate coarse subangular blocky structure; hard, friable, slightly sticky and nonplastic; neutral; abrupt wavy boundary.

2C2—57 to 60 inches; light yellowish brown (10YR 6/4) extremely bouldery coarse sand, yellowish brown (10YR 5/4) moist; single grain; loose, nonsticky and nonplastic; 45 percent stones and boulders, 15 percent cobbles, and 10 percent gravel; neutral.

The depth to the 2C2 horizon ranges from 40 to 60 inches. Reaction is slightly acid to mildly alkaline throughout the profile.

The Bt horizon is silty clay loam, sandy clay loam, or clay loam. The content of rock fragments ranges from 0 to 15 percent. The content of coarse and medium arkosic sand ranges from 5 to 25 percent in the fine-earth fraction.

Hiland Series

The Hiland series consists of very deep, well drained soils that formed in alluvium and eolian deposits derived from sandstone. These soils are on alluvial fans and hills. Slopes are 3 to 15 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are fine-loamy, mixed, mesic Ustollic Haplargids.

Typical pedon of Hiland fine sandy loam, in an area of Hiland-Bowbac association, 3 to 15 percent slopes, SE¹/₄, SE¹/₄ sec. 21, T. 55 N., R. 79 W.

A—0 to 4 inches; light brownish gray (10YR 6/2) fine sandy loam, dark brown (10YR 3/3) moist; moderate thin platy structure; soft, friable, slightly sticky and nonplastic; many fine and very fine roots; neutral; clear smooth boundary.

Bt1—4 to 17 inches; brown (10YR 5/3) sandy clay loam, dark yellowish brown (10YR 3/4) moist; strong coarse prismatic structure parting to strong coarse and medium angular blocky; slightly hard, friable, sticky and plastic; few fine and very fine roots; many faint and few distinct clay films on faces of peds; mildly alkaline; clear smooth boundary.

Bt2—17 to 30 inches; light yellowish brown (10YR 6/4) sandy clay loam, dark yellowish brown (10YR 4/4) moist; moderate coarse prismatic structure parting to strong coarse and medium subangular blocky; hard, friable, sticky and plastic; few fine and very fine roots; common faint clay films on faces of peds; mildly alkaline; clear smooth boundary.

Bk—30 to 60 inches; pale brown (10YR 6/3) sandy loam, dark grayish brown (10YR 4/2) moist; moderate medium and fine subangular blocky structure; soft, friable, slightly sticky and slightly plastic; common fine masses of secondary calcium carbonate; strongly effervescent; moderately alkaline.

The A horizon is sandy loam or fine sandy loam. It is neutral or mildly alkaline.

The Bk horizon is sandy loam or fine sandy loam. It is moderately alkaline or strongly alkaline.

Hilight Series

The Hilight series consists of shallow, well drained soils that formed in residuum and colluvium derived from shale. These soils are on hills. Slopes are 2 to 60 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are clayey, montmorillonitic, nonacid, mesic, shallow Ustic Torriorthents.

Typical pedon of Hilight clay loam, in an area of Samday-Hilight clay loams, 2 to 45 percent slopes, SW¹/₄, NE¹/₄ sec. 12, T. 57 N., R. 86 W.

A—0 to 1 inch; light gray (2.5Y 7/2) clay loam, gray (2.5Y 6/1) moist; moderate fine granular structure; soft, friable, sticky and plastic; common fine roots; moderately alkaline; clear smooth boundary.

C—1 to 16 inches; light gray (2.5Y 7/2) silty clay, grayish brown (2.5Y 5/2) moist; massive; extremely hard, very firm, very sticky and very plastic; common fine roots; moderately alkaline; clear smooth boundary.

Cr—16 inches; soft, platy shale.

The depth to bedrock ranges from 10 to 20 inches. The content of rock fragments throughout the profile ranges from 0 to 15 percent but is typically less than 10 percent. Reaction is mildly alkaline or moderately alkaline throughout the profile.

The A horizon has hue of 10YR or 2.5Y. It is clay or clay loam.

The C horizon has hue of 10YR or 2.5Y. It is silty clay or clay.

Jonpol Series

The Jonpol series consists of moderately deep, well drained soils that formed in residuum, alluvium, and colluvium derived from shale and sandstone. These soils are on low relief hillslopes and mesa tops. Slopes are 0 to 25 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 15 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are fine, montmorillonitic, mesic Aridic Paleustolls.

Typical pedon of Jonpol loam, in an area of Jonpol-Platmak association, 0 to 9 percent slopes, NW¹/₄, SW¹/₄ sec. 29, T. 54 N., R. 83 W.

A—0 to 3 inches; dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2) moist; moderate thin and very thin platy structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and very fine roots; neutral; abrupt smooth boundary.

Bt—3 to 15 inches; dark brown (10YR 4/3) clay, very dark grayish brown (10YR 3/2) moist; strong medium and coarse prismatic structure parting to medium and coarse angular blocky; hard, firm, sticky and plastic; few fine and very fine roots; many prominent clay films on faces of peds; moderately alkaline; clear wavy boundary.

Btk—15 to 19 inches; yellowish brown (10YR 5/4) clay loam, dark brown (10YR 4/3) moist; moderate medium angular blocky structure parting to moderate fine and very fine subangular blocky; hard, firm, slightly sticky and plastic; few fine and very fine roots; common distinct clay films on faces of peds; many coarse soft irregular

masses of calcium carbonate; strongly effervescent; moderately alkaline; clear wavy boundary.

Bk—19 to 32 inches; pale brown (10YR 6/3) loam, dark yellowish brown (10YR 4/4) moist; moderate medium and coarse subangular blocky structure; slightly hard, firm, sticky and plastic; few fine and very fine roots to a depth of 23 inches; many coarse soft irregular masses and common medium seams and filaments of secondary calcium carbonate; violently effervescent; moderately alkaline; abrupt smooth boundary.

Cr—32 inches; varicolored, weakly consolidated, strongly effervescent shale interbedded with sandstone and siltstone.

The depth to bedrock ranges from 20 to 40 inches. Hue is 5Y to 7.5YR throughout the profile.

The A horizon is neutral or mildly alkaline.

The Bt horizon is clay loam or clay. It is mildly alkaline or moderately alkaline.

The Bk horizon is loam or clay loam. It is mildly alkaline or moderately alkaline.

Kirtley Series

The Kirtley series consists of moderately deep, well drained soils that formed in alluvium and residuum derived from shale. These soils are on hills. Slopes are 3 to 15 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 15 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are fine-loamy, mixed, mesic Aridic Argiustolls.

Typical pedon of Kirtley loam, in an area of Harlan-Kirtley association, 3 to 9 percent slopes, NE¹/₄, SE¹/₄ sec. 3, T. 55 N., R. 81 W.

A—0 to 1 inch; reddish brown (5YR 4/3) loam, dark reddish brown (5YR 3/3) moist; moderate fine and very fine granular structure; soft, very friable, slightly sticky and slightly plastic; many fine and very fine roots; mildly alkaline; clear smooth boundary.

BA—1 to 7 inches; dark reddish brown (5YR 3/4) loam, dark reddish brown (5YR 3/3) moist; moderate medium subangular blocky structure parting to moderate fine subangular blocky; slightly hard, very friable, slightly sticky and slightly plastic; common very fine roots; common faint clay films on faces of peds; mildly alkaline; clear smooth boundary.

Bt—7 to 14 inches; reddish brown (5YR 4/4) clay loam, dark reddish brown (5YR 3/3) moist; moderate coarse prismatic structure parting to moderate medium subangular blocky; hard, friable, slightly sticky and plastic; few very fine roots; common distinct clay films on faces of peds; mildly alkaline; clear smooth boundary.

Bk1—14 to 24 inches; yellowish red (5YR 5/6) clay loam, reddish brown (5YR 4/4) moist; moderate coarse subangular blocky structure parting to moderate medium subangular blocky; hard, friable, slightly sticky and plastic; common fine and medium threads of secondary calcium carbonate; strongly effervescent; moderately alkaline; clear smooth boundary.

Bk2—24 to 31 inches; yellowish red (5YR 5/6) clay loam, reddish brown (5YR 4/4) moist; weak coarse subangular blocky structure; hard, friable, sticky and plastic; common medium and coarse masses of secondary calcium carbonate; strongly effervescent; moderately alkaline; abrupt smooth boundary.

Cr—31 inches; light gray soft platy shale; slightly effervescent; thin coatings of calcium carbonate on the undersides of plates.

The depth to bedrock ranges from 20 to 40 inches.

The A horizon is neutral or mildly alkaline.

The Bt horizon is clay loam or loam.

The Bk horizon has hue of 5YR or 7.5YR. It is clay loam or loam. It is moderately alkaline or strongly alkaline. The calcium carbonate equivalent is 5 to 12 percent.

Kishona Series

The Kishona series consists of very deep, well drained soils that formed in alluvium derived from sedimentary rock. These soils are on alluvial fans, hillslopes, and terraces. Slopes are 0 to 15 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are fine-loamy, mixed (calcareous), mesic Ustic Torriorthents.

Typical pedon of Kishona loam, in an area of Kishona-Cambria complex, 0 to 3 percent slopes, NW¹/₄, NW¹/₄ sec. 2, T. 57 N., R. 84 W.

A—0 to 1 inch; light yellowish brown (10YR 6/4) loam, dark yellowish brown (10YR 4/4) moist; weak fine platy structure; soft, friable, slightly sticky and slightly plastic; common fine and medium roots;

slightly effervescent; moderately alkaline; clear smooth boundary.

AB—1 to 8 inches; light yellowish brown (10YR 6/4) loam, dark yellowish brown (10YR 4/4) moist; weak medium and coarse subangular blocky structure; slightly hard, friable, sticky and slightly plastic; common fine and medium roots; few fine threads of segregated calcium carbonate; strongly effervescent; moderately alkaline; clear wavy boundary.

Bk—8 to 60 inches; very pale brown (10YR 7/4) loam, yellowish brown (10YR 5/4) moist; massive; hard, friable, sticky and slightly plastic; few fine roots; common fine soft masses and threads of segregated calcium carbonate; strongly effervescent; 5 percent porcellanite fragments; moderately alkaline.

The content of rock fragments throughout the profile is typically less than 10 percent but ranges from 0 to 15 percent. The exchangeable sodium percentage throughout the profile is commonly less than 3, but in some pedons it is as much as 15 in the Bk or C horizon below a depth of 30 inches.

The A horizon has hue of 10YR or 2.5Y. It is fine sandy loam or loam. It is mildly alkaline or moderately alkaline.

The Bk horizon or the C horizon, if it occurs, has hue of 10YR or 2.5Y. It is loam, clay loam, or silty clay loam. In some pedons it is stratified. Reaction is moderately alkaline or strongly alkaline.

Korchea Series

The Korchea series consists of very deep, well drained soils that formed in alluvium derived from sedimentary rock. These soils are on flood plains. Slopes are 0 to 3 percent. Elevation is 3,900 to 4,200 feet. The average annual precipitation is 15 to 19 inches, and the average annual temperature is 43 to 45 degrees F. The frost-free period is 80 to 100 days.

The Korchea series consists of fine-loamy, mixed (calcareous), frigid Mollic Ustifluvents. The Korchea soils in this survey area are taxadjuncts to the Korchea series because they are fine-loamy, mixed Fluventic Haploborolls and have a mollic epipedon.

Typical pedon of Korchea loam, in an area of Savage-Korchea loams, 0 to 3 percent slopes, NE¹/₄, SW¹/₄ sec. 21, T. 58 N., R. 87 W., in the Parkman area:

A1—0 to 4 inches; grayish brown (2.5Y 5/2) loam, very dark grayish brown (2.5Y 3/2) moist; moderate fine and medium granular structure;

slightly hard, very friable, slightly sticky and slightly plastic; many fine and very fine roots; mildly alkaline; clear smooth boundary.

A2—4 to 13 inches; grayish brown (2.5Y 5/2) loam, very dark grayish brown (2.5Y 3/2) moist; weak medium subangular blocky structure; hard, very friable, slightly sticky and slightly plastic; common fine and very fine roots; slightly effervescent; moderately alkaline; gradual wavy boundary.

Bk1—13 to 21 inches; light yellowish brown (2.5Y 6/4) silt loam, light olive brown (2.5Y 5/4) moist; weak coarse subangular blocky structure; hard, very friable, slightly sticky and slightly plastic; few fine masses of secondary calcium carbonate; strongly effervescent; moderately alkaline; gradual wavy boundary.

Bk2—21 to 37 inches; light brownish gray (2.5Y 6/2) loam, grayish brown (2.5Y 5/2) moist; few thin stratifications of black shale material; few fine faint relict light olive brown (2.5Y 5/4) mottles; massive; hard, very friable, slightly sticky and slightly plastic; common fine masses of secondary calcium carbonate; strongly effervescent; moderately alkaline; gradual wavy boundary.

Bk3—37 to 60 inches; grayish brown (2.5Y 5/2) very fine sandy loam, dark grayish brown (2.5Y 4/2) moist; few thin strata of red silt loam; few fine faint relict light olive brown (2.5Y 5/4) mottles; massive; slightly hard, friable, slightly sticky and nonplastic; common fine masses of secondary calcium carbonate; strongly effervescent; moderately alkaline.

The A horizon is mildly alkaline or moderately alkaline.

The C horizon, if it occurs, is stratified with layers of loam, silt loam, or very fine sandy loam. Layers of coarser or finer textures occur in some pedons at a depth of 40 to 60 inches.

Lambman Series

The Lambman series consists of shallow, well drained soils that formed in alluvium and residuum derived from sandstone. These soils are on hills. Slopes are 3 to 15 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 15 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are loamy, mixed, mesic, shallow Aridic Argiustolls.

Typical pedon of Lambman sandy loam, in an area of Lambman-Hargreave association, 3 to 15 percent slopes, SW¹/₄, SE¹/₄ sec. 21, T. 54 N., R. 82 W.

A—0 to 1 inch; dark brown (10YR 4/3) sandy loam, very dark brown (10YR 3/2) moist; weak very fine subangular blocky structure parting to weak very fine granular; soft, very friable, nonsticky and nonplastic; common fine and medium roots; mildly alkaline; clear smooth boundary.

Bt—1 to 8 inches; brown (10YR 5/3) sandy clay loam, dark brown (10YR 3/3) moist; moderate coarse prismatic structure parting to moderate medium subangular blocky; soft, friable, slightly sticky and slightly plastic; common fine and medium roots; few faint clay films on faces of peds; moderately alkaline; gradual wavy boundary.

Bk—8 to 15 inches; very pale brown (10YR 7/4) sandy clay loam, pale brown (10YR 6/3) moist; moderate coarse prismatic structure parting to moderate coarse and medium subangular blocky; soft, friable, slightly sticky and slightly plastic; common fine and medium seams and masses of secondary calcium carbonate; strongly effervescent; moderately alkaline; clear smooth boundary.

Cr—15 inches; soft, effervescent, fine grained sandstone.

The depth to bedrock ranges from 10 to 20 inches.

The Bt horizon is mildly alkaline or moderately alkaline.

The Bk horizon is sandy clay loam, sandy loam, fine sandy loam, or loamy sand. It is moderately alkaline or strongly alkaline.

Lucky Series

The Lucky series consists of moderately deep, well drained soils that formed in residuum and colluvium derived from granite. These soils are on dip slopes. Slopes are 8 to 25 percent. Elevation is 6,000 to 7,500 feet. The average annual precipitation is 20 to 25 inches, and the average annual temperature is 41 to 43 degrees F. The frost-free period is 50 to 80 days.

These soils are fine-loamy, mixed Argic Cryoborolls.

Typical pedon of Lucky gravelly loam, in an area of Lucky-Burgess-Hazton association, 8 to 30 percent slopes, SW¹/₄, NW¹/₄ sec. 9, T. 53 N., R. 84 W.

A—0 to 5 inches; dark brown (10YR 4/3) gravelly loam, very dark grayish brown (10YR 3/2) moist; weak medium and fine granular structure; soft,

friable, slightly sticky and slightly plastic; common fine and very fine roots; 20 percent gravel; slightly acid; clear smooth boundary.

Bt1—5 to 11 inches; dark yellowish brown (10YR 4/4) gravelly sandy clay loam, dark brown (10YR 3/3) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine and very fine roots; few faint clay films on faces of peds; 20 percent gravel; slightly acid; clear smooth boundary.

Bt2—11 to 17 inches; yellowish brown (10YR 5/6) gravelly sandy clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common faint and few distinct clay films on faces of peds; 30 percent gravel; slightly acid; gradual wavy boundary.

C—17 to 24 inches; light yellowish brown (10YR 6/4) very gravelly sandy loam, yellowish brown (10YR 5/6) moist; single grain; loose, nonsticky and nonplastic; 45 percent gravel; slightly acid; abrupt smooth boundary.

R—24 inches; fractured, hard granite.

The depth to bedrock ranges from 20 to 40 inches. The content of rock fragments ranges from 15 to 35 percent in the control section.

Moskee Series

The Moskee series consists of very deep, well drained soils that formed in alluvium, colluvium, and eolian deposits derived from sandstone. These soils are on alluvial fans, terraces, and hillslopes. Slopes are 0 to 45 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are fine-loamy, mixed, mesic Aridic Argiustolls.

Typical pedon of Moskee fine sandy loam, in an area of Moskee-Noden fine sandy loams, 9 to 15 percent slopes, NW¹/₄, SW¹/₄ sec. 27, T. 54 N., R. 82 W.

A—0 to 1 inch; dark brown (10YR 4/3) fine sandy loam, very dark grayish brown (10YR 3/2) moist; very weak very fine granular structure; soft, very friable, nonsticky and nonplastic; many fine and very fine roots; neutral; clear smooth boundary.

Bt1—1 to 3 inches; dark brown (10YR 4/3) sandy clay loam, very dark grayish brown (10YR 3/2) moist; weak coarse subangular blocky structure parting to moderate medium subangular blocky; slightly hard, friable, slightly sticky and plastic; many fine

and very fine roots; few faint clay films on faces of peds; mildly alkaline; clear smooth boundary.

Bt2—3 to 16 inches; dark brown (10YR 4/3) sandy clay loam, very dark grayish brown (10YR 3/2) moist; moderate coarse prismatic structure parting to moderate medium subangular blocky; slightly hard, friable, slightly sticky and plastic; few fine and very fine roots; many distinct clay films on faces of peds; mildly alkaline; gradual smooth boundary.

Bk—16 to 33 inches; light gray (10YR 7/2) fine sandy loam, yellowish brown (10YR 5/4) moist; weak coarse prismatic structure parting to weak medium subangular blocky; slightly hard, friable, nonsticky and nonplastic; few fine and very fine roots; few fine seams of secondary calcium carbonate; strongly effervescent; moderately alkaline; gradual smooth boundary.

C—33 to 60 inches; light gray (10YR 7/1) fine sandy loam, pale brown (10YR 6/3) moist; massive; soft, very friable, nonsticky and nonplastic; disseminated calcium carbonate; strongly effervescent; moderately alkaline.

The A horizon is fine sandy loam or sandy loam. It is neutral or mildly alkaline.

The Bt horizon is neutral or mildly alkaline.

The Bk horizon has hue of 10YR or 2.5Y. It is fine sandy loam, sandy loam, or sandy clay loam.

The C horizon has hue of 2.5Y or 10YR. It is sandy loam, fine sandy loam, or sandy clay loam. Some pedons do not have a C horizon within a depth of 60 inches.

Nathrop Series

The Nathrop series consists of moderately deep, well drained soils that formed in residuum and colluvium derived from limestone. These soils are on mountain dip slopes. Slopes are 10 to 40 percent. Elevation is 5,500 to 7,500 feet. The average annual precipitation is 19 to 25 inches, and the average annual temperature is 41 to 43 degrees F. The frost-free period is 50 to 80 days.

These soils are loamy-skeletal, mixed Argic Cryoborolls.

Typical pedon of Nathrop loam, in an area of Nathrop-Passcreek-Starley association, 3 to 40 percent slopes, NE¹/₄, NW¹/₄ sec. 2, T. 57 N., R. 89 W.

A—0 to 6 inches; grayish brown (10YR 5/2) loam, very dark brown (10YR 2/2) moist; moderate medium granular structure; soft, very friable, slightly sticky and slightly plastic; common fine and very fine roots; neutral; clear wavy boundary.

Bt—6 to 13 inches; grayish brown (10YR 5/2) very cobbly clay loam, very dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure parting to moderate fine subangular blocky; hard, friable, slightly sticky and plastic; common distinct clay films on faces of peds; 45 percent rock fragments, predominantly cobbles; neutral; clear wavy boundary.

Bk1—13 to 21 inches; pale brown (10YR 6/3) very cobbly clay loam, brown (10YR 5/3) moist; weak medium subangular blocky structure; hard, friable, sticky and plastic; common fine and medium masses and threads of secondary calcium carbonate; strongly effervescent; 45 percent rock fragments, predominantly cobbles; mildly alkaline; clear wavy boundary.

Bk2—21 to 39 inches; very pale brown (10YR 7/4) very cobbly clay loam, light yellowish brown (10YR 6/4) moist; massive; hard, friable, sticky and plastic; many medium and coarse threads and soft masses of secondary calcium carbonate and coatings of calcium carbonate on the undersides of rock fragments; strongly effervescent; 60 percent rock fragments, predominantly cobbles; moderately alkaline; abrupt wavy boundary.

R—39 inches; fractured limestone.

The depth to bedrock ranges from 20 to 40 inches. The content of rock fragments in the Bt and Bk horizons ranges from 35 to 75 percent.

The Bk horizon is mildly alkaline or moderately alkaline.

Nesda Series

The Nesda series consists of very deep, somewhat poorly drained or well drained soils that formed in alluvium derived from limestone, sandstone, and granite. These soils are on terraces and flood plains. Slopes are 0 to 3 percent. Elevation is 3,800 to 5,500 feet. The average annual precipitation is 15 to 19 inches, and the average annual temperature is 43 to 45 degrees F. The frost-free period is 80 to 100 days.

These soils are sandy-skeletal, mixed Fluventic Haploborolls.

Typical pedon of Nesda stony silt loam, 0 to 3 percent slopes, NE¹/₄, SE¹/₄ sec. 24, T. 56 N., R. 87 W.

A—0 to 10 inches; very dark grayish brown (10YR 3/2) stony silt loam, very dark brown (10YR 2/2) moist; weak medium and fine subangular blocky structure; soft, very friable, slightly sticky and

slightly plastic; many fine and very fine roots; slightly effervescent; 30 percent rock fragments, predominantly stones; mildly alkaline; clear smooth boundary.

- 2C1—10 to 30 inches; pale brown (10YR 6/3) very gravelly loamy sand, light yellowish brown (10YR 6/4) moist; single grain; loose, nonsticky and nonplastic; common thin coatings of calcium carbonate on gravel; strongly effervescent; 35 percent gravel and 5 percent cobbles and stones; moderately alkaline; gradual wavy boundary.
- 2C2—30 to 43 inches; pale brown (10YR 6/3) very gravelly loamy sand, light yellowish brown (10YR 6/4) moist; common fine and medium distinct brownish yellow (10YR 6/8) mottles; single grain; loose, nonsticky and nonplastic; common thin coatings of calcium carbonate on gravel; strongly effervescent; 35 percent gravel and 5 percent cobbles and stones; moderately alkaline; clear wavy boundary.
- 3C—43 to 60 inches; yellowish red (5YR 5/6) extremely gravelly sand, yellowish red (5YR 4/8) moist; common fine and medium distinct yellow (10YR 7/6) mottles; single grain; loose, nonsticky and nonplastic; common thin calcium carbonate coatings on some gravel; slightly effervescent; 65 percent gravel; moderately alkaline.

The A horizon is mildly alkaline or moderately alkaline.

The C horizon generally has hue of 10YR to 5Y, but in some pedons it has hue of 5YR or 7.5YR below a depth of 40 inches. This horizon is very gravelly sand, extremely gravelly sand, or very gravelly loamy sand. It has 35 to 85 percent rock fragments. The rock fragments are mainly gravel, but some pedons have as much as 5 percent stones and 30 percent cobbles. Reaction is mildly alkaline to strongly alkaline.

Nesda Variant

The Nesda Variant consists of very deep, well drained soils that formed in alluvium derived from sedimentary rock. These soils are on flood plains and low terraces. Slopes are 0 to 3 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 15 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are sandy-skeletal, mixed, mesic Fluventic Haplustolls.

Typical pedon of Nesda Variant gravelly sandy loam, in an area of Nesda Variant-Havertel complex,

0 to 3 percent slopes, SE¹/₄, NW¹/₄ sec. 4, T. 54 N., R. 84 W.

- A—0 to 3 inches; dark brown (10YR 4/3) gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak very fine granular structure; soft, friable, nonsticky and nonplastic; many fine and very fine roots; slightly effervescent; 20 percent gravel; mildly alkaline; clear smooth boundary.
- AC—3 to 11 inches; brown (10YR 5/3) very gravelly sandy loam, dark brown (10YR 3/3) moist; weak fine granular structure; soft, friable, nonsticky and nonplastic; common fine and very fine roots; strongly effervescent; 40 percent rock fragments, predominantly gravel; moderately alkaline; gradual irregular boundary.
- C1—11 to 47 inches; light yellowish brown (10YR 6/4) very gravelly loamy sand, brown (10YR 5/3) moist; single grain; loose, nonsticky and nonplastic; strongly effervescent; 55 percent rock fragments, predominantly gravel; moderately alkaline; gradual irregular boundary.
- C2—47 to 60 inches; pale brown (10YR 6/3) extremely gravelly sand, yellowish brown (10YR 5/4) moist; single grain; loose, nonsticky and nonplastic; few thin coatings of secondary calcium carbonate on the undersides of pebbles; strongly effervescent; 75 percent rock fragments, predominantly gravel; moderately alkaline.

The A horizon is neutral or mildly alkaline.

The AC horizon typically is very gravelly sandy loam or very gravelly loamy sand. Some pedons contain thin layers of sand or layers that have stones and cobbles.

The C horizon has hue of 5YR to 10YR. It is commonly very gravelly loamy sand or extremely gravelly sand, but in some pedons it has thin layers of silt loam or sand or layers that have stones and cobbles. Reaction is mildly alkaline to strongly alkaline.

Nihill Series

The Nihill series consists of very deep, well drained soils formed in alluvium derived from sedimentary rock. These soils are on terraces, hillslopes, and terrace breaks. Slopes are 3 to 80 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are loamy-skeletal, mixed (calcareous), mesic Ustic Torriorthents.

Typical pedon of Nihill gravelly loam, in an area of Shingle-Nihill complex, moist, 3 to 80 percent slopes, SE¹/₄, SW¹/₄ sec. 32, T. 57 N., R. 86 W., in the Dayton area:

A—0 to 5 inches; dark brown (10YR 4/3) gravelly loam, very dark grayish brown (10YR 3/2) moist; weak very fine granular structure; soft, very friable, slightly sticky and slightly plastic; common fine and very fine roots; few thin coatings of calcium carbonate disseminated on gravel; strongly effervescent; 20 percent rock fragments, predominantly gravel; mildly alkaline; clear wavy boundary.

Bk1—5 to 29 inches; light yellowish brown (10YR 6/4) very gravelly clay loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; few very fine roots; few thin and moderately thick coatings of calcium carbonate disseminated on gravel; violently effervescent; 60 percent rock fragments, predominantly gravel; moderately alkaline; diffuse wavy boundary.

Bk2—29 to 60 inches; very pale brown (10YR 7/3) very gravelly sandy clay loam, light yellowish brown (10YR 6/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few thin coatings of secondary calcium carbonate on gravel; violently effervescent; 60 percent rock fragments, predominantly gravel; moderately alkaline.

The content of rock fragments in the control section ranges from 35 to 70 percent. The control section averages 15 to 27 percent clay.

The A horizon is mildly alkaline or moderately alkaline.

The Bk1 horizon has hue of 10YR or 2.5Y. It is very gravelly loam, very gravelly clay loam, or very gravelly sandy clay loam.

The Bk2 horizon is extremely gravelly sandy loam, very gravelly sandy clay loam, or very gravelly loam. Hue is 10YR or 2.5Y.

Noden Series

The Noden series consists of very deep, well drained soils that formed in alluvium derived from sandstone. These soils are on alluvial fans and hillslopes. Slopes are 0 to 15 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are fine-loamy, mixed, mesic Aridic Argiustolls.

Typical pedon of Noden fine sandy loam, in an area of Moskee-Noden fine sandy loams, 9 to 15 percent slopes, NE¹/₄, NW¹/₄ sec. 21, T. 54 N., R. 82 W.

A—0 to 2 inches; dark grayish brown (10YR 4/2) fine sandy loam, very dark grayish brown (10YR 3/2) moist; weak very fine granular structure; soft, very friable, nonsticky and nonplastic; many fine and very fine roots; neutral; clear smooth boundary.

Bt1—2 to 12 inches; dark grayish brown (10YR 4/2) sandy clay loam, very dark grayish brown (10YR 3/2) moist; moderate coarse prismatic structure parting to moderate coarse and medium subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; common fine and very fine roots; few faint clay films on faces of peds; neutral; gradual smooth boundary.

Bt2—12 to 23 inches; dark yellowish brown (10YR 4/4) sandy clay loam, dark yellowish brown (10YR 3/4) moist; strong medium prismatic structure parting to strong medium subangular blocky; hard, friable, slightly sticky and plastic; common distinct clay films on faces of peds; mildly alkaline; gradual smooth boundary.

BCt—23 to 30 inches; yellowish brown (10YR 5/4) sandy clay loam, dark brown (10YR 4/3) moist; moderate coarse subangular blocky structure; hard, friable, slightly sticky and plastic; few faint clay films on faces of peds; mildly alkaline; gradual smooth boundary.

C—30 to 60 inches; light yellowish brown (10YR 6/4) fine sandy loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; mildly alkaline.

The Bt horizon has hue of 10YR or 2.5Y. It is neutral or mildly alkaline.

The C horizon has hue of 10YR or 2.5Y. It is sandy loam or fine sandy loam. It is neutral or mildly alkaline.

Norbert Series

The Norbert series consists of shallow, well drained soils that formed in residuum and colluvium derived from shale. These soils are on hills. Slopes are 8 to 45 percent. Elevation is 3,500 to 5,500 feet. The average annual precipitation is 15 to 19 inches, and the average annual temperature is 43 to 45 degrees F. The frost-free period is 80 to 100 days.

These soils are clayey, montmorillonitic (calcareous), frigid, shallow Typic Ustorthents.

Typical pedon of Norbert clay, in an area of Norbert-Reget-Savar association, 3 to 35 percent slopes, SW¹/₄, SW¹/₄ sec. 17, T. 58 N., R. 86 W.

A—0 to 1 inch; light brownish gray (2.5Y 6/2) clay, dark grayish brown (2.5Y 4/2) moist; moderate medium platy structure; hard, firm, slightly sticky and plastic; common fine and medium roots; moderately alkaline; clear smooth boundary.

AC—1 to 11 inches; grayish brown (2.5Y 5/2) clay, dark grayish brown (2.5Y 4/2) moist; moderate coarse subangular blocky structure; extremely hard, firm, slightly sticky and plastic; few fine and medium roots; slightly effervescent; moderately alkaline; clear smooth boundary.

C—11 to 19 inches; light brownish gray (2.5Y 6/2) clay, grayish brown (2.5Y 5/2) moist; massive; extremely hard, firm, slightly sticky and plastic; common medium seams of calcium carbonate; strongly effervescent; moderately alkaline; clear smooth boundary.

Cr—19 inches; soft, platy shale containing common small ironstone fragments and seams of calcium carbonate.

The depth to bedrock ranges from 10 to 20 inches. The C horizon is clay or silty clay.

Nuncho Series

The Nuncho series consists of very deep, well drained soils that formed in alluvium derived from sedimentary rock. These soils are on terraces, alluvial fans, and hillslopes. Slopes are 0 to 15 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 15 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are fine, montmorillonitic, mesic Aridic Argiustolls.

Typical pedon of Nuncho loam, in an area of Nuncho-Emigrant association, 9 to 15 percent slopes, NE¹/₄, NE¹/₄ sec. 33, T. 54 N., R. 82 W.

A—0 to 2 inches; grayish brown (10YR 5/2) loam, very dark brown (10YR 2/2) moist; moderate very fine granular structure; soft, very friable, slightly sticky and plastic; many very fine roots; mildly alkaline; clear smooth boundary.

Bt1—2 to 11 inches; grayish brown (10YR 5/2) clay loam, very dark grayish brown (10YR 3/2) moist; moderate coarse prismatic structure parting to moderate medium subangular blocky; slightly

hard, friable, sticky and plastic; common very fine and fine roots; common distinct clay films on faces of peds; mildly alkaline; clear smooth boundary.

Bt2—11 to 35 inches; brown (10YR 5/3) clay loam, dark yellowish brown (10YR 3/4) moist; strong medium prismatic structure parting to strong medium and fine angular blocky; hard, firm, sticky and plastic; many prominent clay films on faces of peds; 10 percent porcellanite gravel; mildly alkaline; clear smooth boundary.

Bk1—35 to 43 inches; very pale brown (10YR 7/3) clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium angular blocky structure; hard, firm, sticky and plastic; many fine threads and masses of secondary calcium carbonate; strongly effervescent; moderately alkaline; clear smooth boundary.

Bk2—43 to 60 inches; very pale brown (10YR 7/3) clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium and coarse subangular blocky structure; hard, firm, sticky and plastic; many medium threads and masses of secondary calcium carbonate; strongly effervescent; moderately alkaline.

The A horizon is loam, sandy clay loam, or clay loam. It is slightly acid to mildly alkaline.

The Bt horizon is clay loam, clay, or sandy clay. It is neutral or mildly alkaline.

The Bk horizon is clay loam, sandy clay loam, or loam.

Some pedons have a C horizon below a depth of 40 inches. This horizon is sandy loam or loamy sand.

Nuncho Variant

The Nuncho Variant consists of very deep, somewhat poorly drained soils that formed in alluvium derived from shale. These soils are on flood plains, terraces, and alluvial fans. Slopes are 0 to 6 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 15 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are fine, montmorillonitic, mesic Aridic Argiustolls.

Typical pedon of Nuncho Variant clay loam, 0 to 6 percent slopes, SE¹/₄, SW¹/₄ sec. 21, T. 57 N., R. 86 W., in the Columbus Creek area:

Ap—0 to 9 inches; grayish brown (10YR 5/2) clay loam, very dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure

parting to strong fine and very fine subangular blocky; hard, friable, slightly sticky and plastic; many fine and very fine roots; mildly alkaline; abrupt smooth boundary.

BAt—9 to 14 inches; dark grayish brown (10YR 4/2) clay, very dark grayish brown (10YR 3/2) moist; strong medium subangular blocky structure parting to strong fine subangular blocky; extremely hard, firm, slightly sticky and plastic; common fine and very fine roots; common distinct clay films on faces of peds; mildly alkaline; abrupt smooth boundary.

Bt—14 to 19 inches; brown (10YR 5/3) clay, dark brown (10YR 3/3) moist; strong medium prismatic structure parting to strong medium and fine angular blocky; extremely hard, firm, sticky and plastic; few fine roots; many prominent clay films on faces of peds; mildly alkaline; clear smooth boundary.

Btk1—19 to 28 inches; brown (10YR 5/3) clay loam, dark yellowish brown (10YR 3/4) moist; strong fine prismatic structure parting to strong medium subangular blocky; very hard, firm, sticky and plastic; many prominent clay films on faces of peds; common fine and medium soft masses of secondary calcium carbonate; strongly effervescent; strongly alkaline; clear smooth boundary.

Btk2—28 to 44 inches; grayish brown (10YR 5/2) clay, dark yellowish brown (10YR 3/4) moist; many fine and medium prominent dark yellowish brown (10YR 4/6) mottles; strong coarse subangular blocky structure parting to strong medium subangular blocky; extremely hard, firm, slightly sticky and plastic; many prominent clay films on faces of peds; many fine and medium soft masses of secondary calcium carbonate; strongly effervescent; moderately alkaline; clear smooth boundary.

Btk3—44 to 60 inches; brown (10YR 5/3) clay loam, dark brown (10YR 3/3) moist; many fine prominent dark yellowish brown (10YR 4/6) mottles; moderate coarse subangular blocky structure; extremely hard, friable, sticky and plastic; common distinct clay films on faces of peds; few fine soft masses of secondary calcium carbonate; strongly effervescent; moderately alkaline.

The A horizon is neutral or mildly alkaline.

The Bt horizon is clay or silty clay. It is mildly alkaline or moderately alkaline.

The Bk horizon is dominantly clay, silty clay, or clay loam. In some pedons, however, it has a few

thin strata of sandy or silty material. Reaction is moderately alkaline or strongly alkaline. The calcium carbonate equivalent is 4 to 14 percent.

Owen Creek Series

The Owen Creek series consists of moderately deep, well drained soils that formed in residuum and colluvium derived from interbedded shale and limestone. These soils are on mountain slopes. Slopes are 15 to 30 percent. Elevation is 7,000 to 8,000 feet. The average annual precipitation is 18 to 22 inches, and the average annual temperature is 40 to 42 degrees F. The frost-free period is 50 to 80 days.

These soils are fine, montmorillonitic Argic Cryoborolls.

Typical pedon of Owen Creek clay loam, in an area of Owen Creek-Echemoor-Bynum association, 9 to 30 percent slopes, SW¹/₄, SE¹/₄ sec. 34, T. 55 N., R. 86 W.

A—0 to 3 inches; very dark grayish brown (10YR 3/2) clay loam, very dark brown (10YR 2/2) moist; moderate medium granular structure; soft, friable, sticky and plastic; many fine and very fine roots; neutral; gradual irregular boundary.

Bt1—3 to 9 inches; dark grayish brown (10YR 4/2) clay, very dark grayish brown (10YR 3/2) moist; moderate medium prismatic structure parting to strong medium and fine angular blocky; hard, firm, sticky and plastic; common fine and medium roots; many distinct clay films on faces of peds; mildly alkaline; clear smooth boundary.

Bt2—9 to 18 inches; yellowish brown (10YR 5/4) clay, dark yellowish brown (10YR 4/4) moist; strong fine prismatic structure parting to strong fine angular blocky; hard, firm, sticky and plastic; common fine and medium roots; many prominent clay films on faces of peds; mildly alkaline; gradual wavy boundary.

Bk—18 to 29 inches; very pale brown (10YR 7/3) channery clay loam, brown (10YR 5/3) moist; massive; hard, firm, sticky and plastic; common fine threads and coatings of calcium carbonate on rock fragments; strongly effervescent; 30 percent channers; moderately alkaline; gradual wavy boundary.

Cr—29 inches; interbedded, soft shale and limestone.

The depth to bedrock ranges from 20 to 40 inches.

The Bk horizon has a calcium carbonate equivalent of 6 to 14 percent. It is channery clay loam or channery clay.

Parmleed Series

The Parmleed series consists of moderately deep, well drained soils that formed in residuum, colluvium, and alluvium derived from shale. These soils are on hills and tablelands. Slopes are 0 to 25 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are fine, montmorillonitic, mesic Ustollic Paleargids.

Typical pedon of Parmleed sandy loam, in an area of Parmleed-Bidman association, moist, 3 to 9 percent slopes, 600 feet east and 100 feet south of the northwest corner of sec. 16, T. 57 N., R. 85 W.

A—0 to 6 inches; light brownish gray (10YR 6/2) sandy loam, dark grayish brown (10YR 4/2) moist; weak thin platy and moderate fine granular structure; slightly hard, very friable, nonsticky and nonplastic; neutral; abrupt smooth boundary.

E—6 to 7 inches; light gray (5Y 6/1) sandy loam, olive (5Y 5/3) moist; weak medium and thin platy structure; soft, very friable, nonsticky and nonplastic; neutral; abrupt smooth boundary.

Bt1—7 to 14 inches; dark grayish brown (10YR 4/2) clay, dark brown (10YR 4/3) moist; moderate medium and fine columnar structure parting to moderate medium and fine subangular blocky; hard, extremely firm, very sticky and very plastic; many prominent clay films on faces of peds; color of the upper part of columns same as that of the E horizon; mildly alkaline; clear smooth boundary.

Bt2—14 to 18 inches; grayish brown (10YR 5/2) clay, dark brown (10YR 4/3) moist; weak medium prismatic structure parting to weak medium subangular blocky; hard, extremely firm, very sticky and very plastic; common distinct clay films on faces of peds; mildly alkaline; clear smooth boundary.

Bk1—18 to 22 inches; pale brown (10YR 6/3) silty clay, brown (10YR 5/3) moist; weak coarse subangular blocky structure; slightly hard, firm, sticky and plastic; few fine spherical soft masses of disseminated calcium carbonate; strongly effervescent; moderately alkaline; gradual wavy boundary.

Bk2—22 to 30 inches; pale brown (10YR 6/3) clay loam, yellowish brown (10YR 5/3) moist; massive; slightly hard, firm, sticky and plastic; few fine spherical soft masses of disseminated calcium carbonate; strongly effervescent; moderately alkaline; gradual irregular boundary.

Bk3—30 to 39 inches; light yellowish brown (2.5Y 6/4) silt loam, light olive brown (2.5Y 5/6) moist; massive; slightly hard, friable, sticky and plastic; few fine irregularly shaped soft masses of disseminated calcium carbonate; strongly effervescent; 5 percent hard, sharp sandstone channers; moderately alkaline; gradual irregular boundary.

Cr—39 inches; light brownish gray to grayish brown, soft, effervescent shale.

The depth to bedrock ranges from 20 to 40 inches. Some pedons do not have an A horizon. Hue is 10YR or 2.5Y in the A and B horizons and 5Y to 10YR in the E horizon.

The A and E horizons are loam, very fine sandy loam, fine sandy loam, or sandy loam. They are neutral or mildly alkaline.

The Bt horizon is clay or clay loam. It is neutral or mildly alkaline.

The Bk horizon is silty clay, clay loam, or silt loam. It is moderately alkaline or strongly alkaline. It has a calcium carbonate equivalent of 6 to 14 percent.

Passcreek Series

The Passcreek series consists of moderately deep, well drained soils that formed in residuum and colluvium derived from limestone. These soils are on mountain slopes and alluvial fans. Slopes are 3 to 15 percent. Elevation is 5,500 to 7,500 feet. The average annual precipitation is 19 to 25 inches, and the average annual temperature is 41 to 43 degrees F. The frost-free period is 50 to 80 days.

These soils are fine-loamy, mixed Argic Cryoborolls.

Typical pedon of Passcreek loam, in an area of Nathrop-Passcreek-Starley association, 3 to 40 percent slopes, NE¹/₄, NW¹/₄ sec. 33, T. 54 N., R. 85 W.

A—0 to 7 inches; dark grayish brown (10YR 4/2) loam, very dark brown (10YR 2/2) moist; moderate medium granular structure; slightly hard, very friable, slightly sticky and slightly plastic; many fine and very fine roots; neutral; clear smooth boundary.

Bt—7 to 14 inches; dark yellowish brown (10YR 4/4) clay loam, dark yellowish brown (10YR 3/4) moist; strong medium subangular blocky structure parting to strong fine subangular blocky; hard, friable, slightly sticky and slightly plastic; many distinct clay films on faces of peds; mildly alkaline; clear wavy boundary.

Btk—14 to 20 inches; yellowish brown (10YR 5/4) gravelly clay loam, dark brown (10YR 4/3) moist; moderate medium subangular blocky structure; hard, friable, slightly sticky and plastic; common distinct clay films on faces of peds; few fine threads and many moderately thick coatings of secondary calcium carbonate on the undersides of pebbles; strongly effervescent; 25 percent gravel; moderately alkaline; clear wavy boundary.

Bk—20 to 34 inches; brown (10YR 5/3) very gravelly clay loam, dark grayish brown (10YR 4/2) moist; massive; hard, friable, slightly sticky and plastic; many fine and medium masses and threads and many moderately thick coatings of secondary calcium carbonate on the undersides of pebbles; strongly effervescent; 45 percent gravel; moderately alkaline; abrupt wavy boundary.

R—34 inches; hard limestone.

The depth to bedrock ranges from 20 to 40 inches. Hue is 10YR or 2.5Y throughout the profile.

The Bt horizon has a fine-earth texture of clay loam or loam. The content of rock fragments is 0 to 25 percent. Reaction is neutral or mildly alkaline.

The Bk horizon has a fine-earth texture of loam or clay loam. The content of rock fragments is 35 to 60 percent.

Peritsa Series

The Peritsa series consists of moderately deep, well drained soils that formed in residuum and colluvium derived from shale. These soils are on hills and uplifted dip slopes. Slopes are 9 to 25 percent. Elevation is 5,000 to 6,000 feet. The average annual precipitation is 15 to 19 inches, and the average annual temperature is 43 to 45 degrees F. The frost-free period is 80 to 100 days.

These soils are fine-silty, mixed Typic Haploborolls.

Typical pedon of Peritsa silt loam, in an area of Peritsa-Abac association, 9 to 35 percent slopes, SW¹/₄, SE¹/₄ sec. 26, T. 58 N., R. 89 W.

A—0 to 1 inch; weak red (2.5YR 4/2) silt loam, dusky red (2.5YR 3/2) moist; weak very fine platy structure; soft, very friable, slightly sticky and slightly plastic; many fine and very fine roots; neutral; clear smooth boundary.

AB—1 to 7 inches; reddish brown (2.5YR 5/3) silt loam, dusky red (2.5YR 3/2) moist; weak medium subangular blocky structure parting to moderate fine subangular blocky; slightly hard, very friable, slightly sticky and slightly plastic; common fine and medium roots; mildly alkaline; clear smooth boundary.

Bw—7 to 11 inches; red (2.5YR 5/6) silty clay loam, red (2.5YR 4/6) moist; moderate medium subangular blocky structure parting to strong fine and very fine subangular blocky; hard, friable, slightly sticky and plastic; common fine and medium roots; 5 percent limestone gravel; mildly alkaline; clear smooth boundary.

Bk1—11 to 21 inches; red (2.5YR 5/6) silt loam, red (2.5YR 4/6) moist; moderate coarse subangular blocky structure parting to moderate fine and very fine subangular blocky; hard, friable, sticky and plastic; few fine roots; many fine masses of secondary calcium carbonate; strongly effervescent; 5 percent limestone gravel; strongly alkaline; clear smooth boundary.

Bk2—21 to 32 inches; light red (2.5YR 6/6) silt loam, red (2.5YR 5/6) moist; moderate coarse subangular blocky structure; hard, friable, sticky and plastic; many fine and medium threads and masses of secondary calcium carbonate; strongly effervescent; 5 percent limestone gravel and soft shale fragments; strongly alkaline; clear smooth boundary.

Cr—32 inches; moderately soft, strongly effervescent, platy shale and limestone.

The depth to bedrock ranges from 20 to 40 inches. The content of rock fragments throughout the profile is typically less than 5 percent but ranges from 0 to 15 percent.

The Bw horizon is silty clay loam or silt loam. It is mildly alkaline or moderately alkaline.

The Bk horizon is silty clay loam or silt loam. It is moderately alkaline or strongly alkaline.

Platmak Series

The Platmak series consists of very deep, well drained soils that formed in colluvium and alluvium derived from shale and sandstone. These soils are on alluvial fans, terraces, and hillslopes. Slopes are 0 to 25 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are fine, montmorillonitic, mesic Aridic Paleustolls.

Typical pedon of Platmak loam, 3 to 6 percent slopes, SW¹/₄, NW¹/₄ sec. 29, T. 57 N., R. 83 W.

A—0 to 2 inches; brown (10YR 5/3) loam, very dark grayish brown (10YR 3/2) moist; weak medium and fine platy structure; soft, very friable, slightly sticky and plastic; many very fine roots; neutral; abrupt smooth boundary.

Bt—2 to 13 inches; dark yellowish brown (10YR 4/4) clay loam, dark brown (10YR 3/3) moist; moderate medium prismatic structure parting to moderate medium and fine subangular blocky; hard, firm, sticky and plastic; common fine and few coarse roots; many prominent clay films on faces of peds; mildly alkaline; clear smooth boundary.

Bk1—13 to 17 inches; pale brown (10YR 6/3) clay loam, yellowish brown (10YR 5/4) moist; moderate medium and coarse angular blocky structure parting to moderate fine and very fine subangular blocky; hard, friable, sticky and plastic; few fine threads and seams of secondary calcium carbonate; strongly effervescent; mildly alkaline; clear smooth boundary.

Bk2—17 to 60 inches; very pale brown (10YR 8/4) loam, yellowish brown (10YR 5/4) moist; moderate medium and coarse subangular blocky structure; slightly hard, friable, sticky and plastic; few fine masses of secondary calcium carbonate; strongly effervescent; moderately alkaline.

The Bt horizon is clay loam or clay. It is neutral or mildly alkaline.

The Bk horizon has hue of 10YR or 2.5Y. It is loam or clay loam.

Platsher Series

The Platsher series consists of very deep, well drained soils that formed in alluvium derived from sedimentary rock and in the underlying outwash deposits. These soils are on outwash terraces. Slopes are 0 to 9 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 15 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are fine, montmorillonitic, mesic Aridic Paleustolls.

Typical pedon of Platsher loam, in an area of Platsher-Wolfvar loams, 0 to 3 percent slopes, NE¹/₄, NE¹/₄ sec. 8, T. 55 N., R. 84 W.

A—0 to 7 inches; grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; moderate fine granular structure; soft, friable, sticky and slightly plastic; many fine and medium roots; neutral; abrupt smooth boundary.

Bt1—7 to 11 inches; grayish brown (10YR 5/2) clay, very dark grayish brown (10YR 3/2) moist; strong medium prismatic structure parting to strong fine angular blocky; extremely hard, firm, sticky and plastic; common fine and medium roots; many

prominent clay films on vertical and horizontal faces of peds; mildly alkaline; gradual smooth boundary.

Bt2—11 to 21 inches; grayish brown (10YR 5/2) clay, dark grayish brown (10YR 4/2) moist; strong medium prismatic structure parting to strong medium and fine angular blocky; extremely hard, very firm, sticky and plastic; common fine and medium roots; many prominent clay films on horizontal and vertical faces of peds; 3 percent gravel; mildly alkaline; gradual smooth boundary.

Bk1—21 to 28 inches; light brownish gray (2.5Y 6/2) clay loam, dark grayish brown (2.5Y 4/2) moist; moderate coarse prismatic structure parting to moderate coarse and medium angular and subangular blocky; extremely hard, firm, sticky and plastic; many fine seams and coarse soft masses of secondary calcium carbonate; strongly effervescent; 3 percent gravel; moderately alkaline; gradual smooth boundary.

2Bk2—28 to 40 inches; light gray (2.5Y 7/2) gravelly clay loam, light brownish gray (2.5Y 6/2) moist; weak coarse subangular blocky structure; hard, firm, sticky and slightly plastic; many fine and medium seams of secondary calcium carbonate; strongly effervescent; 20 percent gravel; moderately alkaline; gradual smooth boundary.

2Bk3—40 to 60 inches; grayish brown (2.5Y 5/2) gravelly clay loam, dark grayish brown (2.5Y 4/2) moist; massive; hard, friable, sticky and slightly plastic; common fine seams of secondary calcium carbonate; strongly effervescent; 25 percent gravel; moderately alkaline.

The depth to the 2Bk horizon ranges from 20 to 40 inches. The content of rock fragments ranges from 0 to 15 percent in the A, Bt, and Bk horizons and from 15 to 35 percent in the 2Bk horizon. Hue is 10YR or 2.5YR throughout the profile.

The A horizon is loam or clay loam. It is neutral or mildly alkaline. Some pedons have an E horizon.

The Bt horizon is clay, silty clay loam, or clay loam. It is mildly alkaline or moderately alkaline.

The Bk horizon is clay loam or silty clay loam. It is moderately alkaline or strongly alkaline.

The 2Bk horizon is gravelly clay loam, gravelly loam, or cobbly clay loam. It is moderately alkaline or strongly alkaline.

Platsher Variant

The Platsher Variant consists of very deep, somewhat poorly drained soils that formed in alluvium derived from sedimentary rock and in the underlying

outwash deposits. These soils are on outwash terraces. Slopes are 0 to 3 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 15 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are fine, montmorillonitic, mesic Aquic Paleustolls.

Typical pedon of Platscher Variant loam, 0 to 3 percent slopes, NW¹/₄, NE¹/₄ sec. 16, T. 55 N., R. 84 W.

Ap₁—0 to 3 inches; dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2) moist; moderate medium granular structure; slightly hard, friable, sticky and plastic; many fine and very fine roots; mildly alkaline; clear smooth boundary.

Ap₂—3 to 9 inches; dark grayish brown (10YR 4/2) clay loam, very dark grayish brown (10YR 3/2) moist; strong medium prismatic structure parting to strong medium and fine angular blocky; hard, firm, sticky and plastic; many fine and very fine roots; common distinct clay films on faces of peds; mildly alkaline; abrupt smooth boundary.

Bt—9 to 13 inches; dark brown (10YR 4/3) clay loam, dark brown (10YR 3/3) moist; strong medium prismatic structure parting to strong medium and fine angular blocky; hard, firm, sticky and plastic; common fine and medium roots; many prominent clay films on faces of peds; moderately alkaline; clear smooth boundary.

Btk—13 to 22 inches; light gray (10YR 7/2) silty clay loam, brown (10YR 5/3) moist; moderate coarse prismatic structure parting to strong medium and coarse angular blocky; hard, friable, very sticky and plastic; common fine and medium roots; common distinct clay films on faces of peds; common medium and coarse masses of secondary calcium carbonate; strongly effervescent; strongly alkaline; clear smooth boundary.

2Bk—22 to 60 inches; very pale brown (10YR 7/4) very gravelly sandy loam, yellowish brown (10YR 5/4) moist; common fine and medium distinct yellowish brown (10YR 5/8) mottles; weak fine granular structure; soft, very friable, nonsticky and nonplastic; moderately thick coatings of secondary calcium carbonate on the undersides of pebbles; strongly effervescent; 45 percent rock fragments, predominantly gravel; moderately alkaline; a fluctuating water table at a depth of 25 inches.

The depth to the 2Bk horizon ranges from 20 to 40 inches. A water table fluctuates from 1.5 to 3.0 feet from August through October. It is the result of the irrigation of the Platscher Variant and the surrounding soils, the seepage from irrigation ditches, or both.

The A horizon has hue of 10YR or 2.5Y.

The Bt horizon has hue of 10YR or 2.5Y. It is clay loam or silty clay loam. It is mildly alkaline or moderately alkaline.

The Btk horizon has hue of 10YR or 2.5Y.

Some pedons have a Bk horizon above the 2Bk horizon. The Bk horizon is silty clay loam or clay loam. It is moderately alkaline or strongly alkaline.

The 2Bk horizon has a fine-earth texture of sandy loam or loam. The content of rock fragments ranges from 40 to 60 percent. The rock fragments are dominantly gravel. Reaction is moderately alkaline or strongly alkaline.

Recluse Series

The Recluse series consists of very deep, well drained soils that formed in alluvium derived from sedimentary rocks. These soils are on terraces, alluvial fans, and hillslopes. Slopes are 0 to 15 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are fine-loamy, mixed, mesic Aridic Argiustolls.

Typical pedon of Recluse loam, 3 to 6 percent slopes, SE¹/₄, NE¹/₄ sec. 28, T. 54 N., R. 82 W.

A—0 to 2 inches; grayish brown (10YR 5/2) loam, very dark brown (10YR 2/2) moist; moderate very fine granular structure; soft, friable, slightly sticky and slightly plastic; many fine and very fine roots; neutral; clear smooth boundary.

AB—2 to 4 inches; grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine roots; neutral; gradual smooth boundary.

Bt₁—4 to 13 inches; dark grayish brown (10YR 4/2) clay loam, dark brown (10YR 3/3) moist; strong coarse prismatic structure parting to strong medium and fine angular blocky; hard, friable, sticky and plastic; few fine and coarse roots; common prominent clay films on faces of peds; mildly alkaline; clear smooth boundary.

Bt2—13 to 25 inches; dark yellowish brown (10YR 4/4) clay loam, dark yellowish brown (10YR 3/4) moist; strong coarse prismatic structure parting to strong medium and fine angular blocky; hard, friable, sticky and plastic; few fine and coarse roots; common prominent clay films on faces of peds; mildly alkaline; clear smooth boundary.

Btk—25 to 34 inches; pale brown (10YR 6/3) clay loam, dark yellowish brown (10YR 3/4) moist; strong medium and coarse angular blocky structure; hard, friable, sticky and plastic; few fine and coarse roots; few faint clay films on faces of peds; few fine threads of secondary calcium carbonate; strongly effervescent; moderately alkaline; clear smooth boundary.

Bk—34 to 60 inches; light yellowish brown (10YR 6/4) clay loam, dark yellowish brown (10YR 3/4) moist; moderate coarse subangular blocky structure; hard, friable, sticky and plastic; common medium threads and masses of secondary calcium carbonate; strongly effervescent; moderately alkaline.

The A horizon is loam or very fine sandy loam. It is neutral or mildly alkaline.

The Bt horizon is silty clay loam or clay loam. It is neutral or mildly alkaline.

The Bk horizon is loam, fine sandy loam, silty clay loam, or clay loam. It is mildly alkaline or moderately alkaline.

Reddale Series

The Reddale series consists of very deep, well drained soils that formed in residuum derived from porcellanite. These soils are on hillslopes and in swales on tablelands. Slopes are 3 to 9 percent. Elevation is 4,000 to 4,500 feet. The average annual precipitation is 12 to 14 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are clayey over fragmental, montmorillonitic, mesic Ustollic Paleargids.

Typical pedon of Reddale very fine sandy loam, in an area of Wibaux-Reddale association, 3 to 15 percent slopes, NW¹/₄, NE¹/₄ sec. 4, T. 57 N., R. 84 W.

A1—0 to 2 inches; light reddish brown (5YR 6/3) very fine sandy loam, dark reddish brown (5YR 3/4) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; mildly alkaline; abrupt smooth boundary.

A2—2 to 4 inches; pinkish gray (5YR 6/2) very fine sandy loam, dark reddish brown (5YR 3/4) moist; moderate very thin platy structure; slightly hard,

very friable, slightly sticky and slightly plastic; mildly alkaline; clear smooth boundary.

BE—4 to 7 inches; pink (5YR 7/3) loam, dark reddish brown (5YR 3/4) moist; moderate fine and medium subangular blocky structure parting to strong very fine angular blocky; hard, very friable, slightly sticky and slightly plastic; mildly alkaline; abrupt smooth boundary.

Bt—7 to 16 inches; reddish brown (5YR 5/4) clay, dark reddish brown (5YR 3/4) moist; strong medium and coarse columnar structure parting to strong fine angular blocky; a thin light gray coating on the upper part of the rounded caps; hard, firm, sticky and plastic; many prominent clay films on faces of peds; 5 percent fine porcellanite channers; moderately alkaline; clear wavy boundary.

Btk—16 to 24 inches; reddish brown (5YR 4/4) clay loam, dark reddish brown (5YR 3/4) moist; moderate medium subangular blocky structure; hard, friable, sticky and slightly plastic; common faint clay films on faces of peds; few thin seams of secondary calcium carbonate; strongly effervescent on ped faces and slightly effervescent in ped interiors; 5 percent fine porcellanite channers; strongly alkaline; gradual wavy boundary.

2C—24 to 60 inches; fractured, displaced porcellanite and many void interstices 2 millimeters or more in size; few interstices partly filled with strongly effervescent, strongly alkaline loam; interstices increase in size with depth; coatings of secondary calcium carbonate on porcellanite fragments in the upper part; 70 percent coarse channers and 25 percent cobbles and stones.

Depth to the 2C horizon ranges from 20 to 40 inches. Rock fragments in the upper part of the control section range from 0 to 15 percent and are fine porcellanite channers. Rock fragments in the 2C horizon consist of 65 to 85 percent channers and 15 to 35 percent cobbles and stones.

The A horizon has hue of 7.5YR to 2.5YR. It is neutral or mildly alkaline.

About half of the pedons have an E or BE horizon. It is loam or clay loam. It is neutral or mildly alkaline.

The Bt horizon has hue of 7.5YR to 2.5YR. It is mildly alkaline or moderately alkaline.

The Btk horizon has hue of 5YR or 2.5YR. It is clay loam or clay. It is moderately alkaline or strongly alkaline.

Some pedons have a Bk horizon. It contains less clay than the Btk horizon.

The 2C horizon consists of red and yellowish red, fractured, porcellanite material. Only a few interstices

in the upper few inches contain soil material, and the rest are void. In some areas clinkers are common within a depth of 60 inches, but they normally occur below a depth of 60 inches.

Reeder Series

The Reeder series consists of moderately deep, well drained soils that formed in alluvium and residuum derived from sedimentary rock. These soils are on hills. Slopes are 3 to 15 percent. Elevation is 3,500 to 5,000 feet. The average annual precipitation is 15 to 19 inches, and the average annual temperature is 43 to 45 degrees F. The frost-free period is 80 to 100 days.

These soils are fine-loamy, mixed Typic Argiborolls.

Typical pedon of Reeder loam, in an area of Reeder-Farnuf association, 9 to 15 percent slopes, NE¹/₄, SW¹/₄ sec. 26, T. 58 N., R. 87 W., in the Passcreek area:

- A—0 to 5 inches; very dark grayish brown (10YR 3/2) loam, very dark brown (10YR 2/2) moist; moderate medium granular structure; soft, very friable, slightly sticky and plastic; many fine and very fine roots; neutral; clear smooth boundary.
- Bt1—5 to 9 inches; dark grayish brown (10YR 4/2) clay loam, dark brown (10YR 3/3) moist; weak medium prismatic structure parting to moderate medium subangular blocky; hard, friable, sticky and plastic; common fine and very fine roots; common distinct clay films on faces of peds; mildly alkaline; clear smooth boundary.
- Bt2—9 to 13 inches; brown (10YR 5/3) clay loam, dark brown (10YR 4/3) moist; moderate medium prismatic structure parting to moderate medium and fine subangular blocky; hard, friable, sticky and plastic; many distinct clay films on faces of peds; mildly alkaline; clear smooth boundary.
- Btk—13 to 23 inches; pale brown (10YR 6/3) clay loam, yellowish brown (10YR 5/4) moist; moderate coarse prismatic structure parting to moderate medium subangular blocky; hard, friable, sticky and plastic; common distinct clay films on faces of peds; common fine and medium threads of secondary calcium carbonate; strongly effervescent; moderately alkaline; clear smooth boundary.
- Bk—23 to 34 inches; light brownish gray (10YR 6/2) loam, brown (10YR 5/3) moist; moderate medium subangular blocky structure; hard, friable, slightly sticky and plastic; many fine and few medium and coarse masses of secondary calcium carbonate;

strongly effervescent; moderately alkaline; gradual wavy boundary.

Cr—34 inches; soft shale bedrock.

The depth to bedrock ranges from 20 to 40 inches. The content of rock fragments ranges from 0 to 15 percent throughout the profile.

Reget Series

The Reget series consists of moderately deep, well drained soils that formed in residuum, alluvium, and colluvium derived from sedimentary rock. These soils are on dip slopes, hills, and alluvial fan aprons. Slopes are 0 to 65 percent. Elevation is 3,900 to 5,500 feet. The average annual precipitation is 15 to 19 inches, and the average annual temperature is 43 to 45 degrees F. The frost-free period is 80 to 100 days.

These soils are fine, montmorillonitic Typic Argiborolls.

Typical pedon of Reget clay loam, in an area of Reget-Savar association, 3 to 45 percent slopes, SE¹/₄, SW¹/₄ sec. 5, T. 57 N., R. 87 W.

- A—0 to 1 inch; dark grayish brown (2.5Y 4/2) clay loam, very dark grayish brown (2.5Y 3/2) moist; moderate very fine granular structure; slightly hard, very friable, slightly sticky and slightly plastic; many fine and very fine roots; mildly alkaline; abrupt smooth boundary.
- Bt—1 to 9 inches; dark grayish brown (2.5Y 4/2) clay, very dark grayish brown (2.5Y 3/2) moist; strong medium subangular blocky structure parting to strong fine and very fine angular blocky; extremely hard, firm, slightly sticky and plastic; common fine and very fine roots; many prominent clay films on faces of peds; moderately alkaline; clear smooth boundary.
- Btk1—9 to 16 inches; grayish brown (2.5Y 5/2) clay, dark grayish brown (2.5Y 4/2) moist; strong medium subangular blocky structure parting to strong fine and very fine angular blocky; extremely hard, firm, slightly sticky and plastic; few fine and very fine roots; many prominent clay films on faces of peds; few fine threads of secondary calcium carbonate; strongly effervescent; moderately alkaline; clear smooth boundary.
- Btk2—16 to 36 inches; light brownish gray (2.5Y 6/2) clay, dark grayish brown (2.5Y 4/2) moist; strong coarse subangular blocky structure parting to moderate medium angular blocky; extremely hard,

firm, slightly sticky and plastic; common distinct clay films on faces of peds; common medium and coarse masses of secondary calcium carbonate; strongly effervescent; strongly alkaline; clear wavy boundary.

Cr—36 inches; moderately hard, gray (5Y 6/1), slightly effervescent, platy shale with many medium and coarse masses of gypsum between the plates.

The depth to bedrock ranges from 20 to 40 inches.

The A or E horizon has hue of 10YR or 2.5Y. It is loam, silt loam, or clay loam. It is neutral or mildly alkaline.

The Bt horizon has hue of 10YR or 2.5Y. It is neutral to moderately alkaline.

The Btk horizon has hue of 10YR to 5Y. It is clay, silty clay loam, or clay loam. The calcium carbonate equivalent ranges from 4 to 15 percent. Reaction is moderately alkaline or strongly alkaline. A thin C horizon is directly above the bedrock in some pedons.

Reget Variant

The Reget Variant consists of very deep, well drained soils that formed in alluvium and colluvium derived from shale and sandstone. These soils are on outwash terraces and hillslopes. Slopes are 10 to 25 percent. Elevation is 4,000 to 5,000 feet. The average annual precipitation is 15 to 19 inches, and the average annual temperature is 43 to 45 degrees F. The frost-free period is 80 to 100 days.

These soils are fine, montmorillonitic Typic Argiborolls.

Typical pedon of Reget Variant loam, in an area of Reget Variant-Reget association, 10 to 65 percent slopes, SW¹/₄, NE¹/₄ sec. 6, T. 53 N., R. 84 W.

A—0 to 3 inches; very dark grayish brown (10YR 3/2) loam, very dark brown (10YR 2/2) moist; weak fine and very fine granular structure; soft, very friable, slightly sticky and plastic; many fine and very fine roots; neutral; clear smooth boundary.

AB—3 to 9 inches; dark brown (10YR 3/3) loam, very dark grayish brown (10YR 3/2) moist; weak medium prismatic structure parting to moderate medium and fine subangular blocky; slightly hard, very friable, slightly sticky and plastic; many fine and very fine roots; neutral; clear smooth boundary.

Bt1—9 to 14 inches; dark brown (10YR 4/3) clay loam, dark brown (10YR 3/3) moist; hard, friable, slightly sticky and plastic; moderate medium and coarse subangular blocky structure parting to

moderate fine subangular blocky; hard, friable, slightly sticky and plastic; common fine and medium roots; common distinct clay films on faces of peds; neutral; clear smooth boundary.

Bt2—14 to 21 inches; strong brown (7.5YR 5/6) clay, dark brown (7.5YR 4/4) moist; strong coarse prismatic structure parting to strong medium angular blocky; extremely hard, firm, slightly sticky and plastic; common fine and medium roots; many prominent clay films on faces of peds; neutral; clear smooth boundary.

Bt3—21 to 39 inches; strong brown (7.5YR 5/8) sandy clay, dark brown (7.5YR 4/4) moist; strong coarse prismatic structure parting to strong medium subangular blocky; hard, friable, slightly sticky and plastic; many prominent clay films on faces of peds; 10 percent granitic gravel (10-20 millimeters); neutral; clear smooth boundary.

Bt4—39 to 60 inches; brown (7.5YR 5/4) sandy clay, dark brown (7.5YR 4/4) moist; strong medium prismatic structure parting to strong medium and coarse subangular blocky; extremely hard, firm, sticky and plastic; many prominent clay films on faces of peds; neutral.

Angular coarse arkosic sand grains make up from 5 to 20 percent of the Bt horizon. Reaction is neutral or mildly alkaline throughout the profile.

The A and Bt1 horizons have hue of 10YR or 2.5Y. The Bt2, Bt3, and Bt4 horizons have hue of 7.5YR or 10YR. They are clay, sandy clay, or clay loam.

Renohill Series

The Renohill series consists of moderately deep, well drained soils that formed in residuum and alluvium derived from shale. These soils are on hills and tablelands. Slopes are 3 to 25 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are fine, montmorillonitic, mesic Ustollic Haplargids.

Typical pedon of Renohill clay loam, in an area of Renohill-Worfka association, moist, 3 to 20 percent slopes, NE¹/₄, NE¹/₄ sec. 10, T. 56 N., R. 85 W.

A—0 to 1 inch; light brownish gray (10YR 6/2) clay loam, dark brown (10YR 4/3) moist; moderate fine granular structure; hard, friable, sticky and plastic; many fine and very fine roots; mildly alkaline; clear smooth boundary.

Bt—1 to 15 inches; grayish brown (10YR 5/2) clay, dark brown (10YR 4/3) moist; strong coarse subangular blocky structure parting to strong medium and coarse angular blocky; very hard, firm, sticky and plastic; common fine and medium roots; many prominent clay films on faces of peds; mildly alkaline; clear smooth boundary.

Btk—15 to 23 inches; brown (10YR 5/3) clay, grayish brown (10YR 5/2) moist; strong medium and coarse angular blocky structure; very hard, firm, sticky and plastic; few fine roots; many prominent clay films on faces of peds; common coarse masses of secondary calcium carbonate; strongly effervescent; moderately alkaline; clear smooth boundary.

Bk—23 to 34 inches; brown (10YR 5/3) clay loam, grayish brown (10YR 5/2) moist; strong coarse subangular blocky structure; very hard, firm, sticky and plastic; many coarse masses and few fine and medium seams of secondary calcium carbonate; strongly effervescent; moderately alkaline; clear wavy boundary.

Cr—34 inches; soft, strongly effervescent shale.

The depth to bedrock ranges from 20 to 40 inches. Hue is 10YR or 2.5Y throughout the profile.

The A horizon is neutral or mildly alkaline. It is loam or clay loam.

The Bt horizon is clay or clay loam. It is mildly alkaline or moderately alkaline.

The Bk horizon is clay or clay loam. It is moderately alkaline or strongly alkaline. The calcium carbonate equivalent ranges from 6 to 15 percent.

Ringling Series

The Ringling series consists of very deep, well drained soils that formed in residuum and colluvium derived from porcellanite. These soils are on ridges, hills, and valley sides. Slopes are 5 to 75 percent. Elevation is 3,500 to 5,000 feet. The average annual precipitation is 15 to 19 inches, and the average annual temperature is 43 to 45 degrees F. The frost-free period is 80 to 100 days.

These soils are loamy-skeletal over fragmental, mixed Typic Haploborolls.

Typical pedon of Ringling channery loam, in an area of Doney-Ringling association, 8 to 90 percent slopes, NE¹/₄, NE¹/₄ sec. 35, T. 58 N., R. 85 W.

A—0 to 4 inches; reddish brown (5YR 4/4) channery loam, dark reddish brown (5YR 3/2) moist; weak fine granular structure; soft, very friable, slightly

sticky and slightly plastic; many fine and very fine roots; 35 percent channers; mildly alkaline; clear wavy boundary.

AC—4 to 12 inches; reddish brown (5YR 5/3) very channery loam, dark reddish brown (5YR 3/3) moist; massive; soft, very friable, slightly sticky and slightly plastic; many fine and very fine roots; 50 percent channers; mildly alkaline; abrupt smooth boundary.

2C—12 to 60 inches; fractured, displaced porcellanite and many void interstices 2 millimeters or more in size; calcium carbonate coatings on rock fragments in the upper part.

The depth to the 2C horizon ranges from 10 to 20 inches. Reaction is neutral or mildly alkaline throughout the profile. The content of rock fragments in the loamy-skeletal part of the control section averages from 40 to 60 percent.

Samday Series

The Samday series consists of shallow, well drained soils that formed in residuum and colluvium derived from shale. These soils are on ridges and hills. Slopes are 2 to 60 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are clayey, montmorillonitic (calcareous), mesic, shallow Ustic Torriorthents.

Typical pedon of Samday clay loam, in an area of Samday-Hilight clay loams, 2 to 45 percent slopes, NW¹/₄, SE¹/₄ sec. 23, T. 58 N., R. 84 W.

A—0 to 2 inches; light gray (2.5Y 7/2) clay loam, dark grayish brown (10YR 4/2) moist; moderate very fine granular structure; hard, firm, sticky and plastic; common fine and medium roots; slightly effervescent; moderately alkaline; clear smooth boundary.

C—2 to 17 inches; grayish brown (2.5Y 5/2) clay, grayish brown (10YR 5/2) moist; moderate medium subangular blocky structure; very hard, very firm, sticky and plastic; common fine and medium masses of secondary calcium carbonate; strongly effervescent; 5 percent soft lignite fragments; moderately alkaline; gradual wavy boundary.

Cr—17 inches; soft, platy, clay shale.

The depth to bedrock ranges from 10 to 20 inches. Hue is 10YR or 2.5Y throughout the profile.

The A horizon is mildly alkaline or moderately alkaline.

The C horizon is clay loam, silty clay, or clay. It is mildly alkaline to strongly alkaline.

Savage Series

The Savage series consists of very deep, well drained soils that formed in alluvium derived from sedimentary rock. These soils are on terraces, alluvial fans, and hillslopes. Slopes are 0 to 15 percent. Elevation is 3,500 to 5,000 feet. The average annual precipitation is 15 to 19 inches, and the average annual temperature is 43 to 45 degrees F. The frost-free period is 80 to 100 days.

These soils are fine, montmorillonitic Typic Argiborolls.

Typical pedon of Savage silt loam, in an area of Savage-Reget association, 4 to 30 percent slopes, NE¹/₄, NW¹/₄ sec. 31, T. 58 N., R. 86 W.

A—0 to 2 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; moderate very fine granular structure; soft, very friable, slightly sticky and plastic; many fine and very fine roots; mildly alkaline; clear smooth boundary.

AB—2 to 10 inches; dark brown (10YR 4/3) silt loam, very dark grayish brown (10YR 3/2) moist; moderate coarse prismatic structure parting to moderate medium subangular blocky; slightly hard, very friable, slightly sticky and plastic; common fine and very fine roots; few faint clay films on faces of peds; mildly alkaline; clear smooth boundary.

Bt1—10 to 14 inches; brown (10YR 5/3) silty clay, dark brown (10YR 4/3) moist; strong medium prismatic structure parting to strong medium subangular blocky; hard, firm, sticky and plastic; common fine and very fine roots; many prominent clay films on faces of peds; mildly alkaline; clear smooth boundary.

Bt2—14 to 21 inches; brown (10YR 5/3) silty clay loam, dark brown (10YR 4/3) moist; strong medium prismatic structure parting to strong medium subangular blocky; hard, firm, sticky and plastic; many prominent clay films on faces of peds; mildly alkaline; clear smooth boundary.

Btk—21 to 30 inches; pale brown (10YR 6/3) silty clay loam, brown (10YR 5/3) moist; moderate coarse subangular blocky structure; hard, firm, sticky and plastic; few distinct clay films on faces of peds; many fine and medium threads and few medium and coarse masses of secondary

calcium carbonate; strongly effervescent; moderately alkaline; gradual wavy boundary.

Bk—30 to 60 inches; light gray (10YR 7/2) silty clay loam, light brownish gray (10YR 6/2) moist; moderate coarse subangular blocky structure; hard, firm, sticky and plastic; many fine and medium threads and few medium and coarse masses of secondary calcium carbonate; strongly effervescent; moderately alkaline.

The A horizon is silt loam or loam. It is neutral or mildly alkaline.

The Bt horizon is silty clay loam, silty clay, clay loam, or clay. It is neutral or mildly alkaline.

The Bk horizon has hue of 10YR or 2.5Y. It is commonly silty clay loam, silty clay, or clay. In some pedons, however, it is gravelly silt loam or gravelly loam below a depth of 40 inches.

Savageton Series

The Savageton series consists of moderately deep, well drained soils that formed in residuum and alluvium derived from shale. These soils are on hills. Slopes are 3 to 15 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are fine, montmorillonitic, mesic Ustollic Camborthids.

Typical pedon of Savageton clay loam, in an area of Renohill-Savageton clay loams, moist, 10 to 15 percent slopes, SE¹/₄, SW¹/₄ sec. 27, T. 54 N., R. 82 W.

A—0 to 1 inch; light brownish gray (2.5Y 6/2) clay loam, dark grayish brown (2.5Y 4/2) moist; moderate fine and medium platy structure parting to moderate fine and very fine granular; soft, friable, slightly sticky and plastic; common fine and very fine roots; slightly effervescent; moderately alkaline; clear smooth boundary.

Bw—1 to 22 inches; light yellowish brown (2.5Y 6/4) clay, dark grayish brown (2.5Y 4/2) moist; strong coarse prismatic structure parting to strong coarse and medium angular blocky; hard, firm, sticky and plastic; few fine and very fine roots; slightly effervescent; 5 percent fine and very fine soft lignite and shale fragments; moderately alkaline; clear smooth boundary.

Bk—22 to 35 inches; light olive brown (2.5Y 5/4) clay loam, dark grayish brown (2.5Y 4/2) moist; strong medium and coarse angular blocky structure;

hard, firm, sticky and plastic; many medium and coarse masses of secondary calcium carbonate; strongly effervescent; 10 percent very fine soft lignite and shale fragments; moderately alkaline; gradual wavy boundary.

Cr—35 inches; soft and interbedded shale.

The depth to bedrock ranges from 20 to 40 inches. The content of rock fragments ranges from 0 to 15 percent throughout the profile.

The A horizon is clay loam or silty clay loam. It is mildly alkaline or moderately alkaline.

The Bw horizon is clay loam or clay. It is moderately alkaline or strongly alkaline.

The Bk horizon has hue of 10YR or 2.5Y. It is clay, silty clay loam, or clay loam. It is moderately alkaline or strongly alkaline.

Savar Series

The Savar series consists of very deep, well drained soils that formed in colluvium and alluvium derived from shale. These soils are on alluvial fans and hillslopes. Slopes are 3 to 35 percent. Elevation is 4,000 to 5,000 feet. The average annual precipitation is 15 to 19 inches, and the average annual temperature is 43 to 45 degrees F. The frost-free period is 80 to 100 days.

These soils are fine, montmorillonitic Pachic Argiborolls.

Typical pedon of Savar clay loam, in an area of Reget-Savar association, 3 to 45 percent slopes, SW¹/₄, SE¹/₄ sec. 5, T. 57 N., R. 87 W.

A—0 to 2 inches; grayish brown (2.5Y 5/2) clay loam, very dark grayish brown (2.5Y 3/2) moist; moderate very fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; many fine and very fine roots; moderately alkaline; clear smooth boundary.

Bt1—2 to 11 inches; dark grayish brown (2.5Y 4/2) clay, very dark grayish brown (2.5Y 3/2) moist; strong coarse prismatic structure parting to strong fine and medium angular blocky; extremely hard, firm, sticky and plastic; common fine and very fine roots; many prominent clay films on vertical and horizontal faces of peds; moderately alkaline; clear smooth boundary.

Bt2—11 to 20 inches; grayish brown (2.5Y 5/2) clay, very dark grayish brown (2.5Y 3/2) moist; strong medium subangular blocky structure parting to strong fine angular blocky; extremely hard, firm, sticky and plastic; few fine and very fine roots; many prominent clay films on vertical and

horizontal faces of peds; moderately alkaline; clear smooth boundary.

Btk1—20 to 31 inches; light yellowish brown (2.5Y 6/4) clay, light olive brown (2.5Y 5/4) moist; strong medium subangular blocky structure; extremely hard, firm, sticky and plastic; many prominent clay films on faces of peds; common fine threads of secondary calcium carbonate; strongly effervescent; strongly alkaline; clear smooth boundary.

Btk2—31 to 60 inches; light gray (2.5Y 7/2) clay, grayish brown (2.5Y 5/2) moist; moderate coarse subangular blocky structure; extremely hard, firm, sticky and plastic; common distinct clay films on faces of peds; common fine threads and medium and coarse soft masses of secondary calcium carbonate; strongly effervescent; strongly alkaline.

Hue is 10YR or 2.5Y throughout the profile.

The A horizon is mildly alkaline or moderately alkaline. Some A horizons occur as a light-colored vesicular crust that darkens when moistened.

The Bt horizon is clay, clay loam, or silty clay. It is mildly alkaline or moderately alkaline.

The Btk horizon is clay, clay loam, or silty clay. The calcium carbonate equivalent generally ranges from 5 to 15 percent, and in a few discontinuous pockets it is more than 15 percent. Reaction is moderately alkaline or strongly alkaline. Some pedons have a Bk horizon.

Searing Series

The Searing series consists of very deep, well drained soils that formed in residuum and colluvium derived from porcellanite. These soils are on hillslopes and ridges and in swales. Slopes are 2 to 15 percent. Elevation is 3,500 to 5,000 feet. The average annual precipitation is 15 to 19 inches, and the average annual temperature is 43 to 45 degrees F. The frost-free period is 80 to 100 days.

The Searing series consists of fine-loamy over fragmental, mixed Typic Haploborolls. The Searing soils in this survey area are taxadjuncts to the Searing series because they are fine-loamy over fragmental, mixed Typic Argiborolls and have an argillic horizon.

Typical pedon of Searing loam, in an area of Searing-Ringling association, 2 to 75 percent slopes, NW¹/₄, NW¹/₄ sec. 26, T. 58 N., R. 85 W.

A—0 to 2 inches; dark brown (7.5YR 4/4) loam, dark brown (7.5YR 3/2) moist; moderate fine platy

structure; soft, very friable, slightly sticky and slightly plastic; many fine and very fine roots; neutral; clear smooth boundary.

Bt1—2 to 13 inches; dark brown (7.5YR 4/2) clay loam, dark brown (7.5YR 3/2) moist; moderate medium prismatic structure parting to moderate medium subangular blocky; slightly hard, very friable, sticky and plastic; common fine and medium roots; common distinct clay films on faces of peds; mildly alkaline; clear smooth boundary.

Bt2—13 to 15 inches; dark yellowish brown (10YR 4/4) clay loam, dark yellowish brown (10YR 3/4) moist; moderate medium prismatic structure parting to moderate medium and fine subangular blocky; hard, friable, sticky and plastic; common fine and medium roots; many distinct clay films on faces of peds; moderately alkaline; clear smooth boundary.

Bk—15 to 38 inches; pinkish gray (7.5YR 7/2) loam, light brown (7.5YR 6/4) moist; weak fine subangular blocky structure; slightly hard, very friable, sticky and plastic; common fine threads of secondary calcium carbonate; strongly effervescent; 5 percent porcellanite fragments; moderately alkaline; gradual wavy boundary.

2C—38 to 60 inches; hard, displaced, fractured porcellanite material; many voids between fragments; 5 percent loamy material in the spaces between the fragments in the upper few inches; strongly effervescent.

The depth to the 2C horizon ranges from 20 to 40 inches. The content of rock fragments in the A and B horizons ranges from 0 to 15 percent.

The A horizon has hue of 5YR or 7.5YR. It is slightly acid or neutral.

The Bt horizon has hue of 5YR to 10YR. It is loam, silt loam, or clay loam. It is mildly alkaline or moderately alkaline.

The Bk horizon has hue of 5YR or 7.5YR. It is loam, silt loam, or channery loam.

Shaak Series

The Shaak series consists of very deep, well drained soils that formed in alluvium derived from interbedded shale and sandstone. These soils are on alluvial fans, terraces, and toe slopes. Slopes are 0 to 6 percent. Elevation is 3,900 to 5,000 feet. The average annual precipitation is 15 to 19 inches, and the average annual temperature is 43 to 45 degrees F. The frost-free period is 80 to 100 days.

These soils are fine, montmorillonitic Abruptic Argiborolls.

Typical pedon of Shaak loam, 0 to 6 percent slopes, SE¹/₄, NE¹/₄ sec. 26, T. 58 N., R. 88 W., in the Parkman area:

Ap—0 to 9 inches; grayish brown (10YR 5/2) loam, dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure; hard, friable, slightly sticky and plastic; common fine and very fine roots; neutral; abrupt smooth boundary.

Bt1—9 to 14 inches; grayish brown (10YR 5/2) clay, dark brown (10YR 3/3) moist; moderate medium prismatic structure parting to moderate medium subangular blocky; extremely hard, firm, sticky and plastic; few fine and very fine roots; many distinct clay films on faces of peds; mildly alkaline; clear smooth boundary.

Bt2—14 to 18 inches; yellowish brown (10YR 5/4) clay, dark yellowish brown (10YR 4/4) moist; strong medium prismatic structure parting to strong medium angular blocky; extremely hard, firm, sticky and plastic; many prominent clay films on faces of peds; mildly alkaline; clear smooth boundary.

Btk—18 to 25 inches; light brownish gray (2.5Y 6/2) clay, grayish brown (2.5Y 5/2) moist; moderate medium angular blocky structure; very hard, firm, sticky and plastic; common distinct clay films on faces of peds; common fine threads and few medium and fine seams of secondary calcium carbonate; strongly effervescent; moderately alkaline; clear smooth boundary.

Bk—25 to 60 inches; light brownish gray (2.5Y 6/2) clay, grayish brown (2.5Y 5/2) moist; moderate coarse subangular blocky structure; hard, friable, sticky and plastic; many fine threads and common medium and coarse masses of secondary calcium carbonate; strongly effervescent; 5 percent gravel; moderately alkaline.

The Bt horizon has hue of 10YR or 2.5Y.

The Bk horizon has hue of 10YR or 2.5Y. The content of rock fragments is 0 to 15 percent.

Shingle Series

The Shingle series consists of shallow, well drained soils that formed in residuum and colluvium derived from interbedded sedimentary rock. These soils are on ridges, terrace breaks, escarpments, the sides of gullies, and hills. Slopes are 0 to 80 percent.

Elevation is 3,500 to 5,000 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are loamy, mixed (calcareous), mesic, shallow Ustic Torriorthents.

Typical pedon of Shingle clay loam, in an area of Shingle-Rock outcrop complex, 30 to 50 percent slopes, SE¹/₄, SW¹/₄ sec. 12, T. 57 N., R. 84 W.

A—0 to 1 inch; light yellowish brown (2.5Y 6/4) clay loam, olive brown (2.5Y 4/4) moist; moderate fine and very fine granular structure; slightly hard, friable, sticky and plastic; common fine and medium roots; slightly effervescent; moderately alkaline; clear smooth boundary.

AC—1 to 15 inches; light yellowish brown (2.5Y 6/4) clay loam, light olive brown (2.5Y 5/4) moist; moderate fine and medium subangular blocky structure; hard, friable, sticky and plastic; few medium roots; common fine and medium seams and threads of secondary calcium carbonate; strongly effervescent; 5 percent sandstone fragments; moderately alkaline; clear smooth boundary.

Cr—15 inches; soft, varicolored, moderately alkaline, strongly effervescent, platy shale.

The depth to bedrock is 10 to 20 inches. The content of rock fragments is 0 to 15 percent.

The A horizon has hue of 5Y to 10YR. It is loam, clay loam, silt loam, or fine sandy loam. It is mildly alkaline or moderately alkaline.

The AC horizon and the C horizon, if it occurs, have hue of 5Y to 7.5YR. They are clay loam, loam, or silt loam. They are moderately alkaline or strongly alkaline.

Shingle Variant

The Shingle Variant consists of shallow, well drained soils that formed in residuum and colluvium derived from sandstone and shale. These soils are on tablelands and hillcrests. Slopes are 3 to 6 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are loamy, mixed (calcareous), mesic Lithic Ustic Torriorthents.

Typical pedon of Shingle Variant silt loam, in an area of Parmleed-Worfka-Shingle Variant association, moist, 3 to 15 percent slopes, SE¹/₄, NE¹/₄ sec. 2, T. 57 N., R. 87 W.

A—0 to 2 inches; light yellowish brown (10YR 6/4) silt loam, dark brown (10YR 3/3) moist; weak very fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; many fine and very fine roots; 5 percent porcellanite fragments; strongly effervescent; moderately alkaline; clear smooth boundary.

AC—2 to 13 inches; pale brown (10YR 6/3) silt loam, dark brown (10YR 4/3) moist; weak medium and coarse subangular blocky structure; slightly hard, friable, slightly sticky and plastic; many fine roots; strongly effervescent; 5 percent porcellanite and sandstone fragments coated with calcium carbonate on the undersides; moderately alkaline; abrupt wavy boundary.

R—13 to 20 inches; hard, effervescent sandstone bedrock.

The depth to bedrock ranges from 10 to 20 inches.

The A horizon is mildly alkaline or moderately alkaline.

The C horizon, if it occurs, is loam or silt loam.

Sinkson Series

The Sinkson series consists of very deep, well drained soils that formed in alluvium derived from shale. These soils are on toe slopes and alluvial fans. Slopes are 6 to 15 percent. Elevation is 3,900 to 4,500 feet. The average annual precipitation is 15 to 19 inches, and the average annual temperature is 43 to 45 degrees F. The frost-free period is 80 to 100 days.

These soils are fine-loamy, mixed (calcareous), frigid Ustic Torriorthents.

Typical pedon of Sinkson silt loam, 6 to 15 percent slopes, NW¹/₄, NE¹/₄ sec. 36, T. 58 N., R. 89 W., in the Passcreek area:

A—0 to 3 inches; reddish brown (2.5YR 4/4) silt loam, dusky red (2.5YR 3/3) moist; moderate very fine granular structure; soft, very friable, slightly sticky and slightly plastic; many fine and medium roots; slightly effervescent; moderately alkaline; clear smooth boundary.

Bk1—3 to 11 inches; reddish brown (2.5YR 5/4) silt loam, dark reddish brown (2.5YR 3/4) moist; weak coarse subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common fine and very fine roots; few fine threads of secondary calcium carbonate; strongly effervescent; moderately alkaline; clear smooth boundary.

Bk2—11 to 26 inches; light reddish brown (2.5YR 6/4) silt loam, red (2.5YR 4/6) moist; weak coarse prismatic structure; slightly hard, very friable, slightly sticky and slightly plastic; few fine threads and few fine and medium masses of secondary calcium carbonate; strongly effervescent; moderately alkaline; gradual smooth boundary.

Bk3—26 to 60 inches; light red (2.5YR 6/6) silt loam, red (2.5YR 4/6) moist; weak coarse subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; few fine and medium threads and few medium and coarse masses of secondary calcium carbonate; strongly effervescent; moderately alkaline.

Spearman Series

The Spearman series consists of very deep, well drained soils that formed in residuum and alluvium derived from porcellanite. These soils are on hillslopes. Slopes are 6 to 15 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is about 12 to 14 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are fine-loamy over fragmental, mixed, mesic Aridic Haplustolls.

Typical pedon of Spearman loam, in an area of Spearman-Wibaux association, 6 to 25 percent slopes, NW¹/₄, NE¹/₄ sec. 20, T. 58 N., R. 84 W., in the Ash Creek area:

A—0 to 2 inches; reddish brown (5YR 5/3) loam, dark reddish brown (5YR 3/3) moist; weak very fine granular structure; soft, very friable, slightly sticky and slightly plastic; many fine and very fine roots; neutral; clear smooth boundary.

Bw—2 to 10 inches; reddish brown (5YR 5/3) clay loam, dark reddish brown (5YR 3/3) moist; weak medium subangular blocky structure parting to moderate fine and very fine subangular blocky; slightly hard, very friable, slightly sticky and slightly plastic; common fine and medium roots; 10 percent porcellanite channers; neutral; clear smooth boundary.

Bk—10 to 21 inches; reddish brown (5YR 5/4) loam, dark reddish brown (5YR 3/4) moist; massive; soft, very friable, slightly sticky and slightly plastic; strongly effervescent; 10 percent porcellanite channers coated with secondary calcium carbonate on the undersides; moderately alkaline; clear wavy boundary.

2C—21 to 60 inches; fractured, displaced porcellanite fragments and many void interstices larger than 2 millimeters; roots matted between layers in the upper 3 inches.

The depth to the 2C horizon is 20 to 40 inches. The content of rock fragments in the A and B horizons ranges from 2 to 10 percent. Hue is 5YR or 2.5YR throughout the profile.

The Bw horizon is loam or clay loam.

Starley Series

The Starley series consists of shallow, well drained soils that formed in residuum and colluvium derived from limestone. These soils are on hills, ridges, and mountain slopes. Slopes are 10 to 60 percent. Elevation is 5,500 to 7,500 feet. The average annual precipitation is 19 to 25 inches, and the average annual temperature is 40 to 42 degrees F. The frost-free period is 50 to 80 days.

These soils are loamy-skeletal, mixed Lithic Cryoborolls.

Typical pedon of Starley loam, in an area of Hardhart-Starley association, 10 to 60 percent slopes, NW¹/₄, NE¹/₄ sec. 3, T. 57 N., R. 89 W.

A—0 to 9 inches; brown (10YR 5/3) loam, very dark grayish brown (10YR 3/2) moist; moderate fine granular structure; soft, very friable, slightly sticky and slightly plastic; common fine and medium roots; 5 percent gravel; neutral; gradual wavy boundary.

Bk—9 to 17 inches; yellowish brown (10YR 5/4) very cobbly loam, dark brown (10YR 4/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; 20 percent gravel and 35 percent cobbles; common moderately thick coatings of secondary calcium carbonate on the undersides of cobbles and gravel; strongly effervescent; moderately alkaline; abrupt smooth boundary.

R—17 inches; hard limestone.

The depth to bedrock ranges from 10 to 20 inches.

The Bk horizon has a fine-earth texture of loam or clay loam. The content of rock fragments ranges from 35 to 60 percent.

Starman Series

The Starman series consists of shallow, well drained soils that formed in residuum and colluvium derived from limestone. These soils are on mountain

slopes. Slopes are 15 to 45 percent. Elevation is 5,500 to 6,500 feet. The average annual precipitation is 19 to 25 inches, and the average annual temperature is 41 to 43 degrees F. The frost-free period is 50 to 80 days.

These soils are loamy-skeletal, mixed (calcareous) Lithic Cryorthents.

Typical pedon of Starman channery clay loam, in an area of Rock outcrop-Starman association, 15 to 45 percent slopes, NW¹/₄, NW¹/₄ sec. 12, T. 53 N., R. 85 W.

A—0 to 4 inches; pale brown (10YR 6/3) channery clay loam, dark grayish brown (10YR 4/2) moist; moderate fine granular structure; soft, friable, slightly sticky and slightly plastic; common fine and very fine roots; slightly effervescent; 25 percent channers; mildly alkaline; gradual wavy boundary.

Bk—4 to 14 inches; very pale brown (10YR 7/3) very channery clay loam, brown (10YR 5/3) moist; massive; hard, friable, slightly sticky and slightly plastic; few fine roots; common medium and fine threads and seams of secondary calcium carbonate; strongly effervescent; 45 percent channers; moderately alkaline; abrupt wavy boundary.

R—14 inches; fractured limestone bedrock.

The depth to bedrock ranges from 10 to 20 inches. The control section contains 35 to 75 percent rock fragments. The rock fragments are dominantly gravel and channers, but cobbles and stones range from 0 to 35 percent.

Starman Variant

The Starman Variant consists of shallow, well drained soils that formed in residuum and colluvium derived from limestone. These soils are on mountain back slopes. Slopes are 10 to 70 percent. Elevation is 4,000 to 6,500 feet. The average annual precipitation is 15 to 19 inches, and the average annual temperature is 43 to 45 degrees F. The frost-free period is 80 to 100 days.

These soils are loamy-skeletal, mixed (calcareous), frigid Lithic Ustic Torriorthents.

Typical pedon of Starman Variant very channery loam, in an area of Rock outcrop-Starman Variant association, 10 to 70 percent slopes, NE¹/₄, NE¹/₄ sec. 11, T. 56 N., R. 87 W.

A—0 to 3 inches; pale brown (10YR 6/3) very channery loam, dark grayish brown (10YR 4/2) moist; weak medium and fine granular structure;

soft, very friable, slightly sticky and slightly plastic; common fine and very fine roots; slightly effervescent; 40 percent channers; mildly alkaline; clear smooth boundary.

C—3 to 14 inches; light yellowish brown (10YR 6/4) extremely channery loam, dark yellowish brown (10YR 4/4) moist; massive; soft, very friable, slightly sticky and slightly plastic; few fine and coarse roots; violently effervescent; 65 percent channers; moderately alkaline; abrupt wavy boundary.

R—14 inches; limestone.

The depth to bedrock ranges from 10 to 20 inches.

The A horizon is mildly alkaline or moderately alkaline.

The C horizon has a fine-earth texture of silt loam, loam, or clay loam. It is moderately alkaline or strongly alkaline. The content of rock fragments ranges from 50 to 75 percent. The rock fragments are mainly gravel, channers, or cobbles that have a few stones or boulders.

Taluce Series

The Taluce series consists of shallow, somewhat excessively drained soils that formed in residuum and colluvium derived from sandstone. These soils are on hills and ridges. Slopes are 3 to 30 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are loamy, mixed (calcareous), mesic, shallow Ustic Torriorthents.

Typical pedon of Taluce fine sandy loam, in an area of Taluce-Tulloch-Vonalee association, moist, 9 to 30 percent slopes, NE¹/₄, SE¹/₄ sec. 17, T. 56 N., R. 78 W., in the Buffalo Creek area:

A—0 to 1 inch; dark brown (10YR 4/3) fine sandy loam, dark yellowish brown (10YR 3/4) moist; weak fine granular structure; soft, friable, nonsticky and nonplastic; many fine and medium roots; slightly effervescent; mildly alkaline; clear smooth boundary.

C—1 to 18 inches; pale brown (10YR 6/3) fine sandy loam, dark yellowish brown (10YR 4/4) moist; weak medium subangular blocky structure; soft, friable, nonsticky and nonplastic; common fine and medium roots; few fine and medium threads of calcium carbonate; strongly effervescent; moderately alkaline; clear smooth boundary.

Cr—18 inches; soft, effervescent sandstone.

The depth to bedrock ranges from 10 to 20 inches. Hue is 10YR or 2.5Y throughout the profile.

The A and C horizons are fine sandy loam or sandy loam. Reaction is mildly alkaline or moderately alkaline in the A horizon and moderately alkaline or strongly alkaline in the C horizon.

Taluze Variant

The Taluze Variant consists of shallow, somewhat excessively drained soils that formed in residuum and colluvium derived from arkosic sandstone. These soils are on the crests of ridges and hills and on back slopes. Slopes are 10 to 65 percent. Elevation is 4,000 to 5,000 feet. The average annual precipitation is 15 to 19 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are sandy, mixed, mesic, shallow Aridic Haplustolls.

Typical pedon of Taluze Variant sandy loam, in an area of Taluze Variant-Treoff-Theedle Variant association, 10 to 65 percent slopes, SE¹/₄, SW¹/₄ sec. 33, T. 54 N., R. 83 W., in the Banner area:

A—0 to 1 inch; grayish brown (10YR 5/2) sandy loam, very dark grayish brown (10YR 3/2) moist; weak very fine granular structure; soft, very friable, nonsticky and nonplastic; many fine and very fine roots; slightly effervescent; mildly alkaline; clear smooth boundary.

AC—1 to 11 inches; grayish brown (10YR 5/2) sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; common fine and very fine roots; strongly effervescent; moderately alkaline; clear smooth boundary.

C—11 to 19 inches; light yellowish brown (10YR 6/4) sand, yellowish brown (10YR 5/4) moist; single grain; loose, nonsticky and nonplastic; few fine roots; strongly effervescent; moderately alkaline; clear smooth boundary.

Cr—19 inches; soft sandstone.

The depth to bedrock ranges from 10 to 20 inches. Reaction is mildly alkaline or moderately alkaline in the A, AC, and C horizons. The C horizon is sand or loamy sand.

Theedle Series

The Theedle series consists of moderately deep, well drained soils that formed in residuum, alluvium,

and colluvium derived from interbedded sedimentary rock. These soils are on ridges and hills. Slopes are 6 to 75 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are fine-loamy, mixed (calcareous), mesic Ustic Torriorthents.

Typical pedon of Theedle loam, in an area of Shingle-Theedle-Kishona association, moist, 3 to 30 percent slopes, NE¹/₄, NW¹/₄ sec. 24, T. 58 N., R. 84 W.

A—0 to 2 inches; dark yellowish brown (10YR 3/4) loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; many fine and very fine roots; strongly effervescent; moderately alkaline; clear smooth boundary.

AC—2 to 12 inches; brown (10YR 5/3) loam, dark brown (10YR 4/3) moist; weak fine coarse subangular blocky structure parting to weak fine subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots; strongly effervescent; moderately alkaline; gradual wavy boundary.

C—12 to 22 inches; pale brown (10YR 6/3) loam, brown (10YR 5/3) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; strongly effervescent; moderately alkaline; gradual wavy boundary.

Cr—22 inches; soft, effervescent, moderately alkaline shale.

The depth to bedrock ranges from 20 to 40 inches. Hue is 10YR or 2.5Y throughout the profile.

The A horizon is fine sandy loam, clay loam, or loam. It is mildly alkaline or moderately alkaline.

The C horizon is clay loam or loam. It is moderately alkaline or strongly alkaline.

Theedle Variant

The Theedle Variant consists of moderately deep, somewhat excessively drained soils that formed in residuum and colluvium derived from interbedded arkosic sandstone and shale. These soils are on hillslopes. Slopes are 25 to 65 percent. Elevation is 4,000 to 5,000 feet. The average annual precipitation is 15 to 19 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are coarse-loamy, mixed, mesic Aridic Haplustolls.

Typical pedon of Theedle Variant very fine sandy loam, in an area of Taluce Variant-Treoff-Theedle Variant association, 10 to 65 percent slopes, SE¹/₄, SW¹/₄ sec. 33, T. 54 N., R. 83 W.

A1—0 to 1 inch; grayish brown (10YR 5/2) very fine sandy loam, very dark grayish brown (10YR 3/2) moist; weak very fine granular structure; soft, very friable, nonsticky and nonplastic; many fine and very fine roots; slightly effervescent; moderately alkaline; clear smooth boundary.

A2—1 to 9 inches; grayish brown (10YR 5/2) very fine sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common fine and very fine roots; strongly effervescent; moderately alkaline; clear smooth boundary.

Bk—9 to 27 inches; pale brown (10YR 6/3) very fine sandy loam, light olive brown (2.5Y 5/4) moist; weak coarse subangular blocky structure; hard, very friable, slightly sticky and slightly plastic; few fine roots; few fine threads of secondary calcium carbonate; strongly effervescent; moderately alkaline; clear smooth boundary.

Cr—27 inches; soft, strongly effervescent shale.

The depth to bedrock ranges from 20 to 40 inches.

The A horizon is mildly alkaline or moderately alkaline.

The Bk horizon or the C horizon, if it occurs, has hue of 10YR or 2.5Y.

Tolman Series

The Tolman series consists of shallow, well drained soils that formed in residuum and colluvium derived from sandstone and limestone. These soils are on mountain slopes and ridges. Slopes are 5 to 70 percent. Elevation is 5,400 to 7,000 feet. The average annual precipitation is 15 to 20 inches, and the average annual temperature is 41 to 43 degrees F. The frost-free period is 50 to 100 days.

These soils are loamy-skeletal, mixed Lithic Argiborolls.

Typical pedon of Tolman channery loam, in an area of Cloud Peak-Tolman complex, 10 to 75 percent slopes, NE¹/₄, NE¹/₄ sec. 5, T. 56 N., R. 87 W., in the Parkman area:

A—0 to 5 inches; dark grayish brown (10YR 4/2) channery loam, very dark brown (10YR 2/2) moist; moderate fine granular structure; soft, very friable, slightly sticky and slightly plastic;

many fine and very fine roots; 25 percent channers; neutral; clear smooth boundary.

Bt—5 to 11 inches; dark grayish brown (10YR 4/2) very channery clay loam, very dark grayish brown (10YR 3/2) moist; moderate coarse prismatic structure parting to moderate medium subangular blocky; hard, friable, sticky and plastic; common faint clay films on faces of peds; 45 percent channers; neutral; clear wavy boundary.

Btk—11 to 15 inches; dark brown (10YR 4/3) very channery clay loam, dark brown (10YR 3/3) moist; moderate medium prismatic structure parting to strong medium and fine subangular blocky; hard, friable, sticky and plastic; common distinct clay films on faces of peds; few fine threads of secondary calcium carbonate; slightly effervescent; 55 percent channers; mildly alkaline; abrupt irregular boundary.

R—15 inches; hard, effervescent, cherty limestone.

The depth to bedrock ranges from 10 to 20 inches. The B horizon typically rests on hard sandstone or limestone bedrock, but some pedons have a thin C horizon. The content of rock fragments in the B and C horizons ranges from 35 to 70 percent. The fragments are mainly hard sandstone and limestone less than 14 inches in diameter.

The Btk horizon and the C horizon, if it occurs, are mildly alkaline or moderately alkaline.

Treoff Series

The Treoff series consists of shallow, somewhat excessively drained soils that formed in residuum and colluvium derived from shale and arkosic sandstone. These soils are on hills. Slopes are 10 to 65 percent. Elevation is 4,000 to 5,000 feet. The average annual precipitation is 15 to 19 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are loamy, mixed, mesic, shallow Torriorthentic Haplustolls.

Typical pedon of Treoff fine sandy loam, in an area of Taluce Variant-Treoff-Theedle Variant association, 10 to 65 percent slopes, NW¹/₄, SE¹/₄ sec. 19, T. 54 N., R. 83 W., in the Banner area:

A—0 to 1 inch; brown (10YR 5/3) fine sandy loam, dark brown (10YR 3/3) moist; weak very fine granular structure; soft, very friable, slightly sticky and slightly plastic; strongly effervescent; moderately alkaline; clear smooth boundary.

Bw—1 to 9 inches; dark brown (10YR 4/3) fine sandy loam, very dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure; hard, very friable, slightly sticky and slightly plastic; disseminated calcium carbonate; strongly effervescent; moderately alkaline; clear smooth boundary.

Bk—9 to 19 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 5/3) moist; moderate very fine and fine subangular blocky structure; hard, very friable, slightly sticky and slightly plastic; common fine threads of secondary calcium carbonate; violently effervescent; moderately alkaline; clear smooth boundary.

Cr—19 inches; soft, platy, strongly effervescent shale.

The depth to bedrock ranges from 10 to 20 inches.

The A horizon is mildly alkaline or moderately alkaline.

The Bw and Bk horizons are sandy loam or fine sandy loam.

Trimad Series

The Trimad series consists of very deep, well drained soils that formed in colluvium and alluvium derived from sedimentary rock or granite. These soils are on terraces, hillslopes, alluvial fans, and terrace escarpments. Slopes are 0 to 45 percent. Elevation is 4,000 to 6,000 feet. The average annual precipitation is 15 to 19 inches, and the average annual temperature is 43 to 45 degrees F. The frost-free period is 80 to 100 days.

These soils are loamy-skeletal, mixed Aridic Calciborolls.

Typical pedon of Trimad gravelly loam, in an area of Trimad-Twin Creek association, 0 to 6 percent slopes, NW¹/₄, SE¹/₄ sec. 2, T. 57 N., R. 89 W.

A1—0 to 1 inch; brown (10YR 5/3) gravelly loam, dark brown (10YR 3/3) moist; moderate medium platy structure; soft, very friable, slightly sticky and slightly plastic; many fine and very fine roots; slightly effervescent; 20 percent gravel; mildly alkaline; clear smooth boundary.

A2—1 to 8 inches; dark brown (10YR 4/3) gravelly loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many fine and very fine roots; slightly effervescent; 20 percent gravel and 5 percent cobbles; mildly alkaline; clear smooth boundary.

Bw—8 to 17 inches; brown (10YR 5/3) very gravelly loam, dark brown (10YR 4/3) moist; moderate

medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many fine and very fine roots; strongly effervescent; 35 percent gravel and 5 percent cobbles; moderately alkaline; clear smooth boundary.

Bk1—17 to 23 inches; pale brown (10YR 6/3) very gravelly loam, brown (10YR 5/3) moist; massive; soft, very friable, slightly sticky and slightly plastic; few fine roots; strongly effervescent; 35 percent gravel and 10 percent cobbles; moderately alkaline; clear wavy boundary.

Bk2—23 to 32 inches; very pale brown (10YR 7/3) very gravelly loam, pale brown (10YR 6/3) moist; massive; hard, very friable, slightly sticky and slightly plastic; few fine roots; many medium secondary carbonate coatings on the undersides of pebbles; violently effervescent; 35 percent gravel, 10 percent cobbles, and 5 percent stones; moderately alkaline; gradual wavy boundary.

C—32 to 60 inches; very pale brown (10YR 7/3) extremely gravelly loam, pale brown (10YR 6/3) moist; massive; soft, very friable, slightly sticky and slightly plastic; strongly effervescent; 45 percent gravel, 15 percent cobbles, and 5 percent stones; moderately alkaline.

Some pedons do not have a Bw horizon.

The Bk horizon has a calcium carbonate equivalent of 15 to 25 percent. The content of rock fragments ranges from 35 to 70 percent. The rock fragments are dominantly gravel and cobbles, but a few stones are in many pedons. The content of clay ranges from 10 to 20 percent.

The C horizon has a calcium carbonate equivalent of 10 to 20 percent. The content of rock fragments ranges from 35 to 70 percent. The rock fragments are dominantly gravel and cobbles, but a few stones are in many pedons. The content of clay ranges from 10 to 20 percent. Some pedons do not have a C horizon within a depth of 60 inches.

Trivar Series

The Trivar series consists of very deep, well drained soils that formed in alluvium derived from sedimentary rock. These soils are on terraces, alluvial fans, and toe slopes. Slopes are 0 to 25 percent. Elevation is 5,400 to 6,000 feet. The average annual precipitation is 15 to 19 inches, and the average annual temperature is 43 to 45 degrees F. The frost-free period is 80 to 100 days.

These soils are coarse-loamy, mixed Typic Calciborolls.

Typical pedon of Trivar silt loam, in an area of Trimad-Trivar complex, 0 to 25 percent slopes, SE¹/₄, SW¹/₄ sec. 13, T. 56 N., R. 87 W.

A—0 to 2 inches; dark brown (7.5YR 4/2) silt loam, dark brown (7.5YR 3/2) moist; weak very fine granular structure; soft, very friable, slightly sticky and slightly plastic; many fine and very fine roots; disseminated calcium carbonate; slightly effervescent; moderately alkaline; clear smooth boundary.

Bw—2 to 7 inches; dark brown (7.5YR 4/2) silt loam, dark brown (7.5YR 3/2) moist; moderate medium subangular blocky structure parting to moderate fine subangular blocky; slightly hard, very friable, slightly sticky and slightly plastic; many fine and very fine roots; few thin clay films on vertical faces of pedis; disseminated calcium carbonate; strongly effervescent; moderately alkaline; clear smooth boundary.

Bk1—7 to 20 inches; pinkish white (7.5YR 8/2) silt loam, light brown (7.5YR 6/4) moist; moderate medium and fine subangular blocky structure; hard, very friable, sticky and slightly plastic; common fine and very fine roots; common moderately thick coatings of secondary calcium carbonate on the undersides of pebbles; violently effervescent; 10 percent gravel; strongly alkaline; gradual smooth boundary.

2Bk2—20 to 41 inches; pink (5YR 7/4) gravelly sandy loam, light reddish brown (5YR 6/4) moist; massive; soft, friable, nonsticky and nonplastic; common moderately thick coatings of secondary calcium carbonate on the undersides of pebbles; violently effervescent; 20 percent gravel and 5 percent cobbles; moderately alkaline; diffuse wavy boundary.

2Bk3—41 to 60 inches; reddish yellow (5YR 7/6) gravelly sandy loam, yellowish red (5YR 5/6) moist; massive; soft, friable, nonsticky and nonplastic; common moderately thick coatings of secondary calcium carbonate on the undersides of pebbles; violently effervescent; 30 percent gravel and 5 percent cobbles; moderately alkaline.

The control section averages 10 to 18 percent noncarbonate clay. Hue is 10YR to 5YR throughout the profile.

The A and Bw horizons are mildly alkaline or moderately alkaline.

The Bk horizon is silt loam or loam. The calcium carbonate equivalent ranges from 10 to 35 percent. Reaction is moderately alkaline or strongly alkaline.

The 2Bk horizon has a fine-earth texture of sandy loam or loam. The content of rock fragments ranges from 25 to 35 percent. The calcium carbonate equivalent ranges from 15 to 35 percent. Reaction is moderately alkaline or strongly alkaline.

Tullock Series

The Tullock series consists of moderately deep, excessively drained soils that formed in residuum, alluvium, and colluvium derived from sandstone. These soils are on ridges and hills. Slopes are 3 to 30 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are mixed, mesic Ustic Torripsamments.

Typical pedon of Tullock loamy fine sand, in an area of Taluce-Tullock-Vonalee association, moist, 9 to 30 percent slopes, NE¹/₄, NW¹/₄ sec. 32, T. 58 N., R. 83 W.

A—0 to 4 inches; brown (10YR 5/3) loamy fine sand, dark yellowish brown (10YR 4/4) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; strongly effervescent; moderately alkaline; clear smooth boundary.

AC—4 to 12 inches; yellowish brown (10YR 5/4) loamy fine sand, dark brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, loose, nonsticky and nonplastic; strongly effervescent; moderately alkaline; gradual wavy boundary.

C—12 to 34 inches; light gray (10YR 7/2) loamy fine sand, brown (10YR 5/3) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; strongly effervescent; moderately alkaline; gradual wavy boundary.

Cr—34 inches; soft sandstone.

The depth to bedrock ranges from 20 to 40 inches.

The A horizon is loamy fine sand, loamy sand, or fine sandy loam. It is mildly alkaline or moderately alkaline. The C horizon is loamy fine sand or loamy sand.

Twin Creek Series

The Twin Creek series consists of very deep, well drained soils that formed in alluvium derived from sandstone and shale. These soils are on terraces and

alluvial fans. Slopes are 0 to 6 percent. Elevation is 3,900 to 5,600 feet. The average annual precipitation is 15 to 19 inches, and the average annual temperature is 43 to 45 degrees F. The frost-free period is 80 to 100 days.

These soils are fine-loamy, mixed Typic Haploborolls.

Typical pedon of Twin Creek loam, 0 to 6 percent slopes, SE¹/₄, NW¹/₄ sec. 26, T. 58 N., R. 89 W., in the Passcreek area:

- A—0 to 3 inches; reddish brown (5YR 4/3) loam, dark reddish brown (5YR 3/3) moist; moderate medium granular structure; soft, very friable, slightly sticky and slightly plastic; many fine and very fine roots; neutral; clear smooth boundary.
- AB—3 to 10 inches; reddish brown (5YR 4/3) loam, dark reddish brown (5YR 3/3) moist; weak medium prismatic structure parting to moderate medium subangular blocky; slightly hard, very friable, slightly sticky and slightly plastic; common fine and very fine roots; mildly alkaline; clear smooth boundary.
- Bw—10 to 19 inches; reddish brown (5YR 5/3) loam, reddish brown (5YR 4/3) moist; moderate medium prismatic structure parting to moderate medium and fine subangular blocky; slightly hard, very friable, slightly sticky and slightly plastic; mildly alkaline; clear smooth boundary.
- Bk1—19 to 28 inches; reddish brown (5YR 5/3) loam, reddish brown (5YR 4/3) moist; moderate medium subangular blocky structure; hard, very friable, slightly sticky and slightly plastic; few fine threads of calcium carbonate; slightly effervescent; moderately alkaline; clear smooth boundary.
- Bk2—28 to 60 inches; reddish yellow (5YR 6/6) loam, yellowish red (5YR 4/6) moist; weak coarse subangular blocky structure; hard, very friable, slightly sticky and slightly plastic; common fine threads and few fine and medium masses of secondary calcium carbonate; strongly effervescent; moderately alkaline.

The A horizon is loam or silt loam. It is neutral or mildly alkaline.

The Bw horizon is loam, silty clay loam, or clay loam. It is mildly alkaline or moderately alkaline.

The Bk horizon has hue of 5YR or 2.5YR. It is dominantly loam or silt loam. In some pedons, however, it is very gravelly silt loam below a depth of 40 inches. Reaction is moderately alkaline or strongly alkaline.

Twin Creek Variant

The Twin Creek Variant consists of very deep, somewhat poorly drained soils that formed in alluvium derived from sandstone and shale. These soils are on alluvial fans and bottoms in the valleys. Slopes are 0 to 3 percent. Elevation is 3,900 to 5,000 feet. The average annual precipitation is 15 to 19 inches, and the average annual temperature is 43 to 45 degrees F. The frost-free period is 80 to 100 days.

These soils are fine-loamy, mixed Aquic Argiborolls.

Typical pedon of Twin Creek Variant silt loam, 0 to 3 percent slopes, NW¹/₄, SW¹/₄ sec. 25, T. 58 N., R. 89 W., in the Passcreek area:

- Ap—0 to 10 inches; dusky red (2.5YR 3/2) silt loam, very dusky red (2.5YR 2/2) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and plastic; many fine and very fine roots; neutral; abrupt smooth boundary.
- Bt1—10 to 17 inches; red (2.5YR 4/8) silt loam, dark red (2.5YR 3/6) moist; moderate medium subangular blocky structure parting to strong fine and very fine angular blocky; slightly hard, very friable, slightly sticky and plastic; common fine and very fine roots; many distinct clay films on faces of peds; mildly alkaline; clear smooth boundary.
- Bt2—17 to 27 inches; red (2.5YR 4/8) silt loam, red (2.5YR 4/6) moist; moderate coarse prismatic structure parting to strong fine and medium angular and subangular blocky; slightly hard, very friable, slightly sticky and plastic; many prominent clay films on faces of peds; mildly alkaline; clear smooth boundary.
- Bt3—27 to 42 inches; red (2.5YR 4/8) silt loam, red (2.5YR 4/6) moist; common fine and medium distinct red (2.5YR 5/8) mottles; moderate coarse prismatic structure parting to strong medium angular and subangular blocky; slightly hard, very friable, slightly sticky and plastic; many prominent clay films on faces of peds; mildly alkaline; clear smooth boundary.
- C—42 to 60 inches; light red (2.5YR 6/8) silt loam, red (2.5YR 4/6) moist; many fine and medium distinct red (2.5YR 5/8) mottles; massive; slightly hard, very friable, slightly sticky and plastic; mildly alkaline.

A fluctuating water table is at a depth of 1.5 to 3.0 feet. It is the result of the irrigation of the Twin Creek Variant and the surrounding soils.

The A horizon is neutral or mildly alkaline. The B and C horizons are mildly alkaline or moderately alkaline. The B horizon is silt loam, silty clay loam, or clay loam. The C horizon is silt loam or loam.

Ulm Series

The Ulm series consists of very deep, well drained soils that formed in alluvium derived from shale. These soils are on alluvial fans, terraces, and toe slopes. Slopes are 0 to 15 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are fine, montmorillonitic, mesic Ustollic Haplargids.

Typical pedon of Ulm loam, in an area of Bidman-Ulm, dry, complex, 0 to 6 percent slopes, NE¹/₄, SE¹/₄ sec. 9, T. 56 N., R. 77 W., in the Powder River area:

A—0 to 3 inches; light brownish gray (10YR 6/2) loam, dark brown (10YR 4/3) moist; strong fine granular structure; soft, very friable, slightly sticky and slightly plastic; many fine and very fine roots; neutral; clear smooth boundary.

Bt1—3 to 8 inches; light brownish gray (10YR 6/2) clay loam, dark brown (10YR 4/3) moist; moderate medium subangular blocky structure parting to moderate fine subangular blocky; hard, very friable, slightly sticky and slightly plastic; common fine roots; few faint clay films on faces of peds; neutral; clear smooth boundary.

Bt2—8 to 19 inches; brown (10YR 5/3) clay loam, dark yellowish brown (10YR 4/4) moist; strong medium prismatic structure parting to strong fine angular blocky; very hard, very friable, sticky and plastic; few medium roots; many distinct clay films on faces of peds; mildly alkaline; clear smooth boundary.

Btk—19 to 25 inches; light olive brown (2.5Y 5/4) clay loam, olive brown (2.5Y 4/4) moist; moderate medium subangular blocky structure; very hard, friable, sticky and plastic; few faint clay films on faces of peds; common fine concretions and threads of secondary calcium carbonate; strongly effervescent; moderately alkaline; gradual smooth boundary.

Bk—25 to 60 inches; light yellowish brown (2.5Y 6/4) clay loam, light olive brown (2.5Y 5/4) moist; moderate coarse subangular blocky structure; hard, friable, sticky and plastic; common fine masses and threads of secondary calcium

carbonate; strongly effervescent; moderately alkaline.

Hue is 10YR or 2.5Y throughout the profile.

The A horizon is loam or clay loam.

The Bt horizon is clay loam or clay. It is neutral or mildly alkaline.

The Bk horizon is clay loam or clay. The calcium carbonate equivalent is 6 to 15 percent. Reaction is moderately alkaline or strongly alkaline.

Vonalee Series

The Vonalee series consists of very deep, somewhat excessively drained soils that formed in alluvium and eolian deposits derived from sandstone. These soils are on hills and alluvial fans. Slopes are 3 to 30 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are coarse-loamy, mixed, mesic Ustollic Haplargids.

Typical pedon of Vonalee loamy sand, in an area of Taluce-Tulloch-Vonalee association, 6 to 15 percent slopes, NW¹/₄, SE¹/₄ sec. 20, T. 54 N., R. 79 W., in the Clearmont area:

A—0 to 2 inches; dark brown (10YR 4/3) loamy sand, dark brown (10YR 3/3) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common fine and medium roots; mildly alkaline; clear smooth boundary.

Bt1—2 to 14 inches; dark yellowish brown (10YR 4/4) sandy loam, dark yellowish brown (10YR 3/4) moist; moderate coarse prismatic structure parting to moderate fine and medium subangular blocky; soft, very friable, slightly sticky and nonplastic; common fine and medium roots; few faint clay films on faces of peds; mildly alkaline; clear smooth boundary.

Bt2—14 to 34 inches; yellowish brown (10YR 5/4) sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; few fine and medium roots; few faint clay films on faces of peds; mildly alkaline; clear smooth boundary.

Bk—34 to 60 inches; light yellowish brown (10YR 6/4) sandy loam, dark yellowish brown (10YR 4/4) moist; massive; soft, very friable, slightly sticky and nonplastic; few fine seams of secondary calcium carbonate; strongly effervescent; moderately alkaline; clear smooth boundary.

Hue is 10YR or 2.5Y throughout the profile.

The A horizon is loamy sand or fine sandy loam. It is neutral or mildly alkaline.

The Bt horizon is sandy loam or fine sandy loam.

The Bk horizon is sandy loam, loamy fine sand, or loamy sand. It is moderately alkaline or strongly alkaline.

Wayden Series

The Wayden series consists of shallow, well drained soils that formed in residuum and colluvium derived from shale. These soils are on terrace escarpments and hills. Slopes are 0 to 45 percent. Elevation is 3,900 to 5,500 feet. The average annual precipitation is 15 to 19 inches, and the average annual temperature is 43 to 45 degrees F. The frost-free period is 80 to 100 days.

These soils are clayey, montmorillonitic (calcareous), frigid, shallow Typic Ustorthents.

Typical pedon of Wayden silty clay, 0 to 35 percent slopes, NE¹/₄, SW¹/₄ sec. 24, T. 58 N., R. 86 W., in the Ranchester area:

A—0 to 2 inches; light brownish gray (2.5Y 6/2) silty clay, grayish brown (2.5Y 5/2) moist; strong very fine granular structure; hard, firm, sticky and plastic; common fine and very fine roots; slightly effervescent; mildly alkaline; clear smooth boundary.

Bk1—2 to 9 inches; light brownish gray (2.5Y 6/2) silty clay, grayish brown (2.5Y 5/2) moist; moderate medium subangular blocky structure; extremely hard, firm, sticky and plastic; few fine and very fine roots; common fine and medium masses of secondary calcium carbonate; strongly effervescent; moderately alkaline; clear smooth boundary.

Bk2—9 to 17 inches; light brownish gray (2.5Y 6/2) silty clay, light olive brown (2.5Y 5/4) moist; moderate coarse subangular blocky structure; extremely hard, firm, sticky and plastic; common medium and coarse masses and few fine threads of secondary calcium carbonate; strongly effervescent; moderately alkaline; gradual wavy boundary.

Cr—17 inches; moderately hard, effervescent shale.

The depth to bedrock ranges from 10 to 20 inches.

The A horizon is silty clay or clay loam. It is mildly alkaline or moderately alkaline. The Bk horizon has a calcium carbonate equivalent of 8 to 15 percent.

Wetterdon Series

The Wetterdon series consists of very deep, well drained soils that formed in alluvium derived from sedimentary rock. These soils are on alluvial fans and hillslopes. Slopes are 0 to 9 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 15 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are fine-loamy, mixed, mesic Pachic Argiustolls.

Typical pedon of Wetterdon silt loam, in an area of Wetterdon-Recluse complex, 0 to 9 percent slopes, SW¹/₄, NE¹/₄ sec. 16, T. 54 N., R. 82 W.

Ap—0 to 5 inches; dark gray (10YR 4/1) silt loam, very dark brown (10YR 2/2) moist; moderate medium granular structure; slightly hard, very friable, slightly sticky and slightly plastic; many fine and very fine roots; common fine and very fine pores; mildly alkaline; clear smooth boundary.

BA—5 to 17 inches; gray (10YR 5/1) silt loam, very dark brown (10YR 2/2) moist; weak coarse prismatic structure parting to moderate coarse subangular blocky; slightly hard, very friable, slightly sticky and slightly plastic; common fine and very fine roots; many fine and very fine pores; few faint clay films on faces of peds; few bleached sand and silt grains on faces of peds; mildly alkaline; clear smooth boundary.

Bt1—17 to 30 inches; grayish brown (10YR 5/2) silty clay loam, very dark grayish brown (10YR 3/2) moist; moderate medium prismatic structure parting to strong coarse angular blocky; slightly hard, very friable, sticky and slightly plastic; few very fine and fine roots; many fine and medium pores; common distinct clay films on faces of peds; common bleached sand or silt grains on faces of peds; mildly alkaline; clear smooth boundary.

Bt2—30 to 46 inches; pale brown (10YR 6/3) silty clay loam, dark yellowish brown (10YR 3/4) moist; strong medium prismatic structure parting to strong medium angular blocky; hard, very firm, sticky and plastic; few fine and very fine pores; many distinct clay films on faces of peds; common bleached sand and silt grains on faces of peds; neutral; clear smooth boundary.

C—46 to 60 inches; brown (10YR 5/3) clay loam, dark yellowish brown (10YR 3/4) moist; weak coarse angular blocky structure; hard, firm, sticky

and plastic; few fine pores; about 40 percent soft, weathered porcellanite chips at angles in the ped faces; mildly alkaline.

Hue is 10YR to 5YR throughout the profile.

The A horizon is neutral or mildly alkaline.

The Bt horizon is silty clay loam or clay loam.

Individual subhorizons may exceed 35 percent clay, but the average content of clay in the upper 20 inches of this horizon is less than 35 percent. Reaction is neutral or mildly alkaline.

Some pedons have a Bk horizon below a depth of 40 inches. This horizon is silt loam, clay loam, or loam. The calcium carbonate equivalent is 3 to 8 percent. Reaction is mildly alkaline or moderately alkaline.

The C horizon is loam, clay loam, or silt loam. It is mildly alkaline or moderately alkaline.

Wibaux Series

The Wibaux series consists of very deep, somewhat excessively drained soils that formed in residuum and colluvium derived from porcellanite. These soils are on ridges and hills. Slopes are 0 to 75 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are loamy-skeletal over fragmental, mixed, nonacid, mesic Ustic Torriorthents.

Typical pedon of Wibaux channery loam, in an area of Shingle-Wibaux complex, cool, 15 to 80 percent slopes, NE¹/₄, NW¹/₄ sec. 4, T. 57 N., R. 84 W., in the Ash Creek area:

A—0 to 3 inches; light reddish brown (5YR 6/3) channery loam, reddish brown (5YR 4/3) moist; weak fine granular structure; soft, friable, slightly sticky and slightly plastic; many fine and very fine roots; 20 percent channers; mildly alkaline; clear smooth boundary.

C—3 to 18 inches; reddish brown (2.5YR 5/4) very channery loam, reddish brown (2.5YR 4/4) moist; weak fine granular structure; soft, friable, slightly sticky and slightly plastic; few fine and very fine roots; 55 percent channers; mildly alkaline; gradual wavy boundary.

2C—18 to 60 inches; displaced porcellanite fragments and many interstices larger than 2 millimeters that do not contain any soil material.

Depth to the 2C horizon is 10 to 20 inches.

The C horizon has hue of 5YR or 2.5YR. It is very channery loam or very channery sandy loam.

Windham Series

The Windham series consists of very deep, well drained soils that formed in alluvium and colluvium derived from sandstone, quartzite, and limestone. These soils are on fan terraces, pediments, and adjacent escarpments of the numerous deep valleys. Slopes are 3 to 85 percent. Elevation is 3,900 to 5,500 feet. The average annual precipitation is 15 to 19 inches, and the average annual temperature is 43 to 45 degrees F. The frost-free period is 80 to 100 days.

These soils are loamy-skeletal, carbonatic Typic Calciborolls.

Typical pedon of Windham gravelly loam, 3 to 85 percent slopes, SE¹/₄, NE¹/₄ sec. 27, T. 58 N., R. 88 W., in the Passcreek area:

A—0 to 9 inches; dark grayish brown (10YR 4/2) gravelly loam, very dark grayish brown (10YR 3/2) moist; weak medium granular structure; soft, very friable, slightly sticky and slightly plastic; common fine and very fine roots; slightly effervescent; 25 percent gravel; mildly alkaline; clear smooth boundary.

Bk1—9 to 16 inches; pale brown (10YR 6/3) very gravelly loam, yellowish brown (10YR 5/4) moist; massive; hard, friable, slightly sticky and slightly plastic; many medium coatings of secondary calcium carbonate on the undersides of pebbles; violently effervescent; 40 percent gravel; moderately alkaline; clear wavy boundary.

Bk2—16 to 29 inches; very pale brown (10YR 8/3) very gravelly loam, light brownish gray (10YR 6/2) moist; massive; hard, friable, slightly sticky and slightly plastic; many medium coatings of secondary calcium carbonate on the undersides of pebbles; violently effervescent; 60 percent gravel; moderately alkaline; gradual wavy boundary.

Bk3—29 to 60 inches; very pale brown (10YR 7/3) very gravelly loam, pale brown (10YR 6/3) moist; massive; hard, friable, sticky and slightly plastic; many medium coatings of secondary calcium carbonate on the undersides of pebbles; violently effervescent; 60 percent gravel; moderately alkaline.

The content of rock fragments in the control section ranges from 35 to 70 percent. The rock fragments are mainly gravel, but some pedons have a few cobbles and stones. The calcic horizon has a calcium carbonate equivalent of 40 to 50 percent.

Wolf Series

The Wolf series consists of very deep, well drained soils that formed in alluvium derived from sedimentary rock and in the underlying outwash deposits. These soils are on terraces and alluvial fans. Slopes are 0 to 6 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 19 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are fine-loamy, mixed, mesic Aridic Argiustolls.

Typical pedon of Wolf loam, 0 to 3 percent slopes, NW¹/₄, NE¹/₄ sec. 6, T. 55 N., R. 84 W.

A—0 to 2 inches; dark brown (10YR 3/3) loam, very dark grayish brown (10YR 3/2) moist; moderate very fine platy structure; slightly hard, very friable, slightly sticky and slightly plastic; common fine and medium roots; neutral; clear smooth boundary.

Bt—2 to 6 inches; dark brown (10YR 3/3) clay loam, very dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure parting to moderate fine and very fine subangular blocky; slightly hard, friable, slightly sticky and plastic; common fine and medium roots; common distinct clay films on faces of peds; mildly alkaline; clear smooth boundary.

Btk—6 to 8 inches; dark yellowish brown (10YR 3/4) clay loam, dark brown (10YR 3/3) moist; moderate coarse subangular blocky structure; slightly hard, very friable, slightly sticky and plastic; few medium roots; few faint clay films on faces of peds; common fine and medium threads of calcium carbonate; strongly effervescent; 5 percent gravel; moderately alkaline; clear smooth boundary.

Bk1—8 to 14 inches; light brownish gray (10YR 6/2) clay loam, brown (10YR 5/3) moist; weak coarse subangular blocky structure; slightly hard, very friable, sticky and plastic; few medium roots; common fine and medium threads of calcium carbonate; strongly effervescent; moderately alkaline; clear wavy boundary.

2Bk2—14 to 60 inches; white (10YR 8/2) gravelly loam, light gray (10YR 7/2) moist; massive;

slightly hard, very friable, slightly sticky and slightly plastic; moderately thick coatings of secondary calcium carbonate 1 to 2 millimeters in size on the undersides of pebbles; violently effervescent; 20 percent gravel; strongly alkaline.

The A horizon is neutral or mildly alkaline.

The Bt horizon is loam or clay loam. The content of rock fragments ranges from 0 to 15 percent.

The Bk1 horizon is loam or clay loam.

The 2Bk2 horizon has hue of 10YR or 2.5Y. The fine-earth texture is commonly sandy loam, loam, or clay loam, but in some pedons it is loamy sand below a depth of 40 inches. The content of rock fragments is 20 to 35 percent. The rock fragments are commonly gravel, but cobbles are in some pedons. Reaction is moderately alkaline or strongly alkaline. The calcium carbonate equivalent in the calcic horizon ranges from 15 to 30 percent.

Wolfvar Series

The Wolfvar series consists of very deep, well drained soils that formed in alluvium derived from sedimentary rock and in the underlying outwash deposits. These soils are on outwash terraces. Slopes are 0 to 9 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 15 to 19 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are fine-loamy over sandy or sandy-skeletal, mixed, mesic Aridic Argiustolls.

Typical pedon of Wolfvar loam, in an area of Platsher-Wolfvar loams, 0 to 3 percent slopes, NW¹/₄, NE¹/₄ sec. 7, T. 55 N., R. 84 W.

A—0 to 2 inches; brown (10YR 5/3) loam, very dark grayish brown (10YR 3/2) moist; moderate medium and fine granular structure; soft, very friable, slightly sticky and plastic; common very fine and fine roots; mildly alkaline; clear smooth boundary.

Bt—2 to 8 inches; dark yellowish brown (10YR 4/4) clay loam, dark brown (10YR 3/3) moist; strong coarse subangular blocky structure parting to strong medium and fine subangular blocky; hard, firm, sticky and plastic; common very fine and fine roots; many prominent clay films on vertical and horizontal faces of peds; 2 percent limestone gravel; mildly alkaline; clear smooth boundary.

Btk—8 to 14 inches; pale brown (10YR 6/3) clay, brown (10YR 5/3) moist; moderate medium and coarse subangular blocky structure parting to moderate fine subangular blocky; hard, friable,

sticky and plastic; few very fine and fine roots; few faint clay films on vertical and horizontal faces of peds; few fine threads of secondary calcium carbonate; strongly effervescent; moderately alkaline; clear wavy boundary.

Bk—14 to 37 inches; white (10YR 8/2) gravelly loam, very pale brown (10YR 8/3) moist; weak medium and coarse subangular blocky structure; hard, friable, sticky and slightly plastic; disseminated secondary calcium carbonate and pendants of secondary calcium carbonate 1 to 3 millimeters thick on the undersides of pebbles; violently effervescent; 30 percent gravel; moderately alkaline; gradual wavy boundary.

2C—37 to 60 inches; white (10YR 8/2) extremely gravelly loamy sand with a few thin strata of silt loam, very pale brown (10YR 8/3) moist; single grain; loose, nonsticky and nonplastic; strongly effervescent; few thin coatings of disseminated calcium carbonate on rock fragments; some oxidation of iron at a depth of 80 inches; 70 percent gravel; moderately alkaline.

Depth to the 2C horizon is 20 to 40 inches.

The A horizon is loam or clay loam. It is neutral to moderately alkaline.

The Bt horizon is clay loam or clay. It is neutral to moderately alkaline.

The Bk horizon has hue of 7.5YR to 2.5Y. The fine-earth texture is loam or clay loam. The content of rock fragments ranges from 0 to 35 percent. The calcium carbonate equivalent is 15 to 35 percent. Reaction is moderately alkaline or strongly alkaline.

The 2C or 2Bk horizon has a fine-earth texture of loamy sand, sand, or coarse sand. The content of rock fragments ranges from 35 to 70 percent. The rock fragments are predominantly rounded limestone gravel and cobbles, but some pedons have granitic rock fragments. Reaction is moderately alkaline or strongly alkaline.

Worf Series

The Worf series consists of shallow, well drained soils that formed in residuum derived from interbedded sedimentary rock. These soils are on hills. Slopes are 3 to 25 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are loamy, mixed, mesic, shallow Ustollic Haplargids.

Typical pedon of Worf loam, in an area of Cushman-Worf association, moist, 3 to 15 percent slopes, NW¹/₄, NW¹/₄ sec. 12, T. 53 N., R. 81 W.

A—0 to 2 inches; grayish brown (10YR 5/2) loam, dark brown (10YR 3/3) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; many fine and very fine roots; mildly alkaline; clear smooth boundary.

Bt—2 to 6 inches; brown (10YR 5/3) clay loam, dark brown (10YR 4/3) moist; moderate medium subangular blocky structure parting to moderate fine subangular blocky; hard, friable, slightly sticky and plastic; common fine and medium roots; many distinct clay films on faces of peds; mildly alkaline; clear smooth boundary.

Bk1—6 to 10 inches; pale brown (10YR 6/3) loam, dark brown (10YR 4/3) moist; moderate medium angular blocky structure; slightly hard, very friable, slightly sticky and plastic; few fine and very fine roots; common fine and medium threads of calcium carbonate; strongly effervescent; mildly alkaline; clear smooth boundary.

Bk2—10 to 13 inches; light gray (10YR 7/2) loam, dark yellowish brown (10YR 4/4) moist; weak coarse subangular blocky structure; slightly hard, very friable, slightly sticky and plastic; few fine and very fine roots; common fine and medium threads and masses of calcium carbonate; strongly effervescent; moderately alkaline; clear smooth boundary.

Cr—13 inches; soft shale.

The depth to bedrock ranges from 10 to 20 inches.

The A and Bt horizons are neutral or mildly alkaline. The Bt and Bk horizons are clay loam or loam.

Worfka Series

The Worfka series consists of shallow, well drained soils that formed in residuum, colluvium, and alluvium derived from shale. These soils are on ridges and hillslopes. Slopes are 0 to 30 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are clayey, montmorillonitic, mesic, shallow Ustollic Haplargids.

Typical pedon of Worfka clay loam, in an area of Renohill-Worfka association, moist, 3 to 20 percent slopes, NE¹/₄, NE¹/₄ sec. 10, T. 56 N., R. 85 W.

A—0 to 1 inch; light brownish gray (10YR 6/2) clay loam, dark brown (10YR 3/3) moist; moderate very fine granular structure; slightly hard, friable, sticky and plastic; common fine and medium roots; mildly alkaline; clear smooth boundary.

Bt—1 to 11 inches; grayish brown (10YR 5/2) clay, dark brown (10YR 4/3) moist; strong very coarse subangular blocky structure parting to strong medium and fine angular blocky; very hard, firm, sticky and plastic; few medium and coarse roots; common prominent clay films on faces of peds; 5 percent shale channers; mildly alkaline; clear smooth boundary.

Bk—11 to 17 inches; gray (10YR 6/1) clay loam, gray (10YR 5/1) moist; strong coarse subangular blocky structure; very hard, firm, sticky and plastic; common fine and medium masses of secondary calcium carbonate; strongly effervescent; 5 percent shale and ironstone channers; moderately alkaline; clear smooth boundary.

Cr—17 inches; varicolored, soft, effervescent shale.

The depth to bedrock ranges from 10 to 20 inches.

The A horizon has hue of 10YR or 2.5Y. It is clay loam, loam, or fine sandy loam. It is neutral or mildly alkaline.

The Bt horizon has hue of 10YR or 2.5Y. It is clay loam or clay. It is mildly alkaline or moderately alkaline.

The Bk horizon is clay loam or clay.

Worthenton Series

The Worthenton series consists of very deep, poorly drained soils that formed in alluvium derived from sedimentary rock. These soils are on flood plains and in drainageways. Slopes are 0 to 3 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are fine, montmorillonitic, mesic Typic Argiaquolls.

Typical pedon of Worthenton clay loam, 0 to 3 percent slopes, NE¹/₄, SW¹/₄ sec. 14, T. 51 N., R. 85 W.

Oi—2 inches to 0; partly decomposed root mat.

A—0 to 8 inches; gray (10YR 5/1) clay loam, very dark grayish brown (10YR 3/2) moist; common fine and medium prominent yellowish brown (10YR 5/6) mottles; moderate fine and medium angular blocky structure; hard, very friable, sticky and plastic; many very fine and coarse roots;

slightly effervescent; disseminated calcium carbonate; moderately alkaline; clear smooth boundary.

Btg—8 to 19 inches; gray (5Y 6/1) silty clay loam, dark brown (10YR 3/3) moist; common fine and medium prominent yellowish brown (10YR 5/6) mottles; strong medium and coarse angular blocky structure parting to strong fine angular blocky; hard, firm, sticky and plastic; many very fine and coarse roots; common prominent clay films on faces of peds; slightly effervescent; disseminated calcium carbonate; moderately alkaline; clear smooth boundary.

Bkg1—19 to 36 inches; greenish gray (5GY 6/1) clay, dark brown (10YR 3/3) moist; many fine and medium distinct yellowish brown (10YR 5/6) mottles; strong medium angular blocky structure; extremely hard, firm, sticky and plastic; few very fine roots; common fine and medium soft masses of secondary calcium carbonate; strongly effervescent; 5 percent lignite fragments; moderately alkaline; clear smooth boundary.

Bkg2—36 to 60 inches; light greenish gray (5GY 7/1) clay loam, dark gray (N 4/0) moist; many medium and coarse distinct dark yellowish brown (10YR 4/4) mottles; massive; hard, friable, sticky and plastic; common medium roots; common fine and medium soft masses of secondary calcium carbonate; strongly effervescent; 10 percent lignite fragments; moderately alkaline.

A fluctuating water table occurs at a depth of 0.5 foot to 1.5 feet from March through July and at a depth of 1.5 to 3.0 feet the rest of the year.

The A horizon has hue of 10YR to 5Y. It is clay loam, silty clay loam, or loam.

The Btg horizon has hue of 10YR to 5Y. It is clay, silty clay, or silty clay loam. Iron oxide masses and concretions and manganese concretions are common.

The Bkg horizon has hue of 10YR to 5GY. It is clay loam, clay, silty clay loam, or silty clay. It is moderately alkaline or strongly alkaline. Some pedons have accumulations of gypsum.

Worthenton Variant

The Worthenton Variant consists of very deep, very poorly drained soils that formed in alluvium derived from shale over alluvium derived from granite. These soils are in drainageways. Slopes are 0 to 3 percent. Elevation is 4,900 to 5,500 feet. The average annual precipitation is 15 to 19 inches, and the

average annual temperature is 43 to 45 degrees F. The frost-free period is 80 to 100 days.

These soils are fine-loamy over sandy or sandy-skeletal, mixed, frigid Typic Argiaquolls.

Typical pedon of Worthenton Variant loam, in an area of Worthenton Variant-Assinniboine Variant association, 0 to 6 percent slopes, SW¹/₄, NW¹/₄ sec. 13, T. 53 N., R. 84 W., in the Story area:

Oe—1 inch to 0; partly decomposed organic material.

A—0 to 8 inches; very dark gray (10YR 3/1) loam, black (10YR 2/1) moist; moderate fine and medium granular structure; soft, very friable, slightly sticky and plastic; many fine and very fine and common medium roots; slightly acid; clear smooth boundary.

Btg—8 to 24 inches; greenish gray (5GY 6/1) sandy clay loam, dark greenish gray (5GY 4/1) moist; many fine distinct strong brown (7.5YR 5/8) mottles; moderate medium and coarse subangular blocky structure; hard, friable, sticky and plastic; few very fine roots to a depth of 19 inches; few distinct clay films on faces of peds; 5 percent granitic gravel; slightly acid; clear wavy boundary.

2C—24 to 60 inches; light yellowish brown (10YR 6/4) extremely bouldery coarse sand, yellowish brown (10YR 5/4) moist; single grain; loose, nonsticky and nonplastic; 35 percent stones and boulders, 15 percent cobbles, and 15 percent gravel; slightly acid.

The depth to the 2C horizon ranges from 20 to 40 inches. The water table generally is at or near the surface most months of the year.

The O horizon is 1 to 4 inches thick. The A horizon is moderately acid to neutral.

The B horizon has hue of 5GY or 5G. The B and C horizons are moderately acid or slightly acid.

Wyarno Series

The Wyarno series consists of very deep, well drained soils that formed in alluvium derived from sedimentary rock. These soils are on alluvial fans, terraces, and hillslopes. Slopes are 0 to 9 percent. Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are fine, montmorillonitic, mesic Ustollic Haplargids.

Typical pedon of Wyarno clay loam, 0 to 3 percent slopes, NW¹/₄, SE¹/₄ sec. 10, T. 56 N., R. 83 W.

A—0 to 5 inches; light brownish gray (10YR 6/2) clay loam, dark grayish brown (10YR 4/2) moist; moderate coarse granular structure; soft, very friable, slightly sticky and slightly plastic; neutral; clear smooth boundary.

Bt1—5 to 9 inches; light brownish gray (10YR 6/2) silty clay loam, dark grayish brown (10YR 4/2) moist; moderate medium subangular blocky structure; hard, friable, sticky and plastic; common faint clay films on faces of peds; neutral; clear smooth boundary.

Bt2—9 to 12 inches; grayish brown (10YR 5/2) clay loam, dark grayish brown (10YR 4/2) moist; moderate medium prismatic structure parting to moderate medium subangular blocky; hard, friable, sticky and plastic; common faint clay films on faces of peds; mildly alkaline; clear smooth boundary.

Btk—12 to 15 inches; light brownish gray (2.5Y 6/2) clay loam, grayish brown (2.5Y 5/2) moist; weak medium subangular blocky structure; hard, friable, sticky and plastic; few faint clay films on faces of peds; common thin seams and threads of secondary calcium carbonate; strongly effervescent; moderately alkaline; gradual smooth boundary.

Bk1—15 to 36 inches; light brownish gray (2.5Y 6/2) clay loam, grayish brown (2.5Y 5/2) moist; massive; hard, friable, sticky and plastic; many medium seams and threads of secondary calcium carbonate; strongly effervescent; moderately alkaline; gradual smooth boundary.

Bk2—36 to 60 inches; light brownish gray (2.5Y 6/2) clay loam, grayish brown (2.5Y 5/2) moist; massive; slightly hard, very friable, sticky and plastic; few fine masses of secondary calcium carbonate; strongly effervescent; moderately alkaline.

Hue is 10YR or 2.5Y throughout the profile.

The A and Bt horizons are neutral or mildly alkaline. The Bt horizon is clay loam, silty clay loam, or clay.

The Bk horizon is moderately alkaline or strongly alkaline. In some pedons it is sandy clay loam or loam below a depth of 40 inches.

Zigweid Series

The Zigweid series consists of very deep, well drained soils that formed in alluvium derived from sedimentary rock. These soils are on alluvial fans, terraces, and hillslopes. Slopes are 0 to 15 percent.

Elevation is 3,500 to 4,500 feet. The average annual precipitation is 12 to 17 inches, and the average annual temperature is 45 to 47 degrees F. The frost-free period is 110 to 120 days.

These soils are fine-loamy, mixed, mesic Ustollic Camborthids.

Typical pedon of Zigweid loam, in an area of Zigweid-Kishona-Cambria complex, moist, 0 to 3 percent slopes, SW¹/₄, NE¹/₄ sec. 4, T. 57 N., R. 83 W., in the Lower Prairie Dog Creek area:

A—0 to 1 inch; pale brown (10YR 6/3) loam, dark brown (10YR 4/3) moist; moderate coarse platy structure; slightly hard, very friable, slightly sticky and slightly plastic; many fine and medium roots; slightly effervescent; mildly alkaline; clear smooth boundary.

Bw—1 to 11 inches; brown (10YR 5/3) clay loam, dark brown (10YR 4/3) moist; moderate coarse prismatic structure parting to strong medium subangular blocky; hard, friable, slightly sticky and plastic; many fine and medium roots; strongly effervescent; moderately alkaline; clear smooth boundary.

Bk1—11 to 27 inches; yellowish brown (10YR 5/4) clay loam, brown (10YR 5/3) moist; moderate medium subangular blocky structure; hard, friable, sticky and plastic; few medium and coarse roots; many medium and coarse masses of secondary calcium carbonate; violently effervescent; moderately alkaline; clear smooth boundary.

Bk2—27 to 60 inches; light yellowish brown (10YR 6/4) loam, yellowish brown (10YR 5/4) moist; moderate coarse subangular blocky structure; hard, friable, sticky and plastic; many fine threads of secondary calcium carbonate; strongly effervescent; strongly alkaline.

Hue is 10YR or 2.5Y throughout the profile.

The A horizon is loam or fine sandy loam. It is mildly alkaline or moderately alkaline.

The Bw horizon is clay loam or loam.

The Bk horizon is loam or clay loam. The calcium carbonate equivalent ranges from 5 to 12 percent. Some pedons have a few crystals of calcium sulfate. Reaction is moderately alkaline or strongly alkaline.

Factors of Soil Formation

Soils form as a result of the interaction of physical and chemical processes acting on geologic parent material. The individual characteristics of a soil are determined by the type of parent material from which it derived. It is then further modified by the influence of the various active and passive soil-forming factors. The various kinds of soils that develop are largely controlled by five major factors—climate, particularly temperature and precipitation; living organisms, especially native vegetation; the chemistry and mineralogy of the parent material; topography; and the length of time that the parent material has been subject to the processes of soil formation.

Climate and living organisms are the active factors in soil formation. They act on the parent material through physical and chemical weathering and change it into soil material. The effects of these factors are conditioned by topography, or relief, over time.

Climate

Climate is perhaps the most important factor in soil formation because of its influence on the intensity of the weathering process. This influence is exerted mainly by variables in temperature and precipitation. The amount of water available and the distribution of the water in relation to the temperature are of prime importance in the development of soil. These two factors play a major role in the growth and activity of organic life in the soil. The leaching of salts, movement of clay particles, and intensity of chemical processes are some of the activities of these two agents. These factors also strongly influence the type of native vegetation on the soil.

Soil morphology in the survey area reflects the relationship between the annual precipitation and the development of soil. The drier soils, such as Kishona or Zigweid soils, are more likely to have less leaching of soluble salts, such as calcium carbonate, from the upper horizons, less structure development, and less organic matter. Platsher soils, which are in an area that has more moisture, have a higher organic matter content and do not have salts in the upper part of the profile. These soils have a subsoil that has prominent

structure and contains clay particles that have been leached from the surface layer.

The relationship between soil temperature and soil morphology is more indistinct for most of the survey area, since most of the soils are in the mesic temperature regime. The main influence of temperature in this area may be to determine the effects of moisture in the soil. Other effects are frost action and the influence of temperature on vegetation by the length of the growing season. The combined effects of temperature and precipitation, along with the other factors of soil genesis, result in the formation of a specific soil.

Living Organisms

Living organisms refers to all life forms on or in the soil, including microscopic bacteria, vegetation, animals, and humans. They make the accumulation of organic matter, profile mixing, nutrient cycling, and structural stability possible. Fungi and algae are early inhabitants of rock, and they contribute to its decomposition and disintegration. The organic matter increases as the parent material is modified by earthworms, rodents, and small animals. This, in turn, increases microbial activity and the concurrent development with the soil. This increase of organic matter darkens the surface layer. Nuncho, Recluse, and Moskee soils are examples of soils that have a dark surface horizon.

Human agricultural practices also influence soil characteristics. The soils in the survey area that have been cultivated or used as pasture or hayland for the past 80 to 90 years are often much darker than contiguous soils that have not been cultivated or irrigated or had applications of manure.

Parent Material

The nature of the parent material often strongly influences the soils that form. The percolation of water is largely controlled by the texture of the parent material. The chemical and mineralogical compositions of the parent material often determine not only the effectiveness of the weathering forces but may also influence the native vegetation. Many of

the physical and chemical properties of the soils in this survey area are strongly influenced by the parent material from which they derived, especially those in the less developed soils, such as Kishona, Bahl, or Haverdad soils. These soils have chemical and physical properties closely related to their geologic origins.

Most of the soils in this survey area formed in material derived from sedimentary rock that either formed in place or has been moved by water or gravity into drainageways and onto fans and terraces. The soils that formed in material weathered from sandstone, such as Hiland or Moskee soils, contain greater amounts of sand. Soils that are derived from shale, such as Ulm soils, are clayey, since clay is the dominant component of the shales in this area. Other soils, such as Zigweid or Recluse soils, are loamy in texture and formed in material derived from various sources.

Although alkalinity is not a widespread problem in the survey area, some soils, especially in the drier eastern part, have a high alkalinity that influences soil characteristics such as structure and permeability. Salts that result in alkalinity are in the marine shales. Such soils as Arvada and Absted soils are formed in material derived from these shales.

Along the western part of the survey area, granite and gneiss near the flank of the Big Horn Mountains are the parent material of Agneston and Lucky soils. These soils contain significant amounts of rock fragments.

Topography

Soil formation is affected by topography, or relief, through its influence on microclimates and runoff. The soils on fans and in swales where water concentrates generally develop at a greater rate than the soils on the steeper hillslopes and crests where runoff is more rapid. The soils often have a thicker, darker surface layer, and clay particles and salts move from the upper horizons to the lower horizons. Aspect is an important variable of microclimatic effect.

It influences soil moisture and temperature, and consequently the type, density, and growth of vegetation.

The slope influences the amount of runoff, as well as the rate of water erosion. On the steep slopes, erosion carries soil material away before it can accumulate and develop. In the more level areas, runoff is more likely to percolate into the soil, resulting in the potential for less erosion.

Time

The length of time that material has been subject to soil-forming processes determines the degree to which it has developed (*Brady, 1974*). For example, Kishona, Haverdad, or Theedle soils, which have formed in recent alluvial material, show little or no development. These soils are characterized by the absence of genetic horizons and the presence of calcium carbonate throughout the profile. The organic matter content is low throughout the profile. These soils are probably less than 3,000 years old.

The most developed and probably the oldest soils in the survey area are on terraces or stable fans. These soils are more prevalent in the 15- to 19-inch precipitation zone. They are characterized by a high content of organic matter in the surface and the upper part of the subsoil, a well developed subsoil, and the absence of free carbonates above a depth of 15 or 20 inches. These soils commonly have an argillic horizon and a mollic epipedon. Platsher, Wetterdon, and Moskee soils are examples of such soils. They may be 15,000 to 300,000 years old.

The soils that are common in both precipitation zones are the intermediate soils in this survey area. These soils generally do not have carbonates in the upper 10 to 15 inches. They have a high content of organic matter in the surface layer and a moderately well developed subsoil that has a low content of organic matter. These soils commonly have an argillic horizon and an ochric epipedon. Forkwood, Ulm, and Hiland soils are examples.

References

- American Association of State Highway and Transportation Officials. 1986. Standard specifications for highway materials and methods of sampling and testing. Ed. 14, 2 vols.
- American Society for Testing and Materials. 1993. Standard classification of soils for engineering purposes. ASTM Stand. D 2487.
- Brady, N.C. 1974. The nature and properties of soils. 8th ed.
- Dunrud, C. Richard, and Osterwald, Frank W. 1980. Effects of coal mine subsidence in the Sheridan, Wyoming area. U.S. Geol. Surv. Prof. Pap. 1164.
- Geological Survey of Wyoming. 1978. County Resour. Ser. No. 5, Sheridan County, Wyoming.
- Hodson, W.G., et al. 1973. Water resources of the Powder River Basin and adjacent areas, northeastern Wyoming. USGS Hydrol. Invest. Atlas HA-465.
- Lowry, M.E., and Cummings, R.T. 1966. Ground-water resources of Sheridan County, Wyoming. USGS Water Supply Pap. 1807.
- United States Department of Agriculture. 1961. Land capability classification. U.S. Dep. Agric. Handb. 210.
- United States Department of Agriculture. 1975. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. Soil Conserv. Serv., U.S. Dep. Agric. Handb. 436.
- United States Department of Agriculture. 1993. Soil survey manual. U.S. Dep. Agric. Handb. 18.
- United States Department of Commerce, National Oceanic and Atmospheric Administration. 1984. Local climatological data, Sheridan, Wyoming.

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 fan. The fanlike deposit of a stream where it issues from a gorge upon a plain or of a tributary stream near or at its junction with its main stream.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

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.

Arroyo. The flat-floored channel of an ephemeral stream, commonly with very steep to vertical banks cut in alluvium.

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 5.0
Moderate	5.0 to 7.5
High	More than 7.5

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.

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.

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Bedding planes. Fine strata, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bench. A platform type landform where an erosional surface developed on resistant strata in areas where valleys are cut in alternating strong and weak layers with an essentially horizontal attitude. In contrast to terraces, benches have no geomorphic implication of former, partial erosion cycles and base level controls, nor do they represent a stage of flood plain development following an episode of valley trenching.

Blowout. A shallow depression from which all or most of the soil material has been removed by the wind. A blowout has a flat or irregular floor formed by a resistant layer or by an accumulation of pebbles or cobbles. In some blowouts the water table is exposed.

- Bottom land.** The normal flood plain of a stream, subject to flooding.
- Boulders.** Rock fragments larger than 2 feet (60 centimeters) in diameter.
- Breaks.** The steep and very steep broken land at the border of an upland summit that is dissected by ravines.
- Brush management.** Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.
- Butte.** An isolated small mountain or hill with steep or precipitous sides and a top variously flat, rounded, or pointed that may be a residual mass isolated by erosion or an exposed volcanic neck.
- Calcareous soil.** A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.
- Canopy.** The leafy crown of trees or shrubs. (See Crown.)
- Canyon.** A long, deep, narrow, very steep sided valley with high, precipitous walls in an area of high local relief.
- Capillary water.** Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.
- Catena.** A sequence, or "chain," of soils on a landscape that formed in similar kinds of parent material but have different characteristics as a result of differences in relief and drainage.
- Cation.** An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.
- Cation-exchange capacity.** The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.
- Catsteps.** Very small, irregular terraces on steep hillsides, especially in pasture, formed by the trampling of cattle or the slippage of saturated soil.
- Channery soil.** A soil that is, by volume, more than 15 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches 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 loosen the subsoil and bring clods to the surface. A form of emergency tillage to control wind erosion.
- 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 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.
- Climax plant community.** The plant community on a given site that will be established if present environmental conditions continue to prevail and the site is properly managed.
- Coarse fragments.** Mineral or rock particles larger than 2 millimeters in diameter.
- Coarse textured soil.** Sand or loamy sand.
- Cobble (or cobblestone).** A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.
- Cobbly soil material.** Material that 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.
- Colluvium.** Soil material, rock fragments, or both, moved by creep, slide, or local wash and deposited at the base of steep slopes.
- Complex slope.** Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.
- Complex, soil.** A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.
- Concretions.** Grains, pellets, or nodules of various sizes, shapes, and colors consisting of concentrated compounds or cemented soil grains. The composition of most concretions is unlike that of the surrounding soil. Calcium carbonate

and iron oxide are common compounds in concretions.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Consistence, soil. The feel of the soil and the ease with which a lump can be crushed by the fingers. Terms commonly used to describe consistence are:

Loose.—Noncoherent when dry or moist; does not hold together in a mass.

Friable.—When moist, crushes easily under gentle pressure between thumb and forefinger and can be pressed together into a lump.

Firm.—When moist, crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.

Plastic.—Readily deformed by moderate pressure but can be pressed into a lump; will form a “wire” when rolled between thumb and forefinger.

Sticky.—Adheres to other material and tends to stretch somewhat and pull apart rather than to pull free from other material.

Hard.—When dry, moderately resistant to pressure; can be broken with difficulty between thumb and forefinger.

Soft.—When dry, breaks into powder or individual grains under very slight pressure.

Contour stripcropping (or contour farming).

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.

Coppice dune. A small dune of fine grained soil material stabilized around shrubs or small trees.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of

regular crop production, or a crop seeded with grass to protect the soil until the grass seedlings have become well established.

Critical area planting. Planting vegetation, such as trees, shrubs, grasses, or legumes, in highly erodible or critically eroding areas.

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.

Cropping system. Growing crops according to a planned system of rotation and management practices.

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.

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.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

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 sediment 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.

Drainage class (natural). Refers to the frequency and duration of periods of saturation or partial saturation during soil formation, as opposed to altered drainage, which is commonly the result of artificial drainage or irrigation but may be caused by the sudden deepening of channels or the blocking of drainage outlets. Seven classes of natural soil drainage are recognized:
Excessively drained.—These soils have very high and high hydraulic conductivity and a low water-holding capacity. They are not suited to crop production unless irrigated.

Somewhat excessively drained.—These soils have high hydraulic conductivity and a low water-holding capacity. Without irrigation, only a narrow range of crops can be grown and yields are low.

Well drained.—These soils have an intermediate water-holding capacity. They retain optimum amounts of moisture, but they are not wet close enough to the surface or long enough during the growing season to adversely affect yields.

Moderately well drained.—These soils are wet close enough to the surface or long enough that planting or harvesting operations or yields of some field crops are adversely affected unless a drainage system is installed. Moderately well drained soils commonly have a layer with low hydraulic conductivity, a wet layer relatively high in the profile, additions of water by seepage, or some combination of these.

Somewhat poorly drained.—These soils are wet close enough to the surface or long enough that planting or harvesting operations or crop growth is markedly restricted unless a drainage system is installed. Somewhat poorly drained soils commonly have a layer with low hydraulic conductivity, a wet layer high in the profile, additions of water through seepage, or a combination of these.

Poorly drained.—These soils commonly are so wet at or near the surface during a considerable part of the year that field crops cannot be grown under natural conditions. Poorly drained conditions are caused by a saturated zone, a layer with low hydraulic conductivity, seepage, or a combination of these.

Very poorly drained.—These soils are wet to the surface most of the time. The wetness prevents the growth of important crops (except for rice) unless a drainage system is installed.

Drainage, surface. Runoff, or surface flow of water, from an area.

Draw. A small stream valley that generally is more open and has broader bottom land than a ravine or gulch.

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.

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.

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.

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 salt (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.

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 terrace. A relict alluvial fan, no longer a site of active deposition, incised by younger and lower alluvial surfaces.

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 earth. The particles of the soil that are smaller than 2 millimeters in diameter, or the sand, silt, and clay part of the soil. (See Texture, soil.)

Fine textured soil. Sandy clay, silty clay, or clay.

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.

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.

Glacial outwash (geology). Gravel, sand, and silt, commonly stratified, deposited by glacial melt water.

Glacial till (geology). Unsorted, nonstratified glacial drift consisting of clay, silt, sand, and boulders transported and deposited by glacial ice.

Glaciofluvial deposits (geology). Material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The deposits are stratified and occur as kames, eskers, deltas, and outwash plains.

Glaciolacustrine deposits. Material ranging from fine clay to sand derived from glaciers and deposited in glacial lakes mainly by glacial melt water. Many deposits are interbedded or laminated.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other

elements in the profile and in gray colors and mottles.

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 (geology). Water filling all the unblocked pores of the material below the water table.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Hard bedrock. Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

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.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the

identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the "Soil Survey Manual." The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

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.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

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-producing characteristics. The chief consideration is the inherent capacity of soil bare of vegetation to permit infiltration. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff. Soils are assigned to four groups. In group A are soils having a high infiltration rate when thoroughly wet and having a low runoff potential. They are mainly deep, well drained, and sandy or gravelly. In group D, at the other extreme, are soils having a very slow infiltration rate and thus

a high runoff potential. They have a claypan or clay layer at or near the surface, have a permanent high water table, or are shallow over nearly impervious bedrock or other material. A soil is assigned to two hydrologic groups if part of the acreage is artificially drained and part is undrained.

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 the less palatable to livestock.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

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.

Intermittent stream. A stream, or reach of a stream, that flows for prolonged periods only when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Invaders. On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, plants invade following disturbance of the surface.

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.

Knoll. A small, low, rounded hill rising above adjacent 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.

Loess. Fine grained material, dominantly of silt-sized particles, deposited by the wind.

Low strength. The soil is not strong enough to support loads.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Mesa. A broad, nearly flat topped and commonly isolated upland mass characterized by summit widths that are more than the heights of bounding erosional scarps.

Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement. Nearly all such rocks are crystalline.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

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 fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

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. Mottling generally indicates poor aeration and impeded drainage. 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 and a surface of considerably bare rock. A mountain can occur as a single, isolated mass or in a group forming a chain or range.

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.

Neutral soil. A soil having a pH value between 6.6 and 7.3. (See Reaction, soil.)

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium,

magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition.

Outwash, glacial. Stratified sand and gravel produced by glaciers and carried, sorted, and deposited by glacial meltwater.

Outwash plain. A landform of mainly sandy or coarse textured material of glaciofluvial origin. An outwash plain is commonly smooth; where pitted, it is generally low in relief.

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan*, *fragipan*, *claypan*, *plowpan*, and *traffic pan*.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

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 affecting the specified use.

Permeability. The quality of the soil that enables water to move downward through the profile. Permeability is measured as the number of inches per hour that water moves downward through the saturated soil. Terms describing permeability are:

Very slow	less than 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 thickness.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plateau. An extensive upland mass with relatively flat summit area that is considerably elevated (more than 100 meters) above adjacent lowlands and separated from them on one or more sides by escarpments.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poor filter (in tables). Because of rapid permeability or an impermeable layer near the surface, 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.

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. Burning an area under conditions of weather and soil moisture and at the time of day that will result in the intensity of heat and spread required to accomplish specific forest management, wildlife, grazing, or fire hazard reduction purposes.

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.

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.

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.

Rangeland. Land on which the potential natural vegetation is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing or browsing. It includes natural grasslands, savannas, many wetlands, some deserts, tundras, and areas that support certain forb and shrub communities.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Extremely acid	below 4.5
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
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

Red beds. Sedimentary strata that are mainly red and are made up largely of sandstone and shale.

Regolith. The unconsolidated mantle of weathered rock and soil material on the earth's surface; the loose earth material above the solid rock.

Relief. The elevations or inequalities of a land surface, considered collectively.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

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.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, gravel, cobbles, stones, and boulders.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Saline soil. A soil containing soluble salts in an amount that impairs the growth of plants. A saline soil does not contain excess exchangeable sodium.

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.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

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 content at saturation of all organic soil material.

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.

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 or of the underlying material. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock formed by the hardening of a clay deposit.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

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.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silica-sesquioxide ratio. The ratio of the number of molecules of silica to the number of molecules of alumina and iron oxide. The more highly weathered soils or their clay fractions in warm-temperate, humid regions, and especially those in the tropics, generally have a low ratio.

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.

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 is generally silty or clayey, is slippery when wet, and is low in productivity.

Slippage. 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 3 percent
Gently sloping	3 to 6 percent
Moderately sloping	6 to 9 percent
Strongly sloping	9 to 15 percent
Moderately steep	15 to 35 percent
Steep	35 to 50 percent
Very steep	50 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 $\text{Ca}^{++} + \text{Mg}^{++}$.

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 depth. The thickness of the soil over bedrock. Very shallow soils are 4 to 10 inches deep over bedrock; shallow soils, 10 to 20 inches; moderately deep soils, 20 to 40 inches; deep soils, 40 to 60 inches; and very deep soils, more than 60 inches.

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 underlying material. The living roots and plant and animal activities are largely confined to the solum.

- 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.
- Strippcropping.** Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.
- Structure, soil.** The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single 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 erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.
- Subsoil.** Technically, the B horizon; roughly, the part of the solum below plow depth.
- Subsoiling.** Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.
- Substratum.** The part of the soil below the solum.
- Subsurface layer.** Technically, the E horizon. Generally refers to a leached horizon lighter in color and lower in content of organic matter than the overlying surface layer.
- Summer fallow.** The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.
- Summer wildlife habitat.** A population or part of a population uses this habitat annually during the summer but not during the winter.
- Surface layer.** In tilled soils, the part of the soil ordinarily moved in tillage ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon." In uncultivated soils, the part of the soil designated as the "A horizon."
- Talus.** Rock fragments of any size or shape, commonly coarse and angular, derived from and lying at the base of a cliff or very steep, rock slope. The accumulated mass of such loose, broken rock formed chiefly by falling, rolling, or sliding.
- 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.
- Terrace** (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.
- Texture, soil.** The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand*, *loamy sand*, *sandy loam*, *loam*, *silt loam*, *silt*, *sandy clay loam*, *clay loam*, *silty clay loam*, *sandy clay*, *silty clay*, and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."
- Thin layer** (in tables). Otherwise suitable soil material that is too thin for the specified use.
- 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.
- Trace elements.** Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.
- Upland** (geology). Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.
- Valley fill.** In glaciated regions, material deposited in stream valleys by glacial melt water. In nonglaciated regions, alluvium deposited by heavily loaded streams.
- Variants, soil.** A soil having properties sufficiently different from those of other known soils to justify a new series name, but occurring in such a limited geographic area that creation of a new series is not justified.

Variation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

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.

Winter wildlife habitat. A population or part of a population uses this habitat annually only during the winter. A substantial number of animals use the habitat during this period.

Year-round wildlife habitat. A population or a substantial part of a population uses this habitat throughout the year.

Tables

Table 1.--Temperature and Precipitation

(Recorded in the period 1950-81 at Clearmont, Wyoming, and 1920-90 at Sheridan, Wyoming)

Month	Temperature						Precipitation			
	Average daily maximum	Average daily minimum	Average	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--	
				o	o		In	In	In	
F	F	F	F	F	Units	In	In	In		
CLEARMONT:										
January----	31.6	4.5	18.1	55	-31	0	0.57	0.22	0.91	2
February----	36.7	10.7	23.7	59	-25	2	.52	.23	.77	2
March-----	46.2	19.8	33.0	72	-12	33	.75	.32	1.13	2
April-----	57.9	28.6	43.3	81	8	159	1.55	.64	2.31	4
May-----	68.0	37.7	52.9	89	20	402	2.28	1.08	3.31	5
June-----	77.5	46.6	62.1	97	30	657	2.22	1.08	3.20	5
July-----	86.0	51.9	68.9	101	37	889	1.40	.45	2.17	3
August-----	84.0	49.4	66.7	100	34	802	1.16	.34	1.87	2
September--	72.3	39.3	66.7	94	19	461	1.23	.40	1.90	3
October----	61.3	29.0	45.1	89	8	198	.97	.42	1.47	3
November---	43.8	17.1	30.5	73	-14	19	.66	.35	.96	2
December---	33.8	7.4	20.6	62	-29	2	.54	.18	.84	2
Yearly:										
Average----	58.3	28.5	43.4	---	---	---	---	---	---	---
Extreme----	110	-48	---	102	-37	---	---	---	---	---
Total-----	---	---	---	---	---	3,623	13.83	11.08	16.44	35
SHERIDAN:										
January----	31.6	5.7	18.7	59	-29	2	0.54	0.25	0.80	1
February----	36.0	10.3	23.1	62	-25	6	.52	.26	.74	1
March-----	43.8	19.3	31.5	72	-14	35	.97	.50	1.38	3
April-----	57.0	30.2	43.6	83	7	177	1.89	.81	2.80	4
May-----	67.4	39.9	43.6	91	22	427	2.59	1.24	3.75	5
June-----	76.5	48.1	62.3	98	32	663	2.77	1.40	3.96	5
July-----	87.5	53.7	70.6	104	37	937	1.23	.43	1.93	2
August-----	86.5	51.3	68.9	102	36	888	.91	.29	1.47	2
September--	74.2	40.9	57.6	97	22	529	1.45	.47	2.25	3
October----	62.0	30.8	46.4	86	10	249	1.24	.55	1.87	3
November---	45.0	18.8	31.9	72	-12	34	.77	.38	1.13	2
December---	35.3	9.9	22.6	64	-26	6	.55	.24	.83	2
Yearly:										
Average----	58.6	29.9	44.2	---	---	---	---	---	---	---
Extreme----	107	-44	---	105	-33	---	---	---	---	---
Total-----	---	---	---	---	---	3,955	15.42	11.57	18.37	33

* 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 1957-91 at Clearmont, Wyoming, and 1920-90 at Sheridan, Wyoming)

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
CLEARMONT*:			
Last freezing temperature in spring:			
1 year in 10 later than--	May 21	May 30	June 23
2 years in 10 later than--	May 15	May 25	June 15
5 years in 10 later than--	May 3	May 16	June 1
First freezing temperature in fall:			
1 year in 10 earlier than--	Sept. 16	Sept. 8	Aug. 25
2 years in 10 earlier than--	Sept. 22	Sept. 13	Aug. 31
5 years in 10 earlier than--	Oct. 2	Sept. 22	Sept. 11
SHERIDAN*:			
Last freezing temperature in spring:			
1 year in 10 later than--	May 15	May 31	June 24
2 years in 10 later than--	May 8	May 23	June 15
5 years in 10 later than--	Apr. 25	May 8	May 27
First freezing temperature in fall:			
1 year in 10 earlier than--	Sept. 21	Sept. 12	Sept. 2
2 years in 10 earlier than--	Sept. 28	Sept. 17	Sept. 7
5 years in 10 earlier than--	Oct. 11	Sept. 27	Sept. 17

* Data are missing for 25 days or more for 2 years at Clearmont and 4 years at Sheridan.

Table 3.--Growing Season

(Recorded in the period 1957-91 at Clearmont,
Wyoming, and 1920-90 at Sheridan, Wyoming)

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	<u>Days</u>	<u>Days</u>	<u>Days</u>
CLEARMONT*:			
9 years in 10	114	102	72
8 years in 10	122	108	82
5 years in 10	136	120	100
2 years in 10	149	132	118
1 year in 10	157	139	127
SHERIDAN*:			
9 years in 10	157	139	100
8 years in 10	167	149	113
5 years in 10	185	168	140
2 years in 10	203	187	166
1 year in 10	212	197	180

* Data are missing for 25 days or more for 1
year at Clearmont and 2 years at Sheridan.

Table 4.--Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
100	Abac-Rock outcrop complex, 35 to 50 percent slopes-----	3,835	0.3
101	Absted-Haverdad association, 0 to 6 percent slopes-----	2,048	0.2
102	Absted-Haverdad association, moist, 0 to 6 percent slopes-----	3,101	0.3
103	Absted-Slickspots complex, 0 to 6 percent slopes-----	7,322	0.6
104	Agneston-Granile-Rock outcrop association, 10 to 50 percent slopes-----	2,027	0.2
105	Arnegard-Farnuf association, 0 to 6 percent slopes-----	355	*
106	Arnegard-Farnuf association, 6 to 25 percent slopes-----	2,756	0.2
107	Assinniboine-Dast association, 3 to 65 percent slopes-----	1,310	0.1
108	Baux-Bauxson association, 0 to 65 percent slopes-----	938	0.1
109	Baux-Bauxson association, dry, 0 to 65 percent slopes-----	1,587	0.1
110	Baux-Bauxson-Kirtley association, 3 to 60 percent slopes-----	30,121	2.5
111	Baux-Bauxson-Wetterdon association, 0 to 75 percent slopes-----	6,364	0.5
112	Bidman-Arvada fine sandy loams, 0 to 6 percent slopes-----	2,895	0.2
113	Bidman-Arvada complex, moist, 0 to 3 percent slopes-----	1,895	0.2
114	Bidman-Ulm, dry, complex, 0 to 6 percent slopes-----	21,063	1.7
115	Bidman, moist-Ulm loams, 0 to 6 percent slopes-----	5,045	0.4
116	Big Horn-Wolf, dry, loams, 0 to 6 percent slopes-----	869	0.1
117	Cambria-Forkwood complex, 0 to 15 percent slopes-----	5,547	0.5
118	Cambria-Forkwood complex, moist, 0 to 9 percent slopes-----	6,122	0.5
119	Cedak-Recluse association, 3 to 6 percent slopes-----	4,312	0.4
120	Cedak-Recluse association, 6 to 9 percent slopes-----	17,974	1.5
121	Cedak-Recluse association, 9 to 15 percent slopes-----	8,976	0.7
122	Cedak-Recluse association, dry, 3 to 15 percent slopes-----	918	0.1
123	Clarkelen loam, 0 to 3 percent slopes-----	848	0.1
124	Clarkelen fine sandy loam, moist, 0 to 3 percent slopes-----	1,006	0.1
125	Cloud Peak-Tolman complex, 10 to 75 percent slopes-----	16,939	1.4
126	Coaliams-Worthington, moist, complex, 0 to 3 percent slopes-----	1,825	0.1
127	Cushman-Forkwood association, 3 to 15 percent slopes-----	5,386	0.4
128	Cushman-Forkwood association, moist, 0 to 9 percent slopes-----	3,005	0.2
129	Cushman-Forkwood association, moist, 9 to 15 percent slopes-----	1,446	0.1
130	Cushman-Worf association, 3 to 25 percent slopes-----	1,118	0.1
131	Cushman-Worf association, moist, 3 to 15 percent slopes-----	1,660	0.1
132	Dast Variant loamy fine sand, 30 to 65 percent slopes-----	115	*
133	Doney-Doney Variant complex, 6 to 75 percent slopes-----	3,900	0.3
134	Doney-Ringling association, 8 to 90 percent slopes-----	1,348	0.1
135	Doney-Ringling-Rock outcrop complex, 15 to 70 percent slopes-----	2,016	0.2
136	Draknab loamy fine sand, 0 to 3 percent slopes-----	1,453	0.1
137	Farnuf loam, 0 to 6 percent slopes-----	568	*
138	Farnuf loam, 6 to 9 percent slopes-----	460	*
139	Farnuf loam, 9 to 15 percent slopes-----	612	0.1
140	Farnuf Variant loam, wet, 0 to 3 percent slopes-----	151	*
141	Farnuf Variant-Cloud Peak Variant complex, 0 to 6 percent slopes-----	587	*
142	Forkwood loam, 0 to 3 percent slopes-----	995	0.1
143	Forkwood loam, 3 to 6 percent slopes-----	1,587	0.1
144	Forkwood loam, 6 to 9 percent slopes-----	626	0.1
145	Gayhart-Bahl association, 6 to 30 percent slopes-----	747	0.1
146	Gayhart-Bahl association, moist, 6 to 15 percent slopes-----	3,439	0.3
147	Hardhart-Starley association, 10 to 60 percent slopes-----	4,309	0.4
148	Hargreave-Moskee association, 3 to 9 percent slopes-----	6,806	0.6
149	Hargreave-Moskee association, 9 to 15 percent slopes-----	5,870	0.5
150	Hargreave-Moskee association, dry, 3 to 15 percent slopes-----	3,806	0.3
151	Harlan loam, dry, 0 to 15 percent slopes-----	533	*
152	Harlan-Kirtley association, 3 to 9 percent slopes-----	3,076	0.3

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
153	Harlan-Kirtley association, 9 to 15 percent slopes-----	1,322	0.1
154	Haverdad very fine sandy loam, 0 to 3 percent slopes-----	5,639	0.5
155	Haverdad loam, moist, 0 to 3 percent slopes-----	1,540	0.1
156	Haverdad silt loam, saline, 0 to 3 percent slopes-----	465	*
157	Haverdad loam, moist, saline, 0 to 3 percent slopes-----	691	0.1
158	Haverdad-Draknab complex, 0 to 3 percent slopes-----	6,716	0.5
159	Haverdad-Draknab complex, moist, 0 to 3 percent slopes-----	2,527	0.2
160	Haverdad-Worthenton complex, 0 to 3 percent slopes-----	2,324	0.2
161	Haverdad, moist-Worthenton complex, 0 to 3 percent slopes-----	3,829	0.3
162	Havertel silt loam, 0 to 3 percent slopes-----	1,113	0.1
163	Hesperus Variant-Reget association, 10 to 65 percent slopes-----	2,457	0.2
164	Hiland-Bowbac association, 3 to 15 percent slopes-----	2,610	0.2
165	Hiland-Bowbac association, moist, 3 to 15 percent slopes-----	1,181	0.1
166	Hiland-Decolney complex, 3 to 15 percent slopes-----	3,718	0.3
167	Hiland-Vonalee complex, moist, 3 to 10 percent slopes-----	1,306	0.1
168	Hiligh-Rock outcrop complex, 10 to 30 percent slopes-----	2,960	0.2
169	Jonpol-Platmak association, 0 to 9 percent slopes-----	17,719	1.5
170	Jonpol-Platmak association, 9 to 25 percent slopes-----	5,258	0.4
171	Kishona-Cambria complex, 0 to 3 percent slopes-----	7,129	0.6
172	Kishona-Cambria complex, 3 to 6 percent slopes-----	4,192	0.3
173	Lambman-Hargreave association, 3 to 15 percent slopes-----	2,977	0.2
174	Lucky-Burgess-Hazton association, 8 to 30 percent slopes-----	532	*
175	Moskee sandy loam, 0 to 3 percent slopes-----	1,296	0.1
176	Moskee sandy loam, 3 to 6 percent slopes-----	2,013	0.2
177	Moskee fine sandy loam, 6 to 9 percent slopes-----	799	0.1
178	Moskee-Noden complex, 0 to 9 percent slopes-----	7,511	0.6
179	Moskee-Noden fine sandy loams, 9 to 15 percent slopes-----	2,742	0.2
180	Moskee-Noden fine sandy loams, dry, 0 to 15 percent slopes-----	5,225	0.4
181	Moskee-Nuncho complex, 0 to 3 percent slopes-----	441	*
182	Moskee-Nuncho complex, 3 to 6 percent slopes-----	324	*
183	Moskee-Worthenton, moist, association, 0 to 45 percent slopes-----	2,898	0.2
184	Nathrop-Passcreek-Starley association, 3 to 40 percent slopes-----	869	0.1
185	Nesda stony silt loam, 0 to 3 percent slopes-----	2,663	0.2
186	Nesda-Rubble land complex, 0 to 3 percent slopes-----	407	*
187	Nesda Variant-Havertel complex, 0 to 3 percent slopes-----	1,102	0.1
188	Norbert-Doney-Rock outcrop complex, 8 to 45 percent slopes-----	4,620	0.4
189	Norbert-Eltsac complex, 15 to 35 percent slopes-----	5,474	0.4
190	Norbert-Reget-Savar association, 3 to 35 percent slopes-----	17,464	1.4
191	Norbert-Rock outcrop complex, 15 to 35 percent slopes-----	3,561	0.3
192	Nuncho loam, 0 to 3 percent slopes-----	2,281	0.2
193	Nuncho loam, 3 to 6 percent slopes-----	1,735	0.1
194	Nuncho loam, 6 to 9 percent slopes-----	2,762	0.2
195	Nuncho clay loam, 0 to 3 percent slopes-----	6,521	0.5
196	Nuncho clay loam, 3 to 6 percent slopes-----	3,369	0.3
197	Nuncho-Emigrant association, 3 to 9 percent slopes-----	4,603	0.4
198	Nuncho-Emigrant association, 9 to 15 percent slopes-----	7,516	0.6
199	Nuncho Variant clay loam, 0 to 6 percent slopes-----	1,080	0.1
200	Owen Creek-Echemoor-Bynum association, 9 to 30 percent slopes-----	1,565	0.1
201	Parmleed-Bidman association, 3 to 15 percent slopes-----	7,836	0.6
202	Parmleed-Bidman association, moist, 3 to 9 percent slopes-----	8,614	0.7
203	Parmleed-Bidman association, moist, 9 to 25 percent slopes-----	3,660	0.3
204	Parmleed-Renohill complex, 3 to 25 percent slopes-----	1,096	0.1
205	Parmleed-Renohill complex, moist, 3 to 9 percent slopes-----	733	0.1

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
206	Parmleed-Renohill complex, moist, 9 to 25 percent slopes-----	762	0.1
207	Parmleed-Worfka association, 0 to 15 percent slopes-----	4,494	0.4
208	Parmleed-Worfka association, moist, 0 to 9 percent slopes-----	9,565	0.8
209	Parmleed-Worfka association, moist, 9 to 25 percent slopes-----	5,696	0.5
210	Parmleed-Worfka-Shingle Variant association, moist, 3 to 15 percent slopes-----	517	*
211	Peritsa-Abac association, 9 to 35 percent slopes-----	5,656	0.5
212	Platmak loam, 0 to 3 percent slopes-----	2,608	0.2
213	Platmak loam, 3 to 6 percent slopes-----	3,441	0.3
214	Platmak loam, dry, 0 to 9 percent slopes-----	2,513	0.2
215	Platsher loam, 0 to 3 percent slopes-----	2,259	0.2
216	Platsher loam, 3 to 6 percent slopes-----	1,382	0.1
217	Platsher clay loam, 0 to 3 percent slopes-----	3,795	0.3
218	Platsher clay loam, 3 to 6 percent slopes-----	1,406	0.1
219	Platsher-Wolfvar loams, 0 to 3 percent slopes-----	4,540	0.4
220	Platsher-Wolfvar loams, 3 to 6 percent slopes-----	7,060	0.6
221	Platsher-Wolfvar complex, 6 to 9 percent slopes-----	4,722	0.4
222	Platsher Variant loam, 0 to 3 percent slopes-----	971	0.1
223	Recluse loam, 0 to 3 percent slopes-----	5,359	0.4
224	Recluse loam, 3 to 6 percent slopes-----	6,800	0.6
225	Recluse loam, 6 to 9 percent slopes-----	4,003	0.3
226	Recluse-Bauxson-Baux association, 9 to 30 percent slopes-----	3,968	0.3
227	Reeder-Farnuf association, 3 to 9 percent slopes-----	1,397	0.1
228	Reeder-Farnuf association, 9 to 15 percent slopes-----	1,469	0.1
229	Reget silt loam, 0 to 6 percent slopes-----	195	*
230	Reget clay loam, 6 to 9 percent slopes-----	102	*
231	Reget-Savar association, 3 to 45 percent slopes-----	771	0.1
232	Reget Variant-Reget association, 10 to 65 percent slopes-----	2,405	0.2
233	Renohill-Savageton clay loams, 3 to 15 percent slopes-----	771	0.1
234	Renohill-Savageton complex, moist, 3 to 10 percent slopes-----	4,655	0.4
235	Renohill-Savageton clay loams, moist, 10 to 15 percent slopes-----	900	0.1
236	Renohill-Ulm, dry, association, 6 to 15 percent slopes-----	1,906	0.2
237	Renohill, moist-Ulm association, 3 to 10 percent slopes-----	3,197	0.3
238	Renohill-Worfka association, 6 to 15 percent slopes-----	438	*
239	Renohill-Worfka association, moist, 3 to 20 percent slopes-----	2,394	0.2
240	Renohill, moist-Wyarno association, 6 to 9 percent slopes-----	2,173	0.2
241	Rock outcrop-Agneston-Rubble land association, 20 to 50 percent slopes-----	1,919	0.2
242	Rock outcrop-Starman association, 15 to 45 percent slopes-----	221	*
243	Rock outcrop-Starman Variant association, 10 to 70 percent slopes-----	1,869	0.2
244	Samday-Gayhart-Hilight clay loams, moist, 2 to 60 percent slopes-----	9,582	0.8
245	Samday-Hilight clay loams, 2 to 45 percent slopes-----	1,128	0.1
246	Savage loam, 0 to 6 percent slopes-----	2,160	0.2
247	Savage silt loam, 6 to 9 percent slopes-----	980	0.1
248	Savage silt loam, 9 to 15 percent slopes-----	523	*
249	Savage-Farnuf silt loams, gravelly substratum, 0 to 6 percent slopes-----	3,252	0.3
250	Savage-Korchea loams, 0 to 3 percent slopes-----	1,153	0.1
251	Savage-Reget association, 4 to 30 percent slopes-----	3,695	0.3
252	Searing-Ringling association, 2 to 75 percent slopes-----	2,597	0.2
253	Shaak loam, 0 to 6 percent slopes-----	192	*
254	Shingle, moist-Baux-Rock outcrop complex, 30 to 60 percent slopes-----	53,304	4.4
255	Shingle-Haverdad association, 0 to 80 percent slopes-----	24,742	2.0
256	Shingle-Haverdad association, moist, 0 to 80 percent slopes-----	10,100	0.8
257	Shingle-Nihill complex, 3 to 80 percent slopes-----	1,485	0.1
258	Shingle-Nihill complex, moist, 3 to 80 percent slopes-----	8,640	0.7

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
259	Shingle, moist-Nuncho association, 3 to 45 percent slopes-----	836	0.1
260	Shingle-Rock outcrop complex, 30 to 50 percent slopes-----	59,748	4.9
261	Shingle, moist-Rock outcrop complex, 30 to 50 percent slopes-----	73,155	6.0
262	Shingle-Samday clay loams, 6 to 60 percent slopes-----	3,899	0.3
263	Shingle-Samday clay loams, moist, 3 to 55 percent slopes-----	20,514	1.7
264	Shingle-Taluze complex, 9 to 15 percent slopes-----	3,087	0.3
265	Shingle-Taluze complex, moist, 9 to 15 percent slopes-----	6,975	0.6
266	Shingle-Theedle complex, 45 to 75 percent slopes-----	3,621	0.3
267	Shingle-Theedle loams, moist, 45 to 75 percent slopes-----	36,596	3.0
268	Shingle-Theedle-Kishona association, 6 to 25 percent slopes-----	46,172	3.8
269	Shingle-Theedle-Kishona association, moist, 3 to 30 percent slopes-----	78,270	6.4
270	Shingle-Theedle-Rock outcrop association, moist, 15 to 45 percent slopes-----	2,924	0.2
271	Shingle-Wibaux complex, 0 to 60 percent slopes-----	6,572	0.5
272	Shingle-Wibaux complex, cool, 15 to 80 percent slopes-----	2,301	0.2
273	Shingle-Worf complex, 6 to 15 percent slopes-----	2,656	0.2
274	Shingle-Worf complex, moist, 9 to 15 percent slopes-----	1,933	0.2
275	Sinkson silt loam, 6 to 15 percent slopes-----	612	0.1
276	Spearman-Wibaux association, 6 to 25 percent slopes-----	4,373	0.4
277	Taluze-Tulloch-Rock outcrop association, 3 to 15 percent slopes-----	1,560	0.1
278	Taluze-Tulloch-Vonalee association, 6 to 15 percent slopes-----	3,089	0.3
279	Taluze-Tulloch-Vonalee association, moist, 9 to 30 percent slopes-----	6,301	0.5
280	Taluze Variant-Treoff-Theedle Variant association, 10 to 65 percent slopes-----	2,718	0.2
281	Theedle-Kishona association, 6 to 15 percent slopes-----	7,155	0.6
282	Theedle-Kishona association, moist, 6 to 9 percent slopes-----	6,835	0.6
283	Theedle-Kishona association, moist, 9 to 15 percent slopes-----	2,986	0.2
284	Tolman-Beeno-Beenom complex, 5 to 45 percent slopes-----	12,663	1.0
285	Trimad-Doney-Wayden complex, 15 to 45 percent slopes-----	3,743	0.3
286	Trimad-Trivar complex, 0 to 25 percent slopes-----	17,525	1.4
287	Trimad-Twin Creek association, 0 to 6 percent slopes-----	773	0.1
288	Twin Creek loam, 0 to 6 percent slopes-----	1,665	0.1
289	Twin Creek Variant silt loam, 0 to 3 percent slopes-----	138	*
290	Ulm clay loam, 0 to 3 percent slopes-----	1,785	0.1
291	Ulm clay loam, 3 to 6 percent slopes-----	1,014	0.1
292	Ulm clay loam, dry, 0 to 3 percent slopes-----	1,492	0.1
293	Ulm clay loam, dry, 3 to 6 percent slopes-----	768	0.1
294	Urban land-Kishona, moist-Clarkelen complex, 0 to 3 percent slopes-----	1,370	0.1
295	Urban land-Platsher-Wolfvar complex, 0 to 6 percent slopes-----	1,248	0.1
296	Urban land-Wyarno-Nuncho complex, 0 to 3 percent slopes-----	852	0.1
297	Ustic Torriorthants-Fits complex, 0 to 100 percent slopes-----	3,200	0.3
298	Wayden silty clay, 0 to 35 percent slopes-----	438	*
299	Wetterdon-Recluse complex, 0 to 9 percent slopes-----	5,241	0.4
300	Wibaux-Reddale association, 3 to 15 percent slopes-----	976	0.1
301	Windham gravelly loam, 3 to 85 percent slopes-----	1,842	0.2
302	Wolf loam, 0 to 3 percent slopes-----	1,763	0.1
303	Wolf loam, 3 to 6 percent slopes-----	1,709	0.1
304	Worfka-Shingle-Samday complex, 6 to 30 percent slopes-----	13,398	1.1
305	Worfka-Shingle-Samday complex, moist, 6 to 30 percent slopes-----	35,532	2.9
306	Worthenton clay loam, 0 to 3 percent slopes-----	1,479	0.1
307	Worthenton-Recluse association, 0 to 3 percent slopes-----	1,282	0.1
308	Worthenton Variant-Assiniboine Variant association, 0 to 6 percent slopes-----	335	*
309	Wyarno clay loam, 0 to 3 percent slopes-----	3,656	0.3
310	Wyarno clay loam, 3 to 6 percent slopes-----	1,712	0.1
311	Wyarno clay loam, 6 to 9 percent slopes-----	1,588	0.1

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
312	Wyarno clay loam, dry, 0 to 3 percent slopes-----	1,995	0.2
313	Wyarno clay loam, dry, 3 to 6 percent slopes-----	2,842	0.2
314	Wyarno clay loam, dry, 6 to 9 percent slopes-----	895	0.1
315	Zigweid loam, 0 to 3 percent slopes-----	1,068	0.1
316	Zigweid-Cambria loams, 0 to 6 percent slopes-----	4,831	0.4
317	Zigweid-Kishona-Cambria complex, 6 to 15 percent slopes-----	19,317	1.6
318	Zigweid-Kishona-Cambria complex, moist, 0 to 3 percent slopes-----	6,704	0.5
319	Zigweid-Kishona-Cambria complex, moist, 3 to 6 percent slopes-----	9,718	0.8
320	Zigweid-Kishona-Cambria loams, moist, 6 to 9 percent slopes-----	30,186	2.5
	Access denied-----	1,203	0.1
	Water-----	6,010	0.5
	Total-----	1,225,278	100.0

* Less than 0.05 percent.

Table 5.--Land Capability and Yields per Acre of Crops and Pasture

(Yields in the N columns are for nonirrigated soils; those in the I columns are for irrigated soils. Yields are those that can be expected under a high level of management. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)

Soil name and map symbol	Land capability		Winter wheat		Barley		Oats		Grass hay		Alfalfa hay		Pasture	
	N	I	N	I	N	I	N	I	N	I	N	I	N	I
			Bu	Bu	Bu	Bu	Bu	Bu	Tons	Tons	Tons	Tons	AUM*	AUM*
100**:														
Abac-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop---	VIII	---	---	---	---	---	---	---	---	---	---	---	---	---
101**:														
Absted-----	VI	---	---	---	---	---	---	---	---	---	---	---	---	---
Haverdad-----	IVe	---	---	---	---	---	---	---	---	---	---	---	---	---
102**:														
Absted, moist---	VI	---	---	---	---	---	---	---	---	---	---	---	---	---
Haverdad, moist	IVe	---	---	---	---	---	---	---	---	---	---	---	---	---
103**:														
Absted-----	VI	---	---	---	---	---	---	---	---	---	---	---	---	---
Slickspots-----	VIII	---	---	---	---	---	---	---	---	---	---	---	---	---
104**:														
Agneston-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Granile-----	VI	---	---	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop---	VIII	---	---	---	---	---	---	---	---	---	---	---	---	---
105**:														
Arnegard-----	IVe	IVe	40	---	45	65	55	70	1.0	3.0	1.5	3.5	1.0	6.0
Farnuf-----	IVe	IVe	40	---	45	65	55	70	1.0	3.0	1.5	3.5	1.0	6.0
106**:														
Arnegard-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Farnuf-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
107**:														
Assinniboine---	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Dast-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
108**:														
Baux-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Bauxson-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability		Winter wheat		Barley		Oats		Grass hay		Alfalfa hay		Pasture	
	N	I	N	I	N	I	N	I	N	I	N	I	N	I
			Bu	Bu	Bu	Bu	Bu	Bu	Tons	Tons	Tons	Tons	ALM*	ALM*
109**:														
Baux, dry-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Bauxson, dry---	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
110**:														
Baux-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Bauxson-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Kirtley-----	IVe	---	---	---	---	---	---	---	---	---	---	---	---	---
111**:														
Baux-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Bauxson-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Wetterdon-----	IIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
112:														
Bidman-----	IVe	---	---	---	---	---	---	---	---	---	---	---	---	---
Arvada-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
113:														
Bidman, moist--	IIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Arvada, moist--	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
114:														
Bidman-----	IVe	IIIe	25	---	35	60	40	65	---	3.0	---	4.5	---	6.0
Ulm, dry-----	IVe	IIIe	25	---	35	60	40	65	---	3.0	---	4.5	---	6.0
115:														
Bidman, moist--	IIIe	IIIe	35	---	40	65	50	70	1.0	3.0	1.5	4.5	1.0	6.0
Ulm-----	IIIe	IIIe	35	---	40	65	50	70	1.0	3.0	1.5	4.5	1.0	6.0
116:														
Big Horn-----	IVe	IIIe	25	---	30	55	35	60	---	3.0	---	4.5	---	5.0
Wolf, dry-----	IVe	IIIe	20	---	25	50	30	60	---	3.0	---	4.0	---	5.0
117:														
Cambria-----	IVe	---	20	---	30	---	35	---	---	---	---	---	---	---
Forkwood-----	IVe	---	20	---	30	---	35	---	---	---	---	---	---	---

See footnotes at end of table.

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability		Winter wheat		Barley		Oats		Grass hay		Alfalfa hay		Pasture	
	N	I	N	I	N	I	N	I	N	I	N	I	N	I
			Bu	Bu	Bu	Bu	Bu	Bu	Tons	Tons	Tons	Tons	AUM*	AUM*
118:														
Cambria, moist-	IIIe	---	30	---	40	---	50	---	1.0	---	1.5	---	1.0	---
Forkwood, moist-	IIIe	---	30	---	40	---	50	---	1.0	---	1.5	---	1.0	---
119**:														
Cedak-----	IVe	---	30	---	35	---	50	---	1.0	---	1.0	---	1.0	---
Recluse-----	IIIe	---	35	---	40	---	60	---	1.5	---	2.0	---	1.0	---
120**:														
Cedak-----	IVe	---	25	---	30	---	45	---	1.0	---	1.0	---	1.0	---
Recluse-----	IVe	---	30	---	35	---	50	---	1.0	---	1.5	---	1.0	---
121**:														
Cedak-----	IVe	---	20	---	30	---	40	---	1.0	---	1.0	---	1.0	---
Recluse-----	IVe	---	25	---	35	---	40	---	1.0	---	1.0	---	1.0	---
122**:														
Cedak, dry----	IVe	---	20	---	25	---	35	---	---	---	---	---	---	---
Recluse, dry----	IVe	---	25	---	30	---	40	---	---	---	---	---	---	---
123-----	IVe	IIIe	25	---	25	55	35	60	---	2.5	---	4.5	---	6.0
Clarkelen														
124-----	IIIe	IIIe	30	---	30	55	40	65	---	2.5	1.0	4.5	1.0	6.0
Clarkelen, moist														
125**:														
Cloud Peak-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Tolman-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
126:														
Coaliams, moist-	IIIe	IIIe	---	---	---	---	---	---	1.0	3.5	2.0	4.0	1.0	6.0
Worhenton, moist-----	VIw	VIw	---	---	---	---	---	---	3.0	---	---	---	3.0	---
127**:														
Cushman-----	IVe	---	15	---	20	---	30	---	---	---	---	---	---	---
Forkwood-----	IVe	---	20	---	30	---	40	---	---	---	---	---	---	---
128**:														
Cushman, moist-	IVe	IVe	25	---	35	55	40	60	0.7	2.5	1.0	3.5	1.0	5.0
Forkwood, moist-	IIIe	IIIe	30	---	40	60	50	65	1.0	3.0	1.5	4.0	1.0	6.0

See footnotes at end of table.

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability		Winter wheat		Barley		Oats		Grass hay		Alfalfa hay		Pasture	
	N	I	N	I	N	I	N	I	N	I	N	I	N	I
			Bu	Bu	Bu	Bu	Bu	Bu	Tons	Tons	Tons	Tons	AUM*	AUM*
129**:														
Cushman, moist	IVe	---	20	---	25	---	35	---	0.5	---	0.7	---	---	---
Forkwood, moist	IVe	---	25	---	30	---	40	---	1.0	---	1.0	---	1.0	---
130**:														
Cushman-----	IVe	---	15	---	20	---	30	---	---	---	---	---	---	---
Worf-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
131**:														
Cushman, moist	IVe	---	20	---	30	---	35	---	0.5	---	0.7	---	1.0	---
Worf, moist----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
132-----														
Dast Variant	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
133:														
Doney-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Doney Variant--	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
134**:														
Doney-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Ringling-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
135**:														
Doney-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Ringling-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop--	VIII	---	---	---	---	---	---	---	---	---	---	---	---	---
136-----														
Draknab	IVe	IVe	---	---	---	---	---	---	---	2.5	---	3.5	---	5.0
137-----														
Farnuf	IVe	IVe	40	---	45	65	55	70	1.0	3.0	1.5	3.5	1.0	6.0
138-----														
Farnuf	IVe	IVe	35	---	40	55	45	60	1.0	3.0	1.0	3.5	1.0	6.0
139-----														
Farnuf	IVe	IVe	30	---	35	---	40	---	1.0	2.5	1.0	3.0	1.0	6.0
140-----														
Farnuf Variant, wet	IVw	---	---	---	---	---	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability		Winter wheat		Barley		Oats		Grass hay		Alfalfa hay		Pasture	
	N	I	N	I	N	I	N	I	N	I	N	I	N	I
			Bu	Bu	Bu	Bu	Bu	Bu	Tons	Tons	Tons	Tons	ALM*	ALM*
141:														
Farnuf Variant-	IVe	---	---	---	---	---	---	---	---	---	---	---	---	---
Cloud Peak Variant-----	IVe	---	---	---	---	---	---	---	---	---	---	---	---	---
142, 143-----	IVe	IIIe	25	---	35	60	45	65	---	3.0	---	4.5	---	6.0
Forkwood														
144-----	IVe	IVe	25	---	30	50	40	60	---	2.5	---	4.0	---	6.0
Forkwood														
145**:														
Gayhart-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Bahl-----	IVe	---	20	---	25	---	35	---	---	---	---	---	---	---
146**:														
Gayhart, moist-	IVe	---	20	---	25	---	30	---	---	---	---	---	---	---
Bahl, moist----	IVe	---	25	---	30	---	40	---	---	---	---	---	---	---
147**:														
Hardhart-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Starley-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
148**:														
Hargreave-----	IVe	IVe	30	---	35	55	45	60	1.0	2.5	1.0	3.5	1.0	5.0
Moskee-----	IIIe	IIIe	30	---	35	65	50	65	1.0	3.0	1.5	4.5	1.0	6.0
149**:														
Hargreave-----	IVe	IVe	25	---	30	50	40	55	0.5	2.0	1.0	3.0	0.7	5.0
Moskee-----	IVe	IVe	30	---	35	60	50	65	1.0	3.0	1.5	4.0	1.0	6.0
150**:														
Hargreave, dry-	IVe	IVe	20	---	25	50	35	50	---	2.0	---	3.0	---	5.0
Moskee, dry----	IVe	IVe	25	---	30	55	45	60	---	3.0	---	3.5	---	6.0
151-----	IVe	---	20	---	30	---	40	---	---	---	---	---	---	---
Harlan, dry														
152**:														
Harlan-----	IIIe	---	35	---	40	---	50	---	1.0	---	2.0	---	1.0	---
Kirtley-----	IVe	---	30	---	35	---	45	---	0.7	---	1.2	---	1.0	---

See footnotes at end of table.

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability		Winter wheat		Barley		Oats		Grass hay		Alfalfa hay		Pasture	
	N	I	N	I	N	I	N	I	N	I	N	I	N	I
			Bu	Bu	Bu	Bu	Bu	Bu	Tons	Tons	Tons	Tons	AUM*	AUM*
153**:														
Harlan-----	IVe	---	30	---	35	---	40	---	1.0	---	1.5	---	1.0	---
Kirtley-----	IVe	---	25	---	30	---	35	---	0.7	---	1.2	---	1.0	---
154-----	IVe	IIIe	25	---	35	60	40	65	---	3.0	---	5.0	---	6.0
Haverdad														
155-----	IIIe	IIIe	35	---	40	65	50	70	1.0	3.0	1.5	5.0	1.0	6.0
Haverdad, moist														
156-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Haverdad, saline														
157-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Haverdad, moist, saline														
158:														
Haverdad-----	Vw	Vw	---	---	---	---	---	---	1.0	3.0	1.5	4.5	1.0	6.0
Draknab-----	Vw	Vw	---	---	---	---	---	---	1.0	2.5	1.0	3.5	1.0	5.0
159:														
Haverdad, moist	Vw	Vw	---	---	---	---	---	---	1.5	3.0	2.0	4.5	1.5	6.0
Draknab, moist-	Vw	Vw	---	---	---	---	---	---	1.0	2.5	1.0	3.5	1.0	5.0
160:														
Haverdad-----	Vw	Vw	---	---	---	---	---	---	1.0	3.0	1.5	4.5	1.0	6.0
Worthenton-----	VIw	VIw	---	---	---	---	---	---	3.0	---	---	---	3.0	---
161:														
Haverdad, moist	Vw	Vw	---	---	---	---	---	---	1.5	3.0	2.0	4.5	1.5	6.0
Worthenton-----	VIw	VIw	---	---	---	---	---	---	3.0	---	---	---	3.0	---
162-----	IIIw	IIIw	40	---	45	70	55	75	1.5	3.5	2.0	5.0	1.0	6.0
Havertel														
163**:														
Hesperus Variant-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Reget-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
164**:														
Hiland-----	IVe	---	20	---	30	---	35	---	---	---	---	---	---	---
Bowbac-----	IVe	---	20	---	20	---	30	---	---	---	---	---	---	---

See footnotes at end of table.

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability		Winter wheat		Barley		Oats		Grass hay		Alfalfa hay		Pasture	
	N	I	N	I	N	I	N	I	N	I	N	I	N	I
			Bu	Bu	Bu	Bu	Bu	Bu	Tons	Tons	Tons	Tons	ALM*	ALM*
165**:														
Hiland, moist--	IIIe	---	25	---	35	---	45	---	0.7	---	1.0	---	1.0	---
Bowbac, moist--	IVe	---	30	---	25	---	35	---	0.5	---	1.0	---	1.0	---
166:														
Hiland-----	IVe	---	20	---	30	---	35	---	---	---	---	---	---	---
Decolney-----	IVe	---	20	---	25	---	30	---	---	---	---	---	---	---
167:														
Hiland, moist--	IIIe	---	30	---	35	---	45	---	0.7	---	1.0	---	1.0	---
Vonalee, moist-	IIIe	---	25	---	30	---	40	---	0.5	---	0.5	---	1.0	---
168**:														
Hilight-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop--	VIII	---	---	---	---	---	---	---	---	---	---	---	---	---
169**:														
Jonpol-----	IVe	IIIe	30	---	35	60	50	65	1.0	2.5	1.5	4.0	1.0	5.0
Platmak-----	IIIe	IIIe	35	---	40	70	60	75	1.5	3.0	2.0	4.5	1.0	6.0
170**:														
Jonpol-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Platmak-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
171, 172:														
Kishona-----	IVe	IIIe	25	---	30	60	35	65	---	3.0	---	4.5	---	6.0
Cambria-----	IVe	IIIe	25	---	35	60	40	65	---	3.0	---	4.5	---	6.0
173**:														
Lambman-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Hargreave-----	IVe	---	30	---	35	---	45	---	1.0	---	1.0	---	1.0	---
174**:														
Lucky-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Burgess-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Hazton-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
175, 176-----	IIIe	IIIe	35	---	40	70	60	75	1.5	3.5	2.0	5.0	1.0	6.0
Moskee														
177-----	IVe	IVe	30	---	35	60	50	65	1.0	3.0	1.5	4.0	1.0	6.0
Moskee														

See footnotes at end of table.

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability		Winter wheat		Barley		Oats		Grass hay		Alfalfa hay		Pasture	
	N	I	N	I	N	I	N	I	N	I	N	I	N	I
			Bu	Bu	Bu	Bu	Bu	Bu	Tons	Tons	Tons	Tons	AUM*	AUM*
178:														
Moskee-----	IIIe	IIIe	35	---	40	65	55	70	1.5	3.0	2.0	4.5	1.0	6.0
Noden-----	IIIe	IIIe	35	---	40	65	55	70	1.5	3.0	2.0	4.5	1.0	6.0
179:														
Moskee-----	IVe	IVe	30	---	35	60	45	65	1.0	3.0	1.5	4.0	1.0	6.0
Noden-----	IVe	IVe	30	---	35	60	45	65	1.0	3.0	1.5	4.0	1.0	6.0
180:														
Moskee, dry----	IVe	IVe	25	---	30	55	45	60	---	3.0	---	3.5	---	6.0
Noden, dry----	IVe	IVe	25	---	30	55	45	60	---	3.0	---	3.5	---	6.0
181, 182:														
Moskee-----	IIIe	IIIe	35	---	40	70	60	75	1.5	3.5	2.0	5.0	1.0	6.0
Nuncho-----	IIIe	IIIe	35	---	40	70	60	75	1.5	3.5	2.0	5.0	1.0	6.0
183**:														
Moskee-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Worhenton, moist-----	VIw	---	---	---	---	---	---	---	---	---	---	---	---	---
184**:														
Nathrop-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Passcreek-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Starley-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
185-----														
Nesda	VIIs	---	---	---	---	---	---	---	---	---	---	---	---	---
186**:														
Nesda-----	VIIs	---	---	---	---	---	---	---	---	---	---	---	---	---
Rubble land----	VIII	---	---	---	---	---	---	---	---	---	---	---	---	---
187:														
Nesda Variant--	VIIs	---	---	---	---	---	---	---	---	---	---	---	---	---
Havertel-----	IVs	---	---	---	---	---	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability		Winter wheat		Barley		Oats		Grass hay		Alfalfa hay		Pasture	
	N	I	N	I	N	I	N	I	N	I	N	I	N	I
			Bu	Bu	Bu	Bu	Bu	Bu	Tons	Tons	Tons	Tons	AUM*	AUM*
188**:														
Norbert-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Doney-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop---	VIII	---	---	---	---	---	---	---	---	---	---	---	---	---
189:														
Norbert-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Eltzac-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
190**:														
Norbert-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Reget-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Savar-----	IVe	IVe	35	---	40	---	45	---	---	3.0	---	3.5	---	6.0
191**:														
Norbert-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop---	VIII	---	---	---	---	---	---	---	---	---	---	---	---	---
192, 193-----	IIIe	IIIe	35	---	40	70	60	75	1.5	3.5	2.0	5.0	1.0	6.0
Nuncho														
194-----	IVe	IVe	30	---	35	60	50	65	1.0	3.0	1.5	4.5	1.0	6.0
Nuncho														
195, 196-----	IIIe	IIIe	35	---	40	70	60	75	1.5	3.5	2.0	5.0	1.0	6.0
Nuncho														
197**:														
Nuncho-----	IVe	IVe	30	---	35	60	50	65	1.0	3.0	1.5	4.5	1.0	6.0
Emigrant-----	IVe	IVe	30	---	35	55	45	60	1.0	2.5	1.0	4.0	1.0	5.0
198**:														
Nuncho-----	IVe	IVe	30	---	35	---	40	---	1.0	3.0	1.5	3.0	1.0	6.0
Emigrant-----	IVe	IVe	25	---	30	---	40	---	0.7	2.0	1.0	3.0	1.0	5.0
199-----	IIIw	IIIw	---	---	---	---	---	---	---	3.5	---	---	---	6.0
Nuncho Variant														
200**:														
Owen Creek----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Echemoor-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Bynum-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability		Winter wheat		Barley		Oats		Grass hay		Alfalfa hay		Pasture		
	N	I	N	I	N	I	N	I	N	I	N	I	N	I	
			Bu	Bu	Bu	Bu	Bu	Bu	Tons	Tons	Tons	Tons	AUM*	AUM*	
201**:															
Parmleed-----	IVe	---	20	---	25	---	30	---	---	---	---	---	---	---	---
Bidman-----	IVe	---	25	---	30	---	35	---	---	---	---	---	---	---	---
202**:															
Parmleed, moist	IVe	---	30	---	30	---	40	---	0.5	---	0.5	---	1.0	---	
Bidman, moist--	IIIe	---	35	---	40	---	50	---	1.0	---	1.5	---	1.0	---	
203**:															
Parmleed, moist	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bidman, moist--	IVe	---	---	---	---	---	---	---	---	---	---	---	---	---	---
204:															
Parmleed-----	IVe	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Renohill-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---	---
205:															
Parmleed, moist	IVe	---	25	---	30	---	40	---	0.5	---	0.5	---	1.0	---	
Renohill, moist	IVe	---	25	---	30	---	40	---	0.5	---	0.5	---	1.0	---	
206:															
Parmleed, moist	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Renohill, moist	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---	---
207**:															
Parmleed-----	IVe	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Worfka-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---	---
208**:															
Parmleed, moist	IVe	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Worfka, moist--	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---	---
209**:															
Parmleed, moist	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Worfka, moist--	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---	---
210**:															
Parmleed, moist	IVe	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Worfka, moist--	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability		Winter wheat		Barley		Oats		Grass hay		Alfalfa hay		Pasture	
	N	I	N	I	N	I	N	I	N	I	N	I	N	I
			Bu	Bu	Bu	Bu	Bu	Bu	Tons	Tons	Tons	Tons	AUM*	AUM*
210**: Shingle Variant, moist	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
211**: Peritsa	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Abac	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
212, 213 Platmak	IIIe	IIIe	35	---	40	70	60	75	1.5	3.5	2.0	5.0	1.0	6.0
214 Platmak, dry	IVe	---	25	---	30	---	40	---	---	---	---	---	---	---
215, 216, 217, 218 Platsher	IIIe	IIIe	35	---	40	70	60	75	1.5	3.5	2.0	5.0	1.0	6.0
219: Platsher	IIIe	IIIe	35	---	40	70	60	75	1.5	3.5	2.0	5.0	1.0	6.0
Wolfvar	IIIe	IIIe	30	---	35	60	50	65	1.5	3.0	1.5	4.0	1.0	5.0
220: Platsher	IIIe	IIIe	35	---	40	70	60	75	1.5	3.5	2.0	5.0	1.0	6.0
Wolfvar	IIIe	IIIe	30	---	35	60	50	65	1.5	3.0	1.5	3.5	1.0	5.0
221: Platsher	IVe	IVe	30	---	35	60	50	65	1.0	3.0	1.5	4.0	1.0	5.0
Wolfvar	IVe	IVe	25	---	30	55	50	60	1.0	3.0	1.0	3.0	1.0	5.0
222 Platsher Variant	IIIw	IIIw	---	---	---	---	---	---	---	3.5	---	2.5	---	6.0
223 Recluse	IIIe	IIIe	35	---	40	70	60	75	1.5	3.5	2.0	5.0	1.0	6.0
224 Recluse	IIIe	IIIe	35	---	40	70	60	75	1.5	3.5	2.0	4.5	1.0	6.0
225 Recluse	IVe	IVe	30	---	35	60	50	65	1.0	3.0	1.5	4.0	1.0	6.0

See footnotes at end of table.

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability		Winter wheat		Barley		Oats		Grass hay		Alfalfa hay		Pasture	
	N	I	N	I	N	I	N	I	N	I	N	I	N	I
			Bu	Bu	Bu	Bu	Bu	Bu	Tons	Tons	Tons	Tons	AUM*	AUM*
226**:														
Recluse-----	IVe	---	---	---	---	---	---	---	---	---	---	---	---	---
Bauxson-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Baux-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
227**:														
Reeder-----	IVe	IVe	30	---	35	50	40	55	1.0	2.5	1.0	3.0	1.0	5.0
Farnuf-----	IVe	IVe	35	---	40	55	45	60	1.0	3.0	1.0	3.5	1.0	6.0
228**:														
Reeder-----	IVe	IVe	25	---	30	---	35	---	1.0	2.0	1.0	2.5	1.0	5.0
Farnuf-----	IVe	IVe	30	---	35	---	40	---	1.0	2.5	1.0	3.0	1.0	6.0
229-----	IVe	IVe	35	---	40	---	45	---	1.0	3.0	1.5	3.5	1.0	6.0
Reget														
230-----	IVe	IVe	30	---	35	---	40	---	1.0	3.0	1.5	3.0	1.0	6.0
Reget														
231**:														
Reget-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Savar-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
232**:														
Reget Variant--	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Reget-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
233:														
Renohill-----	IVe	---	20	---	25	---	30	---	---	---	---	---	---	---
Savageton-----	IVe	---	20	---	25	---	30	---	---	---	---	---	---	---
234:														
Renohill, moist	IVe	---	25	---	30	---	40	---	0.5	---	0.5	---	1.0	---
Savageton, moist-----	IVe	---	25	---	30	---	40	---	0.5	---	0.5	---	1.0	---
235:														
Renohill, moist	IVe	---	20	---	25	---	30	---	0.5	---	0.5	---	1.0	---
Savageton, moist-----	IVe	---	20	---	25	---	30	---	0.5	---	0.5	---	1.0	---

See footnotes at end of table.

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability	Winter wheat		Barley		Oats		Grass hay		Alfalfa hay		Pasture			
		N	I	N	I	N	I	N	I	N	I	N	I		
		Bu	Bu	Bu	Bu	Bu	Bu	Tons	Tons	Tons	Tons	AUM*	AUM*		
236**:															
Renohill-----	IVe	---	---	20	---	20	---	30	---	---	---	---	---	---	---
Ulm, dry-----	IVe	---	---	25	---	30	---	40	---	---	---	---	---	---	---
237**:															
Renohill, moist	IVe	---	---	25	---	30	---	40	---	0.5	---	0.5	---	1.0	---
Ulm-----	IIIe	---	---	30	---	35	---	45	---	1.0	---	1.0	---	1.0	---
238**:															
Renohill-----	IVe	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Worfka-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---	---
239**:															
Renohill, moist	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Worfka, moist--	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---	---
240**:															
Renohill, moist	IVe	---	---	25	---	30	---	40	---	0.5	---	0.5	---	1.0	---
Wyarno-----	IVe	---	---	30	---	35	---	45	---	0.7	---	1.0	---	1.0	---
241**:															
Rock outcrop---	VIII	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ageston-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Rubble land---	VIII	---	---	---	---	---	---	---	---	---	---	---	---	---	---
242**:															
Rock outcrop---	VIII	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Starman-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---	---
243**:															
Rock outcrop---	VIII	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Starman Variant	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---	---
244:															
Samday, moist--	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Gayhart, moist-	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hilight, moist-	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability		Winter wheat		Barley		Oats		Grass hay		Alfalfa hay		Pasture	
	N	I	N	I	N	I	N	I	N	I	N	I	N	I
			Bu	Bu	Bu	Bu	Bu	Bu	Tons	Tons	Tons	Tons	AUM*	AUM*
245:														
Samday-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Hilight-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
246-----	IVe	IVe	40	---	45	65	55	70	1.0	3.0	1.5	3.5	1.0	6.0
Savage														
247-----	IVe	IVe	35	---	40	55	45	60	1.0	3.0	1.0	3.0	1.0	6.0
Savage														
248-----	IVe	IVe	30	---	35	---	40	---	1.0	2.5	1.0	2.0	1.0	6.0
Savage														
249:														
Savage-----	IVe	IVe	35	---	45	65	55	70	1.0	3.0	1.5	3.5	1.0	6.0
Farnuf-----	IVe	IVe	35	---	45	65	55	70	1.0	3.0	1.5	3.5	1.0	6.0
250:														
Savage-----	IVe	---	---	---	---	---	---	---	1.5	---	1.5	---	1.0	---
Korchea-----	IVe	---	---	---	---	---	---	---	1.5	---	2.0	---	1.0	---
251**:														
Savage-----	IVe	---	35	---	40	---	45	---	1.0	---	1.0	---	1.0	---
Reget-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
252**:														
Searing-----	IVe	---	---	---	---	---	---	---	---	---	---	---	---	---
Ringling-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
253-----	IVe	IVe	40	---	50	65	60	75	1.0	3.5	1.5	4.0	1.0	6.0
Shaak														
254**:														
Shingle, moist-	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Baux-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop---	VIII	---	---	---	---	---	---	---	---	---	---	---	---	---
255**:														
Shingle-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Haverdad-----	Vw	---	---	---	---	---	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability		Winter wheat		Barley		Oats		Grass hay		Alfalfa hay		Pasture	
	N	I	N	I	N	I	N	I	N	I	N	I	N	I
			Bu	Bu	Bu	Bu	Bu	Bu	Tons	Tons	Tons	Tons	AUM*	AUM*
256**:														
Shingle, moist-	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Haverdad, moist	Vw	---	---	---	---	---	---	---	---	---	---	---	---	---
257:														
Shingle-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Nihill-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
258:														
Shingle, moist-	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Nihill, moist--	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
259**:														
Shingle, moist-	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Nuncho-----	IIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
260**:														
Shingle-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop---	VIII	---	---	---	---	---	---	---	---	---	---	---	---	---
261**:														
Shingle, moist-	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop---	VIII	---	---	---	---	---	---	---	---	---	---	---	---	---
262:														
Shingle-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Samday-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
263:														
Shingle, moist-	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Samday, moist--	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
264:														
Shingle-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Taluca-----	VIIIs	---	---	---	---	---	---	---	---	---	---	---	---	---
265:														
Shingle, moist-	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Taluca, moist--	VIIIs	---	---	---	---	---	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability		Winter wheat		Barley		Oats		Grass hay		Alfalfa hay		Pasture	
	N	I	N	I	N	I	N	I	N	I	N	I	N	I
			Bu	Bu	Bu	Bu	Bu	Bu	Tons	Tons	Tons	Tons	AUM*	AUM*
266:														
Shingle-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Theedle-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
267:														
Shingle, moist-	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Theedle, moist-	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
268**:														
Shingle-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Theedle-----	IVe	---	---	---	---	---	---	---	---	---	---	---	---	---
Kishona-----	IVe	---	---	---	---	---	---	---	---	---	---	---	---	---
269**:														
Shingle, moist-	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Theedle, moist-	IVe	---	---	---	---	---	---	---	---	---	---	---	---	---
Kishona, moist-	IVe	---	---	---	---	---	---	---	---	---	---	---	---	---
270**:														
Shingle, moist-	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Theedle, moist-	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop---	VIII	---	---	---	---	---	---	---	---	---	---	---	---	---
271:														
Shingle-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Wibaux-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
272:														
Shingle, cool--	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Wibaux, cool---	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
273:														
Shingle-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Worf-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
274:														
Shingle, moist-	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Worf, moist---	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability		Winter wheat		Barley		Oats		Grass hay		Alfalfa hay		Pasture	
	N	I	N	I	N	I	N	I	N	I	N	I	N	I
			Bu	Bu	Bu	Bu	Bu	Bu	Tons	Tons	Tons	Tons	AUM*	AUM*
275----- Sinkson	IVe	---	30	---	40	---	50	---	0.7	---	1.0	---	1.0	---
276**: Spearman-----	IVe	---	---	---	---	---	---	---	---	---	---	---	---	---
Wibaux-----	VIIIs	---	---	---	---	---	---	---	---	---	---	---	---	---
277**: Taluca-----	VIIIs	---	---	---	---	---	---	---	---	---	---	---	---	---
Tullock-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop--	VIII	---	---	---	---	---	---	---	---	---	---	---	---	---
278**: Taluca-----	VIIIs	---	---	---	---	---	---	---	---	---	---	---	---	---
Tullock-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Vonalee-----	IVe	---	---	---	---	---	---	---	---	---	---	---	---	---
279**: Taluca, moist--	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Tullock, moist-	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Vonalee, moist-	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
280**: Taluca Variant-	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Treoff-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Theedle Variant	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
281**: Theedle-----	IVe	---	15	---	20	---	25	---	---	---	---	---	---	---
Kishona-----	IVe	---	20	---	25	---	30	---	---	---	---	---	---	---
282**: Theedle, moist-	IVe	---	25	---	30	---	35	---	0.7	---	0.7	---	1.0	---
Kishona, moist-	IVe	---	30	---	35	---	40	---	1.0	---	1.5	---	1.0	---
283**: Theedle, moist-	IVe	---	20	---	25	---	30	---	0.7	---	0.7	---	1.0	---
Kishona, moist-	IVe	---	25	---	30	---	35	---	1.0	---	1.0	---	1.0	---

See footnotes at end of table.

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability		Winter wheat		Barley		Oats		Grass hay		Alfalfa hay		Pasture	
	N	I	N	I	N	I	N	I	N	I	N	I	N	I
			Bu	Bu	Bu	Bu	Bu	Bu	Tons	Tons	Tons	Tons	AUM*	AUM*
284:														
Tolman-----	VIIc	---	---	---	---	---	---	---	---	---	---	---	---	---
Beeno-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Beenom-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
285:														
Trimad-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Doney-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Wayden-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
286:														
Trimad-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Trivar-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
287**:														
Trimad-----	VIc	---	---	---	---	---	---	---	---	---	---	---	---	---
Twin Creek-----	IVe	---	---	---	---	---	---	---	---	---	---	---	---	---
288-----	IVe	IVe	40	---	50	65	60	70	1.0	3.0	1.5	4.0	1.0	6.0
Twin Creek														
289-----	IVw	IVw	---	---	---	---	---	---	---	3.0	---	---	---	6.0
Twin Creek Variant														
290-----	IIIe	IIIe	35	---	40	65	50	70	1.0	3.0	1.5	5.0	1.0	6.0
Ulm														
291-----	IIIe	IIIe	35	---	40	65	50	70	1.0	3.0	1.5	4.5	1.0	6.0
Ulm														
292, 293-----	IVe	IIIe	25	---	35	60	40	65	---	3.0	---	4.5	---	6.0
Ulm, dry														
294:														
Urban land.														
Kishona, moist-	IIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Clarkelen-----	IIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
295:														
Urban land.														

See footnotes at end of table.

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability		Winter wheat		Barley		Oats		Grass hay		Alfalfa hay		Pasture	
	N	I	N	I	N	I	N	I	N	I	N	I	N	I
			Bu	Bu	Bu	Bu	Bu	Bu	Tons	Tons	Tons	Tons	ALM*	ALM*
295:														
Platscher-----	IIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Wolfvar-----	IIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
296:														
Urban land.														
Wyarno-----	IIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Nuncho-----	IIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
297:														
Ustic Torriorthents.														
Pits.														
298-----	VIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Wayden														
299:														
Wetterdon-----	IIIe	---	35	---	40	---	50	---	1.5	---	2.0	---	1.0	---
Recluse-----	IIIe	---	35	---	40	---	60	---	1.5	---	2.0	---	1.0	---
300**:														
Wibaux-----	VIIIs	---	---	---	---	---	---	---	---	---	---	---	---	---
Reddale-----	IVe	---	---	---	---	---	---	---	---	---	---	---	---	---
301-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Windham														
302-----	IIIe	IIIe	25	---	30	50	40	60	1.0	3.0	2.0	4.0	1.0	5.0
Wolf														
303-----	IIIe	IIIe	25	---	30	50	40	60	1.0	3.0	1.5	4.0	1.0	5.0
Wolf														
304:														
Worfka-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Shingle-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Samday-----	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---

See footnotes at end of table.

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability		Winter wheat		Barley		Oats		Grass hay		Alfalfa hay		Pasture	
	N	I	N	I	N	I	N	I	N	I	N	I	N	I
			Bu	Bu	Bu	Bu	Bu	Bu	Tons	Tons	Tons	Tons	AUM*	AUM*
305:														
Worfka, moist--	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Shingle, moist-	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
Samday, moist--	VIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
306-----	VIw	---	---	---	---	---	---	---	---	---	---	---	---	---
Worthenton														
307**:														
Worthenton-----	VIw	---	---	---	---	---	---	---	---	---	---	---	---	---
Recluse-----	IIIe	---	---	---	---	---	---	---	---	---	---	---	---	---
308**:														
Worthenton														
Variant-----	VIw	---	---	---	---	---	---	---	---	---	---	---	---	---
Assinniboine														
Variant-----	IIIw	---	---	---	---	---	---	---	---	---	---	---	---	---
309-----	IIIe	IIIe	35	---	40	65	50	70	1.0	3.0	1.5	5.0	1.0	6.0
Wyarno														
310-----	IIIe	IIIe	35	---	40	65	50	70	1.0	3.0	1.5	4.5	1.0	6.0
Wyarno														
311-----	IVe	IVe	30	---	35	50	45	60	0.7	3.0	1.0	4.0	1.0	6.0
Wyarno														
312-----	IVe	IIIe	25	---	35	60	40	65	---	3.0	---	5.0	---	6.0
Wyarno, dry														
313-----	IVe	IIIe	25	---	35	60	40	65	---	3.0	---	4.5	---	6.0
Wyarno, dry														
314-----	IVe	IVe	25	---	30	50	35	60	---	3.0	---	4.0	---	6.0
Wyarno, dry														
315-----	IVe	IIIe	25	---	35	60	40	65	---	3.0	---	4.5	---	6.0
Zigweid														
316:														
Zigweid-----	IVe	IIIe	25	---	35	60	40	65	---	3.0	---	4.5	---	6.0
Cambria-----	IVe	IIIe	25	---	35	60	40	65	---	3.0	---	4.5	---	6.0

See footnotes at end of table.

Table 5.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Soil name and map symbol	Land capability		Winter wheat		Barley		Oats		Grass hay		Alfalfa hay		Pasture	
	N	I	N	I	N	I	N	I	N	I	N	I	N	I
			Bu	Bu	Bu	Bu	Bu	Bu	Tons	Tons	Tons	Tons	AUM*	AUM*
317:														
Zigweid-----	IVe	---	20	---	25	---	35	---	---	---	---	---	---	---
Kishona-----	IVe	---	20	---	25	---	35	---	---	---	---	---	---	---
Cambrina-----	IVe	---	20	---	30	---	35	---	---	---	---	---	---	---
318, 319:														
Zigweid, moist-	IIIe	IIIe	35	---	40	65	45	70	1.0	3.0	1.5	4.5	1.0	6.0
Kishona, moist-	IIIe	IIIe	30	---	35	65	45	70	1.0	3.0	1.5	4.5	1.0	6.0
Cambrina, moist-	IIIe	IIIe	35	---	40	65	50	70	1.0	3.0	1.5	4.5	1.0	6.0
320:														
Zigweid, moist-	IVe	IVe	30	---	35	55	40	60	1.0	2.5	1.0	4.0	1.0	6.0
Kishona, moist-	IVe	IVe	30	---	35	55	40	60	1.0	2.5	1.0	4.0	1.0	6.0
Cambrina, moist-	IVe	IVe	30	---	35	55	40	60	1.0	2.5	1.0	4.0	1.0	6.0

* Animal unit month: 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.

** See description of the map unit for composition and behavior characteristics of the map unit.

Table 6.--Soil-Pesticide Loss Potential

(Absence of an entry indicates that the map unit component was not rated)

Soil name and map symbol	Pesticide loss potential-- leaching	Pesticide loss potential-- runoff
100:		
Abac-----	Slight*-----	Severe: runoff.
Rock outcrop-----	Slight*-----	Moderate: runoff.
101:		
Absted-----	Slight-----	Moderate: runoff.
Haverdad-----	Moderate: low adsorption.	Moderate: runoff.
102:		
Absted, moist-----	Slight-----	Moderate: runoff.
Haverdad, moist-----	Moderate: low adsorption.	Moderate: runoff.
103:		
Absted-----	Slight-----	Moderate: runoff.
Slickspots.		
104:		
Ageston-----	Slight*-----	Severe: runoff.
Granile-----	Slight-----	Severe: runoff.
Rock outcrop-----	Slight*-----	Moderate: runoff.
105:		
Arnegard-----	Moderate: low adsorption.	Moderate: runoff.
Farnuf-----	Moderate: low adsorption.	Moderate: runoff.
106:		
Arnegard-----	Moderate: low adsorption.	Moderate: runoff.

See footnote at end of table.

Table 6.--Soil-Pesticide Loss Potential--Continued

Soil name and map symbol	Pesticide loss potential--leaching	Pesticide loss potential--runoff
106: Farnuf-----	Slight-----	Severe: runoff.
107: Assinniboine-----	Slight-----	Severe: runoff.
Dast-----	Slight-----	Severe: runoff.
108: Baux-----	Severe: poor filter.	Severe: runoff.
Bauxson-----	Severe: poor filter.	Severe: runoff.
109: Baux, dry-----	Severe: poor filter.	Severe: runoff.
Bauxson, dry-----	Severe: poor filter.	Severe: runoff.
110: Baux-----	Severe: poor filter.	Severe: runoff.
Bauxson-----	Severe: poor filter.	Severe: runoff.
Kirtley-----	Slight*-----	Moderate: runoff.
111: Baux-----	Severe: poor filter.	Severe: runoff.
Bauxson-----	Severe: poor filter.	Severe: runoff.
Wetterdon-----	Moderate: low adsorption.	Moderate: runoff.
112: Bidman-----	Slight-----	Moderate: runoff.
Arvada-----	Slight-----	Severe: runoff.

See footnote at end of table.

Table 6.--Soil-Pesticide Loss Potential--Continued

Soil name and map symbol	Pesticide loss potential--leaching	Pesticide loss potential--runoff
113: Bidman, moist-----	Slight-----	Slight.
Arvada, moist-----	Slight-----	Slight.
114: Bidman-----	Slight-----	Moderate: runoff.
Ulm, dry-----	Slight-----	Moderate: runoff.
115: Bidman, moist-----	Slight-----	Moderate: runoff.
Ulm-----	Slight-----	Moderate: runoff.
116: Big Horn-----	Slight-----	Moderate: runoff.
Wolf, dry-----	Slight-----	Moderate: runoff.
117: Cambria-----	Slight-----	Moderate: runoff.
Forkwood-----	Slight-----	Moderate: runoff.
118: Cambria, moist-----	Moderate: low adsorption.	Moderate: runoff.
Forkwood, moist-----	Slight-----	Moderate: runoff.
119: Cedak-----	Slight*-----	Moderate: runoff.
Recluse-----	Slight-----	Moderate: runoff.
120: Cedak-----	Slight*-----	Moderate: runoff.
Recluse-----	Slight-----	Moderate: runoff.

See footnote at end of table.

Table 6.--Soil-Pesticide Loss Potential--Continued

Soil name and map symbol	Pesticide loss potential-- leaching	Pesticide loss potential-- runoff
121: Cedak-----	Slight*-----	Moderate: runoff.
Recluse-----	Slight-----	Moderate: runoff.
122: Cedak, dry-----	Slight*-----	Moderate: runoff.
Recluse, dry-----	Slight-----	Moderate: runoff.
123----- Clarkelen	Slight-----	Slight.
124----- Clarkelen, moist	Slight-----	Slight.
125: Cloud Peak-----	Slight*-----	Severe: runoff.
Tolman-----	Slight*-----	Severe: runoff.
126: Coaliams, moist-----	Moderate: wetness.	Slight.
Worthenton, moist-----	Severe: wetness.	Moderate: flooding.
127: Cushman-----	Slight*-----	Moderate: runoff.
Forkwood-----	Slight-----	Moderate: runoff.
128: Cushman, moist-----	Slight*-----	Moderate: runoff.
Forkwood, moist-----	Slight-----	Moderate: runoff.
129: Cushman, moist-----	Slight*-----	Moderate: runoff.

See footnote at end of table.

Table 6.--Soil-Pesticide Loss Potential--Continued

Soil name and map symbol	Pesticide loss potential--leaching	Pesticide loss potential--runoff
129: Forkwood, moist-----	Moderate: low adsorption.	Moderate: runoff.
130: Cushman-----	Slight*-----	Moderate: runoff.
Worf-----	Slight*-----	Severe: runoff.
131: Cushman, moist-----	Slight*-----	Moderate: runoff.
Worf, moist-----	Slight*-----	Severe: runoff.
132----- Dast Variant	Severe*: poor filter.	Severe: runoff.
133: Doney-----	Slight*-----	Severe: runoff.
Doney Variant-----	Slight*-----	Severe: runoff.
134: Doney-----	Slight*-----	Severe: runoff.
Ringling-----	Severe: poor filter.	Severe: runoff.
135: Doney-----	Slight*-----	Severe: runoff.
Ringling-----	Severe: poor filter.	Severe: runoff.
Rock outcrop-----	Slight*-----	Moderate: runoff.
136----- Draknab	Severe: poor filter.	Slight.
137----- Farnuf	Moderate: low adsorption.	Moderate: runoff.

See footnote at end of table.

Table 6.--Soil-Pesticide Loss Potential--Continued

Soil name and map symbol	Pesticide loss potential--leaching	Pesticide loss potential--runoff
138----- Farnuf	Moderate: low adsorption.	Moderate: runoff.
139----- Farnuf	Moderate: low adsorption.	Moderate: runoff.
140----- Farnuf Variant, wet	Severe: wetness.	Slight.
141: Farnuf Variant-----	Moderate: low adsorption, poor filter.	Moderate: runoff.
Cloud Peak Variant-----	Moderate: low adsorption, poor filter.	Moderate: runoff.
142----- Forkwood	Slight-----	Slight.
143----- Forkwood	Slight-----	Moderate: runoff.
144----- Forkwood	Slight-----	Moderate: runoff.
145: Gayhart-----	Slight*-----	Severe: runoff.
Bahl-----	Slight-----	Moderate: runoff.
146: Gayhart, moist-----	Slight*-----	Moderate: runoff.
Bahl, moist-----	Slight-----	Moderate: runoff.
147: Hardhart-----	Slight*-----	Severe: runoff.
148: Hargreave-----	Slight*-----	Moderate: runoff.
Moskee-----	Slight-----	Moderate: runoff.

See footnote at end of table.

Table 6.--Soil-Pesticide Loss Potential--Continued

Soil name and map symbol	Pesticide loss potential--leaching	Pesticide loss potential--runoff
149: Hargreave-----	Slight*-----	Moderate: runoff.
Moskee-----	Slight-----	Moderate: runoff.
150: Hargreave, dry-----	Slight*-----	Moderate: runoff.
Moskee, dry-----	Slight-----	Moderate: runoff.
151----- Harlan, dry	Slight-----	Moderate: runoff.
152: Harlan-----	Slight-----	Moderate: runoff.
Kirtley-----	Slight*-----	Moderate: runoff.
153: Harlan-----	Slight-----	Moderate: runoff.
Kirtley-----	Slight*-----	Moderate: runoff.
154----- Haverdad	Moderate: low adsorption.	Slight.
155----- Haverdad, moist	Slight-----	Slight.
156----- Haverdad, saline	Severe: wetness.	Moderate: flooding.
157----- Haverdad, moist, saline	Severe: wetness.	Moderate: flooding.
158: Haverdad-----	Moderate: low adsorption.	Severe: flooding.
Draknab-----	Severe: poor filter.	Severe: flooding.

See footnote at end of table.

Table 6.--Soil-Pesticide Loss Potential--Continued

Soil name and map symbol	Pesticide loss potential--leaching	Pesticide loss potential--runoff
159:		
Haverdad, moist-----	Moderate: low adsorption.	Severe: flooding.
Draknab, moist-----	Severe: poor filter.	Severe: flooding.
160:		
Haverdad-----	Slight-----	Severe: flooding.
Worthenton-----	Severe: wetness.	Severe: flooding.
161:		
Haverdad, moist-----	Moderate: low adsorption.	Severe: flooding.
Worthenton-----	Severe: wetness.	Severe: flooding.
162-----	Severe: poor filter.	Moderate: flooding.
Havertel		
163:		
Hesperus Variant-----	Severe: wetness.	Severe: runoff.
Reget-----	Slight*-----	Severe: runoff.
164:		
Hiland-----	Slight-----	Moderate: runoff.
Bowbac-----	Slight*-----	Moderate: runoff.
165:		
Hiland, moist-----	Slight-----	Moderate: runoff.
Bowbac, moist-----	Slight*-----	Moderate: runoff.
166:		
Hiland-----	Moderate: low adsorption.	Moderate: runoff.
Decolney-----	Moderate: low adsorption.	Moderate: runoff.

See footnote at end of table.

Table 6.--Soil-Pesticide Loss Potential--Continued

Soil name and map symbol	Pesticide loss potential--leaching	Pesticide loss potential--runoff
167: Hiland, moist-----	Slight-----	Moderate: runoff.
Vonalee, moist-----	Moderate: low adsorption.	Moderate: runoff.
168: Hilight-----	Slight*-----	Severe: runoff.
Rock outcrop-----	Slight*-----	Moderate: runoff.
169: Jonpol-----	Slight*-----	Moderate: runoff.
Platmak-----	Slight-----	Moderate: runoff.
170: Jonpol-----	Slight*-----	Severe: runoff.
Platmak-----	Slight-----	Severe: runoff.
171: Kishona-----	Moderate: low adsorption.	Slight.
Cambria-----	Slight-----	Slight.
172: Kishona-----	Moderate: low adsorption.	Moderate: runoff.
Cambria-----	Moderate: low adsorption.	Moderate: runoff.
173: Lambman-----	Slight*-----	Severe: runoff.
Hargreave-----	Slight*-----	Moderate: runoff.
174: Lucky-----	Slight*-----	Severe: runoff.

See footnote at end of table.

Table 6.--Soil-Pesticide Loss Potential--Continued

Soil name and map symbol	Pesticide loss potential-- leaching	Pesticide loss potential-- runoff
174: Burgess-----	Slight*	Moderate: runoff.
Hazton-----	Slight*	Severe: runoff.
175----- Moskee	Slight	Slight.
176----- Moskee	Slight	Moderate: runoff.
177----- Moskee	Slight	Moderate: runoff.
178: Moskee-----	Slight	Moderate: runoff.
Noden-----	Slight	Moderate: runoff.
179: Moskee-----	Moderate: low adsorption.	Moderate: runoff.
Noden-----	Slight	Moderate: runoff.
180: Moskee, dry-----	Slight	Moderate: runoff.
Noden, dry-----	Slight	Moderate: runoff.
181: Moskee-----	Slight	Slight.
Nuncho-----	Slight	Slight.
182: Moskee-----	Slight	Moderate: runoff.
Nuncho-----	Slight	Moderate: runoff.
183: Moskee-----	Slight	Severe: runoff.

See footnote at end of table.

Table 6.--Soil-Pesticide Loss Potential--Continued

Soil name and map symbol	Pesticide loss potential--leaching	Pesticide loss potential--runoff
183: Worthenton, moist-----	Severe: wetness.	Moderate: flooding.
184: Nathrop-----	Slight*-----	Severe: runoff.
Passcreek-----	Slight*-----	Moderate: runoff.
Starley-----	Slight*-----	Severe: runoff.
185----- Nesda	Severe: wetness, poor filter.	Slight.
186: Nesda-----	Severe: poor filter.	Slight.
Rubble land-----	Severe: low adsorption.	Slight.
187: Nesda Variant-----	Severe: low adsorption, poor filter.	Moderate: flooding.
Havertel-----	Severe: poor filter.	Moderate: flooding.
188: Norbert-----	Slight*-----	Severe: runoff.
Doney-----	Slight*-----	Severe: runoff.
Rock outcrop-----	Slight*-----	Moderate: runoff.
189: Norbert-----	Slight*-----	Severe: runoff.
Eltzac-----	Slight*-----	Severe: runoff.

See footnote at end of table.

Table 6.--Soil-Pesticide Loss Potential--Continued

Soil name and map symbol	Pesticide loss potential--leaching	Pesticide loss potential--runoff
190: Norbert-----	Slight*	Severe: runoff.
Reget-----	Slight*	Moderate: runoff.
Savar-----	Moderate: low adsorption.	Moderate: runoff.
191: Norbert-----	Slight*	Severe: runoff.
Rock outcrop-----	Slight*	Moderate: runoff.
192----- Nuncho	Slight	Slight.
193----- Nuncho	Slight	Moderate: runoff.
194----- Nuncho	Slight	Moderate: runoff.
195----- Nuncho	Slight	Slight.
196----- Nuncho	Slight	Moderate: runoff.
197: Nuncho-----	Slight	Moderate: runoff.
Emigrant-----	Slight*	Moderate: runoff.
198: Nuncho-----	Slight	Moderate: runoff.
Emigrant-----	Slight*	Moderate: runoff.
199----- Nuncho Variant	Moderate: wetness.	Moderate: runoff.
200: Owen Creek-----	Slight*	Severe: runoff.

See footnote at end of table.

Table 6.--Soil-Pesticide Loss Potential--Continued

Soil name and map symbol	Pesticide loss potential--leaching	Pesticide loss potential--runoff
200: Echemoor-----	Slight*-----	Severe: runoff.
Bynum-----	Slight*-----	Severe: runoff.
201: Pamleed-----	Slight*-----	Moderate: runoff.
Bidman-----	Slight-----	Moderate: runoff.
202: Pamleed, moist-----	Slight*-----	Moderate: runoff.
Bidman, moist-----	Slight-----	Moderate: runoff.
203: Pamleed, moist-----	Slight*-----	Severe: runoff.
Bidman, moist-----	Slight-----	Moderate: runoff.
204: Pamleed-----	Slight*-----	Moderate: runoff.
Renohill-----	Slight*-----	Moderate: runoff.
205: Pamleed, moist-----	Slight*-----	Moderate: runoff.
Renohill, moist-----	Slight*-----	Moderate: runoff.
206: Pamleed, moist-----	Slight*-----	Severe: runoff.
Renohill, moist-----	Slight*-----	Severe: runoff.

See footnote at end of table.

Table 6.--Soil-Pesticide Loss Potential--Continued

Soil name and map symbol	Pesticide loss potential-- leaching	Pesticide loss potential-- runoff
207: Parmlaad-----	Slight*-----	Moderate: runoff.
Worfka-----	Slight*-----	Severe: runoff.
208: Parmlaad, moist-----	Slight*-----	Moderate: runoff.
Worfka, moist-----	Slight*-----	Severe: runoff.
209: Parmlaad, moist-----	Slight*-----	Severe: runoff.
Worfka, moist-----	Slight*-----	Severe: runoff.
210: Parmlaad, moist-----	Slight*-----	Moderate: runoff.
Worfka, moist-----	Slight*-----	Severe: runoff.
Shingle Variant, moist-----	Slight*-----	Moderate: runoff.
211: Peritsa-----	Slight*-----	Severe: runoff.
Abac-----	Slight*-----	Severe: runoff.
212----- Platmak	Slight-----	Slight.
213----- Platmak	Slight-----	Moderate: runoff.
214----- Platmak, dry	Slight-----	Moderate: runoff.
215----- Platsher	Slight-----	Slight.
216----- Platsher	Slight-----	Moderate: runoff.

See footnote at end of table.

Table 6.--Soil-Pesticide Loss Potential--Continued

Soil name and map symbol	Pesticide loss potential--leaching	Pesticide loss potential--runoff
217----- Platsher	Slight-----	Slight.
218----- Platsher	Slight-----	Moderate: runoff.
219: Platsher-----	Slight-----	Slight.
Wolfvar-----	Slight-----	Slight.
220: Platsher-----	Slight-----	Moderate: runoff.
Wolfvar-----	Slight-----	Moderate: runoff.
221: Platsher-----	Slight-----	Moderate: runoff.
Wolfvar-----	Moderate: low adsorption.	Moderate: runoff.
222----- Platsher Variant	Severe: wetness.	Slight.
223----- Recluse	Slight-----	Slight.
224----- Recluse	Slight-----	Moderate: runoff.
225----- Recluse	Slight-----	Moderate: runoff.
226: Recluse-----	Slight-----	Moderate: runoff.
Bauxson-----	Severe: poor filter.	Severe: runoff.
Baux-----	Severe: poor filter.	Severe: runoff.
227: Reedar-----	Slight*-----	Moderate: runoff.
Farnuf-----	Moderate: low adsorption.	Moderate: runoff.

See footnote at end of table.

Table 6.--Soil-Pesticide Loss Potential--Continued

Soil name and map symbol	Pesticide loss potential--leaching	Pesticide loss potential--runoff
228: Reeder-----	Slight*-----	Moderate: runoff.
Farnuf-----	Moderate: low adsorption.	Moderate: runoff.
229: Reget-----	Slight*-----	Moderate: runoff.
230: Reget-----	Slight*-----	Moderate: runoff.
231: Reget-----	Slight*-----	Severe: runoff.
Savar-----	Slight-----	Severe: runoff.
232: Reget Variant-----	Slight-----	Severe: runoff.
Reget-----	Slight*-----	Severe: runoff.
233: Renohill-----	Slight*-----	Moderate: runoff.
Savageton-----	Slight*-----	Moderate: runoff.
234: Renohill, moist-----	Slight*-----	Moderate: runoff.
Savageton, moist-----	Slight*-----	Moderate: runoff.
235: Renohill, moist-----	Slight*-----	Moderate: runoff.
Savageton, moist-----	Slight*-----	Moderate: runoff.
236: Renohill-----	Slight*-----	Moderate: runoff.

See footnote at end of table.

Table 6.--Soil-Pesticide Loss Potential--Continued

Soil name and map symbol	Pesticide loss potential--leaching	Pesticide loss potential--runoff
236: Ulm, dry-----	Slight-----	Moderate: runoff.
237: Renchill, moist-----	Slight*-----	Moderate: runoff.
Ulm-----	Slight-----	Moderate: runoff.
238: Renchill-----	Slight*-----	Moderate: runoff.
Worfka-----	Slight*-----	Severe: runoff.
239: Renchill, moist-----	Slight*-----	Moderate: runoff.
Worfka, moist-----	Slight*-----	Severe: runoff.
240: Renchill, moist-----	Slight*-----	Moderate: runoff.
Wyarno-----	Slight-----	Moderate: runoff.
241: Rock outcrop-----	Slight*-----	Moderate: runoff.
Agneston-----	Slight*-----	Severe: runoff.
Rubble land-----	Moderate: low adsorption.	Moderate: runoff.
242: Rock outcrop-----	Slight*-----	Moderate: runoff.
Starman-----	Slight*-----	Severe: runoff.
243: Rock outcrop-----	Slight*-----	Moderate: runoff.

See footnote at end of table.

Table 6.--Soil-Pesticide Loss Potential--Continued

Soil name and map symbol	Pesticide loss potential-- leaching	Pesticide loss potential-- runoff
243: Starman Variant-----	Slight*-----	Severe: runoff.
244: Samday, moist-----	Slight*-----	Severe: runoff.
Gayhart, moist-----	Slight*-----	Severe: runoff.
Hilight, moist-----	Slight*-----	Severe: runoff.
245: Samday-----	Slight*-----	Severe: runoff.
Hilight-----	Slight*-----	Severe: runoff.
246-----	Slight-----	Moderate: runoff.
Savage		
247-----	Slight-----	Moderate: runoff.
Savage		
248-----	Slight-----	Moderate: runoff.
Savage		
249: Savage-----	Slight-----	Moderate: runoff.
Farnuf-----	Moderate: low adsorption.	Moderate: runoff.
250: Savage-----	Slight-----	Slight.
Korchea-----	Moderate: low adsorption.	Moderate: flooding.
251: Savage-----	Slight-----	Moderate: runoff.
Reget-----	Slight*-----	Severe: runoff.

See footnote at end of table.

Table 6.--Soil-Pesticide Loss Potential--Continued

Soil name and map symbol	Pesticide loss potential--leaching	Pesticide loss potential--runoff
252: Searing-----	Moderate: low adsorption, poor filter.	Moderate: runoff.
Ringling-----	Severe: poor filter.	Severe: runoff.
253----- Shaak	Slight-----	Moderate: runoff.
254: Shingle, moist-----	Slight*-----	Severe: runoff.
Baux-----	Severe: poor filter.	Severe: runoff.
Rock outcrop-----	Slight*-----	Moderate: runoff.
255: Shingle-----	Slight*-----	Severe: runoff.
Haverdad-----	Slight-----	Severe: flooding.
256: Shingle, moist-----	Slight*-----	Severe: runoff.
Haverdad, moist-----	Slight-----	Severe: flooding.
257: Shingle-----	Slight*-----	Severe: runoff.
Nihill-----	Slight-----	Severe: runoff.
258: Shingle, moist-----	Slight*-----	Severe: runoff.
Nihill, moist-----	Slight-----	Severe: runoff.
259: Shingle, moist-----	Slight*-----	Severe: runoff.

See footnote at end of table.

Table 6.--Soil-Pesticide Loss Potential--Continued

Soil name and map symbol	Pesticide loss potential--leaching	Pesticide loss potential--runoff
259: Nuncho-----	Slight-----	Moderate: runoff.
260: Shingle-----	Slight*-----	Severe: runoff.
Rock outcrop-----	Slight*-----	Moderate: runoff.
261: Shingle, moist-----	Slight*-----	Severe: runoff.
Rock outcrop-----	Slight*-----	Moderate: runoff.
262: Shingle-----	Slight*-----	Severe: runoff.
Sanday-----	Slight*-----	Severe: runoff.
263: Shingle, moist-----	Slight*-----	Severe: runoff.
Sanday, moist-----	Slight*-----	Severe: runoff.
264: Shingle-----	Slight*-----	Severe: runoff.
Taluca-----	Slight*-----	Severe: runoff.
265: Shingle, moist-----	Slight*-----	Severe: runoff.
Taluca, moist-----	Slight*-----	Severe: runoff.
266: Shingle-----	Slight*-----	Severe: runoff.
Theedle-----	Slight*-----	Severe: runoff.

See footnote at end of table.

Table 6.--Soil-Pesticide Loss Potential--Continued

Soil name and map symbol	Pesticide loss potential-- leaching	Pesticide loss potential-- runoff
267: Shingle, moist-----	Slight*	Severe: runoff.
Theedle, moist-----	Slight*	Severe: runoff.
268: Shingle-----	Slight*	Severe: runoff.
Theedle-----	Slight*	Moderate: runoff.
Kishona-----	Moderate: low adsorption.	Moderate: runoff.
269: Shingle, moist-----	Slight*	Severe: runoff.
Theedle, moist-----	Slight*	Moderate: runoff.
Kishona, moist-----	Moderate: low adsorption.	Moderate: runoff.
270: Shingle, moist-----	Slight*	Severe: runoff.
Theedle, moist-----	Slight*	Severe: runoff.
Rock outcrop-----	Slight*	Moderate: runoff.
271: Shingle-----	Slight*	Severe: runoff.
Wibaux-----	Severe: poor filter.	Severe: runoff.
272: Shingle, cool-----	Slight*	Severe: runoff.
Wibaux, cool-----	Severe: poor filter.	Severe: runoff.

See footnote at end of table.

Table 6.--Soil-Pesticide Loss Potential--Continued

Soil name and map symbol	Pesticide loss potential--leaching	Pesticide loss potential--runoff
273: Shingle-----	Slight*-----	Severe: runoff.
Worf-----	Slight*-----	Severe: runoff.
274: Shingle, moist-----	Slight*-----	Severe: runoff.
Worf, moist-----	Slight*-----	Severe: runoff.
275----- Sinkson	Moderate: low adsorption.	Moderate: runoff.
276: Spearman-----	Severe: poor filter.	Moderate: runoff.
Wibaux-----	Severe: poor filter.	Severe: runoff.
277: Taluca-----	Slight*-----	Moderate: runoff.
Tulloch-----	Severe*: poor filter.	Moderate: runoff.
Rock outcrop-----	Slight*-----	Moderate: runoff.
278: Taluca-----	Slight*-----	Severe: runoff.
Tulloch-----	Severe*: poor filter.	Moderate: runoff.
Vonalee-----	Moderate: low adsorption.	Moderate: runoff.
279: Taluca, moist-----	Slight*-----	Severe: runoff.
Tulloch, moist-----	Severe*: poor filter.	Severe: runoff.
Vonalee, moist-----	Slight-----	Severe: runoff.

See footnote at end of table.

Table 6.--Soil-Pesticide Loss Potential--Continued

Soil name and map symbol	Pesticide loss potential--leaching	Pesticide loss potential--runoff
280: Taluze Variant-----	Severe*: poor filter.	Severe: runoff.
Treoff-----	Slight*-----	Severe: runoff.
Theedle Variant-----	Slight*-----	Severe: runoff.
281: Theedle-----	Slight*-----	Moderate: runoff.
Kishona-----	Slight-----	Moderate: runoff.
282: Theedle, moist-----	Slight*-----	Moderate: runoff.
Kishona, moist-----	Moderate: low adsorption.	Moderate: runoff.
283: Theedle, moist-----	Slight*-----	Moderate: runoff.
Kishona, moist-----	Moderate: low adsorption.	Moderate: runoff.
284: Tolman-----	Slight*-----	Severe: runoff.
Beeno-----	Slight*-----	Severe: runoff.
Beenom-----	Slight*-----	Severe: runoff.
285: Trimad-----	Slight-----	Severe: runoff.
Doney-----	Slight*-----	Severe: runoff.
Wayden-----	Slight*-----	Severe: runoff.

See footnote at end of table.

Table 6.--Soil-Pesticide Loss Potential--Continued

Soil name and map symbol	Pesticide loss potential-- leaching	Pesticide loss potential-- runoff
286: Trimad-----	Slight-----	Moderate: runoff.
Trivar-----	Moderate: low adsorption.	Moderate: runoff.
287: Trimad-----	Slight-----	Slight.
Twin Creek-----	Moderate: low adsorption.	Moderate: runoff.
288----- Twin Creek	Moderate: low adsorption.	Moderate: runoff.
289----- Twin Creek Variant	Severe: wetness.	Slight.
290----- Ulm	Slight-----	Slight.
291----- Ulm	Slight-----	Moderate: runoff.
292----- Ulm, dry	Slight-----	Slight.
293----- Ulm, dry	Slight-----	Moderate: runoff.
294: Urban land.		
Kishona, moist-----	Slight-----	Slight.
Clarkalen-----	Moderate: low adsorption, wetness, poor filter.	Slight.
295: Urban land.		
Platsher-----	Slight-----	Moderate: runoff.
Wolfvar-----	Slight-----	Moderate: runoff.

See footnote at end of table.

Table 6.--Soil-Pesticide Loss Potential--Continued

Soil name and map symbol	Pesticide loss potential--leaching	Pesticide loss potential--runoff
296: Urban land.		
Wyarno-----	Slight-----	Slight.
Nuncho-----	Slight-----	Slight.
297. Ustic Torriorthents-Pits		
298----- Wayden	Slight*-----	Severe: runoff.
299: Wetterdon-----	Moderate: low adsorption.	Moderate: runoff.
Recluse-----	Slight-----	Moderate: runoff.
300: Wibaux-----	Severe: poor filter.	Moderate: runoff.
Reddale-----	Moderate: poor filter.	Severe: runoff.
301----- Windham	Slight-----	Severe: runoff.
302----- Wolf	Slight-----	Slight.
303----- Wolf	Slight-----	Moderate: runoff.
304: Worfka-----	Slight*-----	Severe: runoff.
Shingle-----	Slight*-----	Severe: runoff.
Samday-----	Slight*-----	Severe: runoff.
305: Worfka, moist-----	Slight*-----	Severe: runoff.

See footnote at end of table.

Table 6.--Soil-Pesticide Loss Potential--Continued

Soil name and map symbol	Pesticide loss potential--leaching	Pesticide loss potential--runoff
305: Shingle, moist-----	Slight*-----	Severe: runoff.
Samday, moist-----	Slight*-----	Severe: runoff.
306----- Worthenton	Severe: wetness.	Moderate: flooding.
307: Worthenton-----	Severe: wetness.	Moderate: flooding.
Recluse-----	Slight-----	Slight.
308: Worthenton Variant-----	Severe: wetness.	Slight.
Assinniboine Variant-----	Moderate: low adsorption, wetness, poor filter.	Moderate: runoff.
309----- Wyarno	Slight-----	Slight.
310----- Wyarno	Slight-----	Moderate: runoff.
311----- Wyarno	Slight-----	Moderate: runoff.
312----- Wyarno, dry	Slight-----	Slight.
313----- Wyarno, dry	Slight-----	Moderate: runoff.
314----- Wyarno, dry	Slight-----	Moderate: runoff.
315----- Zigweid	Moderate: low adsorption.	Slight.
316: Zigweid-----	Slight-----	Moderate: runoff.
Cambria-----	Moderate: low adsorption.	Moderate: runoff.

See footnote at end of table.

Table 6.--Soil-Pesticide Loss Potential--Continued

Soil name and map symbol	Pesticide loss potential--leaching	Pesticide loss potential--runoff
317: Zigweid-----	Moderate: low adsorption.	Moderate: runoff.
Kishona-----	Slight-----	Moderate: runoff.
Cambria-----	Moderate: low adsorption.	Moderate: runoff.
318: Zigweid, moist-----	Moderate: low adsorption.	Slight.
Kishona, moist-----	Moderate: low adsorption.	Slight.
Cambria, moist-----	Moderate: low adsorption.	Slight.
319: Zigweid, moist-----	Moderate: low adsorption.	Moderate: runoff.
Kishona, moist-----	Moderate: low adsorption.	Moderate: runoff.
Cambria, moist-----	Moderate: low adsorption.	Moderate: runoff.
320: Zigweid, moist-----	Moderate: low adsorption.	Moderate: runoff.
Kishona, moist-----	Moderate: low adsorption.	Moderate: runoff.
Cambria, moist-----	Moderate: low adsorption.	Moderate: runoff.

* Bedrock permeability criteria were not evaluated because data were not available.

Table 7.--Rangeland Productivity and Characteristic Plant Communities

(Only the soils that support rangeland vegetation suitable for grazing are listed. Numbers given in the range site name refer to annual precipitation)

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
100*:					
Abac-----	Shallow Loamy, 15-19 Northern Plains.	Favorable	1,800	Idaho fescue-----	20
		Normal	1,400	Bluebunch wheatgrass-----	15
		Unfavorable	900	Needleandthread-----	15
				Little bluestem-----	10
				Green needlegrass-----	10
				Big sagebrush-----	5
	Rock outcrop.				
101*:					
Absted-----	Loamy, 10-14 Northern Plains	Favorable	1,500	Western wheatgrass-----	25
		Normal	1,200	Needleandthread-----	25
		Unfavorable	700	Blue grama-----	15
				Green needlegrass-----	15
Haverdad-----	Overflow, 10-14 Northern Plains.	Favorable	2,400	Basin wildrye-----	50
		Normal	1,800	Green needlegrass-----	25
		Unfavorable	1,200	Western wheatgrass-----	15
				Canby bluegrass-----	10
102*:					
Absted, moist----	Loamy, 15-19 Northern Plains	Favorable	3,000	Green needlegrass-----	25
		Normal	2,200	Idaho fescue-----	25
		Unfavorable	1,500	Spike fescue-----	25
				Western wheatgrass-----	20
Haverdad, moist---	Overflow, 15-19 Northern Plains.	Favorable	4,000	Western wheatgrass-----	25
		Normal	3,000	Green needlegrass-----	25
		Unfavorable	2,000	Basin wildrye-----	20
				Columbia needlegrass-----	10
103*:					
Absted-----	Loamy, 10-14 Northern Plains	Favorable	1,500	Western wheatgrass-----	25
		Normal	1,200	Needleandthread-----	25
		Unfavorable	700	Blue grama-----	15
				Green needlegrass-----	15
	Slickspots.				
105*, 106*:					
Arnegard-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	25
		Normal	2,200	Spike fescue-----	25
		Unfavorable	1,500	Green needlegrass-----	25
				Western wheatgrass-----	20

See footnote at end of table.

Table 7.--Rangeland Productivity and Characteristic Plant Communities--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
		Lb/acre		Pct	
105*, 106*:					
Farnuf-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	25
		Normal	2,200	Spike fescue-----	25
		Unfavorable	1,500	Green needlegrass-----	25
				Western wheatgrass-----	20
107*:					
Assinniboine-----	Sandy, 15-19 Northern Plains	Favorable	3,000	Sand bluestem-----	30
		Normal	2,200	Prairie sandreed-----	30
		Unfavorable	1,500	Needleandthread-----	25
				Western wheatgrass-----	10
Dast-----	Sandy, 15-19 Northern Plains	Favorable	3,000	Sand bluestem-----	30
		Normal	2,200	Prairie sandreed-----	30
		Unfavorable	1,500	Needleandthread-----	25
				Western wheatgrass-----	10
108*:					
Baux-----	Very Shallow, 15-19 Northern Plains.	Favorable	900	Bluebunch wheatgrass-----	40
		Normal	700	Little bluestem-----	20
		Unfavorable	400	Spike fescue-----	10
				Western wheatgrass-----	10
Bauxson-----	Shallow Loamy, 15-19 Northern Plains.	Favorable	1,800	Bluebunch wheatgrass-----	25
		Normal	1,400	Idaho fescue-----	25
		Unfavorable	900	Little bluestem-----	15
				Needleandthread-----	15
				Spike fescue-----	10
109*:					
Baux, dry-----	Very Shallow, 10-14 Northern Plains.	Favorable	500	Bluebunch wheatgrass-----	50
		Normal	350	Little bluestem-----	10
		Unfavorable	250	Western wheatgrass-----	10
Bauxson, dry-----	Shallow Loamy, 10-14 Northern Plains.	Favorable	1,200	Bluebunch wheatgrass-----	50
		Normal	900	Western wheatgrass-----	15
		Unfavorable	450	Needleandthread-----	10
				Blue grama-----	10
110*:					
Baux-----	Very Shallow, 15-19 Northern Plains.	Favorable	900	Bluebunch wheatgrass-----	40
		Normal	700	Little bluestem-----	20
		Unfavorable	400	Spike fescue-----	10
				Western wheatgrass-----	10
Bauxson-----	Shallow Loamy, 15-19 Northern Plains.	Favorable	1,800	Bluebunch wheatgrass-----	25
		Normal	1,400	Idaho fescue-----	25
		Unfavorable	900	Little bluestem-----	15
				Needleandthread-----	15
				Spike fescue-----	10

See footnote at end of table.

Table 7.--Rangeland Productivity and Characteristic Plant Communities--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Compo- sition Pct
		Kind of year	Dry weight		
110*:					
Kirtley-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	25
		Normal	2,200	Spike fescue-----	25
		Unfavorable	1,500	Green needlegrass-----	25
				Western wheatgrass-----	20
111*:					
Baux-----	Very Shallow, 15-19 Northern Plains.	Favorable	900	Bluebunch wheatgrass-----	40
		Normal	700	Little bluestem-----	20
		Unfavorable	400	Spike fescue-----	10
				Western wheatgrass-----	10
Bauxson-----	Shallow Loamy, 15-19 Northern Plains.	Favorable	1,800	Bluebunch wheatgrass-----	25
		Normal	1,400	Idaho fescue-----	25
		Unfavorable	900	Little bluestem-----	15
				Needleandthread-----	15
				Green needlegrass-----	10
				Spike fescue-----	10
				Western wheatgrass-----	5
Wetterdon-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	25
		Normal	2,200	Spike fescue-----	25
		Unfavorable	1,500	Green needlegrass-----	25
				Western wheatgrass-----	20
112*:					
Bidman-----	Loamy, 10-14 Northern Plains	Favorable	1,500	Western wheatgrass-----	25
		Normal	1,200	Needleandthread-----	25
		Unfavorable	700	Blue grama-----	15
				Green needlegrass-----	15
Arvada-----	Loamy, 10-14 Northern Plains	Favorable	1,500	Western wheatgrass-----	25
		Normal	1,200	Needleandthread-----	25
		Unfavorable	700	Blue grama-----	15
				Green needlegrass-----	15
113*:					
Bidman, moist----	Loamy, 15-19 Northern Plains	Favorable	3,000	Green needlegrass-----	25
		Normal	2,200	Idaho fescue-----	25
		Unfavorable	1,500	Spike fescue-----	25
				Western wheatgrass-----	20
Arvada, moist----	Loamy, 15-19 Northern Plains	Favorable	3,000	Green needlegrass-----	25
		Normal	2,200	Idaho fescue-----	25
		Unfavorable	1,500	Spike fescue-----	25
				Western wheatgrass-----	20

See footnote at end of table.

Table 7.--Rangeland Productivity and Characteristic Plant Communities--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
114*:					
Bidman-----	Loamy, 10-14 Northern Plains	Favorable	1,500	Western wheatgrass-----	25
		Normal	1,200	Needleandthread-----	25
		Unfavorable	700	Blue grama-----	15
				Green needlegrass-----	15
Ulm, dry-----	Loamy, 10-14 Northern Plains	Favorable	1,500	Needleandthread-----	25
		Normal	1,200	Western wheatgrass-----	25
		Unfavorable	700	Blue grama-----	15
				Green needlegrass-----	15
115*:					
Bidman, moist----	Loamy, 15-19 Northern Plains	Favorable	3,000	Green needlegrass-----	25
		Normal	2,200	Idaho fescue-----	25
		Unfavorable	1,500	Spike fescue-----	25
				Western wheatgrass-----	20
Ulm-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	25
		Normal	2,200	Spike fescue-----	25
		Unfavorable	1,500	Western wheatgrass-----	20
				Green needlegrass-----	20
116*:					
Big Horn-----	Loamy, 10-14 Northern Plains	Favorable	1,500	Western wheatgrass-----	25
		Normal	1,200	Needleandthread-----	20
		Unfavorable	700	Green needlegrass-----	15
				Blue grama-----	15
Wolf, dry-----	Loamy, 10-14 Northern Plains	Favorable	1,500	Needleandthread-----	25
		Normal	1,200	Western wheatgrass-----	25
		Unfavorable	700	Green needlegrass-----	15
				Blue grama-----	15
117*:					
Cambria-----	Loamy, 10-14 Northern Plains	Favorable	1,500	Western wheatgrass-----	25
		Normal	1,200	Needleandthread-----	25
		Unfavorable	700	Blue grama-----	15
				Green needlegrass-----	15
Forkwood-----	Loamy, 10-14 Northern Plains	Favorable	1,500	Western wheatgrass-----	25
		Normal	1,200	Needleandthread-----	25
		Unfavorable	700	Green needlegrass-----	15
				Blue grama-----	15
118*:					
Cambria, moist----	Loamy, 15-19 Northern Plains	Favorable	3,000	Green needlegrass-----	25
		Normal	2,200	Spike fescue-----	25
		Unfavorable	1,500	Idaho fescue-----	25
				Western wheatgrass-----	20

See footnote at end of table.

Table 7.--Rangeland Productivity and Characteristic Plant Communities--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Compo- sition
		Kind of year	Dry		
			weight Lb/acre		
118*: Forkwood, moist---	Loamy, 15-19 Northern Plains	Favorable	3,000	Green needlegrass-----	25
Normal		2,200	Idaho fescue-----	25	
Unfavorable		1,500	Spike fescue-----	25	
			Western wheatgrass-----	20	
119*, 120*, 121*: Cedak-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	25
Normal		2,200	Spike fescue-----	25	
Unfavorable		1,500	Green needlegrass-----	25	
			Western wheatgrass-----	20	
Recluse-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	20
Normal		2,200	Spike fescue-----	20	
Unfavorable		1,500	Western wheatgrass-----	20	
			Green needlegrass-----	15	
122*: Cedak, dry-----	Loamy, 10-14 Northern Plains	Favorable	1,500	Needleandthread-----	25
Normal		1,200	Western wheatgrass-----	25	
Unfavorable		700	Blue grama-----	15	
			Green needlegrass-----	15	
Recluse, dry-----	Loamy, 10-14 Northern Plains	Favorable	1,500	Western wheatgrass-----	25
Normal		1,200	Needleandthread-----	20	
Unfavorable		700	Green needlegrass-----	15	
			Blue grama-----	15	
123----- Clarkelen	Loamy, 10-14 Northern Plains	Favorable	1,500	Western wheatgrass-----	25
Normal		1,200	Needleandthread-----	25	
Unfavorable		700	Blue grama-----	15	
			Green needlegrass-----	15	
124----- Clarkelen, moist	Loamy, 15-19 Northern Plains	Favorable	3,000	Green needlegrass-----	25
Normal		2,200	Idaho fescue-----	25	
Unfavorable		1,500	Spike fescue-----	25	
			Western wheatgrass-----	20	
125*: Cloud Peak.	Coarse Upland, 15-19 Northern Plains.	Favorable	1,100	Columbia needlegrass-----	25
Normal		950	Idaho fescue-----	25	
Unfavorable		600	Western wheatgrass-----	20	
			Spike fescue-----	10	

See footnote at end of table.

Table 7.--Rangeland Productivity and Characteristic Plant Communities--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
126*:					
Coaliam, moist---	Lowland, 15-19 Northern Plains	Favorable	3,000	Green needlegrass-----	15
		Normal	2,500	Western wheatgrass-----	15
		Unfavorable	2,000	Basin wildrye-----	15
				Columbia needlegrass-----	10
				Canada wildrye-----	10
				Slender wheatgrass-----	10
Cottonwood-----	10				
Worthenton, moist-	Wetland, 15-19 Northern Plains	Favorable	7,000	Nebraska sedge-----	25
		Normal	6,000	Tufted hairgrass-----	20
		Unfavorable	4,500	Northern reedgrass-----	15
				Bluejoint reedgrass-----	10
127*:					
Cushman-----	Loamy, 10-14 Northern Plains	Favorable	1,500	Needleandthread-----	25
		Normal	1,200	Western wheatgrass-----	25
		Unfavorable	700	Blue grama-----	15
Green needlegrass-----	15				
Forkwood-----	Loamy, 10-14 Northern Plains	Favorable	1,500	Western wheatgrass-----	25
		Normal	1,200	Needleandthread-----	25
		Unfavorable	700	Green needlegrass-----	15
				Blue grama-----	15
128*, 129*:					
Cushman, moist---	Loamy, 15-19 Northern Plains	Favorable	3,000	Spike fescue-----	25
		Normal	2,200	Green needlegrass-----	25
		Unfavorable	1,500	Idaho fescue-----	25
				Western wheatgrass-----	20
Forkwood, moist---	Loamy, 15-19 Northern Plains	Favorable	3,000	Green needlegrass-----	25
		Normal	2,200	Idaho fescue-----	25
		Unfavorable	1,500	Spike fescue-----	25
Western wheatgrass-----	20				
130*:					
Cushman-----	Loamy, 10-14 Northern Plains	Favorable	1,500	Needleandthread-----	25
		Normal	1,200	Western wheatgrass-----	25
		Unfavorable	700	Blue grama-----	15
Green needlegrass-----	15				
Worf-----	Shallow Loamy, 10-14 Northern Plains.	Favorable	1,200	Bluebunch wheatgrass-----	50
		Normal	900	Western wheatgrass-----	15
		Unfavorable	450	Needleandthread-----	10
Blue grama-----	10				

See footnote at end of table.

Table 7.--Rangeland Productivity and Characteristic Plant Communities--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Compo- sition
		Kind of year	Dry weight		
131*:					
Cushman, moist----	Loamy, 15-19 Northern Plains	Favorable	3,000	Spike fescue-----	25
		Normal	2,200	Green needlegrass-----	25
		Unfavorable	1,500	Idaho fescue-----	25
				Western wheatgrass-----	20
Worf, moist-----	Shallow Loamy, 15-19 Northern Plains.	Favorable	1,800	Bluebunch wheatgrass-----	25
		Normal	1,400	Idaho fescue-----	25
		Unfavorable	900	Needleandthread-----	15
				Little bluestem-----	15
133*:					
Doney-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	25
		Normal	2,200	Spike fescue-----	25
		Unfavorable	1,500	Green needlegrass-----	25
				Western wheatgrass-----	20
Doney Variant-----	Shallow Loamy, 15-19 Northern Plains.	Favorable	1,800	Bluebunch wheatgrass-----	25
		Normal	1,400	Idaho fescue-----	20
		Unfavorable	900	Needleandthread-----	15
				Little bluestem-----	15
				Green needlegrass-----	10
				Western wheatgrass-----	5
134*:					
Doney-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	25
		Normal	2,200	Spike fescue-----	25
		Unfavorable	1,500	Green needlegrass-----	25
				Western wheatgrass-----	20
Ringling-----	Shallow Loamy, 15-19 Northern Plains.	Favorable	1,800	Idaho fescue-----	25
		Normal	1,400	Bluebunch wheatgrass-----	25
		Unfavorable	900	Needleandthread-----	15
				Little bluestem-----	15
135*:					
Doney-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	25
		Normal	2,200	Spike fescue-----	25
		Unfavorable	1,500	Green needlegrass-----	25
				Western wheatgrass-----	20
Ringling-----	Shallow Loamy, 15-19 Northern Plains.	Favorable	1,800	Idaho fescue-----	25
		Normal	1,400	Bluebunch wheatgrass-----	25
		Unfavorable	900	Needleandthread-----	15
				Little bluestem-----	15
Rock outcrop.					

See footnote at end of table.

Table 7.--Rangeland Productivity and Characteristic Plant Communities--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
		Lb/acre		Pct	
136----- Draknab	Lowland, 10-14 Northern Plains	Favorable	3,000	Green needlegrass-----	25
		Normal	2,300	Slender wheatgrass-----	10
		Unfavorable	1,600	Western wheatgrass-----	10
137, 138, 139----- Farnuf	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	25
		Normal	2,200	Spike fescue-----	25
		Unfavorable	1,500	Green needlegrass-----	25
				Western wheatgrass-----	20
141*: Farnuf Variant----	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	25
		Normal	2,200	Spike fescue-----	25
		Unfavorable	1,500	Green needlegrass-----	25
				Western wheatgrass-----	20
Cloud Peak Variant.					
142, 143, 144----- Forkwood	Loamy, 10-14 Northern Plains	Favorable	1,500	Western wheatgrass-----	25
		Normal	1,200	Needleandthread-----	25
		Unfavorable	700	Green needlegrass-----	15
				Blue grama-----	15
145*: Gayhart-----	Clayey, 10-14 Northern Plains	Favorable	1,400	Green needlegrass-----	40
		Normal	1,000	Western wheatgrass-----	40
		Unfavorable	600	Blue grama-----	10
Bahl-----	Clayey, 10-14 Northern Plains	Favorable	1,400	Western wheatgrass-----	40
		Normal	1,000	Green needlegrass-----	40
		Unfavorable	600	Blue grama-----	10
146*: Gayhart, moist----	Clayey, 15-19 Northern Plains	Favorable	2,900	Green needlegrass-----	50
		Normal	2,100	Western wheatgrass-----	20
		Unfavorable	1,400	Idaho fescue-----	10
				Sideoats grama-----	10
Bahl, moist-----	Clayey, 15-19 Northern Plains	Favorable	2,900	Green needlegrass-----	50
		Normal	2,100	Western wheatgrass-----	20
		Unfavorable	1,400	Idaho fescue-----	10
				Sideoats grama-----	10

See footnote at end of table.

Table 7.--Rangeland Productivity and Characteristic Plant Communities--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Compo- sition
		Kind of year	Dry		
			weight		
147*:					
Hardhart-----	Coarse Upland, 15-19 Northern Plains.	Favorable	1,100	Columbia needlegrass-----	25
		Normal	950	Idaho fescue-----	20
		Unfavorable	600	Western wheatgrass-----	20
				Spike fescue-----	10
				Bluebunch wheatgrass-----	5
				Prairie junegrass-----	5
				Threetip sagebrush-----	5
Starley-----	Shallow Loamy, 15-19 Northern Plains.	Favorable	1,800	Bluebunch wheatgrass-----	25
		Normal	1,400	Idaho fescue-----	25
		Unfavorable	900	Needleandthread-----	15
				Little bluestem-----	15
148*, 149*:					
Hargreave-----	Sandy, 15-19 Northern Plains	Favorable	3,000	Prairie sandreed-----	25
		Normal	2,200	Sand bluestem-----	25
		Unfavorable	1,500	Needleandthread-----	25
				Western wheatgrass-----	10
				Little bluestem-----	10
Moskee-----	Sandy, 15-19 Northern Plains	Favorable	3,000	Needleandthread-----	25
		Normal	2,200	Sand bluestem-----	25
		Unfavorable	1,500	Prairie sandreed-----	25
				Western wheatgrass-----	10
				Little bluestem-----	10
150*:					
Hargreave, dry----	Sandy, 10-14 Northern Plains	Favorable	1,600	Needleandthread-----	25
		Normal	1,300	Prairie sandreed-----	20
		Unfavorable	750	Indian ricegrass-----	15
				Little bluestem-----	10
Moskee, dry-----	Sandy, 10-14 Northern Plains	Favorable	1,600	Needleandthread-----	25
		Normal	1,300	Prairie sandreed-----	20
		Unfavorable	750	Indian ricegrass-----	15
				Little bluestem-----	10
151-----	Loamy, 10-14 Northern Plains	Favorable	1,500	Western wheatgrass-----	25
Harlan, dry		Normal	1,200	Needleandthread-----	25
		Unfavorable	700	Green needlegrass-----	15
				Blue grama-----	15
152*, 153*:					
Harlan-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	25
		Normal	2,200	Spike fescue-----	25
		Unfavorable	1,500	Green needlegrass-----	25
				Western wheatgrass-----	20

See footnote at end of table.

Table 7.--Rangeland Productivity and Characteristic Plant Communities--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
152*, 153*: Kirtley-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	25
		Normal	2,200	Spike fescue-----	25
		Unfavorable	1,500	Green needlegrass-----	25
				Western wheatgrass-----	20
154----- Haverdad	Lowland, 10-14 Northern Plains	Favorable	3,000	Green needlegrass-----	25
		Normal	2,300	Western wheatgrass-----	10
		Unfavorable	1,600	Slender wheatgrass-----	10
				Needleandthread-----	10
155----- Haverdad, moist	Lowland, 15-19 Northern Plains	Favorable	3,000	Western wheatgrass-----	25
		Normal	2,500	Green needlegrass-----	25
		Unfavorable	2,000	Slender wheatgrass-----	10
				Needleandthread-----	5
156----- Haverdad, saline	Saline Lowland, 10-14 Northern Plains.	Favorable	2,200	Alkali sacaton-----	25
		Normal	1,700	Western wheatgrass-----	15
		Unfavorable	1,400	Squirreltail-----	10
				Inland saltgrass-----	10
				Alkali bluegrass-----	5
			Muttall alkaligrass-----	5	
			Greasewood-----	5	
157----- Haverdad, moist, saline	Saline Lowland, 10-14 Northern Plains.	Favorable	3,100	Alkali sacaton-----	25
		Normal	2,300	Western wheatgrass-----	15
		Unfavorable	1,600	Squirreltail-----	10
				Inland saltgrass-----	10
158*: Haverdad-----	Lowland, 10-14 Northern Plains	Favorable	3,000	Green needlegrass-----	25
		Normal	2,300	Western wheatgrass-----	10
		Unfavorable	1,600	Slender wheatgrass-----	10
				Cottonwood-----	5
				Needleandthread-----	5
Draknab-----	Lowland, 10-14 Northern Plains	Favorable	3,000	Green needlegrass-----	25
		Normal	2,300	Slender wheatgrass-----	10
		Unfavorable	1,600	Western wheatgrass-----	10
				Needleandthread-----	5
				Cottonwood-----	5

See footnote at end of table.

Table 7.--Rangeland Productivity and Characteristic Plant Communities--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
159*:					
Haverdad, moist---	Lowland, 15-19 Northern Plains	Favorable	3,000	Western wheatgrass-----	25
		Normal	2,500	Green needlegrass-----	25
		Unfavorable	2,000	Slender wheatgrass-----	10
				Columbia needlegrass-----	5
				Basin wildrye-----	5
				Canada wildrye-----	5
				Cottonwood-----	5
				Needleandthread-----	5
Draknab, moist----	Lowland, 15-19 Northern Plains	Favorable	3,000	Western wheatgrass-----	25
		Normal	2,500	Green needlegrass-----	25
		Unfavorable	2,000	Slender wheatgrass-----	10
				Basin wildrye-----	5
				Needleandthread-----	5
				Cottonwood-----	5
				Columbia needlegrass-----	5
				Canada wildrye-----	5
160*:					
Haverdad-----	Lowland, 10-14 Northern Plains	Favorable	3,000	Green needlegrass-----	25
		Normal	2,300	Western wheatgrass-----	10
		Unfavorable	1,600	Slender wheatgrass-----	10
				Cottonwood-----	5
				Needleandthread-----	5
Worthenton-----	Wetland, 10-14 Northern Plains	Favorable	6,000	Nebraska sedge-----	20
		Normal	5,000	Tufted hairgrass-----	20
		Unfavorable	4,000	Northern reedgrass-----	15
				Bluejoint reedgrass-----	10
161*:					
Haverdad, moist---	Lowland, 15-19 Northern Plains	Favorable	3,000	Western wheatgrass-----	25
		Normal	2,500	Green needlegrass-----	25
		Unfavorable	2,000	Slender wheatgrass-----	10
				Columbia needlegrass-----	5
				Basin wildrye-----	5
				Canada wildrye-----	5
				Cottonwood-----	5
				Needleandthread-----	5
Worthenton-----	Wetland, 15-19 Northern Plains	Favorable	7,000	Nebraska sedge-----	25
		Normal	6,000	Tufted hairgrass-----	20
		Unfavorable	4,500	Northern reedgrass-----	15
				Bluejoint reedgrass-----	10

See footnote at end of table.

Table 7.--Rangeland Productivity and Characteristic Plant Communities--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry		
			weight		
162----- Havertel	Lowland, 15-19 Northern Plains	Favorable	3,000	Green needlegrass-----	20
		Normal	2,500	Western wheatgrass-----	20
		Unfavorable	2,000	Basin wildrye-----	10
				Columbia needlegrass-----	10
				Slender wheatgrass-----	10
				Canada wildrye-----	5
164*: Hiland-----	Sandy, 10-14 Northern Plains	Favorable	1,600	Needleandthread-----	25
		Normal	1,300	Prairie sandreed-----	20
		Unfavorable	750	Indian ricegrass-----	15
Bowbac-----	Sandy, 10-14 Northern Plains	Favorable	1,600	Needleandthread-----	25
		Normal	1,300	Prairie sandreed-----	20
		Unfavorable	750	Indian ricegrass-----	15
165*: Hiland, moist----	Sandy, 15-19 Northern Plains	Favorable	3,000	Sand bluestem-----	30
		Normal	2,200	Prairie sandreed-----	30
		Unfavorable	1,500	Needleandthread-----	25
				Western wheatgrass-----	10
Bowbac, moist----	Sandy, 15-19 Northern Plains	Favorable	3,000	Sand bluestem-----	30
		Normal	2,200	Prairie sandreed-----	30
		Unfavorable	1,500	Needleandthread-----	25
				Western wheatgrass-----	10
166*: Hiland-----	Sandy, 10-14 Northern Plains	Favorable	1,600	Needleandthread-----	25
		Normal	1,300	Prairie sandreed-----	20
		Unfavorable	750	Indian ricegrass-----	15
Decolney-----	Sandy, 10-14 Northern Plains	Favorable	1,600	Needleandthread-----	25
		Normal	1,300	Prairie sandreed-----	20
		Unfavorable	750	Indian ricegrass-----	15
167*: Hiland, moist----	Sandy, 15-19 Northern Plains	Favorable	3,000	Sand bluestem-----	30
		Normal	2,200	Prairie sandreed-----	30
		Unfavorable	1,500	Needleandthread-----	25
				Western wheatgrass-----	10
Vonalee, moist----	Sandy, 15-19 Northern Plains	Favorable	3,000	Prairie sandreed-----	30
		Normal	2,200	Sand bluestem-----	30
		Unfavorable	1,500	Needleandthread-----	25
				Western wheatgrass-----	10

See footnote at end of table.

Table 7.--Rangeland Productivity and Characteristic Plant Communities--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Compo- sition
		Kind of year	Dry weight		
			Lb/acre		Pct
168*:					
Hilght-----	Shallow Clayey, 10-14 Northern Plains.	Favorable	1,000	Western wheatgrass-----	40
		Normal	750	Green needlegrass-----	40
		Unfavorable	450	Bluebunch wheatgrass-----	15
	Rock outcrop.				
169*, 170*:					
Jonpol-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Green needlegrass-----	20
		Normal	2,200	Idaho fescue-----	20
		Unfavorable	1,500	Spike fescue-----	20
				Western wheatgrass-----	20
				Bluebunch wheatgrass-----	5
				Needleandthread-----	5
				Prairie junegrass-----	5
Platmak-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Green needlegrass-----	20
		Normal	2,200	Idaho fescue-----	20
		Unfavorable	1,500	Spike fescue-----	20
				Western wheatgrass-----	20
				Needleandthread-----	10
				Bluebunch wheatgrass-----	5
171*, 172*:					
Kishona-----	Loamy, 10-14 Northern Plains	Favorable	1,500	Western wheatgrass-----	25
		Normal	1,200	Needleandthread-----	25
		Unfavorable	700	Blue grama-----	15
				Green needlegrass-----	15
Cambria-----	Loamy, 10-14 Northern Plains	Favorable	1,500	Western wheatgrass-----	25
		Normal	1,200	Needleandthread-----	25
		Unfavorable	700	Blue grama-----	15
				Green needlegrass-----	15
173*:					
Lambman-----	Shallow Sandy, 15-19 Northern Plains.	Favorable	1,800	Prairie sandreed-----	25
		Normal	1,400	Needleandthread-----	20
		Unfavorable	900	Western wheatgrass-----	10
				Sand bluestem-----	10
				Silver sagebrush-----	10
				Bluebunch wheatgrass-----	10
Hargreave-----	Sandy, 15-19 Northern Plains	Favorable	3,000	Prairie sandreed-----	25
		Normal	2,200	Sand bluestem-----	25
		Unfavorable	1,500	Needleandthread-----	25
				Western wheatgrass-----	10
				Little bluestem-----	10

See footnote at end of table.

Table 7.--Rangeland Productivity and Characteristic Plant Communities--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
174*:					
Lucky-----	Coarse Upland, 15-19 Northern Plains.	Favorable	1,100	Columbia needlegrass-----	20
		Normal	950	Idaho fescue-----	20
		Unfavorable	600	Western wheatgrass-----	15
				Spike fescue-----	10
				Bluebunch wheatgrass-----	10
Burgess-----	Coarse Upland, 15-19 Northern Plains.	Favorable	1,100	Columbia needlegrass-----	25
		Normal	950	Idaho fescue-----	25
		Unfavorable	600	Western wheatgrass-----	20
				Spike fescue-----	10
				Bluebunch wheatgrass-----	10
Hazton-----	Coarse Upland, 15-19 Northern Plains.	Favorable	1,100	Idaho fescue-----	25
		Normal	950	Columbia needlegrass-----	25
		Unfavorable	600	Western wheatgrass-----	20
				Spike fescue-----	10
				Bluebunch wheatgrass-----	10
175, 176, 177-----	Sandy, 15-19 Northern Plains	Favorable	3,000	Needleandthread-----	25
Moskee		Normal	2,200	Sand bluestem-----	25
		Unfavorable	1,500	Prairie sandreed-----	25
				Western wheatgrass-----	10
				Little bluestem-----	10
178*, 179*:					
Moskee-----	Sandy, 15-19 Northern Plains	Favorable	3,000	Needleandthread-----	25
		Normal	2,200	Sand bluestem-----	25
		Unfavorable	1,500	Prairie sandreed-----	25
				Western wheatgrass-----	10
				Little bluestem-----	10
Noden-----	Sandy, 15-19 Northern Plains	Favorable	3,000	Sand bluestem-----	25
		Normal	2,200	Prairie sandreed-----	25
		Unfavorable	1,500	Needleandthread-----	25
				Western wheatgrass-----	10
				Little bluestem-----	10
180*:					
Moskee, dry-----	Sandy, 10-14 Northern Plains	Favorable	1,600	Needleandthread-----	25
		Normal	1,300	Prairie sandreed-----	20
		Unfavorable	750	Indian ricegrass-----	15
				Little bluestem-----	10
Noden, dry-----	Sandy, 10-14 Northern Plains	Favorable	1,600	Needleandthread-----	25
		Normal	1,300	Prairie sandreed-----	20
		Unfavorable	750	Indian ricegrass-----	15
				Little bluestem-----	10

See footnote at end of table.

Table 7.--Rangeland Productivity and Characteristic Plant Communities--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
181*, 182*: Moskee-----	Sandy, 15-19 Northern Plains	Favorable	3,000	Needleandthread-----	25
		Normal	2,200	Sand bluestem-----	25
		Unfavorable	1,500	Prairie sandreed-----	25
				Western wheatgrass-----	10
				Little bluestem-----	10
Nuncho-----	Sandy, 15-19 Northern Plains	Favorable	3,000	Prairie sandreed-----	20
		Normal	2,200	Sand bluestem-----	20
		Unfavorable	1,500	Needleandthread-----	15
				Western wheatgrass-----	15
				Little bluestem-----	10
184*: Nathrop-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	20
		Normal	2,200	Spike fescue-----	20
		Unfavorable	1,500	Green needlegrass-----	20
				Western wheatgrass-----	20
				Bluebunch wheatgrass-----	10
Passcreek-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	20
		Normal	2,200	Spike fescue-----	20
		Unfavorable	1,500	Green needlegrass-----	20
				Western wheatgrass-----	20
				Bluebunch wheatgrass-----	10
Starley-----	Shallow Loamy, 15-19 Northern Plains.	Favorable	1,800	Bluebunch wheatgrass-----	25
		Normal	1,400	Idaho fescue-----	25
		Unfavorable	900	Needleandthread-----	15
				Little bluestem-----	15
185----- Nesda	Subirrigated, 15-19 Northern Plains.	Favorable	6,000	Slender wheatgrass-----	25
		Normal	5,000	Nebraska sedge-----	20
		Unfavorable	3,500	Spike sedge-----	20
				Tufted hairgrass-----	15
187*: Nesda Variant----	Lowland, 15-19 Northern Plains	Favorable	3,000	Green needlegrass-----	15
		Normal	2,500	Western wheatgrass-----	15
		Unfavorable	2,000	Basin wildrye-----	10
				Columbia needlegrass-----	10
				Canada wildrye-----	10
				Slender wheatgrass-----	10
			Cottonwood-----	5	

See footnote at end of table.

Table 7.--Rangeland Productivity and Characteristic Plant Communities--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
187*:					
Havertel-----	Lowland, 15-19 Northern Plains	Favorable	3,000	Green needlegrass-----	20
		Normal	2,500	Western wheatgrass-----	20
		Unfavorable	2,000	Basin wildrye-----	10
				Columbia needlegrass-----	10
				Slender wheatgrass-----	10
				Canada wildrye-----	5
188*:					
Norbert-----	Shallow Clayey, 15-19 Northern Plains.	Favorable	1,800	Western wheatgrass-----	25
		Normal	1,400	Little bluestem-----	10
		Unfavorable	900	Green needlegrass-----	10
				Spike fescue-----	10
				Bluebunch wheatgrass-----	10
				Thickspike wheatgrass-----	10
Doney-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	25
		Normal	2,200	Spike fescue-----	25
		Unfavorable	1,500	Green needlegrass-----	25
				Western wheatgrass-----	20
Rock outcrop.					
189*:					
Norbert-----	Shallow Clayey, 15-19 Northern Plains.	Favorable	1,800	Western wheatgrass-----	25
		Normal	1,400	Little bluestem-----	10
		Unfavorable	900	Green needlegrass-----	10
				Spike fescue-----	10
				Bluebunch wheatgrass-----	10
				Thickspike wheatgrass-----	10
Eltzac-----	Clayey, 15-19 Northern Plains	Favorable	2,900	Green needlegrass-----	50
		Normal	2,100	Western wheatgrass-----	20
		Unfavorable	1,400	Idaho fescue-----	10
				Sideoats grama-----	10
190*:					
Norbert-----	Shallow Clayey, 15-19 Northern Plains.	Favorable	1,800	Western wheatgrass-----	25
		Normal	1,400	Little bluestem-----	10
		Unfavorable	900	Green needlegrass-----	10
				Spike fescue-----	10
				Bluebunch wheatgrass-----	10
				Thickspike wheatgrass-----	10
Reget-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Green needlegrass-----	25
		Normal	2,200	Idaho fescue-----	25
		Unfavorable	1,500	Spike fescue-----	25
				Western wheatgrass-----	20

See footnote at end of table.

Table 7.--Rangeland Productivity and Characteristic Plant Communities--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Compo- sition
		Kind of year	Dry weight		
			Lb/acre		Pct
190*:					
Savar-----	Clayey, 15-19 Northern Plains	Favorable	2,900	Green needlegrass-----	50
		Normal	2,100	Western wheatgrass-----	20
		Unfavorable	1,400	Idaho fescue-----	10
				Sideoats grama-----	10
191*:					
Norbert-----	Shallow Clayey, 15-19 Northern Plains.	Favorable	1,800	Western wheatgrass-----	25
		Normal	1,400	Little bluestem-----	10
		Unfavorable	900	Green needlegrass-----	10
				Spike fescue-----	10
				Bluebunch wheatgrass-----	10
				Thickspike wheatgrass-----	10
Rock outcrop.					
192, 193, 194-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	25
Nuncho		Normal	2,200	Spike fescue-----	25
		Unfavorable	1,500	Green needlegrass-----	25
				Western wheatgrass-----	20
195, 196-----	Clayey, 15-19 Northern Plains	Favorable	2,900	Green needlegrass-----	40
Nuncho		Normal	2,100	Western wheatgrass-----	20
		Unfavorable	1,400	Idaho fescue-----	10
				Sideoats grama-----	10
				Spike fescue-----	5
197*, 198*:					
Nuncho-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	25
		Normal	2,200	Spike fescue-----	25
		Unfavorable	1,500	Green needlegrass-----	25
				Western wheatgrass-----	20
Emigrant-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	25
		Normal	2,200	Spike fescue-----	25
		Unfavorable	1,500	Green needlegrass-----	25
				Western wheatgrass-----	20
200*:					
Owen Creek-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	25
		Normal	2,200	Spike fescue-----	25
		Unfavorable	1,500	Green needlegrass-----	25
				Western wheatgrass-----	20
Echemoor-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	25
		Normal	2,200	Spike fescue-----	25
		Unfavorable	1,500	Green needlegrass-----	25
				Western wheatgrass-----	20

See footnote at end of table.

Table 7.--Rangeland Productivity and Characteristic Plant Communities--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
200*:					
Bynum-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	25
		Normal	2,200	Spike fescue-----	25
		Unfavorable	1,500	Green needlegrass-----	25
				Western wheatgrass-----	20
201*:					
Farmleed-----	Loamy, 10-14 Northern Plains	Favorable	1,500	Western wheatgrass-----	25
		Normal	1,200	Needleandthread-----	20
		Unfavorable	700	Blue grama-----	15
				Green needlegrass-----	15
Bidman-----	Loamy, 10-14 Northern Plains	Favorable	1,500	Western wheatgrass-----	25
		Normal	1,200	Needleandthread-----	25
		Unfavorable	700	Blue grama-----	15
				Green needlegrass-----	15
202*, 203*:					
Farmleed, moist---	Loamy, 15-19 Northern Plains	Favorable	3,000	Western wheatgrass-----	25
		Normal	2,200	Green needlegrass-----	25
		Unfavorable	1,500	Idaho fescue-----	25
				Spike fescue-----	20
Bidman, moist----	Loamy, 15-19 Northern Plains	Favorable	3,000	Green needlegrass-----	25
		Normal	2,200	Idaho fescue-----	25
		Unfavorable	1,500	Spike fescue-----	25
				Western wheatgrass-----	20
204*:					
Farmleed-----	Loamy, 10-14 Northern Plains	Favorable	1,500	Western wheatgrass-----	25
		Normal	1,200	Needleandthread-----	20
		Unfavorable	700	Blue grama-----	15
				Green needlegrass-----	15
Renchill-----	Clayey, 10-14 Northern Plains	Favorable	1,400	Western wheatgrass-----	40
		Normal	1,000	Green needlegrass-----	40
		Unfavorable	600	Blue grama-----	10
205*, 206*:					
Farmleed, moist---	Loamy, 15-19 Northern Plains	Favorable	3,000	Western wheatgrass-----	25
		Normal	2,200	Green needlegrass-----	25
		Unfavorable	1,500	Idaho fescue-----	25
				Spike fescue-----	25
Renchill, moist---	Clayey, 15-19 Northern Plains	Favorable	2,900	Green needlegrass-----	50
		Normal	2,100	Western wheatgrass-----	20
		Unfavorable	1,400	Idaho fescue-----	10
				Sideoats grama-----	10

See footnote at end of table.

Table 7.--Rangeland Productivity and Characteristic Plant Communities--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Compo- sition
		Kind of year	Dry weight		
			(lb/acre)		Pct
207*:					
Farmleed-----	Loamy, 10-14 Northern Plains	Favorable	1,500	Western wheatgrass-----	25
		Normal	1,200	Needleandthread-----	20
		Unfavorable	700	Blue grama-----	15
				Green needlegrass-----	15
Worfka-----	Shallow Loamy, 10-14 Northern Plains.	Favorable	1,200	Bluebunch wheatgrass-----	40
		Normal	900	Western wheatgrass-----	15
		Unfavorable	450	Needleandthread-----	10
				Blue grama-----	10
208*, 209*:					
Farmleed, moist---	Loamy, 15-19 Northern Plains	Favorable	3,000	Western wheatgrass-----	25
		Normal	2,200	Green needlegrass-----	25
		Unfavorable	1,500	Idaho fescue-----	25
				Spike fescue-----	20
Worfka, moist-----	Shallow Loamy, 15-19 Northern Plains.	Favorable	1,800	Bluebunch wheatgrass-----	25
		Normal	1,400	Idaho fescue-----	25
		Unfavorable	900	Needleandthread-----	15
				Little bluestem-----	15
210*:					
Farmleed, moist---	Loamy, 15-19 Northern Plains	Favorable	3,000	Western wheatgrass-----	25
		Normal	2,200	Green needlegrass-----	25
		Unfavorable	1,500	Idaho fescue-----	25
				Spike fescue-----	20
Worfka, moist-----	Shallow Loamy, 15-19 Northern Plains.	Favorable	1,800	Bluebunch wheatgrass-----	25
		Normal	1,400	Idaho fescue-----	25
		Unfavorable	900	Needleandthread-----	15
				Little bluestem-----	15
Shingle Variant, moist-----	Shallow Loamy, 15-19 Northern Plains.	Favorable	1,800	Bluebunch wheatgrass-----	25
		Normal	1,400	Idaho fescue-----	25
		Unfavorable	900	Needleandthread-----	15
				Little bluestem-----	15
211*:					
Peritsa-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Spike fescue-----	25
		Normal	2,200	Idaho fescue-----	25
		Unfavorable	1,500	Green needlegrass-----	25
				Western wheatgrass-----	20

See footnote at end of table.

Table 7.--Rangeland Productivity and Characteristic Plant Communities--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
211*:					
Abac-----	Shallow Loamy, 15-19 Northern Plains.	Favorable	1,800	Idaho fescue-----	20
		Normal	1,400	Bluebunch wheatgrass-----	15
		Unfavorable	900	Needleandthread-----	15
				Little bluestem-----	10
				Green needlegrass-----	10
				Big sagebrush-----	5
212, 213-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Green needlegrass-----	20
Platmak		Normal	2,200	Idaho fescue-----	20
		Unfavorable	1,500	Spike fescue-----	20
				Western wheatgrass-----	20
				Needleandthread-----	10
				Bluebunch wheatgrass-----	5
214-----	Loamy, 10-14 Northern Plains	Favorable	1,500	Western wheatgrass-----	25
Platmak, dry		Normal	1,200	Needleandthread-----	20
		Unfavorable	700	Green needlegrass-----	15
				Blue grama-----	15
				Bluebunch wheatgrass-----	5
215, 216-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Western wheatgrass-----	25
Platsher		Normal	2,200	Idaho fescue-----	20
		Unfavorable	1,500	Spike fescue-----	20
				Green needlegrass-----	15
217, 218-----	Clayey, 15-19 Northern Plains	Favorable	2,900	Green needlegrass-----	40
Platsher		Normal	2,100	Western wheatgrass-----	20
		Unfavorable	1,400	Idaho fescue-----	10
				Sideoats grama-----	10
219*, 220*, 221*:					
Platsher-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Western wheatgrass-----	25
		Normal	2,200	Idaho fescue-----	20
		Unfavorable	1,500	Spike fescue-----	20
				Green needlegrass-----	15
Wolfvar-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	15
		Normal	2,200	Spike fescue-----	15
		Unfavorable	1,500	Green needlegrass-----	10
				Western wheatgrass-----	10
222-----	Subirrigated, 15-19 Northern Plains.	Favorable	6,000	Slender wheatgrass-----	25
Platsher Variant		Normal	5,000	Nebraska sedge-----	20
		Unfavorable	3,500	Spike sedge-----	20
				Tufted hairgrass-----	15

See footnote at end of table.

Table 7.--Rangeland Productivity and Characteristic Plant Communities--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Compo- sition
		Kind of year	Dry weight		
223, 224, 225----- Recluse	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	20
		Normal	2,200	Spike fescue-----	20
		Unfavorable	1,500	Western wheatgrass-----	20
				Green needlegrass-----	15
226*: Recluse-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	20
		Normal	2,200	Spike fescue-----	20
		Unfavorable	1,500	Western wheatgrass-----	20
				Green needlegrass-----	15
Bauxson-----	Shallow Loamy, 15-19 Northern Plains.	Favorable	1,800	Bluebunch wheatgrass-----	25
		Normal	1,400	Idaho fescue-----	25
		Unfavorable	900	Little bluestem-----	15
				Needleandthread-----	15
Baux-----	Very Shallow, 15-19 Northern Plains.	Favorable	900	Bluebunch wheatgrass-----	40
		Normal	700	Little bluestem-----	20
		Unfavorable	400	Spike fescue-----	10
				Western wheatgrass-----	10
227*, 228*: Reeder-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	25
		Normal	2,200	Spike fescue-----	25
		Unfavorable	1,500	Green needlegrass-----	25
				Western wheatgrass-----	20
Farnuf-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	25
		Normal	2,200	Spike fescue-----	25
		Unfavorable	1,500	Green needlegrass-----	25
				Western wheatgrass-----	20
229, 230----- Reget	Clayey, 15-19 Northern Plains	Favorable	2,900	Green needlegrass-----	40
		Normal	2,100	Western wheatgrass-----	20
		Unfavorable	1,400	Idaho fescue-----	10
Sideoats grama-----	10				
231*: Reget-----	Clayey, 15-19 Northern Plains	Favorable	2,900	Green needlegrass-----	40
		Normal	2,100	Western wheatgrass-----	20
		Unfavorable	1,400	Idaho fescue-----	10
				Sideoats grama-----	10
Savar-----	Clayey, 15-19 Northern Plains	Favorable	2,900	Green needlegrass-----	50
		Normal	2,100	Western wheatgrass-----	20
		Unfavorable	1,400	Idaho fescue-----	10
				Sideoats grama-----	10

See footnote at end of table.

Table 7.--Rangeland Productivity and Characteristic Plant Communities--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry		
			weight		
			Lb/acre		Pct
232*:					
Reget Variant-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Green needlegrass-----	20
		Normal	2,200	Western wheatgrass-----	20
		Unfavorable	1,500	Idaho fescue-----	20
				Spike fescue-----	20
Reget-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Green needlegrass-----	25
		Normal	2,200	Idaho fescue-----	25
		Unfavorable	1,500	Spike fescue-----	25
				Western wheatgrass-----	20
233*:					
Renohill-----	Clayey, 10-14 Northern Plains	Favorable	1,400	Western wheatgrass-----	40
		Normal	1,000	Green needlegrass-----	40
		Unfavorable	600	Blue grama-----	10
Savageton-----	Clayey, 10-14 Northern Plains	Favorable	1,400	Western wheatgrass-----	40
		Normal	1,000	Green needlegrass-----	40
		Unfavorable	600	Blue grama-----	10
234*, 235*:					
Renohill, moist---	Clayey, 15-19 Northern Plains	Favorable	2,900	Green needlegrass-----	50
		Normal	2,100	Western wheatgrass-----	20
		Unfavorable	1,400	Idaho fescue-----	10
				Sidecoats grama-----	10
Savageton, moist--	Clayey, 15-19 Northern Plains	Favorable	2,900	Green needlegrass-----	50
		Normal	2,100	Western wheatgrass-----	20
		Unfavorable	1,400	Idaho fescue-----	10
				Sidecoats grama-----	10
236*:					
Renohill-----	Clayey, 10-14 Northern Plains	Favorable	1,400	Western wheatgrass-----	40
		Normal	1,000	Green needlegrass-----	40
		Unfavorable	600	Blue grama-----	10
Ulm, dry-----	Clayey, 10-14 Northern Plains	Favorable	1,400	Western wheatgrass-----	40
		Normal	1,000	Green needlegrass-----	40
		Unfavorable	600	Blue grama-----	10
237*:					
Renohill, moist---	Clayey, 15-19 Northern Plains	Favorable	2,900	Green needlegrass-----	50
		Normal	2,100	Western wheatgrass-----	20
		Unfavorable	1,400	Idaho fescue-----	10
				Sidecoats grama-----	10

See footnote at end of table.

Table 7.--Rangeland Productivity and Characteristic Plant Communities--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Compo- sition
		Kind of year	Dry weight		
			Lb/acre		Pct
237*:					
Ulm-----	Clayey, 15-19 Northern Plains	Favorable	2,900	Green needlegrass-----	50
		Normal	2,100	Western wheatgrass-----	20
		Unfavorable	1,400	Idaho fescue-----	10
				Sideoats grama-----	10
238*:					
Renohill-----	Clayey, 10-14 Northern Plains	Favorable	1,400	Western wheatgrass-----	40
		Normal	1,000	Green needlegrass-----	40
		Unfavorable	600	Blue grama-----	10
Worfka-----	Shallow Clayey, 10-14 Northern Plains.	Favorable	1,000	Western wheatgrass-----	40
		Normal	750	Green needlegrass-----	40
		Unfavorable	450	Bluebunch wheatgrass-----	15
239*:					
Renohill, moist---	Clayey, 15-19 Northern Plains	Favorable	2,900	Green needlegrass-----	50
		Normal	2,100	Western wheatgrass-----	20
		Unfavorable	1,400	Idaho fescue-----	10
				Sideoats grama-----	10
Worfka, moist----	Shallow Clayey, 15-19 Northern Plains.	Favorable	1,800	Western wheatgrass-----	25
		Normal	1,400	Green needlegrass-----	10
		Unfavorable	900	Little bluestem-----	10
				Spike fescue-----	10
240*:					
Renohill, moist---	Clayey, 15-19 Northern Plains	Favorable	2,900	Green needlegrass-----	50
		Normal	2,100	Western wheatgrass-----	20
		Unfavorable	1,400	Idaho fescue-----	10
				Sideoats grama-----	10
Wyarno-----	Clayey, 15-19 Northern Plains	Favorable	2,900	Green needlegrass-----	40
		Normal	2,100	Western wheatgrass-----	20
		Unfavorable	1,400	Idaho fescue-----	10
				Sideoats grama-----	10
				Blue grama-----	10
242*:					
Rock outcrop.					
Starman-----	Coarse Upland, 15-19 Northern Plains.	Favorable	1,100	Columbia needlegrass-----	25
		Normal	950	Idaho fescue-----	20
		Unfavorable	600	Montana wheatgrass-----	15
				Spike fescue-----	10
				Bluebunch wheatgrass-----	5
				Prairie junegrass-----	5

See footnote at end of table.

Table 7.--Rangeland Productivity and Characteristic Plant Communities--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
243*: Rock outcrop.					
Starman Variant	Coarse Upland, 15-19 Northern Plains.	Favorable	1,100	Columbia needlegrass-----	25
		Normal	950	Idaho fescue-----	20
		Unfavorable	600	Montana wheatgrass-----	15
				Spike fescue-----	10
				Bluebunch wheatgrass-----	5
244*: Samday, moist	Shallow Clayey, 15-19 Northern Plains.	Favorable	1,800	Western wheatgrass-----	25
		Normal	1,400	Green needlegrass-----	10
		Unfavorable	900	Little bluestem-----	10
				Spike fescue-----	10
Gayhart, moist	Clayey, 15-19 Northern Plains	Favorable	2,900	Green needlegrass-----	50
		Normal	2,100	Western wheatgrass-----	20
		Unfavorable	1,400	Idaho fescue-----	10
				Sidecoats grama-----	10
Hilight, moist	Shallow Clayey, 15-19 Northern Plains.	Favorable	1,800	Western wheatgrass-----	25
		Normal	1,400	Green needlegrass-----	10
		Unfavorable	900	Little bluestem-----	10
				Spike fescue-----	10
Samday	Shallow Clayey, 10-14 Northern Plains.	Favorable	1,000	Western wheatgrass-----	40
		Normal	750	Green needlegrass-----	40
		Unfavorable	450	Bluebunch wheatgrass-----	15
245*: Hilight	Shallow Clayey, 10-14 Northern Plains.	Favorable	1,000	Western wheatgrass-----	40
		Normal	750	Green needlegrass-----	40
		Unfavorable	450	Bluebunch wheatgrass-----	15
246, 247, 248 Savage	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	25
		Normal	2,200	Spike fescue-----	25
		Unfavorable	1,500	Green needlegrass-----	25
				Western wheatgrass-----	20
249*: Savage	Loamy, 15-19 Northern Plains	Favorable	3,000	Green needlegrass-----	25
		Normal	2,200	Idaho fescue-----	25
		Unfavorable	1,500	Spike fescue-----	25
				Western wheatgrass-----	20

See footnote at end of table.

Table 7.--Rangeland Productivity and Characteristic Plant Communities--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Compo- sition Pct
		Kind of year	Dry		
			weight lb/acre		
249*:					
Farnuf-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Green needlegrass-----	20
		Normal	2,200	Idaho fescue-----	20
		Unfavorable	1,500	Spike fescue-----	20
				Western wheatgrass-----	20
				Bluebunch wheatgrass-----	5
				Needleandthread-----	5
				Prairie junegrass-----	5
250*:					
Savage-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	25
		Normal	2,200	Spike fescue-----	25
		Unfavorable	1,500	Green needlegrass-----	25
				Western wheatgrass-----	20
Korchea-----	Overflow, 15-19 Northern Plains.	Favorable	4,000	Green needlegrass-----	25
		Normal	3,000	Western wheatgrass-----	25
		Unfavorable	2,000	Basin wildrye-----	20
				Columbia needlegrass-----	10
251*:					
Savage-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	25
		Normal	2,200	Spike fescue-----	25
		Unfavorable	1,500	Green needlegrass-----	25
				Western wheatgrass-----	20
Reget-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Green needlegrass-----	25
		Normal	2,200	Idaho fescue-----	25
		Unfavorable	1,500	Spike fescue-----	25
				Western wheatgrass-----	20
252*:					
Searing-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	25
		Normal	2,200	Spike fescue-----	25
		Unfavorable	1,500	Green needlegrass-----	25
				Western wheatgrass-----	20
Ringling-----	Shallow Loamy, 15-19 Northern Plains.	Favorable	1,800	Idaho fescue-----	25
		Normal	1,400	Bluebunch wheatgrass-----	25
		Unfavorable	900	Needleandthread-----	15
				Little bluestem-----	15
253-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	25
Shaak		Normal	2,200	Spike fescue-----	25
		Unfavorable	1,500	Green needlegrass-----	25
				Western wheatgrass-----	20

See footnote at end of table.

Table 7.--Rangeland Productivity and Characteristic Plant Communities--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
254*:					
Shingle, moist----	Shallow Loamy, 15-19 Northern Plains.	Favorable	1,800	Bluebunch wheatgrass-----	25
		Normal	1,400	Idaho fescue-----	25
		Unfavorable	900	Needleandthread-----	15
				Little bluestem-----	15
Baux-----	Very Shallow, 15-19 Northern Plains.	Favorable	900	Bluebunch wheatgrass-----	40
		Normal	700	Little bluestem-----	20
		Unfavorable	400	Spike fescue-----	10
				Western wheatgrass-----	10
Rock outcrop.					
255*:					
Shingle-----	Shallow Loamy, 10-14 Northern Plains.	Favorable	1,200	Bluebunch wheatgrass-----	50
		Normal	900	Western wheatgrass-----	15
		Unfavorable	450	Needleandthread-----	10
				Blue grama-----	10
Haverdad-----	Overflow, 10-14 Northern Plains.	Favorable	2,400	Basin wildrye-----	40
		Normal	1,800	Green needlegrass-----	25
		Unfavorable	1,200	Western wheatgrass-----	15
				Canby bluegrass-----	10
				Cottonwood-----	5
256*:					
Shingle, moist----	Shallow Loamy, 15-19 Northern Plains.	Favorable	1,800	Bluebunch wheatgrass-----	25
		Normal	1,400	Idaho fescue-----	25
		Unfavorable	900	Needleandthread-----	15
				Little bluestem-----	15
Haverdad, moist---	Overflow, 15-19 Northern Plains.	Favorable	4,000	Western wheatgrass-----	25
		Normal	3,000	Green needlegrass-----	25
		Unfavorable	2,000	Basin wildrye-----	20
				Columbia needlegrass-----	10
				Slender wheatgrass-----	10
257*:					
Shingle-----	Shallow Loamy, 10-14 Northern Plains.	Favorable	1,200	Bluebunch wheatgrass-----	50
		Normal	900	Western wheatgrass-----	15
		Unfavorable	450	Needleandthread-----	10
				Blue grama-----	10
Nihill-----	Shallow Loamy, 10-14 Northern Plains.	Favorable	1,200	Bluebunch wheatgrass-----	50
		Normal	900	Western wheatgrass-----	15
		Unfavorable	400	Needleandthread-----	10
				Blue grama-----	10

See footnote at end of table.

Table 7.--Rangeland Productivity and Characteristic Plant Communities--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Compo- sition
		Kind of year	Dry weight		
258*:					
Shingle, moist----	Shallow Loamy, 15-19 Northern Plains.	Favorable	1,800	Bluebunch wheatgrass-----	25
		Normal	1,400	Idaho fescue-----	25
		Unfavorable	900	Needleandthread-----	15
				Little bluestem-----	15
Nihill, moist----	Shallow Loamy, 15-19 Northern Plains.	Favorable	1,800	Bluebunch wheatgrass-----	25
		Normal	1,400	Idaho fescue-----	25
		Unfavorable	900	Needleandthread-----	15
				Little bluestem-----	15
259*:					
Shingle, moist----	Shallow Loamy, 15-19 Northern Plains.	Favorable	1,800	Bluebunch wheatgrass-----	25
		Normal	1,400	Idaho fescue-----	25
		Unfavorable	900	Needleandthread-----	15
				Little bluestem-----	15
Nuncho-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	25
		Normal	2,200	Spike fescue-----	25
		Unfavorable	1,500	Green needlegrass-----	25
				Western wheatgrass-----	20
260*:					
Shingle-----	Shallow Loamy, 10-14 Northern Plains.	Favorable	1,200	Bluebunch wheatgrass-----	50
		Normal	900	Western wheatgrass-----	15
		Unfavorable	450	Needleandthread-----	10
				Blue grama-----	10
Rock outcrop.					
261*:					
Shingle, moist----	Shallow Loamy, 15-19 Northern Plains.	Favorable	1,800	Bluebunch wheatgrass-----	25
		Normal	1,400	Idaho fescue-----	25
		Unfavorable	900	Needleandthread-----	15
				Little bluestem-----	15
Rock outcrop.					
262*:					
Shingle-----	Shallow Loamy, 10-14 Northern Plains.	Favorable	1,200	Bluebunch wheatgrass-----	50
		Normal	900	Western wheatgrass-----	15
		Unfavorable	450	Needleandthread-----	10
				Blue grama-----	10
Sanday-----	Shallow Clayey, 10-14 Northern Plains.	Favorable	1,000	Western wheatgrass-----	40
		Normal	750	Green needlegrass-----	40
		Unfavorable	450	Bluebunch wheatgrass-----	15

See footnote at end of table.

Table 7.--Rangeland Productivity and Characteristic Plant Communities--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
		Lb/acre		Pct	
263*:					
Shingle, moist----	Shallow Loamy, 15-19 Northern Plains.	Favorable	1,800	Bluebunch wheatgrass-----	25
		Normal	1,400	Idaho fescue-----	25
		Unfavorable	900	Needleandthread-----	15
				Little bluestem-----	15
Samday, moist----	Shallow Clayey, 15-19 Northern Plains.	Favorable	1,800	Western wheatgrass-----	25
		Normal	1,400	Green needlegrass-----	10
		Unfavorable	900	Little bluestem-----	10
				Spike fescue-----	10
264*:					
Shingle-----	Shallow Loamy, 10-14 Northern Plains.	Favorable	1,200	Bluebunch wheatgrass-----	50
		Normal	900	Western wheatgrass-----	15
		Unfavorable	450	Needleandthread-----	10
				Blue grama-----	10
Taluce-----	Shallow Sandy, 10-14 Northern Plains.	Favorable	1,300	Needleandthread-----	25
		Normal	1,000	Prairie sandreed-----	25
		Unfavorable	600	Little bluestem-----	10
265*:					
Shingle, moist----	Shallow Loamy, 15-19 Northern Plains.	Favorable	1,800	Bluebunch wheatgrass-----	25
		Normal	1,400	Idaho fescue-----	25
		Unfavorable	900	Needleandthread-----	15
				Little bluestem-----	15
Taluce, moist----	Shallow Sandy, 15-19 Northern Plains.	Favorable	1,800	Prairie sandreed-----	35
		Normal	1,400	Needleandthread-----	30
		Unfavorable	900	Western wheatgrass-----	15
				Bluebunch wheatgrass-----	10
266*:					
Shingle-----	Shallow Loamy, 10-14 Northern Plains.	Favorable	1,200	Bluebunch wheatgrass-----	50
		Normal	900	Western wheatgrass-----	15
		Unfavorable	450	Needleandthread-----	10
				Blue grama-----	10
Theedle-----	Loamy, 10-14 Northern Plains	Favorable	1,500	Western wheatgrass-----	25
		Normal	1,200	Needleandthread-----	25
		Unfavorable	700	Blue grama-----	15
				Green needlegrass-----	15
267*:					
Shingle, moist----	Shallow Loamy, 15-19 Northern Plains.	Favorable	1,800	Bluebunch wheatgrass-----	25
		Normal	1,400	Idaho fescue-----	25
		Unfavorable	900	Needleandthread-----	15
				Little bluestem-----	15

See footnote at end of table.

Table 7.--Rangeland Productivity and Characteristic Plant Communities--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Compo- sition
		Kind of year	Dry weight		
267*:					
Theedle, moist----	Loamy, 15-19 Northern Plains	Favorable	3,000	Green needlegrass-----	25
		Normal	2,200	Spike fescue-----	25
		Unfavorable	1,500	Idaho fescue-----	25
				Western wheatgrass-----	20
268*:					
Shingle-----	Shallow Loamy, 10-14 Northern Plains.	Favorable	1,200	Bluebunch wheatgrass-----	50
		Normal	900	Western wheatgrass-----	15
		Unfavorable	450	Needleandthread-----	10
				Blue grama-----	10
Theedle-----	Loamy, 10-14 Northern Plains	Favorable	1,500	Western wheatgrass-----	25
		Normal	1,200	Needleandthread-----	25
		Unfavorable	700	Blue grama-----	15
				Green needlegrass-----	15
Kishona-----	Loamy, 10-14 Northern Plains	Favorable	1,500	Western wheatgrass-----	25
		Normal	1,200	Needleandthread-----	25
		Unfavorable	700	Blue grama-----	15
				Green needlegrass-----	15
269*:					
Shingle, moist----	Shallow Loamy, 15-19 Northern Plains.	Favorable	1,800	Bluebunch wheatgrass-----	25
		Normal	1,400	Idaho fescue-----	25
		Unfavorable	900	Needleandthread-----	15
				Little bluestem-----	15
Theedle, moist----	Loamy, 15-19 Northern Plains	Favorable	3,000	Green needlegrass-----	25
		Normal	2,200	Spike fescue-----	25
		Unfavorable	1,500	Idaho fescue-----	25
				Western wheatgrass-----	20
Kishona, moist----	Loamy, 15-19 Northern Plains	Favorable	3,000	Green needlegrass-----	25
		Normal	2,200	Idaho fescue-----	25
		Unfavorable	1,500	Spike fescue-----	25
				Western wheatgrass-----	20
270*:					
Shingle, moist----	Shallow Loamy, 15-19 Northern Plains.	Favorable	1,800	Bluebunch wheatgrass-----	25
		Normal	1,400	Idaho fescue-----	25
		Unfavorable	900	Needleandthread-----	15
				Little bluestem-----	15
Theedle, moist----	Loamy, 15-19 Northern Plains	Favorable	3,000	Green needlegrass-----	25
		Normal	2,200	Spike fescue-----	25
		Unfavorable	1,500	Idaho fescue-----	25
				Western wheatgrass-----	20
Rock outcrop.					

See footnote at end of table.

Table 7.--Rangeland Productivity and Characteristic Plant Communities--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
271*:					
Shingle-----	Shallow Loamy, 10-14 Northern Plains.	Favorable	1,200	Bluebunch wheatgrass-----	50
		Normal	900	Western wheatgrass-----	15
		Unfavorable	450	Needleandthread-----	10
				Blue grama-----	10
Wibaux-----	Shallow Loamy, 10-14 Northern Plains.	Favorable	1,200	Bluebunch wheatgrass-----	50
		Normal	900	Western wheatgrass-----	15
		Unfavorable	450	Needleandthread-----	10
				Blue grama-----	10
273*:					
Shingle-----	Shallow Loamy, 10-14 Northern Plains.	Favorable	1,200	Bluebunch wheatgrass-----	50
		Normal	900	Western wheatgrass-----	15
		Unfavorable	450	Needleandthread-----	10
				Blue grama-----	10
Worf-----	Shallow Loamy, 10-14 Northern Plains.	Favorable	1,200	Bluebunch wheatgrass-----	50
		Normal	900	Western wheatgrass-----	15
		Unfavorable	450	Needleandthread-----	10
				Blue grama-----	10
274*:					
Shingle, moist----	Shallow Loamy, 15-19 Northern Plains.	Favorable	1,800	Bluebunch wheatgrass-----	25
		Normal	1,400	Idaho fescue-----	25
		Unfavorable	900	Needleandthread-----	15
				Little bluestem-----	15
Worf, moist-----	Shallow Loamy, 15-19 Northern Plains.	Favorable	1,800	Bluebunch wheatgrass-----	25
		Normal	1,400	Idaho fescue-----	25
		Unfavorable	900	Needleandthread-----	15
				Little bluestem-----	15
275-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	25
Sinkson		Normal	2,200	Spike fescue-----	25
		Unfavorable	1,500	Green needlegrass-----	25
				Western wheatgrass-----	20
276*:					
Spearman-----	Loamy, 10-14 Northern Plains	Favorable	1,500	Western wheatgrass-----	25
		Normal	1,200	Needleandthread-----	25
		Unfavorable	700	Blue grama-----	15
				Green needlegrass-----	15
Wibaux-----	Shallow Loamy, 10-14 Northern Plains.	Favorable	1,200	Bluebunch wheatgrass-----	50
		Normal	900	Western wheatgrass-----	15
		Unfavorable	450	Needleandthread-----	10
				Blue grama-----	10

See footnote at end of table.

Table 7.--Rangeland Productivity and Characteristic Plant Communities--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Compo- sition
		Kind of year	Dry weight		
278*:					
Taluca-----	Shallow Sandy, 10-14 Northern Plains.	Favorable	1,300	Needleandthread-----	25
		Normal	1,000	Prairie sandreed-----	25
		Unfavorable	600	Little bluestem-----	10
Tullock-----	Sandy, 10-14 Northern Plains	Favorable	1,600	Needleandthread-----	25
		Normal	1,300	Prairie sandreed-----	20
		Unfavorable	750	Indian ricegrass-----	15
Vonalee-----	Sandy, 10-14 Northern Plains	Favorable	1,600	Needleandthread-----	25
		Normal	1,300	Prairie sandreed-----	20
		Unfavorable	750	Indian ricegrass-----	15
279*:					
Taluca, moist----	Shallow Sandy, 15-19 Northern Plains.	Favorable	1,800	Prairie sandreed-----	35
		Normal	1,400	Needleandthread-----	30
		Unfavorable	900	Western wheatgrass-----	15
Tullock, moist----	Sandy, 15-19 Northern Plains	Favorable	3,000	Prairie sandreed-----	30
		Normal	2,200	Sand bluestem-----	30
		Unfavorable	1,500	Needleandthread-----	25
Vonalee, moist----	Sandy, 15-19 Northern Plains	Favorable	3,000	Prairie sandreed-----	30
		Normal	2,200	Sand bluestem-----	30
		Unfavorable	1,500	Needleandthread-----	25
Taluca Variant----	Shallow Sandy, 15-19 Northern Plains.	Favorable	1,800	Prairie sandreed-----	25
		Normal	1,400	Needleandthread-----	20
		Unfavorable	900	Western wheatgrass-----	10
Treff-----	Shallow Sandy, 15-19 Northern Plains.	Favorable	1,800	Prairie sandreed-----	25
		Normal	1,400	Needleandthread-----	20
		Unfavorable	900	Western wheatgrass-----	10
Theedle Variant----	Sandy, 15-19 Northern Plains	Favorable	3,000	Prairie sandreed-----	30
		Normal	2,200	Sand bluestem-----	30
		Unfavorable	1,500	Needleandthread-----	25

See footnote at end of table.

Table 7.--Rangeland Productivity and Characteristic Plant Communities--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry		
			weight		
			Lb/acre		Pct
281*:					
Theedle-----	Loamy, 10-14 Northern Plains	Favorable	1,500	Western wheatgrass-----	25
		Normal	1,200	Needleandthread-----	25
		Unfavorable	700	Blue grama-----	15
				Green needlegrass-----	15
Kishona-----	Loamy, 10-14 Northern Plains	Favorable	1,500	Western wheatgrass-----	25
		Normal	1,200	Needleandthread-----	25
		Unfavorable	700	Blue grama-----	15
				Green needlegrass-----	15
282*, 283*:					
Theedle, moist---	Loamy, 15-19 Northern Plains	Favorable	3,000	Green needlegrass-----	25
		Normal	2,200	Spike fescue-----	25
		Unfavorable	1,500	Idaho fescue-----	25
				Western wheatgrass-----	20
Kishona, moist---	Loamy, 15-19 Northern Plains	Favorable	3,000	Green needlegrass-----	25
		Normal	2,200	Idaho fescue-----	25
		Unfavorable	1,500	Spike fescue-----	25
				Western wheatgrass-----	20
284*:					
Tolman-----	Coarse Upland, 15-19 Northern Plains.	Favorable	1,100	Columbia needlegrass-----	25
		Normal	950	Idaho fescue-----	25
		Unfavorable	600	Western wheatgrass-----	20
				Spike fescue-----	10
Beeno-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	25
		Normal	2,200	Spike fescue-----	25
		Unfavorable	1,500	Green needlegrass-----	20
				Western wheatgrass-----	20
				Needleandthread-----	10
Beenom-----	Shallow Loamy, 15-19 Northern Plains.	Favorable	1,800	Idaho fescue-----	25
		Normal	1,400	Bluebunch wheatgrass-----	25
		Unfavorable	900	Needleandthread-----	15
				Little bluestem-----	15
285*:					
Trimad-----	Coarse Upland, 15-19 Northern Plains.	Favorable	1,100	Columbia needlegrass-----	25
		Normal	950	Idaho fescue-----	25
		Unfavorable	600	Western wheatgrass-----	20
				Spike fescue-----	10
Doney-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	25
		Normal	2,200	Spike fescue-----	25
		Unfavorable	1,500	Green needlegrass-----	25
				Western wheatgrass-----	20

See footnote at end of table.

Table 7.--Rangeland Productivity and Characteristic Plant Communities--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Compo- sition
		Kind of year	Dry		
			weight		
			Lb/acre		Pct
285*:					
Wayden-----	Shallow Clayey, 15-19 Northern Plains.	Favorable	1,800	Western wheatgrass-----	25
		Normal	1,400	Little bluestem-----	10
		Unfavorable	900	Green needlegrass-----	10
				Spike fescue-----	10
286*:					
Trimad-----	Coarse Upland, 15-19 Northern Plains.	Favorable	1,100	Columbia needlegrass-----	25
		Normal	950	Idaho fescue-----	25
		Unfavorable	600	Western wheatgrass-----	20
				Spike fescue-----	10
Trivar-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Green needlegrass-----	20
		Normal	2,200	Idaho fescue-----	20
		Unfavorable	1,500	Western wheatgrass-----	20
				Spike fescue-----	20
287*:					
Trimad-----	Coarse Upland, 15-19 Northern Plains.	Favorable	1,100	Columbia needlegrass-----	25
		Normal	950	Idaho fescue-----	25
		Unfavorable	600	Western wheatgrass-----	20
				Spike fescue-----	10
Twin Creek-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	25
		Normal	2,200	Spike fescue-----	25
		Unfavorable	1,500	Green needlegrass-----	25
				Western wheatgrass-----	20
288-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	25
Twin Creek		Normal	2,200	Spike fescue-----	25
		Unfavorable	1,500	Green needlegrass-----	25
				Western wheatgrass-----	20
289-----	Subirrigated, 15-19 Northern Twin Creek Variant Plains.	Favorable	6,000	Slender wheatgrass-----	25
		Normal	5,000	Nebraska sedge-----	20
		Unfavorable	3,500	Spike sedge-----	20
				Tufted hairgrass-----	15
290, 291-----	Clayey, 15-19 Northern Plains	Favorable	2,900	Green needlegrass-----	50
Ulm		Normal	2,100	Western wheatgrass-----	20
		Unfavorable	1,400	Idaho fescue-----	10
				Sideoats grama-----	10
292, 293-----	Clayey, 10-14 Northern Plains	Favorable	1,400	Western wheatgrass-----	40
Ulm, dry		Normal	1,000	Green needlegrass-----	40
		Unfavorable	600	Blue grama-----	10

See footnote at end of table.

Table 7.--Rangeland Productivity and Characteristic Plant Communities--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
298----- Wayden	Shallow Clayey, 15-19 Northern Plains.	Favorable	1,800	Western wheatgrass-----	25
		Normal	1,400	Little bluestem-----	10
		Unfavorable	900	Green needlegrass-----	10
				Spike fescue-----	10
299*: Wetterdon-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	25
		Normal	2,200	Spike fescue-----	25
		Unfavorable	1,500	Green needlegrass-----	25
				Western wheatgrass-----	20
Recluse-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	20
		Normal	2,200	Spike fescue-----	20
		Unfavorable	1,500	Western wheatgrass-----	20
				Green needlegrass-----	15
300*: Wibaux-----	Shallow Loamy, 10-14 Northern Plains.	Favorable	1,200	Bluebunch wheatgrass-----	50
		Normal	900	Western wheatgrass-----	15
		Unfavorable	450	Needleandthread-----	10
				Blue grama-----	10
Reddale-----	Loamy, 10-14 Northern Plains	Favorable	1,500	Western wheatgrass-----	20
		Normal	1,200	Needleandthread-----	20
		Unfavorable	700	Blue grama-----	15
				Green needlegrass-----	15
301----- Windham	Shallow Loamy, 15-19 Northern Plains.	Favorable	1,800	Idaho fescue-----	20
		Normal	1,400	Bluebunch wheatgrass-----	20
		Unfavorable	900	Needleandthread-----	15
				Little bluestem-----	15
				Big sagebrush-----	10
302, 303----- Wolf	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	15
		Normal	2,200	Spike fescue-----	15
		Unfavorable	1,500	Green needlegrass-----	10
				Needleandthread-----	10
				Western wheatgrass-----	10
				Big sagebrush-----	10
304*: Worfka-----	Shallow Loamy, 10-14 Northern Plains.	Favorable	1,200	Bluebunch wheatgrass-----	40
		Normal	900	Western wheatgrass-----	15
		Unfavorable	450	Needleandthread-----	10
				Blue grama-----	10
Shingle-----	Shallow Loamy, 10-14 Northern Plains.	Favorable	1,200	Bluebunch wheatgrass-----	50
		Normal	900	Western wheatgrass-----	15
		Unfavorable	450	Needleandthread-----	10
				Blue grama-----	10

See footnote at end of table.

Table 7.--Rangeland Productivity and Characteristic Plant Communities--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Compo- sition
		Kind of year	Dry weight		
			Lb/acre		Pct
304*:					
Samday-----	Shallow Clayey, 10-14 Northern Plains.	Favorable	1,000	Western wheatgrass-----	40
		Normal	750	Green needlegrass-----	40
		Unfavorable	450	Bluebunch wheatgrass-----	15
305*:					
Worfka, moist----	Shallow Loamy, 15-19 Northern Plains.	Favorable	1,800	Bluebunch wheatgrass-----	25
		Normal	1,400	Idaho fescue-----	25
		Unfavorable	900	Needleandthread-----	15
				Little bluestem-----	15
Shingle, moist----	Shallow Loamy, 15-19 Northern Plains.	Favorable	1,800	Bluebunch wheatgrass-----	25
		Normal	1,400	Idaho fescue-----	25
		Unfavorable	900	Needleandthread-----	15
				Little bluestem-----	15
Samday, moist----	Shallow Clayey, 15-19 Northern Plains.	Favorable	1,800	Western wheatgrass-----	25
		Normal	1,400	Green needlegrass-----	10
		Unfavorable	900	Little bluestem-----	10
				Spike fescue-----	10
306-----	Wetland, 10-14 Northern Plains	Favorable	6,000	Nebraska sedge-----	20
Worthenton		Normal	5,000	Tufted hairgrass-----	20
		Unfavorable	4,000	Northern reedgrass-----	15
				Bluejoint reedgrass-----	10
307*:					
Worthenton-----	Wetland, 15-19 Northern Plains	Favorable	7,000	Nebraska sedge-----	25
		Normal	6,000	Tufted hairgrass-----	25
		Unfavorable	4,500	Northern reedgrass-----	25
				Bluejoint reedgrass-----	25
Recluse-----	Loamy, 15-19 Northern Plains	Favorable	3,000	Idaho fescue-----	20
		Normal	2,200	Spike fescue-----	20
		Unfavorable	1,500	Western wheatgrass-----	20
				Green needlegrass-----	15
308*:					
Worthenton Variant	Wetland, 15-19 Northern Plains	Favorable	7,000	Nebraska sedge-----	25
		Normal	6,000	Tufted hairgrass-----	25
		Unfavorable	4,500	Northern reedgrass-----	20
				Baltic rush-----	10
Assinniboine Variant.					

See footnote at end of table.

Table 7.--Rangeland Productivity and Characteristic Plant Communities--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry		
			weight		
		Lb/acre		Pct	
309, 310, 311----- Wyarno	Clayey, 15-19 Northern Plains	Favorable	2,900	Green needlegrass-----	40
		Normal	2,100	Western wheatgrass-----	20
		Unfavorable	1,400	Idaho fescue-----	10
				Sideoats grama-----	10
				Blue grama-----	10
312, 313, 314----- Wyarno, dry	Clayey, 10-14 Northern Plains	Favorable	1,400	Green needlegrass-----	40
		Normal	1,000	Western wheatgrass-----	40
		Unfavorable	600	Blue grama-----	10
315----- Zigweid	Loamy, 10-14 Northern Plains	Favorable	1,500	Western wheatgrass-----	25
		Normal	1,200	Needleandthread-----	25
		Unfavorable	700	Green needlegrass-----	15
				Blue grama-----	15
316*: Zigweid-----	Loamy, 10-14 Northern Plains	Favorable	1,500	Western wheatgrass-----	25
		Normal	1,200	Needleandthread-----	25
		Unfavorable	700	Green needlegrass-----	15
				Blue grama-----	15
Cambria-----	Loamy, 10-14 Northern Plains	Favorable	1,500	Western wheatgrass-----	25
		Normal	1,200	Needleandthread-----	25
		Unfavorable	700	Blue grama-----	15
				Green needlegrass-----	15
317*: Zigweid-----	Loamy, 10-14 Northern Plains	Favorable	1,500	Western wheatgrass-----	25
		Normal	1,200	Needleandthread-----	25
		Unfavorable	700	Green needlegrass-----	15
				Blue grama-----	15
Kishona-----	Loamy, 10-14 Northern Plains	Favorable	1,500	Western wheatgrass-----	25
		Normal	1,200	Needleandthread-----	25
		Unfavorable	700	Blue grama-----	15
				Green needlegrass-----	15
Cambria-----	Loamy, 10-14 Northern Plains	Favorable	1,500	Western wheatgrass-----	25
		Normal	1,200	Needleandthread-----	25
		Unfavorable	700	Blue grama-----	15
				Green needlegrass-----	15
318*, 319*, 320*: Zigweid, moist----	Loamy, 15-19 Northern Plains	Favorable	3,000	Green needlegrass-----	25
		Normal	2,200	Idaho fescue-----	25
		Unfavorable	1,500	Spike fescue-----	25
				Western wheatgrass-----	20

See footnote at end of table.

Table 7.--Rangeland Productivity and Characteristic Plant Communities--Continued

Soil name and map symbol	Range site	Total production		Characteristic vegetation	Compo- sition
		Kind of year	Dry		
			weight		
			Lb/acre		Pct
318*, 319*, 320*: Kishona, moist----	Loamy, 15-19 Northern Plains	Favorable	3,000	Green needlegrass-----	25
		Normal	2,200	Idaho fescue-----	25
		Unfavorable	1,500	Spike fescue-----	25
				Western wheatgrass-----	20
Cambria, moist----	Loamy, 15-19 Northern Plains	Favorable	3,000	Green needlegrass-----	25
		Normal	2,200	Spike fescue-----	25
		Unfavorable	1,500	Idaho fescue-----	25
				Western wheatgrass-----	20

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 8.--Windbreak Suitability Groups
And Planting Zones

Soil name and map symbol	Suitability group	Planting zone
100*: Abac-----	10	III
Rock outcrop-----	---	---
101*: Absted-----	9N	I
Haverdad-----	8	I
102*: Absted, moist-----	9N	I
Haverdad, moist-----	8	I
103*: Absted-----	9N	I
Slickspots-----	10	I
104*: Agneston-----	6G	III
Granile-----	6G	III
Rock outcrop-----	---	---
105*: Arnegard-----	3	III
Farnuf-----	3	III
106*: Arnegard-----	3	III
Farnuf-----	3	III
107*: Assinniboine-----	3	III
Dast-----	6R	III
108*: Baux-----	10	I
Bauxson-----	10	I
109*: Baux, dry-----	10	I
Bauxson, dry-----	10	I

See footnote at end of table.

Table 8.--Windbreak Suitability Groups
And Planting Zones--Continued

Soil name and map symbol	Suitability group	Planting zone
110*:		
Baux-----	10	I
Bauxson-----	10	I
Kirtley-----	6R	I
111*:		
Baux-----	10	I
Bauxson-----	10	I
Wetterdon-----	3	I
112*:		
Bidman-----	4C	I
Arvada-----	9N	I
113*:		
Bidman, moist-----	4C	I
Arvada, moist-----	9N	I
114*:		
Bidman-----	4C	I
Ulm, dry-----	4C	I
115*:		
Bidman, moist-----	4C	I
Ulm-----	4C	I
116*:		
Big Horn-----	4C	I
Wolf, dry-----	5K	I
117*:		
Cambria-----	8	I
Forkwood-----	3	I
118*:		
Cambria, moist-----	8	I
Forkwood, moist-----	3	I

See footnote at end of table.

Table 8.--Windbreak Suitability Groups
And Planting Zones--Continued

Soil name and map symbol	Suitability group	Planting zone
119*: Cedak-----	6R	I
Recluse-----	3	I
120*: Cedak-----	6R	I
Recluse-----	3	I
121*: Cedak-----	6R	I
Recluse-----	3	I
122*: Cedak, dry-----	6R	I
Recluse, dry-----	3	I
123----- Clarkelen	5K	I
124----- Clarkelen, moist	5K	I
125*: Cloud Peak-----	6G	III
Tolman-----	10	III
126*: Coaliams-----	8	I
Worthenton-----	10	I
127*: Cushman-----	6R	I
Forkwood-----	3	I
128*: Cushman, moist-----	6R	I
Forkwood, moist-----	3	I
129*: Cushman, moist-----	6R	I
Forkwood, moist-----	3	I

See footnote at end of table.

Table 8.--Windbreak Suitability Groups
And Planting Zones--Continued

Soil name and map symbol	Suitability group	Planting zone
130*: Cushman-----	6R	I
Worf-----	10	I
131*: Cushman, moist-----	6R	I
Worf, moist-----	10	I
132----- Dast Variant	10	III
133*: Doney-----	6R	III
Doney Variant-----	10	III
134*: Doney-----	6R	III
Ringling-----	10	III
135*: Doney-----	6R	III
Ringling-----	10	III
Rock outcrop-----	---	---
136----- Draknab	7	I
137----- Farnuf	3	III
138----- Farnuf	3	III
139----- Farnuf	3	III
140----- Farnuf Variant, wet	1	III
141*: Farnuf Variant-----	3	III
Cloud Peak Variant-----	6G	III

See footnote at end of table.

Table 8.--Windbreak Suitability Groups
And Planting Zones--Continued

Soil name and map symbol	Suitability group	Planting zone
142, 143----- Forkwood	3	I
144----- Forkwood	3	I
145*: Gayhart-----	4C	I
Bahl-----	4C	I
146*: Gayhart, moist-----	4C	I
Bahl, moist-----	4C	I
147*: Hardhart-----	6G	III
Starley-----	10	III
148*: Hargreave-----	6R	I
Moskee-----	3	I
149*: Hargreave-----	6R	I
Moskee-----	3	I
150*: Hargreave, dry-----	6R	I
Moskee, dry-----	3	I
151----- Harlan, dry	3	I
152*: Harlan-----	3	I
Kirtley-----	6R	I
153*: Harlan-----	3	I
Kirtley-----	6R	I

See footnote at end of table.

Table 8.--Windbreak Suitability Groups
And Planting Zones--Continued

Soil name and map symbol	Suitability group	Planting zone
154----- Haverdad	8	I
155----- Haverdad, moist	8	I
156----- Haverdad, saline	9G	I
157----- Haverdad, moist, saline	9G	I
158*: Haverdad-----	1K	I
Draknab-----	1K	I
159*: Haverdad, moist-----	1K	I
Draknab, moist-----	1K	I
160*: Haverdad-----	1K	I
Worthenton-----	10	I
161*: Haverdad, moist-----	1K	I
Worthenton-----	10	I
162----- Havertel	1K	I
163*: Hesperus Variant-----	3	III
Regat-----	6R	III
164*: Hiland-----	5	I
Bowbac-----	6R	I
165*: Hiland, moist-----	3	I
Bowbac, moist-----	6R	I

See footnote at end of table.

Table 8.--Windbreak Suitability Groups
And Planting Zones--Continued

Soil name and map symbol	Suitability group	Planting zone
166*: Hiland-----	3	I
Decolney-----	3	I
167*: Hiland, moist-----	3	I
Vonalee, moist-----	5	I
168*: Hilight-----	10	I
Rock outcrop-----	---	---
169*: Jonpol-----	6R	I
Platmak-----	4C	I
170*: Jonpol-----	6R	I
Platmak-----	4C	I
171*: Kishona-----	8	I
Cambria-----	8	I
172*: Kishona-----	8	I
Cambria-----	8	I
173*: Lambman-----	10	I
Hargreave-----	6R	I
174*: Lucky-----	10	III
Burgess-----	6G	III
Hazton-----	10	III
175, 176----- Moskee	3	I

See footnote at end of table.

Table 8.--Windbreak Suitability Groups
And Planting Zones--Continued

Soil name and map symbol	Suitability group	Planting zone
177----- Moskee	3	I
178*: Moskee-----	3	I
Noden-----	3	I
179*: Moskee-----	3	I
Noden-----	3	I
180*: Moskee, dry-----	3	I
Noden, dry-----	3	I
181*, 182*: Moskee-----	3	I
Nuncho-----	4	I
183*: Moskee-----	3	I
Worthanton, moist-----	10	I
184*: Nathrop-----	6G	III
Passcreek-----	6R	III
Starley-----	10	III
185----- Nesda	6G	III
186*: Nesda-----	6G	III
Rubble land-----	10	III
187*: Nesda Variant-----	6G	I
Havertal-----	1K	I
188*: Norbert-----	10	III

See footnote at end of table.

Table 8.--Windbreak Suitability Groups
And Planting Zones--Continued

Soil name and map symbol	Suitability group	Planting zone
188*:		
Doney-----	6R	III
Rock outcrop-----	---	---
189*:		
Norbert-----	10	III
Eltzac-----	6R	III
190*:		
Norbert-----	10	III
Reget-----	6R	III
Savar-----	4C	III
191*:		
Norbert-----	10	III
Rock outcrop-----	---	---
192-----	4	I
Nuncho		
193-----	4C	I
Nuncho		
194-----	4C	I
Nuncho		
195-----	4C	I
Nuncho		
196-----	4C	I
Nuncho		
197*:		
Nuncho-----	4C	I
Emigrant-----	6R	I
198*:		
Nuncho-----	4C	I
Emigrant-----	6R	I
199-----	4C	I
Nuncho Variant		

See footnote at end of table.

Table 8.--Windbreak Suitability Groups
And Planting Zones--Continued

Soil name and map symbol	Suitability group	Planting zone
200*:		
Owen Creek-----	6R	III
Echemoor-----	6R	III
Bynum-----	6R	III
201*:		
Parmleed-----	6R	I
Bidman-----	4C	I
202*:		
Parmleed, moist-----	6R	I
Bidman, moist-----	4	I
203*:		
Parmleed, moist-----	6R	I
Bidman, moist-----	4C	I
204*:		
Parmleed-----	6R	I
Renohill-----	6R	I
205*:		
Parmleed, moist-----	6R	I
Renohill, moist-----	6R	I
206*:		
Parmleed, moist-----	6R	I
Renohill, moist-----	6R	I
207*:		
Parmleed-----	6R	I
Worfka-----	10	I
208*:		
Parmleed, moist-----	6R	I
Worfka, moist-----	10	I
209*:		
Parmleed, moist-----	6R	I
Worfka, moist-----	10	I

See footnote at end of table.

Table 8.--Windbreak Suitability Groups
And Planting Zones--Continued

Soil name and map symbol	Suitability group	Planting zone
210*:		
Parmleed, moist-----	6R	I
Worfka, moist-----	10	I
Shingle Variant, moist---	10	I
211*:		
Peritsa-----	6R	III
Abac-----	10	III
212-----	4C	I
Platmak		
213-----	4C	I
Platmak		
214-----	4C	I
Platmak, dry		
215-----	4C	I
Platsher		
216-----	4C	I
Platsher		
217, 218-----	4C	I
Platsher		
219*:		
Platsher-----	4	I
Wolfvar-----	4C	I
220*:		
Platsher-----	4	I
Wolfvar-----	4C	I
221*:		
Platsher-----	4C	I
Wolfvar-----	4C	I
222-----	4C	I
Platsher Variant		
223-----	3	I
Recluse		

See footnote at end of table.

Table 8.--Windbreak Suitability Groups
And Planting Zones--Continued

Soil name and map symbol	Suitability group	Planting zone
224----- Recluse	3	I
225----- Recluse	3	I
226*: Recluse-----	3	I
Bauxson-----	10	I
Baux-----	10	I
227*: Reeder-----	6R	III
Farnuf-----	3	III
228*: Reeder-----	6R	III
Farnuf-----	3	III
229----- Reget	6R	III
230----- Reget	6R	III
231*: Reget-----	6R	III
Savar-----	4C	III
232*: Reget Variant-----	4	III
Reget-----	6R	III
233*: Renohill-----	6R	I
Savageton-----	6R	I
234*: Renohill, moist-----	6R	I
Savageton, moist-----	6R	I
235*: Renohill, moist-----	6R	I

See footnote at end of table.

Table 8.--Windbreak Suitability Groups
And Planting Zones--Continued

Soil name and map symbol	Suitability group	Planting zone
235*: Savageton, moist-----	6R	I
236*: Renchill-----	6R	I
Ulm, dry-----	4C	I
237*: Renchill, moist-----	6R	I
Ulm-----	4C	I
238*: Renchill-----	6R	I
Worfka-----	10	I
239*: Renchill, moist-----	6R	I
Worfka, moist-----	10	I
240*: Renchill, moist-----	6R	I
Wyarno-----	4C	I
241*: Rock outcrop-----	---	---
Agneston-----	6G	III
Rubble land-----	10	III
242*: Rock outcrop-----	---	---
Starman-----	10	III
243*: Rock outcrop-----	---	---
Starman Variant-----	10	III
244*: Sanday, moist-----	10	I
Geyhart, moist-----	6R	I
Hilight, moist-----	10	I

See footnote at end of table.

Table 8.--Windbreak Suitability Groups
And Planting Zones--Continued

Soil name and map symbol	Suitability group	Planting zone
245*:		
Samday-----	10	I
Hilight-----	10	I
246-----	4	III
Savage		
247-----	4	III
Savage		
248-----	4	III
Savage		
249*:		
Savage-----	4	III
Farnuf-----	3	III
250*:		
Savage-----	4C	III
Korchea-----	8	III
251*:		
Savage-----	4	III
Reget-----	6R	III
252*:		
Searing-----	6R	III
Ringling-----	10	III
253-----	4	III
Shaak		
254*:		
Shingle, moist-----	10	I
Baux-----	10	I
Rock outcrop-----	---	---
255*:		
Shingle-----	10	I
Haverdad-----	8	I
256*:		
Shingle, moist-----	10	I

See footnote at end of table.

Table 8.--Windbreak Suitability Groups
And Planting Zones--Continued

Soil name and map symbol	Suitability group	Planting zone
256*: Havardad, moist-----	8	I
257*: Shingle-----	10	I
Nihill-----	6G	I
258*: Shingle, moist-----	10	I
Nihill, moist-----	6G	I
259*: Shingle, moist-----	10	I
Nuncho-----	4C	I
260*: Shingle-----	10	I
Rock outcrop-----	---	---
261*: Shingle, moist-----	10	I
Rock outcrop-----	---	---
262*: Shingle-----	10	I
Samday-----	10	I
263*: Shingle, moist-----	10	I
Samday, moist-----	10	I
264*: Shingle-----	10	I
Taluca-----	10	I
265*: Shingle, moist-----	10	I
Taluca, moist-----	10	I
266*: Shingle-----	10	I

See footnote at end of table.

Table 8.--Windbreak Suitability Groups
And Planting Zones--Continued

Soil name and map symbol	Suitability group	Planting zone
266*: Theedle-----	6R	I
267*: Shingle, moist-----	10	I
Theedle, moist-----	6R	I
268*: Shingle-----	10	I
Theedle-----	6R	I
Kishona-----	8	I
269*: Shingle, moist-----	10	I
Theedle, moist-----	6R	I
Kishona, moist-----	8	I
270*: Shingle, moist-----	10	I
Theedle, moist-----	6R	I
Rock outcrop-----	---	---
271*: Shingle-----	10	I
Wibaux-----	10	I
272*: Shingle, cool-----	10	I
Wibaux, cool-----	10	I
273*: Shingle-----	10	I
Worf-----	10	I
274*: Shingle, moist-----	10	I
Worf, moist-----	10	I
275----- Sinkson	8	III

See footnote at end of table.

Table 8.--Windbreak Suitability Groups
And Planting Zones--Continued

Soil name and map symbol	Suitability group	Planting zone
276*:		
Spearman-----	6R	I
Wibaux-----	10	I
277*:		
Taluca-----	10	I
Tulloch-----	7	I
Rock outcrop-----	---	---
278*:		
Taluca-----	10	I
Tulloch-----	7	I
Vonalee-----	5	I
279*:		
Taluca, moist-----	10	I
Tulloch, moist-----	7	I
Vonalee, moist-----	5	I
280*:		
Taluca Variant-----	10	I
Treoff-----	10	I
Theedle Variant-----	6R	I
281*:		
Theedle-----	6R	I
Kishona-----	8	I
282*:		
Theedle, moist-----	6R	I
Kishona, moist-----	8	I
283*:		
Theedle, moist-----	6R	I
Kishona, moist-----	8	I

See footnote at end of table.

Table 8.--Windbreak Suitability Groups
And Planting Zones--Continued

Soil name and map symbol	Suitability group	Planting zone
284*:		
Tolman-----	10	III
Beeno-----	6R	III
Beenom-----	10	III
285*:		
Trimad-----	6G	III
Doney-----	6R	III
Wayden-----	10	III
286*:		
Trimad-----	6G	III
Trivar-----	8	III
287*:		
Trimad-----	6G	III
Twin Creek-----	3	III
288-----	3	III
Twin Creek		
289-----	1	III
Twin Creek Variant		
290-----	4C	I
Ulm		
291-----	4C	I
Ulm		
292, 293-----	4C	I
Ulm, dry		
294*:		
Urban land-----	---	---
Kishona, moist-----	8	I
Clarkelen-----	5K	I
295*:		
Urban land-----	---	---
Platsher-----	4	I

See footnote at end of table.

Table 8.--Windbreak Suitability Groups
And Planting Zones--Continued

Soil name and map symbol	Suitability group	Planting zone
295*: Wolfvar-----	4C	I
296*: Urban land-----	---	---
Wyarno-----	4C	I
Nuncho-----	4C	I
297*: Ustic Torriorthents-Pits.		
298----- Wayden	10	III
299*: Wetterdon-----	3	I
Recluse-----	3	I
300*: Wibaux-----	10	I
Reddale-----	6R	I
301----- Windham	6R	III
302, 303----- Wolf	5K	I
304*: Worfka-----	10	I
Shingle-----	10	I
Samday-----	10	I
305*: Worfka, moist-----	10	I
Shingle, moist-----	10	I
Samday, moist-----	10	I
306----- Worthenton	10	I
307*: Worthenton-----	10	I

See footnote at end of table.

Table 8.--Windbreak Suitability Groups
And Planting Zones--Continued

Soil name and map symbol	Suitability group	Planting zone
307*: Recluse-----	3	I
308*: Worthenton Variant-----	10	III
Assinniboine Variant-----	1	III
309----- Wyarno	4C	I
310----- Wyarno	4C	I
311----- Wyarno	4C	I
312----- Wyarno, dry	4C	I
313----- Wyarno, dry	4C	I
314----- Wyarno, dry	4C	I
315----- Zigweid	8	I
316*: Zigweid-----	8	I
Cambria-----	8	I
317*: Zigweid-----	8	I
Kishona-----	8	I
Cambria-----	8	I
318*: Zigweid, moist-----	8	I
Kishona, moist-----	8	I
Cambria, moist-----	8	I
319*: Zigweid, moist-----	8	I

See footnote at end of table.

Table 8.--Windbreak Suitability Groups
And Planting Zones--Continued

Soil name and map symbol	Suitability group	Planting zone
319*:		
Kishona, moist-----	8	I
Cambria, moist-----	8	I
320*:		
Zigweid, moist-----	8	I
Kishona, moist-----	8	I
Cambria, moist-----	8	I

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 9A.--Expected Heights of Selected Woody Species At Age 20, By Suitability Group, In Planting Zone I

(Dashes indicate that the species is not suited to the soils in the group)

Woody species	Group 1			Group 1K			Group 3			Group 4			Group 4C		
	Precipitation			Precipitation			Precipitation			Precipitation			Precipitation		
	10- 14"	15- 19"	Irrig- gated												
	Ft	Ft	Ft												
Conifers*:															
Austrian pine-----	---	17	22	---	---	---	---	**16	22	---	15	22	---	---	22
Black Hills spruce-----	---	**16	21	**15	17	22	---	**16	22	---	---	20	---	---	20
Blue spruce-----	**12	16	22	---	16	22	---	16	22	---	---	20	---	---	19
Eastern redcedar-----	15	18	23	15	17	22	10	13	21	10	12	20	8	11	20
Ponderosa pine-----	**16	18	23	**16	18	23	**14	16	22	**12	15	22	**10	12	21
Rocky Mountain juniper--	10	14	21	10	14	21	8	10	18	8	10	18	8	10	18
Scotch pine-----	---	**17	21	---	---	---	---	**15	20	---	---	20	---	---	20
Deciduous trees:															
Boxelder-----	---	**16	21	---	---	---	---	---	20	---	---	19	---	---	19
Golden willow-----	**20	**24	31	**20	**24	31	---	---	29	---	---	29	---	---	29
Green ash-----	**14	18	28	**14	17	27	**13	16	28	**13	15	28	**10	12	25
Hackberry-----	**14	18	26	**14	17	26	**14	18	24	**14	18	24	**12	16	23
Honeylocust-----	15	19	28	15	19	28	14	17	26	13	16	26	12	14	24
Plains cottonwood-----	**29	**31	41	**29	31	41	---	---	41	---	---	41	---	---	41
Russian-olive-----	15	18	24	16	18	24	13	15	23	11	14	22	9	11	22
Siberian crabapple-----	**11	13	19	---	---	---	---	12	19	---	12	19	---	11	19
Siberian elm-----	**20	24	33	**20	24	33	**18	23	33	**17	21	33	**15	19	31
Shrubs:															
American plum-----	---	**7	10	---	**7	10	---	**7	10	---	**7	10	---	**7	10
Basin big sagebrush-----	---	---	---	---	---	---	4	5	---	---	---	---	---	---	---
Common chokecherry-----	**7	**7	11	**7	**7	11	**7	**8	11	**7	8	11	**7	8	11
Fourwing saltbush-----	2	---	---	2	---	---	2	---	---	2	2	3	2	---	---
Golden currant-----	---	**4	6	---	---	---	---	**4	6	---	**4	6	---	---	6
Greasewood-----	---	---	---	3	---	---	---	---	---	---	---	---	---	---	---
Lilac-----	**5	7	10	**5	7	10	**5	7	10	**5	7	10	**4	5	9
Nanking cherry-----	**3	5	8	---	---	---	**3	5	8	**3	5	8	**3	5	8
Peking cotoneaster-----	**3	5	9	---	---	---	**3	4	8	**3	4	8	---	4	8
Redosier dogwood-----	---	4	8	---	---	---	---	---	8	---	---	8	---	---	7
Rubber rabbitbrush-----	---	---	---	3	---	---	---	---	---	---	---	---	2	---	---
Rugosa rose-----	2	4	6	---	---	---	3	4	6	3	4	6	---	3	5
Saskatoon serviceberry--	---	**4	7	---	---	---	---	---	5	---	---	5	---	---	5
Siberian peashrub-----	7	9	14	6	9	14	7	8	12	6	7	12	4	5	12
Silver buffaloberry-----	---	**7	12	---	**7	12	---	**7	11	---	**7	10	---	---	10
Skunkbush sumac-----	3	5	9	3	5	9	3	5	9	3	5	9	3	4	8
Tatarian honeysuckle-----	6	8	11	6	8	11	5	7	11	5	7	11	4	6	11
Western sandcherry-----	2	3	3	---	---	---	2	3	3	2	3	3	---	---	3

See footnotes at end of table.

Table 9A.--Expected Heights of Selected Woody Species At Age 20, By Suitability Group, In Planting Zone I--Continued

Woody species	Group 5			Group 5K			Group 6G			Group 6R		
	Precipitation			Precipitation			Precipitation			Precipitation		
	10- 14"	15- 19"	Irrigated	10- 14"	15- 19"	Irrigated	10- 14"	15- 19"	Irrigated	10- 15"	15- 19"	Irrigated
	Ft	Ft	Ft									
Conifers*:												
Austrian pine-----	---	**16	22	---	---	---	---	---	16	---	**13	22
Black Hills spruce-----	---	---	20	---	---	20	---	---	20	---	---	20
Blue spruce-----	---	---	21	---	---	21	---	---	21	---	---	21
Eastern redcedar-----	10	13	20	8	10	20	8	10	20	8	11	20
Ponderosa pine-----	**13	15	22	**10	13	22	**10	13	22	**11	13	22
Rocky Mountain juniper--	8	10	17	8	10	17	8	10	18	8	10	18
Scotch pine-----	---	**15	20	---	---	---	---	13	20	---	13	20
Deciduous trees:												
Boxelder-----	---	---	20	---	---	---	---	---	20	---	---	20
Golden willow-----	---	---	29	---	---	---	---	---	---	---	---	29
Green ash-----	**12	15	27	**11	13	28	---	**13	28	**11	14	28
Hackberry-----	---	14	24	---	---	25	---	---	24	---	12	25
Honeylocust-----	12	15	26	11	14	28	---	13	26	14	17	27
Plains cottonwood-----	---	---	41	---	---	41	---	---	35	---	---	35
Russian-olive-----	11	14	23	9	11	23	10	13	23	11	14	24
Siberian crabapple-----	---	12	19	---	---	---	---	---	19	---	**12	19
Siberian elm-----	**17	22	33	**16	20	33	**15	20	33	17	21	33
Shrubs:												
American plum-----	---	**7	10	---	---	10	---	---	10	---	---	10
Basin big sagebrush-----	4	---	---	3	---	---	3	4	---	3	4	---
Common chokecherry-----	**6	8	11	---	7	11	---	**7	11	---	**7	11
Fourwing saltbush-----	2	---	---	2	2	---	2	2	---	2	2	---
Golden currant-----	---	---	6	---	---	---	---	---	6	---	---	6
Greasewood-----	---	---	3	---	---	---	---	---	---	---	---	---
Lilac-----	**5	6	10	**4	5	10	---	**5	9	---	**5	9
Nanking cherry-----	---	**4	8	---	---	---	---	---	7	---	**4	8
Peking cotoneaster-----	---	**4	8	---	---	---	---	**4	8	---	**4	8
Redosier dogwood-----	---	---	8	---	---	---	---	---	7	---	---	7
Rubber rabbitbrush-----	---	---	---	2	---	---	2	3	---	3	3	---
Rugosa rose-----	2	3	6	---	---	---	2	3	6	2	3	6
Saskatoon serviceberry--	---	---	5	---	---	5	---	---	5	---	---	5
Siberian peashrub-----	5	6	12	4	6	12	5	6	12	5	7	12
Silver buffaloberry-----	---	**6	11	---	**6	11	---	**5	11	---	**7	11
Skunkbush sumac-----	3	5	8	3	5	8	---	3	8	**3	5	8
Tatarian honeysuckle-----	5	7	11	4	6	11	---	6	11	5	7	11
Western sandcherry-----	2	3	3	---	---	---	---	2	3	---	2	3

See footnotes at end of table.

Table 9A.--Expected Heights of Selected Woody Species At Age 20, By Suitability Group,
In Planting Zone I--Continued

Woody species	Group 7			Group 8			Group 9G			Group 9N		
	Precipitation			Precipitation			Precipitation			Precipitation		
	10- 14"	15- 19"	Irrig- gated									
	Ft	Ft	Ft									
Conifers*:												
Austrian pine-----	---	**12	22	---	---	---	---	---	---	---	---	---
Black Hills spruce-----	---	---	20	---	---	21	---	---	---	---	---	---
Blue spruce-----	---	---	21	---	---	21	---	---	---	---	---	---
Eastern redcedar-----	**7	9	20	8	10	20	---	10	20	---	**7	17
Ponderosa pine-----	---	**11	22	**11	13	22	---	---	---	**9	11	21
Rocky Mountain juniper--	**6	8	18	8	10	17	**7	9	18	**5	6	16
Scotch pine-----	---	**12	20	---	---	---	---	---	---	---	---	---
Deciduous trees:												
Boxelder-----	---	---	20	---	---	---	---	---	---	---	---	---
Golden willow-----	---	---	---	---	---	---	---	---	---	---	---	---
Green ash-----	---	12	28	11	13	30	---	16	27	---	**11	24
Hackberry-----	---	---	24	---	---	26	---	---	---	---	---	---
Honeylocust-----	---	13	26	11	14	29	14	17	27	---	---	---
Plains cottonwood-----	---	---	30	---	---	41	---	27	41	---	---	35
Russian-olive-----	---	**13	23	9	11	22	13	16	23	8	9	22
Siberian crabapple-----	---	---	19	---	---	---	---	---	---	8	---	---
Siberian elm-----	---	16	29	17	20	33	**16	21	32	**10	12	30
Shrubs:												
American plum-----	---	---	10	---	---	10	---	---	---	---	---	---
Basin big sagebrush-----	---	---	---	3	---	---	---	---	---	4	---	---
Common chokecherry-----	---	---	11	---	7	11	---	---	---	---	---	---
Fourwing saltbush-----	---	---	---	2	---	---	2	2	---	3	---	---
Golden currant-----	---	---	6	---	---	---	3	4	---	---	---	---
Greasewood-----	---	---	---	---	---	---	3	2	---	3	---	---
Lilac-----	---	**5	9	4	5	10	**5	6	10	---	5	10
Nanking cherry-----	---	---	7	---	---	---	---	---	---	---	---	---
Peking cotoneaster-----	---	---	8	---	---	---	---	---	---	---	---	---
Redosier dogwood-----	---	---	7	---	---	---	---	---	---	---	---	---
Rubber rabbitbrush-----	**2	3	---	2	---	---	2	3	---	3	---	---
Rugosa rose-----	**2	3	6	---	---	---	---	---	---	---	---	---
Saskatoon serviceberry--	---	---	5	---	---	---	---	---	---	---	---	---
Siberian peashrub-----	**4	6	12	5	6	12	5	8	12	4	5	10
Silver buffaloberry-----	---	---	11	---	6	12	---	7	11	---	5	11
Skunkbush sumac-----	---	---	---	3	5	8	3	5	9	3	4	9
Tatarian honeysuckle-----	---	5	11	5	7	11	6	7	11	4	5	11
Western sandcherry-----	---	2	3	---	---	---	---	---	---	---	---	---

* New plantings in areas that are prone to high wind need protection from the wind during the 3- to 5-year establishment period. A midwinter watering is also recommended to prevent foliar desiccation.

** Supplemental water is needed during the 3- to 5-year establishment period.

Table 9B.--Expected Heights of Selected Woody Species At Age 20, By Suitability Group, In Planting Zone III

(Dashes indicate that the species is not suited to the soils in the group)

Woody species	Group 1				Group 1K				Group 3				Group 4			
	Precipitation				Precipitation				Precipitation				Precipitation			
	10- 14"	15- 19"	20+ 20+"	Irrigated												
	Ft	Ft	Ft	Ft												
Conifers:																
Blue spruce-----	*14	16	20	22	*13	16	20	22	---	16	18	22	---	14	16	22
Douglas-fir-----	---	---	---	---	---	---	---	---	---	20	25	26	---	16	20	26
Engelmann spruce-----	*14	16	25	26	---	---	---	---	---	16	18	22	---	14	16	22
Lodgepole pine-----	---	---	---	---	---	---	---	---	---	20	25	26	---	16	20	26
Ponderosa pine-----	---	---	---	---	---	---	---	---	*12	16	18	24	*12	15	17	24
Rocky Mountain juniper--	---	---	---	---	---	---	---	---	9	10	12	20	9	11	13	20
Scotch pine-----	---	---	---	---	---	---	---	---	---	15	18	22	---	---	15	22
Subalpine fir-----	---	*12	15	15	---	---	---	---	---	---	13	13	---	---	12	12
White fir-----	*14	17	22	26	---	---	---	---	---	---	---	---	---	---	12	12
Deciduous trees:																
Boxelder-----	---	16	18	22	---	---	---	---	---	14	16	22	---	*13	15	22
Golden willow-----	*21	24	26	32	*19	23	26	32	---	---	---	32	---	---	---	32
Green ash-----	14	18	22	30	14	18	22	30	12	16	18	30	13	15	17	30
Narrowleaf cottonwood---	*22	27	36	42	---	---	---	---	---	---	---	38	---	---	---	35
Plains cottonwood-----	*22	27	36	42	*20	25	36	42	---	---	---	---	---	---	---	36
Russian-olive-----	15	18	22	25	15	18	20	25	13	15	16	25	11	13	16	25
Siberian crabapple-----	*11	12	15	19	---	---	---	---	---	12	15	19	---	---	---	---
Siberian elm-----	*20	27	28	36	*20	27	28	35	*20	26	28	35	*19	24	26	36
White willow-----	*21	24	26	32	*19	23	26	32	---	---	---	32	---	---	---	32
Shrubs:																
American plum-----	---	*6	6	11	---	*6	7	11	---	*6	7	11	---	*6	7	11
Basin big sagebrush-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Common chokecherry-----	*7	8	8	12	*7	8	8	12	*7	8	9	12	*7	8	8	12
Common snowberry-----	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Fourwing saltbush-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Golden currant-----	---	*4	4	4	---	---	---	---	---	4	4	4	---	3	4	4
Greasewood-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Lilac-----	*4	6	6	10	*4	6	6	10	*4	6	7	10	*4	6	7	10
Redosier dogwood-----	---	---	6	8	---	---	---	---	---	---	5	6	---	---	6	7
Rocky Mountain maple----	---	7	9	10	---	---	---	---	---	---	---	---	---	---	---	---
Rubber rabbitbrush-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Rugosa rose-----	3	4	4	4	3	4	4	4	4	4	4	4	3	4	4	4
Saskatoon serviceberry--	---	4	4	4	---	---	---	---	---	4	4	5	---	---	4	5
Siberian peashrub-----	5	7	7	10	5	7	7	10	5	7	7	9	6	7	8	9
Silver buffaloberry-----	---	*7	9	11	---	*7	9	11	---	*7	8	11	---	*7	9	11
Skunkbush sumac-----	3	5	6	7	3	5	6	7	3	4	6	7	4	6	6	7
Tatarian honeysuckle----	5	6	7	11	5	6	7	11	5	7	8	11	5	6	9	11
Woods rose-----	3	4	4	4	3	4	4	4	---	---	---	---	---	---	---	---

See footnote at end of table.

Table 9B.--Expected Heights of Selected Woody Species At Age 20, By Suitability Group, In Planting Zone III--Continued

Woody species	Group 4C				Group 5				Group 5K				Group 6G			
	Precipitation				Precipitation				Precipitation				Precipitation			
	10- 14"	15- 19"	20+ 24"	Irrigated												
	Ft	Ft	Ft	Ft												
Conifers:																
Blue spruce-----	---	---	17	20	---	16	20	22	---	---	16	20	---	---	14	18
Douglas-fir-----	---	---	---	---	---	---	18	24	---	---	---	---	---	---	---	---
Engelmann spruce-----	---	---	17	20	---	17	21	24	---	---	---	---	---	---	14	18
Lodgepole pine-----	---	---	---	---	---	17	22	26	---	---	---	---	---	---	16	22
Ponderosa pine-----	*10	12	14	22	*12	17	19	24	*10	12	14	22	*10	14	16	22
Rocky Mountain juniper--	9	10	12	20	9	11	13	18	9	10	12	17	9	10	12	18
Scotch pine-----	---	---	---	20	---	---	18	22	---	---	---	---	---	---	---	21
Subalpine fir-----	---	---	---	---	---	---	13	13	---	---	---	---	---	---	---	---
White fir-----	---	---	---	---	---	---	18	24	---	---	---	---	---	---	---	22
Deciduous trees:																
Boxelder-----	---	---	---	20	---	---	16	20	---	---	---	---	---	---	---	18
Golden willow-----	---	---	---	28	---	---	---	27	---	---	---	27	---	---	---	---
Green ash-----	11	12	14	27	12	16	18	26	10	12	14	26	---	12	14	26
Narrowleaf cottonwood---	---	---	---	32	---	---	---	33	---	---	---	31	---	---	---	---
Plains cottonwood-----	---	---	---	33	---	---	---	33	---	---	---	31	---	---	---	32
Russian-olive-----	10	11	13	22	10	13	15	23	9	11	13	25	10	12	14	23
Siberian crabapple-----	---	12	15	19	---	12	15	19	---	---	---	---	---	---	---	---
Siberian elm-----	*19	21	24	32	*20	24	26	33	*17	21	24	31	*16	20	24	29
White willow-----	---	---	---	27	---	---	---	27	---	---	---	27	---	---	---	---
Shrubs:																
American plum-----	---	*6	6	9	---	6	7	10	---	---	---	11	---	---	7	9
Basin big sagebrush-----	2	3	---	---	2	3	---	---	3	3	---	---	3	3	---	---
Common chokecherry-----	*7	8	8	11	*7	8	9	11	---	7	9	10	---	7	8	11
Common snowberry-----	---	---	---	---	---	3	3	3	---	3	3	3	---	---	---	---
Fourwing saltbush-----	---	---	---	---	---	---	---	---	2	2	---	---	---	---	---	---
Golden currant-----	---	3	3	4	---	*3	4	4	---	---	---	---	---	---	4	4
Greasewood-----	---	---	---	---	---	---	---	---	3	3	---	---	---	---	---	---
Lilac-----	*4	5	6	10	*5	6	7	9	*4	6	7	10	---	5	7	9
Redosier dogwood-----	---	---	---	7	---	---	6	6	---	---	---	---	---	---	---	---
Rocky Mountain maple-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Rubber rabbitbrush-----	2	3	---	---	---	---	---	---	2	---	---	---	2	3	---	---
Rugosa rose-----	---	3	3	4	3	4	4	4	4	---	---	---	---	3	4	4
Saskatoon serviceberry--	---	---	---	---	---	---	4	5	---	---	---	---	---	---	4	6
Siberian peashrub-----	4	5	7	8	6	7	8	9	6	7	7	9	6	7	8	9
Silver buffaloberry-----	---	*5	7	11	---	*7	8	11	---	*6	8	11	---	*6	8	10
Skunkbush sumac-----	3	4	5	6	4	5	5	6	---	---	---	---	---	4	6	7
Tatarian honeysuckle----	4	6	8	11	5	7	8	11	5	7	8	11	5	7	8	11
Woods rose-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

Table 9B.--Expected Heights of Selected Woody Species At Age 20, By Suitability Group, In Planting Zone III--Continued

Woody species	Group 6R				Group 8				Group 9G			
	Precipitation				Precipitation				Precipitation			
	10- 14"	15- 19"	20+ 20"	Irrig- gated	10- 14"	15- 19"	20+ 20"	Irrig- gated	10- 14"	15- 19"	20+ 20"	Irrig- gated
	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft	Ft
Conifers:												
Blue spruce-----	---	---	16	20	---	---	16	21	---	---	---	---
Douglas-fir-----	---	---	18	20	---	---	---	---	---	---	---	---
Engelmann spruce-----	---	---	16	20	---	---	---	---	---	---	---	---
Lodgepole pine-----	---	16	19	25	---	---	---	---	---	---	---	---
Ponderosa pine-----	*12	17	19	22	*11	12	16	22	---	---	---	---
Rocky Mountain juniper--	9	11	13	17	8	10	13	18	*7	8	9	18
Scotch pine-----	---	---	18	21	---	---	---	---	---	---	---	---
Subalpine fir-----	---	---	---	---	---	---	---	---	---	---	---	---
White fir-----	---	---	17	21	---	---	---	---	---	---	---	---
Deciduous trees:												
Boxelder-----	---	---	---	20	---	---	---	---	---	---	---	---
Golden willow-----	---	---	---	---	---	---	---	25	---	---	28	34
Green ash-----	11	13	15	24	11	13	16	29	13	16	19	28
Narrowleaf cottonwood---	---	---	---	33	---	---	---	32	---	---	---	---
Plains cottonwood-----	---	---	---	---	---	---	---	---	---	---	32	42
Russian-olive-----	11	13	15	22	9	11	14	21	14	16	19	24
Siberian crabapple-----	---	---	---	---	---	---	---	---	---	---	---	---
Siberian elm-----	*19	22	25	31	*16	19	23	33	*19	22	27	33
White willow-----	---	---	---	27	---	---	---	25	---	---	27	34
Shrubs:												
American plum-----	---	---	6	8	---	---	---	---	---	---	---	---
Basin big sagebrush-----	3	3	---	---	3	3	---	---	---	---	---	---
Common chokecherry-----	---	7	8	11	---	---	---	---	---	---	---	---
Common snowberry-----	---	2	3	3	---	3	3	3	---	---	---	---
Fourwing saltbush-----	---	---	---	---	2	2	---	---	2	2	---	---
Golden currant-----	---	3	3	4	---	---	---	---	---	---	---	---
Greasewood-----	---	---	---	---	---	---	---	---	2	4	---	---
Lilac-----	---	5	6	8	*4	6	7	10	*5	6	7	10
Redosier dogwood-----	---	---	6	8	---	---	---	---	---	---	---	---
Rocky Mountain maple-----	---	---	---	---	---	---	---	---	---	---	---	---
Rubber rabbitbrush-----	2	3	---	---	2	3	---	---	2	2	---	---
Rugosa rose-----	---	3	3	4	---	---	---	---	---	---	---	---
Saskatoon serviceberry--	---	---	4	5	---	---	---	---	---	---	---	---
Siberian peashrub-----	5	7	8	12	5	6	7	12	---	---	---	---
Silver buffaloberry-----	---	*7	8	11	---	*5	8	12	---	7	8	11
Skunkbush sumac-----	3	4	5	8	3	5	7	9	---	5	6	7
Tatarian honeysuckle-----	5	7	8	11	5	6	8	11	5	6	7	11
Woods rose-----	---	---	---	---	---	---	---	---	---	---	---	---

* Supplemental water is needed during the 3- to 5-year establishment period.

Table 10.--Building Site Development

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
100*:						
Abac-----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope, depth to rock.
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: depth to rock.
101*:						
Absted-----	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Severe: excess sodium.
Haverdad-----	Slight-----	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: low strength.	Slight.
102*:						
Absted, moist----	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Severe: excess sodium.
Haverdad, moist--	Slight-----	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: low strength.	Slight.
103*:						
Absted-----	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Severe: excess sodium.
Slickspots.						
104*:						
Agneston-----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Granile-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
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: depth to rock.

See footnote at end of table.

Table 10.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
105*: Arnegard-----	Slight-----	Slight-----	Slight-----	Slight-----	Moderate: low strength, frost action.	Slight.
Farnuf-----	Slight-----	Slight-----	Slight-----	Moderate: slope.	Moderate: low strength, frost action.	Slight.
106*: Arnegard-----	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: low strength, slope, frost action.	Moderate: slope.
Farnuf-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
107*: Assinniboine----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Dast-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
108*: Baux-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: droughty, slope.
Bauxson-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
109*: Baux, dry-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: droughty, slope.
Bauxson, dry----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
110*: Baux-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: droughty, slope.
Bauxson-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Kirtley-----	Moderate: depth to rock.	Slight-----	Moderate: depth to rock.	Moderate: slope.	Moderate: frost action.	Moderate: depth to rock.

See footnote at end of table.

Table 10.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
111*: Baux-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: droughty, slope.
Bauxson-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Wetterdon-----	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Severe: low strength.	Slight.
112*: Bidman-----	Moderate: too clayey.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Severe: low strength.	Slight.
Arvada-----	Slight-----	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Severe: excess sodium.
113*: Bidman, moist----	Moderate: too clayey.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Severe: low strength.	Slight.
Arvada, moist----	Slight-----	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Severe: excess sodium.
114*: Bidman-----	Moderate: too clayey.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Severe: low strength.	Slight.
Ulm, dry-----	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Slight.
115*: Bidman, moist----	Moderate: too clayey.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Severe: low strength.	Slight.
Ulm-----	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Slight.
116*: Big Horn-----	Moderate: too clayey.	Severe: shrink-swell.	Slight-----	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Slight.
Wolf, dry-----	Slight-----	Slight-----	Slight-----	Slight-----	Moderate: frost action.	Slight.

See footnote at end of table.

Table 10.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
117*:						
Cambria-----	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Moderate: shrink-swell, low strength.	Slight.
Forkwood-----	Slight-----	Slight-----	Slight-----	Moderate: slope.	Moderate: low strength.	Slight.
118*:						
Cambria, moist---	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Moderate: shrink-swell, low strength.	Slight.
Forkwood, moist---	Slight-----	Slight-----	Slight-----	Moderate: slope.	Moderate: low strength.	Slight.
119*, 120*:						
Cedak-----	Moderate: depth to rock.	Slight-----	Moderate: depth to rock.	Moderate: slope.	Moderate: frost action.	Moderate: depth to rock.
Recluse-----	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Moderate: shrink-swell, low strength.	Slight.
121*:						
Cedak-----	Moderate: depth to rock, slope.	Moderate: slope.	Moderate: depth to rock, slope.	Severe: slope.	Moderate: slope, frost action.	Moderate: slope, depth to rock.
Recluse-----	Moderate: slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Moderate: shrink-swell, low strength, slope.	Moderate: slope.
122*:						
Cedak, dry-----	Moderate: depth to rock, slope.	Moderate: shrink-swell, slope.	Moderate: depth to rock, slope, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: slope, depth to rock.
Recluse, dry-----	Moderate: slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Moderate: shrink-swell, low strength, slope.	Moderate: slope.
123-----						
Clarkelen	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding.	Slight.
124-----						
Clarkelen, moist	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding.	Slight.

See footnote at end of table.

Table 10.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
125*: Cloud Peak-----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Tolman-----	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.
126*: Coaliams, moist--	Moderate: wetness.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: low strength, flooding, frost action.	Slight.
Worthenton, moist	Severe: wetness.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: shrink-swell, low strength, wetness.	Severe: wetness.
127*: Cushman-----	Moderate: depth to rock, slope.	Moderate: shrink-swell, slope.	Moderate: depth to rock, slope, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: slope, depth to rock.
Forkwood-----	Slight-----	Slight-----	Slight-----	Moderate: slope.	Moderate: low strength.	Slight.
128*: Cushman, moist---	Moderate: depth to rock.	Moderate: shrink-swell.	Moderate: depth to rock, shrink-swell.	Moderate: shrink-swell, slope.	Severe: low strength.	Moderate: depth to rock.
Forkwood, moist--	Slight-----	Slight-----	Slight-----	Moderate: slope.	Moderate: low strength.	Slight.
129*: Cushman, moist---	Moderate: depth to rock, slope.	Moderate: shrink-swell, slope.	Moderate: depth to rock, slope, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: slope, depth to rock.
Forkwood, moist--	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: low strength, slope.	Moderate: slope.

See footnote at end of table.

Table 10.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
130*:						
Cushman-----	Moderate: depth to rock, slope.	Moderate: shrink-swell, slope.	Moderate: depth to rock, slope, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: slope, depth to rock.
Worff-----	Severe: depth to rock.	Moderate: slope, depth to rock.	Severe: depth to rock.	Severe: slope.	Moderate: depth to rock, low strength, slope.	Severe: depth to rock.
131*:						
Cushman, moist---	Moderate: depth to rock, slope.	Moderate: shrink-swell, slope.	Moderate: depth to rock, slope, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: slope, depth to rock.
Worff, moist-----	Severe: depth to rock.	Moderate: slope, depth to rock.	Severe: depth to rock.	Severe: slope.	Moderate: depth to rock, low strength, slope.	Severe: depth to rock.
132-----						
Dast Variant	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.
133*:						
Doney-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Doney Variant----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope, depth to rock.
134*:						
Doney-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Ringling-----	Severe: large stones, slope.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: droughty, slope.
135*:						
Doney-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Ringling-----	Severe: large stones, slope.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: droughty, slope.

See footnote at end of table.

Table 10.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
135*: 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: depth to rock.
136----- Draknab	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding.	Moderate: droughty.
137----- Farnuf	Slight-----	Slight-----	Slight-----	Slight-----	Moderate: low strength, frost action.	Slight.
138----- Farnuf	Slight-----	Slight-----	Slight-----	Moderate: slope.	Moderate: low strength, frost action.	Slight.
139----- Farnuf	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: low strength, slope, frost action.	Moderate: slope.
140----- Farnuf Variant, wet	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: low strength.	Moderate: wetness.
141*: Farnuf Variant---	Severe: cutbanks cave.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Severe: low strength.	Slight.
Cloud Peak Variant-----	Severe: cutbanks cave.	Slight-----	Slight-----	Slight-----	Moderate: frost action.	Moderate: droughty.
142----- Forkwood	Slight-----	Slight-----	Slight-----	Slight-----	Moderate: low strength.	Slight.
143, 144----- Forkwood	Slight-----	Slight-----	Slight-----	Moderate: slope.	Moderate: low strength.	Slight.
145*: Gayhart-----	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
Bahl-----	Moderate: too clayey, slope.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength.	Moderate: slope.

See footnote at end of table.

Table 10.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
146*: Gayhart, moist---	Moderate: depth to rock, too clayey, slope.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength.	Moderate: slope, depth to rock.
Bahl, moist-----	Moderate: too clayey, slope.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength.	Moderate: slope.
147*: Hardhart-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Starley-----	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.
148*: Hargreave-----	Moderate: depth to rock.	Slight-----	Moderate: depth to rock.	Moderate: slope.	Moderate: frost action.	Moderate: depth to rock.
Moskee-----	Slight-----	Moderate: shrink-swell.	Slight-----	Moderate: shrink-swell, slope.	Moderate: frost action.	Slight.
149*: Hargreave-----	Moderate: depth to rock, slope.	Moderate: slope.	Moderate: depth to rock, slope.	Severe: slope.	Moderate: slope, frost action.	Moderate: slope, depth to rock.
Moskee-----	Moderate: slope.	Moderate: shrink-swell, slope.	Moderate: slope.	Severe: slope.	Moderate: shrink-swell, slope, frost action.	Moderate: slope.
150*: Hargreave, dry---	Moderate: depth to rock, slope.	Moderate: slope.	Moderate: depth to rock, slope.	Severe: slope.	Moderate: slope, frost action.	Moderate: slope, depth to rock.
Moskee, dry-----	Slight-----	Moderate: shrink-swell.	Slight-----	Moderate: shrink-swell, slope.	Moderate: shrink-swell, frost action.	Slight.
151----- Harlan, dry	Slight-----	Slight-----	Slight-----	Moderate: slope.	Moderate: low strength, frost action.	Slight.

See footnote at end of table.

Table 10.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
152*:						
Harlan-----	Slight-----	Slight-----	Slight-----	Moderate: slope.	Moderate: low strength, frost action.	Slight.
Kirtley-----	Moderate: depth to rock.	Slight-----	Moderate: depth to rock.	Moderate: slope.	Moderate: frost action.	Moderate: depth to rock.
153*:						
Harlan-----	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: low strength, slope, frost action.	Moderate: slope.
Kirtley-----	Moderate: depth to rock, slope.	Moderate: slope.	Moderate: depth to rock, slope.	Severe: slope.	Moderate: slope, frost action.	Moderate: slope, depth to rock.
154-----						
Haverdad-----	Slight-----	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: low strength.	Slight.
155-----						
Haverdad, moist-----	Slight-----	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: low strength.	Slight.
156-----						
Haverdad, saline-----	Severe: wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: low strength, flooding.	Moderate: wetness, flooding.
157-----						
Haverdad, moist, saline-----	Severe: wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: low strength, flooding.	Moderate: wetness, flooding.
158*:						
Haverdad-----	Moderate: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.
Draknab-----	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.
159*:						
Haverdad, moist-----	Moderate: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.
Draknab, moist-----	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.
160*:						
Haverdad-----	Moderate: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.

See footnote at end of table.

Table 10.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
160*: Worthenton-----	Severe: wetness.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: shrink-swell, low strength, wetness.	Severe: wetness, flooding.
161*: Haverdad, moist--	Moderate: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.
Worthenton-----	Severe: wetness.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: shrink-swell, low strength, wetness.	Severe: wetness, flooding.
162----- Havertel	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: droughty, flooding.
163*: Hesperus Variant-	Severe: cutbanks cave, wetness, slope.	Severe: slope.	Severe: wetness, slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
Regat-----	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
164*: Hiland-----	Moderate: slope.	Moderate: shrink-swell, slope.	Moderate: slope.	Severe: slope.	Moderate: shrink-swell, slope.	Moderate: slope.
Bowbac-----	Moderate: depth to rock, slope.	Moderate: slope.	Moderate: depth to rock, slope.	Severe: slope.	Moderate: slope.	Moderate: slope, depth to rock.
165*: Hiland, moist---	Slight-----	Moderate: shrink-swell.	Slight-----	Moderate: shrink-swell, slope.	Moderate: shrink-swell.	Slight.
Bowbac, moist---	Moderate: depth to rock, slope.	Moderate: slope.	Moderate: depth to rock, slope.	Severe: slope.	Moderate: slope.	Moderate: slope, depth to rock.

See footnote at end of table.

Table 10.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
166*:						
Hiland-----	Moderate: slope.	Moderate: shrink-swell, slope.	Moderate: slope.	Severe: slope.	Moderate: shrink-swell, slope.	Moderate: slope.
Decolney-----	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope.
167*:						
Hiland, moist----	Slight-----	Moderate: shrink-swell.	Slight-----	Moderate: shrink-swell, slope.	Moderate: shrink-swell.	Slight.
Vonalee, moist----	Severe: cutbanks cave.	Slight-----	Slight-----	Moderate: slope.	Slight-----	Moderate: droughthy.
168*:						
Hilight-----	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, depth to rock.
Rock outcrop----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope, depth to rock.
169*:						
Jonpol-----	Moderate: depth to rock.	Moderate: shrink-swell.	Moderate: depth to rock, shrink-swell.	Moderate: shrink-swell, slope.	Severe: low strength.	Moderate: depth to rock.
Platmak-----	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Severe: low strength.	Slight.
170*:						
Jonpol-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
Platmak-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
171*:						
Kishona-----	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Severe: low strength.	Slight.
Cambria-----	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, low strength.	Slight.

See footnote at end of table.

Table 10.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
172*: Kishona-----	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Severe: low strength.	Slight.
Cambria-----	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Moderate: shrink-swell, low strength.	Slight.
173*: Lambman-----	Severe: depth to rock.	Moderate: slope, depth to rock.	Severe: depth to rock.	Severe: slope.	Moderate: depth to rock, slope, frost action.	Severe: depth to rock.
Hargreave-----	Moderate: depth to rock.	Slight-----	Moderate: depth to rock.	Moderate: slope.	Moderate: frost action.	Moderate: depth to rock.
174*: Lucky-----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Burgess-----	Severe: depth to rock.	Moderate: slope, depth to rock.	Severe: depth to rock.	Severe: slope.	Moderate: depth to rock, slope, frost action.	Moderate: small stones, droughty, slope.
Hazton-----	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.
175----- Moskee	Slight-----	Moderate: shrink-swell.	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell, frost action.	Slight.
176, 177----- Moskee	Slight-----	Moderate: shrink-swell.	Slight-----	Moderate: shrink-swell, slope.	Moderate: shrink-swell, frost action.	Slight.
178*: Moskee-----	Slight-----	Moderate: shrink-swell.	Slight-----	Moderate: shrink-swell, slope.	Moderate: shrink-swell, frost action.	Slight.
Noden-----	Slight-----	Moderate: shrink-swell.	Slight-----	Moderate: shrink-swell, slope.	Moderate: shrink-swell, frost action.	Slight.

See footnote at end of table.

Table 10.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
179*: Moskee-----	Moderate: slope.	Moderate: shrink-swell, slope.	Moderate: slope.	Severe: slope.	Moderate: shrink-swell, slope, frost action.	Moderate: slope.
Noden-----	Moderate: slope.	Moderate: shrink-swell, slope.	Moderate: slope.	Severe: slope.	Moderate: shrink-swell, slope, frost action.	Moderate: slope.
180*: Moskee, dry----	Slight-----	Moderate: shrink-swell.	Slight-----	Moderate: shrink-swell, slope.	Moderate: shrink-swell, frost action.	Slight.
Noden, dry----	Slight-----	Moderate: shrink-swell.	Slight-----	Moderate: shrink-swell, slope.	Moderate: shrink-swell, frost action.	Slight.
181*: Moskee-----	Slight-----	Moderate: shrink-swell.	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell, frost action.	Slight.
Nuncho-----	Severe: cutbanks cave.	Slight-----	Slight-----	Slight-----	Moderate: frost action, low strength.	Slight.
182*: Moskee-----	Slight-----	Moderate: shrink-swell.	Slight-----	Moderate: shrink-swell, slope.	Moderate: shrink-swell, frost action.	Slight.
Nuncho-----	Severe: cutbanks cave.	Slight-----	Slight-----	Moderate: slope.	Moderate: frost action, low strength.	Slight.
183*: Moskee-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Worhenton, moist	Severe: wetness.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: shrink-swell, low strength, wetness.	Severe: wetness.
184*: Nathrop-----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.

See footnote at end of table.

Table 10.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
184*: Passcreek-----	Severe: depth to rock.	Moderate: slope, depth to rock.	Severe: depth to rock.	Severe: slope.	Moderate: depth to rock, slope, frost action.	Moderate: slope, depth to rock.
Starley-----	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.
185----- Nesda	Severe: cutbanks cave, wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Moderate: wetness, flooding.	Severe: droughty.
186*: Nesda-----	Severe: cutbanks cave.	Slight-----	Slight-----	Slight-----	Slight-----	Severe: droughty.
Rubble land-----	Severe: large stones.	Severe: large stones.	Severe: large stones.	Severe: large stones.	Severe: large stones.	Severe: small stones, large stones, droughty.
187*: Nesda Variant----	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: droughty.
Havertel-----	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: droughty, flooding.
188*: Norbert-----	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, depth to rock, too clayey.
Doney-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Rock outcrop-----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope, depth to rock.
189*: Norbert-----	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, depth to rock, too clayey.

See footnote at end of table.

Table 10.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
189*: Eltsac-----	Severe: cutbanks cave, slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope, too clayey.
190*: Norbert-----	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, depth to rock, too clayey.
Reget-----	Moderate: depth to rock, too clayey, slope.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength.	Moderate: slope, depth to rock.
Savar-----	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Slight.
191*: Norbert-----	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, depth to rock, too clayey.
Rock outcrop----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope, depth to rock.
192, 193, 194, 195, 196----- Nuncho	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Slight.
197*: Nuncho-----	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Slight.
Emigrant-----	Moderate: depth to rock, too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Moderate: depth to rock.
198*: Nuncho-----	Moderate: too clayey, slope.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength.	Moderate: slope.

See footnote at end of table.

Table 10.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
198*: Emigrant-----	Moderate: depth to rock, too clayey, slope.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength.	Moderate: slope, depth to rock.
199----- Nuncho Variant	Severe: wetness.	Severe: flooding, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, shrink-swell.	Severe: shrink-swell, low strength, frost action.	Slight.
200*: Owen Creek-----	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
Echemoor-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
Bynum-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
201*: Farmleed-----	Moderate: depth to rock, too clayey, slope.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength.	Moderate: slope, depth to rock.
Bidman-----	Moderate: too clayey, slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: slope.
202*: Farmleed, moist--	Moderate: depth to rock, too clayey.	Moderate: shrink-swell.	Moderate: depth to rock, shrink-swell.	Moderate: shrink-swell, slope.	Moderate: shrink-swell, low strength.	Moderate: depth to rock.
Bidman, moist----	Moderate: too clayey.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Severe: low strength.	Slight.
203*: Farmleed, moist--	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.

See footnote at end of table.

Table 10.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
203*: Bidman, moist----	Moderate: too clayey, slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: slope.
204*: Parmleed-----	Moderate: depth to rock, too clayey, slope.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength.	Moderate: slope, depth to rock.
Renohill-----	Moderate: depth to rock, too clayey, slope.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength.	Moderate: slope, depth to rock.
205*: Parmleed, moist--	Moderate: depth to rock, too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Moderate: depth to rock.
Renohill, moist--	Moderate: depth to rock, too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Moderate: depth to rock.
206*: Parmleed, moist--	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
Renohill, moist--	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
207*: Parmleed-----	Moderate: depth to rock, too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Moderate: depth to rock.
Worfka-----	Slight-----	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Slight.
208*: Parmleed, moist--	Moderate: depth to rock, too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Moderate: depth to rock.

See footnote at end of table.

Table 10.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
208*: Worfka, moist----	Slight-----	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Slight.
209*: Parmleed, moist--	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
Worfka, moist----	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
210*: Parmleed, moist--	Moderate: depth to rock, too clayey, slope.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength.	Moderate: slope, depth to rock.
Worfka, moist----	Moderate: slope.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength.	Moderate: slope.
Shingle Variant, moist-----	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.
211*: Peritsa-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
Abac-----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope, depth to rock.
212----- Platmak	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Severe: low strength.	Slight.
213----- Platmak	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Severe: low strength.	Slight.
214----- Platmak, dry	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Severe: low strength.	Slight.

See footnote at end of table.

Table 10.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
215----- Platsher	Moderate: too clayey.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, frost action.	Slight.
216----- Platsher	Moderate: too clayey.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Moderate: shrink-swell, frost action.	Slight.
217----- Platsher	Moderate: too clayey.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, frost action.	Slight.
218----- Platsher	Moderate: too clayey.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Moderate: shrink-swell, frost action.	Slight.
219*: Platsher-----	Moderate: too clayey.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, frost action.	Slight.
Wolfvar-----	Severe: cutbanks cave.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, frost action.	Slight.
220*, 221*: Platsher-----	Moderate: too clayey.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Moderate: shrink-swell, frost action.	Slight.
Wolfvar-----	Severe: cutbanks cave.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Moderate: shrink-swell, frost action.	Slight.
222----- Platsher Variant	Severe: wetness.	Severe: shrink-swell.	Severe: wetness.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Moderate: wetness.
223----- Recluse	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, low strength.	Slight.
224, 225----- Recluse	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Moderate: shrink-swell, low strength.	Slight.

See footnote at end of table.

Table 10.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
226*:						
Recluse-----	Moderate: slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Moderate: shrink-swell, low strength, slope.	Moderate: slope.
Bauxson-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Baux-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: droughty, slope.
227*:						
Reeder-----	Moderate: depth to rock.	Slight-----	Moderate: depth to rock.	Moderate: slope.	Moderate: low strength, frost action.	Moderate: depth to rock.
Farnuf-----	Slight-----	Slight-----	Slight-----	Moderate: slope.	Moderate: low strength, frost action.	Slight.
228*:						
Reeder-----	Moderate: depth to rock, slope.	Moderate: slope.	Moderate: depth to rock, slope.	Severe: slope.	Moderate: low strength, slope, frost action.	Moderate: slope, depth to rock.
Farnuf-----	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: low strength, slope, frost action.	Moderate: slope.
229, 230-----						
Reget	Moderate: depth to rock, too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Moderate: depth to rock.
231*:						
Reget-----	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
Savar-----	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.

See footnote at end of table.

Table 10.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
232*:						
Reget Variant----	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
Reget-----	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
233*:						
Renohill-----	Moderate: depth to rock, too clayey, slope.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength.	Moderate: slope, depth to rock.
Savageton-----	Moderate: depth to rock, too clayey, slope.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength.	Moderate: slope, depth to rock.
234*:						
Renohill, moist--	Moderate: depth to rock, too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Moderate: depth to rock.
Savageton, moist-	Moderate: depth to rock, too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Moderate: depth to rock.
235*:						
Renohill, moist--	Moderate: depth to rock, too clayey, slope.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength.	Moderate: slope, depth to rock.
Savageton, moist-	Moderate: depth to rock, too clayey, slope.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength.	Moderate: slope, depth to rock.
236*:						
Renohill-----	Moderate: depth to rock, too clayey, slope.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength.	Moderate: slope, depth to rock.
Ulm, dry-----	Moderate: too clayey, slope.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength.	Moderate: slope.

See footnotes at end of table.

Table 10.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
237*: Renchill, moist--	Moderate: depth to rock, too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Moderate: depth to rock.
Ulm-----	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Slight.
238*: Renchill-----	Moderate: depth to rock, too clayey, slope.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength.	Moderate: slope, depth to rock.
Worfka-----	Moderate: slope.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength.	Moderate: slope.
239*: Renchill, moist--	Moderate: depth to rock, too clayey, slope.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength.	Moderate: slope, depth to rock.
Worfka, moist----	Moderate: slope.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength.	Moderate: slope.
240*: Renchill, moist--	Moderate: depth to rock, too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Moderate: depth to rock.
Wyarno-----	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Moderate: shrink-swell, frost action.	Slight.
241*: 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: depth to rock.
Agneston-----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
Rubble land-----	Severe: large stones, slope.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: small stones, large stones, droughty.

See footnote at end of table.

Table 10.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
242*:						
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: depth to rock.
Starman-----	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.
243*:						
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: depth to rock.
Starman Variant--	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.
244*:						
Samday, moist----	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, depth to rock.
Gayhart, moist---	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
Hilight, moist---	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, depth to rock.
245*:						
Samday-----	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, depth to rock.
Hilight-----	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, depth to rock.
246, 247-----	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Slight.
Savage						

See footnote at end of table.

Table 10.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
248----- Savage	Moderate: too clayey, slope.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength.	Moderate: slope.
249*: Savage-----	Moderate: too clayey.	Severe: shrink-swell.	Slight-----	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Slight.
Farnuf-----	Slight-----	Slight-----	Slight-----	Slight-----	Moderate: frost action.	Slight.
250*: Savage-----	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Slight.
Korchea-----	Moderate: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding.
251*: Savage-----	Moderate: too clayey, slope.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength.	Moderate: slope.
Reget-----	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
252*: Searing-----	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope, frost action.	Moderate: slope.
Ringling-----	Severe: large stones, slope.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: droughty, slope.
253----- Shaak	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Slight.
254*: Shingle, moist---	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope, depth to rock.

See footnote at end of table.

Table 10.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
254*:						
Baux-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: droughty, slope.
Rock outcrop----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope, depth to rock.
255*:						
Shingle-----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope, depth to rock.
Haverdad-----	Moderate: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.
256*:						
Shingle, moist---	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope, depth to rock.
Haverdad, moist--	Moderate: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.
257*:						
Shingle-----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope, depth to rock.
Nihill-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
258*:						
Shingle, moist---	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope, depth to rock.
Nihill, moist----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
259*:						
Shingle, moist---	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope, depth to rock.
Nuncho-----	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Slight.

See footnote at end of table.

Table 10.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
260*:						
Shingle-----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope, depth to rock.
Rock outcrop----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope, depth to rock.
261*:						
Shingle, moist---	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope, depth to rock.
Rock outcrop----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope, depth to rock.
262*:						
Shingle-----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope, depth to rock.
Samday-----	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, depth to rock.
263*:						
Shingle, moist---	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope, depth to rock.
Samday, moist----	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, depth to rock.
264*:						
Shingle-----	Severe: depth to rock.	Moderate: slope, depth to rock.	Severe: depth to rock.	Severe: slope.	Moderate: depth to rock, low strength, slope.	Severe: depth to rock.
Taluca-----	Severe: depth to rock.	Moderate: slope, depth to rock.	Severe: depth to rock.	Severe: slope.	Moderate: depth to rock, slope.	Severe: depth to rock.

See footnote at end of table.

Table 10.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
265*: Shingle, moist---	Severe: depth to rock.	Moderate: slope, depth to rock.	Severe: depth to rock.	Severe: slope.	Moderate: depth to rock, low strength, slope.	Severe: depth to rock.
Taluca, moist---	Severe: depth to rock.	Moderate: slope, depth to rock.	Severe: depth to rock.	Severe: slope.	Moderate: depth to rock, slope.	Severe: depth to rock.
266*: Shingle-----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope, depth to rock.
Theedle-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
267*: Shingle, moist---	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope, depth to rock.
Theedle, moist---	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
268*: Shingle-----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope, depth to rock.
Theedle-----	Moderate: depth to rock, slope.	Moderate: shrink-swell, slope.	Moderate: depth to rock, slope, shrink-swell.	Severe: slope.	Moderate: shrink-swell, low strength, slope.	Moderate: slope, depth to rock.
Kishona-----	Moderate: slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: slope.
269*: Shingle, moist---	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope, depth to rock.
Theedle, moist---	Moderate: depth to rock, slope.	Moderate: shrink-swell, slope.	Moderate: depth to rock, slope, shrink-swell.	Severe: slope.	Moderate: shrink-swell, low strength, slope.	Moderate: slope, depth to rock.

See footnote at end of table.

Table 10.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
269*: Kishona, moist---	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Severe: low strength.	Slight.
270*: Shingle, moist---	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope, depth to rock.
Theedle, moist---	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Rock outcrop----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope, depth to rock.
271*: Shingle-----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope, depth to rock.
Wibaux-----	Severe: large stones, slope.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: droughty, slope.
272*: Shingle, cool---	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope, depth to rock.
Wibaux, cool----	Severe: large stones, slope.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: droughty, slope.
273*: Shingle-----	Severe: depth to rock.	Moderate: slope, depth to rock.	Severe: depth to rock.	Severe: slope.	Moderate: depth to rock, low strength, slope.	Severe: depth to rock.
Worf-----	Severe: depth to rock.	Moderate: slope, depth to rock.	Severe: depth to rock.	Severe: slope.	Moderate: depth to rock, low strength, slope.	Severe: depth to rock.
274*: Shingle, moist---	Severe: depth to rock.	Moderate: slope, depth to rock.	Severe: depth to rock.	Severe: slope.	Moderate: depth to rock, low strength, slope.	Severe: depth to rock.

See footnote at end of table.

Table 10.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
274*: Worf, moist-----	Severe: depth to rock.	Moderate: slope, depth to rock.	Severe: depth to rock.	Severe: slope.	Moderate: depth to rock, low strength, slope.	Severe: depth to rock.
275----- Sinkson	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: low strength, slope.	Moderate: slope.
276*: Spearman-----	Moderate: large stones, slope.	Moderate: slope, large stones.	Moderate: slope, large stones.	Severe: slope.	Moderate: slope, large stones.	Moderate: droughty, slope.
Wibaux-----	Severe: large stones, slope.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: droughty, slope.
277*: Taluca-----	Severe: depth to rock.	Moderate: slope, depth to rock.	Severe: depth to rock.	Severe: slope.	Moderate: depth to rock, slope.	Severe: depth to rock.
Tulloch-----	Severe: cutbanks cave.	Moderate: slope.	Moderate: depth to rock, slope.	Severe: slope.	Moderate: slope.	Moderate: droughty, slope, depth to rock.
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: depth to rock.
278*: Taluca-----	Severe: depth to rock.	Moderate: slope, depth to rock.	Severe: depth to rock.	Severe: slope.	Moderate: depth to rock, slope.	Severe: depth to rock.
Tulloch-----	Severe: cutbanks cave.	Moderate: slope.	Moderate: depth to rock, slope.	Severe: slope.	Moderate: slope.	Moderate: droughty, slope, depth to rock.
Vonalee-----	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: droughty, slope.
279*: Taluca, moist----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope, depth to rock.

See footnote at end of table.

Table 10.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
279*:						
Tulloch, moist---	Severe: cutbanks cave, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Vonalee, moist---	Severe: cutbanks cave, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
280*:						
Taluce Variant---	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope, depth to rock.
Treoff-----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope, depth to rock.
Theedle Variant--	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
281*:						
Theedle-----	Moderate: depth to rock, slope.	Moderate: shrink-swell, slope.	Moderate: depth to rock, slope, shrink-swell.	Severe: slope.	Moderate: shrink-swell, low strength, slope.	Moderate: slope, depth to rock.
Kishona-----	Moderate: slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: slope.
282*:						
Theedle, moist---	Moderate: depth to rock.	Moderate: shrink-swell.	Moderate: depth to rock, shrink-swell.	Moderate: shrink-swell, slope.	Moderate: shrink-swell, low strength.	Moderate: depth to rock.
Kishona, moist---	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Severe: low strength.	Slight.
283*:						
Theedle, moist---	Moderate: depth to rock, slope.	Moderate: shrink-swell, slope.	Moderate: depth to rock, slope, shrink-swell.	Severe: slope.	Moderate: shrink-swell, low strength, slope.	Moderate: slope, depth to rock.
Kishona, moist---	Moderate: slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: slope.

See footnote at end of table.

Table 10.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
284*:						
Tolman-----	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.
Beeno-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
Beenom-----	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.
285*:						
Trimad-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Doney-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Wayden-----	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, depth to rock.
286*:						
Trimad-----	Moderate: large stones, slope.	Moderate: slope, large stones.	Moderate: slope, large stones.	Severe: slope.	Moderate: slope, frost action, large stones.	Moderate: small stones, large stones, slope.
Trivar-----	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope, frost action.	Moderate: slope.
287*:						
Trimad-----	Moderate: large stones.	Moderate: large stones.	Moderate: large stones.	Moderate: large stones.	Moderate: frost action, large stones.	Moderate: small stones, large stones.
Twin Creek-----	Slight-----	Slight-----	Slight-----	Slight-----	Moderate: frost action.	Slight.
288-----	Slight-----	Moderate: shrink-swell.	Slight-----	Moderate: shrink-swell.	Severe: low strength.	Slight.
Twin Creek						
289-----	Severe: wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: low strength.	Moderate: wetness.
Twin Creek Variant						

See footnote at end of table.

Table 10.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
290, 291----- Ulm	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Slight.
292, 293----- Ulm, dry	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Slight.
294*: Urban land.						
Kishona, moist---	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Severe: low strength.	Slight.
Clarkelen-----	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding.	Slight.
295*: Urban land.						
Platsher-----	Moderate: too clayey.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, frost action.	Slight.
Wolfvar-----	Severe: cutbanks cave.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, frost action.	Slight.
296*: Urban land.						
Wyarno-----	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, frost action.	Slight.
Nuncho-----	Moderate: too clayey.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Slight.
297*: Ustic Torriorthents.						
Pits.						
298----- Wayden	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, depth to rock, too clayey.

See footnote at end of table.

Table 10.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
299*: Wetterdon-----	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Severe: low strength.	Slight.
Recluse-----	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Moderate: shrink-swell, low strength.	Slight.
300*: Wibaux-----	Severe: large stones.	Severe: large stones.	Severe: large stones.	Severe: slope, large stones.	Severe: large stones.	Severe: droughty.
Reddale-----	Moderate: too clayey.	Slight-----	Slight-----	Moderate: slope.	Moderate: frost action.	Moderate: droughty.
301----- Windham	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
302----- Wolf	Slight-----	Slight-----	Slight-----	Slight-----	Moderate: frost action.	Slight.
303----- Wolf	Slight-----	Slight-----	Slight-----	Moderate: slope.	Moderate: frost action.	Slight.
304*: Worfka-----	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
Shingle-----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope, depth to rock.
Samday-----	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, depth to rock.
305*: Worfka, moist---	Severe: slope.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength, slope.	Severe: slope.
Shingle, moist---	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope, depth to rock.

See footnote at end of table.

Table 10.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
305*: Samday, moist----	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, depth to rock.
306----- Worthington	Severe: wetness.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: shrink-swell, low strength, wetness.	Severe: wetness.
307*: Worthington-----	Severe: wetness.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: shrink-swell, low strength, wetness.	Severe: wetness.
Recluse-----	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, low strength.	Slight.
308*: Worthington Variant-----	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness.
Assinniboine Variant-----	Severe: cutbanks cave, wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Moderate: shrink-swell, wetness, flooding.	Slight.
309----- Wyarno	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, frost action.	Slight.
310, 311----- Wyarno	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Moderate: shrink-swell, frost action.	Slight.
312----- Wyarno, dry	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, frost action.	Slight.
313, 314----- Wyarno, dry	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Moderate: shrink-swell, frost action.	Slight.

See footnote at end of table.

Table 10.--Building Site Development--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
315----- Zigweid	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Severe: low strength.	Slight.
316*: Zigweid-----	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Severe: low strength.	Slight.
Cambria-----	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, low strength.	Slight.
317*: Zigweid-----	Moderate: slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: slope.
Kishona-----	Moderate: slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: slope.
Cambria-----	Moderate: slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Moderate: shrink-swell, low strength, slope.	Moderate: slope.
318*: Zigweid, moist---	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Severe: low strength.	Slight.
Kishona, moist---	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Severe: low strength.	Slight.
Cambria, moist---	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, low strength.	Slight.
319*, 320*: Zigweid, moist---	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Severe: low strength.	Slight.
Kishona, moist---	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Severe: low strength.	Slight.
Cambria, moist---	Slight-----	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Moderate: shrink-swell, low strength.	Slight.

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 11.--Sanitary Facilities

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "good," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
100*:					
Abac-----	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.
Rock outcrop-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.	Severe: depth to rock.	Poor: depth to rock, slope.
101*:					
Absted-----	Severe: percs slowly.	Moderate: slope.	Slight-----	Slight-----	Good.
Haverdad-----	Moderate: flooding, percs slowly.	Moderate: seepage, slope.	Moderate: flooding.	Moderate: flooding.	Good.
102*:					
Absted, moist-----	Severe: percs slowly.	Moderate: slope.	Slight-----	Slight-----	Good.
Haverdad, moist-----	Moderate: flooding, percs slowly.	Moderate: seepage, slope.	Moderate: flooding.	Moderate: flooding.	Good.
103*:					
Absted-----	Severe: percs slowly.	Moderate: slope.	Slight-----	Slight-----	Good.
Slickspots.					
104*:					
Agneston-----	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: depth to rock, small stones, slope.
Granile-----	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope.	Severe: slope.	Poor: small stones, slope.
Rock outcrop-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.	Severe: depth to rock.	Poor: depth to rock, slope.

See footnote at end of table.

Table 11.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
105*:					
Arnegard-----	Moderate: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight-----	Fair: too clayey.
Farnuf-----	Moderate: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight-----	Fair: too clayey.
106*:					
Arnegard-----	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, slope.
Farnuf-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
107*:					
Assinniboine-----	Severe: slope.	Severe: seepage, slope.	Severe: slope.	Severe: slope.	Poor: slope.
Dast-----	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: depth to rock, slope.
108*:					
Baux-----	Severe: poor filter, slope.	Severe: seepage, slope.	Severe: slope, large stones.	Severe: slope.	Poor: seepage, small stones, slope.
Bauxson-----	Severe: poor filter, slope.	Severe: seepage, slope.	Severe: slope, large stones.	Severe: slope.	Poor: seepage, small stones, slope.
109*:					
Baux, dry-----	Severe: poor filter, slope.	Severe: seepage, slope.	Severe: slope, large stones.	Severe: slope.	Poor: seepage, small stones, slope.
Bauxson, dry-----	Severe: poor filter, slope.	Severe: seepage, slope.	Severe: slope, large stones.	Severe: slope.	Poor: seepage, small stones, slope.

See footnote at end of table.

Table 11.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
110*:					
Baux-----	Severe: poor filter, slope.	Severe: seepage, slope.	Severe: slope, large stones.	Severe: slope.	Poor: seepage, small stones, slope.
Bauxson-----	Severe: poor filter, slope.	Severe: seepage, slope.	Severe: slope, large stones.	Severe: slope.	Poor: seepage, small stones, slope.
Kirtley-----	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Slight-----	Poor: depth to rock.
111*:					
Baux-----	Severe: poor filter, slope.	Severe: seepage, slope.	Severe: slope, large stones.	Severe: slope.	Poor: seepage, small stones, slope.
Bauxson-----	Severe: poor filter, slope.	Severe: seepage, slope.	Severe: slope, large stones.	Severe: slope.	Poor: seepage, small stones, slope.
Wetterdon-----	Moderate: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight-----	Fair: too clayey.
112*:					
Bidman-----	Severe: percs slowly.	Moderate: seepage, slope.	Slight-----	Slight-----	Good.
Arvada-----	Severe: percs slowly.	Moderate: slope.	Slight-----	Slight-----	Good.
113*:					
Bidman, moist-----	Severe: percs slowly.	Moderate: seepage.	Slight-----	Slight-----	Good.
Arvada, moist-----	Severe: percs slowly.	Slight-----	Slight-----	Slight-----	Good.
114*:					
Bidman-----	Severe: percs slowly.	Moderate: seepage, slope.	Slight-----	Slight-----	Good.
Ulm, dry-----	Severe: percs slowly.	Moderate: slope.	Slight-----	Slight-----	Poor: hard to pack.

See footnote at end of table.

Table 11.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
115*: Bidman, moist-----	Severe: percs slowly.	Moderate: seepage, slope.	Slight-----	Slight-----	Good.
Ulm-----	Severe: percs slowly.	Moderate: slope.	Slight-----	Slight-----	Poor: hard to pack.
116*: Big Horn-----	Severe: percs slowly.	Moderate: seepage, slope.	Slight-----	Slight-----	Poor: small stones.
Wolf, dry-----	Moderate: percs slowly.	Moderate: seepage, slope.	Slight-----	Slight-----	Fair: small stones.
117*: Cambria-----	Moderate: percs slowly.	Severe: slope.	Slight-----	Slight-----	Good.
Forkwood-----	Moderate: percs slowly.	Severe: slope.	Slight-----	Slight-----	Good.
118*: Cambria, moist----	Moderate: percs slowly.	Moderate: seepage, slope.	Slight-----	Slight-----	Good.
Forkwood, moist----	Moderate: percs slowly.	Moderate: seepage, slope.	Slight-----	Slight-----	Good.
119*: Cedak-----	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Slight-----	Poor: depth to rock.
Recluse-----	Moderate: percs slowly.	Moderate: seepage, slope.	Slight-----	Slight-----	Good.
120*: Cedak-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.	Slight-----	Poor: depth to rock.
Recluse-----	Moderate: percs slowly.	Severe: slope.	Slight-----	Slight-----	Good.

See footnote at end of table.

Table 11.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
121*: Cedak-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock.
Recluse-----	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
122*: Cedak, dry-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock.
Recluse, dry-----	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
123----- Clarkalen	Moderate: flooding.	Severe: seepage.	Moderate: flooding, too sandy.	Moderate: flooding.	Fair: too sandy.
124----- Clarkalen, moist	Moderate: flooding.	Severe: seepage.	Moderate: flooding, too sandy.	Moderate: flooding.	Fair: too sandy.
125*: Cloud Peak-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Poor: depth to rock, large stones, slope.
Tolman-----	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.
126*: Coaliams, moist----	Severe: wetness.	Moderate: seepage, wetness.	Severe: wetness.	Moderate: flooding, wetness.	Fair: too clayey.
Worthenton, moist--	Severe: flooding, wetness, percs slowly.	Severe: flooding.	Severe: flooding, wetness, too clayey.	Severe: flooding, wetness.	Poor: too clayey, hard to pack, wetness.
127*: Cushman-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock.

See footnote at end of table.

Table 11.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
127*: Forkwood-----	Moderate: percs slowly.	Moderate: seepage, slope.	Slight-----	Slight-----	Good.
128*: Cushman, moist----	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Slight-----	Poor: depth to rock.
Forkwood, moist----	Moderate: percs slowly.	Moderate: seepage, slope.	Slight-----	Slight-----	Good.
129*: Cushman, moist----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock.
Forkwood, moist----	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
130*: Cushman-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock.
Worf-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock.
131*: Cushman, moist----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock.
Worf, moist-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock.
132----- Dast Variant	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, slope.	Poor: depth to rock, seepage, too sandy.
133*: Doney-----	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.

See footnote at end of table.

Table 11.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
133*: Doney Variant-----	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.
134*: Doney-----	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.
Ringling-----	Severe: poor filter, slope, large stones.	Severe: seepage, slope, large stones.	Severe: seepage, slope, large stones.	Severe: seepage, slope.	Poor: seepage, small stones, slope.
135*: Doney-----	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.
Ringling-----	Severe: poor filter, slope, large stones.	Severe: seepage, slope, large stones.	Severe: seepage, slope, large stones.	Severe: seepage, slope.	Poor: seepage, small stones, slope.
Rock outcrop-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.	Severe: depth to rock.	Poor: depth to rock, slope.
136----- Draknab	Severe: poor filter.	Severe: seepage.	Severe: too sandy.	Moderate: flooding.	Poor: seepage, too sandy.
137----- Farnuf	Moderate: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight-----	Fair: too clayey.
138----- Farnuf	Moderate: percs slowly.	Severe: slope.	Moderate: too clayey.	Slight-----	Fair: too clayey.
139----- Farnuf	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, slope.
140----- Farnuf Variant, wet	Severe: wetness, percs slowly.	Severe: seepage, wetness.	Severe: seepage, wetness.	Severe: wetness.	Poor: wetness.

See footnote at end of table.

Table 11.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
141*: Farnuf Variant-----	Severe: percs slowly.	Severe: seepage.	Severe: seepage.	Slight-----	Fair: too clayey, thin layer.
Cloud Peak Variant-	Severe: poor filter.	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy, small stones.
142----- Forkwood	Moderate: percs slowly.	Moderate: seepage.	Slight-----	Slight-----	Good.
143----- Forkwood	Moderate: percs slowly.	Moderate: seepage, slope.	Slight-----	Slight-----	Good.
144----- Forkwood	Moderate: percs slowly.	Severe: slope.	Slight-----	Slight-----	Good.
145*: Gayhart-----	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.
Bahl-----	Severe: percs slowly.	Severe: slope.	Moderate: slope.	Moderate: slope.	Poor: hard to pack.
146*: Gayhart, moist----	Severe: depth to rock, percs slowly.	Severe: depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock, hard to pack.
Bahl, moist-----	Severe: percs slowly.	Severe: slope.	Moderate: slope.	Moderate: slope.	Poor: hard to pack.
147*: Hardhart-----	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.
Starley-----	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.
148*: Hargreave-----	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Slight-----	Poor: depth to rock.

See footnote at end of table.

Table 11.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
148*: Moskee-----	Moderate: percs slowly.	Severe: seepage.	Slight-----	Slight-----	Good.
149*: Hargreave-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock.
Moskee-----	Moderate: percs slowly, slope.	Severe: seepage, slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
150*: Hargreave, dry-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock.
Moskee, dry-----	Moderate: percs slowly.	Severe: seepage.	Slight-----	Slight-----	Good.
151----- Harlan, dry	Moderate: percs slowly.	Severe: slope.	Slight-----	Slight-----	Good.
152*: Harlan-----	Moderate: percs slowly.	Moderate: seepage, slope.	Slight-----	Slight-----	Good.
Kirtley-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.	Slight-----	Poor: depth to rock.
153*: Harlan-----	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
Kirtley-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock.
154----- Haverdad	Moderate: flooding, percs slowly.	Moderate: seepage.	Moderate: flooding.	Moderate: flooding.	Good.
155----- Haverdad, moist	Moderate: flooding, percs slowly.	Moderate: seepage.	Moderate: flooding.	Moderate: flooding.	Good.

See footnote at end of table.

Table 11.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
156----- Haverdad, saline	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Fair: wetness.
157----- Haverdad, moist, saline	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Fair: wetness.
158*: Haverdad-----	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Good.
Draknab-----	Severe: flooding, poor filter.	Severe: seepage, flooding.	Severe: flooding, too sandy.	Severe: flooding.	Poor: seepage, too sandy.
159*: Haverdad, moist----	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Good.
Draknab, moist----	Severe: flooding, poor filter.	Severe: seepage, flooding.	Severe: flooding, too sandy.	Severe: flooding.	Poor: seepage, too sandy.
160*: Haverdad-----	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Good.
Worthenton-----	Severe: flooding, wetness, percs slowly.	Severe: flooding.	Severe: flooding, wetness, too clayey.	Severe: flooding, wetness.	Poor: too clayey, hard to pack, wetness.
161*: Haverdad, moist----	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Good.
Worthenton-----	Severe: flooding, wetness, percs slowly.	Severe: flooding.	Severe: flooding, wetness, too clayey.	Severe: flooding, wetness.	Poor: too clayey, hard to pack, wetness.
162----- Havertel	Severe: flooding, wetness, poor filter.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Poor: seepage, too sandy, small stones.

See footnote at end of table.

Table 11.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
163*: Hesperus Variant----	Severe: wetness, percs slowly, slope.	Severe: seepage, slope, wetness.	Severe: seepage, wetness, slope.	Severe: wetness, slope.	Poor: slope.
Reget-----	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, too clayey.	Severe: depth to rock, slope.	Poor: depth to rock, too clayey, slope.
164*: Hiland-----	Moderate: percs slowly, slope.	Severe: seepage, slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
Bowbac-----	Severe: depth to rock.	Severe: seepage, depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock.
165*: Hiland, moist----	Moderate: percs slowly.	Severe: seepage.	Slight-----	Slight-----	Good.
Bowbac, moist----	Severe: depth to rock.	Severe: seepage, depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock.
166*: Hiland-----	Moderate: percs slowly, slope.	Severe: seepage, slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
Decolney-----	Moderate: slope.	Severe: seepage, slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
167*: Hiland, moist----	Moderate: percs slowly.	Severe: seepage.	Slight-----	Slight-----	Good.
Vonalee, moist----	Slight-----	Severe: seepage.	Moderate: too sandy.	Slight-----	Fair: too sandy.
168*: Hilight-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: depth to rock, hard to pack, slope.

See footnote at end of table.

Table 11.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
168*: Rock outcrop-----	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.
169*: Jonpol-----	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Slight-----	Poor: depth to rock.
Platmak-----	Moderate: percs slowly.	Moderate: seepage, slope.	Slight-----	Slight-----	Good.
170*: Jonpol-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: depth to rock, slope.
Platmak-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
171*: Kishona-----	Moderate: percs slowly.	Moderate: seepage.	Slight-----	Slight-----	Good.
Cambria-----	Moderate: percs slowly.	Moderate: seepage.	Slight-----	Slight-----	Good.
172*: Kishona-----	Moderate: percs slowly.	Moderate: seepage, slope.	Slight-----	Slight-----	Good.
Cambria-----	Moderate: percs slowly.	Moderate: seepage, slope.	Slight-----	Slight-----	Good.
173*: Lambman-----	Severe: depth to rock.	Severe: seepage, depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock.
Hargreave-----	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Slight-----	Poor: depth to rock.
174*: Lucky-----	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: depth to rock, small stones, slope.

See footnote at end of table.

Table 11.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
174*: Burgess-----	Severe: depth to rock.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage.	Severe: depth to rock, seepage.	Poor: depth to rock, seepage, small stones.
Hazton-----	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, slope.	Poor: depth to rock, small stones, slope.
175, 176----- Moskee	Moderate: percs slowly.	Severe: seepage.	Slight-----	Slight-----	Good.
177----- Moskee	Moderate: percs slowly.	Severe: seepage, slope.	Slight-----	Slight-----	Good.
178*: Moskee-----	Moderate: percs slowly.	Severe: seepage.	Slight-----	Slight-----	Good.
Noden-----	Moderate: percs slowly.	Severe: seepage.	Slight-----	Slight-----	Good.
179*: Moskee-----	Moderate: percs slowly, slope.	Severe: seepage, slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
Noden-----	Moderate: percs slowly, slope.	Severe: seepage, slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
180*: Moskee, dry-----	Moderate: percs slowly.	Severe: seepage, slope.	Slight-----	Slight-----	Good.
Noden, dry-----	Moderate: percs slowly.	Severe: seepage, slope.	Slight-----	Slight-----	Good.
181*, 182*: Moskee-----	Moderate: percs slowly.	Severe: seepage.	Slight-----	Slight-----	Good.
Nuncho-----	Moderate: percs slowly.	Severe: seepage.	Moderate: too sandy.	Slight-----	Fair: too sandy.

See footnote at end of table.

Table 11.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
183*: Moskee-----	Severe: slope.	Severe: seepage, slope.	Severe: slope.	Severe: slope.	Poor: slope.
Worthenton, moist--	Severe: flooding, wetness, percs slowly.	Severe: flooding.	Severe: flooding, wetness, too clayey.	Severe: flooding, wetness.	Poor: too clayey, hard to pack, wetness.
184*: Nathrop-----	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.
Passcreek-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.	Severe: depth to rock.	Poor: depth to rock, small stones.
Starley-----	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.
185----- Nesda	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy, small stones.
186*: Nesda-----	Severe: poor filter.	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy, small stones.
Rubble land-----	Severe: poor filter, large stones.	Severe: seepage.	Severe: depth to rock, seepage.	Severe: seepage, large stones.	Poor: seepage, small stones.
187*: Nesda Variant-----	Severe: flooding, poor filter.	Severe: seepage, flooding.	Severe: flooding, seepage, too sandy.	Severe: flooding, seepage.	Poor: seepage, too sandy, small stones.
Havertel-----	Severe: flooding, wetness, poor filter.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Poor: seepage, too sandy, small stones.

See footnote at end of table.

Table 11.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
188*:					
Norbert-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, too clayey.	Severe: depth to rock, slope.	Poor: depth to rock, too clayey, hard to pack.
Doney-----	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.
Rock outcrop-----	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.
189*:					
Norbert-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, too clayey.	Severe: depth to rock, slope.	Poor: depth to rock, too clayey, hard to pack.
Elsac-----	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, too clayey.	Severe: depth to rock, slope.	Poor: depth to rock, too clayey, hard to pack.
190*:					
Norbert-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, too clayey.	Severe: depth to rock, slope.	Poor: depth to rock, too clayey, hard to pack.
Regat-----	Severe: depth to rock, percs slowly.	Severe: depth to rock, slope.	Severe: depth to rock, too clayey.	Severe: depth to rock.	Poor: depth to rock, too clayey.
Savar-----	Severe: percs slowly.	Moderate: slope.	Severe: too clayey.	Slight-----	Poor: too clayey, hard to pack.
191*:					
Norbert-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, too clayey.	Severe: depth to rock, slope.	Poor: depth to rock, too clayey, hard to pack.
Rock outcrop-----	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.
192-----					
Nuncho	Severe: percs slowly.	Moderate: seepage.	Slight-----	Slight-----	Poor: hard to pack.

See footnote at end of table.

Table 11.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
193----- Nuncho	Severe: percs slowly.	Moderate: seepage, slope.	Slight-----	Slight-----	Poor: hard to pack.
194----- Nuncho	Severe: percs slowly.	Severe: slope.	Slight-----	Slight-----	Poor: hard to pack.
195----- Nuncho	Severe: percs slowly.	Moderate: seepage.	Slight-----	Slight-----	Poor: hard to pack.
196----- Nuncho	Severe: percs slowly.	Moderate: seepage, slope.	Slight-----	Slight-----	Poor: hard to pack.
197*: Nuncho-----	Severe: percs slowly.	Moderate: seepage, slope.	Slight-----	Slight-----	Poor: hard to pack.
Emigrant-----	Severe: depth to rock, percs slowly.	Severe: depth to rock.	Severe: depth to rock.	Slight-----	Poor: depth to rock, hard to pack.
198*: Nuncho-----	Severe: percs slowly.	Severe: slope.	Moderate: slope.	Moderate: slope.	Poor: hard to pack.
Emigrant-----	Severe: depth to rock, percs slowly.	Severe: depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock, hard to pack.
199----- Nuncho Variant	Severe: wetness, percs slowly.	Moderate: slope.	Severe: wetness.	Severe: wetness.	Poor: hard to pack.
200*: Owen Creek-----	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, too clayey.	Severe: depth to rock, slope.	Poor: depth to rock, too clayey, hard to pack.
Echemoor-----	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.
Bynum-----	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.

See footnote at end of table.

Table 11.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
201*:					
Parmleed-----	Severe: depth to rock, percs slowly.	Severe: depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock.
Bidman-----	Severe: percs slowly.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
202*:					
Parmleed, moist----	Severe: depth to rock, percs slowly.	Severe: depth to rock.	Severe: depth to rock.	Slight-----	Poor: depth to rock.
Bidman, moist----	Severe: percs slowly.	Moderate: seepage, slope.	Slight-----	Slight-----	Good.
203*:					
Parmleed, moist----	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: depth to rock, slope.
Bidman, moist----	Severe: percs slowly.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
204*:					
Parmleed-----	Severe: depth to rock, percs slowly.	Severe: depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock.
Renhill-----	Severe: depth to rock, percs slowly.	Severe: depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock.
205*:					
Parmleed, moist----	Severe: depth to rock, percs slowly.	Severe: depth to rock.	Severe: depth to rock.	Slight-----	Poor: depth to rock.
Renhill, moist----	Severe: depth to rock, percs slowly.	Severe: depth to rock.	Severe: depth to rock.	Slight-----	Poor: depth to rock.
206*:					
Parmleed, moist----	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: depth to rock, slope.

See footnote at end of table.

Table 11.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
206*: Renohill, moist----	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: depth to rock, slope.
207*: Farmleed-----	Severe: depth to rock, percs slowly.	Severe: depth to rock, slope.	Severe: depth to rock.	Slight-----	Poor: depth to rock.
Worfka-----	Slight-----	Severe: slope.	Slight-----	Slight-----	Poor: hard to pack.
208*: Farmleed, moist----	Severe: depth to rock, percs slowly.	Severe: depth to rock.	Severe: depth to rock.	Slight-----	Poor: depth to rock.
Worfka, moist----	Slight-----	Moderate: slope.	Slight-----	Slight-----	Poor: hard to pack.
209*: Farmleed, moist----	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: depth to rock, slope.
Worfka, moist-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: hard to pack, slope.
210*: Farmleed, moist----	Severe: depth to rock, percs slowly.	Severe: depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock.
Worfka, moist-----	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Poor: hard to pack.
Shingle Variant, moist-----	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Slight-----	Poor: depth to rock.
211*: Peritsa-----	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.

See footnote at end of table.

Table 11.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
211*: Abac-----	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.
212----- Platmak	Moderate: percs slowly.	Moderate: seepage.	Slight-----	Slight-----	Good.
213----- Platmak	Moderate: percs slowly.	Moderate: seepage, slope.	Slight-----	Slight-----	Good.
214----- Platmak, dry	Moderate: percs slowly.	Moderate: seepage, slope.	Slight-----	Slight-----	Good.
215----- Platsher	Severe: percs slowly.	Moderate: seepage.	Moderate: too clayey.	Slight-----	Poor: small stones.
216----- Platsher	Severe: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight-----	Poor: small stones.
217----- Platsher	Severe: percs slowly.	Moderate: seepage.	Moderate: too clayey.	Slight-----	Poor: small stones.
218----- Platsher	Severe: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight-----	Poor: small stones.
219*: Platsher-----	Severe: percs slowly.	Moderate: seepage.	Moderate: too clayey.	Slight-----	Poor: small stones.
Wolfvar-----	Moderate: percs slowly.	Severe: seepage.	Slight-----	Slight-----	Poor: seepage, small stones.
220*: Platsher-----	Severe: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight-----	Poor: small stones.
Wolfvar-----	Moderate: percs slowly.	Severe: seepage.	Slight-----	Slight-----	Poor: seepage, small stones.
221*: Platsher-----	Severe: percs slowly.	Severe: slope.	Moderate: too clayey.	Slight-----	Poor: small stones.

See footnote at end of table.

Table 11.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
221*: Wolfvar-----	Moderate: percs slowly.	Severe: seepage, slope.	Slight-----	Slight-----	Poor: seepage, small stones.
222----- Platsher Variant	Severe: wetness, percs slowly.	Severe: seepage.	Severe: seepage, wetness.	Severe: seepage, wetness.	Poor: small stones.
223----- Recluse	Moderate: percs slowly.	Moderate: seepage.	Slight-----	Slight-----	Good.
224----- Recluse	Moderate: percs slowly.	Moderate: seepage, slope.	Slight-----	Slight-----	Good.
225----- Recluse	Moderate: percs slowly.	Severe: slope.	Slight-----	Slight-----	Good.
226*: Recluse-----	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
Bauxson-----	Severe: poor filter, slope.	Severe: seepage, slope.	Severe: slope, large stones.	Severe: slope.	Poor: seepage, small stones, slope.
Baux-----	Severe: poor filter, slope.	Severe: seepage, slope.	Severe: slope, large stones.	Severe: slope.	Poor: seepage, small stones, slope.
227*: Reeder-----	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Poor: depth to rock.
Farnuf-----	Moderate: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight-----	Fair: too clayey.
228*: Reeder-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.	Severe: depth to rock.	Poor: depth to rock.
Farnuf----	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, slope.

See footnote at end of table.

Table 11.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
229----- Reget	Severe: depth to rock, percs slowly.	Severe: depth to rock.	Severe: depth to rock, too clayey.	Severe: depth to rock.	Poor: depth to rock, too clayey.
230----- Reget	Severe: depth to rock, percs slowly.	Severe: depth to rock, slope.	Severe: depth to rock, too clayey.	Severe: depth to rock.	Poor: depth to rock, too clayey.
231*: Reget-----	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, too clayey.	Severe: depth to rock, slope.	Poor: depth to rock, too clayey, slope.
Savar-----	Severe: percs slowly, slope.	Severe: slope.	Severe: slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, slope.
232*: Reget Variant-----	Severe: percs slowly, slope.	Severe: slope.	Severe: slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, slope.
Reget-----	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, too clayey.	Severe: depth to rock, slope.	Poor: depth to rock, too clayey, slope.
233*: Renohill-----	Severe: depth to rock, percs slowly.	Severe: depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock.
Savageton-----	Severe: depth to rock, percs slowly.	Severe: depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock, hard to pack.
234*: Renohill, moist----	Severe: depth to rock, percs slowly.	Severe: depth to rock.	Severe: depth to rock.	Slight-----	Poor: depth to rock.
Savageton, moist---	Severe: depth to rock, percs slowly.	Severe: depth to rock.	Severe: depth to rock.	Slight-----	Poor: depth to rock, hard to pack.

See footnote at end of table.

Table 11.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
235*:					
Renohill, moist----	Severe: depth to rock, percs slowly.	Severe: depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock.
Savageton, moist---	Severe: depth to rock, percs slowly.	Severe: depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock, hard to pack.
236*:					
Renohill-----	Severe: depth to rock, percs slowly.	Severe: depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock.
Ulm, dry-----	Severe: percs slowly.	Severe: slope.	Moderate: slope.	Moderate: slope.	Poor: hard to pack.
237*:					
Renohill, moist----	Severe: depth to rock, percs slowly.	Severe: depth to rock.	Severe: depth to rock.	Slight-----	Poor: depth to rock.
Ulm-----	Severe: percs slowly.	Moderate: slope.	Slight-----	Slight-----	Poor: hard to pack.
238*:					
Renohill-----	Severe: depth to rock, percs slowly.	Severe: depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock.
Worfka-----	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Poor: hard to pack.
239*:					
Renohill, moist----	Severe: depth to rock, percs slowly.	Severe: depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock.
Worfka, moist----	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Poor: hard to pack.
240*:					
Renohill, moist----	Severe: depth to rock, percs slowly.	Severe: depth to rock, slope.	Severe: depth to rock.	Slight-----	Poor: depth to rock.
Wyarno-----	Severe: percs slowly.	Severe: slope.	Slight-----	Slight-----	Good.

See footnote at end of table.

Table 11.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
241*:					
Rock outcrop-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.	Severe: depth to rock.	Poor: depth to rock, slope.
Agneston-----	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: depth to rock, small stones, slope.
Rubble land-----	Severe: poor filter, large stones.	Severe: seepage, slope.	Severe: depth to rock, seepage.	Severe: seepage, large stones.	Poor: seepage, small stones, slope.
242*:					
Rock outcrop-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.	Severe: depth to rock.	Poor: depth to rock, slope.
Starman-----	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.
243*:					
Rock outcrop-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock.	Severe: depth to rock.	Poor: depth to rock, slope.
Starman Variant----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: depth to rock, small stones, slope.
244*:					
Samday, moist-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: depth to rock, hard to pack, slope.
Gayhart, moist-----	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.
Hilight, moist-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: depth to rock, hard to pack, slope.

See footnote at end of table.

Table 11.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
245*: Samday-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: depth to rock, hard to pack, slope.
Hilight-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: depth to rock, hard to pack, slope.
246----- Savage	Severe: percs slowly.	Moderate: slope.	Severe: too clayey.	Slight-----	Poor: too clayey, hard to pack.
247----- Savage	Severe: percs slowly.	Severe: slope.	Severe: too clayey.	Slight-----	Poor: too clayey, hard to pack.
248----- Savage	Severe: percs slowly.	Severe: slope.	Severe: too clayey.	Moderate: slope.	Poor: too clayey, hard to pack.
249*: Savage-----	Severe: percs slowly.	Moderate: seepage, slope.	Slight-----	Slight-----	Poor: small stones.
Farnuf-----	Moderate: percs slowly.	Moderate: seepage, slope.	Slight-----	Slight-----	Poor: small stones.
250*: Savage-----	Severe: percs slowly.	Slight-----	Severe: too clayey.	Slight-----	Poor: too clayey, hard to pack.
Korchea-----	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Good.
251*: Savage-----	Severe: percs slowly.	Severe: slope.	Severe: too clayey.	Moderate: slope.	Poor: too clayey, hard to pack.
Reget-----	Severe: depth to rock, percs slowly, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, too clayey.	Severe: depth to rock, slope.	Poor: depth to rock, too clayey, slope.

See footnote at end of table.

Table 11.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
252*:					
Searing-----	Severe: poor filter.	Severe: seepage, slope.	Severe: seepage.	Severe: seepage.	Poor: thin layer.
Ringling-----	Severe: poor filter, slope, large stones.	Severe: seepage, slope, large stones.	Severe: seepage, slope, large stones.	Severe: seepage, slope.	Poor: seepage, small stones, slope.
253-----					
Shaak	Severe: percs slowly.	Moderate: slope.	Severe: too clayey.	Slight-----	Poor: too clayey, hard to pack.
254*:					
Shingle, moist----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: depth to rock, slope.
Baux-----	Severe: poor filter, slope.	Severe: seepage, slope.	Severe: slope, large stones.	Severe: slope.	Poor: seepage, small stones, slope.
Rock outcrop-----	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.
255*:					
Shingle-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: depth to rock, slope.
Haverdad-----	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Good.
256*:					
Shingle, moist----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: depth to rock, slope.
Haverdad, moist----	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Good.
257*:					
Shingle-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: depth to rock, slope.

See footnote at end of table.

Table 11.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
257*: Nihill-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.
258*: Shingle, moist----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: depth to rock, slope.
Nihill, moist-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.
259*: Shingle, moist----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: depth to rock, slope.
Nuncho-----	Severe: percs slowly.	Moderate: seepage, slope.	Slight-----	Slight-----	Poor: hard to pack.
260*: Shingle-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: depth to rock, slope.
Rock outcrop-----	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.
261*: Shingle, moist----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: depth to rock, slope.
Rock outcrop-----	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.
262*: Shingle-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: depth to rock, slope.
Samday-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: depth to rock, hard to pack, slope.

See footnote at end of table.

Table 11.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
263*:					
Shingle, moist-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: depth to rock, slope.
Samday, moist-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: depth to rock, hard to pack, slope.
264*:					
Shingle-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock.
Taluca-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock.
265*:					
Shingle, moist-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock.
Taluca, moist-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock.
266*:					
Shingle-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: depth to rock, slope.
Theedle-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: depth to rock, slope.
267*:					
Shingle, moist-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: depth to rock, slope.
Theedle, moist-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: depth to rock, slope.
268*:					
Shingle-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: depth to rock, slope.

See footnote at end of table.

Table 11.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
268*:					
Theedle-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock.
Kishona-----	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
269*:					
Shingle, moist----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: depth to rock, slope.
Theedle, moist----	Severe: depth to rock. slope.	Severe: depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock.
Kishona, moist----	Moderate: percs slowly.	Moderate: seepage, slope.	Slight-----	Slight-----	Good.
270*:					
Shingle, moist----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: depth to rock, slope.
Theedle, moist----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: depth to rock, slope.
Rock outcrop-----	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.
271*:					
Shingle-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: depth to rock, slope.
Wibaux-----	Severe: poor filter, slope, large stones.	Severe: seepage, slope, large stones.	Severe: slope, large stones.	Severe: slope.	Poor: seepage, small stones, slope.
272*:					
Shingle, cool-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: depth to rock, slope.

See footnote at end of table.

Table 11.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
272*: Wibaux, cool-----	Severe: poor filter, slope, large stones.	Severe: seepage, slope, large stones.	Severe: slope, large stones.	Severe: slope.	Poor: seepage, small stones, slope.
273*: Shingle-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock.
Worf-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock.
274*: Shingle, moist-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock.
Worf, moist-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock.
275----- Sinkson	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
276*: Spearman-----	Severe: poor filter.	Severe: seepage, slope.	Severe: large stones.	Moderate: slope.	Poor: seepage, small stones.
Wibaux-----	Severe: poor filter, slope, large stones.	Severe: seepage, slope, large stones.	Severe: slope, large stones.	Severe: slope.	Poor: seepage, small stones, slope.
277*: Taluce-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock.
Tulloch-----	Severe: depth to rock, poor filter.	Severe: seepage, depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock.
Rock outcrop-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.	Severe: depth to rock.	Poor: depth to rock, slope.

See footnote at end of table.

Table 11.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
278*:					
Taluca-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock.
Tulloch-----	Severe: depth to rock, poor filter.	Severe: seepage, depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock.
Vonalee-----	Moderate: slope.	Severe: seepage, slope.	Moderate: slope, too sandy.	Moderate: slope.	Fair: too sandy, slope.
279*:					
Taluca, moist-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: depth to rock, slope.
Tulloch, moist-----	Severe: depth to rock, poor filter, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: depth to rock, slope.
Vonalee, moist-----	Severe: slope.	Severe: seepage, slope.	Severe: slope.	Severe: slope.	Poor: slope.
280*:					
Taluca Variant-----	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, slope, too sandy.	Severe: slope.	Poor: depth to rock, too sandy, slope.
Treoff-----	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.
Theedle Variant-----	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: depth to rock, slope.
281*:					
Theedle-----	Severe: depth to rock.	Severe: depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock.

See footnote at end of table.

Table 11.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
281*: Kishona-----	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
282*: Theedle, moist----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock.	Slight-----	Poor: depth to rock.
Kishona, moist----	Moderate: percs slowly.	Severe: slope.	Slight-----	Slight-----	Good.
283*: Theedle, moist----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock.	Moderate: slope.	Poor: depth to rock.
Kishona, moist----	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
284*: Tolman-----	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.
Beeno-----	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.
Beenom-----	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.
285*: Trimad-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.
Doney-----	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.
Waydan-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, too clayey.	Severe: depth to rock, slope.	Poor: depth to rock, too clayey, hard to pack.

See footnote at end of table.

Table 11.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
286*: Trimad-----	Moderate: percs slowly, slope, large stones.	Severe: slope.	Moderate: slope, large stones.	Moderate: slope.	Poor: small stones.
Trivar-----	Moderate: slope.	Severe: seepage, slope.	Severe: seepage.	Severe: seepage.	Poor: small stones.
287*: Trimad-----	Moderate: percs slowly, large stones.	Moderate: seepage, slope, large stones.	Moderate: large stones.	Slight-----	Poor: small stones.
Twin Creek-----	Moderate: percs slowly.	Moderate: seepage, slope.	Slight-----	Slight-----	Good.
288----- Twin Creek	Moderate: percs slowly.	Moderate: seepage, slope.	Slight-----	Slight-----	Good.
289----- Twin Creek Variant	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Fair: too clayey, wetness.
290----- Ulm	Severe: percs slowly.	Slight-----	Slight-----	Slight-----	Poor: hard to pack.
291----- Ulm	Severe: percs slowly.	Moderate: slope.	Slight-----	Slight-----	Poor: hard to pack.
292----- Ulm, dry	Severe: percs slowly.	Slight-----	Slight-----	Slight-----	Poor: hard to pack.
293----- Ulm, dry	Severe: percs slowly.	Moderate: slope.	Slight-----	Slight-----	Poor: hard to pack.
294*: Urban land.					
Kishona, moist----	Moderate: percs slowly.	Moderate: seepage.	Slight-----	Slight-----	Good.
Clarkelen-----	Severe: poor filter.	Severe: seepage.	Severe: wetness, too sandy.	Moderate: flooding, wetness.	Poor: seepage, too sandy.

See footnote at end of table.

Table 11.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
295*: Urban land.					
Platsher-----	Severe: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight-----	Poor: small stones.
Wolfvar-----	Moderate: percs slowly.	Severe: seepage.	Slight-----	Slight-----	Poor: seepage, small stones.
296*: Urban land.					
Wyarno-----	Severe: percs slowly.	Slight-----	Slight-----	Slight-----	Good.
Nuncho-----	Severe: percs slowly.	Moderate: seepage.	Slight-----	Slight-----	Poor: hard to pack.
297*: Ustic Torriorthents. Pits.					
298----- Wayden	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope, too clayey.	Severe: depth to rock, slope.	Poor: depth to rock, too clayey, hard to pack.
299*: Wetterdon-----	Moderate: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight-----	Fair: too clayey.
Recluse-----	Moderate: percs slowly.	Moderate: seepage, slope.	Slight-----	Slight-----	Good.
300*: Wibaux-----	Severe: poor filter, large stones.	Severe: seepage, slope, large stones.	Severe: large stones.	Moderate: slope.	Poor: seepage, small stones.
Reddale-----	Severe: poor filter.	Severe: seepage.	Moderate: large stones.	Slight-----	Poor: seepage, small stones.

See footnote at end of table.

Table 11.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
301----- Windham	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: small stones, slope.
302----- Wolf	Moderate: percs slowly.	Moderate: seepage.	Slight-----	Slight-----	Fair: small stones.
303----- Wolf	Slight-----	Severe: seepage.	Slight-----	Slight-----	Poor: large stones.
304*: Worfka-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: hard to pack, slope.
Shingle-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: depth to rock, slope.
Samday-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: depth to rock, hard to pack, slope.
305*: Worfka, moist-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: hard to pack, slope.
Shingle, moist-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: depth to rock, slope.
Samday, moist-----	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: depth to rock, hard to pack, slope.
306----- Worthenton	Severe: flooding, wetness, percs slowly.	Severe: flooding.	Severe: flooding, wetness, too clayey.	Severe: flooding, wetness.	Poor: too clayey, hard to pack, wetness.
307*: Worthenton-----	Severe: flooding, wetness, percs slowly.	Severe: flooding.	Severe: flooding, wetness, too clayey.	Severe: flooding, wetness.	Poor: too clayey, hard to pack, wetness.
Recluse-----	Moderate: percs slowly.	Moderate: seepage.	Slight-----	Slight-----	Good.

See footnote at end of table.

Table 11.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
308*: Worthenton Variant-	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy, small stones.
Assinniboine Variant-----	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness.	Severe: seepage, wetness.	Poor: thin layer.
309----- Wyarno	Severe: percs slowly.	Slight-----	Slight-----	Slight-----	Good.
310----- Wyarno	Severe: percs slowly.	Moderate: slope.	Slight-----	Slight-----	Good.
311----- Wyarno	Severe: percs slowly.	Severe: slope.	Slight-----	Slight-----	Good.
312----- Wyarno, dry	Severe: percs slowly.	Slight-----	Slight-----	Slight-----	Good.
313----- Wyarno, dry	Severe: percs slowly.	Moderate: slope.	Slight-----	Slight-----	Good.
314----- Wyarno, dry	Severe: percs slowly.	Severe: slope.	Slight-----	Slight-----	Good.
315----- Zigweid	Moderate: percs slowly.	Moderate: seepage.	Slight-----	Slight-----	Good.
316*: Zigweid-----	Moderate: percs slowly.	Moderate: seepage, slope.	Slight-----	Slight-----	Good.
Cambria-----	Moderate: percs slowly.	Moderate: seepage, slope.	Slight-----	Slight-----	Good.
317*: Zigweid-----	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
Kishona-----	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.

See footnote at end of table.

Table 11.--Sanitary Facilities--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
317*: Cambria-----	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: slope.
318*: Zigweid, moist----	Moderate: percs slowly.	Moderate: seepage.	Slight-----	Slight-----	Good.
Kishona, moist----	Moderate: percs slowly.	Moderate: seepage.	Slight-----	Slight-----	Good.
Cambria, moist----	Moderate: percs slowly.	Moderate: seepage.	Slight-----	Slight-----	Good.
319*: Zigweid, moist----	Moderate: percs slowly.	Moderate: seepage, slope.	Slight-----	Slight-----	Good.
Kishona, moist----	Moderate: percs slowly.	Moderate: seepage, slope.	Slight-----	Slight-----	Good.
Cambria, moist----	Moderate: percs slowly.	Moderate: seepage, slope.	Slight-----	Slight-----	Good.
320*: Zigweid, moist----	Moderate: percs slowly.	Severe: slope.	Slight-----	Slight-----	Good.
Kishona, moist----	Moderate: percs slowly.	Severe: slope.	Slight-----	Slight-----	Good.
Cambria, moist----	Moderate: percs slowly.	Severe: slope.	Slight-----	Slight-----	Good.

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 12.--Construction Materials

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "good," "fair," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
100*: Abac-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
Rock outcrop-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
101*: Absted-----	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, excess sodium.
Haverdad-----	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
102*: Absted, moist-----	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, excess sodium.
Haverdad, moist-----	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
103*: Absted-----	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, excess sodium.
Slickspots.				
104*: Agneston-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Granile-----	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.

See footnote at end of table.

Table 12.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
104*: Rock outcrop-----	Poor: depth to rock, slope.	Improbable: depth to rock.	Improbable: depth to rock.	Poor: depth to rock, slope.
105*: Arnegard-----	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
Farnuf-----	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
106*: Arnegard-----	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, slope.
Farnuf-----	Fair: low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
107*: Assinniboine-----	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Dast-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
108*: Baux-----	Poor: slope.	Improbable: large stones.	Probable-----	Poor: small stones, area reclaim, slope.
Bauxson-----	Poor: slope.	Improbable: large stones.	Probable-----	Poor: small stones, area reclaim, slope.
109*: Baux, dry-----	Poor: slope.	Improbable: large stones.	Probable-----	Poor: small stones, area reclaim, slope.
Bauxson, dry-----	Poor: slope.	Improbable: large stones.	Probable-----	Poor: small stones, area reclaim, slope.

See footnote at end of table.

Table 12.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
110*:				
Baux-----	Fair: large stones, slope.	Improbable: large stones.	Probable-----	Poor: small stones, area reclaim, slope.
Bauxson-----	Poor: slope.	Improbable: large stones.	Probable-----	Poor: small stones, area reclaim, slope.
Kirtley-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, too clayey, thin layer.
111*:				
Baux-----	Fair: large stones, slope.	Improbable: large stones.	Probable-----	Poor: small stones, area reclaim, slope.
Bauxson-----	Poor: slope.	Improbable: large stones.	Probable-----	Poor: small stones, area reclaim, slope.
Wetterdon-----	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
112*:				
Bidman-----	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
Arvada-----	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: excess sodium.
113*:				
Bidman, moist-----	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
Arvada, moist-----	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: excess sodium.
114*:				
Bidman-----	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.

See footnote at end of table.

Table 12.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
114*: Ulm, dry-----	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
115*: Bidman, moist-----	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
Ulm-----	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
116*: Big Horn-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones, area reclaim.
Wolf, dry-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
117*: Cambria-----	Fair: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
Forkwood-----	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
118*: Cambria, moist-----	Fair: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
Forkwood, moist-----	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
119*, 120*: Cedak-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, too clayey, thin layer.
Recluse-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.

See footnote at end of table.

Table 12.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
121*: Cedak-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, too clayey, thin layer.
Recluse-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones, slope.
122*: Cedak, dry-----	Poor: depth to rock, low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, too clayey, thin layer.
Recluse, dry-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones, slope.
123----- Clarkalen	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy, too clayey.
124----- Clarkalen, moist	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy, too clayey.
125*: Cloud Peak-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Tolman-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
126*: Coaliams, moist-----	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
Worthanton, moist----	Poor: shrink-swell, low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.

See footnote at end of table.

Table 12.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
127*: Cushman-----	Poor: depth to rock, low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, too clayey, slope.
Forkwood-----	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
128*: Cushman, moist-----	Poor: depth to rock, low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, too clayey.
Forkwood, moist-----	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
129*: Cushman, moist-----	Poor: depth to rock, low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, too clayey, slope.
Forkwood, moist-----	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones, slope.
130*: Cushman-----	Poor: depth to rock, low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, too clayey, slope.
Worf-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock.
131*: Cushman, moist-----	Poor: depth to rock, low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, too clayey, slope.
Worf, moist-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock.

See footnote at end of table.

Table 12.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
132----- Dast Variant	Poor: depth to rock, slope.	Improbable: thin layer.	Improbable: too sandy.	Poor: depth to rock, too sandy, slope.
133*: Doney-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Doney Variant-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
134*: Doney-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Ringling-----	Poor: large stones, slope.	Improbable: small stones, large stones.	Probable-----	Poor: small stones, area reclaim, slope.
135*: Doney-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Ringling-----	Poor: large stones, slope.	Improbable: small stones, large stones.	Probable-----	Poor: small stones, area reclaim, slope.
Rock outcrop-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
136----- Draknab	Good-----	Probable-----	Improbable: too sandy.	Poor: too sandy.
137, 138----- Farnuf	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
139----- Farnuf	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, slope.
140----- Farnuf Variant, wet	Fair: wetness.	Probable-----	Probable-----	Poor: area reclaim.

See footnote at end of table.

Table 12.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
141*: Farnuf Variant-----	Good-----	Probable-----	Probable-----	Poor: area reclaim.
Cloud Peak Variant---	Good-----	Probable-----	Probable-----	Poor: too sandy, small stones, area reclaim.
142, 143, 144----- Forkwood	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
145*: Gayhart-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
Bahl-----	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
146*: Gayhart, moist-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
Bahl, moist-----	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
147*: Hardhart-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Starley-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
148*: Hargreave-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, too clayey, small stones.

See footnote at end of table.

Table 12.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
148*: Moskee-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
149*: Hargreave-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, too clayey, small stones.
Moskee-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones, slope.
150*: Hargreave, dry-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, too clayey, small stones.
Moskee, dry-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
151----- Harlan, dry	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones.
152*: Harlan-----	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones.
Kirtley-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, too clayey, thin layer.
153*: Harlan-----	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones, slope.
Kirtley-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, too clayey, thin layer.
154----- Haverdad	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.

See footnote at end of table.

Table 12.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
155----- Haverdad, moist	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
156----- Haverdad, saline	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: excess salt.
157----- Haverdad, moist, saline	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: excess salt.
158*: Haverdad-----	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
Draknab-----	Good-----	Probable-----	Improbable: too sandy.	Poor: too sandy.
159*: Haverdad, moist-----	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
Draknab, moist-----	Good-----	Probable-----	Improbable: too sandy.	Poor: too sandy.
160*: Haverdad-----	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
Worthenton-----	Poor: shrink-swell, low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
161*: Haverdad, moist-----	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
Worthenton-----	Poor: shrink-swell, low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
162----- Havertel	Good-----	Probable-----	Probable-----	Poor: too sandy, small stones, area reclaim.

See footnote at end of table.

Table 12.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
163*: Hesperus Variant-----	Fair: wetness, slope.	Probable-----	Probable-----	Poor: slope.
Reget-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
164*: Hiland-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones, slope.
Bowbac-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, too clayey, small stones.
165*: Hiland, moist-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
Bowbac, moist-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, too clayey, small stones.
166*: Hiland-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones, slope.
Decolney-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, slope.
167*: Hiland, moist-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
Vonalee, moist-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy.

See footnote at end of table.

Table 12.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
168*: Hilight-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, too clayey, slope.
Rock outcrop-----	Poor: area reclaim, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
169*: Jonpol-----	Poor: depth to rock, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
Platmak-----	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
170*: Jonpol-----	Poor: depth to rock, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.
Platmak-----	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.
171*, 172*: Kishona-----	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
Cambria-----	Fair: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
173*: Lambman-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock.
Hargreave-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, too clayey, small stones.
174*: Lucky-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.

See footnote at end of table.

Table 12.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
174*: Burgess-----	Poor: depth to rock.	Improbable: thin layer.	Improbable: thin layer.	Poor: small stones.
Hazton-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
175, 176, 177----- Moskee	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
178*: Moskee-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
Noden-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
179*: Moskee-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones, slope.
Noden-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, slope.
180*: Moskee, dry-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
Noden, dry-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
181*, 182*: Moskee-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
Nuncho-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
183*: Moskee-----	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.

See footnote at end of table.

Table 12.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
183*: Worthenton, moist----	Poor: shrink-swell, low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
184*: Nathrop-----	Poor: depth to rock, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: small stones, slope.
Passcreek-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
Starley-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
185----- Nesda	Fair: wetness.	Probable-----	Probable-----	Poor: too sandy, small stones, area reclaim.
186*: Nesda-----	Good-----	Probable-----	Probable-----	Poor: too sandy, small stones, area reclaim.
Rubble land-----	Poor: large stones.	Improbable: small stones, large stones.	Improbable: large stones.	Poor: large stones, small stones.
187*: Nesda Variant-----	Good-----	Probable-----	Probable-----	Poor: too sandy, small stones, area reclaim.
Havertel-----	Good-----	Probable-----	Probable-----	Poor: too sandy, small stones, area reclaim.
188*: Norbert-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, too clayey, slope.

See footnote at end of table.

Table 12.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
188*:				
Doney-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Rock outcrop-----	Poor: area reclaim, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
189*:				
Norbert-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, too clayey, slope.
Eltzac-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
190*:				
Norbert-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, too clayey, slope.
Reget-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
Savar-----	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
191*:				
Norbert-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, too clayey, slope.
Rock outcrop-----	Poor: area reclaim, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
192, 193, 194, 195,				
196-----	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
Nuncho				

See footnote at end of table.

Table 12.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
197*, 198*: Nuncho-----	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
Emigrant-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
199----- Nuncho Variant	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
200*: Owen Creek-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones, slope.
Echemoor-----	Poor: depth to rock, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Bynum-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
201*: Farmleed-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
Bidman-----	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
202*: Farmleed, moist-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
Bidman, moist-----	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
203*: Farmleed, moist-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.

See footnote at end of table.

Table 12.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
203*: Bidman, moist-----	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
204*: Pamleed-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
Renhill-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
205*: Pamleed, moist-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
Renhill, moist-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
206*: Pamleed, moist-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.
Renhill, moist-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
207*: Pamleed-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
Worfka-----	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.

See footnote at end of table.

Table 12.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
208*: Pamleed, moist-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
Worfka, moist-----	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
209*: Pamleed, moist-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.
Worfka, moist-----	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
210*: Pamleed, moist-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
Worfka, moist-----	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
Shingle Variant, moist-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock.
211*: Peritsa-----	Poor: depth to rock, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Abac-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
212, 213----- Platmak	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
214----- Platmak, dry	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.

See footnote at end of table.

Table 12.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
215, 216, 217, 218---- Platsher	Fair: shrink-swell, thin layer.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones, area reclaim.
219*, 220*, 221*: Platsher-----	Fair: shrink-swell, thin layer.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones, area reclaim.
Wolfvar-----	Good-----	Probable-----	Probable-----	Poor: small stones, area reclaim.
222----- Platsher Variant	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim.
223, 224, 225----- Recluse	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
226*: Recluse-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones, slope.
Bauxson-----	Fair: large stones, slope.	Improbable: large stones.	Probable-----	Poor: small stones, area reclaim, slope.
Baux-----	Fair: large stones, slope.	Improbable: large stones.	Probable-----	Poor: small stones, area reclaim, slope.
227*: Reeder-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, thin layer.
Farnuf-----	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.

See footnote at end of table.

Table 12.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
228*: Reeder-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, thin layer, slope.
Farnuf-----	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, slope.
229, 230----- Reget	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
231*: Reget-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
Savar-----	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
232*: Reget Variant-----	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
Reget-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
233*: Renohill-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
Savageton-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
234*, 235*: Renohill, moist-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.

See footnote at end of table.

Table 12.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
234*, 235*: Savageton, moist-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
236*: Ranohill-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
Ulm, dry-----	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
237*: Ranohill, moist-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
Ulm-----	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
238*: Ranohill-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
Worfka-----	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
239*: Ranohill, moist-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
Worfka, moist-----	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.

See footnote at end of table.

Table 12.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
240*: Renohill, moist-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
Wyarno-----	Fair: shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
241*: Rock outcrop-----	Poor: depth to rock, slope.	Improbable: depth to rock.	Improbable: depth to rock.	Poor: depth to rock, slope.
Agneston-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Rubble land-----	Poor: large stones, slope.	Improbable: small stones, large stones.	Improbable: large stones.	Poor: large stones, small stones, slope.
242*: Rock outcrop-----	Poor: depth to rock, slope.	Improbable: depth to rock.	Improbable: depth to rock.	Poor: depth to rock, slope.
Starman-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
243*: Rock outcrop-----	Poor: depth to rock, slope.	Improbable: depth to rock.	Improbable: depth to rock.	Poor: depth to rock, slope.
Starman Variant-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
244*: Samday, moist-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, too clayey, slope.

See footnote at end of table.

Table 12.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
244*: Gayhart, moist-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
Hilight, moist-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, too clayey, slope.
245*: Samday-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, too clayey, slope.
Hilight-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, too clayey, slope.
246, 247, 248----- Savage	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
249*: Savage-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, area reclaim.
Farnuf-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim.
250*: Savage-----	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
Korchea-----	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Good.
251*: Savage-----	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.

See footnote at end of table.

Table 12.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
251*: Reget-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
252*: Searing-----	Good-----	Improbable: small stones, large stones.	Probable-----	Poor: small stones, area reclaim.
Ringling-----	Poor: large stones, slope.	Improbable: small stones, large stones.	Probable-----	Poor: small stones, area reclaim, slope.
253----- Shaak	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
254*: Shingle, moist-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
Baux-----	Poor: slope.	Improbable: large stones.	Probable-----	Poor: small stones, area reclaim, slope.
Rock outcrop-----	Poor: area reclaim, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
255*: Shingle-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
Haverdad-----	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
256*: Shingle, moist-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
Haverdad, moist-----	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.

See footnote at end of table.

Table 12.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
257*: Shingle-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
Nihill-----	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
258*: Shingle, moist-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
Nihill, moist-----	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
259*: Shingle, moist-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
Nuncho-----	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
260*: Shingle-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
Rock outcrop-----	Poor: area reclaim, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
261*: Shingle, moist-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
Rock outcrop-----	Poor: area reclaim, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
262*: Shingle-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.

See footnote at end of table.

Table 12.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
262*: Samday-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, too clayey, slope.
263*: Shingle, moist-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
Samday, moist-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, too clayey, slope.
264*: Shingle-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock.
Taluca-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock.
265*: Shingle, moist-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock.
Taluca, moist-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock.
266*: Shingle-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
Theedle-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
267*: Shingle, moist-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
Theedle, moist-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.

See footnote at end of table.

Table 12.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
268*:				
Shingle-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
Theedle-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, too clayey, slope.
Kishona-----	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones, slope.
269*:				
Shingle, moist-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
Theedle, moist-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, too clayey, slope.
Kishona, moist-----	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
270*:				
Shingle, moist-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
Theedle, moist-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Rock outcrop-----	Poor: area reclaim, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
271*:				
Shingle-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
Wibaux-----	Poor: large stones, slope.	Improbable: small stones, large stones.	Probable-----	Poor: small stones, area reclaim, slope.

See footnote at end of table.

Table 12.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
272*: Shingle, cool-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
Wibaux, cool-----	Poor: large stones, slope.	Improbable: small stones, large stones.	Probable-----	Poor: small stones, area reclaim, slope.
273*: Shingle-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock.
Worf-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock.
274*: Shingle, moist-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock.
Worf, moist-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock.
275----- Sinkson	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: slope.
276*: Spearman-----	Fair: large stones.	Improbable: small stones, large stones.	Improbable: large stones.	Poor: small stones, area reclaim.
Wibaux-----	Poor: large stones.	Improbable: small stones, large stones.	Probable-----	Poor: small stones, area reclaim, slope.
277*: Taluco-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock.
Tulloch-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, too sandy, slope.
Rock outcrop-----	Poor: depth to rock, slope.	Improbable: depth to rock.	Improbable: depth to rock.	Poor: depth to rock, slope.

See footnote at end of table.

Table 12.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
278*:				
Taluce-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock.
Tulloch-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, too sandy, slope.
Vonalee-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy, slope.
279*:				
Taluce, moist-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
Tulloch, moist-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Vonalee, moist-----	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
280*:				
Taluce Variant-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
Treoff-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
Theedle Variant-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
281*:				
Theedle-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, too clayey, slope.
Kishona-----	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones, slope.

See footnote at end of table.

Table 12.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
282*: Theedle, moist-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, too clayey.
Kishona, moist-----	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
283*: Theedle, moist-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Fair: depth to rock, too clayey, slope.
Kishona, moist-----	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones, slope.
284*: Tolman-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
Beeno-----	Poor: depth to rock, low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Beencm-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, small stones, slope.
285*: Trimad-----	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Doney-----	Poor: depth to rock, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
Wayden-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, too clayey, slope.

See footnote at end of table.

Table 12.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
286*: Trimad-----	Fair: large stones.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim.
Trivar-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim.
287*: Trimad-----	Fair: large stones.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim.
Twin Creek-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: area reclaim.
288----- Twin Creek	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
289----- Twin Creek Variant	Fair: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
290, 291----- Ulm	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
292, 293----- Ulm, dry	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
294*: Urban land.				
Kishona, moist-----	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
Clarkelen-----	Good-----	Probable-----	Improbable: too sandy.	Fair: too sandy, too clayey, small stones.
295*: Urban land.				
Platsher-----	Fair: shrink-swell, thin layer.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones, area reclaim.

See footnote at end of table.

Table 12.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
295*: Wolfvar-----	Good-----	Probable-----	Probable-----	Poor: small stones, area reclaim.
296*: Urban land.				
Wyarno-----	Fair: shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
Nuncho-----	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
297*: Ustic Torriorthents. Pits.				
298----- Wayden	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, too clayey, slope.
299*: Wetterdon-----	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
Recluse-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
300*: Wibaux-----	Fair: large stones.	Improbable: small stones, large stones.	Probable-----	Poor: small stones, area reclaim.
Reddale-----	Good-----	Improbable: small stones, large stones.	Probable-----	Poor: small stones, area reclaim.
301----- Windham	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
302----- Wolf	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.

See footnote at end of table.

Table 12.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
303----- Wolf	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: area reclaim, small stones.
304*: Worfka-----	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
Shingle-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
Samday-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, too clayey, slope.
305*: Worfka, moist-----	Poor: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
Shingle, moist-----	Poor: depth to rock.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, slope.
Samday, moist-----	Poor: depth to rock, shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: depth to rock, too clayey, slope.
306----- Worthenton	Poor: shrink-swell, low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
307*: Worthenton-----	Poor: shrink-swell, low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, wetness.
Recluse-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.

See footnote at end of table.

Table 12.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
308*: Worhenton Variant	Poor: wetness.	Probable	Probable	Poor: small stones, area reclaim, wetness.
Assinniboine Variant	Fair: wetness.	Probable	Probable	Poor: small stones, area reclaim.
309, 310, 311 Wyarno	Fair: shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
312, 313, 314 Wyarno, dry	Fair: shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
315 Zigweid	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
316*: Zigweid	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
Cambria	Fair: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
317*: Zigweid	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, slope.
Kishona	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones, slope.
Cambria	Fair: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, slope.
318*, 319*, 320*: Zigweid, moist	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
Kishona, moist	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.

See footnote at end of table.

Table 12.--Construction Materials--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
318*, 319*, 320*: Cambria, moist-----	Fair: shrink-swell, low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 13.--Water Management

(Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not evaluated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Irrigation	Terraces and diversions	Grassed waterways
100*:						
Abac-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, depth to rock, erodes easily.	Slope, depth to rock, erodes easily.	Slope, erodes easily, depth to rock.
Rock outcrop----	Severe: depth to rock, slope.	Severe: depth to rock.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.
101*:						
Absted-----	Moderate: slope.	Severe: excess sodium.	Severe: no water.	Slope, soil blowing, percs slowly.	Erodes easily, soil blowing, percs slowly.	Too arid, excess sodium, erodes easily.
Havardad-----	Moderate: seepage, slope.	Moderate: piping.	Severe: no water.	Slope, soil blowing.	Erodes easily, soil blowing.	Too arid, erodes easily.
102*:						
Absted, moist----	Moderate: slope.	Severe: excess sodium.	Severe: no water.	Slope, percs slowly.	Erodes easily, percs slowly.	Too arid, excess sodium, erodes easily.
Havardad, moist--	Moderate: seepage, slope.	Moderate: piping.	Severe: no water.	Slope, soil blowing.	Erodes easily, soil blowing.	Too arid, erodes easily.
103*:						
Absted-----	Moderate: slope.	Severe: excess sodium.	Severe: no water.	Slope, soil blowing, percs slowly.	Erodes easily, soil blowing, percs slowly.	Too arid, excess sodium, erodes easily.
Slickspots.	---	Severe: excess sodium.	Severe: no water.	Excess sodium	---	Excess sodium.
104*:						
Agnaston-----	Severe: seepage, slope.	Severe: thin layer.	Severe: no water.	Slope, droughty, soil blowing.	Slope, depth to rock, soil blowing.	Slope, droughty, depth to rock.
Granile-----	Severe: seepage, slope.	Moderate: thin layer, large stones.	Severe: no water.	Slope, droughty.	Slope, large stones.	Large stones, slope, droughty.

See footnote at end of table.

Table 13.--Water Management--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Irrigation	Terraces and diversions	Grassed waterways
104*: Rock outcrop----	Severe: depth to rock, slope.	Severe: depth to rock.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.
105*: Arnegard-----	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Slope-----	Erodes easily	Erodes easily.
106*: Farnuf-----	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Slope-----	Erodes easily	Erodes easily.
Arnegard-----	Severe: slope.	Severe: piping.	Severe: no water.	Slope-----	Slope, erodes easily.	Slope, erodes easily.
Farnuf-----	Severe: slope.	Severe: piping.	Severe: no water.	Slope-----	Slope, erodes easily.	Slope, erodes easily.
107*: Assinniboine----	Severe: seepage, slope.	Slight-----	Severe: no water.	Slope, soil blowing.	Slope, soil blowing.	Too arid, slope.
Dast-----	Severe: seepage, slope.	Severe: piping.	Severe: no water.	Slope, soil blowing, depth to rock.	Slope, depth to rock, erodes easily.	Slope, erodes easily, depth to rock.
108*: Baux-----	Severe: seepage, slope.	Severe: seepage, large stones.	Severe: no water.	Slope, large stones, droughty.	Slope, large stones.	Too arid, large stones, slope.
Bauxson-----	Severe: seepage, slope.	Severe: seepage.	Severe: no water.	Slope, large stones, droughty.	Slope, large stones, erodes easily.	Too arid, large stones, slope.
109*: Baux, dry-----	Severe: seepage, slope.	Severe: seepage, large stones.	Severe: no water.	Slope, large stones, droughty.	Slope, large stones.	Too arid, large stones, slope.
Bauxson, dry----	Severe: seepage, slope.	Severe: seepage.	Severe: no water.	Slope, large stones, droughty.	Slope, large stones, erodes easily.	Too arid, large stones, slope.

See footnote at end of table.

Table 13.--Water Management--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Irrigation	Terraces and diversions	Grassed waterways
110*:						
Baux-----	Severe: seepage, slope.	Severe: seepage, large stones.	Severe: no water.	Slope, large stones, droughty.	Slope, large stones.	Too arid, large stones, slope.
Bauxson-----	Severe: seepage, slope.	Severe: seepage.	Severe: no water.	Slope, large stones, droughty.	Slope, large stones, erodes easily.	Too arid, large stones, slope.
Kirtley-----	Moderate: seepage, depth to rock, slope.	Severe: piping.	Severe: no water.	Slope, depth to rock.	Depth to rock, erodes easily.	Too arid, erodes easily.
111*:						
Baux-----	Severe: seepage, slope.	Severe: seepage, large stones.	Severe: no water.	Slope, large stones, droughty.	Slope, large stones.	Too arid, large stones, slope.
Bauxson-----	Severe: seepage, slope.	Severe: seepage.	Severe: no water.	Slope, large stones, droughty.	Slope, large stones, erodes easily.	Too arid, large stones, slope.
Wetterdon-----	Moderate: seepage, slope.	Severe: thin layer.	Severe: no water.	Slope, erodes easily.	Erodes easily.	Erodes easily.
112*:						
Bidman-----	Moderate: seepage, slope.	Slight-----	Severe: no water.	Slope, soil blowing, percs slowly, excess sodium, excess salt.	Erodes easily, soil blowing.	Too arid, erodes easily.
Arvada-----	Moderate: slope.	Severe: excess sodium.	Severe: no water.	Slope, soil blowing, percs slowly.	Erodes easily, soil blowing, percs slowly.	Too arid, excess sodium, erodes easily.
113*:						
Bidman, moist----	Moderate: seepage.	Slight-----	Severe: no water.	Percs slowly---	Erodes easily	Too arid, erodes easily.
Arvada, moist----	Slight-----	Severe: excess sodium.	Severe: no water.	Soil blowing, percs slowly, excess sodium, excess salt.	Erodes easily, soil blowing, percs slowly.	Too arid, excess sodium,

See footnote at end of table.

Table 13.--Water Management--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Irrigation	Terraces and diversions	Grassed waterways
114*:						
Bidman-----	Moderate: seepage, slope.	Slight-----	Severe: no water.	Slope, soil blowing, percs slowly.	Erodes easily, soil blowing.	Too arid, erodes easily.
Ulm, dry-----	Moderate: slope.	Moderate: hard to pack.	Severe: no water.	Slope, percs slowly.	Erodes easily	Too arid, erodes easily.
115*:						
Bidman, moist---	Moderate: seepage, slope.	Slight-----	Severe: no water.	Slope, percs slowly.	Erodes easily	Too arid, erodes easily.
Ulm-----	Moderate: slope.	Moderate: hard to pack.	Severe: no water.	Slope, percs slowly.	Erodes easily	Too arid, erodes easily.
116*:						
Big Horn-----	Moderate: seepage, slope.	Moderate: piping.	Severe: no water.	Slope, percs slowly.	Erodes easily	Too arid, erodes easily, percs slowly.
Wolf, dry-----	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Slope, erodes easily.	Erodes easily	Too arid, erodes easily.
117*:						
Cambria-----	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Slope, soil blowing.	Erodes easily, soil blowing.	Too arid, erodes easily.
Forkwood-----	Moderate: seepage, slope.	Moderate: piping.	Severe: no water.	Slope, soil blowing.	Erodes easily, soil blowing.	Too arid, erodes easily.
118*:						
Cambria, moist---	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Slope, soil blowing.	Erodes easily, soil blowing.	Too arid, erodes easily.
Forkwood, moist--	Moderate: seepage, slope.	Moderate: piping.	Severe: no water.	Slope-----	Erodes easily	Too arid, erodes easily.
119*:						
Cedak-----	Moderate: seepage, depth to rock, slope.	Severe: piping.	Severe: no water.	Slope, soil blowing, depth to rock.	Depth to rock, erodes easily.	Too arid, erodes easily.

See footnote at end of table.

Table 13.--Water Management--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Irrigation	Terraces and diversions	Grassed waterways
119*: Recluse-----	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Slope, erodes easily.	Erodes easily	Too arid, erodes easily.
120*: Cedak-----	Moderate: seepage, depth to rock, slope.	Severe: piping.	Severe: no water.	Slope, depth to rock.	Depth to rock, erodes easily.	Too arid, erodes easily.
Recluse-----	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Slope, erodes easily.	Erodes easily	Too arid, erodes easily.
121*: Cedak-----	Severe: slope.	Severe: piping.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Recluse-----	Severe: slope.	Severe: piping.	Severe: no water.	Slope, erodes easily.	Slope, erodes easily.	Too arid, slope, erodes easily.
122*: Cedak, dry-----	Severe: slope.	Severe: thin layer.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Recluse, dry-----	Severe: slope.	Severe: piping.	Severe: no water.	Slope, erodes easily.	Slope, erodes easily.	Too arid, slope, erodes easily.
123----- Clarkelen	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Favorable-----	Too sandy-----	Too arid.
124----- Clarkelen, moist	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Soil blowing---	Too sandy, soil blowing.	Too arid.
125*: Cloud Peak-----	Severe: slope.	Moderate: thin layer, large stones.	Severe: no water.	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope.
Tolman-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.

See footnote at end of table.

Table 13.--Water Management--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Irrigation	Terraces and diversions	Grassed waterways
126*:						
Coaliams, moist--	Moderate: seepage.	Severe: piping.	Moderate: deep to water, slow refill.	Favorable-----	Erodes easily	Too arid, erodes easily.
Worhenton, moist	Slight-----	Severe: wetness.	Severe: slow refill.	Wetness, percs slowly, erodes easily.	Erodes easily, wetness, percs slowly.	Wetness, erodes easily, percs slowly.
127*:						
Cushman-----	Severe: slope.	Moderate: thin layer, piping.	Severe: no water.	Slope, soil blowing, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Forkwood-----	Moderate: seepage, slope.	Moderate: piping.	Severe: no water.	Slope-----	Erodes easily	Too arid, erodes easily.
128*:						
Cushman, moist--	Moderate: seepage, depth to rock, slope.	Moderate: thin layer, piping.	Severe: no water.	Slope, depth to rock.	Depth to rock, erodes easily.	Too arid, erodes easily.
Forkwood, moist--	Moderate: seepage, slope.	Moderate: piping.	Severe: no water.	Slope-----	Erodes easily	Too arid, erodes easily.
129*:						
Cushman, moist--	Severe: slope.	Moderate: thin layer, piping.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Forkwood, moist--	Severe: slope.	Moderate: piping.	Severe: no water.	Slope-----	Slope, erodes easily.	Too arid, slope, erodes easily.
130*:						
Cushman-----	Severe: slope.	Moderate: thin layer, piping.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Worf-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
131*:						
Cushman, moist--	Severe: slope.	Moderate: thin layer, piping.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.

See footnote at end of table.

Table 13.--Water Management--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Irrigation	Terraces and diversions	Grassed waterways
131*: Worf, moist-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
132----- Dast Variant	Severe: depth to rock, slope.	Severe: seepage, piping.	Severe: no water.	Slope, droughty, fast intake.	Slope, depth to rock, erodes easily.	Slope, erodes easily, droughty.
133*: Doney-----	Severe: slope.	Severe: piping.	Severe: no water.	Slope, depth to rock, erodes easily.	Slope, depth to rock, erodes easily.	Slope, erodes easily, depth to rock.
Doney Variant----	Severe: depth to rock, slope.	Severe: piping.	Severe: no water.	Slope, depth to rock, erodes easily.	Slope, depth to rock, erodes easily.	Slope, erodes easily, depth to rock.
134*: Doney-----	Severe: slope.	Severe: piping.	Severe: no water.	Slope, depth to rock, erodes easily.	Slope, depth to rock, erodes easily.	Slope, erodes easily, depth to rock.
Ringling-----	Severe: seepage, slope.	Severe: seepage, large stones.	Severe: no water.	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
135*: Doney-----	Severe: slope.	Severe: piping.	Severe: no water.	Slope, depth to rock, erodes easily.	Slope, depth to rock, erodes easily.	Slope, erodes easily, depth to rock.
Ringling-----	Severe: seepage, slope.	Severe: seepage, large stones.	Severe: no water.	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
Rock outcrop----	Severe: depth to rock, slope.	Severe: depth to rock.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.
136----- Draknab	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Droughty, fast intake.	Too sandy, soil blowing.	Too arid, droughty.
137, 138----- Farnuf	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Slope-----	Erodes easily	Erodes easily.
139----- Farnuf	Severe: slope.	Severe: piping.	Severe: no water.	Slope-----	Slope, erodes easily.	Slope, erodes easily.

See footnote at end of table.

Table 13.--Water Management--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Irrigation	Terraces and diversions	Grassed waterways
140----- Farnuf Variant, wet	Severe: seepage.	Severe: wetness.	Severe: slow refill.	Wetness, erodes easily.	Erodes easily, wetness.	Wetness, erodes easily.
141*: Farnuf Variant	Severe: seepage.	Moderate: thin layer.	Severe: no water.	Slope, erodes easily.	Erodes easily	Erodes easily.
Cloud Peak Variant-----	Severe: seepage.	Severe: seepage.	Severe: no water.	Slope, droughty.	Erodes easily, too sandy, soil blowing.	Erodes easily, droughty.
142----- Forkwood	Moderate: seepage.	Moderate: piping.	Severe: no water.	Favorable-----	Erodes easily	Too arid, erodes easily.
143, 144----- Forkwood	Moderate: seepage, slope.	Moderate: piping.	Severe: no water.	Slope-----	Erodes easily	Too arid, erodes easily.
145*: Gayhart-----	Severe: slope.	Moderate: thin layer, hard to pack.	Severe: no water.	Slope, percs slowly.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Bahl-----	Severe: slope.	Moderate: hard to pack.	Severe: no water.	Slope, percs slowly.	Slope, erodes easily, percs slowly.	Too arid, slope, erodes easily.
146*: Gayhart, moist---	Severe: slope.	Moderate: thin layer, hard to pack.	Severe: no water.	Slope, percs slowly.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Bahl, moist-----	Severe: slope.	Moderate: hard to pack.	Severe: no water.	Slope, percs slowly.	Slope, erodes easily, percs slowly.	Too arid, slope, erodes easily.
147*: Hardhart-----	Severe: slope.	Severe: thin layer.	Severe: no water.	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Starley-----	Severe: depth to rock, slope.	Moderate: large stones.	Severe: no water.	Slope, large stones.	Slope, large stones, depth to rock.	Large stones, slope.

See footnote at end of table.

Table 13.--Water Management--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Irrigation	Terraces and diversions	Grassed waterways
148*:						
Hargreave-----	Moderate: seepage, depth to rock, slope.	Moderate: thin layer, piping.	Severe: no water.	Slope, soil blowing, depth to rock.	Depth to rock, soil blowing.	Too arid, depth to rock.
Moskee-----	Severe: seepage.	Slight-----	Severe: no water.	Slope, soil blowing.	Erodes easily, soil blowing.	Too arid, erodes easily.
149*:						
Hargreave-----	Severe: slope.	Moderate: thin layer, piping.	Severe: no water.	Slope, soil blowing, depth to rock.	Slope, depth to rock, soil blowing.	Too arid, slope, depth to rock.
Moskee-----	Severe: seepage, slope.	Slight-----	Severe: no water.	Slope, soil blowing, erodes easily.	Slope, erodes easily, soil blowing.	Too arid, slope, erodes easily.
150*:						
Hargreave, dry---	Severe: slope.	Moderate: thin layer, piping.	Severe: no water.	Slope, soil blowing, depth to rock.	Slope, depth to rock, soil blowing.	Too arid, slope, depth to rock.
Moskee, dry-----	Severe: seepage.	Slight-----	Severe: no water.	Slope, soil blowing.	Erodes easily, soil blowing.	Too arid, erodes easily.
151-----						
Harlan, dry	Moderate: seepage, slope.	Moderate: piping.	Severe: no water.	Slope-----	Erodes easily	Too arid, erodes easily.
152*:						
Harlan-----	Moderate: seepage, slope.	Moderate: piping.	Severe: no water.	Slope, erodes easily.	Erodes easily	Too arid, erodes easily.
Kirtley-----	Moderate: seepage, depth to rock, slope.	Severe: piping.	Severe: no water.	Slope, depth to rock.	Depth to rock, erodes easily.	Too arid, erodes easily.
153*:						
Harlan-----	Severe: slope.	Moderate: piping.	Severe: no water.	Slope-----	Slope, erodes easily.	Too arid, slope, erodes easily.
Kirtley-----	Severe: slope.	Severe: piping.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.

See footnote at end of table.

Table 13.--Water Management--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Irrigation	Terraces and diversions	Grassed waterways
154----- Haverdad	Moderate: seepage.	Moderate: piping.	Severe: no water.	Soil blowing---	Erodes easily, soil blowing.	Too arid, erodes easily.
155----- Haverdad, moist	Moderate: seepage.	Moderate: piping.	Severe: no water.	Favorable-----	Erodes easily	Too arid, erodes easily.
156----- Haverdad, saline	Moderate: seepage.	Severe: wetness.	Moderate: slow refill, salty water.	Wetness, flooding.	Erodes easily, wetness.	Too arid, erodes easily.
157----- Haverdad, moist, saline	Moderate: seepage.	Severe: wetness.	Moderate: slow refill, salty water.	Wetness, flooding.	Erodes easily, wetness, excess salt.	Too arid, erodes easily, excess salt.
158*: Haverdad-----	Moderate: seepage.	Moderate: piping.	Severe: no water.	Soil blowing, flooding.	Erodes easily, soil blowing.	Too arid, erodes easily.
Draknab-----	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Droughty-----	Too sandy, soil blowing.	Too arid, droughty.
159*: Haverdad, moist--	Moderate: seepage.	Moderate: piping.	Severe: no water.	Soil blowing, flooding.	Erodes easily, soil blowing.	Too arid, erodes easily.
Draknab, moist---	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Droughty, fast intake.	Too sandy, soil blowing.	Too arid, droughty.
160*: Haverdad-----	Moderate: seepage.	Moderate: piping.	Severe: no water.	Flooding-----	Erodes easily	Too arid, erodes easily.
Worthenton-----	Slight-----	Severe: wetness.	Severe: slow refill.	Wetness, percs slowly, erodes easily.	Erodes easily, wetness, percs slowly.	Wetness, erodes easily, percs slowly.
161*: Haverdad, moist--	Moderate: seepage.	Moderate: piping.	Severe: no water.	Soil blowing, flooding.	Erodes easily, soil blowing.	Too arid, erodes easily.
Worthenton-----	Slight-----	Severe: wetness.	Severe: slow refill.	Wetness, percs slowly, erodes easily.	Erodes easily, wetness, percs slowly.	Wetness, erodes easily, percs slowly.
162----- Havertel	Severe: seepage.	Severe: seepage.	Severe: cutbanks cave.	Droughty, erodes easily, flooding.	Erodes easily, too sandy.	Erodes easily, droughty.

See footnote at end of table.

Table 13.--Water Management--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Irrigation	Terraces and diversions	Grassed waterways
163*: Hesperus Variant-	Severe: seepage, slope.	Severe: wetness.	Severe: slow refill.	Slope, wetness, erodes easily.	Slope, erodes easily, wetness.	Slope, erodes easily.
Regat-----	Severe: slope.	Moderate: thin layer.	Severe: no water.	Slope, percs slowly, depth to rock.	Slope, depth to rock, erodes easily.	Slope, erodes easily, depth to rock.
164*: Hiland-----	Severe: seepage, slope.	Severe: piping.	Severe: no water.	Slope, soil blowing.	Slope, soil blowing.	Too arid, slope.
Bowbac-----	Severe: seepage, slope.	Severe: piping.	Severe: no water.	Slope, soil blowing, depth to rock.	Slope, depth to rock, soil blowing.	Too arid, slope, depth to rock.
165*: Hiland, moist---	Severe: seepage.	Severe: piping.	Severe: no water.	Slope, soil blowing.	Soil blowing---	Too arid.
Bowbac, moist---	Severe: seepage, slope.	Severe: piping.	Severe: no water.	Slope, soil blowing, depth to rock.	Slope, depth to rock, soil blowing.	Too arid, slope, depth to rock.
166*: Hiland-----	Severe: seepage, slope.	Severe: piping.	Severe: no water.	Slope, soil blowing.	Slope, soil blowing.	Too arid, slope.
Decolney-----	Severe: seepage, slope.	Slight-----	Severe: no water.	Slope, fast intake, soil blowing.	Slope, soil blowing.	Too arid, slope.
167*: Hiland, moist---	Severe: seepage.	Severe: piping.	Severe: no water.	Slope, soil blowing.	Soil blowing---	Too arid.
Vonalee, moist---	Severe: seepage.	Severe: piping.	Severe: no water.	Slope, droughty, fast intake.	Too sandy, soil blowing.	Too arid, droughty.
168*: Hilight-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, percs slowly.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.

See footnote at end of table.

Table 13.--Water Management--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Irrigation	Terraces and diversions	Grassed waterways
168*: Rock outcrop-----	Severe: depth to rock, slope.	Severe: depth to rock.	Severe: no water.	Depth to rock, slope.	Slope, depth to rock.	Slope, depth to rock.
169*: Jonpol-----	Moderate: seepage, depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, percs slowly.	Depth to rock, erodes easily.	Too arid, erodes easily.
Platmak-----	Moderate: seepage, slope.	Slight-----	Severe: no water.	Slope, percs slowly.	Erodes easily	Too arid, erodes easily.
170*: Jonpol-----	Severe: slope.	Severe: thin layer.	Severe: no water.	Slope, percs slowly.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Platmak-----	Severe: slope.	Slight-----	Severe: no water.	Slope, percs slowly.	Slope, erodes easily.	Too arid, slope, erodes easily.
171*: Kishona-----	Moderate: seepage.	Moderate: piping.	Severe: no water.	Favorable-----	Erodes easily	Too arid, erodes easily.
Cambria-----	Moderate: seepage.	Severe: piping.	Severe: no water.	Soil blowing---	Erodes easily, soil blowing.	Too arid, erodes easily.
172*: Kishona-----	Moderate: seepage, slope.	Moderate: piping.	Severe: no water.	Slope-----	Erodes easily	Too arid, erodes easily.
Cambria-----	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Slope, soil blowing.	Erodes easily, soil blowing.	Too arid, erodes easily.
173*: Lambman-----	Severe: depth to rock, slope.	Severe: piping.	Severe: no water.	Slope, soil blowing, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Hargreave-----	Moderate: seepage, depth to rock, slope.	Moderate: thin layer, piping.	Severe: no water.	Slope, soil blowing, depth to rock.	Depth to rock, soil blowing.	Too arid, depth to rock.

See footnote at end of table.

Table 13.--Water Management--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Irrigation	Terraces and diversions	Grassed waterways
174*:						
Lucky-----	Severe: seepage, slope.	Severe: thin layer.	Severe: no water.	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
Burgess-----	Severe: seepage, slope.	Severe: seepage.	Severe: no water.	Slope, droughty, soil blowing.	Slope, depth to rock, soil blowing.	Slope, droughty, depth to rock.
Hazton-----	Severe: depth to rock, slope.	Severe: seepage.	Severe: no water.	Slope, droughty, depth to rock.	Slope, depth to rock.	Slope, droughty, depth to rock.
175-----	Severe: seepage.	Slight-----	Severe: no water.	Soil blowing---	Erodes easily, soil blowing.	Too arid, erodes easily.
176-----	Severe: seepage.	Slight-----	Severe: no water.	Slope, soil blowing.	Erodes easily, soil blowing.	Too arid, erodes easily.
177-----	Severe: seepage.	Slight-----	Severe: no water.	Slope, soil blowing, erodes easily.	Erodes easily, soil blowing.	Too arid, erodes easily.
178*:						
Moskee-----	Severe: seepage.	Slight-----	Severe: no water.	Slope, soil blowing.	Erodes easily, soil blowing.	Too arid, erodes easily.
Noden-----	Severe: seepage.	Severe: piping.	Severe: no water.	Slope, soil blowing.	Soil blowing---	Too arid.
179*:						
Moskee-----	Severe: seepage, slope.	Slight-----	Severe: no water.	Slope, soil blowing, erodes easily.	Slope, erodes easily, soil blowing.	Too arid, slope, erodes easily.
Noden-----	Severe: seepage, slope.	Severe: piping.	Severe: no water.	Slope, soil blowing.	Slope, soil blowing.	Too arid, slope.
180*:						
Moskee, dry-----	Severe: seepage.	Slight-----	Severe: no water.	Slope, soil blowing, erodes easily.	Erodes easily, soil blowing.	Too arid, erodes easily.
Noden, dry-----	Severe: seepage.	Severe: piping.	Severe: no water.	Slope, soil blowing.	Soil blowing---	Too arid.

See footnote at end of table.

Table 13.--Water Management--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Irrigation	Terraces and diversions	Grassed waterways
181*:						
Moskee-----	Severe: seepage.	Slight-----	Severe: no water.	Soil blowing---	Erodes easily, soil blowing.	Too arid, erodes easily.
Nuncho-----	Severe: seepage.	Moderate: piping, thin layer.	Severe: no water.	Percs slowly---	Erodes easily	Too arid, erodes easily, percs slowly.
182*:						
Moskee-----	Severe: seepage.	Slight-----	Severe: no water.	Slope, soil blowing.	Erodes easily, soil blowing.	Too arid, erodes easily.
Nuncho-----	Severe: seepage.	Moderate: piping,	Severe: no water.	Slope, percs slowly, thin layer.	Erodes easily too sandy.	Too arid, erodes easily, percs slowly.
183*:						
Moskee-----	Severe: seepage, slope.	Slight-----	Severe: no water.	Slope, soil blowing.	Slope, erodes easily, soil blowing.	Too arid, slope, erodes easily.
Worthington, moist	Slight-----	Severe: wetness.	Severe: slow refill.	Wetness, percs slowly, erodes easily.	Erodes easily, wetness, percs slowly.	Wetness, erodes easily, percs slowly.
184*:						
Nathrop-----	Severe: slope.	Severe: large stones.	Severe: no water.	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Passcreek-----	Severe: slope.	Severe: thin layer.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock, erodes easily.	Slope, erodes easily, depth to rock.
Starley-----	Severe: depth to rock, slope.	Moderate: large stones.	Severe: no water.	Slope, large stones.	Slope, large stones, depth to rock.	Large stones, slope.
185-----						
Nasda	Severe: seepage.	Severe: seepage, wetness.	Severe: cutbanks cave.	Wetness, droughty.	Wetness, too sandy.	Droughty.
186*:						
Nasda-----	Severe: seepage.	Severe: seepage.	Severe: no water.	Droughty-----	Too sandy-----	Droughty.
Rubble land-----	Severe: seepage.	Severe: seepage, large stones.	Severe: no water.	Large stones, droughty.	Large stones---	Large stones, droughty.

See footnote at end of table.

Table 13.--Water Management--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Irrigation	Terraces and diversions	Grassed waterways
187*:						
Nesda Variant----	Severe: seepage.	Severe: seepage.	Severe: no water.	Droughty, soil blowing.	Large stones, too sandy, soil blowing.	Large stones, droughty.
Havertal-----	Severe: seepage.	Severe: seepage.	Severe: cutbanks cave.	Droughty, erodes easily, flooding.	Erodes easily, too sandy.	Erodes easily, droughty.
188*:						
Norbert-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, slow intake, percs slowly.	Slope, depth to rock, erodes easily.	Slope, erodes easily, depth to rock.
Doney-----	Severe: slope.	Severe: piping.	Severe: no water.	Slope, depth to rock, erodes easily.	Slope, depth to rock, erodes easily.	Slope, erodes easily, depth to rock.
Rock outcrop----	Severe: depth to rock, slope.	Severe: depth to rock.	Severe: no water.	Depth to rock, slope.	Slope, depth to rock.	Slope, depth to rock.
189*:						
Norbert-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, slow intake, percs slowly.	Slope, depth to rock, erodes easily.	Slope, erodes easily, depth to rock.
Eltzac-----	Severe: slope.	Severe: hard to pack.	Severe: no water.	Slope, slow intake, percs slowly.	Slope, depth to rock, erodes easily.	Slope, erodes easily, depth to rock.
190*:						
Norbert-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, slow intake, percs slowly.	Slope, depth to rock, erodes easily.	Slope, erodes easily, depth to rock.
Reget-----	Severe: slope.	Moderate: thin layer.	Severe: no water.	Slope, percs slowly, depth to rock.	Slope, depth to rock, erodes easily.	Slope, erodes easily, depth to rock.
Savar-----	Moderate: slope.	Moderate: hard to pack.	Severe: no water.	Slope, percs slowly, erodes easily.	Erodes easily, percs slowly.	Erodes easily, percs slowly.
191*:						
Norbert-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, slow intake, percs slowly.	Slope, depth to rock, erodes easily.	Slope, erodes easily, depth to rock.

See footnote at end of table.

Table 13.--Water Management--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Irrigation	Terraces and diversions	Grassed waterways
191*: Rock outcrop-----	Severe: depth to rock, slope.	Severe: depth to rock.	Severe: no water.	Depth to rock, slope.	Slope, depth to rock.	Slope, depth to rock.
192----- Nuncho	Moderate: seepage.	Moderate: hard to pack.	Severe: no water.	Percs slowly, erodes easily.	Erodes easily, percs slowly.	Too arid, erodes easily.
193, 194----- Nuncho	Moderate: seepage, slope.	Moderate: hard to pack.	Severe: no water.	Slope, percs slowly, erodes easily.	Erodes easily, percs slowly.	Too arid, erodes easily.
195----- Nuncho	Moderate: seepage.	Moderate: hard to pack.	Severe: no water.	Percs slowly, erodes easily.	Erodes easily, percs slowly.	Too arid, erodes easily.
196----- Nuncho	Moderate: seepage, slope.	Moderate: hard to pack.	Severe: no water.	Slope, percs slowly, erodes easily.	Erodes easily, percs slowly.	Too arid, erodes easily.
197*: Nuncho-----	Moderate: seepage, slope.	Moderate: hard to pack.	Severe: no water.	Slope, percs slowly, erodes easily.	Erodes easily, percs slowly.	Too arid, erodes easily.
Emigrant-----	Moderate: depth to rock, slope.	Moderate: thin layer, hard to pack.	Severe: no water.	Slope, percs slowly, depth to rock.	Depth to rock, percs slowly.	Too arid, depth to rock.
198*: Nuncho-----	Severe: slope.	Moderate: hard to pack.	Severe: no water.	Slope, percs slowly, erodes easily.	Slope, erodes easily, percs slowly.	Too arid, slope, erodes easily.
Emigrant-----	Severe: slope.	Moderate: thin layer, hard to pack.	Severe: no water.	Slope, percs slowly, depth to rock.	Slope, depth to rock, percs slowly.	Too arid, slope, depth to rock.
199----- Nuncho Variant	Moderate: slope.	Moderate: hard to pack, wetness.	Severe: slow refill.	Slope, wetness, percs slowly.	Erodes easily, wetness, percs slowly.	Too arid, erodes easily, percs slowly.
200*: Owen Creek-----	Severe: slope.	Severe: thin layer.	Severe: no water.	Slope, percs slowly, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, depth to rock.
Echemoor-----	Severe: slope.	Severe: thin layer.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock, erodes easily.	Slope, erodes easily, depth to rock.

See footnote at end of table.

Table 13.--Water Management--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Irrigation	Terraces and diversions	Grassed waterways
200*: Bynum-----	Severe: slope.	Severe: thin layer.	Severe: no water.	Slope, depth to rock, erodes easily.	Slope, depth to rock, erodes easily.	Slope, erodes easily, depth to rock.
201*: Parmleed-----	Severe: slope.	Moderate: thin layer.	Severe: no water.	Slope, soil blowing, percs slowly.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Bidman-----	Severe: slope.	Slight-----	Severe: no water.	Slope, soil blowing, percs slowly.	Slope, erodes easily, soil blowing.	Too arid, slope, erodes easily.
202*: Parmleed, moist--	Moderate: depth to rock, slope.	Moderate: thin layer, piping.	Severe: no water.	Slope, soil blowing, percs slowly.	Depth to rock, erodes easily.	Too arid, erodes easily.
Bidman, moist---	Moderate: seepage, slope.	Slight-----	Severe: no water.	Slope, percs slowly.	Erodes easily	Too arid, erodes easily.
203*: Parmleed, moist--	Severe: slope.	Moderate: thin layer.	Severe: no water.	Slope, percs slowly.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Bidman, moist---	Severe: slope.	Slight-----	Severe: no water.	Slope, percs slowly.	Slope, erodes easily.	Too arid, slope, erodes easily.
204*: Parmleed-----	Severe: slope.	Moderate: thin layer.	Severe: no water.	Slope, soil blowing, percs slowly.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Renohill-----	Severe: slope.	Moderate: thin layer.	Severe: no water.	Slope, percs slowly, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
205*: Parmleed, moist--	Moderate: depth to rock, slope.	Moderate: thin layer.	Severe: no water.	Slope, soil blowing, percs slowly.	Depth to rock, erodes easily.	Too arid, erodes easily.
Renohill, moist--	Moderate: depth to rock, slope.	Moderate: thin layer.	Severe: no water.	Slope, percs slowly, depth to rock.	Depth to rock, erodes easily.	Too arid, erodes easily.

See footnote at end of table.

Table 13.--Water Management--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Irrigation	Terraces and diversions	Grassed waterways
206*:						
Parmleed, moist--	Severe: slope.	Moderate: thin layer.	Severe: no water.	Slope, percs slowly.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Reno Hill, moist--	Severe: slope.	Moderate: thin layer.	Severe: no water.	Slope, percs slowly, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
207*:						
Parmleed-----	Moderate: depth to rock, slope.	Moderate: thin layer.	Severe: no water.	Slope, soil blowing, percs slowly.	Depth to rock, erodes easily.	Too arid, erodes easily.
Worfka-----	Moderate: slope.	Severe: thin layer.	Severe: no water.	Slope, percs slowly.	Erodes easily.	Too arid, erodes easily.
208*:						
Parmleed, moist--	Moderate: depth to rock, slope.	Moderate: thin layer.	Severe: no water.	Slope, soil blowing, percs slowly.	Depth to rock, erodes easily.	Too arid, erodes easily.
Worfka, moist----	Moderate: slope.	Severe: thin layer.	Severe: no water.	Slope, soil blowing, percs slowly.	Erodes easily, soil blowing.	Too arid, erodes easily.
209*:						
Parmleed, moist--	Severe: slope.	Moderate: thin layer.	Severe: no water.	Slope, percs slowly.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Worfka, moist----	Severe: slope.	Severe: thin layer.	Severe: no water.	Slope, percs slowly.	Slope, erodes easily.	Too arid, slope, erodes easily.
210*:						
Parmleed, moist--	Severe: slope.	Moderate: thin layer.	Severe: no water.	Slope, percs slowly.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Worfka, moist----	Severe: slope.	Severe: thin layer.	Severe: no water.	Slope, percs slowly.	Slope, erodes easily.	Too arid, slope, erodes easily.
Shingle Variant, moist-----	Severe: depth to rock.	Severe: thin layer.	Severe: no water.	Slope, depth to rock, erodes easily.	Depth to rock, erodes easily.	Too arid, erodes easily.

See footnote at end of table.

Table 13.--Water Management--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Irrigation	Terraces and diversions	Grassed waterways
211*: Peritsa-----	Severe: slope.	Severe: thin layer.	Severe: no water.	Slope, depth to rock, erodes easily.	Slope, depth to rock, erodes easily.	Slope, erodes easily, depth to rock.
Abac-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, depth to rock, erodes easily.	Slope, depth to rock, erodes easily.	Slope, erodes easily, depth to rock.
212----- Platmak	Moderate: seepage.	Slight-----	Severe: no water.	Percs slowly---	Erodes easily	Too arid, erodes easily.
213----- Platmak	Moderate: seepage, slope.	Slight-----	Severe: no water.	Slope, percs slowly.	Erodes easily	Too arid, erodes easily.
214----- Platmak, dry	Moderate: seepage, slope.	Slight-----	Severe: no water.	Slope, percs slowly.	Erodes easily	Too arid, erodes easily.
215----- Platsher	Moderate: seepage.	Severe: piping.	Severe: no water.	Percs slowly---	Erodes easily	Erodes easily.
216----- Platsher	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Slope, percs slowly.	Erodes easily	Erodes easily.
217----- Platsher	Moderate: seepage.	Severe: piping.	Severe: no water.	Percs slowly, erodes easily.	Erodes easily	Erodes easily.
218----- Platsher	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Slope, percs slowly, erodes easily.	Erodes easily	Erodes easily.
219*: Platsher-----	Moderate: seepage.	Severe: piping.	Severe: no water.	Percs slowly---	Erodes easily	Erodes easily.
Wolfvar-----	Severe: seepage.	Severe: seepage.	Severe: no water.	Percs slowly---	Erodes easily	Too arid, erodes easily.
220*: Platsher-----	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Slope, percs slowly.	Erodes easily	Erodes easily.
Wolfvar-----	Severe: seepage.	Severe: seepage.	Severe: no water.	Slope, percs slowly.	Erodes easily	Too arid, erodes easily.

See footnote at end of table.

Table 13.--Water Management--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Irrigation	Terraces and diversions	Grassed waterways
221*:						
Platsher-----	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Slope, percs slowly, erodes easily.	Erodes easily	Erodes easily.
Wolfvar-----	Severe: seepage.	Severe: seepage.	Severe: no water.	Slope, percs slowly.	Erodes easily	Too arid, erodes easily.
222-----						
Platsher Variant	Severe: seepage.	Severe: seepage, wetness.	Severe: slow refill.	Wetness, percs slowly, erodes easily.	Erodes easily, wetness.	Erodes easily, percs slowly.
223-----						
Recluse	Moderate: seepage.	Severe: piping.	Severe: no water.	Erodes easily	Erodes easily	Too arid, erodes easily.
224, 225-----						
Recluse	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Slope, erodes easily.	Erodes easily	Too arid, erodes easily.
Recluse-----						
Recluse	Severe: slope.	Severe: piping.	Severe: no water.	Slope, erodes easily.	Slope, erodes easily.	Too arid, slope, erodes easily.
226*:						
Bauxson-----	Severe: seepage, slope.	Severe: seepage.	Severe: no water.	Slope, large stones, droughty.	Slope, large stones, erodes easily.	Too arid, large stones, slope.
Baux-----						
Baux	Severe: seepage, slope.	Severe: seepage, large stones.	Severe: no water.	Slope, large stones, droughty.	Slope, large stones.	Too arid, large stones, slope.
227*:						
Reeder-----	Moderate: seepage, depth to rock, slope.	Severe: piping.	Severe: no water.	Slope, depth to rock.	Depth to rock, erodes easily.	Erodes easily, depth to rock.
Farnuf-----						
Farnuf	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Slope, erodes easily.	Erodes easily	Erodes easily.
228*:						
Reeder-----	Severe: slope.	Severe: piping.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock, erodes easily.	Slope, erodes easily, depth to rock.
Farnuf-----						
Farnuf	Severe: slope.	Severe: piping.	Severe: no water.	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.

See footnote at end of table.

Table 13.--Water Management--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Irrigation	Terraces and diversions	Grassed waterways
229, 230----- Reget	Moderate: depth to rock, slope.	Moderate: thin layer.	Severe: no water.	Slope, percs slowly, depth to rock.	Depth to rock, erodes easily.	Erodes easily, depth to rock.
231*: Reget-----	Severe: slope.	Moderate: thin layer.	Severe: no water.	Slope, percs slowly, depth to rock.	Slope, depth to rock, erodes easily.	Slope, erodes easily, depth to rock.
Savar-----	Severe: slope.	Moderate: hard to pack.	Severe: no water.	Slope, percs slowly, erodes easily.	Slope, erodes easily, percs slowly.	Slope, erodes easily, percs slowly.
232*: Reget Variant----	Severe: slope.	Moderate: hard to pack.	Severe: no water.	Slope, percs slowly, erodes easily.	Slope, erodes easily, percs slowly.	Slope, erodes easily, percs slowly.
Reget-----	Severe: slope.	Moderate: thin layer.	Severe: no water.	Slope, percs slowly, depth to rock.	Slope, depth to rock, erodes easily.	Slope, erodes easily, depth to rock.
233*: Renohill-----	Severe: slope.	Moderate: thin layer.	Severe: no water.	Slope, percs slowly, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Savageton-----	Severe: slope.	Moderate: thin layer, hard to pack.	Severe: no water.	Slope, percs slowly, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
234*: Renohill, moist--	Moderate: depth to rock, slope.	Moderate: thin layer.	Severe: no water.	Slope, percs slowly, depth to rock.	Depth to rock, erodes easily.	Too arid, erodes easily.
Savageton, moist--	Moderate: depth to rock, slope.	Moderate: thin layer, hard to pack.	Severe: no water.	Slope, percs slowly, depth to rock.	Depth to rock, erodes easily.	Too arid, erodes easily.
235*: Renohill, moist--	Severe: slope.	Moderate: thin layer.	Severe: no water.	Slope, percs slowly, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Savageton, moist--	Severe: slope.	Moderate: thin layer, hard to pack.	Severe: no water.	Slope, percs slowly, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.

See footnote at end of table.

Table 13.--Water Management--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Irrigation	Terraces and diversions	Grassed waterways
236*:						
Renchill-----	Severe: slope.	Moderate: thin layer.	Severe: no water.	Slope, percs slowly, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Ulm, dry-----	Severe: slope.	Moderate: hard to pack.	Severe: no water.	Slope, percs slowly.	Slope, erodes easily.	Too arid, slope, erodes easily.
237*:						
Renchill, moist--	Moderate: depth to rock, slope.	Moderate: thin layer.	Severe: no water.	Slope, percs slowly, depth to rock.	Depth to rock, erodes easily.	Too arid, erodes easily.
Ulm-----	Moderate: slope.	Moderate: hard to pack.	Severe: no water.	Slope, percs slowly.	Erodes easily	Too arid, erodes easily.
238*:						
Renchill-----	Severe: slope.	Moderate: thin layer.	Severe: no water.	Slope, percs slowly, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Worfka-----	Severe: slope.	Severe: thin layer.	Severe: no water.	Slope, percs slowly.	Slope, erodes easily.	Too arid, slope, erodes easily.
239*:						
Renchill, moist--	Severe: slope.	Moderate: thin layer.	Severe: no water.	Slope, percs slowly, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Worfka, moist----	Severe: slope.	Severe: thin layer.	Severe: no water.	Slope, percs slowly.	Slope, erodes easily.	Too arid, slope, erodes easily.
240*:						
Renchill, moist--	Moderate: depth to rock, slope.	Moderate: thin layer.	Severe: no water.	Slope, percs slowly, depth to rock.	Depth to rock, erodes easily.	Too arid, erodes easily.
Wyarno-----	Moderate: slope.	Moderate: piping.	Severe: no water.	Slope, percs slowly, erodes easily.	Erodes easily	Too arid, erodes easily.
241*:						
Rock outcrop----	Severe: depth to rock, slope.	Severe: depth to rock.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.

See footnote at end of table.

Table 13.--Water Management--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Irrigation	Terraces and diversions	Grassed waterways
241*: Agneston-----	Severe: seepage, slope.	Severe: thin layer.	Severe: no water.	Slope, droughty, soil blowing.	Slope, depth to rock, soil blowing.	Slope, droughty, depth to rock.
Rubble land-----	Severe: seepage, slope.	Severe: seepage, large stones.	Severe: no water.	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
242*: Rock outcrop----	Severe: depth to rock, slope.	Severe: depth to rock.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.
Starman-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
243*: Rock outcrop----	Severe: depth to rock, slope.	Severe: depth to rock.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.
Starman Variant--	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, droughty, depth to rock.	Slope, large stones, depth to rock.	Too arid, large stones, slope.
244*: Sanday, moist----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, percs slowly.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Gayhart, moist---	Severe: slope.	Moderate: thin layer, hard to pack.	Severe: no water.	Slope, percs slowly.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Hilight, moist---	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, percs slowly.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
245*: Sanday-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, percs slowly.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Hilight-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, percs slowly.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.

See footnote at end of table.

Table 13.--Water Management--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Irrigation	Terraces and diversions	Grassed waterways
246----- Savage	Moderate: slope.	Moderate: hard to pack.	Severe: no water.	Slope, percs slowly.	Percs slowly---	Percs slowly.
247----- Savage	Moderate: slope.	Moderate: hard to pack.	Severe: no water.	Slope, percs slowly, erodes easily.	Erodes easily, percs slowly.	Erodes easily, percs slowly.
248----- Savage	Severe: slope.	Moderate: hard to pack.	Severe: no water.	Slope, percs slowly, erodes easily.	Slope, erodes easily, percs slowly.	Slope, erodes easily, percs slowly.
249*: Savage	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Slope, percs slowly.	Erodes easily	Erodes easily, percs slowly.
Farnuf-----	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Slope, erodes easily.	Erodes easily	Erodes easily.
250*: Savage	Slight-----	Moderate: hard to pack.	Severe: no water.	Percs slowly---	Percs slowly---	Percs slowly.
Korchea-----	Moderate: seepage.	Moderate: piping.	Severe: no water.	Flooding-----	Erodes easily	Erodes easily.
251*: Savage	Severe: slope.	Moderate: hard to pack.	Severe: no water.	Slope, percs slowly, erodes easily.	Slope, erodes easily, percs slowly.	Slope, erodes easily, percs slowly.
Reget-----	Severe: slope.	Moderate: thin layer.	Severe: no water.	Slope, percs slowly, depth to rock.	Slope, depth to rock, erodes easily.	Slope, erodes easily, depth to rock.
252*: Searing	Severe: seepage, slope.	Moderate: thin layer, piping.	Severe: no water.	Slope-----	Slope, erodes easily.	Slope, erodes easily.
Ringling-----	Severe: seepage, slope.	Severe: seepage, large stones.	Severe: no water.	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
253----- Shaak	Moderate: slope.	Moderate: hard to pack.	Severe: no water.	Slope, percs slowly.	Percs slowly---	Percs slowly.

See footnote at end of table.

Table 13.--Water Management--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Irrigation	Terraces and diversions	Grassed waterways
254*:						
Shingle, moist---	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Baux-----	Severe: seepage, slope.	Severe: seepage, large stones.	Severe: no water.	Slope, large stones, droughty.	Slope, large stones.	Too arid, large stones, slope.
Rock outcrop----	Severe: depth to rock, slope.	Severe: depth to rock.	Severe: no water.	Depth to rock, slope.	Slope, depth to rock.	Slope, depth to rock.
255*:						
Shingle-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Haverdad-----	Moderate: seepage, slope.	Moderate: piping.	Severe: no water.	Slope, flooding.	Erodes easily	Too arid, erodes easily.
256*:						
Shingle, moist---	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Haverdad, moist--	Moderate: seepage, slope.	Moderate: piping.	Severe: no water.	Slope, soil blowing, flooding.	Erodes easily, soil blowing.	Too arid, erodes easily.
257*:						
Shingle-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Nihill-----	Severe: slope.	Severe: seepage.	Severe: no water.	Slope, large stones, droughty.	Slope, large stones.	Too arid, large stones, slope.
258*:						
Shingle, moist---	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Nihill, moist----	Severe: slope.	Severe: seepage.	Severe: no water.	Slope, large stones, droughty.	Slope, large stones.	Too arid, large stones, slope.

See footnote at end of table.

Table 13.--Water Management--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Irrigation	Terraces and diversions	Grassed waterways
259*:						
Shingle, moist---	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Nuncho-----	Moderate: seepage, slope.	Moderate: hard to pack.	Severe: no water.	Slope, percs slowly, erodes easily.	Erodes easily, percs slowly.	Too arid, erodes easily.
260*:						
Shingle-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Rock outcrop----	Severe: depth to rock, slope.	Severe: depth to rock.	Severe: no water.	Depth to rock, slope.	Slope, depth to rock.	Slope, depth to rock.
261*:						
Shingle, moist---	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Rock outcrop----	Severe: depth to rock, slope.	Severe: depth to rock.	Severe: no water.	Depth to rock, slope.	Slope, depth to rock.	Slope, depth to rock.
262*:						
Shingle-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Samday-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, percs slowly.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
263*:						
Shingle, moist---	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Samday, moist----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, percs slowly.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
264*:						
Shingle-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.

See footnote at end of table.

Table 13.--Water Management--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Irrigation	Terraces and diversions	Grassed waterways
264*: Taluca-----	Severe: depth to rock, slope.	Severe: piping.	Severe: no water.	Slope, soil blowing, depth to rock.	Slope, depth to rock, soil blowing.	Too arid, slope, depth to rock.
265*: Shingle, moist---	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Taluca, moist---	Severe: depth to rock, slope.	Severe: piping.	Severe: no water.	Slope, soil blowing, depth to rock.	Slope, depth to rock, soil blowing.	Too arid, slope, depth to rock.
266*: Shingle-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Theedle-----	Severe: slope.	Severe: piping.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
267*: Shingle, moist---	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Theedle, moist---	Severe: slope.	Severe: piping.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
268*: Shingle-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Theedle-----	Severe: slope.	Severe: piping.	Severe: no water.	Slope, soil blowing, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Kishona-----	Severe: slope.	Moderate: piping.	Severe: no water.	Slope, soil blowing.	Slope, erodes easily, soil blowing.	Too arid, slope, erodes easily.
269*: Shingle, moist---	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.

See footnote at end of table.

Table 13.--Water Management--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Irrigation	Terraces and diversions	Grassed waterways
269*:						
Theedle, moist---	Severe: slope.	Severe: piping.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Kishona, moist---	Moderate: seepage, slope.	Moderate: piping.	Severe: no water.	Slope-----	Erodes easily	Too arid, erodes easily.
270*:						
Shingle, moist---	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, soil blowing, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Theedle, moist---	Severe: slope.	Severe: piping.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Rock outcrop----	Severe: depth to rock, slope.	Severe: depth to rock.	Severe: no water.	Depth to rock, slope.	Slope, depth to rock.	Slope, depth to rock.
271*:						
Shingle-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, soil blowing, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Wibaux-----	Severe: seepage, slope.	Severe: seepage, large stones.	Severe: no water.	Slope, large stones, droughty.	Slope, large stones.	Too arid, large stones, slope.
272*:						
Shingle, cool----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Wibaux, cool----	Severe: seepage, slope.	Severe: seepage, large stones.	Severe: no water.	Slope, large stones, droughty.	Slope, large stones.	Too arid, large stones, slope.
273*:						
Shingle-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Worf-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.

See footnote at end of table.

Table 13.--Water Management--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Irrigation	Terraces and diversions	Grassed waterways
274*:						
Shingle, moist---	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Worf, moist-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
275-----						
Sinkson	Severe: slope.	Severe: piping.	Severe: no water.	Slope, erodes easily.	Slope, erodes easily.	Too arid, slope, erodes easily.
276*:						
Spearmen-----	Severe: seepage, slope.	Severe: seepage.	Severe: no water.	Slope, large stones, droughty.	Slope, large stones.	Too arid, large stones, slope.
Wibaux-----	Severe: seepage, slope.	Severe: seepage, large stones.	Severe: no water.	Slope, large stones, droughty.	Slope, large stones.	Too arid, large stones, slope.
277*:						
Taluca-----	Severe: depth to rock, slope.	Severe: piping.	Severe: no water.	Slope, soil blowing, depth to rock.	Slope, depth to rock, soil blowing.	Too arid, slope, depth to rock.
Tulloch-----	Severe: seepage, slope.	Severe: piping.	Severe: no water.	Slope, droughty, fast intake.	Slope, depth to rock, too sandy.	Too arid, slope, droughty.
Rock outcrop----	Severe: depth to rock, slope.	Severe: depth to rock.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.
278*:						
Taluca-----	Severe: depth to rock, slope.	Severe: piping.	Severe: no water.	Slope, soil blowing, depth to rock.	Slope, depth to rock, soil blowing.	Too arid, slope, depth to rock.
Tulloch-----	Severe: seepage, slope.	Severe: piping.	Severe: no water.	Slope, droughty.	Slope, depth to rock, too sandy.	Too arid, slope, droughty.
Vonalee-----	Severe: seepage, slope.	Severe: piping.	Severe: no water.	Slope, droughty, fast intake.	Slope, too sandy, soil blowing.	Too arid, slope, droughty.

See footnote at end of table.

Table 13.--Water Management--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Irrigation	Terraces and diversions	Grassed waterways
279*:						
Taluca, moist----	Severe: depth to rock, slope.	Severe: piping.	Severe: no water.	Slope, soil blowing, depth to rock.	Slope, depth to rock, soil blowing.	Too arid, slope, depth to rock.
Tulloch, moist---	Severe: seepage, slope.	Severe: piping.	Severe: no water.	Slope, droughty, fast intake.	Slope, depth to rock, too sandy.	Too arid, slope, droughty.
Vonalee, moist---	Severe: seepage, slope.	Severe: piping.	Severe: no water.	Slope, droughty.	Slope, too sandy, soil blowing.	Too arid, slope, droughty.
280*:						
Taluca Variant---	Severe: depth to rock, slope.	Severe: seepage, piping.	Severe: no water.	Slope, droughty, soil blowing.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Treoff-----	Severe: depth to rock, slope.	Severe: piping.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock.	Too arid, slope.
Theedle Variant--	Severe: seepage, slope.	Severe: piping.	Severe: no water.	Slope, soil blowing, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
281*:						
Theedle-----	Severe: slope.	Severe: piping.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Kishona-----	Severe: slope.	Moderate: piping.	Severe: no water.	Slope-----	Slope, erodes easily.	Too arid, slope, erodes easily.
282*:						
Theedle, moist---	Moderate: seepage, depth to rock, slope.	Severe: piping.	Severe: no water.	Slope, soil blowing, depth to rock.	Depth to rock, erodes easily.	Too arid, erodes easily.
Kishona, moist---	Moderate: seepage, slope.	Moderate: piping.	Severe: no water.	Slope-----	Erodes easily	Too arid, erodes easily.
283*:						
Theedle, moist---	Severe: slope.	Severe: piping.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.

See footnote at end of table.

Table 13.--Water Management--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Irrigation	Terraces and diversions	Grassed waterways
283*: Kishona, moist---	Severe: slope.	Moderate: piping.	Severe: no water.	Slope-----	Slope, erodes easily.	Too arid, slope, erodes easily.
284*: Tolman-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, large stones, droughty.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Beeno-----	Severe: slope.	Severe: thin layer.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock, erodes easily.	Slope, erodes easily, depth to rock.
Beenom-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock.	Slope, depth to rock.
285*: Trimad-----	Severe: slope.	Moderate: large stones.	Severe: no water.	Slope, large stones, droughty.	Slope, large stones.	Too arid, large stones, slope.
Doney-----	Severe: slope.	Severe: piping.	Severe: no water.	Slope, depth to rock, erodes easily.	Slope, depth to rock, erodes easily.	Slope, erodes easily, depth to rock.
Wayden-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, percs slowly.	Slope, depth to rock, erodes easily.	Slope, erodes easily, depth to rock.
286*: Trimad-----	Severe: slope.	Moderate: large stones.	Severe: no water.	Slope, large stones, droughty.	Slope, large stones.	Too arid, large stones, slope.
Trivar-----	Severe: seepage, slope.	Moderate: seepage.	Severe: no water.	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
287*: Trimad-----	Moderate: seepage, slope.	Moderate: large stones.	Severe: no water.	Slope, large stones, droughty.	Large stones---	Too arid, large stones.
Twin Creek-----	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Slope, erodes easily.	Erodes easily	Erodes easily.

See footnote at end of table.

Table 13.--Water Management--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Irrigation	Terraces and diversions	Grassed waterways
288----- Twin Creek	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Slope, erodes easily.	Erodes easily	Erodes easily.
289----- Twin Creek Variant	Moderate: seepage.	Severe: wetness.	Moderate: slow refill.	Wetness, erodes easily.	Erodes easily, wetness.	Erodes easily.
290----- Ulm	Slight-----	Moderate: hard to pack.	Severe: no water.	Percs slowly---	Erodes easily	Too arid, erodes easily.
291----- Ulm	Moderate: slope.	Moderate: hard to pack.	Severe: no water.	Slope, percs slowly.	Erodes easily	Too arid, erodes easily.
292----- Ulm, dry	Slight-----	Moderate: hard to pack.	Severe: no water.	Percs slowly---	Erodes easily	Too arid, erodes easily.
293----- Ulm, dry	Moderate: slope.	Moderate: hard to pack.	Severe: no water.	Slope, percs slowly.	Erodes easily	Too arid, erodes easily.
294*: Urban land.						
Kishona, moist---	Moderate: seepage.	Moderate: piping.	Severe: no water.	Favorable-----	Erodes easily	Too arid, erodes easily.
Clarkelen-----	Severe: seepage.	Severe: seepage, piping.	Severe: cutbanks cave.	Soil blowing---	Too sandy, soil blowing.	Too arid.
295*: Urban land.						
Platsher-----	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Slope, percs slowly, erodes easily.	Erodes easily	Erodes easily.
Wolfvar-----	Severe: seepage.	Severe: seepage.	Severe: no water.	Slope, percs slowly.	Erodes easily	Too arid, erodes easily.
296*: Urban land.						
Wyarno-----	Slight-----	Moderate: piping.	Severe: no water.	Percs slowly, erodes easily.	Erodes easily	Too arid, erodes easily.
Nuncho-----	Moderate: seepage.	Moderate: hard to pack.	Severe: no water.	Percs slowly, erodes easily.	Erodes easily, percs slowly.	Too arid, erodes easily.

See footnote at end of table.

Table 13.--Water Management--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Irrigation	Terraces and diversions	Grassed waterways
297*: Ustic Torriorthents.						
Pits.						
298----- Wayden	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, slow intake, percs slowly.	Slope, depth to rock, erodes easily.	Slope, erodes easily, depth to rock.
299*: Wetterdon-----	Moderate: seepage, slope.	Severe: thin layer.	Severe: no water.	Slope, erodes easily.	Erodes easily	Erodes easily.
Recluse-----	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Slope, soil blowing, erodes easily.	Erodes easily, soil blowing.	Too arid, erodes easily.
300*: Wibaux-----	Severe: seepage, slope.	Severe: seepage, large stones.	Severe: no water.	Slope, large stones, droughty.	Slope, large stones.	Too arid, large stones, slope.
Reddale-----	Severe: seepage.	Severe: seepage.	Severe: no water.	Slope, droughty, soil blowing.	Erodes easily, soil blowing.	Too arid, erodes easily.
301----- Windham	Severe: slope.	Moderate: large stones.	Severe: no water.	Slope, large stones, droughty.	Slope, large stones.	Large stones, slope, droughty.
302----- Wolf	Moderate: seepage.	Severe: piping.	Severe: no water.	Erodes easily	Erodes easily	Too arid, erodes easily.
303----- Wolf	Severe: seepage.	Moderate: seepage, piping.	Severe: no water.	Slope, erodes easily.	Erodes easily	Too arid, erodes easily.
304*: Worfka-----	Severe: slope.	Severe: thin layer.	Severe: no water.	Slope, soil blowing, percs slowly.	Slope, erodes easily, soil blowing.	Too arid, slope, erodes easily.
Shingle-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.

See footnote at end of table.

Table 13.--Water Management--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Irrigation	Terraces and diversions	Grassed waterways
304*: Samday-----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, percs slowly.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
305*: Worfka, moist----	Severe: slope.	Severe: thin layer.	Severe: no water.	Slope, percs slowly.	Slope, erodes easily.	Too arid, slope, erodes easily.
Shingle, moist----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, depth to rock.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
Samday, moist----	Severe: depth to rock, slope.	Severe: thin layer.	Severe: no water.	Slope, percs slowly.	Slope, depth to rock, erodes easily.	Too arid, slope, erodes easily.
306----- Worthenton	Slight-----	Severe: wetness.	Severe: slow refill.	Wetness, percs slowly, erodes easily.	Erodes easily, wetness, percs slowly.	Wetness, erodes easily, percs slowly.
307*: Worthenton-----	Slight-----	Severe: wetness.	Severe: slow refill.	Wetness, percs slowly, erodes easily.	Erodes easily, wetness, percs slowly.	Wetness, erodes easily, percs slowly.
Recluse-----	Moderate: seepage.	Severe: piping.	Severe: no water.	Erodes easily	Erodes easily	Too arid, erodes easily.
308*: Worthenton	Variant-----	Severe: seepage, wetness.	Moderate: slow refill, cutbanks cave.	Wetness-----	Large stones, erodes easily, wetness.	Large stones, wetness, erodes easily.
Assinniboine Variant-----	Severe: seepage.	Moderate: thin layer, wetness.	Moderate: deep to water, slow refill, cutbanks cave.	Slope, wetness, soil blowing.	Wetness, soil blowing.	Favorable.
309----- Wyarno	Slight-----	Moderate: piping.	Severe: no water.	Percs slowly, erodes easily.	Erodes easily	Too arid, erodes easily.
310, 311----- Wyarno	Moderate: slope.	Moderate: piping.	Severe: no water.	Slope, percs slowly, erodes easily.	Erodes easily	Too arid, erodes easily.

See footnote at end of table.

Table 13.--Water Management--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Irrigation	Terraces and diversions	Grassed waterways
312----- Wyarno, dry	Slight-----	Moderate: piping.	Severe: no water.	Percs slowly, erodes easily.	Erodes easily	Too arid, erodes easily.
313, 314----- Wyarno, dry	Moderate: slope.	Moderate: piping.	Severe: no water.	Slope, percs slowly, erodes easily.	Erodes easily	Too arid, erodes easily.
315----- Zigweid	Moderate: seepage.	Moderate: piping.	Severe: no water.	Favorable-----	Erodes easily	Too arid, erodes easily.
316*: Zigweid-----	Moderate: seepage, slope.	Moderate: piping.	Severe: no water.	Slope-----	Erodes easily	Too arid, erodes easily.
Cambria-----	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Slope-----	Erodes easily	Too arid, erodes easily.
317*: Zigweid-----	Severe: slope.	Moderate: piping.	Severe: no water.	Slope, soil blowing.	Slope, erodes easily, soil blowing.	Too arid, slope, erodes easily.
Kishona-----	Severe: slope.	Moderate: piping.	Severe: no water.	Slope-----	Slope, erodes easily.	Too arid, slope, erodes easily.
Cambria-----	Severe: slope.	Severe: piping.	Severe: no water.	Slope-----	Slope, erodes easily.	Too arid, slope, erodes easily.
318*: Zigweid, moist---	Moderate: seepage.	Moderate: piping.	Severe: no water.	Favorable-----	Erodes easily	Too arid, erodes easily.
Kishona, moist---	Moderate: seepage.	Moderate: piping.	Severe: no water.	Soil blowing---	Erodes easily, soil blowing.	Too arid, erodes easily.
Cambria, moist---	Moderate: seepage.	Severe: piping.	Severe: no water.	Favorable-----	Erodes easily	Too arid, erodes easily.
319*: Zigweid, moist---	Moderate: seepage, slope.	Moderate: piping.	Severe: no water.	Slope-----	Erodes easily	Too arid, erodes easily.
Kishona, moist---	Moderate: seepage, slope.	Moderate: piping.	Severe: no water.	Slope, soil blowing.	Erodes easily, soil blowing.	Too arid, erodes easily.

See footnote at end of table.

Table 13.--Water Management--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Irrigation	Terraces and diversions	Grassed waterways
319*: Cambria, moist---	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Slope-----	Erodes easily	Too arid, erodes easily.
320*: Zigweid, moist---	Moderate: seepage, slope.	Moderate: piping.	Severe: no water.	Slope-----	Erodes easily	Too arid, erodes easily.
Kishona, moist---	Moderate: seepage, slope.	Moderate: piping.	Severe: no water.	Slope-----	Erodes easily	Too arid, erodes easily.
Cambria, moist---	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Slope-----	Erodes easily	Too arid, erodes easily.

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 14.--Engineering Index Properties

(The symbol < means less than; > means more than. Absence of an entry indicates that data were not estimated)

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
100*:												
Abac-----	0-3	Silt loam	CL, ML	A-4	0	0-5	95-100	90-100	80-90	55-75	25-35	5-10
	3-18	Gravelly loam	GM-GC, SC-SM, SM, GM	A-2-4, A-4	0	0-20	55-85	50-75	40-55	30-55	25-35	5-10
	18	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
101*:												
Absted-----	0-3	Very fine sandy loam.	ML, CL-ML	A-4	0	0	95-100	95-100	80-90	50-60	<30	NP-10
	3-10	Clay loam, clay, silty clay loam.	CL, CH	A-7	0	0	95-100	95-100	80-90	70-85	40-55	20-30
	10-17	Clay, silty clay, silty clay loam.	CL, CH	A-7	0	0	95-100	95-100	80-90	70-85	40-55	20-30
	17-60	Clay loam, clay, silty clay loam.	CL	A-6, A-7	0	0	95-100	95-100	80-90	70-85	35-50	15-25
Haverdad-----	0-2	Very fine sandy loam.	CL-ML, SC-SM, SM, ML	A-4	0	0	95-100	95-100	90-95	40-55	<30	NP-10
	2-60	Stratified sandy loam to clay loam.	CL	A-6	0	0	95-100	95-100	80-90	60-75	30-40	10-20
102*:												
Absted, moist	0-3	Clay loam	CL	A-6	0	0	95-100	95-100	80-90	70-80	35-40	15-20
	3-13	Clay loam, clay, silty clay loam.	CL, CH	A-7	0	0	95-100	95-100	80-90	70-85	40-55	20-30
	13-26	Clay, silty clay, silty clay loam.	CL, CH	A-7	0	0	95-100	95-100	80-90	70-85	40-55	20-30
	26-60	Clay loam, clay, silty clay loam.	CL	A-6, A-7	0	0	95-100	95-100	80-90	70-85	35-50	15-25

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO			4	10	40	200		
102*: Haverdad, moist-----	0-2	Very fine sandy loam.	CL-ML, SC-SM, SM, ML	A-4	0	0	95-100	95-100	90-95	40-55	<30	NP-10
	2-60	Stratified sandy loam to clay loam.	CL	A-6	0	0	95-100	95-100	80-90	60-75	30-40	10-20
103*: Absted-----	0-2	Fine sandy loam.	SM	A-4	0	0	95-100	95-100	75-85	35-50	<25	NP-5
	2-8	Clay loam, clay, silty clay loam.	CL, CH	A-7	0	0	95-100	95-100	80-90	70-85	40-55	20-30
	8-13	Clay, silty clay loam.	CL, CH	A-7	0	0	95-100	95-100	80-90	70-85	40-55	20-30
	13-60	Clay loam, clay, silty clay loam.	CL	A-6, A-7	0	0	95-100	95-100	80-90	70-85	35-50	15-25
Slickspots.												
104*: Agneston-----	0-6	Gravelly coarse sandy loam.	SM, GM	A-1-b, A-2-4	0	0-5	60-85	50-75	35-50	15-30	<25	NP
	6-22	Very gravelly sandy clay loam.	GC	A-2-6	0	0-5	40-60	30-50	20-35	15-30	30-40	10-20
	22-29	Very gravelly sandy clay loam, very gravelly sandy loam.	GC, GM-GC	A-1, A-2-4, A-2-6	0	0-5	40-60	30-50	20-35	10-30	25-35	5-15
	29	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Granile-----	0-8	Gravelly sandy loam.	SM	A-2, A-4	0	5-10	75-85	70-80	55-65	30-40	<25	NP
	8-19	Very gravelly sandy clay loam.	GC, SC	A-2-6, A-6	0-20	5-20	60-70	50-60	40-50	30-40	25-35	10-15
	19-60	Very gravelly sandy loam, very gravelly sandy clay loam.	GM, GM-GC, SM, SC-SM	A-1, A-2-4	0	0-5	55-65	40-50	30-40	15-30	<25	NP-5

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
104*: Rock outcrop	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
105*: Arnegard	0-4	Loam	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	80-90	65-75	25-40	5-15
	4-30	Loam, clay loam, silt loam.	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	80-95	65-80	25-40	5-15
	30-41	Loam, clay loam, silt loam.	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	80-95	65-80	25-40	5-15
	41-60	Loam, clay loam.	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	80-90	65-75	25-40	5-15
Farnuf	0-5	Loam	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	80-90	65-75	25-35	5-15
	5-22	Clay loam, silty clay loam, loam.	CL	A-6, A-7	0	0	95-100	95-100	80-90	65-80	30-45	10-20
	22-60	Loam, silt loam, clay loam.	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	80-90	65-80	25-35	5-15
106*: Arnegard	0-7	Loam	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	80-90	65-75	25-40	5-15
	7-21	Loam, clay loam, silt loam.	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	80-95	65-80	25-40	5-15
	21-39	Loam, clay loam, silt loam.	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	80-95	65-80	25-40	5-15
	39-60	Loam, clay loam.	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	80-90	65-75	25-40	5-15
Farnuf	0-7	Loam	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	80-90	65-75	25-35	5-15
	7-23	Clay loam, silty clay loam, loam.	CL	A-6, A-7	0	0	95-100	95-100	80-90	65-80	30-45	10-20
	23-28	Loam, clay loam, silt loam.	CL	A-6	0	0	95-100	95-100	80-90	65-80	30-40	10-15
	28-60	Loam, silt loam, clay loam.	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	80-90	65-80	25-35	5-15

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO			4	10	40	200		
In												
107*: Assinniboine-	0-4	Fine sandy loam.	SM	A-4	0	0	95-100	95-100	70-85	35-50	<25	NP-5
	4-23	Sandy clay loam, sandy loam.	SC-SM, SC, CL-ML, CL	A-4, A-6	0	0	95-100	95-100	70-85	40-60	25-35	5-15
	23-60	Sandy loam, fine sandy loam.	SC-SM	A-4	0	0	95-100	95-100	70-85	35-50	<30	5-10
Dast-----	0-4	Fine sandy loam.	SM, SC-SM	A-2-4, A-4	0	0	95-100	90-100	75-90	30-50	<25	NP-5
	4-25	Fine sandy loam.	SM, SC-SM	A-2-4, A-4	0	0	95-100	90-100	75-90	30-50	<25	NP-5
	25-40	Fine sandy loam.	SM, SC-SM	A-2-4, A-4	0	0	95-100	90-100	75-90	30-50	<25	NP-5
	40	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
108*: Baux-----	0-9	Channery loam	SC-SM, SC, GM-GC, GC	A-4, A-6	0	0-5	60-80	55-75	50-70	40-55	25-35	5-15
	9-13	Very channery loam, very channery silt loam.	GM-GC, GC	A-2, A-4, A-6	0	0-5	35-56	30-50	30-45	30-40	25-35	5-15
	13-60	Fragmental material.	GP	A-1	0-5	35-55	15-30	10-25	0-5	0-1	---	NP
Bauxson-----	0-5	Channery loam	CL-ML	A-4	0	0-5	75-80	70-75	60-75	50-60	25-30	5-10
	5-19	Clay loam, silty clay loam.	CL	A-6	0	0	80-100	75-100	70-90	65-85	35-40	15-20
	19-60	Fragmental material.	GP	A-1	0-5	35-55	15-30	10-25	0-5	0-1	---	NP
109*: Baux, dry----	0-1	Channery loam	SC-SM, SC, GM-GC, GC	A-4, A-6	0	0-5	60-80	55-75	50-70	40-55	25-35	5-15
	1-13	Very channery loam, very channery silt loam.	GM-GC, GC	A-2, A-4, A-6	0	0-5	35-56	30-50	30-45	30-40	25-35	5-15
	13-60	Fragmental material.	GP	A-1	0-5	35-55	15-30	10-25	0-5	0-1	---	NP

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
109*:												
Bauxson, dry-	0-2	Channery loam	CL-ML	A-4	0	0-5	75-80	70-75	60-75	50-60	25-30	5-10
	2-11	Clay loam, silty clay loam.	CL	A-6	0	0	80-100	75-100	70-90	65-85	35-40	15-20
	11-16	Very channery loam, very channery clay loam, extremely channery loam.	GC, GP-GC	A-2	0	0-5	20-45	15-40	10-35	10-30	25-40	10-20
	16-60	Fragmental material.	GP	A-1	0-5	35-55	15-30	10-25	0-5	0-1	---	NP
Baux-----	0-1	Loam-----	CL-ML, CL	A-4, A-6	0	0-5	80-100	75-100	70-90	55-80	25-35	5-15
	1-12	Very channery loam, very channery silt loam.	GM-GC, GC	A-2, A-4, A-6	0	0-5	35-55	30-50	30-45	30-40	25-35	5-15
	12-60	Fragmental material.	GP	A-1	0-5	35-55	15-30	10-25	0-5	0-1	---	NP
Bauxson-----	0-2	Channery loam	CL-ML	A-4	0	0-5	75-80	70-75	60-75	50-60	25-30	5-10
	2-13	Clay loam, silty clay loam.	CL	A-6	0	0	80-100	75-100	70-90	65-85	35-40	15-20
	13-18	Very channery loam, very channery clay loam, extremely channery loam.	GC, GP-GC	A-2	0	0-5	20-45	15-40	10-35	10-30	25-40	10-20
	18-60	Fragmental material.	GP	A-1	0-5	35-55	15-30	10-25	0-5	0-1	---	NP
110*:												
Kirtley-----	0-4	Loam-----	CL-ML, ML	A-4	0	0	95-100	95-100	85-95	60-75	20-30	NP-10
	4-15	Clay loam, loam.	CL	A-6	0	0	95-100	95-100	85-95	65-80	30-40	10-20
	15-33	Loam, clay loam.	CL, CL-ML	A-6, A-4	0	0	95-100	95-100	85-95	60-75	25-35	5-15
	33	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO			4	10	40	200		
In												
111*:												
Baux-----	0-1	Loam-----	CL-ML, CL	A-4, A-6	0	0-5	80-100	75-100	70-90	55-80	25-35	5-15
	1-12	Very channery loam, very channery silt loam.	GM-GC, GC	A-2, A-4, A-6	0	0-5	35-56	30-50	30-45	30-40	25-35	5-15
	12-60	Fragmental material.	GP	A-1	0-5	35-55	15-30	10-25	0-5	0-1	---	NP
Bauxson-----	0-2	Channery loam	CL-ML	A-4	0	0-5	75-80	70-75	60-75	50-60	25-30	5-10
	2-13	Clay loam, silty clay loam.	CL	A-6	0	0	80-100	75-100	70-90	65-85	35-40	15-20
	13-18	Very channery loam, very channery clay loam, extremely channery loam.	GC, GP-GC	A-2	0	0-5	20-45	15-40	10-35	10-30	25-40	10-20
	18-60	Fragmental material.	GP	A-1	0-5	35-55	15-30	10-25	0-5	0-1	---	NP
Wetterdon----	0-22	Silt loam-----	CL-ML, CL	A-4, A-6	0	0	100	95-100	80-90	70-85	25-35	5-15
	22-41	Clay loam, silty clay loam.	CL	A-6, A-7	0	0	100	95-100	80-90	70-85	35-45	15-25
	41-60	Loam, silt loam, clay loam.	CL-ML, CL	A-4, A-6	0	0	100	95-100	80-90	70-85	25-35	5-15
112*:												
Bidman-----	0-4	Fine sandy loam.	SM	A-4	0	0	95-100	90-100	80-90	35-50	<25	NP-5
	4-16	Clay, clay loam.	CL, CH	A-7	0	0	95-100	90-100	80-90	65-80	45-55	20-30
	16-26	Clay, clay loam.	CL, CH	A-7	0	0	90-100	85-100	75-90	60-80	45-55	20-30
	26-60	Clay loam, loam.	CL	A-6, A-7	0	0	80-100	75-95	65-90	55-75	35-45	15-20
Arvada-----	0-4	Fine sandy loam.	SM	A-4	0	0	95-100	95-100	80-90	40-50	<20	NP-5
	4-14	Clay-----	CL, CH	A-7	0	0	95-100	95-100	85-95	75-85	45-60	20-30
	14-20	Clay loam, clay.	CL, CH	A-7	0	0	95-100	95-100	85-95	70-85	40-60	15-30
	20-60	Clay loam-----	CL	A-6, A-7	0	0	95-100	95-100	80-95	65-80	35-50	15-25

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
113*:												
Bidman, moist	0-2	Loam-----	CL-ML	A-4	0	0	95-100	90-100	80-90	55-70	25-30	5-10
	2-17	Clay, clay loam.	CL, CH	A-7	0	0	95-100	90-100	80-90	65-80	45-55	20-30
	17-26	Clay, clay loam.	CL, CH	A-7	0	0	90-100	85-100	75-90	60-80	45-55	20-30
	26-60	Clay loam, loam.	CL	A-6, A-7	0	0	80-100	75-95	65-90	55-75	35-45	15-20
Arvada, moist	0-5	Fine sandy loam.	SM	A-4	0	0	95-100	95-100	80-90	40-50	<20	NP-5
	5-18	Clay-----	CL, CH	A-7	0	0	95-100	95-100	85-95	75-85	45-60	20-30
	18-23	Clay loam, clay.	CL, CH	A-7	0	0	95-100	95-100	85-95	70-85	40-60	15-30
	23-60	Clay loam-----	CL	A-6, A-7	0	0	95-100	95-100	80-95	65-80	35-50	15-25
114*:												
Bidman-----	0-4	Fine sandy loam.	SM	A-4	0	0	95-100	90-100	80-90	35-50	<25	NP-5
	4-14	Clay, clay loam.	CL, CH	A-7	0	0	95-100	90-100	80-90	65-80	45-55	20-30
	14-26	Clay, clay loam.	CL, CH	A-7	0	0	90-100	85-100	75-90	60-80	45-55	20-30
	26-60	Clay loam, loam.	CL	A-6, A-7	0	0	80-100	75-95	65-90	55-75	35-45	15-20
Ulm, dry----	0-3	Loam-----	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	80-100	70-80	25-35	5-15
	3-19	Clay loam, clay.	CL, CH	A-7	0	0	95-100	95-100	85-100	70-80	45-60	25-35
	19-60	Clay loam, clay.	CL, CH	A-7	0	0	95-100	95-100	85-100	65-80	40-55	20-30
115*:												
Bidman, moist	0-2	Loam-----	CL-ML	A-4	0	0	95-100	90-100	80-90	55-70	25-30	5-10
	2-13	Clay, clay loam.	CL, CH	A-7	0	0	95-100	90-100	80-90	65-80	45-55	20-30
	13-22	Clay, clay loam.	CL, CH	A-7	0	0	90-100	85-100	75-90	60-80	45-55	20-30
	22-60	Clay loam, loam.	CL	A-6, A-7	0	0	80-100	75-95	65-90	55-75	35-45	15-20
Ulm-----	0-3	Loam-----	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	80-100	70-80	25-35	5-15
	3-19	Clay loam, clay.	CL, CH	A-7	0	0	95-100	95-100	85-100	70-80	45-60	25-35
	19-60	Clay loam, clay.	CL, CH	A-7	0	0	95-100	95-100	85-100	65-80	40-55	20-30

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO			4	10	40	200		
116*:												
Big Horn-----	0-5	Loam-----	ML	A-4	0	0-5	80-100	75-100	65-85	55-75	30-35	5-10
	5-17	Clay, clay loam.	CH, CL	A-7	0	0-5	80-100	75-100	70-85	60-75	45-60	20-35
	17-30	Clay, clay loam.	CL	A-7	0	0-5	80-100	75-100	70-85	55-75	40-50	20-30
	30-60	Gravelly loam, gravelly clay loam.	GM, SM	A-4	0	0-5	55-80	50-75	45-65	40-50	30-40	5-10
Wolf, dry----	0-4	Loam-----	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	80-90	60-70	25-35	5-15
	4-14	Clay loam, loam.	CL	A-6, A-4	0	0	95-100	95-100	85-95	65-75	30-40	10-20
	14-60	Gravelly loam, gravelly clay loam.	CL, CL-ML	A-4, A-6	0	0	65-75	60-70	55-65	50-60	25-40	5-15
117*:												
Cambria-----	0-5	Very fine sandy loam.	CL-ML	A-4	0	0	95-100	95-100	85-95	55-65	25-30	5-10
	5-10	Clay loam, silty clay loam.	CL	A-6	0	0	95-100	95-100	85-95	70-80	35-40	15-20
	10-60	Loam, clay loam, silty clay loam.	CL, CL-ML	A-4, A-6	0	0	95-100	95-100	65-95	60-80	20-40	5-15
Forkwood-----	0-3	Fine sandy loam.	SM, ML	A-4	0	0	95-100	90-100	75-90	45-55	<25	NP-5
	3-14	Clay loam, loam.	CL	A-6	0	0	95-100	90-100	80-90	65-80	30-35	10-15
	14-60	Loam, clay loam.	CL	A-6	0	0	95-100	90-100	80-90	65-75	30-40	10-15
118*:												
Cambria, moist-----	0-3	Very fine sandy loam.	CL-ML	A-4	0	0	95-100	95-100	85-95	55-65	25-30	5-10
	3-10	Clay loam, silty clay loam.	CL	A-6	0	0	95-100	95-100	85-95	70-80	35-40	15-20
	10-60	Loam, clay loam, silty clay loam.	CL, CL-ML	A-4, A-6	0	0	95-100	95-100	65-95	60-80	20-40	5-15

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
			In				Pct	Pct				
118*: Forkwood, moist-----	0-2	Loam-----	CL-ML, CL	A-4	0	0	95-100	90-100	80-90	60-70	20-30	5-10
	2-21	Clay loam, loam.	CL	A-6	0	0	95-100	90-100	80-90	65-80	30-35	10-15
	21-60	Loam, clay loam.	CL	A-6	0	0	95-100	90-100	80-90	65-75	30-40	10-15
119*: Cedak-----	0-2	Fine sandy loam.	SM	A-4	0	0	100	95-100	80-95	35-45	---	NP
	2-17	Loam, clay loam.	CL-ML, CL	A-4, A-6	0	0	100	95-100	70-85	60-70	25-40	5-15
	17-24	Loam, very fine sandy loam.	CL-ML	A-4	0	0	100	95-100	80-95	55-65	20-30	5-10
	24	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Recluse-----	0-6	Loam-----	ML	A-4	0	0	100	95-100	80-90	75-85	30-35	5-10
	6-27	Clay loam, silty clay loam.	CL	A-6	0	0	100	90-100	70-90	65-85	35-40	15-20
	27-60	Loam, clay loam, silty clay loam.	CL-ML, CL	A-4, A-6	0	0	100	90-100	80-95	70-85	25-35	5-15
120*: Cedak-----	0-4	Loam-----	CL-ML	A-4	0	0	100	95-100	70-85	60-70	20-30	5-10
	4-24	Loam, clay loam.	CL-ML, CL	A-4, A-6	0	0	100	95-100	70-85	60-70	25-40	5-15
	24-30	Loam, very fine sandy loam.	CL-ML	A-4	0	0	100	95-100	80-95	55-65	20-30	5-10
	30	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Recluse-----	0-14	Loam-----	ML	A-4	0	0	100	95-100	80-90	75-85	30-35	5-10
	14-30	Clay loam, silty clay loam.	CL	A-6	0	0	100	90-100	70-90	65-85	35-40	15-20
	30-60	Loam, clay loam, silty clay loam.	CL-ML, CL	A-4, A-6	0	0	100	90-100	80-95	70-85	25-35	5-15

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth In	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
121*: Cedak-----	0-1	Loam-----	CL-ML	A-4	0	0	100	95-100	70-85	60-70	20-30	5-10
	1-16	Loam, clay loam.	CL-ML, CL	A-4, A-6	0	0	100	95-100	70-85	60-70	25-40	5-15
	16-31	Loam, very fine sandy loam.	CL-ML	A-4	0	0	100	95-100	80-95	55-65	20-30	5-10
	31	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Recluse-----	0-4	Loam-----	ML	A-4	0	0	100	95-100	80-90	75-85	30-35	5-10
	4-18	Clay loam, silty clay loam.	CL	A-6	0	0	100	90-100	70-90	65-85	35-40	15-20
	18-60	Loam, clay loam, silty clay loam.	CL-ML, CL	A-4, A-6	0	0	100	90-100	80-95	70-85	25-35	5-15
122*: Cedak, dry---	0-10	Loam-----	CL-ML	A-4	0	0	100	95-100	70-85	60-70	20-30	5-10
	10-16	Loam, clay loam.	CL-ML, CL	A-4, A-6	0	0	100	95-100	70-85	60-70	25-40	5-15
	16-32	Clay loam, silty clay loam.	CL	A-6	0	0	100	95-100	70-85	60-70	35-40	15-20
	32	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Recluse, dry-	0-5	Loam-----	ML	A-4	0	0	100	95-100	80-90	75-85	30-35	5-10
	5-23	Clay loam, silty clay loam.	CL	A-6	0	0	100	90-100	70-90	65-85	35-40	15-20
	23-60	Loam, clay loam, silty clay loam.	CL-ML, CL	A-4, A-6	0	0	100	90-100	80-95	70-85	25-35	5-15
123----- Clarkelen	0-9	Loam-----	CL-ML	A-4	0	0	95-100	95-100	85-95	55-65	25-30	5-10
	9-60	Stratified loamy coarse sand to clay loam.	SM, SC-SM	A-2-4	0	0	95-100	95-100	65-85	15-35	<25	NP-5
124----- Clarkelen, moist	0-10	Fine sandy loam.	SM, SC-SM, CL-ML, ML	A-4	0	0	95-100	95-100	85-95	35-55	<30	NP-10
	10-60	Stratified loamy coarse sand to clay loam.	SM, SC-SM	A-2-4	0	0	95-100	95-100	65-85	15-35	<25	NP-5

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
			In				Pct	Pct				
125*: Cloud Peak---	0-2	Gravelly silt loam.	GM-GC, GC, SC-SM, SC	A-4, A-6	0-5	0-15	55-75	50-70	35-65	35-50	25-35	5-15
	2-14	Very gravelly silty clay loam.	GC	A-2-6, A-6	0-5	0-10	40-55	30-50	25-45	25-45	35-40	15-20
	14-37	Very cobbly silty clay loam, extremely cobbly silt loam.	GC	A-6, A-2-6	0-5	40-60	45-65	40-60	35-55	30-50	25-40	10-20
	37	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Tolman-----	0-5	Channery loam	CL, SC	A-6	0-10	15-25	70-80	65-75	50-65	40-55	30-35	10-15
	5-11	Very channery clay loam.	GC	A-7, A-2-7	10-35	25-40	45-70	40-65	30-55	30-50	40-45	15-20
	11-15	Very channery clay loam, extremely channery clay loam.	GC	A-7, A-2-7	10-35	25-40	45-70	40-65	30-55	30-50	40-45	15-20
	15	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
126*: Coaliams, moist-----	0-8	Loam-----	ML	A-4	0	0	95-100	95-100	75-90	50-70	<35	NP-5
	8-60	Stratified clay loam to sandy loam.	CL, CL-ML	A-4, A-6	0	0	90-100	90-100	75-90	60-75	25-40	5-15
Worthenton, moist-----	0-8	Silty clay loam.	CL	A-6, A-7	0	0	100	95-100	85-100	85-95	35-45	15-25
	8-22	Clay, silty clay, silty clay loam.	CL, CH	A-7	0	0	95-100	95-100	80-100	80-100	40-55	20-30
	22-60	Clay loam, clay, silty clay loam.	CL, CH	A-6, A-7	0	0	100	95-100	80-100	80-100	35-55	15-30

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments	Frag-ments	Percentage passing				Liquid limit	Plas-ticity index
			Unified	AASHTO			sieve number--					
							> 10 inches	3-10 inches	4	10	40	200
127*:												
Cushman-----	0-2	Very fine sandy loam.	SM, ML	A-4	0	0	90-100	90-100	70-80	35-55	<25	NP-5
	2-14	Clay loam, loam.	CL	A-6	0	0	90-100	90-100	80-90	70-80	30-40	10-20
	14-32	Loam, clay loam.	CL	A-6	0	0	90-100	90-100	80-90	70-80	30-40	10-20
	32	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Forkwood-----												
0-3	Loam-----	CL-ML, CL	A-4	0	0	95-100	90-100	80-90	60-70	20-30	5-10	
	3-18	Clay loam, loam.	CL	A-6	0	0	95-100	90-100	80-90	65-80	30-35	10-15
	18-60	Loam, clay loam.	CL	A-6	0	0	95-100	90-100	80-90	65-75	30-40	10-15
128*:												
Cushman, moist-----												
0-1	Loam-----	CL-ML	A-4	0	0	90-100	90-100	70-85	60-70	20-30	5-10	
	1-14	Clay loam, loam.	CL	A-6	0	0	90-100	90-100	80-90	70-80	30-40	10-20
	14-38	Loam, clay loam.	CL	A-6	0	0	90-100	90-100	80-90	70-80	30-40	10-20
	38	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Forkwood, moist-----												
0-4	Loam-----	CL-ML, CL	A-4	0	0	95-100	90-100	80-90	60-70	20-30	5-10	
	4-17	Clay loam, loam.	CL	A-6	0	0	95-100	90-100	80-90	65-80	30-35	10-15
	17-60	Loam, clay loam.	CL	A-6	0	0	95-100	90-100	80-90	65-75	30-40	10-15
129*:												
Cushman, moist-----												
0-5	Loam-----	CL-ML	A-4	0	0	90-100	90-100	70-85	60-70	20-30	5-10	
	5-13	Clay loam, loam.	CL	A-6	0	0	90-100	90-100	80-90	70-80	30-40	10-20
	13-34	Loam, clay loam.	CL	A-6	0	0	90-100	90-100	80-90	70-80	30-40	10-20
	34	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Forkwood, moist-----												
0-1	Loam-----	CL-ML, CL	A-4	0	0	95-100	90-100	80-90	60-70	20-30	5-10	
	1-13	Clay loam, loam.	CL	A-6	0	0	95-100	90-100	80-90	65-80	30-35	10-15
	13-60	Loam, clay loam.	CL	A-6	0	0	95-100	90-100	80-90	65-75	30-40	10-15

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth In	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
130*: Cushman-----	0-1	Loam-----	CL-ML	A-4	0	0	90-100	90-100	70-85	60-70	20-30	5-10
	1-12	Clay loam, loam.	CL	A-6	0	0	90-100	90-100	80-90	70-80	30-40	10-20
	12-26	Loam, clay loam.	CL	A-6	0	0	90-100	90-100	80-90	70-80	30-40	10-20
	26	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Worff-----	0-1	Loam-----	CL-ML	A-4	0	0	100	95-100	65-90	50-65	25-35	5-10
	1-6	Clay loam, loam.	CL	A-6	0	0	100	95-100	75-90	65-80	25-40	10-20
	6-19	Clay loam, loam.	CL	A-6	0	0	100	95-100	75-90	65-75	25-35	10-15
	19	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
131*: Cushman, moist-----	0-3	Loam-----	CL-ML	A-4	0	0	90-100	90-100	70-85	60-70	20-30	5-10
	3-11	Clay loam, loam.	CL	A-6	0	0	90-100	90-100	80-90	70-80	30-40	10-20
	11-38	Loam, clay loam.	CL	A-6	0	0	90-100	90-100	80-90	70-80	30-40	10-20
	38	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Worff, moist--	0-2	Loam-----	CL-ML	A-4	0	0	100	95-100	65-90	50-65	25-35	5-10
	2-6	Clay loam, loam.	CL	A-6	0	0	100	95-100	75-90	65-80	25-40	10-20
	6-13	Clay loam, loam.	CL	A-6	0	0	100	95-100	75-90	65-75	25-35	10-15
	13	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
132----- Dast Variant	0-9	Loamy fine sand.	SM	A-2-4	0	0	90-100	90-100	70-90	25-35	---	NP
	9-20	Loamy fine sand, fine sand.	SM, SP-SM	A-2-4	0	0	80-100	80-100	65-90	10-35	---	NP
	20	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index	
			Unified	AASHTO			4	10	40	200			
			In				Pct	Pct					Pct
133*:													
Doney-----	0-3	Silt loam-----	CL, CL-ML	A-4, A-6	0	0	90-100	90-100	85-95	75-85	25-35	5-15	
	3-16	Loam, silty clay loam, clay loam.	CL, CL-ML	A-4, A-6	0	0	90-100	90-100	80-95	65-85	25-40	5-20	
	16-23	Loam, silty clay loam, clay loam.	CL, CL-ML	A-4, A-6	0	0	90-100	90-100	80-95	65-85	25-40	5-20	
	23	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---	
Doney Variant	0-1	Loam-----	CL-ML, CL	A-4, A-6	0	0	85-100	75-100	65-95	50-75	25-35	5-15	
	1-17	Loam, silt loam.	CL-ML, CL	A-4, A-6	0	0	85-100	75-100	65-95	60-80	25-35	5-15	
	17	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---	
134*:													
Doney-----	0-2	Silt loam-----	CL, CL-ML	A-4, A-6	0	0	90-100	90-100	85-95	75-85	25-35	5-15	
	2-11	Loam, silty clay loam, clay loam.	CL, CL-ML	A-4, A-6	0	0	90-100	90-100	80-95	65-85	25-40	5-20	
	11-27	Loam, silty clay loam, clay loam.	CL, CL-ML	A-4, A-6	0	0	90-100	90-100	80-95	65-85	25-40	5-20	
	27	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---	
Ringling-----	0-4	Channery loam	CL-ML, CL, SC-SM, SC	A-4, A-6	0-5	15-25	75-90	70-85	50-70	40-65	25-35	5-15	
	4-12	Very channery loam, extremely channery loam.	GM-GC, GC	A-1, A-2-4, A-2-6, A-4	0-5	45-65	30-65	25-60	20-45	15-45	25-35	5-15	
	12-60	Fragmental material.	GP	A-1	0-5	30-60	15-30	0-5	0-5	0-5	---	NP	
135*:													
Doney-----	0-2	Loam-----	CL, CL-ML	A-4, A-6	0	0	90-100	90-100	80-90	65-80	25-35	5-15	
	2-12	Loam, silty clay loam, clay loam.	CL, CL-ML	A-4, A-6	0	0	90-100	90-100	80-95	65-85	25-40	5-20	
	12-23	Loam, silty clay loam, clay loam.	CL, CL-ML	A-4, A-6	0	0	90-100	90-100	80-95	65-85	25-40	5-20	
	23	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---	

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth In	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
							Pct	Pct				
135*: Ringling-----	0-4	Channery loam	CL-ML, CL, SC-SM, SC	A-4, A-6	0-5	15-25	75-90	70-85	50-70	40-65	25-35	5-15
	4-12	Very channery loam, extremely channery loam.	GM-GC, GC	A-1, A-2-4, A-2-6, A-4	0-5	45-65	30-65	25-60	20-45	15-45	25-35	5-15
	12-60	Fragmental material.	GP	A-1	0-5	30-60	15-30	0-5	0-5	0-5	---	NP
Rock outcrop-	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
136----- Draknab	0-3	Loamy fine sand.	SM	A-2	0	0	100	95-100	50-70	20-35	---	NP
	3-60	Stratified sandy loam to sand.	SM, SP-SM	A-1, A-2, A-3	0	0-5	95-100	85-100	45-70	5-25	---	NP
137----- Farnuf	0-9	Loam-----	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	80-90	65-75	25-35	5-15
	9-21	Clay loam, silty clay loam, loam.	CL	A-6, A-7	0	0	95-100	95-100	80-90	65-80	30-45	10-20
	21-60	Loam, silt loam, clay loam.	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	80-90	65-80	25-35	5-15
138----- Farnuf	0-9	Loam-----	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	80-90	65-75	25-35	5-15
	9-24	Clay loam, silty clay loam, loam.	CL	A-6, A-7	0	0	95-100	95-100	80-90	65-80	30-45	10-20
	24-31	Loam, clay loam, silt loam.	CL	A-6	0	0	95-100	95-100	80-90	65-80	30-40	10-15
	31-60	Loam, silt loam, clay loam.	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	80-90	65-80	25-35	5-15

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth In	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
139----- Farnuf	0-8	Loam-----	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	80-90	65-75	25-35	5-15
	8-22	Clay loam, silty clay loam, loam.	CL	A-6, A-7	0	0	95-100	95-100	80-90	65-80	30-45	10-20
	22-29	Loam, clay loam, silt loam.	CL	A-6	0	0	95-100	95-100	80-90	65-80	30-40	10-15
	29-60	Loam, silt loam, clay loam.	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	80-90	65-80	25-35	5-15
140----- Farnuf Variant, wet	0-10	Loam-----	CL-ML	A-4	0	0-5	95-100	80-100	80-95	55-75	15-20	5-10
	10-40	Clay loam----	CL	A-6	0	0-5	95-100	80-100	80-100	60-85	35-40	15-20
	40-60	Extremely bouldery coarse sand.	SP, SP-SM	A-1	55-65	15-20	50-65	50-65	15-30	0-5	---	NP
141*: Farnuf Variant-----	0-10	Silt loam----	CL-ML	A-4	0	0-5	95-100	80-100	80-95	55-75	15-20	5-10
	10-40	Clay loam----	CL	A-6	0	0-5	95-100	80-100	80-100	60-85	35-40	15-20
	40-60	Extremely bouldery coarse sand.	SP, SP-SM, GP, GP-GM	A-1	55-65	15-20	50-65	50-65	15-30	0-5	---	NP
Cloud Peak Variant-----	0-4	Very fine sandy loam.	SM	A-2-4, A-4	0	0-5	100	100	75-95	30-40	---	NP
	4-11	Loamy sand, sandy loam.	SM	A-2-4	0	0-5	100	100	60-75	20-30	---	NP
	11-24	Sandy clay loam.	SC	A-6	0	0-5	95-100	75-90	65-85	35-45	30-40	10-20
	24-60	Extremely bouldery coarse sand.	SP, SP-SM	A-1-b	45-55	20-30	55-75	50-70	30-45	0-10	---	NP
142----- Forkwood	0-8	Loam-----	CL-ML, CL	A-4	0	0	95-100	90-100	80-90	60-70	20-30	5-10
	8-18	Clay loam, loam.	CL	A-6	0	0	95-100	90-100	80-90	65-80	30-35	10-15
	18-60	Loam, clay loam.	CL	A-6	0	0	95-100	90-100	80-90	65-75	30-40	10-15
143----- Forkwood	0-3	Loam-----	CL-ML, CL	A-4	0	0	95-100	90-100	80-90	60-70	20-30	5-10
	3-13	Clay loam, loam.	CL	A-6	0	0	95-100	90-100	80-90	65-80	30-35	10-15
	13-60	Loam, clay loam.	CL	A-6	0	0	95-100	90-100	80-90	65-75	30-40	10-15

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
			In				Pct	Pct				
144----- Forkwood	0-4	Loam-----	CL-ML, CL	A-4	0	0	95-100	90-100	80-90	60-70	20-30	5-10
	4-19	Clay loam, loam.	CL	A-6	0	0	95-100	90-100	80-90	65-80	30-35	10-15
	19-60	Loam, clay loam.	CL	A-6	0	0	95-100	90-100	80-90	65-75	30-40	10-15
145*:												
Gayhart-----	0-10	Clay loam-----	CL, CH	A-7	0	0	95-100	95-100	90-100	75-85	45-55	20-30
	10-36	Clay loam, silty clay, clay.	CL, CH	A-7	0	0	95-100	95-100	95-100	75-95	45-65	20-40
	36	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Bahl-----	0-10	Clay loam-----	CL	A-6	0	0	100	95-100	85-100	70-80	35-40	15-20
	10-60	Clay-----	CH	A-7	0	0	100	100	90-100	85-95	50-65	30-40
146*:												
Gayhart, moist-----	0-3	Clay loam-----	CL, CH	A-7	0	0	95-100	95-100	90-100	75-85	45-55	20-30
	3-24	Clay loam, silty clay, clay.	CL, CH	A-7	0	0	95-100	95-100	95-100	75-95	45-65	20-40
	24	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Bahl, moist--	0-3	Clay loam-----	CL	A-6	0	0	100	95-100	85-100	70-80	35-40	15-20
	3-60	Clay-----	CH	A-7	0	0	100	100	90-100	85-95	50-65	30-40
147*:												
Hardhart-----	0-8	Very gravelly silt loam.	GM-GC, GC	A-2-4, A-1-b, A-2-6	0	0-10	35-50	30-45	25-40	20-35	20-35	5-15
	8-27	Very gravelly loam, very gravelly silt loam, very channery loam.	GM-GC, GC	A-2-4, A-1-b, A-2-6	0	0-35	35-50	30-45	25-40	20-35	20-35	5-15
	27	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Starley-----	0-9	Loam-----	CL, CL-ML	A-4, A-6	0	0-15	80-95	75-90	60-75	50-70	25-35	5-15
	9-17	Very cobbly loam, very cobbly clay loam.	GC, GM-GC	A-2, A-4, A-6	10-20	30-45	55-65	50-65	40-55	30-50	25-35	5-15
	17	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth In	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
148*: Hargreave----	0-2	Sandy loam	SM, SC-SM	A-4	0	0	95-100	95-100	75-85	35-45	<25	NP-10
	2-19	Sandy clay loam.	SC, CL	A-6	0	0	95-100	95-100	80-90	45-60	30-40	10-15
	19-35	Sandy clay loam, fine sandy loam, sandy loam.	SC-SM, SC	A-4	0	0	90-100	90-100	75-90	35-50	25-30	5-10
	35	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Moskee-----	0-6	Sandy loam	SM, SC-SM	A-2-4	0	0	95-100	90-100	70-85	25-35	<25	NP-5
	6-18	Sandy clay loam.	CL	A-6	0	0	95-100	90-100	60-80	50-60	30-40	10-15
	18-60	Sandy loam, fine sandy loam, sandy clay loam.	SC-SM, SC	A-2-4, A-4, A-6	0	0	95-100	90-100	70-85	30-40	20-35	5-15
149*: Hargreave----	0-4	Fine sandy loam.	SM, SC-SM	A-4	0	0	95-100	95-100	80-90	40-50	<25	NP-10
	4-16	Sandy clay loam.	SC, CL	A-6	0	0	95-100	95-100	80-90	45-60	30-40	10-15
	16-34	Sandy clay loam, fine sandy loam, sandy loam.	SC-SM, SC	A-4	0	0	90-100	90-100	75-90	35-50	25-30	5-10
	34	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Moskee-----	0-5	Fine sandy loam.	SM, SC-SM	A-2-4, A-4	0	0	95-100	90-100	75-85	30-40	<25	NP-5
	5-22	Sandy clay loam.	CL	A-6	0	0	95-100	90-100	60-80	50-60	30-40	10-15
	22-60	Sandy loam, fine sandy loam, sandy clay loam.	SC-SM, SC	A-2-4, A-4, A-6	0	0	95-100	90-100	70-85	30-40	20-35	5-15

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO			4	10	40	200		
150*: Hargreave, dry-----	0-3	Sandy loam	SM, SC-SM	A-4	0	0	95-100	95-100	75-85	35-45	<25	NP-10
	3-12	Sandy clay loam.	SC, CL	A-6	0	0	95-100	95-100	80-90	45-60	30-40	10-15
	12-25	Sandy clay loam, fine sandy loam, sandy loam.	SC-SM, SC	A-4	0	0	90-100	90-100	75-90	35-50	25-30	5-10
	25	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Moskee, dry--	0-4	Sandy loam	SM, SC-SM	A-2-4	0	0	95-100	90-100	70-85	25-35	<25	NP-5
	4-16	Sandy clay loam.	CL	A-6	0	0	95-100	90-100	60-80	50-60	30-40	10-15
	16-60	Sandy loam, fine sandy loam, sandy clay loam.	SC-SM, SC	A-2-4, A-4, A-6	0	0	95-100	90-100	70-85	30-40	20-35	5-15
151-----	0-3	Loam	CL	A-6	0	0	90-100	90-100	85-95	60-75	30-35	10-15
Harlan, dry	3-13	Clay loam, loam.	CL	A-6, A-7	0	0	90-100	90-100	85-95	65-80	35-45	15-20
	13-60	Loam	CL	A-6	0	0	90-100	90-100	85-95	60-80	30-35	10-15
152*: Harlan-----	0-4	Silt loam	CL	A-6	0	0	90-100	90-100	85-95	65-80	30-35	10-15
	4-16	Clay loam, loam.	CL	A-6, A-7	0	0	90-100	90-100	85-95	65-80	35-45	15-20
	16-60	Loam	CL	A-6	0	0	90-100	90-100	85-95	60-80	30-35	10-15
Kirtley-----	0-7	Loam	CL-ML, ML	A-4	0	0	95-100	95-100	85-95	60-75	20-30	NP-10
	7-14	Clay loam, loam.	CL	A-6	0	0	95-100	95-100	85-95	65-80	30-40	10-20
	14-31	Loam, clay loam.	CL, CL-ML	A-6, A-4	0	0	95-100	95-100	85-95	60-75	25-35	5-15
	31	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
153*: Harlan-----	0-2	Loam	CL	A-6	0	0	90-100	90-100	85-95	60-75	30-35	10-15
	2-13	Clay loam, loam.	CL	A-6, A-7	0	0	90-100	90-100	85-95	65-80	35-45	15-20
	13-24	Clay loam, loam.	CL	A-6	0	0	90-100	90-100	85-95	65-80	30-40	10-15
	24-60	Loam	CL	A-6	0	0	90-100	90-100	85-95	60-80	30-35	10-15

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO			4	10	40	200		
153*:												
Kirtley-----	0-9	Loam-----	CL-ML, ML	A-4	0	0	95-100	95-100	85-95	60-75	20-30	NP-10
	9-16	Clay loam, loam.	CL	A-6	0	0	95-100	95-100	85-95	65-80	30-40	10-20
	16-32	Loam, clay loam.	CL, CL-ML	A-6, A-4	0	0	95-100	95-100	85-95	60-75	25-35	5-15
	32	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
154-----	0-2	Very fine sandy loam.	CL-ML, SC-SM, SM, ML	A-4	0	0	95-100	95-100	90-95	40-55	<30	NP-10
Haverdad	2-60	Stratified sandy loam to clay loam.	CL	A-6	0	0	95-100	95-100	80-90	60-75	30-40	10-20
155-----	0-8	Loam-----	CL	A-6	0	0	95-100	95-100	80-90	60-75	30-35	10-15
Haverdad, moist	8-60	Stratified sandy loam to clay loam.	CL	A-6	0	0	95-100	95-100	80-90	60-75	30-40	10-20
156-----	0-1	Silt loam----	CL-ML, CL	A-4, A-6	0	0	95-100	90-100	85-95	75-85	25-35	5-15
Haverdad, saline	1-60	Stratified fine sandy loam to silty clay loam.	CL	A-6, A-7	0	0	95-100	90-100	75-90	60-80	30-45	10-20
157-----	0-2	Loam-----	CL	A-6	0	0	95-100	90-100	80-90	60-75	30-35	10-15
Haverdad, moist, saline	2-60	Stratified fine sandy loam to silty clay loam.	CL	A-6, A-7	0	0	95-100	90-100	75-90	60-80	30-45	10-20
158*:												
Haverdad-----	0-2	Very fine sandy loam.	ML, CL-ML	A-4	0	0	90-100	90-100	75-90	50-65	<25	NP-10
	2-60	Stratified sandy loam to clay loam.	CL	A-6	0	0	90-100	90-100	75-90	65-80	30-35	10-15
Draknab-----	0-2	Fine sandy loam.	SM	A-2-4, A-4	0	0	100	95-100	55-75	25-40	<25	NP-5
	2-60	Stratified sand to sandy loam.	SM, SP-SM	A-1, A-2-4, A-3	0	0-5	95-100	85-100	45-60	5-25	---	NP

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
159*: Haverdad, moist-----	0-2	Very fine sandy loam.	ML, CL-ML	A-4	0	0	90-100	90-100	75-90	50-65	<25	NP-10
	2-60	Stratified sandy loam to clay loam.	CL	A-6	0	0	90-100	90-100	75-90	65-80	30-35	10-15
Draknab, moist-----	0-2	Loamy fine sand.	SM	A-2-4	0	0	100	95-100	50-70	20-35	---	NP
	2-60	Stratified sand to sandy loam.	SM, SP-SM	A-1, A-2-4, A-3	0	0-5	95-100	85-100	45-60	5-25	---	NP
160*: Haverdad-----	0-4	Silt loam-----	CL	A-6	0	0	90-100	90-100	80-90	75-85	30-35	10-15
	4-60	Stratified sandy loam to clay loam.	CL	A-6	0	0	90-100	90-100	75-90	65-80	30-35	10-15
Worthington---	0-7	Clay loam-----	CL	A-6, A-7	0	0	100	95-100	85-100	85-95	35-45	15-25
	7-20	Clay, silty clay, silty clay loam.	CL, CH	A-7	0	0	95-100	95-100	80-100	80-100	40-55	20-30
	20-60	Clay loam, clay, silty clay loam.	CL, CH	A-6, A-7	0	0	100	95-100	80-100	80-100	35-55	15-30
161*: Haverdad, moist-----	0-2	Very fine sandy loam.	ML, CL-ML	A-4	0	0	90-100	90-100	75-90	50-65	<25	NP-10
	2-60	Stratified sandy loam to clay loam.	CL	A-6	0	0	90-100	90-100	75-90	65-80	30-35	10-15
Worthington---	0-7	Clay loam-----	CL	A-6, A-7	0	0	100	95-100	85-100	85-95	35-45	15-25
	7-24	Clay, silty clay, silty clay loam.	CL, CH	A-7	0	0	95-100	95-100	80-100	80-100	40-55	20-30
	24-60	Clay loam, clay, silty clay loam.	CL, CH	A-6, A-7	0	0	100	95-100	80-100	80-100	35-55	15-30

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth In	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
162----- Havertel	0-17	Silt loam	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	90-95	80-90	25-35	5-15
	17-29	Gravelly loamy sand, gravelly sand.	GP-GM, SP-SM, GM, SM	A-1-b, A-2-4, A-3	0	0-10	55-80	50-75	30-55	5-20	---	NP
	29-60	Very gravelly sand, extremely gravelly sand.	GP, GP-GM	A-1-a	0	0-15	35-55	30-50	20-30	0-10	---	NP
163*: Hesperus												
Variant-----	0-3	Silt loam	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	80-95	75-85	25-35	5-15
	3-18	Silty clay loam, clay loam.	CL	A-6	0	0	95-100	95-100	80-95	75-85	35-40	15-20
	18-49	Sandy clay loam, clay loam.	CL	A-6	0	0	95-100	95-100	75-85	50-70	35-40	15-20
	49-57	Sandy loam	SM	A-2, A-4	0	0-10	85-95	85-95	60-70	30-50	25-30	NP-5
	57-60	Extremely bouldery coarse sand.	SP	A-1	50-60	15-20	65-80	60-75	15-30	0-5	---	NP
Regat-----												
	0-8	Loam	ML	A-4	0	0	100	95-100	70-85	60-70	30-35	5-10
	8-33	Clay	CL, CH	A-7	0	0	100	100	90-100	85-95	45-60	20-35
	33-39	Silty clay loam, clay loam, clay.	CL	A-6, A-7	0	0	100	95-100	70-85	65-85	35-50	15-25
	39	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
164*: Hiland-----												
	0-4	Fine sandy loam.	SM	A-4	0	0	95-100	90-100	75-85	35-45	<25	NP-5
	4-30	Sandy clay loam.	SC, CL	A-6	0	0	95-100	90-100	75-85	40-60	30-40	10-20
	30-60	Sandy loam, fine sandy loam.	SM, SC-SM	A-2-4, A-4	0	0	95-100	90-100	65-80	25-45	<30	NP-10

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
164*: Bowbac-----	0-4	Sandy loam	SC-SM, SC, SM	A-4	0	0	90-100	90-100	80-95	40-50	<25	NP-10
	4-15	Sandy clay loam.	CL-ML, CL	A-4, A-6	0	0	90-100	90-100	80-95	50-70	25-35	5-15
	15-24	Sandy loam, fine sandy loam.	SC-SM, SC, SM	A-4	0	0	85-100	80-100	80-95	35-50	<30	NP-10
	24	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
165*: Hiland, moist	0-4	Fine sandy loam.	SM	A-4	0	0	95-100	90-100	75-85	35-45	<25	NP-5
	4-17	Sandy clay loam.	SC, CL	A-6	0	0	95-100	90-100	75-85	40-60	30-40	10-20
	17-24	Sandy loam, sandy clay loam.	SC-SM, SC	A-4, A-6	0	0	95-100	90-100	75-85	35-50	25-35	5-15
	24-60	Sandy loam, fine sandy loam.	SM, SC-SM	A-2-4, A-4	0	0	95-100	90-100	65-80	25-45	<30	NP-10
Bowbac, moist	0-7	Sandy loam	SC-SM, SC, SM	A-4	0	0	90-100	90-100	80-95	40-50	<25	NP-10
	7-30	Sandy clay loam.	CL-ML, CL	A-4, A-6	0	0	90-100	90-100	80-95	50-70	25-35	5-15
	30-39	Sandy loam, fine sandy loam.	SC-SM, SC, SM	A-4	0	0	85-100	80-100	80-95	35-50	<30	NP-10
	39	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
166*: Hiland-----	0-2	Sandy loam	SM, SC-SM	A-2, A-4	0	0	95-100	90-100	65-75	30-40	<30	NP-10
	2-15	Sandy clay loam.	SC, CL	A-6	0	0	95-100	90-100	75-85	40-60	30-40	10-20
	15-27	Sandy loam, sandy clay loam.	SC-SM, SC	A-4, A-6	0	0	95-100	90-100	75-85	35-50	25-35	5-15
	27-60	Sandy loam, fine sandy loam.	SM, SC-SM	A-2-4, A-4	0	0	95-100	90-100	65-80	25-45	<30	NP-10
Decolney-----	0-2	Loamy sand	SM	A-2	0	0	100	100	65-75	15-25	---	NP
	2-11	Sandy clay loam.	SC, CL	A-6	0	0	100	100	80-90	40-60	30-40	10-20
	11-60	Sandy loam, sandy clay loam.	SC-SM	A-2-4, A-4	0	0	100	100	70-80	30-50	<30	5-10

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index	
			Unified	AASHTO			4	10	40	200			
			In				Pct	Pct					Pct
167*:													
Hiland, moist	0-4	Sandy loam	SM, SC-SM	A-2, A-4	0	0	95-100	90-100	65-75	30-40	<30	NP-10	
	4-23	Sandy clay loam.	SC, CL	A-6	0	0	95-100	90-100	75-85	40-60	30-40	10-20	
	23-60	Sandy loam, fine sandy loam.	SM, SC-SM	A-2-4, A-4	0	0	95-100	90-100	65-80	25-45	<30	NP-10	
Vonalee, moist	0-3	Loamy sand	SM	A-2	0	0	100	95-100	70-80	20-30	---	NP	
	3-19	Sandy loam, fine sandy loam.	SC-SM, SC	A-2, A-4	0	0	100	95-100	70-80	30-40	20-30	5-10	
	19-60	Loamy sand, loamy fine sand, sandy loam.	SM, SC-SM	A-2	0	0	100	95-100	70-80	20-35	<25	NP-5	
168*:													
Hilight	0-1	Clay loam	CL	A-7	0	0	95-100	95-100	80-90	70-80	40-50	20-30	
	1-17	Clay, silty clay.	CH	A-7	0	0	95-100	95-100	90-100	85-95	50-65	30-40	
	17	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---	
Rock outcrop	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---	
169*:													
Jonpol	0-3	Loam	CL, CL-ML	A-4, A-6	0	0	75-100	75-100	70-90	50-60	25-35	5-15	
	3-19	Clay, clay loam.	CL, CH	A-7	0	0	90-100	85-100	80-95	70-85	45-60	20-35	
	19-32	Loam, clay loam.	CL	A-6	0	0	90-100	75-100	70-95	60-80	25-40	10-20	
	32	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---	
Flatmak	0-4	Loam	CL-ML	A-4	0	0	90-100	90-100	80-95	60-75	25-30	5-10	
	4-16	Clay, clay loam.	CL, CH	A-7	0	0	90-100	90-100	80-100	70-95	40-60	20-40	
	16-60	Loam, clay loam.	CL	A-6, A-7	0	0	90-100	90-100	80-95	65-80	35-45	15-25	

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
			In				Pct	Pct				
170*: Jonpol-----	0-3	Loam-----	CL, CL-ML	A-4, A-6	0	0	75-100	75-100	70-90	50-60	25-35	5-15
	3-15	Clay, clay loam.	CL, CH	A-7	0	0	90-100	85-100	80-95	70-85	45-60	20-35
	15-19	Clay, clay loam.	CL, CH	A-7	0	0	90-100	85-100	80-95	70-85	45-60	20-35
	19-23	Loam, clay loam.	CL	A-6	0	0	90-100	75-100	70-95	60-80	25-40	10-20
	23	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Platmak-----	0-6	Loam-----	CL-ML	A-4	0	0	90-100	90-100	80-95	60-75	25-30	5-10
	6-14	Clay, clay loam.	CL, CH	A-7	0	0	90-100	90-100	80-100	70-95	40-60	20-40
	14-60	Loam, clay loam.	CL	A-6, A-7	0	0	90-100	90-100	80-95	65-80	35-45	15-25
171*: Kishona-----	0-1	Loam-----	CL	A-6	0	0	95-100	90-100	75-85	55-75	30-35	10-15
	1-60	Loam, clay loam, silty clay loam.	CL	A-6, A-7	0	0	95-100	90-100	75-90	60-80	30-45	10-20
Cambria-----	0-5	Very fine sandy loam.	CL-ML	A-4	0	0	95-100	95-100	85-95	55-65	25-30	5-10
	5-16	Clay loam, silty clay loam.	CL	A-6	0	0	95-100	95-100	85-95	70-80	35-40	15-20
	16-60	Loam, clay loam, silty clay loam.	CL, CL-ML	A-4, A-6	0	0	95-100	95-100	65-95	60-80	20-40	5-15
172*: Kishona-----	0-2	Loam-----	CL	A-6	0	0	95-100	90-100	75-85	55-75	30-35	10-15
	2-60	Loam, clay loam, silty clay loam.	CL	A-6, A-7	0	0	95-100	90-100	75-90	60-80	30-45	10-20
Cambria-----	0-3	Very fine sandy loam.	CL-ML	A-4	0	0	95-100	95-100	85-95	55-65	25-30	5-10
	3-11	Clay loam, silty clay loam.	CL	A-6	0	0	95-100	95-100	85-95	70-80	35-40	15-20
	11-60	Loam, clay loam, silty clay loam.	CL, CL-ML	A-4, A-6	0	0	95-100	95-100	65-95	60-80	20-40	5-15

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
			In				Pct	Pct				
173*:												
Lambman-----	0-1	Sandy loam----	SM	A-4	0	0	100	95-100	65-85	35-50	25-30	NP-5
	1-8	Sandy clay loam.	CL	A-6	0	0	100	95-100	70-90	60-75	30-40	10-20
	8-15	Sandy loam, loamy sand, sandy clay loam.	SM, SC-SM	A-2-4, A-4	0	0	100	85-95	60-80	30-50	<30	NP-10
	15	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Hargreave----	0-2	Fine sandy loam.	SM, SC-SM	A-4	0	0	95-100	95-100	80-90	40-50	<25	NP-10
	2-23	Sandy clay loam.	SC, CL	A-6	0	0	95-100	95-100	80-90	45-60	30-40	10-15
	23-32	Sandy clay loam, fine sandy loam, sandy loam.	SC-SM, SC	A-4	0	0	90-100	90-100	75-90	35-50	25-30	5-10
	32	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
174*:												
Lucky-----	0-5	Gravelly loam	SC-SM	A-2-4, A-4	0	0-10	75-85	60-75	45-60	30-45	25-30	5-10
	5-17	Gravelly sandy clay loam.	SC	A-2-6, A-6	0	0-10	70-85	50-75	40-60	20-45	30-40	10-20
	17-24	Vary gravelly sandy loam.	GM, GM-GC, SM, SC-SM	A-1, A-2-4	0	0-10	50-70	35-50	25-40	10-20	<30	NP-10
	24	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Burgess-----	0-9	Gravelly sandy loam.	SM, SP-SM	A-1-b, A-2-4	0	0-5	60-85	50-75	30-55	10-30	<25	NP-5
	9-34	Gravelly sandy loam.	SM, SP-SM	A-1-b, A-2-4	0	0-5	60-85	50-75	30-55	10-30	<25	NP-5
	34	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Hazton-----	0-8	Gravelly sandy loam.	SC-SM	A-2	0	0	80-85	70-75	50-55	25-30	25-30	5-10
	8-14	Gravelly coarse sandy loam, gravelly sandy loam.	GM, SM	A-1, A-2	0	0-5	50-100	50-75	30-60	15-30	<25	NP-5
	14	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth In	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
							Pct	Pct				
175----- Moskee	0-3	Sandy loam	SM, SC-SM	A-2-4	0	0	95-100	90-100	70-85	25-35	<25	NP-5
	3-20	Sandy clay loam.	CL	A-6	0	0	95-100	90-100	60-80	50-60	30-40	10-15
	20-60	Sandy loam, fine sandy loam, sandy clay loam.	SC-SM, SC	A-2-4, A-4, A-6	0	0	95-100	90-100	70-85	30-40	20-35	5-15
176----- Moskee	0-4	Sandy loam	SM, SC-SM	A-2-4	0	0	95-100	90-100	70-85	25-35	<25	NP-5
	4-29	Sandy clay loam.	CL	A-6	0	0	95-100	90-100	60-80	50-60	30-40	10-15
	29-60	Sandy loam, fine sandy loam, sandy clay loam.	SC-SM, SC	A-2-4, A-4, A-6	0	0	95-100	90-100	70-85	30-40	20-35	5-15
177----- Moskee	0-9	Fine sandy loam.	SM, SC-SM	A-2-4, A-4	0	0	95-100	90-100	75-85	30-40	<25	NP-5
	9-25	Sandy clay loam.	CL	A-6	0	0	95-100	90-100	60-80	50-60	30-40	10-15
	25-60	Sandy loam, fine sandy loam, sandy clay loam.	SC-SM, SC	A-2-4, A-4, A-6	0	0	95-100	90-100	70-85	30-40	20-35	5-15
178*: Moskee-----	0-4	Sandy loam	SM, SC-SM	A-2-4	0	0	95-100	90-100	70-85	25-35	<25	NP-5
	4-29	Sandy clay loam.	CL	A-6	0	0	95-100	90-100	60-80	50-60	30-40	10-15
	29-60	Sandy loam, fine sandy loam, sandy clay loam.	SC-SM, SC	A-2-4, A-4, A-6	0	0	95-100	90-100	70-85	30-40	20-35	5-15
Noden-----	0-2	Fine sandy loam.	SC-SM, SM	A-2-4, A-4	0	0	95-100	95-100	80-90	30-50	<30	NP-10
	2-36	Sandy clay loam.	SC, CL	A-6	0	0	95-100	95-100	80-90	45-65	30-35	10-15
	36-60	Fine sandy loam, sandy loam.	SC-SM, SM	A-2-4, A-4	0	0	95-100	95-100	80-90	30-50	<30	NP-10

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
179*:												
Moskee-----	0-1	Fine sandy loam.	SM, SC-SM	A-2-4, A-4	0	0	95-100	90-100	75-85	30-40	<25	NP-5
	1-16	Sandy clay loam.	CL	A-6	0	0	95-100	90-100	60-80	50-60	30-40	10-15
	16-60	Sandy loam, fine sandy loam, sandy clay loam.	SC-SM, SC	A-2-4, A-4, A-6	0	0	95-100	90-100	70-85	30-40	20-35	5-15
Noden-----	0-2	Fine sandy loam.	SC-SM, SM	A-2-4, A-4	0	0	95-100	95-100	80-90	30-50	<30	NP-10
	2-30	Sandy clay loam.	SC, CL	A-6	0	0	95-100	95-100	80-90	45-65	30-35	10-15
	30-60	Fine sandy loam, sandy loam.	SC-SM, SM	A-2-4, A-4	0	0	95-100	95-100	80-90	30-50	<30	NP-10
180*:												
Moskee, dry--	0-5	Fine sandy loam.	SM, SC-SM	A-2-4, A-4	0	0	95-100	90-100	75-85	30-40	<25	NP-5
	5-15	Sandy clay loam.	CL	A-6	0	0	95-100	90-100	60-80	50-60	30-40	10-15
	15-60	Sandy loam, fine sandy loam, sandy clay loam.	SC-SM, SC	A-2-4, A-4, A-6	0	0	95-100	90-100	70-85	30-40	20-35	5-15
Noden, dry---	0-7	Fine sandy loam.	SC-SM, SM	A-2-4, A-4	0	0	95-100	95-100	80-90	30-50	<30	NP-10
	7-22	Sandy clay loam.	SC, CL	A-6	0	0	95-100	95-100	80-90	45-65	30-35	10-15
	22-60	Fine sandy loam, sandy loam.	SC-SM, SM	A-2-4, A-4	0	0	95-100	95-100	80-90	30-50	<30	NP-10
181*:												
Moskee-----	0-8	Sandy loam	SM, SC-SM	A-2-4	0	0	95-100	90-100	70-85	25-35	<25	NP-5
	8-21	Sandy clay loam.	CL	A-6	0	0	95-100	90-100	60-80	50-60	30-40	10-15
	21-60	Sandy loam, fine sandy loam, sandy clay loam.	SC-SM, SC	A-2-4, A-4, A-6	0	0	95-100	90-100	70-85	30-40	20-35	5-15

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
181*: Nuncho-----	0-8	Sandy clay loam.	CL	A-6	0	0	100	95-100	75-90	50-65	30-40	10-15
	8-24	Sandy clay	CL, CH	A-7	0	0	100	95-100	85-95	65-80	40-55	20-30
	24-40	Sandy clay loam.	CL	A-6	0	0	100	80-95	65-75	50-60	30-40	10-15
	40-60	Sandy loam, loamy sand.	SM, SC-SM	A-2, A-4	0	0	95-100	80-95	65-75	30-50	<30	NP-10
182*: Moskee-----	0-8	Sandy loam	SM, SC-SM	A-2-4	0	0	95-100	90-100	70-85	25-35	<25	NP-5
	8-35	Sandy clay loam.	CL	A-6	0	0	95-100	90-100	60-80	50-60	30-40	10-15
	35-60	Sandy loam, fine sandy loam, sandy clay loam.	SC-SM, SC	A-2-4, A-4, A-6	0	0	95-100	90-100	70-85	30-40	20-35	5-15
Nuncho-----	0-10	Sandy clay loam.	CL	A-6	0	0	100	95-100	75-90	50-65	30-40	10-15
	10-27	Sandy clay	CL, CH	A-7	0	0	100	95-100	85-95	65-80	40-55	20-30
	27-40	Sandy clay loam.	CL	A-6	0	0	100	80-95	65-75	50-60	30-40	10-15
	40-60	Sandy loam, loamy sand.	SM, SC-SM	A-2, A-4	0	0	95-100	80-95	65-75	30-50	<30	NP-10
183*: Moskee-----	0-7	Sandy loam	SM, SC-SM	A-2-4	0	0	95-100	90-100	70-85	25-35	<25	NP-5
	7-21	Sandy clay loam.	CL	A-6	0	0	95-100	90-100	60-80	50-60	30-40	10-15
	21-60	Sandy loam, fine sandy loam, sandy clay loam.	SC-SM, SC	A-2-4, A-4, A-6	0	0	95-100	90-100	70-85	30-40	20-35	5-15
Worthenton, moist-----	0-4	Clay loam	CL	A-6, A-7	0	0	100	95-100	85-100	85-95	35-45	15-25
	4-17	Clay, silty clay, silty clay loam.	CL, CH	A-7	0	0	95-100	95-100	80-100	80-100	40-55	20-30
	17-60	Clay loam, clay, silty clay loam.	CL, CH	A-6, A-7	0	0	100	95-100	80-100	80-100	35-55	15-30

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth In	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
184*: Nathrop-----	0-6	Loam-----	CL	A-6	0-5	0-10	80-90	80-90	65-75	50-70	30-35	10-15
	6-13	Very cobbly clay loam, extremely cobble clay loam.	GC, SC	A-6, A-2-6	0-15	35-55	45-80	40-75	30-55	25-50	35-40	15-20
	13-39	Very cobbly clay loam, extremely cobble clay loam.	GC, SC	A-6, A-2-6	0-15	35-55	45-80	40-75	30-55	25-50	35-40	15-20
	39	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Passcreek----	0-7	Loam-----	CL-ML, CL	A-4, A-6	0	0	90-100	85-100	70-90	50-75	25-35	5-15
	7-14	Clay loam, loam, gravelly clay loam.	CL, GC	A-6	0	0	65-100	60-100	50-85	40-75	30-40	10-20
	14-20	Gravelly clay loam, gravelly loam.	CL, GC	A-2-6, A-6	0	0-10	55-80	50-75	40-65	30-55	30-40	10-20
	20-34	Very gravelly clay loam, very gravelly loam.	GM-GC, GC	A-1-b, A-2-4, A-2-6	0	0-10	35-60	30-50	25-45	20-40	25-35	5-15
	34	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Starley-----	0-9	Loam-----	CL, CL-ML	A-4, A-6	0	0-15	80-95	75-90	60-75	50-70	25-35	5-15
	9-17	Very cobbly loam, very cobble clay loam.	GC, GM-GC	A-2, A-4, A-6	10-20	30-45	55-65	50-65	40-55	30-50	25-35	5-15
	17	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
185----- Nesda	0-10	Stony silt loam.	ML	A-4	20-35	0-10	90-100	85-100	75-85	65-80	30-35	5-10
	10-60	Very gravelly sand, very gravelly loamy sand, extremely gravelly sand.	GP-GM, GM	A-1	0-10	5-40	30-50	20-45	10-30	5-15	---	NP

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
			In				Pct	Pct				
186*: Nesda-----	0-10	Stony silt loam.	ML	A-4	20-35	0-10	90-100	85-100	75-85	65-80	30-35	5-10
	10-60	Very gravelly sand, very gravelly loamy sand, extremely gravelly sand.	GP-GM	A-1	0-10	5-40	30-50	20-45	10-30	5-15	---	NP
Rubble land--	0-60	Fragmental material.	GP	A-1	70-80	75-90	0-10	0-5	0-5	0	---	NP
187*: Nesda Variant	0-3	Gravelly sandy loam.	GM, SM	A-1, A-2	0-5	0-15	55-80	50-75	40-60	15-30	---	NP
	3-11	Very gravelly sandy loam, very gravelly loamy sand.	SM, SP-SM	A-1	0-10	10-20	60-70	40-50	20-35	5-15	---	NP
	11-60	Very gravelly loamy sand, extremely gravelly sand.	GP, GP-GM, SP, SP-SM	A-1	0-10	15-25	25-65	20-35	5-25	0-10	---	NP
Havertal-----	0-16	Silt loam-----	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	90-95	80-90	25-35	5-15
	16-60	Very gravelly sand, extremely gravelly sand.	GP, GP-GM	A-1-a	0	0-15	35-55	30-50	20-30	0-10	---	NP
188*: Norbert-----	0-2	Clay-----	CH	A-7	0	0	90-100	90-100	80-90	70-80	50-65	30-40
	2-14	Clay, silty clay.	CH	A-7	0	0	90-100	90-100	80-90	70-80	50-65	30-40
	14	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Doney-----	0-1	Loam-----	CL, CL-ML	A-4, A-6	0	0	90-100	90-100	80-90	65-80	25-35	5-15
	1-15	Loam, silty clay loam, clay loam.	CL, CL-ML	A-4, A-6	0	0	90-100	90-100	80-95	65-85	25-40	5-20
	15-27	Loam, silty clay loam, clay loam.	CL, CL-ML	A-4, A-6	0	0	90-100	90-100	80-95	65-85	25-40	5-20
	27	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth In	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
							Pct	Pct				
188*: Rock outcrop-	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
189*: Norbert-----	0-2	Clay-----	CH	A-7	0	0	90-100	90-100	80-90	70-80	50-65	30-40
	2-19	Clay, silty clay.	CH	A-7	0	0	90-100	90-100	80-90	70-80	50-65	30-40
	19	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Eltac-----	0-1	Silty clay----	CH	A-7	0	0	95-100	95-100	90-100	80-90	60-70	35-45
	1-16	Clay-----	CH	A-7	0	0	95-100	95-100	90-100	75-90	65-75	40-50
	16-39	Clay-----	CH	A-7	0	0	95-100	95-100	90-100	75-90	65-75	40-50
	39	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
190*: Norbert-----	0-1	Clay-----	CH	A-7	0	0	90-100	90-100	80-90	70-80	50-65	30-40
	1-19	Clay, silty clay.	CH	A-7	0	0	90-100	90-100	80-90	70-80	50-65	30-40
	19	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Reget-----	0-11	Silt loam----	ML	A-4	0	0	100	95-100	70-85	60-70	30-35	5-10
	11-26	Clay-----	CL, CH	A-7	0	0	100	100	90-100	85-95	45-60	20-35
	26-38	Silty clay loam, clay loam, clay.	CL	A-6, A-7	0	0	100	95-100	70-85	65-85	35-50	15-25
	38	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Savar-----	0-2	Clay loam----	CL	A-6, A-7	0	0	100	100	90-100	85-95	35-45	15-25
	2-20	Clay, silty clay, clay loam.	CL, CH	A-7	0	0	100	100	90-100	85-95	45-60	20-35
	20-60	Clay, clay loam, silty clay.	CL, CH	A-7	0	0	100	100	90-100	85-95	40-55	20-30
191*: Norbert-----	0-1	Clay-----	CH	A-7	0	0	90-100	90-100	80-90	70-80	50-65	30-40
	1-19	Clay, silty clay.	CH	A-7	0	0	90-100	90-100	80-90	70-80	50-65	30-40
	19	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop-	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth In	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
192----- Nuncho	0-7	Loam-----	CL	A-6	0	0	100	95-100	80-95	65-80	30-35	10-15
	7-34	Clay, clay loam.	CL, CH	A-7	0	0	100	95-100	85-95	65-80	40-55	20-30
	34-60	Clay loam, loam.	CL	A-6	0	0	95-100	90-100	80-90	65-75	35-40	15-20
193----- Nuncho	0-2	Loam-----	CL	A-6	0	0	100	95-100	80-95	65-80	30-35	10-15
	2-20	Clay, clay loam.	CL, CH	A-7	0	0	100	95-100	85-95	65-80	40-55	20-30
	20-60	Clay loam, loam.	CL	A-6	0	0	95-100	90-100	80-90	65-75	35-40	15-20
194----- Nuncho	0-4	Loam-----	CL	A-6	0	0	100	95-100	80-95	65-80	30-35	10-15
	4-22	Clay, clay loam.	CL, CH	A-7	0	0	100	95-100	85-95	65-80	40-55	20-30
	22-60	Clay loam, loam.	CL	A-6	0	0	95-100	90-100	80-90	65-75	35-40	15-20
195----- Nuncho	0-7	Clay loam----	CL	A-7	0	0	100	95-100	85-95	75-90	40-50	20-25
	7-25	Clay, clay loam.	CL, CH	A-7	0	0	100	95-100	85-95	65-80	40-55	20-30
	25-60	Clay loam, loam.	CL	A-6	0	0	95-100	90-100	80-90	65-75	35-40	15-20
196----- Nuncho	0-12	Clay loam----	CL	A-7	0	0	100	95-100	85-95	75-90	40-50	20-25
	12-34	Clay, clay loam.	CL, CH	A-7	0	0	100	95-100	85-95	65-80	40-55	20-30
	34-60	Clay loam, loam.	CL	A-6	0	0	95-100	90-100	80-90	65-75	35-40	15-20
197*: Nuncho-----	0-3	Loam-----	CL	A-6	0	0	100	95-100	80-95	65-80	30-35	10-15
	3-24	Clay, clay loam.	CL, CH	A-7	0	0	100	95-100	85-95	65-80	40-55	20-30
	24-60	Clay loam, loam.	CL	A-6	0	0	95-100	90-100	80-90	65-75	35-40	15-20
Emigrant-----	0-1	Clay loam----	CL	A-6, A-7	0	0	95-100	95-100	80-90	70-80	35-45	15-25
	1-9	Clay, clay loam.	CL, CH	A-7	0	0	95-100	95-100	80-90	70-80	45-60	25-35
	9-36	Clay loam, clay.	CL, CH	A-7	0	0	95-100	95-100	80-90	70-80	45-55	25-30
	36	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO			4	10	40	200		
198*:												
Nuncho-----	0-2	Loam-----	CL	A-6	0	0	100	95-100	80-95	65-80	30-35	10-15
	2-35	Clay, clay loam.	CL, CH	A-7	0	0	100	95-100	85-95	65-80	40-55	20-30
	35-60	Clay loam, loam.	CL	A-6	0	0	95-100	90-100	80-90	65-75	35-40	15-20
Emigrant-----	0-5	Loam-----	CL	A-6	0	0	95-100	95-100	80-90	65-75	30-35	10-15
	5-12	Clay, clay loam.	CL, CH	A-7	0	0	95-100	95-100	80-90	70-80	45-60	25-35
	12-38	Clay loam, clay.	CL, CH	A-7	0	0	95-100	95-100	80-90	70-80	45-55	25-30
	38	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
199-----	0-9	Clay loam----	CH, CL	A-7	0	0	95-100	90-100	85-100	75-85	40-55	15-30
Nuncho Variant	9-19	Clay, silty clay.	CH	A-7	0	0	95-100	90-100	85-100	75-95	50-60	20-30
	19-60	Clay, silty clay, clay loam.	CL, CH	A-7	0	0	95-100	90-100	85-100	75-95	40-55	15-25
200*:												
Owen Creek---	0-3	Clay loam----	CL	A-6	0	0	90-100	90-100	80-90	65-75	30-40	10-15
	3-18	Clay-----	CL, CH	A-7	0	0-5	90-100	90-100	80-90	70-80	45-60	20-30
	18-29	Channery clay loam, channery clay.	CL, GC, CH	A-6, A-7	0	5-35	65-90	60-85	50-70	40-65	35-55	15-30
	29	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Echemoor-----	0-12	Silt loam----	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	90-100	75-80	25-35	5-15
	12-29	Silty clay loam.	CL	A-6	0	0	95-100	95-100	90-100	75-80	35-40	15-20
	29	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Bynum-----	0-10	Silt loam----	ML, CL-ML, CL	A-4, A-6	0	0-5	90-100	90-100	85-95	70-85	30-40	5-15
	10-16	Channery clay loam.	GC, SC	A-6, A-7	0	0-10	60-80	55-75	45-65	35-50	35-45	15-20
	16-28	Channery clay loam.	GC, SC	A-6, A-7	0	0-10	60-80	55-75	45-65	35-50	35-45	15-20
	28	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
			In				Pct	Pct				
201*: Parmleed-----	0-4	Fine sandy loam.	SM	A-4	0	0	95-100	95-100	75-85	35-50	----	NP
	4-17	Clay, clay loam.	CL, CH	A-7	0	0	95-100	95-100	85-95	85-95	45-60	25-35
	17-30	Clay loam-----	CL	A-6, A-7	0	0	95-100	85-100	70-85	65-80	35-45	15-25
	30	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Bidman-----	0-2	Fine sandy loam.	SM	A-4	0	0	95-100	90-100	80-90	35-50	<25	NP-5
	2-17	Clay, clay loam.	CL, CH	A-7	0	0	95-100	90-100	80-90	65-80	45-55	20-30
	17-25	Clay, clay loam.	CL, CH	A-7	0	0	90-100	85-100	75-90	60-80	45-55	20-30
	25-60	Clay loam, loam.	CL	A-6, A-7	0	0	80-100	75-95	65-90	55-75	35-45	15-20
202*: Parmleed, moist-----	0-7	Sandy loam-----	SM, SC-SM	A-4	0	0	95-100	95-100	75-80	35-50	20-30	NP-10
	7-18	Clay-----	CL, CH	A-7	0	0	95-100	95-100	85-95	80-90	45-60	25-35
	18-30	Clay loam, silty clay.	CL, CH	A-7	0	0	95-100	95-100	85-95	85-95	40-55	20-35
	30-39	Silt loam, clay loam.	CL	A-6	0	0	95-100	95-100	70-85	60-70	30-40	10-15
	39	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Bidman, moist	0-7	Loam-----	CL-ML	A-4	0	0	95-100	90-100	80-90	55-70	25-30	5-10
	7-18	Clay, clay loam.	CL, CH	A-7	0	0	95-100	90-100	80-90	65-80	45-55	20-30
	18-25	Clay, clay loam.	CL, CH	A-7	0	0	90-100	85-100	75-90	60-80	45-55	20-30
	25-60	Clay loam, loam.	CL	A-6, A-7	0	0	80-100	75-95	65-90	55-75	35-45	15-20
203*: Parmleed, moist-----	0-3	Loam-----	CL-ML, ML	A-4	0	0	95-100	95-100	80-90	60-75	20-30	NP-10
	3-27	Clay, clay loam.	CL, CH	A-7	0	0	95-100	95-100	85-95	85-95	45-60	25-35
	27-38	Clay loam-----	CL	A-6, A-7	0	0	95-100	85-100	70-85	65-80	35-45	15-25
	38	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth In	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
203*:												
Bidman, moist	0-3	Loam-----	CL-ML	A-4	0	0	95-100	90-100	80-90	55-70	25-30	5-10
	3-15	Clay, clay loam.	CL, CH	A-7	0	0	95-100	90-100	80-90	65-80	45-55	20-30
		15-25	Clay, clay loam.	CL, CH	A-7	0	0	90-100	85-100	75-90	60-80	45-55
	25-60	Clay loam, loam.	CL	A-6, A-7	0	0	80-100	75-95	65-90	55-75	35-45	15-20
204*:												
Parmleed-----	0-2	Very fine sandy loam.	SM, SC-SM, CL-ML	A-4	0	0	95-100	95-100	80-90	45-55	<25	NP-5
	2-14	Clay, clay loam.	CL, CH	A-7	0	0	95-100	95-100	85-95	85-95	45-60	25-35
		14-27	Clay loam----- Unweathered bedrock.	CL ---	A-6, A-7 ---	0 ---	0 ---	95-100 ---	85-100 ---	70-85 ---	65-80 ---	35-45 ---
	27											
Renohill-----	0-1	Clay loam-----	CL	A-6, A-7	0	0	95-100	95-100	80-90	65-80	35-45	15-20
	1-15	Clay loam, clay.	CL, CH	A-7	0	0	95-100	95-100	80-90	70-80	45-60	20-30
		15-34	Clay loam, clay.	CL	A-6, A-7	0	0	95-100	95-100	80-90	65-80	35-50
	34	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
205*:												
Parmleed, moist-----	0-7	Sandy loam-----	SM	A-4	0	0	95-100	95-100	75-85	35-50	---	NP
	7-22	Clay, clay loam.	CL, CH	A-7	0	0	95-100	95-100	85-95	85-95	45-60	25-35
		22-38	Clay loam----- Unweathered bedrock.	CL ---	A-6, A-7 ---	0 ---	0 ---	95-100 ---	85-100 ---	70-85 ---	65-80 ---	35-45 ---
	38											
Renohill, moist-----	0-2	Clay loam-----	CL	A-6, A-7	0	0	95-100	95-100	80-90	65-80	35-45	15-20
	2-17	Clay loam, clay.	CL, CH	A-7	0	0	95-100	95-100	80-90	70-80	45-60	20-30
		17-37	Clay loam, clay.	CL	A-6, A-7	0	0	95-100	95-100	80-90	65-80	35-50
	37	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
206*: Parmleed, moist-----	0-3	Loam-----	CL-ML, ML	A-4	0	0	95-100	95-100	80-90	60-75	20-30	NP-10
	3-24	Clay, clay loam.	CL, CH	A-7	0	0	95-100	95-100	85-95	85-95	45-60	25-35
	24-31	Clay loam-----	CL	A-6, A-7	0	0	95-100	85-100	70-85	65-80	35-45	15-25
	31	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Renohill, moist-----	0-1	Clay loam-----	CL	A-6, A-7	0	0	95-100	95-100	80-90	65-80	35-45	15-20
	1-13	Clay loam, clay.	CL, CH	A-7	0	0	95-100	95-100	80-90	70-80	45-60	20-30
	13-22	Clay loam, clay.	CL	A-6, A-7	0	0	95-100	95-100	80-90	65-80	35-50	15-25
	22	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
207*: Parmleed-----	0-3	Fine sandy loam.	SM	A-4	0	0	95-100	95-100	75-85	35-50	---	NP
	3-18	Clay, clay loam.	CL, CH	A-7	0	0	95-100	95-100	85-95	85-95	45-60	25-35
	18-29	Clay loam-----	CL	A-6, A-7	0	0	95-100	85-100	70-85	65-80	35-45	15-25
	29	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Worfka-----	0-4	Loam-----	CL	A-6	0	0	95-100	95-100	85-95	65-75	30-35	10-15
	4-10	Clay loam, clay.	CL, CH	A-7	0	0	90-100	90-100	80-95	75-85	45-60	20-35
	10-19	Clay loam, clay.	CL, CH	A-7	0	0	90-100	90-100	80-95	70-85	40-55	15-30
	19	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
208*: Parmleed, moist-----	0-4	Very fine sandy loam.	SM, SC-SM, CL-ML	A-4	0	0	95-100	95-100	80-90	45-55	<25	NP-5
	4-14	Clay, clay loam.	CL, CH	A-7	0	0	95-100	95-100	85-95	85-95	45-60	25-35
	14-29	Clay loam-----	CL	A-6, A-7	0	0	95-100	85-100	70-85	65-80	35-45	15-25
	29	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
208*: Worfka, moist	0-2	Fine sandy loam.	SC-SM	A-4	0	0	95-100	95-100	85-95	40-50	<30	5-10
	2-8	Clay loam, clay.	CL, CH	A-7	0	0	90-100	90-100	80-95	75-85	45-60	20-35
	8-12	Clay loam, clay.	CL, CH	A-7	0	0	90-100	90-100	80-95	70-85	40-55	15-30
	12	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
209*: Pamleed, moist	0-8	Loam	CL-ML, ML	A-4	0	0	95-100	95-100	80-90	60-75	20-30	NP-10
	8-29	Clay, clay loam.	CL, CH	A-7	0	0	95-100	95-100	85-95	85-95	45-60	25-35
	29-32	Clay loam	CL	A-6, A-7	0	0	95-100	85-100	70-85	65-80	35-45	15-25
	32	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Worfka, moist	0-1	Loam	CL	A-6	0	0	95-100	95-100	85-95	65-75	30-35	10-15
	1-8	Clay loam, clay.	CL, CH	A-7	0	0	90-100	90-100	80-95	75-85	45-60	20-35
	8-11	Clay loam, clay.	CL, CH	A-7	0	0	90-100	90-100	80-95	70-85	40-55	15-30
	11	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
210*: Pamleed, moist	0-2	Loam	CL-ML, ML	A-4	0	0	95-100	95-100	80-90	60-75	20-30	NP-10
	2-16	Clay, clay loam.	CL, CH	A-7	0	0	95-100	95-100	85-95	85-95	45-60	25-35
	16-35	Clay loam	CL	A-6, A-7	0	0	95-100	85-100	70-85	65-80	35-45	15-25
	35	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Worfka, moist	0-2	Loam	CL	A-6	0	0	95-100	95-100	85-95	65-75	30-35	10-15
	2-13	Clay loam, clay.	CL, CH	A-7	0	0	90-100	90-100	80-95	75-85	45-60	20-35
	13-17	Clay loam, clay.	CL, CH	A-7	0	0	90-100	90-100	80-95	70-85	40-55	15-30
	17	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth In	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
210*: Shingle Variant, moist-----	0-2	Silt loam----	CL	A-6	0	0-5	95-100	95-100	65-85	65-80	30-40	10-15
	2-13	Loam, silt loam.	CL	A-6	0	0-5	95-100	95-100	65-85	65-80	30-40	10-15
	13	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
211*: Peritsa-----	0-7	Silt loam----	CL-ML	A-4	0	0	95-100	95-100	90-100	85-90	25-30	5-10
	7-11	Silty clay loam, silt loam.	CL	A-6	0	0	95-100	95-100	90-100	85-95	30-40	10-20
	11-32	Silty clay loam, silt loam.	CL	A-6	0	0	95-100	95-100	90-100	85-95	30-40	10-20
	32	Weathered bedrock.	---	---	---	---	---	---	---	---	---	---
Abac-----	0-9	Silt loam----	CL, ML	A-4	0	0-5	95-100	90-100	80-90	55-75	25-35	5-10
	9-18	Gravelly loam	GM-GC, SC-SM, SM, GM	A-2-4, A-4	0	0-20	55-85	50-75	40-55	30-55	25-35	5-10
	18	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
212----- Platmak	0-3	Loam-----	CL-ML	A-4	0	0	90-100	90-100	80-95	60-75	25-30	5-10
	3-17	Clay, clay loam.	CL, CH	A-7	0	0	90-100	90-100	80-100	70-95	40-60	20-40
	17-60	Loam, clay loam.	CL	A-6, A-7	0	0	90-100	90-100	80-95	65-80	35-45	15-25
213----- Platmak	0-2	Loam-----	CL-ML	A-4	0	0	90-100	90-100	80-95	60-75	25-30	5-10
	2-13	Clay, clay loam.	CL, CH	A-7	0	0	90-100	90-100	80-100	70-95	40-60	20-40
	13-60	Loam, clay loam.	CL	A-6, A-7	0	0	90-100	90-100	80-95	65-80	35-45	15-25
214----- Platmak, dry	0-5	Loam-----	CL-ML	A-4	0	0	90-100	90-100	80-95	60-75	25-30	5-10
	5-14	Clay, clay loam.	CL, CH	A-7	0	0	90-100	90-100	80-100	70-95	40-60	20-40
	14-60	Loam, clay loam.	CL	A-6, A-7	0	0	90-100	90-100	80-95	65-80	35-45	15-25

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
215----- Platsher	0-4	Loam-----	CL-ML, CL	A-4, A-6	---	0	90-100	90-100	80-95	65-75	25-35	5-15
	4-15	Clay, clay loam, silty clay loam.	CL, CH	A-7	---	0	90-100	90-100	80-90	75-85	45-60	25-35
	15-38	Clay loam, silty clay loam.	CL	A-6, A-7	---	0	90-100	90-100	80-95	75-85	35-45	15-25
	38-60	Gravelly clay loam, gravelly loam.	CL-ML, CL, GM-GC, GC	A-4, A-6	---	0-15	60-80	50-75	45-75	35-60	25-40	5-15
216----- Platsher	0-2	Loam-----	CL-ML, CL	A-4, A-6	---	0	90-100	90-100	80-95	65-75	25-35	5-15
	2-15	Clay, clay loam, silty clay loam.	CL, CH	A-7	---	0	90-100	90-100	80-90	75-85	45-60	25-35
	15-36	Clay loam, silty clay loam.	CL	A-6, A-7	---	0	90-100	90-100	80-95	75-85	35-45	15-25
	36-60	Gravelly clay loam, gravelly loam.	CL-ML, CL, GM-GC, GC	A-4, A-6	---	0-15	60-80	50-75	45-75	35-60	25-40	5-15
217----- Platsher	0-8	Clay loam-----	CL	A-7, A-6	---	0	90-100	90-100	80-90	65-80	35-45	15-25
	8-19	Clay, clay loam, silty clay loam.	CL, CH	A-7	---	0	90-100	90-100	80-90	75-85	45-60	25-35
	19-27	Clay loam, silty clay loam.	CL	A-6, A-7	---	0	90-100	90-100	80-95	75-85	35-45	15-25
	27-60	Gravelly clay loam, gravelly loam.	CL-ML, CL, GM-GC, GC	A-4, A-6	---	0-15	60-80	50-75	45-75	35-60	25-40	5-15
218----- Platsher	0-7	Clay loam-----	CL	A-7, A-6	---	0	90-100	90-100	80-90	65-80	35-45	15-25
	7-17	Clay, clay loam, silty clay loam.	CL, CH	A-7	---	0	90-100	90-100	80-90	75-85	45-60	25-35
	17-27	Clay loam, silty clay loam.	CL	A-6, A-7	---	0	90-100	90-100	80-95	75-85	35-45	15-25
	27-60	Gravelly clay loam, gravelly loam.	CL-ML, CL, GM-GC, GC	A-4, A-6	---	0-15	60-80	50-75	45-75	35-60	25-40	5-15

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
219*: Platsher-----	0-7	Loam-----	CL-ML, CL	A-4, A-6	---	0	90-100	90-100	80-95	65-75	25-35	5-15
	7-21	Clay, clay loam, silty clay loam.	CL, CH	A-7	---	0	90-100	90-100	80-90	75-85	45-60	25-35
	21-28	Clay loam, silty clay loam.	CL	A-6, A-7	---	0	90-100	90-100	80-95	75-85	35-45	15-25
	28-60	Gravelly clay loam, gravelly loam.	CL-ML, CL, GM-GC, GC	A-4, A-6	---	0-15	60-80	50-75	45-75	35-60	25-40	5-15
Wolfvar-----	0-2	Loam-----	CL	A-6	0	0	90-100	85-100	80-90	65-75	30-35	10-15
	2-14	Clay, clay loam.	CL, CH	A-7	0	0	100	85-100	80-90	65-75	45-60	20-35
	14-37	Gravelly clay loam, gravelly loam.	GC	A-2, A-6	0	0-5	55-70	50-65	40-60	30-50	30-40	10-20
	37-60	Extremely gravelly loamy sand, very gravelly sand, very gravelly coarse sand.	GP-GM	A-1	0	0-15	30-60	25-50	15-35	5-15	---	NP
220*: Platsher-----	0-9	Loam-----	CL-ML, CL	A-4, A-6	---	0	90-100	90-100	80-95	65-75	25-35	5-15
	9-20	Clay, clay loam, silty clay loam.	CL, CH	A-7	---	0	90-100	90-100	80-90	75-85	45-60	25-35
	20-37	Clay loam, silty clay loam.	CL	A-6, A-7	---	0	90-100	90-100	80-95	75-85	35-45	15-25
	37-60	Gravelly clay loam, gravelly loam.	CL-ML, CL, GM-GC, GC	A-4, A-6	---	0-15	60-80	50-75	45-75	35-60	25-40	5-15

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
			In				Pct	Pct				
220*: Wolfvar-----	0-2	Loam-----	CL	A-6	0	0	90-100	85-100	80-90	65-75	30-35	10-15
	2-16	Clay, clay loam.	CL, CH	A-7	0	0	100	85-100	80-90	65-75	45-60	20-35
	16-23	Gravelly clay loam, gravelly loam.	GC	A-2, A-6	0	0-5	55-70	50-65	40-60	30-50	30-40	10-20
	23-60	Extremely gravelly loamy sand, very gravelly sand, very gravelly coarse sand.	GP-GM	A-1	0	0-15	30-60	25-50	15-35	5-15	---	NP
221*: Flatsher-----	0-2	Clay loam----	CL	A-7, A-6	---	0	90-100	90-100	80-90	65-80	35-45	15-25
	2-18	Clay, clay loam, silty clay loam.	CL, CH	A-7	---	0	90-100	90-100	80-90	75-85	45-60	25-35
	18-39	Clay loam, silty clay loam.	CL	A-6, A-7	---	0	90-100	90-100	80-95	75-85	35-45	15-25
	39-60	Cobbly clay loam.	CL	A-6	---	20-30	75-85	75-85	60-80	55-65	35-40	15-20
Wolfvar-----	0-1	Loam-----	CL	A-6	0	0	90-100	85-100	80-90	65-75	30-35	10-15
	1-16	Clay, clay loam.	CL, CH	A-7	0	0	100	85-100	80-90	65-75	45-60	20-35
	16-24	Gravelly clay loam, gravelly loam.	GC	A-2, A-6	0	0-5	55-70	50-65	40-60	30-50	30-40	10-20
	24-60	Extremely gravelly loamy sand, very gravelly sand, very gravelly coarse sand.	GP-GM	A-1	0	0-15	30-60	25-50	15-35	5-15	---	NP

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
			In				Pct	Pct				
222----- Platsher Variant	0-3	Loam-----	ML	A-4	0	0	85-100	85-100	75-95	55-75	30-35	5-10
	3-13	Clay loam, silty clay loam.	CL	A-7	0	0	85-100	85-100	75-90	65-85	40-50	15-25
	13-22	Clay loam, silty clay loam.	CL	A-7	0	0	85-100	85-100	75-90	65-85	40-50	15-25
	22-60	Very gravelly sandy loam, very gravelly loam.	GM, GM-GC	A-1-b, A-2-4	0	10-15	35-60	30-50	20-40	15-30	<30	NP-10
223----- Recluse	0-9	Loam-----	ML	A-4	0	0	100	95-100	80-90	75-85	30-35	5-10
	9-19	Clay loam, silty clay loam.	CL	A-6	0	0	100	90-100	70-90	65-85	35-40	15-20
	19-60	Loam, clay loam, silty clay loam.	CL-ML, CL	A-4, A-6	0	0	100	90-100	80-95	70-85	25-35	5-15
224----- Recluse	0-4	Loam-----	ML	A-4	0	0	100	95-100	80-90	75-85	30-35	5-10
	4-25	Clay loam, silty clay loam.	CL	A-6	0	0	100	90-100	70-90	65-85	35-40	15-20
	25-60	Loam, clay loam, silty clay loam.	CL-ML, CL	A-4, A-6	0	0	100	90-100	80-95	70-85	25-35	5-15
225----- Recluse	0-4	Loam-----	ML	A-4	0	0	100	95-100	80-90	75-85	30-35	5-10
	4-18	Clay loam, silty clay loam.	CL	A-6	0	0	100	90-100	70-90	65-85	35-40	15-20
	18-60	Loam, clay loam, silty clay loam.	CL-ML, CL	A-4, A-6	0	0	100	90-100	80-95	70-85	25-35	5-15
226*: Recluse-----	0-14	Loam-----	ML	A-4	0	0	100	95-100	80-90	75-85	30-35	5-10
	14-22	Clay loam, silty clay loam.	CL	A-6	0	0	100	90-100	70-90	65-85	35-40	15-20
	22-60	Loam, clay loam, silty clay loam.	CL-ML, CL	A-4, A-6	0	0	100	90-100	80-95	70-85	25-35	5-15

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
226*:												
Bauxson-----	0-2	Silt loam-----	CL-ML	A-4	0	0-5	80-100	75-100	65-80	60-70	25-30	5-10
	2-10	Clay loam, silty clay loam.	CL	A-6	0	0	80-100	75-100	70-90	65-85	35-40	15-20
	10-60	Fragmental material.	GP	A-1	0-5	35-55	15-30	10-25	0-5	0-1	---	NP
Baux-----	0-4	Channery loam	SC-SM, SC, GM-GC, GC	A-4, A-6	0	0-5	60-80	55-75	50-70	40-55	25-35	5-15
	4-12	Very channery loam, very channery silt loam.	GM-GC, GC	A-2, A-4, A-6	0	0-5	35-56	30-50	30-45	30-40	25-35	5-15
	12-60	Fragmental material.	GP	A-1	0-5	35-55	15-30	10-25	0-5	0-1	---	NP
227*:												
Reeder-----	0-7	Loam-----	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	80-90	65-75	25-35	5-15
	7-19	Clay loam-----	CL	A-6, A-7	0	0	95-100	95-100	80-90	70-80	35-45	15-20
	19-30	Loam-----	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	80-90	65-75	25-35	5-15
	30	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Farnuf-----	0-11	Silt loam-----	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	80-90	70-80	25-35	5-15
	11-16	Clay loam, silty clay loam, loam.	CL	A-6, A-7	0	0	95-100	95-100	80-90	65-80	30-45	10-20
	16-21	Loam, clay loam, silt loam.	CL	A-6	0	0	95-100	95-100	80-90	65-80	30-40	10-15
	21-60	Loam, silt loam, clay loam.	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	80-90	65-80	25-35	5-15
228*:												
Reeder-----	0-5	Loam-----	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	80-90	65-75	25-35	5-15
	5-13	Clay loam-----	CL	A-6, A-7	0	0	95-100	95-100	80-90	70-80	35-45	15-20
	13-23	Loam, clay loam.	CL	A-6	0	0	95-100	95-100	80-90	65-80	30-35	10-15
	23-34	Loam-----	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	80-90	65-75	25-35	5-15
	34	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
			In				Pct	Pct				
228*: Farnuf-----	0-2	Silt loam-----	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	80-90	70-80	25-35	5-15
	2-21	Clay loam, silty clay loam, loam.	CL	A-6, A-7	0	0	95-100	95-100	80-90	65-80	30-45	10-20
	21-60	Loam, silt loam, clay loam.	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	80-90	65-80	25-35	5-15
229----- Reget	0-1	Silt loam-----	ML	A-4	0	0	100	95-100	70-85	60-70	30-35	5-10
	1-8	Clay-----	CL, CH	A-7	0	0	100	100	90-100	85-95	45-60	20-35
	8-23	Silty clay loam, clay loam, clay.	CL	A-6, A-7	0	0	100	95-100	70-85	65-85	35-50	15-25
	23	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
230----- Reget	0-1	Clay loam-----	CL, CH	A-6, A-7	0	0	100	100	90-100	85-95	35-60	15-35
	1-9	Clay-----	CL, CH	A-7	0	0	100	100	90-100	85-95	45-60	20-35
	9-38	Silty clay loam, clay loam, clay.	CL	A-6, A-7	0	0	100	95-100	70-85	65-85	35-50	15-25
	38	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
231*: Reget-----	0-1	Clay loam-----	CL, CH	A-6, A-7	0	0	100	100	90-100	85-95	35-60	15-35
	1-9	Clay-----	CL, CH	A-7	0	0	100	100	90-100	85-95	45-60	20-35
	9-36	Silty clay loam, clay loam, clay.	CL	A-6, A-7	0	0	100	95-100	70-85	65-85	35-50	15-25
	36	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Savar-----	0-2	Clay loam-----	CL	A-6, A-7	0	0	100	100	90-100	85-95	35-45	15-25
	2-20	Clay, silty clay, clay loam.	CL, CH	A-7	0	0	100	100	90-100	85-95	45-60	20-35
	20-60	Clay, clay loam, silty clay.	CL, CH	A-7	0	0	100	100	90-100	85-95	40-55	20-30
232*: Reget Variant	0-9	Loam-----	CL	A-6	0	0	100	95-100	75-95	55-80	30-35	10-15
	9-60	Clay, sandy clay, clay loam.	CL, CH	A-7	0	0	100	95-100	85-95	60-75	40-55	20-35

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
			In				Pct	Pct				
232*: Reget-----	0-8	Loam-----	ML	A-4	0	0	100	95-100	70-85	60-70	30-35	5-10
	8-33	Clay-----	CL, CH	A-7	0	0	100	100	90-100	85-95	45-60	20-35
	33-39	Silty clay loam, clay loam, clay.	CL	A-6, A-7	0	0	100	95-100	70-85	65-85	35-50	15-25
	39	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
233*: Renohill-----	0-1	Clay loam-----	CL	A-6, A-7	0	0	95-100	95-100	80-90	65-80	35-45	15-20
	1-15	Clay loam, clay.	CL, CH	A-7	0	0	95-100	95-100	80-90	70-80	45-60	20-30
	15-37	Clay loam, clay.	CL	A-6, A-7	0	0	95-100	95-100	80-90	65-80	35-50	15-25
	37	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Savageton-----	0-3	Clay loam-----	CL, CH	A-7	0	0	95-100	95-100	90-100	80-90	45-55	25-35
	3-16	Clay loam, clay.	CL, CH	A-7	0	0	95-100	95-100	90-100	80-95	45-60	25-35
	16-29	Clay loam, silty clay loam, clay.	CL, CH	A-7	0	0	95-100	95-100	90-100	80-95	45-60	25-35
	29	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
234*: Renohill, moist-----	0-3	Clay loam-----	CL	A-6, A-7	0	0	95-100	95-100	80-90	65-80	35-45	15-20
	3-15	Clay loam, clay.	CL, CH	A-7	0	0	95-100	95-100	80-90	70-80	45-60	20-30
	15-32	Clay loam, clay.	CL	A-6, A-7	0	0	95-100	95-100	80-90	65-80	35-50	15-25
	32	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Savageton, moist-----	0-5	Silty clay loam.	CL, CH	A-7	0	0	95-100	95-100	90-100	85-95	45-55	25-30
	5-22	Clay loam, clay.	CL, CH	A-7	0	0	95-100	95-100	90-100	80-95	45-60	25-35
	22-28	Clay loam, silty clay loam, clay.	CL, CH	A-7	0	0	95-100	95-100	90-100	80-95	45-60	25-35
	28	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth In	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
235*: Reno Hill, moist-----	0-1	Clay loam-----	CL	A-6, A-7	0	0	95-100	95-100	80-90	65-80	35-45	15-20
	1-17	Clay loam, clay.	CL, CH	A-7	0	0	95-100	95-100	80-90	70-80	45-60	20-30
	17-35	Clay loam, clay.	CL	A-6, A-7	0	0	95-100	95-100	80-90	65-80	35-50	15-25
	35	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Savageton, moist-----	0-1	Clay loam-----	CL, CH	A-7	0	0	95-100	95-100	90-100	80-90	45-55	25-35
	1-22	Clay loam, clay.	CL, CH	A-7	0	0	95-100	95-100	90-100	80-95	45-60	25-35
	22-35	Clay loam, silty clay loam, clay.	CL, CH	A-7	0	0	95-100	95-100	90-100	80-95	45-60	25-35
	35	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
236*: Reno Hill-----	0-2	Clay loam-----	CL	A-6, A-7	0	0	95-100	95-100	80-90	65-80	35-45	15-20
	2-10	Clay loam, clay.	CL, CH	A-7	0	0	95-100	95-100	80-90	70-80	45-60	20-30
	10-28	Clay loam, clay.	CL	A-6, A-7	0	0	95-100	95-100	80-90	65-80	35-50	15-25
	28	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Ulm, dry-----	0-6	Clay loam-----	CL	A-6	0	0	95-100	95-100	80-100	70-80	35-40	15-20
	6-17	Clay loam, clay.	CL, CH	A-7	0	0	95-100	95-100	85-100	70-80	45-60	25-35
	17-60	Clay loam, clay.	CL, CH	A-7	0	0	95-100	95-100	85-100	65-80	40-55	20-30
237*: Reno Hill, moist-----	0-3	Clay loam-----	CL	A-6, A-7	0	0	95-100	95-100	80-90	65-80	35-45	15-20
	3-12	Clay loam, clay.	CL, CH	A-7	0	0	95-100	95-100	80-90	70-80	45-60	20-30
	12-35	Clay loam, clay.	CL	A-6, A-7	0	0	95-100	95-100	80-90	65-80	35-50	15-25
	35	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Ulm-----	0-3	Clay loam-----	CL	A-6	0	0	95-100	95-100	80-100	70-80	35-40	15-20
	3-14	Clay loam, clay.	CL, CH	A-7	0	0	95-100	95-100	85-100	70-80	45-60	25-35
	14-60	Clay loam, clay.	CL, CH	A-7	0	0	95-100	95-100	85-100	65-80	40-55	20-30

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
			In				Pct	Pct				
238*: RenoHill-----	0-2	Clay loam-----	CL	A-6, A-7	0	0	95-100	95-100	80-90	65-80	35-45	15-20
	2-16	Clay loam, clay.	CL, CH	A-7	0	0	95-100	95-100	80-90	70-80	45-60	20-30
	16-25	Clay loam, clay.	CL	A-6, A-7	0	0	95-100	95-100	80-90	65-80	35-50	15-25
	25	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
WorFka-----	0-4	Clay loam-----	CL	A-6, A-7	0	0	95-100	95-100	85-95	70-80	35-45	15-25
	4-12	Clay loam, clay.	CL, CH	A-7	0	0	90-100	90-100	80-95	75-85	45-60	20-35
	12-17	Clay loam, clay.	CL, CH	A-7	0	0	90-100	90-100	80-95	70-85	40-55	15-30
	17	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
239*: RenoHill, moist-----	0-1	Clay loam-----	CL	A-6, A-7	0	0	95-100	95-100	80-90	65-80	35-45	15-20
	1-15	Clay loam, clay.	CL, CH	A-7	0	0	95-100	95-100	80-90	70-80	45-60	20-30
	15-34	Clay loam, clay.	CL	A-6, A-7	0	0	95-100	95-100	80-90	65-80	35-50	15-25
	34	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
WorFka, moist	0-1	Clay loam-----	CL	A-6, A-7	0	0	95-100	95-100	85-95	70-80	35-45	15-25
	1-11	Clay loam, clay.	CL, CH	A-7	0	0	90-100	90-100	80-95	75-85	45-60	20-35
	11-17	Clay loam, clay.	CL, CH	A-7	0	0	90-100	90-100	80-95	70-85	40-55	15-30
	17	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
240*: RenoHill, moist-----	0-4	Clay loam-----	CL	A-6, A-7	0	0	95-100	95-100	80-90	65-80	35-45	15-20
	4-18	Clay loam, clay.	CL, CH	A-7	0	0	95-100	95-100	80-90	70-80	45-60	20-30
	18-27	Clay loam, clay.	CL	A-6, A-7	0	0	95-100	95-100	80-90	65-80	35-50	15-25
	27	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO			4	10	40	200		
240*:												
Wyarno-----	0-2	Clay loam-----	CL	A-6, A-7	0	0	100	95-100	75-95	60-80	35-45	15-25
	2-16	Clay loam, clay, silty clay loam.	CL, CH	A-7	0	0	100	95-100	85-95	75-90	40-55	15-30
	16-60	Clay loam-----	CL, SC	A-6	---	0-10	90-100	85-100	75-90	35-55	30-40	10-20
241*:												
Rock outcrop-	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Agneston-----	0-5	Sandy loam----	SM	A-2-4, A-4	0	0-5	80-95	75-90	50-70	25-45	<25	NP-5
	5-18	Very gravelly sandy clay loam.	GC	A-2-6	0	0-5	40-60	30-50	20-35	15-30	30-40	10-20
	18-23	Very gravelly sandy clay loam, very gravelly sandy loam.	GC, GM-GC	A-1, A-2-4, A-2-6	0	0-5	40-60	30-50	20-35	10-30	25-35	5-15
	23	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rubble land--	0-60	Fragmental material.	GP	A-1	70-80	75-90	0-10	0-5	0-5	0	---	NP
242*:												
Rock outcrop-	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Starman-----	0-4	Channery clay loam.	GC	A-2, A-6	0	0-5	60-70	55-65	40-60	30-50	35-40	15-20
	4-14	Very channery clay loam, extremely channery clay loam.	GC, SC	A-6, A-2-6	0-15	20-40	45-70	40-65	30-50	25-50	35-40	15-20
	14	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
243*:												
Rock outcrop-	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth In	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
							Pct	Pct				
243*: Starman Variant-----	0-3	Very channery loam.	GM, GM-GC	A-2, A-1-b	0-5	5-10	40-55	35-50	25-40	20-30	25-35	5-10
	3-14	Extremely channery loam, extremely channery silt loam, extremely channery clay loam.	GC	A-2	0-25	10-25	30-50	20-40	15-35	15-30	30-40	10-15
	14	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
244*: Samday, moist	0-2	Clay loam-----	CL	A-6, A-7	0	0	100	90-100	85-95	75-85	35-45	15-25
	2-14	Clay, clay loam, silty clay.	CL, CH	A-7	0	0	100	95-100	85-100	75-95	40-55	20-30
	14	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Gayhart, moist-----	0-2	Clay loam-----	CL, CH	A-7	0	0	95-100	95-100	90-100	75-85	45-55	20-30
	2-32	Clay loam, silty clay, clay.	CL, CH	A-7	0	0	95-100	95-100	95-100	75-95	45-65	20-40
	32	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Hilight, moist-----	0-1	Clay loam-----	CL	A-7	0	0	95-100	95-100	80-90	70-80	40-50	20-30
	1-12	Clay, silty clay.	CH	A-7	0	0	95-100	95-100	90-100	85-95	50-65	30-40
	12	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
245*: Samday-----	0-2	Clay loam-----	CL	A-6, A-7	0	0	100	90-100	85-95	75-85	35-45	15-25
	2-17	Clay, clay loam, silty clay.	CL, CH	A-7	0	0	100	95-100	85-100	75-95	40-55	20-30
	17	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-	Frag-	Percentage passing				Liquid	Plas-
			Unified	AASHTO	> 10	3-10	sieve number--				limit	ticity
					inches	inches	4	10	40	200	Pct	index
	In				Pct	Pct					Pct	
245*:												
Hilight-----	0-1	Clay loam-----	CL	A-7	0	0	95-100	95-100	80-90	70-80	40-50	20-30
	1-16	Clay, silty clay.	CH	A-7	0	0	95-100	95-100	90-100	85-95	50-65	30-40
	16	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
246-----	0-11	Loam-----	CL	A-6	0	0	100	95-100	95-100	75-85	30-35	10-15
Savage	11-23	Silty clay, clay, silty clay loam.	CL, CH	A-7	0	0	100	95-100	95-100	80-95	45-60	20-30
	23-60	Silty clay loam, clay, silty clay.	CL, CH	A-7	0	0	100	95-100	95-100	80-95	40-55	15-30
247, 248-----	0-8	Silt loam-----	CL	A-6	0	0	100	95-100	95-100	80-90	30-35	10-15
Savage	8-21	Silty clay, clay, silty clay loam.	CL, CH	A-7	0	0	100	95-100	95-100	80-95	45-60	20-30
	21-60	Silty clay loam, clay, silty clay.	CL, CH	A-7	0	0	100	95-100	95-100	80-95	40-55	15-30
249*:												
Savage-----	0-14	Silt loam-----	ML	A-4	0	0	85-100	80-100	70-95	70-85	30-35	5-10
	14-29	Clay, silty clay.	CH	A-7	0	0	95-100	90-100	85-95	75-90	50-60	25-35
	29-41	Clay, clay loam, silty clay loam.	CL, CH	A-7	0	0	95-100	90-100	85-95	75-90	40-55	20-30
	41-60	Gravelly silt loam, gravelly loam.	ML, CL-ML	A-4	0	5-15	65-80	60-75	55-70	50-60	25-35	5-10
Farnuf-----	0-2	Silt loam-----	ML	A-4	0	0	85-100	80-100	70-95	70-85	30-35	5-10
	2-11	Silty clay loam.	CL	A-6	0	0	95-100	90-100	85-100	70-85	30-40	10-15
	11-17	Silt loam-----	ML	A-4	0	0	90-100	90-100	85-100	70-85	30-35	5-10
	17-60	Gravelly silt loam, gravelly loam.	ML	A-4	0	5-15	65-80	60-75	55-70	50-60	25-30	NP-5

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index	
			Unified	AASHTO			4	10	40	200			
			In				Pct	Pct					Pct
250*:													
Savage-----	0-3	Loam-----	CL	A-6	0	0	100	95-100	95-100	75-85	30-35	10-15	
	3-21	Silty clay, clay, silty clay loam.	CL, CH	A-7	0	0	100	95-100	95-100	80-95	45-60	20-30	
	21-60	Silty clay loam, clay, silty clay.	CL, CH	A-7	0	0	100	95-100	95-100	80-95	40-55	15-30	
Korchea-----	0-13	Loam-----	CL	A-6	0	0	95-100	95-100	80-95	65-80	25-35	10-15	
	13-60	Stratified very fine sandy loam to silt loam.	CL	A-6	0	0	95-100	95-100	80-95	65-80	25-35	10-15	
251*:													
Savage-----	0-10	Silt loam----	CL	A-6	0	0	100	95-100	95-100	80-90	30-35	10-15	
	10-21	Silty clay, clay, silty clay loam.	CL, CH	A-7	0	0	100	95-100	95-100	80-95	45-60	20-30	
	21-60	Silty clay loam, clay, silty clay.	CL, CH	A-7	0	0	100	95-100	95-100	80-95	40-55	15-30	
Reget-----	0-9	Silt loam----	ML	A-4	0	0	100	95-100	70-85	60-70	30-35	5-10	
	9-26	Clay-----	CL, CH	A-7	0	0	100	100	90-100	85-95	45-60	20-35	
	26-38	Silty clay loam, clay loam, clay.	CL	A-6, A-7	0	0	100	95-100	70-85	65-85	35-50	15-25	
	38	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---	
252*:													
Searing-----	0-2	Loam-----	CL	A-6	0	0	95-100	95-100	80-90	65-75	25-30	10-15	
	2-15	Loam, silt loam, clay loam.	CL	A-6	0	0	95-100	95-100	80-90	65-80	30-40	10-20	
	15-38	Silt loam, channery loam, loam.	SC, CL	A-6	0	0-10	70-95	65-90	50-80	40-70	25-30	10-15	
	38-60	Fragmental material.	GP	A-1	0-5	30-60	15-30	0-5	0-5	0-5	---	NP	

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
252*: Ringling-----	0-8	Channery loam	CL-ML, CL, SC-SM, SC)	A-4, A-6	0-5	15-25	75-90	70-85	50-70	40-65	25-35	5-15
	8-16	Very channery loam, extremely channery loam.	GM-GC, GC	A-1, A-2-4, A-2-6, A-4	0-5	45-65	30-65	25-60	20-45	15-45	25-35	5-15
	16-60	Fragmental material.	GP	A-1	0-5	30-60	15-30	0-5	0-5	0-5	---	NP
253----- Shaak	0-9	Loam-----	CL	A-6	0	0	95-100	95-100	80-90	65-75	30-35	10-15
	9-18	Clay, silty clay.	CH	A-7	0	0	95-100	95-100	85-100	80-90	50-60	25-30
	18-60	Clay-----	CH	A-7	0	0	90-100	85-100	85-100	60-90	50-60	25-30
254*: Shingle, moist-----	0-4	Loam-----	CL	A-6	0	0	85-100	80-100	65-85	55-85	30-35	10-15
	4-15	Loam, clay loam.	CL	A-6	0	0	85-100	80-100	65-85	50-80	30-40	10-20
	15	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Baux-----	0-5	Loam-----	CL-ML, CL	A-4, A-6	0	0-5	80-100	75-100	70-90	55-80	25-35	5-15
	5-12	Very channery loam, very channery silt loam.	GM-GC, GC	A-2, A-4, A-6	0	0-5	35-56	30-50	30-45	30-40	25-35	5-15
	12-60	Fragmental material.	GP	A-1	0-5	35-55	15-30	10-25	0-5	0-1	---	NP
Rock outcrop-	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
255*: Shingle-----	0-1	Clay loam----	CL	A-6	0	0	85-100	80-100	65-85	55-60	35-40	15-20
	1-15	Loam, clay loam.	CL	A-6	0	0	85-100	80-100	65-85	50-80	30-40	10-20
	15	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Haverdad-----	0-10	Loam-----	CL-ML, CL	A-4, A-6	0	0	90-100	90-100	75-90	60-75	25-35	5-15
	10-60	Stratified loamy sand to clay loam.	CL	A-6	0	0	90-100	90-100	75-90	65-80	30-35	10-15

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
256*: Shingle, moist-----	0-2	Clay loam-----	CL	A-6	0	0	85-100	80-100	65-85	55-60	35-40	15-20
	2-17	Loam, clay loam.	CL	A-6	0	0	85-100	80-100	65-85	50-80	30-40	10-20
	17	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Haverdad, moist-----	0-10	Very fine sandy loam.	ML, CL-ML	A-4	0	0	90-100	90-100	75-90	50-65	<25	NP-10
	10-60	Stratified loamy sand to clay loam.	CL	A-6	0	0	90-100	90-100	75-90	65-80	30-35	10-15
257*: Shingle-----	0-2	Clay loam-----	CL	A-6	0	0	85-100	80-100	65-85	55-60	35-40	15-20
	2-15	Loam, clay loam.	CL	A-6	0	0	85-100	80-100	65-85	50-80	30-40	10-20
	15	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Nihill-----	0-5	Gravelly loam	GM-GC, SC-SM, CL-ML	A-4	0	5-15	65-80	60-75	50-60	40-55	25-30	5-10
	5-29	Very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam.	GC	A-2-6	0	15-35	40-60	35-50	25-40	15-35	30-40	10-20
	29-60	Very gravelly sandy clay loam, very gravelly loam, extremely gravelly sandy loam.	GM, GM-GC, GC	A-1-a, A-1-b, A-2-4	0	15-35	35-60	30-50	20-40	10-30	<30	NP-10
258*: Shingle, moist-----	0-4	Loam-----	CL	A-6	0	0	85-100	80-100	65-85	55-85	30-35	10-15
	4-17	Loam, clay loam.	CL	A-6	0	0	85-100	80-100	65-85	50-80	30-40	10-20
	17	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
258*: Nihill, moist	0-5	Gravelly loam	GM-GC, SC-SM, CL-ML	A-4	0	5-15	65-80	60-75	50-60	40-55	25-30	5-10
	5-29	Very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam.	GC	A-2-6	0	15-35	40-60	35-50	25-40	15-35	30-40	10-20
	29-60	Very gravelly sandy clay loam, very gravelly loam, extremely gravelly sandy loam.	GM, GM-GC, GC	A-1-a, A-1-b, A-2-4	0	15-35	35-60	30-50	20-40	10-30	<30	NP-10
259*: Shingle, moist	0-4	Loam	CL	A-6	0	0	85-100	80-100	65-85	55-85	30-35	10-15
	4-17	Loam, clay loam.	CL	A-6	0	0	85-100	80-100	65-85	50-80	30-40	10-20
	17	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Nuncho	0-3	Loam	CL	A-6	0	0	100	95-100	80-95	65-80	30-35	10-15
	3-24	Clay, clay loam.	CL, CH	A-7	0	0	100	95-100	85-95	65-80	40-55	20-30
	24-60	Clay loam, loam.	CL	A-6	0	0	95-100	90-100	80-90	65-75	35-40	15-20
260*: Shingle	0-1	Clay loam	CL	A-6	0	0	85-100	80-100	65-85	55-60	35-40	15-20
	1-15	Loam, clay loam.	CL	A-6	0	0	85-100	80-100	65-85	50-80	30-40	10-20
	15	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO			4	10	40	200		
261*: Shingle, moist-----	0-2	Clay loam-----	CL	A-6	0	0	85-100	80-100	65-85	55-60	35-40	15-20
	2-17	Loam, clay loam.	CL	A-6	0	0	85-100	80-100	65-85	50-80	30-40	10-20
	17	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop-	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
262*: Shingle-----	0-2	Clay loam-----	CL	A-6	0	0	85-100	80-100	65-85	55-60	35-40	15-20
	2-17	Loam, clay loam.	CL	A-6	0	0	85-100	80-100	65-85	50-80	30-40	10-20
	17	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Samday-----	0-4	Clay loam-----	CL	A-6, A-7	0	0	100	90-100	85-95	75-85	35-45	15-25
	4-16	Clay, clay loam, silty clay.	CL, CH	A-7	0	0	100	95-100	85-100	75-95	40-55	20-30
	16	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
263*: Shingle, moist-----	0-2	Clay loam-----	CL	A-6	0	0	85-100	80-100	65-85	55-60	35-40	15-20
	2-12	Loam, clay loam.	CL	A-6	0	0	85-100	80-100	65-85	50-80	30-40	10-20
	12	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Samday, moist	0-2	Clay loam-----	CL	A-6, A-7	0	0	100	90-100	85-95	75-85	35-45	15-25
	2-17	Clay, clay loam, silty clay.	CL, CH	A-7	0	0	100	95-100	85-100	75-95	40-55	20-30
	17	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
264*: Shingle-----	0-2	Clay loam-----	CL	A-6	0	0	85-100	80-100	65-85	55-60	35-40	15-20
	2-15	Loam, clay loam.	CL	A-6	0	0	85-100	80-100	65-85	50-80	30-40	10-20
	15	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit Pct	Plas-ticity index
			Unified	AASHTO			4	10	40	200		
264*:												
Taluco-----	0-4	Fine sandy loam.	SM	A-4	0	0	95-100	90-100	75-85	35-50	<30	NP-5
	4-19	Sandy loam, fine sandy loam.	SM, SC-SM	A-4	0	0	95-100	90-100	70-85	35-50	<30	NP-10
	19	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
265*:												
Shingle, moist-----	0-1	Loam-----	CL	A-6	0	0	85-100	80-100	65-85	55-85	30-35	10-15
	1-17	Loam, clay loam.	CL	A-6	0	0	85-100	80-100	65-85	50-80	30-40	10-20
	17	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Taluco, moist	0-4	Fine sandy loam.	SM	A-4	0	0	95-100	90-100	75-85	35-50	<30	NP-5
	4-19	Sandy loam, fine sandy loam.	SM, SC-SM	A-4	0	0	95-100	90-100	70-85	35-50	<30	NP-10
	19	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
266*:												
Shingle-----	0-2	Clay loam-----	CL	A-6	0	0	85-100	80-100	65-85	55-60	35-40	15-20
	2-15	Loam, clay loam.	CL	A-6	0	0	85-100	80-100	65-85	50-80	30-40	10-20
	15	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Theedle-----	0-2	Loam-----	CL-ML	A-4	0	0	95-100	95-100	75-85	60-75	20-30	5-10
	2-29	Loam, clay loam.	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	75-85	60-75	25-40	5-20
	29	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
267*:												
Shingle, moist-----	0-4	Loam-----	CL	A-6	0	0	85-100	80-100	65-85	55-85	30-35	10-15
	4-17	Loam, clay loam.	CL	A-6	0	0	85-100	80-100	65-85	50-80	30-40	10-20
	17	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
			In				Pct	Pct				
267*: Theedle, moist-----	0-4	Loam-----	CL-ML	A-4	0	0	95-100	95-100	75-85	60-75	20-30	5-10
	4-30	Loam, clay loam.	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	75-85	60-75	25-40	5-20
	30	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
268*: Shingle-----	0-2	Clay loam----	CL	A-6	0	0	85-100	80-100	65-85	55-60	35-40	15-20
	2-15	Loam, clay loam.	CL	A-6	0	0	85-100	80-100	65-85	50-80	30-40	10-20
	15	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Theedle-----	0-1	Fine sandy loam.	SM	A-4	0	0	95-100	95-100	75-80	35-50	<25	NP-5
	1-38	Loam, clay loam.	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	75-85	60-75	25-40	5-20
	38	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Kishona-----	0-2	Fine sandy loam.	SC-SM	A-4	0	0	95-100	90-100	70-80	40-50	<30	5-10
	2-60	Loam, clay loam, silty clay loam.	CL	A-6, A-7	0	0	95-100	90-100	75-90	60-80	30-45	10-20
269*: Shingle, moist-----	0-2	Clay loam----	CL	A-6	0	0	85-100	80-100	65-85	55-60	35-40	15-20
	2-16	Loam, clay loam.	CL	A-6	0	0	85-100	80-100	65-85	50-80	30-40	10-20
	16	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Theedle, moist-----	0-2	Loam-----	CL-ML	A-4	0	0	95-100	95-100	75-85	60-75	20-30	5-10
	2-22	Loam, clay loam.	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	75-85	60-75	25-40	5-20
	22	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth In	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
269*: Kishona, moist-----	0-2	Loam-----	CL	A-6	0	0	95-100	90-100	75-85	55-75	30-35	10-15
	2-60	Loam, clay loam, silty clay loam.	CL	A-6, A-7	0	0	95-100	90-100	75-90	60-80	30-45	10-20
270*: Shingle, moist-----	0-2	Fine sandy loam.	SM, ML, SC-SM, CL-ML	A-2-4, A-4	0	0	85-100	80-100	65-85	30-55	<25	NP-5
	2-10	Loam, clay loam.	CL	A-6	0	0	85-100	80-100	65-85	50-80	30-40	10-20
	10	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Theedle, moist-----	0-5	Loam-----	CL-ML	A-4	0	0	95-100	95-100	75-85	60-75	20-30	5-10
	5-36	Loam, clay loam.	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	75-85	60-75	25-40	5-20
	36	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop-	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
271*: Shingle-----	0-1	Fine sandy loam.	SM, ML, SC-SM, CL-ML	A-2-4, A-4	0	0	85-100	80-100	65-85	30-55	<25	NP-5
	1-18	Loam, clay loam.	CL	A-6	0	0	85-100	80-100	65-85	50-80	30-40	10-20
	18	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Wibaux-----	0-5	Channery loam	CL-ML, SC-SM, GM-GC	A-4	0-10	15-30	70-80	65-75	50-60	40-55	<30	5-10
	5-12	Very channery loam, very channery sandy loam.	GC, GM-GC	A-2-4, A-4, A-1-b	0-15	40-55	45-60	40-55	30-50	20-40	<30	5-10
	12-60	Fragmental material.	GP	A-1-a	0-10	35-55	5-15	0-5	0-5	0-5	---	NP

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
272*:												
Shingle, cool	0-2	Silt loam----	CL	A-6	0	0	85-100	80-100	65-85	55-85	30-35	10-15
	2-13	Silt loam, loam.	CL	A-6	0	0	85-100	80-100	75-95	60-85	30-35	10-15
	13	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Wibaux, cool-	0-3	Channery loam	CL-ML, SC-SM, GM-GC	A-4	0-10	15-30	70-80	65-75	50-60	40-55	<30	5-10
	3-18	Very channery loam, very channery sandy loam.	GC, GM-GC	A-2-4, A-4, A-1-b	0-15	40-55	45-60	40-55	30-50	20-40	<30	5-10
	18-60	Fragmental material.	GP	A-1-a	0-10	35-55	5-15	0-5	0-5	0-5	---	NP
273*:												
Shingle-----	0-2	Clay loam-----	CL	A-6	0	0	85-100	80-100	65-85	55-60	35-40	15-20
	2-15	Loam, clay loam.	CL	A-6	0	0	85-100	80-100	65-85	50-80	30-40	10-20
	15	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Worf-----	0-2	Loam-----	CL-ML	A-4	0	0	100	95-100	65-90	50-65	25-35	5-10
	2-7	Clay loam, loam.	CL	A-6	0	0	100	95-100	75-90	65-80	25-40	10-20
	7-15	Clay loam, loam.	CL	A-6	0	0	100	95-100	75-90	65-75	25-35	10-15
	15	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
274*:												
Shingle, moist-----	0-3	Clay loam-----	CL	A-6	0	0	85-100	80-100	65-85	55-60	35-40	15-20
	3-17	Loam, clay loam.	CL	A-6	0	0	85-100	80-100	65-85	50-80	30-40	10-20
	17	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Worf, moist--	0-2	Loam-----	CL-ML	A-4	0	0	100	95-100	65-90	50-65	25-35	5-10
	2-11	Clay loam, loam.	CL	A-6	0	0	100	95-100	75-90	65-80	25-40	10-20
	11-14	Clay loam, loam.	CL	A-6	0	0	100	95-100	75-90	65-75	25-35	10-15
	14	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
			In				Pct	Pct				
275----- Sinkson	0-3	Silt loam-----	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	85-95	70-80	25-35	5-15
	3-60	Silt loam-----	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	85-95	70-80	25-35	5-15
276*:												
Spearman-----	0-2	Loam-----	CL	A-6	0	0	90-100	85-95	70-80	55-70	30-35	10-15
	2-10	Clay loam, loam.	CL	A-6	0	0	90-100	85-95	70-80	55-70	30-35	10-15
	10-21	Loam-----	CL	A-6	0	0	90-100	85-95	70-80	55-70	30-35	10-15
	21-60	Fragmental material.	GP	A-1-a	30-50	50-70	0-5	0-5	0-5	0-5	---	NP
Wibaux-----	0-5	Channery loam	CL-ML, SC-SM, GM-GC	A-4	0-10	15-30	70-80	65-75	50-60	40-55	<30	5-10
	5-12	Very channery loam, very channery sandy loam.	GC, GM-GC	A-2-4, A-4, A-1-b	0-15	40-55	45-60	40-55	30-50	20-40	<30	5-10
	12-60	Fragmental material.	GP	A-1-a	0-10	35-55	5-15	0-5	0-5	0-5	---	NP
277*:												
Taluca-----	0-2	Sandy loam-----	SM	A-4	0	0	95-100	90-100	70-85	35-45	<30	NP-5
	2-19	Sandy loam, fine sandy loam.	SM, SC-SM	A-4	0	0	95-100	90-100	70-85	35-50	<30	NP-10
	19	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Tullock-----	0-3	Loamy sand-----	SM	A-2-4	0	0	95-100	95-100	80-90	20-30	---	NP
	3-34	Loamy sand, loamy fine sand.	SM	A-2-4	0	0	95-100	95-100	80-95	20-35	<25	NP-5
	34	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Rock outcrop-	0-60	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	
278*:												
Taluca-----	0-4	Fine sandy loam.	SM	A-4	0	0	95-100	90-100	75-85	35-50	<30	NP-5
	4-17	Sandy loam, fine sandy loam.	SM, SC-SM	A-4	0	0	95-100	90-100	70-85	35-50	<30	NP-10
	17	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
			In				Pct	Pct				
278*: Tullock-----	0-4	Fine sandy loam.	SM	A-2-4, A-4	0	0	95-100	95-100	85-95	25-40	<25	NP-5
	4-27	Loamy sand, loamy fine sand.	SM	A-2-4	0	0	95-100	95-100	80-95	20-35	<25	NP-5
	27	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Vonalee-----	0-2	Loamy sand	SM	A-2	0	0	100	95-100	70-80	20-30	---	NP
	2-14	Sandy loam, fine sandy loam.	SC-SM, SC	A-2, A-4	0	0	100	95-100	70-80	30-40	20-30	5-10
	14-60	Loamy sand, loamy fine sand, sandy loam.	SM, SC-SM	A-2	0	0	100	95-100	70-80	20-35	<25	NP-5
279*: Taluca, moist	0-1	Fine sandy loam.	SM	A-4	0	0	95-100	90-100	75-85	35-50	<30	NP-5
	1-18	Sandy loam, fine sandy loam.	SM, SC-SM	A-4	0	0	95-100	90-100	70-85	35-50	<30	NP-10
	18	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Tullock, moist-----	0-4	Loamy fine sand.	SM	A-2-4	0	0	95-100	95-100	85-95	25-35	<25	NP-5
	4-34	Loamy sand, loamy fine sand.	SM	A-2-4	0	0	95-100	95-100	80-95	20-35	<25	NP-5
	34	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Vonalee, moist-----	0-7	Fine sandy loam.	SC-SM, SM, SC	A-2, A-4	0	0	100	95-100	70-80	25-40	<30	NP-10
	7-17	Sandy loam, fine sandy loam.	SC-SM, SC	A-2, A-4	0	0	100	95-100	70-80	30-40	20-30	5-10
	17-60	Loamy sand, loamy fine sand, sandy loam.	SM, SC-SM	A-2	0	0	100	95-100	70-80	20-35	<25	NP-5

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index	
			Unified	AASHTO			4	10	40	200			
			In				Pct	Pct					Pct
280*: Taluca													
Variant-----	0-11	Sandy loam	SM	A-2, A-4	0	0	85-100	75-100	55-80	25-45	20-30	NP-5	
	11-19	Sand, loamy sand.	SM	A-2	0	0-15	85-100	75-100	55-80	15-30	---	NP	
	19	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---	
Treoff-----	0-9	Fine sandy loam.	SM	A-4, A-2-4	0	0	75-100	75-100	55-95	25-50	<25	NP-5	
	9-19	Fine sandy loam, sandy loam.	SM, ML	A-4, A-2-4	0	0	75-100	75-100	55-95	25-55	<25	NP-5	
	19	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---	
Theedle													
Variant-----	0-9	Very fine sandy loam.	ML, CL-ML	A-4	0	0	100	100	90-95	50-65	<25	NP-10	
	9-27	Very fine sandy loam.	ML, CL-ML	A-4	0	0	100	100	90-95	50-65	<25	NP-10	
	27	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---	
281*: Theedle-----	0-1	Loam-----	CL-ML	A-4	0	0	95-100	95-100	75-85	60-75	20-30	5-10	
	1-29	Loam, clay loam.	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	75-85	60-75	25-40	5-20	
	29	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---	
Kishona-----	0-5	Loam-----	CL	A-6	0	0	95-100	90-100	75-85	55-75	30-35	10-15	
	5-60	Loam, clay loam, silty clay loam.	CL	A-6, A-7	0	0	95-100	90-100	75-90	60-80	30-45	10-20	
282*: Theedle, moist-----	0-3	Fine sandy loam.	SM	A-4	0	0	95-100	95-100	75-80	35-50	<25	NP-5	
	3-25	Loam, clay loam.	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	75-85	60-75	25-40	5-20	
	25	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---	
Kishona, moist-----	0-2	Loam-----	CL	A-6	0	0	95-100	90-100	75-85	55-75	30-35	10-15	
	2-60	Loam, clay loam, silty clay loam.	CL	A-6, A-7	0	0	95-100	90-100	75-90	60-80	30-45	10-20	

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
			In				Pct	Pct				
283*: Theedle, moist-----	0-2	Clay loam-----	CL	A-6	0	0	95-100	95-100	75-85	60-75	30-40	10-20
	2-32	Loam, clay loam.	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	75-85	60-75	25-40	5-20
	32	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Kishona, moist-----	0-2	Loam-----	CL	A-6	0	0	95-100	90-100	75-85	55-75	30-35	10-15
	2-60	Loam, clay loam, silty clay loam.	CL	A-6, A-7	0	0	95-100	90-100	75-90	60-80	30-45	10-20
284*: Tolman-----	0-5	Channery loam	CL, SC	A-6	0-10	15-25	70-80	65-75	50-65	40-55	30-35	10-15
	5-11	Very channery clay loam.	GC	A-7, A-2-7	10-35	25-40	45-70	40-65	30-55	30-50	40-45	15-20
	11-15	Very channery clay loam, extremely channery clay loam.	GC	A-7, A-2-7	10-35	25-40	45-70	40-65	30-55	30-50	40-45	15-20
	15	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Beano-----	0-4	Silt loam-----	CL-ML	A-4	0	0	95-100	95-100	85-90	70-80	25-30	5-10
	4-18	Clay loam, gravelly silty clay loam, gravelly clay loam.	CL	A-6	0	0-15	80-90	70-90	65-80	60-75	35-40	15-20
	18-26	Gravelly silty clay loam, clay loam, loam.	CL	A-6	0	0-15	80-90	70-90	65-80	60-75	35-40	15-20
	26	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Beenom-----	0-3	Loam-----	CL-ML, CL	A-4, A-6	0	0	80-95	75-90	65-80	50-65	25-35	5-15
	3-9	Clay loam, gravelly clay loam.	SC, CL	A-6	0	0	75-95	70-90	65-80	45-65	35-40	15-20
	9-18	Gravelly clay loam.	GC, CL, SC	A-6	0	0-5	60-80	55-75	45-65	35-55	35-40	15-20
	18	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
285*: Trimad-----	0-8	Gravelly loam	GM-GC, SC-SM	A-4	0	10-25	65-80	60-75	50-65	35-50	25-30	5-10
	8-30	Very gravelly loam, extremely gravelly loam.	GM-GC	A-2-4, A-1-b	0-10	20-30	45-65	35-50	30-40	20-35	25-30	5-10
	30-60	Very gravelly loam, extremely gravelly loam.	GM-GC	A-2-4, A-1-b	0-10	20-30	45-65	35-50	30-40	20-35	25-30	5-10
Doney-----	0-3	Loam-----	CL, CL-ML	A-4, A-6	0	0	90-100	90-100	80-90	65-80	25-35	5-15
	3-13	Loam, silty clay loam, clay loam.	CL, CL-ML	A-4, A-6	0	0	90-100	90-100	80-95	65-85	25-40	5-20
	13-24	Loam, silty clay loam, clay loam.	CL, CL-ML	A-4, A-6	0	0	90-100	90-100	80-95	65-85	25-40	5-20
	24	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Wayden-----	0-2	Clay loam-----	CL	A-7	0	0	95-100	95-100	85-95	75-85	45-50	20-25
	2-12	Silty clay-----	CH	A-7	0	0	95-100	95-100	90-100	80-95	50-65	25-35
	12	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
286*: Trimad-----	0-8	Gravelly loam	GM-GC, SC-SM	A-4	0	10-25	65-80	60-75	50-65	35-50	25-30	5-10
	8-32	Very gravelly loam, extremely gravelly loam.	GM-GC	A-2-4, A-1-b	0-10	20-30	45-65	35-50	30-40	20-35	25-30	5-10
	32-60	Very gravelly loam, extremely gravelly loam.	GM-GC	A-2-4, A-1-b	0-10	20-30	45-65	35-50	30-40	20-35	25-30	5-10
Trivar-----	0-7	Silt loam-----	ML	A-4	0	0	85-100	80-100	70-95	70-85	30-35	5-10
	7-20	Silt loam, loam.	ML, CL	A-4, A-6	0	0	85-100	80-100	70-95	65-85	30-40	5-15
	20-60	Gravelly sandy loam, gravelly loam.	SM	A-1-b, A-2-4	0	5-15	70-80	55-75	35-50	20-35	20-30	NP-5

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO			4	10	40	200		
287*: Trimad-----	0-8	Gravelly loam	GM-GC, SC-SM	A-4	0	10-25	65-80	60-75	50-65	35-50	25-30	5-10
	8-32	Very gravelly loam, extremely gravelly loam.	GM-GC	A-2-4, A-1-b	0-10	20-30	45-65	35-50	30-40	20-35	25-30	5-10
	32-60	Very gravelly loam, extremely gravelly loam.	GM-GC	A-2-4, A-1-b	0-10	20-30	45-65	35-50	30-40	20-35	25-30	5-10
Twin Creek---	0-8	Silt loam-----	CL-ML, ML	A-4, A-6	0	0	100	95-100	80-90	70-85	25-35	5-10
	8-23	Clay loam, silty clay loam, loam.	CL	A-6	0	0	100	95-100	85-95	70-85	30-40	10-20
	23-46	Loam, silt loam.	CL-ML, ML	A-4, A-6	0	0-5	100	95-100	80-90	70-85	25-35	5-10
	46-60	Very gravelly silt loam.	GM-GC, GM	A-2, A-1-b	0	0-10	40-50	35-45	20-35	20-35	25-35	5-10
288-----	0-10	Loam-----	CL-ML, CL	A-4, A-6	0	0	100	95-100	80-90	65-80	25-35	5-15
Twin Creek	10-19	Clay loam, silty clay loam, loam.	CL	A-6	0	0	100	95-100	85-95	65-85	30-40	10-20
	19-60	Loam, silt loam.	CL-ML, CL	A-4, A-6	0	0	100	95-100	80-90	65-85	25-35	5-15
289-----	0-10	Silt loam-----	CL-ML, CL	A-4, A-6	0	0	100	100	85-100	70-80	25-35	5-15
Twin Creek Variant	10-42	Silt loam, silty clay loam, clay loam.	CL	A-6	0	0	100	100	80-95	70-90	30-40	10-20
	42-60	Silt loam, loam.	CL-ML, CL	A-4, A-6	0	0	85-100	75-100	65-95	60-90	25-35	5-15
290-----	0-4	Clay loam-----	CL	A-6	0	0	95-100	95-100	80-100	70-80	35-40	15-20
Ulm	4-12	Clay loam, clay.	CL, CH	A-7	0	0	95-100	95-100	85-100	70-80	45-60	25-35
	12-60	Clay loam, clay.	CL, CH	A-7	0	0	95-100	95-100	85-100	65-80	40-55	20-30
291-----	0-8	Clay loam-----	CL	A-6	0	0	95-100	95-100	80-100	70-80	35-40	15-20
Ulm	8-15	Clay loam, clay.	CL, CH	A-7	0	0	95-100	95-100	85-100	70-80	45-60	25-35
	15-60	Clay loam, clay.	CL, CH	A-7	0	0	95-100	95-100	85-100	65-80	40-55	20-30

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO			4	10	40	200		
292----- Ulm, dry	0-2	Clay loam	CL	A-6	0	0	95-100	95-100	80-100	70-80	35-40	15-20
	2-22	Clay loam, clay.	CL, CH	A-7	0	0	95-100	95-100	85-100	70-80	45-60	25-35
	22-60	Clay loam, clay.	CL, CH	A-7	0	0	95-100	95-100	85-100	65-80	40-55	20-30
293----- Ulm, dry	0-9	Clay loam	CL	A-6	0	0	95-100	95-100	80-100	70-80	35-40	15-20
	9-22	Clay loam, clay.	CL, CH	A-7	0	0	95-100	95-100	85-100	70-80	45-60	25-35
	22-60	Clay loam, clay.	CL, CH	A-7	0	0	95-100	95-100	85-100	65-80	40-55	20-30
294*: Urban land.												
Kishona, moist-----	0-4	Loam	CL	A-6	0	0	95-100	90-100	75-85	55-75	30-35	10-15
	4-60	Loam, clay loam, silty clay loam.	CL	A-6, A-7	0	0	95-100	90-100	75-90	60-80	30-45	10-20
Clarkelen----	0-3	Fine sandy loam.	SM, SC-SM, CL-ML, ML	A-4	0	0	95-100	95-100	85-95	35-60	<30	NP-10
	3-33	Stratified loamy sand to clay loam.	SM, SC-SM, CL-ML, ML	A-4	0	0	95-100	95-100	70-90	35-60	<30	NP-10
	33-60	Sand, loamy sand.	SP-SM, SM	A-2-4	0	0	85-100	85-100	60-75	10-25	<25	NP
295*: Urban land.												
Platsher-----	0-6	Clay loam	CL	A-7, A-6	---	0	90-100	90-100	80-90	65-80	35-45	15-25
	6-16	Clay, clay loam, silty clay loam.	CL, CH	A-7	---	0	90-100	90-100	80-90	75-85	45-60	25-35
	16-28	Clay loam, silty clay loam.	CL	A-6, A-7	---	0	90-100	90-100	80-95	75-85	35-45	15-25
	28-60	Gravelly clay loam, gravelly loam.	CL-ML, CL, GM-GC, GC	A-4, A-6	---	0-15	60-80	50-75	45-75	35-60	25-40	5-15

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
295*:												
Wolfvar-----	0-5	Clay loam-----	CL	A-6	0	0	90-100	85-100	80-90	70-80	35-40	15-20
	5-15	Clay, clay loam.	CL, CH	A-7	0	0	100	85-100	80-90	65-75	45-60	20-35
	15-22	Gravelly clay loam, gravelly loam.	GC	A-2, A-6	0	0-5	55-70	50-65	40-60	30-50	30-40	10-20
	22-60	Extremely gravelly loamy sand, very gravelly sand, very gravelly coarse sand.	GP-GM	A-1	0	0-15	30-60	25-50	15-35	5-15	---	NP
296*:												
Urban land.												
Wyarno-----	0-3	Clay loam-----	CL	A-6, A-7	0	0	100	95-100	75-95	60-80	35-45	15-25
	3-15	Clay loam, clay, silty clay loam.	CL, CH	A-7	0	0	100	95-100	85-95	75-90	40-55	15-30
	15-60	Clay loam-----	CL, SC	A-6	---	0-10	90-100	85-100	75-90	35-55	30-40	10-20
Nuncho-----	0-10	Clay loam-----	CL	A-7	0	0	100	95-100	85-95	75-90	40-50	20-25
	10-35	Clay, clay loam.	CL, CH	A-7	0	0	100	95-100	85-95	65-80	40-55	20-30
	35-60	Clay loam, loam.	CL	A-6	0	0	95-100	90-100	80-90	65-75	35-40	15-20
297*:												
Ustic Torriorthents												
Pits.												
298-----	0-2	Silty clay----	CH	A-7	0	0	95-100	95-100	90-100	80-95	50-65	25-35
Wayden	2-17	Silty clay----	CH	A-7	0	0	95-100	95-100	90-100	80-95	50-65	25-35
	17	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
299*:												
Wetterdon----	0-17	Silt loam-----	CL-ML, CL	A-4, A-6	0	0	100	95-100	80-90	70-85	25-35	5-15
	17-46	Clay loam, silty clay loam.	CL	A-6, A-7	0	0	100	95-100	80-90	70-85	35-45	15-25
	46-60	Loam, silt loam, clay loam.	CL-ML, CL	A-4, A-6	0	0	100	95-100	80-90	70-85	25-35	5-15

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth In	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
299*: Recluse-----	0-3	Very fine sandy loam.	ML	A-4	0	0	100	95-100	80-95	60-75	25-30	NP-5
	3-30	Clay loam, silty clay loam.	CL	A-6	0	0	100	90-100	70-90	65-85	35-40	15-20
	30-60	Loam, clay loam, silty clay loam.	CL-ML, CL	A-4, A-6	0	0	100	90-100	80-95	70-85	25-35	5-15
300*: Wibaux-----	0-5	Channery loam	CL-ML, SC-SM, GM-GC	A-4	0-10	15-30	70-80	65-75	50-60	40-55	<30	5-10
	5-12	Very channery loam, very channery sandy loam.	GC, GM-GC	A-2-4, A-4, A-1-b	0-15	40-55	45-60	40-55	30-50	20-40	<30	5-10
	12-60	Fragmental material.	GP	A-1-a	0-10	35-55	5-15	0-5	0-5	0-5	---	NP
Reddale-----	0-4	Very fine sandy loam.	SM	A-4	0	0	95-100	90-100	75-90	40-50	---	NP
	4-7	Loam, clay loam.	CL-ML, CL	A-4, A-6	0	0	95-100	90-100	75-90	60-70	25-40	5-15
	7-16	Clay-----	CL, CH	A-7	0	0	95-100	90-100	80-90	70-80	45-60	20-30
	16-24	Clay loam, clay.	CL	A-7	0	0	95-100	90-100	80-90	70-80	40-50	20-25
	24-60	Fragmental material.	GP	A-1	0-10	35-55	5-10	5-10	0-5	0-5	---	NP
301----- Windham	0-9	Gravelly loam	GM-GC, SC-SM	A-2-4, A-4	0-5	0-10	55-75	50-65	35-55	30-50	25-30	5-10
	9-60	Very gravelly loam, extremely gravelly loam.	GM-GC, GP-GC	A-1, A-2-4	0-10	0-30	35-55	20-35	15-30	10-25	25-30	5-10
302----- Wolf	0-2	Loam-----	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	80-90	60-70	25-35	5-15
	2-14	Clay loam, loam.	CL	A-6, A-4	0	0	95-100	95-100	85-95	65-75	30-40	10-20
	14-60	Gravelly loam, gravelly clay loam.	CL, CL-ML	A-4, A-6	0	0	65-75	60-70	55-65	50-60	25-40	5-15

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO			4	10	40	200		
			In				Pct	Pct				
303----- Wolf	0-2	Loam-----	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	80-90	60-70	25-35	5-15
	2-12	Clay loam, loam.	CL	A-6, A-4	0	0	95-100	95-100	85-95	65-75	30-40	10-20
	12-36	Gravelly sandy loam.	SM, GM	A-2-4	0	0-5	60-75	55-70	40-55	25-35	<25	NP-5
	36-60	Cobbly sandy loam.	SM	A-2-4	0	25-40	80-90	75-85	50-65	25-35	<25	NP-5
304*: Worfka-----	0-3	Fine sandy loam.	SC-SM	A-4	0	0	95-100	95-100	85-95	40-50	<30	5-10
	3-10	Clay loam, clay.	CL, CH	A-7	0	0	90-100	90-100	80-95	75-85	45-60	20-35
	10-13	Clay loam, clay.	CL, CH	A-7	0	0	90-100	90-100	80-95	70-85	40-55	15-30
	13	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Shingle-----	0-1	Clay loam-----	CL	A-6	0	0	85-100	80-100	65-85	55-60	35-40	15-20
	1-15	Loam, clay loam.	CL	A-6	0	0	85-100	80-100	65-85	50-80	30-40	10-20
	15	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Samday-----	0-1	Clay loam-----	CL	A-6, A-7	0	0	100	90-100	85-95	75-85	35-45	15-25
	1-19	Clay, clay loam, silty clay.	CL, CH	A-7	0	0	100	95-100	85-100	75-95	40-55	20-30
	19	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
305*: Worfka, moist	0-1	Loam-----	CL	A-6	0	0	95-100	95-100	85-95	65-75	30-35	10-15
	1-9	Clay loam, clay.	CL, CH	A-7	0	0	90-100	90-100	80-95	75-85	45-60	20-35
	9-19	Clay loam, clay.	CL, CH	A-7	0	0	90-100	90-100	80-95	70-85	40-55	15-30
	19	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
Shingle, moist-----	0-2	Clay loam-----	CL	A-6	0	0	85-100	80-100	65-85	55-60	35-40	15-20
	2-19	Loam, clay loam.	CL	A-6	0	0	85-100	80-100	65-85	50-80	30-40	10-20
	19	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 10 inches	Frag-ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO			4	10	40	200		
			In		Pct	Pct					Pct	
305*: Samday, moist	0-2	Clay loam----	CL	A-6, A-7	0	0	100	90-100	85-95	75-85	35-45	15-25
	2-17	Clay, clay loam, silty clay.	CL, CH	A-7	0	0	100	95-100	85-100	75-95	40-55	20-30
	17	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	---
306----- Worhenton	0-8	Clay loam----	CL	A-6, A-7	0	0	100	95-100	85-100	85-95	35-45	15-25
	8-19	Clay, silty clay, silty clay loam.	CL, CH	A-7	0	0	95-100	95-100	80-100	80-100	40-55	20-30
	19-60	Clay loam, clay, silty clay loam.	CL, CH	A-6, A-7	0	0	100	95-100	80-100	80-100	35-55	15-30
307*: Worhenton---	0-7	Loam-----	CL	A-6	0	0	100	95-100	75-90	60-70	30-35	10-15
	7-19	Clay, silty clay, silty clay loam.	CL, CH	A-7	0	0	95-100	95-100	80-100	80-100	40-55	20-30
	19-60	Clay loam, clay, silty clay loam.	CL, CH	A-6, A-7	0	0	100	95-100	80-100	80-100	35-55	15-30
Recluse-----	0-10	Loam-----	ML	A-4	0	0	100	95-100	80-90	75-85	30-35	5-10
	10-19	Clay loam, silty clay loam.	CL	A-6	0	0	100	90-100	70-90	65-85	35-40	15-20
	19-38	Loam, clay loam, silty clay loam.	CL-ML, CL	A-4, A-6	0	0	100	90-100	80-95	70-85	25-35	5-15
	38-60	Fine sandy loam, loam.	SM, SC-SM	A-2-4, A-4	0	0	100	80-100	65-80	30-50	<30	NP-10
308*: Worhenton	0-8	Loam-----	CL-ML, CL	A-4, A-6	---	0-5	95-100	95-100	70-90	65-85	20-35	5-15
Variant-----	8-24	Sandy clay loam.	SC, CL	A-6	---	0-10	95-100	95-100	65-85	40-55	30-40	10-20
	24-60	Extremely bouldery coarse sand.	SP, SP-SM	A-1	40-50	20-30	60-70	55-65	15-30	0-5	---	NP

See footnotes at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
308*: Assinniboine Variant-----	0-3	Sandy loam	SM	A-2, A-4	---	0-5	90-100	90-100	65-85	25-45	<25	NP-5
	3-35	Sandy clay loam.	SC	A-6	---	0-5	95-100	75-100	65-85	35-45	30-40	10-15
	35-60	Extremely bouldery coarse sand.	SP, SP-SM, GP, GP-GM	A-1	55-65	15-20	50-65	50-65	15-30	0-5	---	NP
309----- Wyarno	0-5	Clay loam	CL	A-6, A-7	0	0	100	95-100	75-95	60-80	35-45	15-25
	5-15	Clay loam, clay, silty clay loam.	CL, CH	A-7	0	0	100	95-100	85-95	75-90	40-55	15-30
	15-60	Clay loam	CL, SC	A-6	---	0-10	90-100	85-100	75-90	35-55	30-40	10-20
310----- Wyarno	0-2	Clay loam	CL	A-6, A-7	0	0	100	95-100	75-95	60-80	35-45	15-25
	2-10	Clay loam, clay, silty clay loam.	CL, CH	A-7	0	0	100	95-100	85-95	75-90	40-55	15-30
	10-60	Clay loam	CL, SC	A-6	---	0-10	90-100	85-100	75-90	35-55	30-40	10-20
311----- Wyarno	0-3	Clay loam	CL	A-6, A-7	0	0	100	95-100	75-95	60-80	35-45	15-25
	3-9	Clay loam, clay, silty clay loam.	CL, CH	A-7	0	0	100	95-100	85-95	75-90	40-55	15-30
	9-60	Clay loam	CL, SC	A-6	---	0-10	90-100	85-100	75-90	35-55	30-40	10-20
312----- Wyarno, dry	0-3	Clay loam	CL	A-6, A-7	0	0	100	95-100	75-95	60-80	35-45	15-25
	3-10	Clay loam, clay, silty clay loam.	CL, CH	A-7	0	0	100	95-100	85-95	75-90	40-55	15-30
	10-60	Clay loam	CL, SC	A-6	---	0-10	90-100	85-100	75-90	35-55	30-40	10-20
313----- Wyarno, dry	0-2	Clay loam	CL	A-6, A-7	0	0	100	95-100	75-95	60-80	35-45	15-25
	2-10	Clay loam, clay, silty clay loam.	CL, CH	A-7	0	0	100	95-100	85-95	75-90	40-55	15-30
	10-60	Clay loam	CL, SC	A-6	---	0-10	90-100	85-100	75-90	35-55	30-40	10-20
314----- Wyarno, dry	0-4	Clay loam	CL	A-6, A-7	0	0	100	95-100	75-95	60-80	35-45	15-25
	4-10	Clay loam, clay, silty clay loam.	CL, CH	A-7	0	0	100	95-100	85-95	75-90	40-55	15-30
	10-60	Clay loam	CL, SC	A-6	---	0-10	90-100	85-100	75-90	35-55	30-40	10-20
315----- Zigweid	0-2	Loam	CL	A-6	0	0	95-100	95-100	80-90	65-75	25-35	10-15
	2-12	Loam, clay loam.	CL	A-6	0	0	95-100	95-100	80-90	65-80	30-40	10-20
	12-60	Loam, clay loam.	CL	A-6	0	0	95-100	95-100	80-90	65-80	30-40	10-20

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
316*:												
Zigweid-----	0-4	Loam-----	CL	A-6	0	0	95-100	95-100	80-90	65-75	25-35	10-15
	4-13	Loam, clay loam.	CL	A-6	0	0	95-100	95-100	80-90	65-80	30-40	10-20
	13-60	Loam, clay loam.	CL	A-6	0	0	95-100	95-100	80-90	65-80	30-40	10-20
Cambria-----	0-3	Loam-----	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	85-95	60-70	25-35	5-15
	3-11	Clay loam, silty clay loam.	CL	A-6	0	0	95-100	95-100	85-95	70-80	35-40	15-20
	11-60	Loam, clay loam, silty clay loam.	CL, CL-ML	A-4, A-6	0	0	95-100	95-100	65-95	60-80	20-40	5-15
317*:												
Zigweid-----	0-1	Fine sandy loam.	SM, SC-SM	A-4	0	0	95-100	95-100	80-90	40-50	<25	NP-5
	1-11	Loam, clay loam.	CL	A-6	0	0	95-100	95-100	80-90	65-80	30-40	10-20
	11-60	Loam, clay loam.	CL	A-6	0	0	95-100	95-100	80-90	65-80	30-40	10-20
Kishona-----	0-5	Loam-----	CL	A-6	0	0	95-100	90-100	75-85	55-75	30-35	10-15
	5-60	Loam, clay loam, silty clay loam.	CL	A-6, A-7	0	0	95-100	90-100	75-90	60-80	30-45	10-20
Cambria-----	0-2	Loam-----	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	85-95	60-70	25-35	5-15
	2-6	Clay loam, silty clay loam.	CL	A-6	0	0	95-100	95-100	85-95	70-80	35-40	15-20
	6-60	Loam, clay loam, silty clay loam.	CL, CL-ML	A-4, A-6	0	0	95-100	95-100	65-95	60-80	20-40	5-15
318*:												
Zigweid, moist-----	0-1	Loam-----	CL	A-6	0	0	95-100	95-100	80-90	65-75	25-35	10-15
	1-11	Loam, clay loam.	CL	A-6	0	0	95-100	95-100	80-90	65-80	30-40	10-20
	11-60	Loam, clay loam.	CL	A-6	0	0	95-100	95-100	80-90	65-80	30-40	10-20
Kishona, moist-----	0-2	Fine sandy loam.	SC-SM	A-4	0	0	95-100	90-100	70-80	40-50	<30	5-10
	2-60	Loam, clay loam, silty clay loam.	CL	A-6, A-7	0	0	95-100	90-100	75-90	60-80	30-45	10-20

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
318*: Cambria, moist-----	0-1	Loam-----	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	85-95	60-70	25-35	5-15
	1-6	Clay loam, silty clay loam.	CL	A-6	0	0	95-100	95-100	85-95	70-80	35-40	15-20
	6-60	Loam, clay loam, silty clay loam.	CL, CL-ML	A-4, A-6	0	0	95-100	95-100	65-95	60-80	20-40	5-15
319*: Zigweid, moist-----	0-1	Loam-----	CL	A-6	0	0	95-100	95-100	80-90	65-75	25-35	10-15
	1-11	Loam, clay loam.	CL	A-6	0	0	95-100	95-100	80-90	65-80	30-40	10-20
	11-60	Loam, clay loam.	CL	A-6	0	0	95-100	95-100	80-90	65-80	30-40	10-20
Kishona, moist-----	0-1	Fine sandy loam.	SC-SM	A-4	0	0	95-100	90-100	70-80	40-50	<30	5-10
	1-60	Loam, clay loam, silty clay loam.	CL	A-6, A-7	0	0	95-100	90-100	75-90	60-80	30-45	10-20
Cambria, moist-----	0-3	Loam-----	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	85-95	60-70	25-35	5-15
	3-10	Clay loam, silty clay loam.	CL	A-6	0	0	95-100	95-100	85-95	70-80	35-40	15-20
	10-60	Loam, clay loam, silty clay loam.	CL, CL-ML	A-4, A-6	0	0	95-100	95-100	65-95	60-80	20-40	5-15
320*: Zigweid, moist-----	0-1	Loam-----	CL	A-6	0	0	95-100	95-100	80-90	65-75	25-35	10-15
	1-12	Loam, clay loam.	CL	A-6	0	0	95-100	95-100	80-90	65-80	30-40	10-20
	12-60	Loam, clay loam.	CL	A-6	0	0	95-100	95-100	80-90	65-80	30-40	10-20
Kishona, moist-----	0-1	Loam-----	CL	A-6	0	0	95-100	90-100	75-85	55-75	30-35	10-15
	1-60	Loam, clay loam, silty clay loam.	CL	A-6, A-7	0	0	95-100	90-100	75-90	60-80	30-45	10-20

See footnote at end of table.

Table 14.--Engineering Index Properties--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag- ments > 10 inches	Frag- ments 3-10 inches	Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO			4	10	40	200		
	In				Pct	Pct					Pct	
320*: Cambria, moist-----	0-2	Loam-----	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	85-95	60-70	25-35	5-15
	2-8	Clay loam, silty clay loam.	CL	A-6	0	0	95-100	95-100	85-95	70-80	35-40	15-20
	8-60	Loam, clay loam, silty clay loam.	CL, CL-ML	A-4, A-6	0	0	95-100	95-100	65-95	60-80	20-40	5-15

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 15.--Physical and Chemical Properties of the Soils

(The symbol < means less than; > means more than. Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Organic matter" apply only to the surface layer. Absence of an entry indicates that data were not available or were not estimated)

Soil name and map symbol	Depth		Moist bulk density	Permeability	Available water capacity	Soil reaction	Salinity	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
	In	Pct							K	T		
100*:												
Abac-----	0-3	18-27	1.05-1.15	0.6-2.0	0.17-0.20	7.4-8.4	<2	Low-----	0.37	1	4L	1-3
	3-18	18-27	1.15-1.25	0.6-2.0	0.04-0.06	7.4-8.4	<2	Low-----	0.20			
	18	---	---	---	---	---	---	-----	---			
Rock outcrop----	0-60	---	---	---	---	---	<2	-----	---			---
101*:												
Absted-----	0-3	10-18	1.15-1.25	2.0-6.0	0.12-0.15	6.6-7.8	<2	Low-----	0.32	3	3	1-2
	3-10	35-50	1.30-1.40	0.06-0.2	0.16-0.18	7.4-8.4	<4	High-----	0.37			
	10-17	35-50	1.30-1.40	0.06-0.2	0.11-0.13	7.9-9.0	2-8	High-----	0.37			
	17-60	30-45	1.30-1.40	0.06-0.2	0.10-0.12	>8.4	2-8	High-----	0.37			
Haverdad-----	0-2	10-20	1.25-1.35	2.0-6.0	0.14-0.17	7.4-8.4	<2	Low-----	0.32	5	3	1-2
	2-60	20-35	1.25-1.35	0.6-2.0	0.14-0.20	7.9-9.0	<2	Low-----	0.37			
102*:												
Absted, moist---	0-3	28-35	1.30-1.40	0.2-0.6	0.18-0.20	6.6-7.8	<2	Moderate	0.37	3	6	1-2
	3-13	35-50	1.30-1.40	0.06-0.2	0.16-0.18	7.4-8.4	<4	High-----	0.37			
	13-26	35-50	1.30-1.40	0.06-0.2	0.11-0.13	7.9-9.0	2-8	High-----	0.37			
	26-60	30-45	1.30-1.40	0.06-0.2	0.10-0.12	>8.4	2-8	High-----	0.37			
Haverdad, moist-	0-2	10-20	1.25-1.35	2.0-6.0	0.14-0.17	7.4-8.4	<2	Low-----	0.32	5	3	1-2
	2-60	20-35	1.25-1.35	0.6-2.0	0.14-0.20	7.9-9.0	<2	Low-----	0.37			
103*:												
Absted-----	0-2	10-18	1.30-1.40	2.0-6.0	0.11-0.14	6.6-7.8	<2	Low-----	0.28	3	3	1-2
	2-8	35-50	1.30-1.40	0.06-0.2	0.16-0.18	7.4-8.4	<4	High-----	0.37			
	8-13	35-50	1.30-1.40	0.06-0.2	0.11-0.13	7.9-9.0	2-8	High-----	0.37			
	13-60	30-45	1.30-1.40	0.06-0.2	0.10-0.12	>8.4	2-8	High-----	0.37			
Slickspots-----	0-60	---	---	<0.06	---	>9.0	>16	-----	---			---
104*:												
Agneston-----	0-6	10-18	1.30-1.40	2.0-6.0	0.08-0.11	5.6-6.0	<2	Low-----	0.15	2	6	1-2
	6-22	18-27	1.30-1.40	0.6-2.0	0.07-0.09	5.1-5.5	<2	Low-----	0.05			
	22-29	12-24	1.35-1.45	2.0-6.0	0.05-0.09	5.1-5.5	<2	Low-----	0.05			
	29	---	---	---	---	---	---	-----	---			
Granile-----	0-8	5-10	1.30-1.40	2.0-6.0	0.09-0.11	5.6-6.0	<2	Low-----	0.17	5	6	1-2
	8-19	18-28	1.30-1.40	0.6-2.0	0.08-0.10	5.6-6.0	<2	Moderate	0.10			
	19-60	10-23	1.40-1.50	2.0-6.0	0.06-0.08	5.6-6.0	<2	Low-----	0.10			
Rock outcrop----	0-60	---	---	---	---	---	<2	-----	---			---

See footnote at end of table.

Table 15.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth		Clay Pct	Moist bulk density g/cc	Permea- bility In/hr	Available water capacity In/in	Soil reaction pH	Salinity mmhos/cm	Shrink- swell potential	Erosion factors		Wind erodi- bility group	Organic matter Pct
	In	Pct								K	T		
105*:													
Arnegard-----	0-4	18-27	1.15-1.25	0.6-2.0	0.17-0.19	6.1-7.3	<2	Low-----	0.32	5	6	2-4	
	4-30	18-30	1.20-1.30	0.6-2.0	0.17-0.21	6.6-7.8	<2	Low-----	0.32				
	30-41	18-30	1.25-1.35	0.6-2.0	0.16-0.19	6.6-7.8	<2	Low-----	0.37				
	41-60	18-30	1.25-1.35	0.6-2.0	0.16-0.19	7.4-8.4	<2	Low-----	0.37				
Farnuf-----	0-5	15-25	1.15-1.25	0.6-2.0	0.15-0.18	6.1-7.8	<2	Low-----	0.32	5	6	2-3	
	5-22	25-35	1.20-1.30	0.6-2.0	0.17-0.21	6.6-7.8	<2	Moderate	0.37				
	22-60	15-30	1.25-1.35	0.6-2.0	0.14-0.18	7.9-9.0	<2	Low-----	0.43				
106*:													
Arnegard-----	0-7	18-27	1.15-1.25	0.6-2.0	0.17-0.19	6.1-7.3	<2	Low-----	0.32	5	6	2-4	
	7-21	18-30	1.20-1.30	0.6-2.0	0.17-0.21	6.6-7.8	<2	Low-----	0.32				
	21-39	18-30	1.25-1.35	0.6-2.0	0.16-0.19	6.6-7.8	<2	Low-----	0.37				
	39-60	18-30	1.25-1.35	0.6-2.0	0.16-0.19	7.4-8.4	<2	Low-----	0.37				
Farnuf-----	0-7	15-25	1.15-1.25	0.6-2.0	0.15-0.18	6.1-7.8	<2	Low-----	0.32	5	6	2-3	
	7-23	25-35	1.20-1.30	0.6-2.0	0.17-0.21	6.6-7.8	<2	Moderate	0.37				
	23-28	20-33	1.20-1.30	0.6-2.0	0.17-0.21	7.4-8.4	<2	Moderate	0.37				
	28-60	15-30	1.25-1.35	0.6-2.0	0.14-0.18	7.9-9.0	<2	Low-----	0.43				
107*:													
Assinniboine----	0-4	10-20	1.25-1.35	2.0-6.0	0.13-0.15	6.6-7.8	<2	Low-----	0.32	5	3	2-4	
	4-23	18-27	1.25-1.35	0.6-2.0	0.14-0.16	7.4-7.8	<2	Low-----	0.28				
	23-60	12-20	1.30-1.40	2.0-6.0	0.11-0.15	7.9-8.4	<2	Low-----	0.32				
Dast-----	0-4	10-18	1.25-1.35	2.0-6.0	0.13-0.15	7.4-8.4	<2	Low-----	0.32	2	3	1-3	
	4-25	10-18	1.35-1.45	2.0-6.0	0.13-0.15	7.4-8.4	<2	Low-----	0.37				
	25-40	10-18	1.40-1.50	2.0-6.0	0.13-0.15	7.9-8.4	<2	Low-----	0.37				
	40	---	---	---	---	---	---	-----	-----				
108*:													
Baux-----	0-9	18-27	1.15-1.25	0.6-2.0	0.09-0.13	6.6-7.8	<2	Low-----	0.15	1	7	1-3	
	9-13	18-27	1.15-1.25	0.6-2.0	0.04-0.07	6.6-7.8	<2	Low-----	0.10				
	13-60	---	1.65-1.75	>20	0.01-0.02	7.4-8.4	<2	Low-----	0.02				
Bauxson-----	0-5	15-20	1.15-1.25	0.6-2.0	0.12-0.13	6.6-7.8	<2	Low-----	0.20	1	8	1-3	
	5-19	28-35	1.20-1.30	0.6-2.0	0.19-0.21	7.4-8.4	<2	Moderate	0.37				
	19-60	0-1	1.65-1.75	>20	0.01-0.02	7.9-8.4	<2	Low-----	0.02				
109*:													
Baux, dry-----	0-1	18-27	1.15-1.25	0.6-2.0	0.09-0.13	6.6-7.8	<2	Low-----	0.15	1	7	1-3	
	1-13	18-27	1.15-1.25	0.6-2.0	0.04-0.07	6.6-7.8	<2	Low-----	0.10				
	13-60	---	1.65-1.75	>20	0.01-0.02	7.4-8.4	<2	Low-----	0.02				
Bauxson, dry----	0-2	15-20	1.15-1.25	0.6-2.0	0.12-0.13	6.6-7.8	<2	Low-----	0.20	1	8	1-3	
	2-11	28-35	1.20-1.30	0.6-2.0	0.19-0.21	7.4-8.4	<2	Moderate	0.37				
	11-16	18-35	1.25-1.35	0.6-2.0	0.04-0.08	7.9-8.4	<2	Moderate	0.05				
	16-60	0-1	1.65-1.75	>20	0.01-0.02	7.9-8.4	<2	Low-----	0.02				

See footnote at end of table.

Table 15.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth		Clay Pct	Moist bulk density g/cc	Permea- bility In/hr	Available water capacity In/in	Soil reaction pH	Salinity mmhos/cm	Shrink- swell potential	Erosion factors		Wind erodi- bility group	Organic matter Pct
	In	Pct								K	T		
110*:													
Baux-----	0-1	18-27	1.15-1.25	0.6-2.0	0.16-0.18	6.6-7.8	<2	Low-----	0.32	1	5	1-3	
	1-12	18-27	1.15-1.25	0.6-2.0	0.04-0.07	6.6-7.8	<2	Low-----	0.10				
	12-60	---	1.65-1.75	>20	0.01-0.02	7.4-8.4	<2	Low-----	0.02				
Bauxson-----	0-2	15-20	1.15-1.25	0.6-2.0	0.12-0.13	6.6-7.8	<2	Low-----	0.20	1	8	1-3	
	2-13	28-35	1.20-1.30	0.6-2.0	0.19-0.21	7.4-8.4	<2	Moderate	0.37				
	13-18	18-35	1.25-1.35	0.6-2.0	0.04-0.08	7.9-8.4	<2	Moderate	0.05				
	18-60	0-1	1.65-1.75	>20	0.01-0.02	7.9-8.4	<2	Low-----	0.02				
Kirtley-----	0-4	15-25	1.15-1.25	0.6-2.0	0.16-0.18	6.6-7.8	<2	Low-----	0.32	2	5	1-3	
	4-15	20-35	1.25-1.35	0.6-2.0	0.19-0.21	7.4-7.8	<2	Moderate	0.37				
	15-33	18-30	1.25-1.35	0.6-2.0	0.16-0.18	7.9-9.0	<2	Low-----	0.37				
	33	---	---	---	---	---	---	-----	---				
111*:													
Baux-----	0-1	18-27	1.15-1.25	0.6-2.0	0.16-0.18	6.6-7.8	<2	Low-----	0.32	1	5	1-3	
	1-12	18-27	1.15-1.25	0.6-2.0	0.04-0.07	6.6-7.8	<2	Low-----	0.10				
	12-60	---	1.65-1.75	>20	0.01-0.02	7.4-8.4	<2	Low-----	0.02				
Bauxson-----	0-2	15-20	1.15-1.25	0.6-2.0	0.12-0.13	6.6-7.8	<2	Low-----	0.20	1	8	1-3	
	2-13	28-35	1.20-1.30	0.6-2.0	0.19-0.21	7.4-8.4	<2	Moderate	0.37				
	13-18	18-35	1.25-1.35	0.6-2.0	0.04-0.08	7.9-8.4	<2	Moderate	0.05				
	18-60	0-1	1.65-1.75	>20	0.01-0.02	7.9-8.4	<2	Low-----	0.02				
Wetterdon-----	0-22	18-27	1.05-1.15	0.6-2.0	0.19-0.21	6.6-7.8	<2	Low-----	0.37	5	5	1-3	
	22-41	28-35	1.20-1.30	0.6-2.0	0.19-0.21	6.6-7.8	<2	Moderate	0.43				
	41-60	18-30	1.20-1.30	0.6-2.0	0.17-0.20	7.4-8.4	<2	Low-----	0.37				
112*:													
Bidman-----	0-4	12-20	1.25-1.35	2.0-6.0	0.13-0.15	6.1-7.3	<2	Low-----	0.28	5	3	1-3	
	4-16	35-45	1.15-1.25	0.06-0.2	0.16-0.19	6.6-7.8	<2	High-----	0.37				
	16-26	35-45	1.15-1.25	0.06-0.2	0.16-0.19	7.9-9.0	<2	High-----	0.32				
	26-60	24-35	1.25-1.35	0.6-2.0	0.16-0.19	7.9-9.0	<2	Moderate	0.28				
Arvada-----	0-4	10-20	1.25-1.35	2.0-6.0	0.13-0.15	7.4-7.8	<2	Low-----	0.32	5	3	1-2	
	4-14	40-50	1.20-1.30	<0.06	0.13-0.16	>9.0	<2	High-----	0.32				
	14-20	35-50	1.20-1.30	<0.06	0.11-0.13	>8.4	2-8	High-----	0.37				
113*:													
Bidman, moist---	0-2	12-20	1.20-1.30	0.6-2.0	0.15-0.17	6.1-7.3	<2	Low-----	0.32	5	5	1-3	
	2-17	35-45	1.15-1.25	0.06-0.2	0.16-0.19	6.6-7.8	<2	High-----	0.37				
	17-26	35-45	1.15-1.25	0.06-0.2	0.16-0.19	7.9-9.0	<2	High-----	0.32				
	26-60	24-35	1.25-1.35	0.6-2.0	0.16-0.19	7.9-9.0	<2	Moderate	0.28				
Arvada, moist---	0-5	10-20	1.25-1.35	2.0-6.0	0.13-0.15	7.4-7.8	<2	Low-----	0.32	5	3	1-2	
	5-18	40-50	1.20-1.30	<0.06	0.13-0.16	>9.0	<2	High-----	0.32				
	18-23	35-50	1.20-1.30	<0.06	0.11-0.13	>8.4	2-8	High-----	0.37				
	23-60	28-40	1.25-1.35	0.06-0.2	0.10-0.12	>8.4	4-8	High-----	0.37				

See footnote at end of table.

Table 15.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Soil reaction	Salinity	Shrink- swell potential	Erosion		Wind erodi- bility group	Organic matter Pct
									factors	K		
	In	Pct	g/cc	In/hr	In/in	pH	mmhos/cm					
114*: Bidman-----	0-4	12-20	1.25-1.35	2.0-6.0	0.13-0.15	6.1-7.3	<2	Low-----	0.28	5	3	1-3
	4-14	35-45	1.15-1.25	0.06-0.2	0.16-0.19	6.6-7.8	<2	High-----	0.37			
	14-26	35-45	1.15-1.25	0.06-0.2	0.16-0.19	7.9-9.0	<2	High-----	0.32			
	26-60	24-35	1.25-1.35	0.6-2.0	0.16-0.19	7.9-9.0	<2	Moderate	0.28			
Ulm, dry-----	0-3	20-25	1.15-1.25	0.6-2.0	0.16-0.18	6.6-7.3	<2	Low-----	0.32	5	6	1-3
	3-19	35-50	1.20-1.30	0.06-0.2	0.17-0.21	6.6-7.8	<2	High-----	0.37			
	19-60	30-42	1.20-1.30	0.2-0.6	0.17-0.21	7.9-9.0	<2	High-----	0.37			
115*: Bidman, moist---	0-2	12-20	1.20-1.30	0.6-2.0	0.15-0.17	6.1-7.3	<2	Low-----	0.32	5	5	1-3
	2-13	35-45	1.15-1.25	0.06-0.2	0.16-0.19	6.6-7.8	<2	High-----	0.37			
	13-22	35-45	1.15-1.25	0.06-0.2	0.16-0.19	7.9-9.0	<2	High-----	0.32			
	22-60	24-35	1.25-1.35	0.6-2.0	0.16-0.19	7.9-9.0	<2	Moderate	0.28			
Ulm-----	0-3	20-25	1.15-1.25	0.6-2.0	0.16-0.18	6.6-7.3	<2	Low-----	0.32	5	6	1-3
	3-19	35-50	1.20-1.30	0.06-0.2	0.17-0.21	6.6-7.8	<2	High-----	0.37			
	19-60	30-42	1.20-1.30	0.2-0.6	0.17-0.21	7.9-9.0	<2	High-----	0.37			
116*: Big Horn-----	0-5	20-27	1.15-1.25	0.6-2.0	0.16-0.18	6.6-7.3	<2	Low-----	0.32	3	6	1-2
	5-17	35-50	1.15-1.25	0.06-0.2	0.14-0.16	6.6-7.3	<2	High-----	0.37			
	17-30	35-45	1.20-1.30	0.06-0.2	0.14-0.18	7.9-9.0	<2	High-----	0.32			
	30-60	20-35	1.25-1.35	0.6-2.0	0.09-0.13	7.9-9.0	<2	Low-----	0.20			
Wolf, dry-----	0-4	15-27	1.15-1.25	0.6-2.0	0.16-0.18	6.6-7.8	<2	Low-----	0.37	5	5	2-3
	4-14	18-35	1.25-1.35	0.6-2.0	0.19-0.21	6.6-8.4	<2	Moderate	0.43			
	14-60	15-30	1.25-1.35	0.6-2.0	0.10-0.14	7.9-9.0	2-4	Low-----	0.24			
117*: Cambria-----	0-5	15-20	1.20-1.30	0.6-2.0	0.14-0.18	6.6-7.8	<2	Low-----	0.32	5	3	1-2
	5-10	28-35	1.20-1.30	0.6-2.0	0.19-0.21	7.4-8.4	<2	Moderate	0.43			
	10-60	20-30	1.20-1.30	0.6-2.0	0.17-0.20	7.9-9.0	<2	Moderate	0.43			
Forkwood-----	0-3	12-20	1.25-1.35	2.0-6.0	0.13-0.15	6.6-7.8	<2	Low-----	0.28	5	3	2-3
	3-14	25-35	1.25-1.35	0.6-2.0	0.19-0.21	6.6-7.8	<2	Moderate	0.37			
	14-60	20-32	1.25-1.35	0.6-2.0	0.16-0.18	7.9-9.0	<2	Low-----	0.37			
118*: Cambria, moist--	0-3	15-20	1.20-1.30	0.6-2.0	0.14-0.18	6.6-7.8	<2	Low-----	0.32	5	3	1-2
	3-10	28-35	1.20-1.30	0.6-2.0	0.19-0.21	7.4-8.4	<2	Moderate	0.43			
	10-60	20-30	1.20-1.30	0.6-2.0	0.17-0.20	7.9-9.0	<2	Moderate	0.43			
Forkwood, moist-	0-2	12-25	1.15-1.25	0.6-2.0	0.15-0.17	6.6-7.8	<2	Low-----	0.32	5	5	2-3
	2-21	25-35	1.25-1.35	0.6-2.0	0.19-0.21	6.6-7.8	<2	Moderate	0.37			
	21-60	20-32	1.25-1.35	0.6-2.0	0.16-0.18	7.9-9.0	<2	Low-----	0.37			

See footnote at end of table.

Table 15.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Soil reaction	Salinity	Shrink- swell potential	Erosion		Wind erodi- bility	Organic matter
									factors	group		
	In	Pct	g/cc	In/hr	In/in	pH	mmhos/cm		K	T		Pct
119*:												
Cedak-----	0-2	12-18	1.25-1.35	2.0-6.0	0.13-0.15	6.6-7.8	<2	Low-----	0.32	2	3	1-2
	2-17	18-35	1.25-1.35	0.6-2.0	0.17-0.20	6.6-7.8	<2	Moderate	0.37			
	17-24	12-25	1.30-1.40	0.6-2.0	0.16-0.18	7.9-9.0	<2	Low-----	0.37			
	24	---	---	---	---	---	---	-----	---			
Recluse-----	0-6	18-27	1.10-1.20	0.6-2.0	0.17-0.20	6.6-7.8	<2	Low-----	0.37	5	5	1-3
	6-27	27-35	1.20-1.30	0.6-2.0	0.19-0.21	6.6-7.8	<2	Moderate	0.43			
	27-60	18-30	1.25-1.35	0.6-2.0	0.17-0.20	7.4-8.4	<2	Moderate	0.37			
120*:												
Cedak-----	0-4	12-22	1.15-1.25	0.6-2.0	0.16-0.18	6.6-7.8	<2	Low-----	0.32	2	5	1-2
	4-24	18-35	1.25-1.35	0.6-2.0	0.17-0.20	6.6-7.8	<2	Moderate	0.37			
	24-30	12-25	1.30-1.40	0.6-2.0	0.16-0.18	7.9-9.0	<2	Low-----	0.37			
	30	---	---	---	---	---	---	-----	---			
Recluse-----	0-14	18-27	1.10-1.20	0.6-2.0	0.17-0.20	6.6-7.8	<2	Low-----	0.37	5	5	1-3
	14-30	27-35	1.20-1.30	0.6-2.0	0.19-0.21	6.6-7.8	<2	Moderate	0.43			
	30-60	18-30	1.25-1.35	0.6-2.0	0.17-0.20	7.4-8.4	<2	Moderate	0.37			
121*:												
Cedak-----	0-1	12-22	1.15-1.25	0.6-2.0	0.16-0.18	6.6-7.8	<2	Low-----	0.32	2	5	1-2
	1-16	18-35	1.25-1.35	0.6-2.0	0.17-0.20	6.6-7.8	<2	Moderate	0.37			
	16-31	12-25	1.30-1.40	0.6-2.0	0.16-0.18	7.9-9.0	<2	Low-----	0.37			
	31	---	---	---	---	---	---	-----	---			
Recluse-----	0-4	18-27	1.10-1.20	0.6-2.0	0.17-0.20	6.6-7.8	<2	Low-----	0.37	5	5	1-3
	4-18	27-35	1.20-1.30	0.6-2.0	0.19-0.21	6.6-7.8	<2	Moderate	0.43			
	18-60	18-30	1.25-1.35	0.6-2.0	0.17-0.20	7.4-8.4	<2	Moderate	0.37			
122*:												
Cedak, dry-----	0-10	12-22	1.15-1.25	0.6-2.0	0.16-0.18	6.6-7.8	<2	Low-----	0.32	2	5	1-2
	10-16	18-35	1.25-1.35	0.6-2.0	0.17-0.20	6.6-7.8	<2	Moderate	0.37			
	16-32	27-32	1.25-1.35	0.6-2.0	0.19-0.21	7.9-9.0	<2	Moderate	0.37			
	32	---	---	---	---	---	---	-----	---			
Recluse, dry----	0-5	18-27	1.10-1.20	0.6-2.0	0.17-0.20	6.6-7.8	<2	Low-----	0.37	5	5	1-3
	5-23	27-35	1.20-1.30	0.6-2.0	0.19-0.21	6.6-7.8	<2	Moderate	0.43			
	23-60	18-30	1.25-1.35	0.6-2.0	0.17-0.20	7.4-8.4	<2	Moderate	0.37			
123-----	0-9	10-18	1.20-1.30	0.6-2.0	0.15-0.18	7.4-8.4	<2	Low-----	0.32	5	5	1-2
Clarkelen	9-60	5-18	1.30-1.40	2.0-6.0	0.10-0.15	7.9-9.0	<2	Low-----	0.20			
124-----	0-10	10-18	1.20-1.30	2.0-6.0	0.13-0.15	7.4-8.4	<2	Low-----	0.28	5	3	1-2
Clarkelen, moist	10-60	5-18	1.30-1.40	2.0-6.0	0.10-0.15	7.9-9.0	<2	Low-----	0.20			

See footnote at end of table.

Table 15.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth		Clay Pct	Moist bulk density g/cc	Permea- bility In/hr	Available water capacity In/in	Soil reaction pH	Salinity mmhos/cm	Shrink- swell potential	Erosion factors		Wind erodi- bility group	Organic matter Pct
	In	Pct								K	T		
125*:													
Cloud Peak-----	0-2	18-27	1.10-1.20	0.6-2.0	0.13-0.16	6.1-7.3	<2	Low-----	0.17	2	7	1-4	
	2-14	27-35	1.15-1.25	0.6-2.0	0.08-0.13	6.6-7.8	<2	Moderate	0.15				
	14-37	18-35	1.20-1.30	0.6-2.0	0.07-0.10	7.9-8.4	<2	Moderate	0.15				
	37	---	---	---	---	---	---	-----	---				
Tolman-----	0-5	18-27	1.15-1.25	0.6-2.0	0.11-0.13	6.6-7.3	<2	Low-----	0.17	1	7	2-3	
	5-11	28-35	1.15-1.25	0.6-2.0	0.08-0.10	6.6-7.3	<2	Low-----	0.10				
	11-15	28-35	1.20-1.30	0.6-2.0	0.08-0.10	7.4-8.4	<2	Low-----	0.10				
	15	---	---	---	---	---	---	-----	---				
126*:													
Coaliam, moist-	0-8	15-25	1.15-1.25	0.6-2.0	0.16-0.18	7.4-8.4	<2	Low-----	0.32	5	4L	2-4	
	8-60	18-35	1.25-1.35	0.6-2.0	0.16-0.20	7.9-9.0	<2	Low-----	0.37				
Worthenton, moist-----	0-8	30-40	1.10-1.20	0.2-0.6	0.19-0.21	7.9-8.4	<2	Moderate	0.43	5	4L	2-4	
	8-22	35-50	1.15-1.25	0.06-0.2	0.15-0.20	7.9-8.4	<2	High-----	0.43				
	22-60	30-50	1.20-1.30	0.06-0.2	0.12-0.20	7.9-9.0	2-8	High-----	0.43				
127*:													
Cushman-----	0-2	5-15	1.25-1.35	2.0-6.0	0.13-0.14	6.6-7.8	<2	Low-----	0.32	2	3	1-2	
	2-14	20-35	1.25-1.35	0.6-2.0	0.17-0.20	7.4-8.4	<2	Moderate	0.37				
	14-32	20-35	1.25-1.35	0.6-2.0	0.17-0.20	7.9-9.0	<2	Moderate	0.37				
	32	---	---	---	---	---	---	-----	---				
Forkwood-----	0-3	12-25	1.15-1.25	0.6-2.0	0.15-0.17	6.6-7.8	<2	Low-----	0.32	5	5	2-3	
	3-18	25-35	1.25-1.35	0.6-2.0	0.19-0.21	6.6-7.8	<2	Moderate	0.37				
	18-60	20-32	1.25-1.35	0.6-2.0	0.16-0.18	7.9-9.0	<2	Low-----	0.37				
128*:													
Cushman, moist--	0-1	10-20	1.15-1.25	0.6-2.0	0.16-0.18	6.6-7.8	<2	Low-----	0.32	2	5	1-2	
	1-14	20-35	1.25-1.35	0.6-2.0	0.17-0.20	7.4-8.4	<2	Moderate	0.37				
	14-38	20-35	1.25-1.35	0.6-2.0	0.17-0.20	7.9-9.0	<2	Moderate	0.37				
	38	---	---	---	---	---	---	-----	---				
Forkwood, moist-	0-4	12-25	1.15-1.25	0.6-2.0	0.15-0.17	6.6-7.8	<2	Low-----	0.32	5	5	2-3	
	4-17	25-35	1.25-1.35	0.6-2.0	0.19-0.21	6.6-7.8	<2	Moderate	0.37				
	17-60	20-32	1.25-1.35	0.6-2.0	0.16-0.18	7.9-9.0	<2	Low-----	0.37				
129*:													
Cushman, moist--	0-5	10-20	1.15-1.25	0.6-2.0	0.16-0.18	6.6-7.8	<2	Low-----	0.32	2	5	1-2	
	5-13	20-35	1.25-1.35	0.6-2.0	0.17-0.20	7.4-8.4	<2	Moderate	0.37				
	13-34	20-35	1.25-1.35	0.6-2.0	0.17-0.20	7.9-9.0	<2	Moderate	0.37				
	34	---	---	---	---	---	---	-----	---				
Forkwood, moist-	0-1	12-25	1.15-1.25	0.6-2.0	0.15-0.17	6.6-7.8	<2	Low-----	0.32	5	5	2-3	
	1-13	25-35	1.25-1.35	0.6-2.0	0.19-0.21	6.6-7.8	<2	Moderate	0.37				
	13-60	20-32	1.25-1.35	0.6-2.0	0.16-0.18	7.9-9.0	<2	Low-----	0.37				

See footnote at end of table.

Table 15.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth		Moist bulk density	Permeability	Available water capacity	Soil reaction	Salinity	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter Pct
	In	Pct							K	T		
130*:												
Cushman-----	0-1	10-20	1.15-1.25	0.6-2.0	0.16-0.18	6.6-7.8	<2	Low-----	0.32	2	5	1-2
	1-12	20-35	1.25-1.35	0.6-2.0	0.17-0.20	7.4-8.4	<2	Moderate	0.37			
	12-26	20-35	1.25-1.35	0.6-2.0	0.17-0.20	7.9-9.0	<2	Moderate	0.37			
	26	---	---	---	---	---	---	-----	---			
Worf-----	0-1	15-25	1.15-1.25	0.6-2.0	0.16-0.18	6.6-7.8	<2	Low-----	0.32	1	5	1-3
	1-6	25-35	1.25-1.35	0.6-2.0	0.15-0.19	6.6-7.8	<2	Moderate	0.32			
	6-19	20-30	1.25-1.35	0.6-2.0	0.15-0.19	7.9-8.4	<2	Low-----	0.37			
	19	---	---	---	---	---	---	-----	---			
131*:												
Cushman, moist--	0-3	10-20	1.15-1.25	0.6-2.0	0.16-0.18	6.6-7.8	<2	Low-----	0.32	2	5	1-2
	3-11	20-35	1.25-1.35	0.6-2.0	0.17-0.20	7.4-8.4	<2	Moderate	0.37			
	11-38	20-35	1.25-1.35	0.6-2.0	0.17-0.20	7.9-9.0	<2	Moderate	0.37			
	38	---	---	---	---	---	---	-----	---			
Worf, moist-----	0-2	15-25	1.15-1.25	0.6-2.0	0.16-0.18	6.6-7.8	<2	Low-----	0.32	1	5	1-3
	2-6	25-35	1.25-1.35	0.6-2.0	0.15-0.19	6.6-7.8	<2	Moderate	0.32			
	6-13	20-30	1.25-1.35	0.6-2.0	0.15-0.19	7.9-8.4	<2	Low-----	0.37			
	13	---	---	---	---	---	---	-----	---			
132-----												
Dast Variant	0-9	5-10	1.35-1.45	6.0-20	0.08-0.10	6.1-7.3	<2	Low-----	0.37	1	2	1-3
	9-20	2-10	1.45-1.55	6.0-20	0.06-0.09	6.1-7.3	<2	Low-----	0.43			
	20	---	---	---	---	---	---	-----	---			
133*:												
Doney-----	0-3	18-27	1.15-1.25	0.6-2.0	0.15-0.17	7.4-8.4	<2	Low-----	0.37	2	4L	1-2
	3-16	18-35	1.20-1.30	0.6-2.0	0.16-0.20	7.4-8.4	<2	Moderate	0.37			
	16-23	18-35	1.20-1.30	0.6-2.0	0.16-0.20	7.9-9.0	<2	Moderate	0.37			
	23	---	---	---	---	---	---	-----	---			
Doney Variant---	0-1	15-27	1.10-1.20	0.6-2.0	0.16-0.20	7.4-8.4	<2	Moderate	0.37	1	4L	.5-2
	1-17	15-27	1.20-1.30	0.6-2.0	0.17-0.20	7.9-9.0	<2	Moderate	0.43			
	17	---	---	---	---	---	---	-----	---			
134*:												
Doney-----	0-2	18-27	1.15-1.25	0.6-2.0	0.15-0.17	7.4-8.4	<2	Low-----	0.37	2	4L	1-2
	2-11	18-35	1.20-1.30	0.6-2.0	0.16-0.20	7.4-8.4	<2	Moderate	0.37			
	11-27	18-35	1.20-1.30	0.6-2.0	0.16-0.20	7.9-9.0	<2	Moderate	0.37			
	27	---	---	---	---	---	---	-----	---			
Ringling-----	0-4	10-25	1.15-1.25	0.6-2.0	0.10-0.13	6.6-7.8	<2	Low-----	0.15	1	7	3-5
	4-12	10-25	1.15-1.25	0.6-2.0	0.05-0.10	6.6-7.8	<2	Low-----	0.10			
	12-60	0-2	---	>20	---	---	<2	Low-----	0.02			

See footnote at end of table.

Table 15.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth		Clay	Moist bulk density	Permea- bility	Available water capacity	Soil reaction	Salinity	Shrink- swell potential	Erosion factors		Wind erodi- bility	Organic matter
	In	Pct		g/cc	In/hr	In/in	pH	mmhos/cm		K	T	group	Pct
135*:													
Doney-----	0-2	18-27		1.15-1.25	0.6-2.0	0.15-0.17	7.4-8.4	<2	Low-----	0.43	2	4L	1-2
	2-12	18-35		1.20-1.30	0.6-2.0	0.16-0.20	7.4-8.4	<2	Moderate	0.37			
	12-23	18-35		1.20-1.30	0.6-2.0	0.16-0.20	7.9-9.0	<2	Moderate	0.37			
	23			---	---	---	---	---	-----				
Ringling-----	0-4	10-25		1.15-1.25	0.6-2.0	0.10-0.13	6.6-7.8	<2	Low-----	0.15	1	7	3-5
	4-12	10-25		1.15-1.25	0.6-2.0	0.05-0.10	6.6-7.8	<2	Low-----	0.10			
	12-60	0-2		---	>20	---	---	<2	Low-----	0.02			
Rock outcrop----	0-60			---	---	---	---	<2	-----				---
136-----													
Draknab	0-3	0-10		1.35-1.45	6.0-20	0.07-0.09	7.4-8.4	2-4	Low-----	0.20	5	2	.5-1
	3-60	0-10		1.40-1.50	6.0-20	0.06-0.09	7.9-9.0	2-4	Low-----	0.15			
137-----													
Farnuf	0-9	15-25		1.15-1.25	0.6-2.0	0.15-0.18	6.1-7.8	<2	Low-----	0.32	5	6	2-3
	9-21	25-35		1.20-1.30	0.6-2.0	0.17-0.21	6.6-7.8	<2	Moderate	0.37			
	21-60	15-30		1.25-1.35	0.6-2.0	0.14-0.18	7.9-9.0	<2	Low-----	0.43			
138-----													
Farnuf	0-9	15-25		1.15-1.25	0.6-2.0	0.15-0.18	6.1-7.8	<2	Low-----	0.32	5	6	2-3
	9-24	25-35		1.20-1.30	0.6-2.0	0.17-0.21	6.6-7.8	<2	Moderate	0.37			
	24-31	20-33		1.20-1.30	0.6-2.0	0.17-0.21	7.4-8.4	<2	Moderate	0.37			
	31-60	15-30		1.25-1.35	0.6-2.0	0.14-0.18	7.9-9.0	<2	Low-----	0.43			
139-----													
Farnuf	0-8	15-25		1.15-1.25	0.6-2.0	0.15-0.18	6.1-7.8	<2	Low-----	0.32	5	6	2-3
	8-22	25-35		1.20-1.30	0.6-2.0	0.17-0.21	6.6-7.8	<2	Moderate	0.37			
	22-29	20-33		1.20-1.30	0.6-2.0	0.17-0.21	7.4-8.4	<2	Moderate	0.37			
	29-60	15-30		1.25-1.35	0.6-2.0	0.14-0.18	7.9-9.0	<2	Low-----	0.43			
140-----													
Farnuf Variant, wet	0-10	15-25		1.10-1.20	0.6-2.0	0.17-0.20	6.1-7.3	<2	Low-----	0.37	3	5	1-3
	10-40	28-35		1.25-1.35	0.2-0.6	0.19-0.21	6.1-7.3	<2	Moderate	0.43			
	40-60	0-2		1.45-1.55	>20	0.01-0.02	6.6-7.3	<2	Low-----	0.02			
141*:													
Farnuf Variant--	0-10	15-25		1.10-1.20	0.6-2.0	0.17-0.20	6.1-7.3	<2	Low-----	0.37	3	6	1-3
	10-40	28-35		1.25-1.35	0.2-0.6	0.19-0.21	6.6-7.3	<2	Moderate	0.43			
	40-60	0-2		1.45-1.55	>20	0.01-0.02	6.6-7.3	<2	Low-----	0.02			
Cloud Peak Variant-----													
	0-4	8-15		1.30-1.40	2.0-6.0	0.10-0.12	6.1-7.3	<2	Low-----	0.32	2	3	1-3
	4-11	8-15		1.40-1.50	2.0-6.0	0.07-0.12	6.1-7.3	<2	Low-----	0.28			
	11-24	20-35		1.25-1.35	0.6-2.0	0.14-0.16	6.1-7.3	<2	Moderate	0.37			
	24-60	0-5		1.45-1.55	>20	0.01-0.02	6.1-7.3	<2	Low-----	0.02			
142-----													
Forkwood	0-8	12-25		1.15-1.25	0.6-2.0	0.15-0.17	6.6-7.8	<2	Low-----	0.32	5	5	2-3
	8-18	25-35		1.25-1.35	0.6-2.0	0.19-0.21	6.6-7.8	<2	Moderate	0.37			
	18-60	20-32		1.25-1.35	0.6-2.0	0.16-0.18	7.9-9.0	<2	Low-----	0.37			

See footnote at end of table.

Table 15.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth		Clay	Moist bulk density	Permea- bility	Available water capacity	Soil reaction	Salinity	Shrink- swell potential	Erosion factors		Wind erodi- bility	Organic matter
	In	Pct		g/cc	In/hr	In/in	pH	mmhos/cm		K	T	group	Pct
143----- Forkwood	0-3	12-25	1.15-1.25	0.6-2.0	0.15-0.17	6.6-7.8	<2	Low-----	0.32	5	5		2-3
	3-13	25-35	1.25-1.35	0.6-2.0	0.19-0.21	6.6-7.8	<2	Moderate	0.37				
	13-60	20-32	1.25-1.35	0.6-2.0	0.16-0.18	7.9-9.0	<2	Low-----	0.37				
144----- Forkwood	0-4	12-25	1.15-1.25	0.6-2.0	0.15-0.17	6.6-7.8	<2	Low-----	0.32	5	5		2-3
	4-19	25-35	1.25-1.35	0.6-2.0	0.19-0.21	6.6-7.8	<2	Moderate	0.37				
	19-60	20-32	1.25-1.35	0.6-2.0	0.16-0.18	7.9-9.0	<2	Low-----	0.37				
145*:													
Gayhart-----	0-10	35-40	1.15-1.25	0.2-0.6	0.16-0.19	7.4-8.4	<2	High-----	0.32	2	4L		5-1
	10-36	35-55	1.30-1.40	0.06-0.2	0.12-0.16	7.9-9.0	<8	High-----	0.37				
	36	---	---	---	---	---	---	-----	---				
Bahl-----	0-10	30-40	1.15-1.25	0.06-0.2	0.17-0.20	7.4-8.4	<2	Moderate	0.32	5	4L		1-2
	10-60	40-55	1.20-1.40	0.06-0.2	0.15-0.20	7.4-9.0	2-4	High-----	0.37				
146*:													
Gayhart, moist--	0-3	35-40	1.15-1.25	0.2-0.6	0.16-0.19	7.4-8.4	<2	High-----	0.32	2	4L		5-1
	3-24	35-55	1.30-1.40	0.06-0.2	0.12-0.16	7.9-9.0	<8	High-----	0.37				
	24	---	---	---	---	---	---	-----	---				
Bahl, moist-----	0-3	30-40	1.15-1.25	0.06-0.2	0.17-0.20	7.4-8.4	<2	Moderate	0.32	5	4L		1-2
	3-60	40-55	1.20-1.40	0.06-0.2	0.15-0.20	7.4-9.0	2-4	High-----	0.37				
147*:													
Hardhart-----	0-8	10-27	1.10-1.20	0.6-2.0	0.05-0.06	6.6-7.8	<2	Low-----	0.10	2	7		2-4
	8-27	10-27	1.20-1.30	0.6-2.0	0.05-0.06	7.9-9.0	<4	Low-----	0.10				
	27	---	---	---	---	---	---	-----	---				
Starley-----	0-9	20-27	1.15-1.25	0.6-2.0	0.16-0.18	6.6-7.8	<2	Low-----	0.32	1	6		2-3
	9-17	20-30	1.25-1.30	0.6-2.0	0.07-0.10	7.9-9.0	<2	Low-----	0.10				
	17	---	---	---	---	---	---	-----	---				
148*:													
Hargreave-----	0-2	10-18	1.25-1.35	2.0-6.0	0.10-0.13	6.6-7.3	<2	Low-----	0.24	2	3		2-3
	2-19	18-27	1.25-1.35	0.6-2.0	0.14-0.18	7.4-7.8	<2	Low-----	0.28				
	19-35	10-23	1.35-1.45	0.6-2.0	0.13-0.17	7.4-8.4	<2	Low-----	0.28				
	35	---	---	---	---	---	---	-----	---				
Moskee-----	0-6	10-20	1.25-1.35	2.0-6.0	0.10-0.13	6.6-7.8	<2	Low-----	0.32	5	3		2-4
	6-18	20-35	1.25-1.35	0.6-2.0	0.14-0.16	6.6-7.8	<2	Moderate	0.37				
	18-60	10-25	1.30-1.40	2.0-6.0	0.10-0.14	7.9-8.4	<2	Low-----	0.37				

See footnote at end of table.

Table 15.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Soil reaction	Salinity	Shrink- swell potential	Erosion		Wind erodi- bility group	Organic matter Pct
									factors	K		
	In	Pct	g/cc	In/hr	In/in	pH	mmhos/cm					
149*:												
Hargreave-----	0-4	10-18	1.25-1.35	2.0-6.0	0.13-0.15	6.6-7.3	<2	Low-----	0.28	2	3	2-3
	4-16	18-27	1.25-1.35	0.6-2.0	0.14-0.18	7.4-7.8	<2	Low-----	0.28			
	16-34	10-23	1.35-1.45	0.6-2.0	0.13-0.17	7.4-8.4	<2	Low-----	0.28			
	34	---	---	---	---	---	---	-----	---			
Moskee-----	0-5	10-20	1.35-1.45	2.0-6.0	0.11-0.15	6.6-7.8	<2	Low-----	0.37	5	3	2-4
	5-22	20-35	1.25-1.35	0.6-2.0	0.14-0.16	6.6-7.8	<2	Moderate	0.37			
	22-60	10-25	1.30-1.40	2.0-6.0	0.10-0.14	7.9-8.4	<2	Low-----	0.37			
150*:												
Hargreave, dry--	0-3	10-18	1.25-1.35	2.0-6.0	0.10-0.13	6.6-7.3	<2	Low-----	0.24	2	3	2-3
	3-12	18-27	1.25-1.35	0.6-2.0	0.14-0.18	7.4-7.8	<2	Low-----	0.28			
	12-25	10-23	1.35-1.45	0.6-2.0	0.13-0.17	7.4-8.4	<2	Low-----	0.28			
	25	---	---	---	---	---	---	-----	---			
Moskee, dry----	0-4	10-20	1.25-1.35	2.0-6.0	0.10-0.13	6.6-7.8	<2	Low-----	0.32	5	3	2-4
	4-16	20-35	1.25-1.35	0.6-2.0	0.14-0.16	6.6-7.8	<2	Moderate	0.37			
	16-60	10-25	1.30-1.40	2.0-6.0	0.10-0.14	7.9-8.4	<2	Low-----	0.37			
151-----	0-3	15-25	1.20-1.30	0.6-2.0	0.14-0.18	6.6-7.8	<2	Low-----	0.32	5	6	2-4
Harlan, dry	3-13	24-35	1.25-1.35	0.6-2.0	0.17-0.21	6.6-7.8	<2	Moderate	0.37			
	13-60	18-27	1.30-1.40	0.6-2.0	0.13-0.16	7.9-9.0	<2	Low-----	0.37			
152*:												
Harlan-----	0-4	15-25	1.15-1.25	0.6-2.0	0.15-0.19	6.6-7.8	<2	Low-----	0.37	5	6	2-4
	4-16	24-35	1.25-1.35	0.6-2.0	0.17-0.21	6.6-7.8	<2	Moderate	0.37			
	16-60	18-27	1.30-1.40	0.6-2.0	0.13-0.16	7.9-9.0	<2	Low-----	0.37			
Kirtley-----	0-7	15-25	1.15-1.25	0.6-2.0	0.16-0.18	6.6-7.8	<2	Low-----	0.32	2	5	1-3
	7-14	20-35	1.25-1.35	0.6-2.0	0.19-0.21	7.4-7.8	<2	Moderate	0.37			
	14-31	18-30	1.25-1.35	0.6-2.0	0.16-0.18	7.9-9.0	<2	Low-----	0.37			
	31	---	---	---	---	---	---	-----	---			
153*:												
Harlan-----	0-2	15-25	1.20-1.30	0.6-2.0	0.14-0.18	6.6-7.8	<2	Low-----	0.32	5	6	2-4
	2-13	24-35	1.25-1.35	0.6-2.0	0.17-0.21	6.6-7.8	<2	Moderate	0.37			
	13-24	20-30	1.25-1.35	0.6-2.0	0.15-0.18	7.9-8.4	<2	Low-----	0.37			
	24-60	18-27	1.30-1.40	0.6-2.0	0.13-0.16	7.9-9.0	<2	Low-----	0.37			
Kirtley-----	0-9	15-25	1.15-1.25	0.6-2.0	0.16-0.18	6.6-7.8	<2	Low-----	0.32	2	5	1-3
	9-16	20-35	1.25-1.35	0.6-2.0	0.19-0.21	7.4-7.8	<2	Moderate	0.37			
	16-32	18-30	1.25-1.35	0.6-2.0	0.16-0.18	7.9-9.0	<2	Low-----	0.37			
	32	---	---	---	---	---	---	-----	---			
154-----	0-2	10-20	1.25-1.35	2.0-6.0	0.14-0.17	7.4-8.4	<2	Low-----	0.32	5	3	1-2
Haverdad	2-60	20-35	1.25-1.35	0.6-2.0	0.14-0.20	7.9-9.0	<2	Low-----	0.37			
155-----	0-8	20-27	1.15-1.25	0.6-2.0	0.15-0.18	7.4-8.4	<2	Low-----	0.32	5	4L	1-2
Haverdad, moist	8-60	20-35	1.25-1.35	0.6-2.0	0.14-0.20	7.9-9.0	<2	Low-----	0.37			

See footnote at end of table.

Table 15.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth		Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Salinity	Shrink-swell potential	Erosion factors		Wind erodibility	Organic matter
	In	Pct		g/cc	In/hr	In/in	pH	mmhos/cm		K	T	group	Pct
156----- Haverdad, saline	0-1	18-27	1.10-1.20	0.6-2.0	0.17-0.20	7.4-8.4	2-4	Low-----	0.37	5	4L	1-4	
	1-60	18-35	1.25-1.40	0.6-2.0	0.10-0.14	7.9-9.0	4-16	Moderate	0.37				
157----- Haverdad, moist, saline	0-2	18-27	1.10-1.20	0.6-2.0	0.15-0.18	7.4-8.4	2-4	Low-----	0.37	5	4L	1-4	
	2-60	18-35	1.25-1.40	0.6-2.0	0.10-0.14	7.9-9.0	4-16	Moderate	0.37				
158*:													
Haverdad-----	0-2	10-20	1.20-1.35	0.6-2.0	0.13-0.15	7.4-8.4	<2	Low-----	0.32	5	3	1-2	
	2-60	18-27	1.25-1.40	0.6-2.0	0.14-0.16	7.9-9.0	<4	Low-----	0.37				
Draknab-----	0-2	5-15	1.25-1.35	2.0-6.0	0.12-0.14	7.4-8.4	2-4	Low-----	0.28	5	3	1-2	
	2-60	0-10	1.40-1.50	6.0-20	0.06-0.09	7.9-9.0	2-4	Low-----	0.15				
159*:													
Haverdad, moist-----	0-2	10-20	1.20-1.35	0.6-2.0	0.13-0.15	7.4-8.4	<2	Low-----	0.32	5	3	1-2	
	2-60	18-27	1.25-1.40	0.6-2.0	0.14-0.16	7.9-9.0	<4	Low-----	0.37				
Draknab, moist--	0-2	0-10	1.35-1.45	6.0-20	0.07-0.09	7.4-8.4	2-4	Low-----	0.20	5	2	.5-1	
	2-60	0-10	1.40-1.50	6.0-20	0.06-0.09	7.9-9.0	2-4	Low-----	0.15				
160*:													
Haverdad-----	0-4	18-27	1.15-1.25	0.6-2.0	0.17-0.20	7.4-8.4	<2	Low-----	0.37	5	4L	1-2	
	4-60	18-27	1.25-1.40	0.6-2.0	0.14-0.16	7.9-9.0	<4	Low-----	0.37				
Worthington-----	0-7	30-40	1.10-1.20	0.2-0.6	0.19-0.21	7.9-8.4	<2	Moderate	0.43	5	4L	2-4	
	7-24	35-50	1.15-1.25	0.06-0.2	0.15-0.20	7.9-8.4	<2	High-----	0.43				
	20-60	30-50	1.20-1.30	0.06-0.2	0.12-0.20	7.9-9.0	2-8	High-----	0.43				
161*:													
Haverdad, moist-----	0-2	10-20	1.20-1.35	0.6-2.0	0.13-0.15	7.4-8.4	<2	Low-----	0.32	5	3	1-2	
	2-60	18-27	1.25-1.40	0.6-2.0	0.14-0.16	7.9-9.0	<4	Low-----	0.37				
Worthington-----	0-7	30-40	1.10-1.20	0.2-0.6	0.19-0.21	7.9-8.4	<2	Moderate	0.43	5	4L	2-4	
	7-24	35-50	1.15-1.25	0.06-0.2	0.15-0.20	7.9-8.4	<2	High-----	0.43				
	24-60	30-50	1.20-1.30	0.06-0.2	0.12-0.20	7.9-9.0	2-8	High-----	0.43				
162-----													
Havertel	0-17	18-30	1.15-1.25	0.6-2.0	0.17-0.21	7.4-8.4	<2	Moderate	0.37	2	4L	2-4	
	17-29	2-10	1.45-1.55	>20	0.05-0.07	7.9-9.0	<2	Low-----	0.10				
	29-60	0-5	1.45-1.55	>20	0.02-0.04	7.4-8.4	<2	Low-----	0.02				
163*:													
Hesperus Variant	0-3	15-27	1.15-1.25	0.6-2.0	0.14-0.20	6.1-7.8	<2	Low-----	0.37	3	6	2-4	
	3-18	28-35	1.20-1.30	0.2-0.6	0.19-0.21	6.1-7.8	<2	Moderate	0.43				
	18-49	28-35	1.25-1.35	0.2-0.6	0.14-0.16	6.1-7.8	<2	Moderate	0.43				
	49-57	15-20	1.35-1.45	2.0-6.0	0.11-0.13	6.1-7.8	<2	Low-----	0.28				
	57-60	0-2	1.45-1.55	>20	0.01-0.02	6.1-7.8	<2	Low-----	0.02				

See footnote at end of table.

Table 15.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth		Clay	Moist bulk density	Permea- bility	Available water capacity	Soil reaction	Salinity	Shrink- swell potential	Erosion factors		Wind erodi- bility	Organic matter
	In	Pct		g/cc	In/hr	In/in	pH	mmhos/cm		K	T	group	Pct
163*: Reget-----	0-8	20-27	1.10-1.20	0.6-2.0	0.17-0.20	6.6-7.8	<2	Low-----	0.43	2	6	2-4	
	8-33	40-55	1.15-1.25	0.06-0.2	0.11-0.13	6.6-8.4	<2	High-----	0.43				
	33-39	30-45	1.20-1.30	0.2-0.6	0.14-0.16	7.9-9.0	<2	High-----	0.43				
	39	---	---	---	---	---	---	-----	---				
164*: Hiland-----	0-4	8-18	1.25-1.35	2.0-6.0	0.10-0.13	6.6-7.8	<2	Low-----	0.32	5	3	1-2	
	4-30	20-35	1.25-1.35	0.6-2.0	0.14-0.16	7.4-7.8	<2	Moderate	0.32				
	30-60	10-20	1.35-1.45	2.0-6.0	0.10-0.14	7.9-9.0	<2	Low-----	0.24				
Bowbac-----	0-4	10-20	1.35-1.45	2.0-6.0	0.10-0.15	6.6-7.8	<2	Low-----	0.28	2	3	1-2	
	4-15	20-35	1.35-1.45	0.6-2.0	0.14-0.18	6.6-7.8	<2	Low-----	0.28				
	15-24	10-20	1.40-1.50	2.0-6.0	0.12-0.15	7.9-9.0	<2	Low-----	0.28				
	24	---	---	---	---	---	---	-----	---				
165*: Hiland, moist---	0-4	8-18	1.25-1.35	2.0-6.0	0.10-0.13	6.6-7.8	<2	Low-----	0.32	5	3	1-2	
	4-17	20-35	1.25-1.35	0.6-2.0	0.14-0.16	7.4-7.8	<2	Moderate	0.32				
	17-24	15-25	1.30-1.40	0.6-2.0	0.12-0.15	7.9-9.0	<2	Low-----	0.32				
	24-60	10-20	1.35-1.45	2.0-6.0	0.10-0.14	7.9-9.0	<2	Low-----	0.24				
Bowbac, moist---	0-7	10-20	1.35-1.45	2.0-6.0	0.10-0.15	6.6-7.8	<2	Low-----	0.28	2	3	1-2	
	7-30	20-35	1.35-1.45	0.6-2.0	0.14-0.18	6.6-7.8	<2	Low-----	0.28				
	30-39	10-20	1.40-1.50	2.0-6.0	0.12-0.15	7.9-9.0	<2	Low-----	0.28				
	39	---	---	---	---	---	---	-----	---				
166*: Hiland-----	0-2	8-18	1.25-1.35	2.0-6.0	0.12-0.15	6.6-7.8	<2	Low-----	0.28	5	3	1-2	
	2-15	20-35	1.25-1.35	0.6-2.0	0.14-0.16	7.4-7.8	<2	Moderate	0.32				
	15-27	15-25	1.30-1.40	0.6-2.0	0.12-0.15	7.9-9.0	<2	Low-----	0.32				
	27-60	10-20	1.35-1.45	2.0-6.0	0.10-0.14	7.9-9.0	<2	Low-----	0.24				
Decolney-----	0-2	3-8	1.35-1.45	2.0-6.0	0.06-0.08	6.6-7.8	<2	Low-----	0.20	5	2	1-2	
	2-11	20-35	1.25-1.35	0.6-2.0	0.14-0.16	7.4-8.4	<2	Low-----	0.28				
	11-60	10-22	1.35-1.45	2.0-6.0	0.11-0.14	7.4-8.4	<2	Low-----	0.28				
167*: Hiland, moist---	0-4	8-18	1.25-1.35	2.0-6.0	0.12-0.15	6.6-7.8	<2	Low-----	0.28	5	3	1-2	
	4-23	20-35	1.25-1.35	0.6-2.0	0.14-0.16	7.4-7.8	<2	Moderate	0.32				
	23-60	10-20	1.35-1.45	2.0-6.0	0.10-0.14	7.9-9.0	<2	Low-----	0.24				
Vonalee, moist--	0-3	5-10	1.35-1.45	6.0-20	0.07-0.09	6.6-7.8	<2	Low-----	0.24	5	2	1-2	
	3-19	12-18	1.35-1.45	2.0-6.0	0.12-0.14	7.4-7.8	<2	Low-----	0.32				
	19-60	8-15	1.45-1.55	2.0-6.0	0.07-0.10	7.9-9.0	<2	Low-----	0.24				
168*: Hiligh-----	0-1	30-40	1.15-1.25	0.06-0.2	0.19-0.21	7.4-8.4	<2	Moderate	0.32	1	4	1-2	
	1-17	40-55	1.15-1.25	0.06-0.2	0.14-0.17	7.4-8.4	<2	High-----	0.43				
	17	---	---	---	---	---	---	-----	---				

See footnote at end of table.

Table 15.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth		Clay Pct	Moist bulk density g/cc	Permea- bility In/hr	Available water capacity In/in	Soil reaction pH	Salinity mmhos/cm	Shrink- swell potential	Erosion factors		Wind erodi- bility group	Organic matter Pct
	In	Pct								K	T		
168*: Rock outcrop	0-60	---	---	---	---	---	---	<2	-----	-----	---	---	---
169*: Jonpol	0-3	15-27	1.15-1.25	0.6-2.0	0.16-0.17	6.6-7.8	<2	Moderate	0.37	2	5	1-3	
	3-19	35-50	1.20-1.30	0.06-0.2	0.15-0.20	7.4-8.4	<2	High	0.43				
	19-32	18-35	1.25-1.35	0.6-2.0	0.17-0.20	7.4-8.4	<2	Moderate	0.43				
	32	---	---	---	---	---	---	---	---				
Platmak	0-4	15-27	1.40-1.45	0.6-2.0	0.16-0.18	6.6-7.3	<2	Low	0.32	5	5	2-4	
	4-16	35-50	1.35-1.45	0.06-0.2	0.16-0.20	6.6-7.8	<2	High	0.37				
	16-60	20-40	1.40-1.45	0.6-2.0	0.16-0.18	7.9-8.4	<2	Moderate	0.37				
170*: Jonpol	0-3	15-27	1.15-1.25	0.6-2.0	0.16-0.17	6.6-7.8	<2	Moderate	0.37	2	5	1-3	
	3-15	35-50	1.20-1.30	0.06-0.2	0.15-0.20	7.4-8.4	<2	High	0.43				
	15-19	35-50	1.20-1.30	0.06-0.2	0.15-0.19	7.4-8.4	<2	High	0.43				
	19-23	18-35	1.25-1.35	0.6-2.0	0.17-0.20	7.4-8.4	<2	Moderate	0.43				
	23	---	---	---	---	---	---	---	---				
Platmak	0-6	15-27	1.40-1.45	0.6-2.0	0.16-0.18	6.6-7.3	<2	Low	0.32	5	5	2-4	
	6-14	35-50	1.35-1.45	0.06-0.2	0.16-0.20	6.6-7.8	<2	High	0.37				
	14-60	20-40	1.40-1.45	0.6-2.0	0.16-0.18	7.9-8.4	<2	Moderate	0.37				
171*: Kishona	0-1	20-27	1.20-1.30	0.6-2.0	0.15-0.17	7.4-8.4	<2	Low	0.32	5	4L	1-2	
	1-60	20-35	1.20-1.35	0.6-2.0	0.16-0.20	7.9-9.0	<4	Moderate	0.37				
Cambria	0-5	15-20	1.20-1.30	0.6-2.0	0.14-0.18	6.6-7.8	<2	Low	0.32	5	3	1-2	
	5-16	28-35	1.20-1.30	0.6-2.0	0.19-0.21	7.4-8.4	<2	Moderate	0.43				
	16-60	20-30	1.20-1.30	0.6-2.0	0.17-0.20	7.9-9.0	<2	Moderate	0.43				
172*: Kishona	0-2	20-27	1.20-1.30	0.6-2.0	0.15-0.17	7.4-8.4	<2	Low	0.32	5	4L	1-2	
	2-60	20-35	1.20-1.35	0.6-2.0	0.16-0.20	7.9-9.0	<4	Moderate	0.37				
Cambria	0-3	15-20	1.20-1.30	0.6-2.0	0.14-0.18	6.6-7.8	<2	Low	0.32	5	3	1-2	
	3-11	28-35	1.20-1.30	0.6-2.0	0.19-0.21	7.4-8.4	<2	Moderate	0.43				
	11-60	20-30	1.20-1.30	0.6-2.0	0.17-0.20	7.9-9.0	<2	Moderate	0.43				
173*: Lambman	0-1	15-20	1.25-1.35	2.0-6.0	0.12-0.14	7.4-7.8	<2	Low	0.32	1	3	1-3	
	1-8	20-35	1.25-1.35	0.6-2.0	0.14-0.16	7.4-8.4	<2	Moderate	0.37				
	8-15	10-24	1.40-1.50	2.0-6.0	0.08-0.12	7.9-9.0	<2	Low	0.24				
	15	---	---	---	---	---	---	---	---				
Hargreave	0-2	10-18	1.25-1.35	2.0-6.0	0.13-0.15	6.6-7.3	<2	Low	0.28	2	3	2-3	
	2-23	18-27	1.25-1.35	0.6-2.0	0.14-0.18	7.4-7.8	<2	Low	0.28				
	23-32	10-23	1.35-1.45	0.6-2.0	0.13-0.17	7.4-8.4	<2	Low	0.28				
	32	---	---	---	---	---	---	---	---				

See footnote at end of table.

Table 15.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Soil reaction	Salinity	Shrink- swell potential	Erosion		Wind erodi- bility	Organic matter
									factors	group		
	In	Pct	g/cc	In/hr	In/in	pH	mmhos/cm					
174*:												
Lucky-----	0-5	15-25	1.20-1.30	0.6-2.0	0.12-0.15	6.1-6.5	<2	Low-----	0.20	2	6	2-3
	5-17	20-35	1.20-1.30	0.6-2.0	0.11-0.14	6.1-6.5	<2	Low-----	0.15			
	17-24	10-20	1.30-1.40	2.0-6.0	0.05-0.09	6.1-6.5	<2	Low-----	0.05			
	24	---	---	---	---	---	---	-----				
Burgess-----	0-9	8-15	1.20-1.30	2.0-6.0	0.07-0.10	5.6-7.3	<2	Low-----	0.15	2	5	2-3
	9-34	8-18	1.30-1.40	2.0-6.0	0.07-0.10	6.1-6.5	<2	Low-----	0.15			
	34	---	---	---	---	---	---	-----				
Hazton-----	0-8	15-19	1.25-1.35	2.0-6.0	0.10-0.12	6.1-7.3	<2	Low-----	0.15	1	7	1-2
	8-14	10-18	1.35-1.45	2.0-6.0	0.07-0.09	6.1-7.3	<2	Low-----	0.10			
	14	---	---	---	---	---	---	-----				
175-----	0-3	10-20	1.25-1.35	2.0-6.0	0.10-0.13	6.6-7.8	<2	Low-----	0.32	5	3	2-4
Moskee	3-20	20-35	1.25-1.35	0.6-2.0	0.14-0.16	6.6-7.8	<2	Moderate	0.37			
	20-60	10-25	1.30-1.40	2.0-6.0	0.10-0.14	7.9-8.4	<2	Low-----	0.37			
176-----	0-4	10-20	1.25-1.35	2.0-6.0	0.10-0.13	6.6-7.8	<2	Low-----	0.32	5	3	2-4
Moskee	4-29	20-35	1.25-1.35	0.6-2.0	0.14-0.16	6.6-7.8	<2	Moderate	0.37			
	29-60	10-25	1.30-1.40	2.0-6.0	0.10-0.14	7.9-8.4	<2	Low-----	0.37			
177-----	0-9	10-20	1.35-1.45	2.0-6.0	0.11-0.15	6.6-7.8	<2	Low-----	0.37	5	3	2-4
Moskee	9-25	20-35	1.25-1.35	0.6-2.0	0.14-0.16	6.6-7.8	<2	Moderate	0.37			
	25-60	10-25	1.30-1.40	2.0-6.0	0.10-0.14	7.9-8.4	<2	Low-----	0.37			
178*:												
Moskee-----	0-4	10-20	1.25-1.35	2.0-6.0	0.10-0.13	6.6-7.8	<2	Low-----	0.32	5	3	2-4
	4-29	20-35	1.25-1.35	0.6-2.0	0.14-0.16	6.6-7.8	<2	Moderate	0.37			
	29-60	10-25	1.30-1.40	2.0-6.0	0.10-0.14	7.9-8.4	<2	Low-----	0.37			
Noden-----	0-2	10-20	1.25-1.35	2.0-6.0	0.13-0.15	6.6-7.3	<2	Low-----	0.28	5	3	2-3
	2-36	20-35	1.25-1.35	0.6-2.0	0.14-0.16	6.6-7.8	<2	Moderate	0.32			
	36-60	10-20	1.40-1.50	2.0-6.0	0.12-0.15	6.6-7.8	<2	Low-----	0.32			
179*:												
Moskee-----	0-1	10-20	1.35-1.45	2.0-6.0	0.11-0.15	6.6-7.8	<2	Low-----	0.37	5	3	2-4
	1-16	20-35	1.25-1.35	0.6-2.0	0.14-0.16	6.6-7.8	<2	Moderate	0.37			
	16-60	10-25	1.30-1.40	2.0-6.0	0.10-0.14	7.9-8.4	<2	Low-----	0.37			
Noden-----	0-2	10-20	1.25-1.35	2.0-6.0	0.13-0.15	6.6-7.3	<2	Low-----	0.28	5	3	2-3
	2-30	20-35	1.25-1.35	0.6-2.0	0.14-0.16	6.6-7.8	<2	Moderate	0.32			
	30-60	10-20	1.40-1.50	2.0-6.0	0.12-0.15	6.6-7.8	<2	Low-----	0.32			
180*:												
Moskee, dry----	0-5	10-20	1.35-1.45	2.0-6.0	0.11-0.15	6.6-7.8	<2	Low-----	0.37	5	3	2-4
	5-15	20-35	1.25-1.35	0.6-2.0	0.14-0.16	6.6-7.8	<2	Moderate	0.37			
	15-60	10-25	1.30-1.40	2.0-6.0	0.10-0.14	7.9-8.4	<2	Low-----	0.37			

See footnote at end of table.

Table 15.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth		Clay	Moist bulk density	Permea- bility	Available water capacity	Soil reaction	Salinity	Shrink- swell potential	Erosion factors		Wind erodi- bility	Organic matter
	In	Pct		g/cc	In/hr	In/in	pH	mmhos/cm		K	T	group	Pct
180*: Noden, dry-----	0-7	10-20	1.25-1.35	2.0-6.0	0.13-0.15	6.6-7.3	<2	Low-----	0.28	5	3	2-3	
	7-22	20-35	1.25-1.35	0.6-2.0	0.14-0.16	6.6-7.8	<2	Moderate	0.32				
	22-60	10-20	1.40-1.50	2.0-6.0	0.12-0.15	6.6-7.8	<2	Low-----	0.32				
181*: Moskee-----	0-8	10-20	1.25-1.35	2.0-6.0	0.10-0.13	6.6-7.8	<2	Low-----	0.32	5	3	2-4	
	8-21	20-35	1.25-1.35	0.6-2.0	0.14-0.16	6.6-7.8	<2	Moderate	0.37				
	21-60	10-25	1.30-1.40	2.0-6.0	0.10-0.14	7.9-8.4	<2	Low-----	0.37				
Nuncho-----	0-8	20-30	1.15-1.25	0.6-2.0	0.15-0.17	6.1-7.8	<2	Low-----	0.32	5	5	1-3	
	8-24	35-45	1.20-1.30	0.06-0.2	0.15-0.20	6.6-7.8	<2	High-----	0.37				
	24-40	20-30	1.25-1.35	0.6-2.0	0.14-0.16	7.9-8.4	<2	Low-----	0.32				
	40-60	8-20	1.35-1.45	2.0-6.0	0.07-0.12	7.9-8.4	<2	Low-----	0.20				
182*: Moskee-----	0-8	10-20	1.25-1.35	2.0-6.0	0.10-0.13	6.6-7.8	<2	Low-----	0.32	5	3	2-4	
	8-35	20-35	1.25-1.35	0.6-2.0	0.14-0.16	6.6-7.8	<2	Moderate	0.37				
	35-60	10-25	1.30-1.40	2.0-6.0	0.10-0.14	7.9-8.4	<2	Low-----	0.37				
Nuncho-----	0-10	20-30	1.15-1.25	0.6-2.0	0.15-0.17	6.1-7.8	<2	Low-----	0.32	5	5	1-3	
	10-27	35-45	1.20-1.30	0.06-0.2	0.15-0.20	6.6-7.8	<2	High-----	0.37				
	27-40	20-30	1.25-1.35	0.6-2.0	0.14-0.16	7.9-8.4	<2	Low-----	0.32				
	40-60	8-20	1.35-1.45	2.0-6.0	0.07-0.12	7.9-8.4	<2	Low-----	0.20				
183*: Moskee-----	0-7	10-20	1.25-1.35	2.0-6.0	0.10-0.13	6.6-7.8	<2	Low-----	0.32	5	3	2-4	
	7-21	20-35	1.25-1.35	0.6-2.0	0.14-0.16	6.6-7.8	<2	Moderate	0.37				
	21-60	10-25	1.30-1.40	2.0-6.0	0.10-0.14	7.9-8.4	<2	Low-----	0.37				
Worthenton, moist-----	0-4	30-40	1.10-1.20	0.2-0.6	0.19-0.21	7.9-8.4	<2	Moderate	0.43	5	4L	2-4	
	4-17	35-50	1.15-1.25	0.06-0.2	0.15-0.20	7.9-8.4	<2	High-----	0.43				
	17-60	30-50	1.20-1.30	0.06-0.2	0.12-0.18	7.9-9.0	2-8	High-----	0.43				
184*: Nathrop-----	0-6	18-27	1.15-1.25	0.6-2.0	0.15-0.18	6.6-7.3	<2	Low-----	0.32	2	6	2-4	
	6-13	28-35	1.20-1.30	0.6-2.0	0.07-0.12	6.6-7.3	<2	Low-----	0.10				
	13-39	28-35	1.25-1.35	0.6-2.0	0.07-0.12	7.4-8.4	<2	Low-----	0.10				
	39	---	---	---	---	---	---	-----	---				
Passcreek-----	0-7	15-25	1.15-1.25	0.6-2.0	0.16-0.19	6.6-7.3	<2	Low-----	0.32	2	6	2-3	
	7-14	20-35	1.15-1.25	0.6-2.0	0.14-0.20	6.6-7.8	<2	Moderate	0.37				
	14-20	20-35	1.20-1.30	0.6-2.0	0.12-0.16	7.4-8.4	<2	Moderate	0.20				
	20-34	15-30	1.20-1.30	0.6-2.0	0.06-0.10	7.9-8.4	<2	Low-----	0.10				
	34	---	---	---	---	---	---	-----	---				

See footnote at end of table.

Table 15.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Soil reaction	Salinity	Shrink- swell potential	Erosion		Wind erodi- bility	Organic matter
									factors	group		
	In	Pct	g/cc	In/hr	In/in	pH	mmhos/cm		K	T	group	Pct
184*:												
Starley-----	0-9	20-27	1.15-1.25	0.6-2.0	0.16-0.18	6.6-7.8	<2	Low-----	0.32	1	6	2-3
	9-17	20-30	1.25-1.30	0.6-2.0	0.07-0.10	7.9-9.0	<2	Low-----	0.10			
	17	---	---	---	---	---	---	-----	---			
185-----	0-10	20-27	1.15-1.25	0.6-2.0	0.09-0.12	7.4-8.4	<2	Low-----	0.17	5	6	2-4
Nesda	10-60	0-15	1.45-1.55	6.0-20	0.02-0.04	7.4-9.0	<2	Low-----	0.05			
186*:												
Nesda-----	0-10	20-27	1.15-1.25	0.6-2.0	0.09-0.12	7.4-8.4	<2	Low-----	0.17	5	6	2-4
	10-60	0-15	1.45-1.55	6.0-20	0.02-0.04	7.4-9.0	<2	Low-----	0.05			
Rubble land----	0-60	0	2.00-2.60	>20	0.0-0.1	---	<2	Low-----	---	---	8	<.1
187*:												
Nesda Variant---	0-3	8-15	1.30-1.40	2.0-6.0	0.04-0.06	6.6-7.8	<2	Low-----	0.10	1	3	2-4
	3-11	2-18	1.40-1.50	6.0-20	0.03-0.05	7.4-8.4	<2	Low-----	0.05			
	11-60	2-10	1.40-1.50	>20	0.01-0.02	7.4-9.0	<2	Low-----	0.02			
Havertel-----	0-16	18-30	1.15-1.25	0.6-2.0	0.17-0.21	7.4-8.4	<2	Moderate	0.37	2	4L	2-4
	16-60	0-5	1.45-1.55	>20	0.02-0.04	7.4-8.4	<2	Low-----	0.02			
188*:												
Norbert-----	0-2	40-55	1.15-1.25	0.06-0.2	0.14-0.16	7.9-8.4	<2	High-----	0.32	1	4	1-2
	2-14	40-55	1.20-1.30	<0.06	0.14-0.16	7.9-8.4	<2	High-----	0.37			
	14	---	---	---	---	---	---	-----	---			
Doney-----	0-1	18-27	1.15-1.25	0.6-2.0	0.15-0.17	7.4-8.4	<2	Low-----	0.43	2	4L	1-2
	1-15	18-35	1.20-1.30	0.6-2.0	0.16-0.20	7.4-8.4	<2	Moderate	0.37			
	15-27	18-35	1.20-1.30	0.6-2.0	0.16-0.20	7.9-9.0	<2	Moderate	0.37			
	27	---	---	---	---	---	---	-----	---			
Rock outcrop----	0-60	---	---	---	---	---	<2	-----	---	---	---	---
189*:												
Norbert-----	0-2	40-55	1.15-1.25	0.06-0.2	0.14-0.16	7.9-8.4	<2	High-----	0.32	1	4	1-2
	2-19	40-55	1.20-1.30	<0.06	0.14-0.16	7.9-8.4	<2	High-----	0.37			
	19	---	---	---	---	---	---	-----	---			
Eltzac-----	0-1	50-60	1.05-1.15	0.06-0.2	0.14-0.17	7.9-8.4	<2	High-----	0.37	2	4	1-2
	1-16	60-70	1.15-1.25	<0.06	0.12-0.15	7.9-8.4	<2	High-----	0.37			
	16-39	60-70	1.25-1.35	<0.06	0.12-0.15	7.9-8.4	<2	High-----	0.37			
	39	---	---	---	---	---	---	-----	---			
190*:												
Norbert-----	0-1	40-55	1.15-1.25	0.06-0.2	0.14-0.16	7.9-8.4	<2	High-----	0.32	1	4	1-2
	1-19	40-55	1.20-1.30	<0.06	0.14-0.16	7.9-8.4	<2	High-----	0.37			
	19	---	---	---	---	---	---	-----	---			

See footnote at end of table.

Table 15.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth		Clay	Moist	Permea-	Available	Soil	Salinity	Shrink-	Erosion		Wind	Organic
	In	Pct		bulk	bility	water	reaction		swell	factors	erodi-	bility	
			g/cc		In/hr	In/in	pH	mmhos/cm	potential	K	T	group	Pct
190*:													
Reget-----	0-11	20-27	1.10-1.20	0.6-2.0	0.17-0.20	6.6-7.8	<2	Low-----	0.43	2	6		2-4
	11-26	40-55	1.15-1.25	0.06-0.2	0.11-0.13	6.6-8.4	<2	High-----	0.43				
	26-38	30-45	1.20-1.30	0.2-0.6	0.14-0.16	7.9-9.0	<2	High-----	0.43				
	38	---	---	---	---	---	---	-----	---				
Savar-----	0-2	30-40	1.15-1.25	0.2-0.6	0.19-0.21	7.4-8.4	<2	High-----	0.37	5	6		2-4
	2-20	35-50	1.20-1.30	0.06-0.2	0.15-0.20	7.4-8.4	<2	High-----	0.43				
	20-60	30-45	1.25-1.35	0.06-0.2	0.15-0.20	7.4-9.0	<2	High-----	0.43				
191*:													
Norbert-----	0-1	40-55	1.15-1.25	0.06-0.2	0.14-0.16	7.9-8.4	<2	High-----	0.32	1	4		1-2
	1-19	40-55	1.20-1.30	<0.06	0.14-0.16	7.9-8.4	<2	High-----	0.37				
	19	---	---	---	---	---	---	-----	---				
Rock outcrop----	0-60	---	---	---	---	---	<2	-----	---				---
192-----													
Nuncho-----	0-7	20-27	1.15-1.25	0.6-2.0	0.15-0.17	6.1-7.8	<2	Moderate	0.37	5	5		1-3
	7-34	35-50	1.20-1.30	0.06-0.2	0.15-0.20	6.6-7.8	<2	High-----	0.43				
	34-60	24-35	1.25-1.35	0.6-2.0	0.17-0.20	7.9-8.4	<2	Moderate	0.37				
193-----													
Nuncho-----	0-2	20-27	1.15-1.25	0.6-2.0	0.15-0.17	6.1-7.8	<2	Moderate	0.37	5	5		1-3
	2-20	35-50	1.20-1.30	0.06-0.2	0.15-0.20	6.6-7.8	<2	High-----	0.43				
	20-60	24-35	1.25-1.35	0.6-2.0	0.17-0.20	7.9-8.4	<2	Moderate	0.37				
194-----													
Nuncho-----	0-4	20-27	1.15-1.25	0.6-2.0	0.15-0.17	6.1-7.8	<2	Moderate	0.37	5	5		1-3
	4-22	35-50	1.20-1.30	0.06-0.2	0.15-0.20	6.6-7.8	<2	High-----	0.43				
	22-60	24-35	1.25-1.35	0.6-2.0	0.17-0.20	7.9-8.4	<2	Moderate	0.37				
195-----													
Nuncho-----	0-7	35-40	1.10-1.20	0.2-0.6	0.15-0.20	6.1-7.8	<2	High-----	0.43	5	6		1-3
	7-25	35-50	1.20-1.30	0.06-0.2	0.15-0.20	6.6-7.8	<2	High-----	0.43				
	25-60	24-35	1.25-1.35	0.6-2.0	0.17-0.20	7.9-8.4	<2	Moderate	0.37				
196-----													
Nuncho-----	0-12	35-40	1.10-1.20	0.2-0.6	0.15-0.20	6.1-7.8	<2	High-----	0.43	5	6		1-3
	12-34	35-50	1.20-1.30	0.06-0.2	0.15-0.20	6.6-7.8	<2	High-----	0.43				
	34-60	24-35	1.25-1.35	0.6-2.0	0.17-0.20	7.9-8.4	<2	Moderate	0.37				
197*:													
Nuncho-----	0-3	20-27	1.15-1.25	0.6-2.0	0.15-0.17	6.1-7.8	<2	Moderate	0.37	5	5		1-3
	3-24	35-50	1.20-1.30	0.06-0.2	0.15-0.20	6.6-7.8	<2	High-----	0.43				
	24-60	24-35	1.25-1.35	0.6-2.0	0.17-0.20	7.9-8.4	<2	Moderate	0.37				
Emigrant-----	0-1	27-35	1.20-1.30	0.6-2.0	0.15-0.18	6.6-7.8	<2	Moderate	0.28	2	6		3-4
	1-9	35-50	1.20-1.30	0.06-0.2	0.15-0.19	6.6-7.8	<2	High-----	0.32				
	9-36	35-45	1.25-1.35	0.06-0.2	0.15-0.19	7.9-8.4	<2	High-----	0.32				
	36	---	---	---	---	---	---	-----	---				

See footnote at end of table.

Table 15.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth		Moist bulk density	Permea- bility In/hr	Available water capacity In/in	Soil reaction pH	Salinity mmhos/cm	Shrink- swell potential	Erosion factors		Wind erodi- bility group	Organic matter Pct
	In	Pct							K	T		
198*:												
Nuncho-----	0-2	20-27	1.15-1.25	0.6-2.0	0.15-0.17	6.1-7.8	<2	Moderate	0.37	5	5	1-3
	2-35	35-50	1.20-1.30	0.06-0.2	0.15-0.20	6.6-7.8	<2	High-----	0.43			
	35-60	24-35	1.25-1.35	0.6-2.0	0.17-0.20	7.9-8.4	<2	Moderate	0.37			
Emigrant-----	0-5	20-27	1.15-1.25	0.6-2.0	0.17-0.21	6.6-7.8	<2	Low-----	0.32	2	6	3-4
	5-12	35-50	1.20-1.30	0.06-0.2	0.15-0.19	6.6-7.8	<2	High-----	0.32			
	12-38	35-45	1.25-1.35	0.06-0.2	0.15-0.19	7.9-8.4	<2	High-----	0.32			
	38	---	---	---	---	---	---	-----	---			
199-----	0-9	35-40	1.05-1.15	0.06-0.2	0.15-0.20	6.6-7.8	<2	High-----	0.43	5	4	1-3
Nuncho Variant	9-19	40-50	1.15-1.25	0.06-0.2	0.15-0.20	7.4-8.4	<2	High-----	0.49			
	19-60	30-45	1.15-1.25	0.06-0.2	0.15-0.20	7.9-9.0	<4	High-----	0.49			
200*:												
Owen Creek-----	0-3	28-35	1.15-1.25	0.6-2.0	0.16-0.18	6.6-7.3	<2	Low-----	0.32	2	6	2-3
	3-18	40-50	1.15-1.25	0.06-0.2	0.15-0.17	7.4-7.8	<2	High-----	0.32			
	18-29	30-45	1.20-1.30	0.2-0.6	0.12-0.16	7.9-8.4	<2	High-----	0.20			
	29	---	---	---	---	---	---	-----	---			
Echemoor-----	0-12	20-27	1.15-1.25	0.6-2.0	0.16-0.20	6.1-6.5	<2	Low-----	0.32	2	6	3-4
	12-29	27-35	1.20-1.30	0.6-2.0	0.17-0.21	6.1-7.3	<2	Moderate	0.37			
	29	---	---	---	---	---	---	-----	---			
Bynum-----	0-10	20-27	1.10-1.20	0.6-2.0	0.16-0.19	6.6-7.8	<2	Low-----	0.37	2	6	2-4
	10-16	27-35	1.15-1.25	0.6-2.0	0.13-0.17	7.4-8.4	<2	Moderate	0.20			
	16-28	27-35	1.20-1.30	0.6-2.0	0.13-0.17	7.9-8.4	<2	Moderate	0.20			
	28	---	---	---	---	---	---	-----	---			
201*:												
Parmleed-----	0-4	10-20	1.25-1.35	2.0-6.0	0.12-0.14	6.6-7.8	<2	Low-----	0.32	2	3	1-2
	4-17	35-50	1.10-1.30	0.06-0.2	0.16-0.19	6.6-7.8	<2	High-----	0.43			
	17-30	28-40	1.20-1.40	0.06-0.2	0.19-0.21	7.9-9.0	<2	High-----	0.43			
	30	---	---	---	---	---	---	-----	---			
Bidman-----	0-2	12-20	1.25-1.35	2.0-6.0	0.13-0.15	6.1-7.3	<2	Low-----	0.28	5	3	1-3
	2-17	35-45	1.15-1.25	0.06-0.2	0.16-0.19	6.6-7.8	<2	High-----	0.37			
	17-25	35-45	1.15-1.25	0.06-0.2	0.16-0.19	7.9-9.0	<2	High-----	0.32			
	25-60	24-35	1.25-1.35	0.6-2.0	0.16-0.19	7.9-9.0	<2	Moderate	0.28			
202*:												
Parmleed, moist-	0-7	10-20	1.25-1.35	2.0-6.0	0.12-0.14	6.6-7.8	<2	Low-----	0.32	2	3	1-2
	7-18	40-50	1.15-1.25	0.06-0.2	0.16-0.18	6.6-7.8	<2	High-----	0.37			
	18-30	35-50	1.20-1.30	0.06-0.2	0.15-0.17	7.9-8.4	<2	High-----	0.43			
	30-39	20-35	1.20-1.40	0.2-0.6	0.19-0.21	7.9-9.0	<2	Moderate	0.43			
	39	---	---	---	---	---	---	-----	---			

See footnote at end of table.

Table 15.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth		Moist bulk density	Permeability	Available water capacity	Soil reaction	Salinity	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
	In	Pct							K	T		
202*:												
Bidman, moist---	0-7	12-20	1.20-1.30	0.6-2.0	0.15-0.17	6.1-7.3	<2	Low-----	0.32	5	5	1-3
	7-18	35-45	1.15-1.25	0.06-0.2	0.16-0.19	6.6-7.8	<2	High-----	0.37			
	18-25	35-45	1.15-1.25	0.06-0.2	0.16-0.19	7.9-9.0	<2	High-----	0.32			
	25-60	24-35	1.25-1.35	0.6-2.0	0.16-0.19	7.9-9.0	<2	Moderate	0.28			
203*:												
Parmleed, moist-	0-3	10-20	1.15-1.25	0.6-2.0	0.16-0.18	6.6-7.8	<2	Low-----	0.37	2	5	1-2
	3-27	35-50	1.10-1.30	0.06-0.2	0.16-0.19	6.6-7.8	<2	High-----	0.43			
	27-38	28-40	1.20-1.40	0.06-0.2	0.19-0.21	7.9-9.0	<2	High-----	0.43			
	38	---	---	---	---	---	---	-----	---			
Bidman, moist---	0-3	12-20	1.20-1.30	0.6-2.0	0.15-0.17	6.1-7.3	<2	Low-----	0.32	5	5	1-3
	3-15	35-45	1.15-1.25	0.06-0.2	0.16-0.19	6.6-7.8	<2	High-----	0.37			
	15-25	35-45	1.15-1.25	0.06-0.2	0.16-0.19	7.9-9.0	<2	High-----	0.32			
	25-60	24-35	1.25-1.35	0.6-2.0	0.16-0.19	7.9-9.0	<2	Moderate	0.28			
204*:												
Parmleed-----	0-2	10-20	1.25-1.35	0.6-2.0	0.15-0.17	6.6-7.8	<2	Low-----	0.37	2	3	1-2
	2-14	35-50	1.10-1.30	0.06-0.2	0.16-0.19	6.6-7.8	<2	High-----	0.43			
	14-27	28-40	1.20-1.40	0.06-0.2	0.19-0.21	7.9-9.0	<2	High-----	0.43			
	27	---	---	---	---	---	---	-----	---			
Renohill-----	0-1	27-35	1.10-1.20	0.2-0.6	0.18-0.21	6.6-7.8	<2	Moderate	0.32	2	4	2-3
	1-15	35-50	1.15-1.25	0.06-0.2	0.16-0.20	7.4-8.4	<2	High-----	0.32			
	15-34	27-40	1.20-1.30	0.06-0.2	0.16-0.20	7.9-9.0	<2	High-----	0.37			
	34	---	---	---	---	---	---	-----	---			
205*:												
Parmleed, moist-	0-7	10-20	1.25-1.35	2.0-6.0	0.12-0.14	6.6-7.8	<2	Low-----	0.32	2	3	1-2
	7-22	35-50	1.10-1.30	0.06-0.2	0.16-0.19	6.6-7.8	<2	High-----	0.43			
	22-38	28-40	1.20-1.40	0.06-0.2	0.19-0.21	7.9-9.0	<2	High-----	0.43			
	38	---	---	---	---	---	---	-----	---			
Renohill, moist-	0-2	27-35	1.10-1.20	0.2-0.6	0.18-0.21	6.6-7.8	<2	Moderate	0.32	2	4	2-3
	2-17	35-50	1.15-1.25	0.06-0.2	0.16-0.20	7.4-8.4	<2	High-----	0.32			
	17-37	27-40	1.20-1.30	0.06-0.2	0.16-0.20	7.9-9.0	<2	High-----	0.37			
	37	---	---	---	---	---	---	-----	---			
206*:												
Parmleed, moist-	0-3	10-20	1.15-1.25	0.6-2.0	0.16-0.18	6.6-7.8	<2	Low-----	0.37	2	5	1-2
	3-24	35-50	1.10-1.30	0.06-0.2	0.16-0.19	6.6-7.8	<2	High-----	0.43			
	24-31	28-40	1.20-1.40	0.06-0.2	0.19-0.21	7.9-9.0	<2	High-----	0.43			
	31	---	---	---	---	---	---	-----	---			
Renohill, moist-	0-1	27-35	1.10-1.20	0.2-0.6	0.18-0.21	6.6-7.8	<2	Moderate	0.32	2	4	2-3
	1-13	35-50	1.15-1.25	0.06-0.2	0.16-0.20	7.4-8.4	<2	High-----	0.32			
	13-22	27-40	1.20-1.30	0.06-0.2	0.16-0.20	7.9-9.0	<2	High-----	0.37			
	22	---	---	---	---	---	---	-----	---			

See footnote at end of table.

Table 15.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Soil reaction	Salinity	Shrink- swell potential	Erosion		Wind erodi- bility	Organic matter
									factors	K		
	In	Pct	g/cc	In/hr	In/in	pH	mmhos/cm					
207*:												
Parmleed-----	0-3	10-20	1.25-1.35	2.0-6.0	0.12-0.14	6.6-7.8	<2	Low-----	0.32	2	3	1-2
	3-18	35-50	1.10-1.30	0.06-0.2	0.16-0.19	6.6-7.8	<2	High-----	0.43			
	18-29	28-40	1.20-1.40	0.06-0.2	0.19-0.21	7.9-9.0	<2	High-----	0.43			
	29	---	---	---	---	---	---	-----	---			
Worfka-----	0-4	18-27	1.15-1.25	0.6-2.0	0.15-0.18	6.6-7.8	<2	Low-----	0.32	1	6	1-3
	4-10	35-50	1.15-1.25	0.06-0.2	0.14-0.18	7.4-8.4	<2	High-----	0.37			
	10-19	30-45	1.20-1.30	0.06-0.2	0.14-0.18	7.9-8.4	<2	High-----	0.37			
	19	---	---	---	---	---	---	-----	---			
208*:												
Parmleed, moist-	0-4	10-20	1.25-1.35	0.6-2.0	0.15-0.17	6.6-7.8	<2	Low-----	0.37	2	3	1-2
	4-14	35-50	1.10-1.30	0.06-0.2	0.16-0.19	6.6-7.8	<2	High-----	0.43			
	14-29	28-40	1.20-1.40	0.06-0.2	0.19-0.21	7.9-9.0	<2	High-----	0.43			
	29	---	---	---	---	---	---	-----	---			
Worfka, moist---	0-2	15-20	1.25-1.35	2.0-6.0	0.13-0.15	6.6-7.8	<2	Low-----	0.28	1	3	1-3
	2-8	35-50	1.15-1.25	0.06-0.2	0.14-0.18	7.4-8.4	<2	High-----	0.37			
	8-12	30-45	1.20-1.30	0.06-0.2	0.14-0.18	7.9-8.4	<2	High-----	0.37			
	12	---	---	---	---	---	---	-----	---			
209*:												
Parmleed, moist-	0-8	10-20	1.15-1.25	0.6-2.0	0.16-0.18	6.6-7.8	<2	Low-----	0.37	2	5	1-2
	8-29	35-50	1.10-1.30	0.06-0.2	0.16-0.19	6.6-7.8	<2	High-----	0.43			
	29-32	28-40	1.20-1.40	0.06-0.2	0.19-0.21	7.9-9.0	<2	High-----	0.43			
	32	---	---	---	---	---	---	-----	---			
Worfka, moist---	0-1	18-27	1.15-1.25	0.6-2.0	0.15-0.18	6.6-7.8	<2	Low-----	0.32	1	6	1-3
	1-8	35-50	1.15-1.25	0.06-0.2	0.14-0.18	7.4-8.4	<2	High-----	0.37			
	8-11	30-45	1.20-1.30	0.06-0.2	0.14-0.18	7.9-8.4	<2	High-----	0.37			
	11	---	---	---	---	---	---	-----	---			
210*:												
Parmleed, moist-	0-2	10-20	1.15-1.25	0.6-2.0	0.16-0.18	6.6-7.8	<2	Low-----	0.37	2	5	1-2
	2-16	35-50	1.10-1.30	0.06-0.2	0.16-0.19	6.6-7.8	<2	High-----	0.43			
	16-35	28-40	1.20-1.40	0.06-0.2	0.19-0.21	7.9-9.0	<2	High-----	0.43			
	35	---	---	---	---	---	---	-----	---			
Worfka, moist---	0-2	18-27	1.15-1.25	0.6-2.0	0.15-0.18	6.6-7.8	<2	Low-----	0.32	1	6	1-3
	2-13	35-50	1.15-1.25	0.06-0.2	0.14-0.18	7.4-8.4	<2	High-----	0.37			
	13-17	30-45	1.20-1.30	0.06-0.2	0.14-0.18	7.9-8.4	<2	High-----	0.37			
	17	---	---	---	---	---	---	-----	---			
Shingle												
Variant, moist-	0-2	20-27	1.10-1.20	0.6-2.0	0.16-0.21	7.4-8.4	<2	Moderate	0.37	1	4L	1-2
	2-13	20-27	1.20-1.30	0.6-2.0	0.16-0.21	7.9-8.4	<2	Moderate	0.43			
	13	---	---	---	---	---	---	-----	---			

See footnote at end of table.

Table 15.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth		Moist bulk density	Permeability	Available water capacity	Soil reaction	Salinity	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter Pct
	In	Pct							In/hr	In/in		
211*:												
Peritsa-----	0-7	15-25	1.05-1.15	0.6-2.0	0.19-0.21	6.6-7.3	<2	Low-----	0.37	2	6	3-5
	7-11	25-35	1.05-1.15	0.6-2.0	0.18-0.20	7.4-8.4	<2	Moderate	0.37			
	11-32	25-35	1.15-1.25	0.6-2.0	0.18-0.20	7.9-9.0	<2	Moderate	0.43			
	32											
Abac-----	0-9	18-27	1.05-1.15	0.6-2.0	0.17-0.20	7.4-8.4	<2	Low-----	0.37	1	4L	1-3
	9-18	18-27	1.15-1.25	0.6-2.0	0.04-0.06	7.4-8.4	<2	Low-----	0.20			
	18											
212-----												
Platmak	0-3	15-27	1.40-1.45	0.6-2.0	0.16-0.18	6.6-7.3	<2	Low-----	0.32	5	5	2-4
	3-17	35-50	1.35-1.45	0.06-0.2	0.16-0.20	6.6-7.8	<2	High-----	0.37			
	17-60	20-40	1.40-1.45	0.6-2.0	0.16-0.18	7.9-8.4	<2	Moderate	0.37			
213-----												
Platmak	0-2	15-27	1.40-1.45	0.6-2.0	0.16-0.18	6.6-7.3	<2	Low-----	0.32	5	5	2-4
	2-13	35-50	1.35-1.45	0.06-0.2	0.16-0.20	6.6-7.8	<2	High-----	0.37			
	13-60	20-40	1.40-1.45	0.6-2.0	0.16-0.18	7.9-8.4	<2	Moderate	0.37			
214-----												
Platmak, dry	0-5	15-27	1.40-1.45	0.6-2.0	0.16-0.18	6.6-7.3	<2	Low-----	0.32	5	5	2-4
	5-14	35-50	1.35-1.45	0.06-0.2	0.16-0.20	6.6-7.8	<2	High-----	0.37			
	14-60	20-40	1.40-1.45	0.6-2.0	0.16-0.18	7.9-8.4	<2	Moderate	0.37			
215-----												
Platsher	0-4	15-27	1.15-1.25	0.6-2.0	0.16-0.18	6.6-7.8	<2	Moderate	0.32	5	5	1-3
	4-15	35-55	1.20-1.30	0.06-0.2	0.15-0.20	7.4-8.4	<2	High-----	0.43			
	15-38	28-40	1.25-1.35	0.2-0.6	0.17-0.19	7.9-9.0	<2	High-----	0.43			
	38-60	20-35	1.25-1.35	0.6-2.0	0.09-0.12	7.9-9.0	2-4	Moderate	0.20			
216-----												
Platsher	0-2	15-27	1.15-1.25	0.6-2.0	0.16-0.18	6.6-7.8	<2	Moderate	0.32	5	5	1-3
	2-15	35-55	1.20-1.30	0.06-0.2	0.15-0.20	7.4-8.4	<2	High-----	0.43			
	15-36	28-40	1.25-1.35	0.2-0.6	0.17-0.19	7.9-9.0	<2	High-----	0.43			
	36-60	20-35	1.25-1.35	0.6-2.0	0.09-0.12	7.9-9.0	2-4	Moderate	0.20			
217-----												
Platsher	0-8	28-40	1.10-1.20	0.2-0.6	0.15-0.20	6.6-7.8	<2	High-----	0.37	5	4	1-3
	8-19	35-55	1.20-1.30	0.06-0.2	0.15-0.20	7.4-8.4	<2	High-----	0.43			
	19-27	28-40	1.25-1.35	0.2-0.6	0.17-0.19	7.9-9.0	<2	High-----	0.43			
	27-60	20-35	1.25-1.35	0.6-2.0	0.09-0.12	7.9-9.0	2-4	Moderate	0.20			
218-----												
Platsher	0-7	28-40	1.10-1.20	0.2-0.6	0.15-0.20	6.6-7.8	<2	High-----	0.37	5	4	1-3
	7-17	35-55	1.20-1.30	0.06-0.2	0.15-0.20	7.4-8.4	<2	High-----	0.43			
	17-27	28-40	1.25-1.35	0.2-0.6	0.17-0.19	7.9-9.0	<2	High-----	0.43			
	27-60	20-35	1.25-1.35	0.6-2.0	0.09-0.12	7.9-9.0	2-4	Moderate	0.20			
219*:												
Platsher-----	0-7	15-27	1.15-1.25	0.6-2.0	0.16-0.18	6.6-7.8	<2	Moderate	0.32	5	5	1-3
	7-21	35-55	1.20-1.30	0.06-0.2	0.15-0.20	7.4-8.4	<2	High-----	0.43			
	21-28	28-40	1.25-1.35	0.2-0.6	0.17-0.19	7.9-9.0	<2	High-----	0.43			
	28-60	20-35	1.25-1.35	0.6-2.0	0.09-0.12	7.9-9.0	2-4	Moderate	0.20			

See footnote at end of table.

Table 15.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth		Clay Pct	Moist bulk density g/cc	Permea- bility In/hr	Available water capacity In/in	Soil reaction pH	Salinity mmhos/cm	Shrink- swell potential	Erosion factors		Wind erodi- bility group	Organic matter Pct
	In	Pct								K	T		
219*:													
Wolfvar-----	0-2	20-27	1.15-1.25	0.6-2.0	0.16-0.19	6.6-8.4	<2	Low-----	0.32	2	6	2-3	
	2-14	35-50	1.20-1.30	0.06-0.2	0.15-0.20	6.6-8.4	<2	High-----	0.37				
	14-37	20-35	1.25-1.35	0.6-2.0	0.08-0.16	7.9-9.0	<2	Moderate	0.20				
	37-60	5-12	1.40-1.50	2.0-6.0	0.03-0.05	7.9-9.0	<2	Low-----	0.05				
220*:													
Platsher-----	0-9	15-27	1.15-1.25	0.6-2.0	0.16-0.18	6.6-7.8	<2	Moderate	0.32	5	5	1-3	
	9-20	35-55	1.20-1.30	0.06-0.2	0.15-0.20	7.4-8.4	<2	High-----	0.43				
	20-37	28-40	1.25-1.35	0.2-0.6	0.17-0.19	7.9-9.0	<2	High-----	0.43				
	37-60	20-35	1.25-1.35	0.6-2.0	0.09-0.12	7.9-9.0	2-4	Moderate	0.20				
Wolfvar-----	0-2	20-27	1.15-1.25	0.6-2.0	0.16-0.19	6.6-8.4	<2	Low-----	0.32	2	6	2-3	
	2-16	35-50	1.20-1.30	0.06-0.2	0.15-0.20	6.6-8.4	<2	High-----	0.37				
	16-23	20-35	1.25-1.35	0.6-2.0	0.08-0.16	7.9-9.0	<2	Moderate	0.20				
	23-60	5-12	1.40-1.50	2.0-6.0	0.03-0.05	7.9-9.0	<2	Low-----	0.05				
221*:													
Platsher-----	0-2	28-40	1.10-1.20	0.2-0.6	0.15-0.20	6.6-7.8	<2	High-----	0.37	5	4	1-3	
	2-18	35-55	1.20-1.30	0.06-0.2	0.15-0.20	7.4-8.4	<2	High-----	0.43				
	18-39	28-40	1.25-1.35	0.2-0.6	0.17-0.19	7.9-9.0	<2	High-----	0.43				
	39-60	28-35	1.25-1.35	0.6-2.0	0.10-0.12	7.9-9.0	2-4	Moderate	0.20				
Wolfvar-----	0-1	20-27	1.15-1.25	0.6-2.0	0.16-0.19	6.6-8.4	<2	Low-----	0.32	2	6	2-3	
	1-16	35-50	1.20-1.30	0.06-0.2	0.15-0.20	6.6-8.4	<2	High-----	0.37				
	16-24	20-35	1.25-1.35	0.6-2.0	0.08-0.16	7.9-9.0	<2	Moderate	0.20				
	24-60	5-12	1.40-1.50	2.0-6.0	0.03-0.05	7.9-9.0	<2	Low-----	0.05				
222-----													
Platsher Variant	0-3	20-27	1.15-1.25	0.6-2.0	0.16-0.17	7.4-7.8	<2	Low-----	0.37	5	6	1-4	
	3-13	35-40	1.20-1.30	0.06-0.2	0.19-0.21	7.4-8.4	<2	High-----	0.43				
	13-22	30-40	1.20-1.30	0.06-0.2	0.17-0.19	7.9-9.0	<2	High-----	0.43				
	22-60	10-20	1.35-1.45	2.0-6.0	0.04-0.06	7.9-9.0	<2	Low-----	0.15				
223-----													
Recluse	0-9	18-27	1.10-1.20	0.6-2.0	0.17-0.20	6.6-7.8	<2	Low-----	0.37	5	5	1-3	
	9-19	27-35	1.20-1.30	0.6-2.0	0.19-0.21	6.6-7.8	<2	Moderate	0.43				
	19-60	18-30	1.25-1.35	0.6-2.0	0.17-0.20	7.4-8.4	<2	Moderate	0.37				
224-----													
Recluse	0-4	18-27	1.10-1.20	0.6-2.0	0.17-0.20	6.6-7.8	<2	Low-----	0.37	5	5	1-3	
	4-25	27-35	1.20-1.30	0.6-2.0	0.19-0.21	6.6-7.8	<2	Moderate	0.43				
	25-60	18-30	1.25-1.35	0.6-2.0	0.17-0.20	7.4-8.4	<2	Moderate	0.37				
225-----													
Recluse	0-4	18-27	1.10-1.20	0.6-2.0	0.17-0.20	6.6-7.8	<2	Low-----	0.37	5	5	1-3	
	4-18	27-35	1.20-1.30	0.6-2.0	0.19-0.21	6.6-7.8	<2	Moderate	0.43				
	18-60	18-30	1.25-1.35	0.6-2.0	0.17-0.20	7.4-8.4	<2	Moderate	0.37				
226*:													
Recluse-----	0-14	18-27	1.10-1.20	0.6-2.0	0.17-0.20	6.6-7.8	<2	Low-----	0.37	5	5	1-3	
	14-22	27-35	1.20-1.30	0.6-2.0	0.19-0.21	6.6-7.8	<2	Moderate	0.43				
	22-60	18-30	1.25-1.35	0.6-2.0	0.17-0.20	7.4-8.4	<2	Moderate	0.37				

See footnote at end of table.

Table 15.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth		Clay	Moist bulk density	Permea- bility	Available water capacity	Soil reaction	Salinity	Shrink- swell potential	Erosion factors		Wind erodi- bility group	Organic matter Pct
	In	Pct		g/cc	In/hr	In/in	pH	mmhos/cm		K	T		
226*:													
Bauxson-----	0-2	15-20		1.10-1.20	0.6-2.0	0.17-0.20	6.6-7.8	<2	Low-----	0.32	1	5	1-3
	2-10	28-35		1.20-1.30	0.6-2.0	0.19-0.21	7.4-8.4	<2	Moderate	0.37			
	10-60	0-1		1.65-1.75	>20	0.01-0.02	7.9-8.4	<2	Low-----	0.02			
Baux-----	0-4	18-27		1.15-1.25	0.6-2.0	0.09-0.13	6.6-7.8	<2	Low-----	0.15	1	7	1-3
	4-12	18-27		1.15-1.25	0.6-2.0	0.04-0.07	6.6-7.8	<2	Low-----	0.10			
	12-60	---		1.65-1.75	>20	0.01-0.02	7.4-8.4	<2	Low-----	0.02			
227*:													
Reeder-----	0-7	15-25		1.10-1.20	0.6-2.0	0.16-0.19	6.6-7.3	<2	Low-----	0.32	2	6	2-4
	7-19	27-35		1.15-1.25	0.6-2.0	0.17-0.21	7.4-7.8	<2	Moderate	0.32			
	19-30	18-27		1.20-1.30	0.6-2.0	0.15-0.18	7.9-8.4	<2	Low-----	0.37			
	30	---		---	---	---	---	---	-----	---			
Farnuf-----	0-11	15-25		1.10-1.20	0.6-2.0	0.16-0.20	6.1-7.8	<2	Low-----	0.37	5	6	2-3
	11-16	25-35		1.20-1.30	0.6-2.0	0.17-0.21	6.6-7.8	<2	Moderate	0.37			
	16-21	20-33		1.20-1.30	0.6-2.0	0.17-0.21	7.4-8.4	<2	Moderate	0.37			
	21-60	15-30		1.25-1.35	0.6-2.0	0.14-0.18	7.9-9.0	<2	Low-----	0.43			
228*:													
Reeder-----	0-5	15-25		1.10-1.20	0.6-2.0	0.16-0.19	6.6-7.3	<2	Low-----	0.32	2	6	2-4
	5-13	27-35		1.15-1.25	0.6-2.0	0.17-0.21	7.4-7.8	<2	Moderate	0.32			
	13-23	24-33		1.15-1.25	0.6-2.0	0.16-0.20	7.9-8.4	<2	Moderate	0.37			
	23-34	18-27		1.20-1.30	0.6-2.0	0.15-0.18	7.9-8.4	<2	Low-----	0.37			
	34	---		---	---	---	---	---	-----	---			
Farnuf-----	0-2	15-25		1.10-1.20	0.6-2.0	0.16-0.20	6.1-7.8	<2	Low-----	0.37	5	6	2-3
	2-21	25-35		1.20-1.30	0.6-2.0	0.17-0.21	6.6-7.8	<2	Moderate	0.37			
	21-60	15-30		1.25-1.35	0.6-2.0	0.14-0.18	7.9-9.0	<2	Low-----	0.43			
229-----													
Reget	0-1	20-27		1.10-1.20	0.6-2.0	0.17-0.20	6.6-7.8	<2	Low-----	0.43	2	6	2-4
	1-8	40-55		1.15-1.25	0.06-0.2	0.11-0.13	6.6-8.4	<2	High-----	0.43			
	8-23	30-45		1.20-1.30	0.2-0.6	0.14-0.16	7.9-9.0	<2	High-----	0.43			
	23	---		---	---	---	---	---	-----	---			
230-----													
Reget	0-1	28-40		1.10-1.20	0.2-0.6	0.15-0.20	6.6-7.8	<2	High-----	0.43	2	4	2-4
	1-9	40-55		1.15-1.25	0.06-0.2	0.11-0.13	6.6-8.4	<2	High-----	0.43			
	9-38	30-45		1.20-1.30	0.2-0.6	0.14-0.16	7.9-9.0	<2	High-----	0.43			
	38	---		---	---	---	---	---	-----	---			
231*:													
Reget-----	0-1	28-40		1.10-1.20	0.2-0.6	0.15-0.20	6.6-7.8	<2	High-----	0.43	2	4	2-4
	1-9	40-55		1.15-1.25	0.06-0.2	0.11-0.13	6.6-8.4	<2	High-----	0.43			
	9-36	30-45		1.20-1.30	0.2-0.6	0.14-0.16	7.9-9.0	<2	High-----	0.43			
	36	---		---	---	---	---	---	-----	---			
Savar-----													
	0-2	30-40		1.15-1.25	0.2-0.6	0.19-0.21	7.4-8.4	<2	High-----	0.37	5	6	2-4
	2-20	35-50		1.20-1.30	0.06-0.2	0.15-0.20	7.4-8.4	<2	High-----	0.43			
	20-60	30-45		1.25-1.35	0.06-0.2	0.15-0.20	7.4-9.0	<2	High-----	0.43			

See footnote at end of table.

Table 15.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth		Moist bulk density	Permeability	Available water capacity	Soil reaction	Salinity	Shrink-swell potential	Erosion factors		Wind erodibility	Organic matter
	In	Pct							K	T		
232*:												
Reget Variant---	0-9	20-27	1.15-1.25	0.2-2.0	0.17-0.20	6.6-7.8	<2	Moderate	0.37	5	5	2-4
	9-60	35-50	1.15-1.25	0.06-0.2	0.15-0.20	6.6-7.8	<2	High-----	0.43			
Reget-----	0-8	20-27	1.10-1.20	0.6-2.0	0.17-0.20	6.6-7.8	<2	Low-----	0.43	2	6	2-4
	8-33	40-55	1.15-1.25	0.06-0.2	0.11-0.13	6.6-8.4	<2	High-----	0.43			
	33-39	30-45	1.20-1.30	0.2-0.6	0.14-0.16	7.9-9.0	<2	High-----	0.43			
	39	---	---	---	---	---	---	-----	---			
233*:												
Renohill-----	0-1	27-35	1.10-1.20	0.2-0.6	0.18-0.21	6.6-7.8	<2	Moderate	0.32	2	4	2-3
	1-15	35-50	1.15-1.25	0.06-0.2	0.16-0.20	7.4-8.4	<2	High-----	0.32			
	15-37	27-40	1.20-1.30	0.06-0.2	0.16-0.20	7.9-9.0	<2	High-----	0.37			
	37	---	---	---	---	---	---	-----	---			
Savageton-----	0-3	35-40	1.10-1.20	0.06-0.2	0.17-0.20	7.4-8.4	<2	High-----	0.32	2	4	1-2
	3-16	35-50	1.15-1.25	0.06-0.2	0.15-0.20	7.9-9.0	<2	High-----	0.37			
	16-29	35-50	1.20-1.30	0.06-0.2	0.15-0.20	7.9-9.0	<2	High-----	0.37			
	29	---	---	---	---	---	---	-----	---			
234*:												
Renohill, moist-	0-3	27-35	1.10-1.20	0.2-0.6	0.18-0.21	6.6-7.8	<2	Moderate	0.32	2	4	2-3
	3-15	35-50	1.15-1.25	0.06-0.2	0.16-0.20	7.4-8.4	<2	High-----	0.32			
	15-32	27-40	1.20-1.30	0.06-0.2	0.16-0.20	7.9-9.0	<2	High-----	0.37			
	32	---	---	---	---	---	---	-----	---			
Savageton, moist	0-5	35-40	1.05-1.15	0.06-0.2	0.17-0.20	7.4-8.4	<2	High-----	0.37	2	4	1-2
	5-22	35-50	1.15-1.25	0.06-0.2	0.15-0.20	7.9-9.0	<2	High-----	0.37			
	22-28	35-50	1.20-1.30	0.06-0.2	0.15-0.20	7.9-9.0	<2	High-----	0.37			
	28	---	---	---	---	---	---	-----	---			
235*:												
Renohill, moist-	0-1	27-35	1.10-1.20	0.2-0.6	0.18-0.21	6.6-7.8	<2	Moderate	0.32	2	4	2-3
	1-17	35-50	1.15-1.25	0.06-0.2	0.16-0.20	7.4-8.4	<2	High-----	0.32			
	17-35	27-40	1.20-1.30	0.06-0.2	0.16-0.20	7.9-9.0	<2	High-----	0.37			
	35	---	---	---	---	---	---	-----	---			
Savageton, moist	0-1	35-40	1.10-1.20	0.06-0.2	0.17-0.20	7.4-8.4	<2	High-----	0.32	2	4	1-2
	1-22	35-50	1.15-1.25	0.06-0.2	0.15-0.20	7.9-9.0	<2	High-----	0.37			
	22-35	35-50	1.20-1.30	0.06-0.2	0.15-0.20	7.9-9.0	<2	High-----	0.37			
	35	---	---	---	---	---	---	-----	---			
236*:												
Renohill-----	0-2	27-35	1.10-1.20	0.2-0.6	0.18-0.21	6.6-7.8	<2	Moderate	0.32	2	4	2-3
	2-10	35-50	1.15-1.25	0.06-0.2	0.16-0.20	7.4-8.4	<2	High-----	0.32			
	10-28	27-40	1.20-1.30	0.06-0.2	0.16-0.20	7.9-9.0	<2	High-----	0.37			
	28	---	---	---	---	---	---	-----	---			

See footnote at end of table.

Table 15.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth		Clay Pct	Moist bulk density g/cc	Permea- bility In/hr	Available water capacity In/in	Soil reaction pH	Salinity mmhos/cm	Shrink- swell potential	Erosion factors		Wind erodi- bility group	Organic matter Pct
	In	Pct								K	T		
236*:													
Ulm, dry-----	0-6	28-35	1.15-1.25	0.6-2.0	0.17-0.21	6.6-7.3	<2	Moderate	0.32	5	6	1-3	
	6-17	35-50	1.20-1.30	0.06-0.2	0.17-0.21	6.6-7.8	<2	High-----	0.37				
	17-60	30-42	1.20-1.30	0.2-0.6	0.17-0.21	7.9-9.0	<2	High-----	0.37				
237*:													
Renohill, moist-	0-3	27-35	1.10-1.20	0.2-0.6	0.18-0.21	6.6-7.8	<2	Moderate	0.32	2	4	2-3	
	3-12	35-50	1.15-1.25	0.06-0.2	0.16-0.20	7.4-8.4	<2	High-----	0.32				
	12-35	27-40	1.20-1.30	0.06-0.2	0.16-0.20	7.9-9.0	<2	High-----	0.37				
	35	---	---	---	---	---	---	-----	---				
Ulm-----	0-3	28-35	1.15-1.25	0.6-2.0	0.17-0.21	6.6-7.3	<2	Moderate	0.32	5	6	1-3	
	3-14	35-50	1.20-1.30	0.06-0.2	0.17-0.21	6.6-7.8	<2	High-----	0.37				
	14-60	30-42	1.20-1.30	0.2-0.6	0.17-0.21	7.9-9.0	<2	High-----	0.37				
238*:													
Renohill-----	0-2	27-35	1.10-1.20	0.2-0.6	0.18-0.21	6.6-7.8	<2	Moderate	0.32	2	4	2-3	
	2-16	35-50	1.15-1.25	0.06-0.2	0.16-0.20	7.4-8.4	<2	High-----	0.32				
	16-25	27-40	1.20-1.30	0.06-0.2	0.16-0.20	7.9-9.0	<2	High-----	0.37				
	25	---	---	---	---	---	---	-----	---				
Worfka-----	0-4	28-40	1.10-1.20	0.6-2.0	0.18-0.21	6.6-7.8	<2	Moderate	0.32	1	6	1-3	
	4-12	35-50	1.15-1.25	0.06-0.2	0.14-0.18	7.4-8.4	<2	High-----	0.37				
	12-17	30-45	1.20-1.30	0.06-0.2	0.14-0.18	7.9-8.4	<2	High-----	0.37				
	17	---	---	---	---	---	---	-----	---				
239*:													
Renohill, moist-	0-1	27-35	1.10-1.20	0.2-0.6	0.18-0.21	6.6-7.8	<2	Moderate	0.32	2	4	2-3	
	1-15	35-50	1.15-1.25	0.06-0.2	0.16-0.20	7.4-8.4	<2	High-----	0.32				
	15-34	27-40	1.20-1.30	0.06-0.2	0.16-0.20	7.9-9.0	<2	High-----	0.37				
	34	---	---	---	---	---	---	-----	---				
Worfka, moist---	0-1	28-40	1.10-1.20	0.6-2.0	0.18-0.21	6.6-7.8	<2	Moderate	0.32	1	6	1-3	
	1-11	35-50	1.15-1.25	0.06-0.2	0.14-0.18	7.4-8.4	<2	High-----	0.37				
	11-17	30-45	1.20-1.30	0.06-0.2	0.14-0.18	7.9-8.4	<2	High-----	0.37				
	17	---	---	---	---	---	---	-----	---				
240*:													
Renohill, moist-	0-4	27-35	1.10-1.20	0.2-0.6	0.18-0.21	6.6-7.8	<2	Moderate	0.32	2	4	2-3	
	4-18	35-50	1.15-1.25	0.06-0.2	0.16-0.20	7.4-8.4	<2	High-----	0.32				
	18-27	27-40	1.20-1.30	0.06-0.2	0.16-0.20	7.9-9.0	<2	High-----	0.37				
	27	---	---	---	---	---	---	-----	---				
Wyarno-----	0-2	28-40	1.10-1.20	0.2-0.6	0.19-0.21	6.6-7.8	<2	High-----	0.37	5	4	1-3	
	2-16	35-50	1.20-1.30	0.06-0.2	0.15-0.20	6.6-8.4	<2	High-----	0.43				
	16-60	28-35	1.25-1.35	0.2-0.6	0.14-0.16	7.9-9.0	<2	Moderate	0.43				

See footnote at end of table.

Table 15.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth		Moist bulk density	Permea- bility	Available water capacity	Soil reaction	Salinity	Shrink- swell potential	Erosion factors		Wind erodi- bility group	Organic matter Pct
	In	Pct							K	T		
241*: Rock outcrop	0-60	---	---	---	---	---	<2	-----	-----	---	---	---
Agneston	0-5 5-18 18-23 23	10-18 18-27 12-24 ---	1.30-1.40 1.30-1.40 1.35-1.45 ---	2.0-6.0 0.6-2.0 2.0-6.0 ---	0.12-0.14 0.07-0.09 0.05-0.09 ---	5.6-6.0 5.1-5.5 5.1-5.5 ---	<2 <2 <2 ---	Low----- Low----- Low----- -----	0.20 0.05 0.05 ---	2 	3 	1-2
Rubble land	0-60	0	2.00-2.60	>20	0.0-0.1	---	<2	Low-----	-----	---	8	<.1
242*: Rock outcrop	0-60	---	---	---	---	---	<2	-----	-----	---	---	---
Starman	0-4 4-14 14	28-35 28-35 ---	1.15-1.25 1.25-1.35 ---	0.6-2.0 0.6-2.0 ---	0.10-0.12 0.06-0.08 ---	7.4-7.8 7.9-8.4 ---	<2 <2 ---	Moderate Moderate -----	0.15 0.10 ---	1 	7 	1-2
243*: Rock outcrop	0-60	---	---	---	---	---	<2	-----	-----	---	---	---
Starman Variant	0-3 3-14 14	15-27 20-35 ---	1.15-1.25 1.20-1.30 ---	0.6-2.0 0.6-2.0 ---	0.09-0.11 0.09-0.11 ---	7.4-8.4 7.9-9.0 ---	<2 <2 ---	Low----- Low----- -----	0.05 0.05 ---	1 	8 	1-2
244*: Samday, moist	0-2 2-14 14	30-40 35-50 ---	1.05-1.15 1.15-1.25 ---	0.2-0.6 0.06-0.2 ---	0.17-0.20 0.14-0.18 ---	7.4-8.4 7.4-9.0 ---	<2 <4 ---	High----- High----- -----	0.37 0.32 ---	1 	4 	1-2
Gayhart, moist	0-2 2-32 32	35-40 35-55 ---	1.15-1.25 1.30-1.40 ---	0.2-0.6 0.06-0.2 ---	0.16-0.19 0.12-0.16 ---	7.4-8.4 7.9-9.0 ---	<2 <8 ---	High----- High----- -----	0.32 0.37 ---	2 	4L 	.5-1
Hilight, moist	0-1 1-12 12	30-40 40-55 ---	1.15-1.25 1.15-1.25 ---	0.06-0.2 0.06-0.2 ---	0.19-0.21 0.14-0.17 ---	7.4-8.4 7.4-8.4 ---	<2 <2 ---	Moderate High----- -----	0.32 0.43 ---	1 	4 	1-2
245*: Samday	0-2 2-17 17	30-40 35-50 ---	1.05-1.15 1.15-1.25 ---	0.2-0.6 0.06-0.2 ---	0.17-0.20 0.14-0.18 ---	7.4-8.4 7.4-9.0 ---	<2 <4 ---	High----- High----- -----	0.37 0.32 ---	1 	4 	1-2
Hilight	0-1 1-16 16	30-40 40-55 ---	1.15-1.25 1.15-1.25 ---	0.06-0.2 0.06-0.2 ---	0.19-0.21 0.14-0.17 ---	7.4-8.4 7.4-8.4 ---	<2 <2 ---	Moderate High----- -----	0.32 0.43 ---	1 	4 	1-2
246----- Savage	0-11 11-23 23-60	20-27 35-50 28-45	1.10-1.20 1.15-1.25 1.20-1.30	0.6-2.0 0.06-0.2 0.06-0.2	0.16-0.19 0.15-0.18 0.15-0.18	6.6-7.8 6.6-7.8 7.9-8.4	<2 <2 <2	Low----- High----- High-----	0.32 0.32 0.32	5 	6 	2-4

See footnote at end of table.

Table 15.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Salinity	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
									K	T		
	In	Pct	g/cc	In/hr	In/in	pH	mmhos/cm					Pct
247, 248 Savage	0-8	20-27	1.05-1.15	0.6-2.0	0.17-0.20	6.6-7.8	<2	Low	0.37	5	6	2-4
	8-21	35-50	1.15-1.25	0.06-0.2	0.15-0.18	6.6-7.8	<2	High	0.32			
	21-60	28-45	1.20-1.30	0.06-0.2	0.15-0.18	7.9-8.4	<2	High	0.32			
249*: Savage	0-14	20-25	1.05-1.15	0.6-2.0	0.18-0.20	6.6-7.8	<2	Low	0.37	5	6	2-4
	14-29	45-55	1.15-1.25	0.06-0.2	0.14-0.16	6.6-7.8	<2	High	0.37			
	29-41	35-45	1.15-1.25	0.06-0.2	0.14-0.16	7.9-8.4	<2	High	0.37			
	41-60	15-25	1.20-1.30	0.6-2.0	0.10-0.12	7.9-8.4	<2	Low	0.20			
Farnuf	0-2	20-25	1.05-1.15	0.6-2.0	0.18-0.20	6.1-7.3	<2	Low	0.37	5	6	2-4
	2-11	27-35	1.15-1.25	0.6-2.0	0.18-0.20	6.6-7.8	<2	Moderate	0.43			
	11-17	20-27	1.15-1.25	0.6-2.0	0.18-0.20	7.9-8.4	<2	Low	0.37			
	17-60	15-25	1.20-1.30	0.6-2.0	0.10-0.12	7.9-9.0	<4	Low	0.20			
250*: Savage	0-3	20-27	1.10-1.20	0.6-2.0	0.16-0.19	6.6-7.8	<2	Low	0.32	5	6	2-4
	3-21	35-50	1.15-1.25	0.06-0.2	0.15-0.18	6.6-7.8	<2	High	0.32			
	21-60	28-45	1.20-1.30	0.06-0.2	0.15-0.18	7.9-8.4	<2	High	0.32			
Korchea	0-13	18-27	1.20-1.30	0.6-2.0	0.16-0.19	7.4-8.4	<2	Low	0.32	5	6	2-3
	13-60	18-27	1.25-1.35	0.6-2.0	0.15-0.18	7.9-8.4	<2	Low	0.37			
251*: Savage	0-10	20-27	1.05-1.15	0.6-2.0	0.17-0.20	6.6-7.8	<2	Low	0.37	5	6	2-4
	10-21	35-50	1.15-1.25	0.06-0.2	0.15-0.18	6.6-7.8	<2	High	0.32			
	21-60	28-45	1.20-1.30	0.06-0.2	0.15-0.18	7.9-8.4	<2	High	0.32			
Reget	0-9	20-27	1.10-1.20	0.6-2.0	0.17-0.20	6.6-7.8	<2	Low	0.43	2	6	2-4
	9-26	40-55	1.15-1.25	0.06-0.2	0.11-0.13	6.6-8.4	<2	High	0.43			
	26-38	30-45	1.20-1.30	0.2-0.6	0.14-0.16	7.9-9.0	<2	High	0.43			
	38	---	---	---	---	---	---	-----	-----			
252*: Searing	0-2	20-27	1.15-1.25	0.6-2.0	0.16-0.19	6.1-7.3	<2	Low	0.32	2	6	2-4
	2-15	25-35	1.20-1.30	0.6-2.0	0.17-0.21	7.4-8.4	<2	Moderate	0.32			
	15-38	20-27	1.20-1.30	0.6-2.0	0.16-0.18	7.9-8.4	<2	Low	0.37			
	38-60	0-2	---	>20	0.01-0.02	7.9-8.4	<2	Low	0.02			
Ringling	0-8	10-25	1.15-1.25	0.6-2.0	0.10-0.13	6.6-7.8	<2	Low	0.15	1	7	3-5
	8-16	10-25	1.15-1.25	0.6-2.0	0.05-0.10	6.6-7.8	<2	Low	0.10			
	16-60	0-2	---	>20	---	---	<2	Low	0.02			
253 Shaak	0-9	20-27	1.15-1.25	0.6-2.0	0.16-0.18	6.6-7.3	<2	Low	0.28	5	6	2-4
	9-18	40-50	1.15-1.25	0.06-0.2	0.14-0.17	7.4-7.8	<2	High	0.32			
	18-60	40-50	1.20-1.30	0.06-0.2	0.14-0.17	7.9-8.4	<2	High	0.32			

See footnote at end of table.

Table 15.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Soil reaction	Salinity	Shrink- swell potential	Erosion		Wind erodi- bility group	Organic matter Pct
									factors	K		
	In	Pct	g/cc	In/hr	In/in	pH	mmhos/cm					
254*:												
Shingle, moist--	0-4	18-27	1.15-1.25	0.6-2.0	0.15-0.18	7.4-8.4	<2	Low-----	0.37	1	4L	1-2
	4-15	18-35	1.20-1.30	0.6-2.0	0.16-0.20	7.9-9.0	<2	Moderate	0.37			
	15	---	---	---	---	---	---	-----	---			
Baux-----	0-5	18-27	1.15-1.25	0.6-2.0	0.16-0.18	6.6-7.8	<2	Low-----	0.32	1	5	1-3
	5-12	18-27	1.15-1.25	0.6-2.0	0.04-0.07	6.6-7.8	<2	Low-----	0.10			
	12-60	---	1.65-1.75	>20	0.01-0.02	7.4-8.4	<2	Low-----	0.02			
Rock outcrop----	0-60	---	---	---	---	---	<2	-----	---			---
255*:												
Shingle-----	0-1	27-35	1.15-1.25	0.6-2.0	0.17-0.20	7.4-8.4	<2	Moderate	0.37	1	4L	1-2
	1-15	18-35	1.20-1.30	0.6-2.0	0.16-0.20	7.9-9.0	<2	Moderate	0.37			
	15	---	---	---	---	---	---	-----	---			
Haverdad-----	0-10	13-27	1.15-1.25	0.6-2.0	0.16-0.18	7.4-8.4	<2	Low-----	0.32	5	4L	1-2
	10-60	18-27	1.25-1.40	0.6-2.0	0.14-0.16	7.9-9.0	<4	Low-----	0.37			
256*:												
Shingle, moist--	0-2	27-35	1.15-1.25	0.6-2.0	0.17-0.20	7.4-8.4	<2	Moderate	0.37	1	4L	1-2
	2-17	18-35	1.20-1.30	0.6-2.0	0.16-0.20	7.9-9.0	<2	Moderate	0.37			
	17	---	---	---	---	---	---	-----	---			
Haverdad, moist-	0-10	10-20	1.20-1.35	0.6-2.0	0.13-0.15	7.4-8.4	<2	Low-----	0.32	5	3	1-2
	10-60	18-27	1.25-1.40	0.6-2.0	0.14-0.16	7.9-9.0	<4	Low-----	0.37			
257*:												
Shingle-----	0-2	27-35	1.15-1.25	0.6-2.0	0.17-0.20	7.4-8.4	<2	Moderate	0.37	1	4L	1-2
	2-15	18-35	1.20-1.30	0.6-2.0	0.16-0.20	7.9-9.0	<2	Moderate	0.37			
	15	---	---	---	---	---	---	-----	---			
Nihill-----	0-5	15-25	1.15-1.25	0.6-2.0	0.10-0.14	7.4-8.4	<2	Low-----	0.20	1	5	1-2
	5-29	18-35	1.20-1.30	0.6-2.0	0.06-0.08	7.9-8.4	<2	Low-----	0.10			
	29-60	10-25	1.25-1.40	0.6-2.0	0.04-0.07	7.9-8.4	<2	Low-----	0.05			
258*:												
Shingle, moist--	0-4	18-27	1.15-1.25	0.6-2.0	0.15-0.18	7.4-8.4	<2	Low-----	0.37	1	4L	1-2
	4-17	18-35	1.20-1.30	0.6-2.0	0.16-0.20	7.9-9.0	<2	Moderate	0.37			
	17	---	---	---	---	---	---	-----	---			
Nihill, moist---	0-5	15-25	1.15-1.25	0.6-2.0	0.10-0.14	7.4-8.4	<2	Low-----	0.20	1	5	1-2
	5-29	18-35	1.20-1.30	0.6-2.0	0.06-0.08	7.9-8.4	<2	Low-----	0.10			
	29-60	10-25	1.25-1.40	0.6-2.0	0.04-0.07	7.9-8.4	<2	Low-----	0.05			
259*:												
Shingle, moist--	0-4	18-27	1.15-1.25	0.6-2.0	0.15-0.18	7.4-8.4	<2	Low-----	0.37	1	4L	1-2
	4-17	18-35	1.20-1.30	0.6-2.0	0.16-0.20	7.9-9.0	<2	Moderate	0.37			
	17	---	---	---	---	---	---	-----	---			

See footnote at end of table.

Table 15.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth		Clay Pct	Moist bulk density g/cc	Permea- bility In/hr	Available water capacity In/in	Soil reaction pH	Salinity mmhos/cm	Shrink- swell potential	Erosion factors		Wind erodi- bility group	Organic matter Pct
	In	Pct								K	T		
259*: Nuncho-----	0-3	20-27	1.15-1.25	0.6-2.0	0.15-0.17	6.1-7.8	<2	Moderate	0.37	5	5	1-3	
	3-24	35-50	1.20-1.30	0.06-0.2	0.15-0.20	6.6-7.8	<2	High-----	0.43				
	24-60	24-35	1.25-1.35	0.6-2.0	0.17-0.20	7.9-8.4	<2	Moderate	0.37				
260*: Shingle-----	0-1	27-35	1.15-1.25	0.6-2.0	0.17-0.20	7.4-8.4	<2	Moderate	0.37	1	4L	1-2	
	1-15	18-35	1.20-1.30	0.6-2.0	0.16-0.20	7.9-9.0	<2	Moderate	0.37				
	15	---	---	---	---	---	---	---	---				
Rock outcrop----	0-60	---	---	---	---	---	<2	-----	-----	---	---	---	
261*: Shingle, moist--	0-2	27-35	1.15-1.25	0.6-2.0	0.17-0.20	7.4-8.4	<2	Moderate	0.37	1	4L	1-2	
	2-17	18-35	1.20-1.30	0.6-2.0	0.16-0.20	7.9-9.0	<2	Moderate	0.37				
	17	---	---	---	---	---	---	-----	-----				
Rock outcrop----	0-60	---	---	---	---	---	<2	-----	-----	---	---	---	
262*: Shingle-----	0-2	27-35	1.15-1.25	0.6-2.0	0.17-0.20	7.4-8.4	<2	Moderate	0.37	1	4L	1-2	
	2-17	18-35	1.20-1.30	0.6-2.0	0.16-0.20	7.9-9.0	<2	Moderate	0.37				
	17	---	---	---	---	---	---	-----	-----				
Samday-----	0-4	30-40	1.05-1.15	0.2-0.6	0.17-0.20	7.4-8.4	<2	High-----	0.37	1	4	1-2	
	4-16	35-50	1.15-1.25	0.06-0.2	0.14-0.18	7.4-9.0	<4	High-----	0.32				
	16	---	---	---	---	---	---	-----	-----				
263*: Shingle, moist--	0-2	27-35	1.15-1.25	0.6-2.0	0.17-0.20	7.4-8.4	<2	Moderate	0.37	1	4L	1-2	
	2-12	18-35	1.20-1.30	0.6-2.0	0.16-0.20	7.9-9.0	<2	Moderate	0.37				
	12	---	---	---	---	---	---	-----	-----				
Samday, moist---	0-2	30-40	1.05-1.15	0.2-0.6	0.17-0.20	7.4-8.4	<2	High-----	0.37	1	4	1-2	
	2-17	35-50	1.15-1.25	0.06-0.2	0.14-0.18	7.4-9.0	<4	High-----	0.32				
	17	---	---	---	---	---	---	-----	-----				
264*: Shingle-----	0-2	27-35	1.15-1.25	0.6-2.0	0.17-0.20	7.4-8.4	<2	Moderate	0.37	1	4L	1-2	
	2-15	18-35	1.20-1.30	0.6-2.0	0.16-0.20	7.9-9.0	<2	Moderate	0.37				
	15	---	---	---	---	---	---	-----	-----				
Taluce-----	0-4	10-18	1.35-1.45	2.0-6.0	0.11-0.13	7.4-8.4	<2	Low-----	0.24	1	3	.5-1	
	4-19	10-18	1.30-1.40	2.0-6.0	0.10-0.13	7.9-9.0	<2	Low-----	0.20				
	19	---	---	---	---	---	---	-----	-----				
265*: Shingle, moist--	0-1	18-27	1.15-1.25	0.6-2.0	0.15-0.18	7.4-8.4	<2	Low-----	0.37	1	4L	1-2	
	1-17	18-35	1.20-1.30	0.6-2.0	0.16-0.20	7.9-9.0	<2	Moderate	0.37				
	17	---	---	---	---	---	---	-----	-----				

See footnote at end of table.

Table 15.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth		Moist bulk density	Permea- bility	Available water capacity	Soil reaction	Salinity	Shrink- swell potential	Erosion factors		Wind erodi- bility group	Organic matter Pct
	In	Pct							K	T		
265*:												
Taluca, moist---	0-4	10-18	1.35-1.45	2.0-6.0	0.11-0.13	7.4-8.4	<2	Low-----	0.24	1	3	.5-1
	4-19	10-18	1.30-1.40	2.0-6.0	0.10-0.13	7.9-9.0	<2	Low-----	0.20			
	19	---	---	---	---	---	---	-----	---			
266*:												
Shingle-----	0-2	27-35	1.15-1.25	0.6-2.0	0.17-0.20	7.4-8.4	<2	Moderate	0.37	1	4L	1-2
	2-15	18-35	1.20-1.30	0.6-2.0	0.16-0.20	7.9-9.0	<2	Moderate	0.37			
	15	---	---	---	---	---	---	-----	---			
Theedle-----	0-2	15-27	1.15-1.25	0.6-2.0	0.17-0.20	7.4-8.4	<2	Low-----	0.32	2	4L	1-2
	2-29	18-35	1.25-1.35	0.6-2.0	0.17-0.20	7.9-9.0	<2	Moderate	0.37			
	29	---	---	---	---	---	---	-----	---			
267*:												
Shingle, moist--	0-4	18-27	1.15-1.25	0.6-2.0	0.15-0.18	7.4-8.4	<2	Low-----	0.37	1	4L	1-2
	4-17	18-35	1.20-1.30	0.6-2.0	0.16-0.20	7.9-9.0	<2	Moderate	0.37			
	17	---	---	---	---	---	---	-----	---			
Theedle, moist--	0-4	15-27	1.15-1.25	0.6-2.0	0.17-0.20	7.4-8.4	<2	Low-----	0.32	2	4L	1-2
	4-30	18-35	1.25-1.35	0.6-2.0	0.17-0.20	7.9-9.0	<2	Moderate	0.37			
	30	---	---	---	---	---	---	-----	---			
268*:												
Shingle-----	0-2	27-35	1.15-1.25	0.6-2.0	0.17-0.20	7.4-8.4	<2	Moderate	0.37	1	4L	1-2
	2-15	18-35	1.20-1.30	0.6-2.0	0.16-0.20	7.9-9.0	<2	Moderate	0.37			
	15	---	---	---	---	---	---	-----	---			
Theedle-----	0-1	10-20	1.25-1.35	2.0-6.0	0.13-0.15	7.4-8.4	<2	Low-----	0.28	2	3	1-2
	1-38	18-35	1.25-1.35	0.6-2.0	0.17-0.20	7.9-9.0	<2	Moderate	0.37			
	38	---	---	---	---	---	---	-----	---			
Kishona-----	0-2	10-20	1.25-1.35	0.6-2.0	0.13-0.15	7.4-8.4	<2	Low-----	0.32	5	3	1-2
	2-60	20-35	1.20-1.35	0.6-2.0	0.16-0.20	7.9-9.0	<4	Moderate	0.37			
269*:												
Shingle, moist--	0-2	27-35	1.15-1.25	0.6-2.0	0.17-0.20	7.4-8.4	<2	Moderate	0.37	1	4L	1-2
	2-16	18-35	1.20-1.30	0.6-2.0	0.16-0.20	7.9-9.0	<2	Moderate	0.37			
	16	---	---	---	---	---	---	-----	---			
Theedle, moist--	0-2	15-27	1.15-1.25	0.6-2.0	0.17-0.20	7.4-8.4	<2	Low-----	0.32	2	4L	1-2
	2-22	18-35	1.25-1.35	0.6-2.0	0.17-0.20	7.9-9.0	<2	Moderate	0.37			
	22	---	---	---	---	---	---	-----	---			
Kishona, moist--	0-2	20-27	1.20-1.30	0.6-2.0	0.15-0.17	7.4-8.4	<2	Low-----	0.32	5	4L	1-2
	2-60	20-35	1.20-1.35	0.6-2.0	0.16-0.20	7.9-9.0	<4	Moderate	0.37			

See footnote at end of table.

Table 15.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth		Clay	Moist bulk density	Permea- bility	Available water capacity	Soil reaction	Salinity	Shrink- swell potential	Erosion factors		Wind erodi- bility	Organic matter
	In	Pct		g/cc	In/hr	In/in	pH	mmhos/cm		K	T	group	Pct
270*:													
Shingle, moist--	0-2	15-20	1.30-1.40	2.0-6.0	0.13-0.15	7.4-8.4	<2	Low-----	0.28	1	3	1-2	
	2-10	18-35	1.20-1.30	0.6-2.0	0.16-0.20	7.9-9.0	<2	Moderate	0.37				
	10	---	---	---	---	---	---	-----	---				
Theedle, moist--	0-5	15-27	1.15-1.25	0.6-2.0	0.17-0.20	7.4-8.4	<2	Low-----	0.32	2	4L	1-2	
	5-36	18-35	1.25-1.35	0.6-2.0	0.17-0.20	7.9-9.0	<2	Moderate	0.37				
	36	---	---	---	---	---	---	-----	---				
Rock outcrop----	0-60	---	---	---	---	---	<2	-----	---			---	
271*:													
Shingle-----	0-1	15-20	1.30-1.40	2.0-6.0	0.13-0.15	7.4-8.4	<2	Low-----	0.28	1	3	1-2	
	1-18	18-35	1.20-1.30	0.6-2.0	0.16-0.20	7.9-9.0	<2	Moderate	0.37				
	18	---	---	---	---	---	---	-----	---				
Wibaux-----	0-5	12-25	1.15-1.25	0.6-2.0	0.10-0.12	7.4-7.8	<2	Low-----	0.20	1	6	1-2	
	5-12	8-25	1.15-1.30	0.6-2.0	0.06-0.09	7.4-7.8	<2	Low-----	0.05				
	12-60	0-2	---	>20	0.00-0.01	7.4-7.8	<2	Low-----	0.02				
272*:													
Shingle, cool---	0-2	18-27	1.15-1.25	0.6-2.0	0.15-0.18	7.4-8.4	<2	Low-----	0.37	1	4L	1-2	
	2-13	18-27	1.20-1.30	0.6-2.0	0.15-0.18	7.9-9.0	<2	Low-----	0.37				
	13	---	---	---	---	---	---	-----	---				
Wibaux, cool----	0-3	12-25	1.15-1.25	0.6-2.0	0.10-0.12	7.4-7.8	<2	Low-----	0.20	1	6	1-2	
	3-18	8-25	1.15-1.30	0.6-2.0	0.06-0.09	7.4-7.8	<2	Low-----	0.05				
	18-60	0-2	---	>20	0.00-0.01	7.4-7.8	<2	Low-----	0.02				
273*:													
Shingle-----	0-2	27-35	1.15-1.25	0.6-2.0	0.17-0.20	7.4-8.4	<2	Moderate	0.37	1	4L	1-2	
	2-15	18-35	1.20-1.30	0.6-2.0	0.16-0.20	7.9-9.0	<2	Moderate	0.37				
	15	---	---	---	---	---	---	-----	---				
Worf-----	0-2	15-25	1.15-1.25	0.6-2.0	0.16-0.18	6.6-7.8	<2	Low-----	0.32	1	5	1-3	
	2-7	25-35	1.25-1.35	0.6-2.0	0.15-0.19	6.6-7.8	<2	Moderate	0.32				
	7-15	20-30	1.25-1.35	0.6-2.0	0.15-0.19	7.9-8.4	<2	Low-----	0.37				
	15	---	---	---	---	---	---	-----	---				
274*:													
Shingle, moist--	0-3	27-35	1.15-1.25	0.6-2.0	0.17-0.20	7.4-8.4	<2	Moderate	0.37	1	4L	1-2	
	3-17	18-35	1.20-1.30	0.6-2.0	0.16-0.20	7.9-9.0	<2	Moderate	0.37				
	17	---	---	---	---	---	---	-----	---				
Worf, moist-----	0-2	15-25	1.15-1.25	0.6-2.0	0.16-0.18	6.6-7.8	<2	Low-----	0.32	1	5	1-3	
	2-11	25-35	1.25-1.35	0.6-2.0	0.15-0.19	6.6-7.8	<2	Moderate	0.32				
	11-14	20-30	1.25-1.35	0.6-2.0	0.15-0.19	7.9-8.4	<2	Low-----	0.37				
	14	---	---	---	---	---	---	-----	---				

See footnote at end of table.

Table 15.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth		Clay Pct	Moist bulk density g/cc	Permea- bility In/hr	Available water capacity In/in	Soil reaction pH	Salinity mmhos/cm	Shrink- swell potential	Erosion factors		Wind erodi- bility group	Organic matter Pct
	In	Pct								K	T		
275----- Sinkson	0-3	18-27	1.10-1.20	0.6-2.0	0.16-0.19	7.9-8.4	<2	Low-----	0.43	5	4L	1-2	
	3-60	18-27	1.20-1.30	0.6-2.0	0.15-0.18	7.9-8.4	<2	Low-----	0.43				
276*: Spearman-----	0-2	18-27	1.05-1.10	0.6-2.0	0.16-0.18	6.6-7.3	<2	Low-----	0.24	2	6	2-4	
	2-10	18-30	1.10-1.20	0.6-2.0	0.16-0.20	6.6-7.3	<2	Low-----	0.28				
	10-21	18-27	1.20-1.30	0.6-2.0	0.15-0.17	7.9-8.4	<2	Low-----	0.32				
	21-60	0-2	---	>20	0.01-0.02	---	<2	Low-----	0.02				
Wibaux-----	0-5	12-25	1.15-1.25	0.6-2.0	0.10-0.12	7.4-7.8	<2	Low-----	0.20	1	6	1-2	
	5-12	8-25	1.15-1.30	0.6-2.0	0.06-0.09	7.4-7.8	<2	Low-----	0.05				
	12-60	0-2	---	>20	0.00-0.01	7.4-7.8	<2	Low-----	0.02				
277*: Taluca-----	0-2	10-18	1.25-1.35	2.0-6.0	0.10-0.12	7.4-8.4	<2	Low-----	0.20	1	3	.5-1	
	2-19	10-18	1.30-1.40	2.0-6.0	0.10-0.13	7.9-9.0	<2	Low-----	0.20				
	19	---	---	---	---	---	---	---	---				
Tulloch-----	0-3	3-12	1.30-1.40	6.0-20	0.06-0.08	7.4-8.4	<2	Low-----	0.20	2	2	1-2	
	3-34	3-12	1.40-1.50	6.0-20	0.06-0.10	7.9-8.4	<2	Low-----	0.24				
	34	---	---	---	---	---	---	---	---				
Rock outcrop----	0-60	---	---	---	---	---	<2	---	---	---	---	---	
278*: Taluca-----	0-4	10-18	1.35-1.45	2.0-6.0	0.11-0.13	7.4-8.4	<2	Low-----	0.24	1	3	.5-1	
	4-17	10-18	1.30-1.40	2.0-6.0	0.10-0.13	7.9-9.0	<2	Low-----	0.20				
	17	---	---	---	---	---	---	---	---				
Tulloch-----	0-4	5-15	1.25-1.35	2.0-6.0	0.12-0.14	7.4-8.4	<2	Low-----	0.28	2	3	1-2	
	4-27	3-12	1.40-1.50	6.0-20	0.06-0.10	7.9-8.4	<2	Low-----	0.24				
	27	---	---	---	---	---	---	---	---				
Vonalee-----	0-2	5-10	1.35-1.45	6.0-20	0.07-0.09	6.6-7.8	<2	Low-----	0.24	5	2	1-2	
	2-14	12-18	1.35-1.45	2.0-6.0	0.12-0.14	7.4-7.8	<2	Low-----	0.32				
	14-60	8-15	1.45-1.55	2.0-6.0	0.07-0.10	7.9-9.0	<2	Low-----	0.24				
279*: Taluca, moist---	0-1	10-18	1.35-1.45	2.0-6.0	0.11-0.13	7.4-8.4	<2	Low-----	0.24	1	3	.5-1	
	1-18	10-18	1.30-1.40	2.0-6.0	0.10-0.13	7.9-9.0	<2	Low-----	0.20				
	18	---	---	---	---	---	---	---	---				
Tulloch, moist--	0-4	3-12	1.30-1.40	6.0-20	0.08-0.11	7.4-8.4	<2	Low-----	0.24	2	2	1-2	
	4-34	3-12	1.40-1.50	6.0-20	0.06-0.10	7.9-8.4	<2	Low-----	0.24				
	34	---	---	---	---	---	---	---	---				
Vonalee, moist--	0-7	8-15	1.25-1.35	2.0-6.0	0.12-0.14	6.6-7.8	<2	Low-----	0.28	5	3	1-2	
	7-17	12-18	1.35-1.45	2.0-6.0	0.12-0.14	7.4-7.8	<2	Low-----	0.32				
	17-60	8-15	1.45-1.55	2.0-6.0	0.07-0.10	7.9-9.0	<2	Low-----	0.24				

See footnote at end of table.

Table 15.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth		Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Salinity	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
	In	Pct		g/cc	In/hr	In/in	pH	mmhos/cm		K	T		Pct
280*:													
Taluze Variant--	0-11	10-20	1.25-1.35	2.0-6.0	0.12-0.14	7.4-8.4	<2	Low-----	0.32	1	3		2-4
	11-19	5-12	1.40-1.50	6.0-20	0.06-0.10	7.4-8.4	<2	Low-----	0.37				
	19	---	---	---	---	---	---	-----	---				
Treoff-----	0-9	10-20	1.30-1.40	2.0-6.0	0.14-0.16	7.4-8.4	<2	Low-----	0.28	1	4L		2-4
	9-19	10-20	1.40-1.50	2.0-6.0	0.11-0.14	7.9-8.4	<2	Low-----	0.28				
	19	---	---	---	---	---	---	-----	---				
Theedle Variant--	0-9	12-18	1.25-1.35	2.0-6.0	0.15-0.17	7.4-8.4	<2	Low-----	0.37	3	3		1-3
	9-27	12-18	1.35-1.45	2.0-6.0	0.15-0.17	7.9-8.4	<2	Low-----	0.43				
	27	---	---	---	---	---	---	-----	---				
281*:													
Theedle-----	0-1	15-27	1.15-1.25	0.6-2.0	0.17-0.20	7.4-8.4	<2	Low-----	0.32	2	4L		1-2
	1-29	18-35	1.25-1.35	0.6-2.0	0.17-0.20	7.9-9.0	<2	Moderate	0.37				
	29	---	---	---	---	---	---	-----	---				
Kishona-----	0-5	20-27	1.20-1.30	0.6-2.0	0.15-0.17	7.4-8.4	<2	Low-----	0.32	5	4L		1-2
	5-60	20-35	1.20-1.35	0.6-2.0	0.16-0.20	7.9-9.0	<4	Moderate	0.37				
282*:													
Theedle, moist--	0-3	10-20	1.25-1.35	2.0-6.0	0.13-0.15	7.4-8.4	<2	Low-----	0.28	2	3		1-2
	3-25	18-35	1.25-1.35	0.6-2.0	0.17-0.20	7.9-9.0	<2	Moderate	0.37				
	25	---	---	---	---	---	---	-----	---				
Kishona, moist--	0-2	20-27	1.20-1.30	0.6-2.0	0.15-0.17	7.4-8.4	<2	Low-----	0.32	5	4L		1-2
	2-60	20-35	1.20-1.35	0.6-2.0	0.16-0.20	7.9-9.0	<4	Moderate	0.37				
283*:													
Theedle, moist--	0-2	28-35	1.15-1.25	0.6-2.0	0.18-0.20	7.4-8.4	<2	Moderate	0.37	2	4L		1-2
	2-32	18-35	1.25-1.35	0.6-2.0	0.17-0.20	7.9-9.0	<2	Moderate	0.37				
	32	---	---	---	---	---	---	-----	---				
Kishona, moist--	0-2	20-27	1.20-1.30	0.6-2.0	0.15-0.17	7.4-8.4	<2	Low-----	0.32	5	4L		1-2
	2-60	20-35	1.20-1.35	0.6-2.0	0.16-0.20	7.9-9.0	<4	Moderate	0.37				
284*:													
Tolman-----	0-5	18-27	1.15-1.25	0.6-2.0	0.11-0.13	6.6-7.3	<2	Low-----	0.17	1	6		2-3
	5-11	28-35	1.15-1.25	0.6-2.0	0.08-0.10	6.6-7.3	<2	Low-----	0.10				
	11-15	28-35	1.20-1.30	0.6-2.0	0.08-0.10	7.4-8.4	<2	Low-----	0.10				
	15	---	---	---	---	---	---	-----	---				
Beeno-----	0-4	17-22	1.05-1.15	0.6-2.0	0.19-0.21	6.6-7.8	<2	Low-----	0.37	2	5		2-3
	4-18	27-35	1.20-1.30	0.6-2.0	0.17-0.18	6.6-7.8	<2	Moderate	0.20				
	18-26	18-35	1.15-1.25	0.6-2.0	0.17-0.19	7.4-8.4	<2	Moderate	0.20				
	26	---	---	---	---	---	---	-----	---				

See footnote at end of table.

Table 15.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth		Clay Pct	Moist bulk density g/cc	Permea- bility In/hr	Available water capacity In/in	Soil reaction pH	Salinity mmhos/cm	Shrink- swell potential	Erosion factors		Wind erodi- bility group	Organic matter Pct
	In	Pct								K	T		
284*:													
Beenom-----	0-3	18-27	1.15-1.25	0.6-2.0	0.15-0.17	6.6-7.3	<2	Low-----	0.32	1	6		2-3
	3-9	27-35	1.15-1.25	0.6-2.0	0.17-0.20	6.6-7.8	<2	Moderate	0.24				
	9-18	27-35	1.20-1.30	0.6-2.0	0.15-0.18	7.4-8.4	<2	Moderate	0.20				
	18	---	---	---	---	---	---	---	---				
285*:													
Trimad-----	0-8	10-20	1.15-1.25	0.6-2.0	0.12-0.15	7.4-7.8	<2	Low-----	0.17	2	6		2-3
	8-30	10-20	1.20-1.30	0.6-2.0	0.06-0.10	7.9-8.4	<2	Low-----	0.10				
	30-60	10-20	1.20-1.30	0.6-2.0	0.06-0.10	7.9-8.4	<2	Low-----	0.10				
Doney-----	0-3	18-27	1.15-1.25	0.6-2.0	0.15-0.17	7.4-8.4	<2	Low-----	0.43	2	4L		1-2
	3-13	18-35	1.20-1.30	0.6-2.0	0.16-0.20	7.4-8.4	<2	Moderate	0.37				
	13-24	18-35	1.20-1.30	0.6-2.0	0.16-0.20	7.9-9.0	<2	Moderate	0.37				
	24	---	---	---	---	---	---	---	---				
Wayden-----	0-2	35-40	1.10-1.20	0.06-0.2	0.17-0.19	7.4-8.4	<2	High-----	0.32	1	4L		1-2
	2-12	40-55	1.10-1.20	0.06-0.2	0.14-0.17	7.9-8.4	<2	High-----	0.37				
	12	---	---	---	---	---	---	---	---				
286*:													
Trimad-----	0-8	10-20	1.15-1.25	0.6-2.0	0.12-0.15	7.4-7.8	<2	Low-----	0.17	2	6		2-3
	8-32	10-20	1.20-1.30	0.6-2.0	0.06-0.10	7.9-8.4	<2	Low-----	0.10				
	32-60	10-20	1.20-1.30	0.6-2.0	0.06-0.10	7.9-8.4	<2	Low-----	0.10				
Trivar-----	0-7	20-25	1.05-1.15	0.6-2.0	0.18-0.20	7.4-8.4	<2	Low-----	0.37	5	4L		2-4
	7-20	20-27	1.10-1.20	0.6-2.0	0.16-0.18	7.9-9.0	<2	Low-----	0.37				
	20-60	10-20	1.35-1.45	2.0-6.0	0.07-0.10	7.9-9.0	<4	Low-----	0.15				
287*:													
Trimad-----	0-8	10-20	1.15-1.25	0.6-2.0	0.12-0.15	7.4-7.8	<2	Low-----	0.17	2	6		2-3
	8-32	10-20	1.20-1.30	0.6-2.0	0.06-0.10	7.9-8.4	<2	Low-----	0.10				
	32-60	10-20	1.20-1.30	0.6-2.0	0.06-0.10	7.9-8.4	<2	Low-----	0.10				
Twin Creek-----	0-8	18-27	1.10-1.20	0.6-2.0	0.17-0.20	6.6-7.8	<2	Low-----	0.37	5	6		2-4
	8-23	18-35	1.20-1.30	0.6-2.0	0.19-0.21	7.4-8.4	<2	Moderate	0.37				
	23-46	18-27	1.20-1.30	0.6-2.0	0.17-0.20	7.9-9.0	<2	Low-----	0.43				
	46-60	18-27	1.15-1.25	0.6-2.0	0.06-0.08	7.9-9.0	<2	Low-----	0.17				
288-----	0-10	18-27	1.10-1.20	0.6-2.0	0.17-0.20	6.6-7.8	<2	Low-----	0.37	5	6		2-4
Twin Creek	10-19	18-35	1.20-1.30	0.6-2.0	0.19-0.21	7.4-8.4	<2	Moderate	0.37				
	19-60	18-27	1.20-1.30	0.6-2.0	0.17-0.20	7.9-9.0	<2	Low-----	0.43				
289-----	0-10	18-27	1.05-1.15	0.6-2.0	0.19-0.21	6.6-7.8	<2	Low-----	0.37	5	5		1-3
Twin Creek	10-42	24-35	1.20-1.30	0.6-2.0	0.17-0.21	7.4-8.4	<2	Moderate	0.43				
Variant	42-60	18-27	1.20-1.30	0.6-2.0	0.17-0.19	7.4-8.4	<2	Low-----	0.43				
290-----	0-4	28-35	1.15-1.25	0.6-2.0	0.17-0.21	6.6-7.3	<2	Moderate	0.32	5	6		1-3
Ulm	4-12	35-50	1.20-1.30	0.06-0.2	0.17-0.21	6.6-7.8	<2	High-----	0.37				
	12-60	30-42	1.20-1.30	0.2-0.6	0.17-0.21	7.9-9.0	<2	High-----	0.37				

See footnote at end of table.

Table 15.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth		Moist bulk density	Permea- bility In/hr	Available water capacity In/in	Soil reaction pH	Salinity mmhos/cm	Shrink- swell potential	Erosion factors		Wind erodi- bility group	Organic matter Pct
	In	Pct							K	T		
291----- Ulm	0-8	28-35	1.15-1.25	0.6-2.0	0.17-0.21	6.6-7.3	<2	Moderate	0.32	5	6	1-3
	8-15	35-50	1.20-1.30	0.06-0.2	0.17-0.21	6.6-7.8	<2	High-----	0.37			
	15-60	30-42	1.20-1.30	0.2-0.6	0.17-0.21	7.9-9.0	<2	High-----	0.37			
292----- Ulm, dry	0-2	28-35	1.15-1.25	0.6-2.0	0.17-0.21	6.6-7.3	<2	Moderate	0.32	5	6	1-3
	2-22	35-50	1.20-1.30	0.06-0.2	0.17-0.21	6.6-7.8	<2	High-----	0.37			
	22-60	30-42	1.20-1.30	0.2-0.6	0.17-0.21	7.9-9.0	<2	High-----	0.37			
293----- Ulm, dry	0-9	28-35	1.15-1.25	0.6-2.0	0.17-0.21	6.6-7.3	<2	Moderate	0.32	5	6	1-3
	9-22	35-50	1.20-1.30	0.06-0.2	0.17-0.21	6.6-7.8	<2	High-----	0.37			
	22-60	30-42	1.20-1.30	0.2-0.6	0.17-0.21	7.9-9.0	<2	High-----	0.37			
294*: Urban land.												
Kishona, moist--	0-4	20-27	1.20-1.30	0.6-2.0	0.15-0.17	7.4-8.4	<2	Low-----	0.32	5	4L	1-2
	4-60	20-35	1.20-1.35	0.6-2.0	0.16-0.20	7.9-9.0	<4	Moderate	0.37			
Clarkelen-----	0-3	8-18	1.20-1.30	2.0-6.0	0.13-0.15	7.4-8.4	<2	Low-----	0.32	5	3	1-2
	3-33	8-18	1.25-1.35	2.0-6.0	0.12-0.14	7.9-9.0	<2	Low-----	0.28			
	33-60	3-12	1.45-1.55	6.0-20	0.05-0.08	7.9-9.0	<2	Low-----	0.10			
295*: Urban land.												
Platsher-----	0-6	28-40	1.10-1.20	0.2-0.6	0.15-0.20	6.6-7.8	<2	High-----	0.37	5	4	1-3
	6-16	35-55	1.20-1.30	0.06-0.2	0.15-0.20	7.9-8.4	<2	High-----	0.43			
	16-28	28-40	1.25-1.35	0.2-0.6	0.17-0.19	7.9-9.0	<2	High-----	0.43			
	28-60	20-35	1.25-1.35	0.6-2.0	0.09-0.12	7.9-9.0	2-4	Moderate	0.20			
Wolfvar-----	0-5	28-35	1.10-1.20	0.6-2.0	0.17-0.20	6.6-8.4	<2	Moderate	0.32	2	6	2-3
	5-15	35-50	1.20-1.30	0.06-0.2	0.15-0.20	6.6-8.4	<2	High-----	0.37			
	15-22	20-35	1.25-1.35	0.6-2.0	0.08-0.16	7.9-9.0	<2	Moderate	0.20			
	22-60	5-12	1.40-1.50	2.0-6.0	0.03-0.05	7.9-9.0	<2	Low-----	0.05			
296*: Urban land.												
Wyarno-----	0-3	28-40	1.10-1.20	0.2-0.6	0.19-0.21	6.6-7.8	<2	High-----	0.37	5	4	1-3
	3-15	35-50	1.20-1.30	0.06-0.2	0.15-0.20	6.6-8.4	<2	High-----	0.43			
	15-60	28-35	1.25-1.35	0.2-0.6	0.14-0.16	7.9-9.0	<2	Moderate	0.43			
Nuncho-----	0-10	35-40	1.10-1.20	0.2-0.6	0.15-0.20	6.1-7.8	<2	High-----	0.43	5	6	1-3
	10-35	35-50	1.20-1.30	0.06-0.2	0.15-0.20	6.6-7.8	<2	High-----	0.43			
	35-60	24-35	1.25-1.35	0.6-2.0	0.17-0.20	7.9-8.4	<2	Moderate	0.37			
297*: Ustic Torriorthents.												

See footnote at end of table.

Table 15.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth		Clay Pct	Moist bulk density g/cc	Permea- bility In/hr	Available water capacity In/in	Soil reaction pH	Salinity mmhos/cm	Shrink- swell potential	Erosion factors		Wind erodi- bility group	Organic matter Pct
	In	Pct								K	T		
297*: Pits.													
298----- Wayden	0-2	40-55	1.05-1.15	0.06-0.2	0.14-0.17	7.4-8.4	<2	High-----	0.37	1	4	1-2	
	2-17	40-55	1.10-1.20	0.06-0.2	0.14-0.17	7.9-8.4	<2	High-----	0.37				
	17	---	---	---	---	---	---	-----	-----				
299*: Wetterdon-----	0-17	18-27	1.05-1.15	0.6-2.0	0.19-0.21	6.6-7.8	<2	Low-----	0.37	5	5	1-3	
	17-46	28-35	1.20-1.30	0.6-2.0	0.19-0.21	6.6-7.8	<2	Moderate	0.43				
	46-60	18-30	1.20-1.30	0.6-2.0	0.17-0.20	7.4-8.4	<2	Low-----	0.37				
Recluse-----	0-3	15-20	1.25-1.35	0.6-2.0	0.15-0.17	6.6-7.8	<2	Low-----	0.43	5	3	1-3	
	3-30	27-35	1.20-1.30	0.6-2.0	0.19-0.21	6.6-7.8	<2	Moderate	0.43				
	30-60	18-30	1.25-1.35	0.6-2.0	0.17-0.20	7.4-8.4	<2	Moderate	0.37				
300*: Wibaux-----	0-5	12-25	1.15-1.25	0.6-2.0	0.10-0.12	7.4-7.8	<2	Low-----	0.20	1	6	1-2	
	5-12	8-25	1.15-1.30	0.6-2.0	0.06-0.09	7.4-7.8	<2	Low-----	0.05				
	12-60	0-2	---	>20	0.00-0.01	7.4-7.8	<2	Low-----	0.02				
Reddale-----	0-4	5-12	1.25-1.35	2.0-6.0	0.14-0.16	6.6-7.8	<2	Low-----	0.32	2	3	1-2	
	4-7	15-32	1.25-1.35	0.6-2.0	0.17-0.20	6.6-7.8	<2	Moderate	0.37				
	7-16	40-55	1.15-1.25	<0.06	0.14-0.16	7.4-8.4	<2	High-----	0.37				
	16-24	35-45	1.20-1.30	<0.06	0.15-0.20	7.9-9.0	2-4	High-----	0.37				
	24-60	0-1	1.65-1.75	>20	0.01-0.02	7.9-9.0	<2	Low-----	0.00				
301----- Windham	0-9	15-25	1.15-1.25	0.6-2.0	0.10-0.14	7.4-7.8	<2	Low-----	0.20	2	6	2-4	
	9-60	18-27	1.20-1.30	0.6-2.0	0.05-0.10	7.9-8.4	<2	Low-----	0.05				
302----- Wolf	0-2	15-27	1.15-1.25	0.6-2.0	0.16-0.18	6.6-7.8	<2	Low-----	0.37	5	5	2-3	
	2-14	18-35	1.25-1.35	0.6-2.0	0.19-0.21	6.6-8.4	<2	Moderate	0.43				
	14-60	15-30	1.25-1.35	0.6-2.0	0.10-0.14	7.9-9.0	2-4	Low-----	0.24				
303----- Wolf	0-2	15-27	1.15-1.25	0.6-2.0	0.16-0.18	6.6-7.8	<2	Low-----	0.37	5	5	2-3	
	2-12	18-35	1.25-1.35	0.6-2.0	0.19-0.21	6.6-8.4	<2	Moderate	0.43				
	12-36	10-20	1.35-1.45	2.0-6.0	0.06-0.08	7.9-9.0	2-4	Low-----	0.15				
	36-60	10-20	1.35-1.45	2.0-6.0	0.06-0.08	7.9-9.0	2-4	Low-----	0.15				
304*: Worfka-----	0-3	15-20	1.25-1.35	2.0-6.0	0.13-0.15	6.6-7.8	<2	Low-----	0.28	1	3	1-3	
	3-10	35-50	1.15-1.25	0.06-0.2	0.14-0.18	7.4-8.4	<2	High-----	0.37				
	10-13	30-45	1.20-1.30	0.06-0.2	0.14-0.18	7.9-8.4	<2	High-----	0.37				
	13	---	---	---	---	---	---	-----	-----				
Shingle-----	0-1	27-35	1.15-1.25	0.6-2.0	0.17-0.20	7.4-8.4	<2	Moderate	0.37	1	4L	1-2	
	1-15	18-35	1.20-1.30	0.6-2.0	0.16-0.20	7.9-9.0	<2	Moderate	0.37				
	15	---	---	---	---	---	---	-----	-----				

See footnote at end of table.

Table 15.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth		Moist bulk density	Permea- bility In/hr	Available water capacity In/in	Soil reaction pH	Salinity mmhos/cm	Shrink- swell potential	Erosion factors		Wind erodi- bility group	Organic matter Pct
	In	Pct							K	T		
304*: Samday-----	0-1	30-40	1.05-1.15	0.2-0.6	0.17-0.20	7.4-8.4	<2	High-----	0.37	1	4	1-2
	1-19	35-50	1.15-1.25	0.06-0.2	0.14-0.18	7.4-9.0	<4	High-----	0.32			
	19	---	---	---	---	---	---	-----	-----			
305*: Worfka, moist---	0-1	18-27	1.15-1.25	0.6-2.0	0.15-0.18	6.6-7.8	<2	Low-----	0.32	1	6	1-3
	1-9	35-50	1.15-1.25	0.06-0.2	0.14-0.18	7.4-8.4	<2	High-----	0.37			
	9-19	30-45	1.20-1.30	0.06-0.2	0.14-0.18	7.9-8.4	<2	High-----	0.37			
	19	---	---	---	---	---	---	-----	-----			
Shingle, moist--	0-2	27-35	1.15-1.25	0.6-2.0	0.17-0.20	7.4-8.4	<2	Moderate	0.37	1	4L	1-2
	2-19	18-35	1.20-1.30	0.6-2.0	0.16-0.20	7.9-9.0	<2	Moderate	0.37			
	19	---	---	---	---	---	---	-----	-----			
Samday, moist---	0-2	30-40	1.05-1.15	0.2-0.6	0.17-0.20	7.4-8.4	<2	High-----	0.37	1	4	1-2
	2-17	35-50	1.15-1.25	0.06-0.2	0.14-0.18	7.4-9.0	<4	High-----	0.32			
	17	---	---	---	---	---	---	-----	-----			
306----- Worthenton	0-8	30-40	1.10-1.20	0.2-0.6	0.19-0.21	7.9-8.4	<2	Moderate	0.43	5	4L	2-4
	8-19	35-50	1.15-1.25	0.06-0.2	0.15-0.20	7.9-8.4	<2	High-----	0.43			
	19-60	30-50	1.20-1.30	0.06-0.2	0.12-0.20	7.9-9.0	2-8	High-----	0.43			
307*: Worthenton-----	0-7	20-27	1.15-1.25	0.6-2.0	0.16-0.18	7.9-8.4	<2	Moderate	0.37	5	4L	2-4
	7-19	35-50	1.15-1.25	0.06-0.2	0.15-0.20	7.9-8.4	<2	High-----	0.43			
	19-60	30-50	1.20-1.30	0.06-0.2	0.12-0.20	7.9-9.0	2-8	High-----	0.43			
Recluse-----	0-10	18-27	1.10-1.20	0.6-2.0	0.17-0.20	6.6-7.8	<2	Low-----	0.37	5	5	1-3
	10-19	27-35	1.20-1.30	0.6-2.0	0.19-0.21	6.6-7.8	<2	Moderate	0.43			
	19-38	18-30	1.25-1.35	0.6-2.0	0.17-0.20	7.4-8.4	<2	Moderate	0.37			
	38-60	15-24	1.35-1.45	0.6-2.0	0.13-0.15	7.4-8.4	<2	Low-----	0.28			
308*: Worthenton												
Variant-----	0-8	10-27	1.10-1.20	0.6-2.0	0.16-0.20	5.6-7.3	<2	Low-----	0.37	2	4L	2-4
	8-24	20-35	1.25-1.35	0.6-2.0	0.14-0.16	5.6-6.5	<2	Moderate	0.43			
	24-60	0-2	1.45-1.55	>20	0.01-0.02	5.6-6.5	<2	Low-----	0.02			
Assinniboine												
Variant-----	0-3	5-15	1.25-1.35	6.0-20	0.10-0.12	6.1-7.3	<2	Low-----	0.28	2	3	1-3
	3-35	20-35	1.25-1.35	0.6-2.0	0.14-0.16	6.1-7.3	<2	Moderate	0.32			
	35-60	0-2	1.45-1.55	>20	0.01-0.02	6.1-7.3	<2	Low-----	0.02			
309----- Wyarno	0-5	28-40	1.10-1.20	0.2-0.6	0.19-0.21	6.6-7.8	<2	High-----	0.37	5	4	1-3
	5-15	35-50	1.20-1.30	0.06-0.2	0.15-0.20	6.6-8.4	<2	High-----	0.43			
	15-60	28-35	1.25-1.35	0.2-0.6	0.14-0.16	7.9-9.0	<2	Moderate	0.43			

See footnote at end of table.

Table 15.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Soil reaction	Salinity	Shrink- swell potential	Erosion factors		Wind erodi- bility group	Organic matter Pct
									K	T		
	In	Pct	g/cc	In/hr	In/in	pH	mmhos/cm					
310----- Wyarno	0-2	28-40	1.10-1.20	0.2-0.6	0.19-0.21	6.6-7.8	<2	High-----	0.37	5	4	1-3
	2-10	35-50	1.20-1.30	0.06-0.2	0.15-0.20	6.6-8.4	<2	High-----	0.43			
	10-60	28-35	1.25-1.35	0.2-0.6	0.14-0.16	7.9-9.0	<2	Moderate	0.43			
311----- Wyarno	0-3	28-40	1.10-1.20	0.2-0.6	0.19-0.21	6.6-7.8	<2	High-----	0.37	5	4	1-3
	3-9	35-50	1.20-1.30	0.06-0.2	0.15-0.20	6.6-8.4	<2	High-----	0.43			
	9-60	28-35	1.25-1.35	0.2-0.6	0.14-0.16	7.9-9.0	<2	Moderate	0.43			
312----- Wyarno, dry	0-3	28-40	1.10-1.20	0.2-0.6	0.19-0.21	6.6-7.8	<2	High-----	0.37	5	4	1-3
	3-10	35-50	1.20-1.30	0.06-0.2	0.15-0.20	6.6-8.4	<2	High-----	0.43			
	10-60	28-35	1.25-1.35	0.2-0.6	0.14-0.16	7.9-9.0	<2	Moderate	0.43			
313----- Wyarno, dry	0-2	28-40	1.10-1.20	0.2-0.6	0.19-0.21	6.6-7.8	<2	High-----	0.37	5	4	1-3
	2-10	35-50	1.20-1.30	0.06-0.2	0.15-0.20	6.6-8.4	<2	High-----	0.43			
	10-60	28-35	1.25-1.35	0.2-0.6	0.14-0.16	7.9-9.0	<2	Moderate	0.43			
314----- Wyarno, dry	0-4	28-40	1.10-1.20	0.2-0.6	0.19-0.21	6.6-7.8	<2	High-----	0.37	5	4	1-3
	4-10	35-50	1.20-1.30	0.06-0.2	0.15-0.20	6.6-8.4	<2	High-----	0.43			
	10-60	28-35	1.25-1.35	0.2-0.6	0.14-0.16	7.9-9.0	<2	Moderate	0.43			
315----- Zigweid	0-2	18-27	1.15-1.25	0.6-2.0	0.16-0.18	7.4-8.4	<2	Low-----	0.32	5	4L	1-2
	2-12	20-35	1.20-1.30	0.6-2.0	0.16-0.21	7.9-8.4	<2	Moderate	0.37			
	12-60	20-35	1.25-1.35	0.6-2.0	0.16-0.21	7.9-9.0	<2	Moderate	0.37			
316*: Zigweid-----	0-4	18-27	1.15-1.25	0.6-2.0	0.16-0.18	7.4-8.4	<2	Low-----	0.32	5	4L	1-2
	4-13	20-35	1.20-1.30	0.6-2.0	0.16-0.21	7.9-8.4	<2	Moderate	0.37			
	13-60	20-35	1.25-1.35	0.6-2.0	0.16-0.21	7.9-9.0	<2	Moderate	0.37			
Cambria-----	0-3	15-25	1.10-1.20	0.6-2.0	0.16-0.18	6.6-7.3	<2	Low-----	0.37	5	5	1-2
	3-11	28-35	1.20-1.30	0.6-2.0	0.19-0.21	7.4-8.4	<2	Moderate	0.43			
	11-60	20-30	1.20-1.30	0.6-2.0	0.17-0.20	7.9-9.0	<2	Moderate	0.43			
317*: Zigweid-----	0-1	10-20	1.25-1.35	2.0-6.0	0.12-0.14	7.4-8.4	<2	Low-----	0.28	5	3	1-2
	1-11	20-35	1.20-1.30	0.6-2.0	0.16-0.21	7.9-8.4	<2	Moderate	0.37			
	11-60	20-35	1.25-1.35	0.6-2.0	0.16-0.21	7.9-9.0	<2	Moderate	0.37			
Kishona-----	0-5	20-27	1.20-1.30	0.6-2.0	0.15-0.17	7.4-8.4	<2	Low-----	0.32	5	4L	1-2
	5-60	20-35	1.20-1.35	0.6-2.0	0.16-0.20	7.9-9.0	<4	Moderate	0.37			
Cambria-----	0-2	15-25	1.10-1.20	0.6-2.0	0.16-0.18	6.6-7.8	<2	Low-----	0.37	5	5	1-2
	2-6	28-35	1.20-1.30	0.6-2.0	0.19-0.21	7.4-8.4	<2	Moderate	0.43			
	6-60	20-30	1.20-1.30	0.6-2.0	0.17-0.20	7.9-9.0	<2	Moderate	0.43			
318*: Zigweid, moist--	0-1	18-27	1.15-1.25	0.6-2.0	0.16-0.18	7.4-8.4	<2	Low-----	0.32	5	4L	1-2
	1-11	20-35	1.20-1.30	0.6-2.0	0.16-0.21	7.9-8.4	<2	Moderate	0.37			
	11-60	20-35	1.25-1.35	0.6-2.0	0.16-0.21	7.9-9.0	<2	Moderate	0.37			

See footnote at end of table.

Table 15.--Physical and Chemical Properties of the Soils--Continued

Soil name and map symbol	Depth		Clay	Moist	Permea-	Available	Soil	Salinity	Shrink-	Erosion		Wind	Organic
	In	Pct		bulk	bility	water	reaction		swell	factors	erodi-	bility	
	In	Pct	g/cc	In/hr	In/in	pH	mmhos/cm		potential	K	T	group	Pct
318*:													
Kishona, moist--	0-2	10-20	1.25-1.35	0.6-2.0	0.13-0.15	7.4-8.4	<2	Low-----	0.32	5	3		1-2
	2-60	20-35	1.20-1.35	0.6-2.0	0.16-0.20	7.9-9.0	<4	Moderate	0.37				
Cambria, moist--	0-1	15-25	1.10-1.20	0.6-2.0	0.16-0.18	6.6-7.8	<2	Low-----	0.37	5	5		1-2
	1-6	28-35	1.20-1.30	0.6-2.0	0.19-0.21	7.4-8.4	<2	Moderate	0.43				
	6-60	20-30	1.20-1.30	0.6-2.0	0.17-0.20	7.9-9.0	<2	Moderate	0.43				
319*:													
Zigweid, moist--	0-1	18-27	1.15-1.25	0.6-2.0	0.16-0.18	7.4-8.4	<2	Low-----	0.32	5	4L		1-2
	1-11	20-35	1.20-1.30	0.6-2.0	0.16-0.21	7.9-8.4	<2	Moderate	0.37				
	11-60	20-35	1.25-1.35	0.6-2.0	0.16-0.21	7.9-9.0	<2	Moderate	0.37				
Kishona, moist--	0-1	10-20	1.25-1.35	0.6-2.0	0.13-0.15	7.4-8.4	<2	Low-----	0.32	5	3		1-2
	1-60	20-35	1.20-1.35	0.6-2.0	0.16-0.20	7.9-9.0	<4	Moderate	0.37				
Cambria, moist--	0-3	15-25	1.10-1.20	0.6-2.0	0.16-0.18	6.6-7.8	<2	Low-----	0.37	5	5		1-2
	3-10	28-35	1.20-1.30	0.6-2.0	0.19-0.21	7.4-8.4	<2	Moderate	0.43				
	10-60	20-30	1.20-1.30	0.6-2.0	0.17-0.20	7.9-9.0	<2	Moderate	0.43				
320*:													
Zigweid, moist--	0-1	18-27	1.15-1.25	0.6-2.0	0.16-0.18	7.4-8.4	<2	Low-----	0.32	5	4L		1-2
	1-12	20-35	1.20-1.30	0.6-2.0	0.16-0.21	7.9-8.4	<2	Moderate	0.37				
	12-60	20-35	1.25-1.35	0.6-2.0	0.16-0.21	7.9-9.0	<2	Moderate	0.37				
Kishona, moist--	0-1	20-27	1.20-1.30	0.6-2.0	0.15-0.17	7.4-8.4	<2	Low-----	0.32	5	4L		1-2
	1-60	20-35	1.20-1.35	0.6-2.0	0.16-0.20	7.9-9.0	<4	Moderate	0.37				
Cambria, moist--	0-2	15-25	1.10-1.20	0.6-2.0	0.16-0.18	6.6-7.8	<2	Low-----	0.37	5	5		1-2
	2-8	28-35	1.20-1.30	0.6-2.0	0.19-0.21	7.4-8.4	<2	Moderate	0.43				
	8-60	20-30	1.20-1.30	0.6-2.0	0.17-0.20	7.9-9.0	<2	Moderate	0.43				

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 16.--Soil and Water Features

("Flooding," "water table," and terms such as "rare," "brief," and "apparent" are explained in the text. The symbol < means less than; > means more than. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Soil name and map symbol	Hydro- logic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness		Uncoated steel	Concrete
					Ft			In				
100*: Abac-----	D	None-----	---	---	>6.0	---	---	10-20	Soft	Moderate	High-----	Low.
Rock outcrop----	D	None-----	---	---	>6.0	---	---	0	Hard	---	---	---
101*: Absted-----	C	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	High.
Haverdad-----	B	Rare-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
102*: Absted, moist----	C	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	High.
Haverdad, moist--	B	Rare-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
103*: Absted-----	C	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	High.
Slickspots.												
104*: Agneston-----	C	None-----	---	---	>6.0	---	---	20-40	Hard	Moderate	Moderate	Moderate.
Granile-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Moderate.
Rock outcrop----	D	None-----	---	---	>6.0	---	---	0	Hard	---	---	---

See footnote at end of table.

Table 16.--Soil and Water Features--Continued

Soil name and map symbol	Hydro-logic group	Flooding		High water table			Bedrock		Potential frost action	Risk of corrosion		
		Frequency	Duration	Months	Depth	Kind	Months	Depth		Hardness	Uncoated steel	Concrete
					Ft			In				
105*, 106*: Arnegard-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Low.
Farnuf-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
107*: Assinniboine----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Dast-----	C	None-----	---	---	>6.0	---	---	20-40	Soft	Moderate	High-----	Low.
108*: Baux-----	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	Moderate	Low.
Bauxson-----	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
Baux, dry-----	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	Moderate	Low.
109*: Baux, dry-----	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	Moderate	Low.
Bauxson, dry----	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
110*: Baux-----	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	Moderate	Low.
Bauxson-----	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
Kirtley-----	C	None-----	---	---	>6.0	---	---	20-40	Soft	Moderate	High-----	Low.
111*: Baux-----	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	Moderate	Low.

See footnote at end of table.

Table 16.--Soil and Water Features--Continued

Soil name and map symbol	Hydro- logic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth Ft	Kind	Months	Depth In	Hardness		Uncoated steel	Concrete
111*: Bauxson-----	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
Wetterdon-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
112*: Bidman-----	C	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
Arvada-----	D	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	High.
113*: Bidman, moist----	C	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
Arvada, moist----	D	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	High.
114*: Bidman-----	C	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
Ulm, dry-----	C	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
115*: Bidman, moist----	C	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
Ulm-----	C	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
116*: Big Horn-----	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
Wolf, dry-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
117*: Cambria-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.

See footnote at end of table.

Table 16.--Soil and Water Features--Continued

Soil name and map symbol	Hydro-logic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness		Uncoated steel	Concrete
					<u>Ft</u>			<u>In</u>				
117*: Forkwood-----	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
118*: Cambria, moist---	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Forkwood, moist--	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
119*, 120*, 121*: Cedak-----	C	None-----	---	---	>6.0	---	---	20-40	Soft	Moderate	High-----	Low.
Recluse-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
122*: Cedak, dry-----	C	None-----	---	---	>6.0	---	---	20-40	Soft	Moderate	High-----	Low.
Recluse, dry-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
123----- Clarkelen	B	Rare-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
124----- Clarkelen, moist	B	Rare-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
125*: Cloud Peak-----	B	None-----	---	---	>6.0	---	---	20-40	Hard	Moderate	High-----	Low.
Tolman-----	D	None-----	---	---	>6.0	---	---	10-20	Hard	Moderate	High-----	Low.
126*: Coaliams, moist--	C	Rare-----	---	---	3.5-6.0	Apparent	May-Sep	>60	---	Moderate	High-----	Low.

See footnote at end of table.

Table 16.--Soil and Water Features--Continued

Soil name and map symbol	Hydro- logic group	Flooding			High water table			Bedrock		Risk of corrosion		
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness	Potential frost action	Uncoated steel	Concrete
126*: Worhenton, moist	D	Occasional	Brief-----	Mar-Jun	0.5-1.5	Apparent	Mar-Jul	>60	---	High-----	High-----	High.
127*: Cushman-----	C	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	High-----	Low.
Forkwood-----	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
128*, 129*: Cushman, moist---	C	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	High-----	Low.
Forkwood, moist--	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
130*: Cushman-----	C	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	High-----	Low.
Worf-----	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Low.
131*: Cushman, moist---	C	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	High-----	Low.
Worf, moist-----	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Low.
132----- Dast Variant	C	None-----	---	---	>6.0	---	---	10-20	Hard	Low-----	Low-----	Low.
133*: Doney-----	C	None-----	---	---	>6.0	---	---	20-40	Soft	Moderate	High-----	Low.
Doney Variant---	C	None-----	---	---	>6.0	---	---	10-20	Soft	Moderate	High-----	Low.

See footnote at end of table.

Table 16.--Soil and Water Features--Continued

Soil name and map symbol	Hydro-logic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness		Uncoated steel	Concrete
					Ft			In				
134*: Doney-----	C	None-----	---	---	>6.0	---	---	20-40	Soft	Moderate	High-----	Low.
Ringling-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Low.
135*: Doney-----	C	None-----	---	---	>6.0	---	---	20-40	Soft	Moderate	High-----	Low.
Ringling-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Low.
Rock outcrop----	D	None-----	---	---	>6.0	---	---	0	Hard	---	---	---
136----- Draknab	A	Rare-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
137, 138, 139---- Farnuf	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
140----- Farnuf Variant, wet	C	None-----	---	---	1.0-3.0	Apparent	May-Oct	>60	---	Moderate	Low-----	Low.
141*: Farnuf Variant----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Cloud Peak Variant-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	Low-----	Low.
142, 143, 144---- Forkwood	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.

See footnote at end of table.

Table 16.--Soil and Water Features--Continued

Soil name and map symbol	Hydro- logic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness		Uncoated steel	Concrete
					<u>Ft</u>			<u>In</u>				
145*: Gayhart-----	C	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	High-----	Moderate.
Bahl-----	C	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Moderate.
146*: Gayhart, moist---	C	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	High-----	Moderate.
Bahl, moist-----	C	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Moderate.
147*: Hardhart-----	B	None-----	---	---	>6.0	---	---	20-40	Soft	Moderate	High-----	Low.
Starley-----	D	None-----	---	---	>6.0	---	---	10-20	Hard	Moderate	High-----	Low.
148*, 149*: Hargreave-----	C	None-----	---	---	>6.0	---	---	20-40	Soft	Moderate	High-----	Low.
Moskee-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
150*: Hargreave, dry---	C	None-----	---	---	>6.0	---	---	20-40	Soft	Moderate	High-----	Low.
Moskee, dry-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
151----- Harlan, dry	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
152*, 153*: Harlan-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Kirtley-----	C	None-----	---	---	>6.0	---	---	20-40	Soft	Moderate	High-----	Low.

See footnote at end of table.

Table 16.--Soil and Water Features--Continued

Soil name and map symbol	Hydro-logic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness		Uncoated steel	Concrete
					Ft			In				
154----- Haverdad	B	Rare-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
155----- Haverdad, moist	B	Rare-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
156----- Haverdad, saline	C	Occasional	Brief-----	Mar-Jun	1.5-3.0	Apparent	May-Aug	>60	---	Low-----	High-----	High.
157----- Haverdad, moist, saline	C	Occasional	Brief-----	Mar-Jun	1.5-3.0	Apparent	May-Aug	>60	---	Low-----	High-----	High.
158*: Haverdad-----	B	Frequent----	Brief-----	Mar-Jun	>6.0	---	---	>60	---	Low-----	High-----	Low.
Draknab-----	A	Frequent----	Brief-----	Mar-Jun	>6.0	---	---	>60	---	Low-----	High-----	Low.
159*: Haverdad, moist--	B	Frequent----	Brief-----	Mar-Jun	>6.0	---	---	>60	---	Low-----	High-----	Low.
Draknab, moist--	A	Frequent----	Brief-----	Mar-Jun	>6.0	---	---	>60	---	Low-----	High-----	Low.
160*: Haverdad-----	B	Frequent----	Brief-----	Mar-Jun	>6.0	---	---	>60	---	Low-----	High-----	Low.
Worthenton-----	D	Frequent----	Brief-----	Mar-Jun	0.5-1.5	Apparent	Mar-Jul	>60	---	High-----	High-----	High.
161*: Haverdad, moist--	B	Frequent----	Brief-----	Mar-Jun	>6.0	---	---	>60	---	Low-----	High-----	Low.
Worthenton-----	D	Frequent----	Brief-----	Mar-Jun	0.5-1.5	Apparent	Mar-Jul	>60	---	High-----	High-----	High.

See footnote at end of table.

Table 16.--Soil and Water Features--Continued

Soil name and map symbol	Hydro- logic group	Flooding			High water table			Bedrock		Risk of corrosion		
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness	Potential frost action	Uncoated steel	Concrete
					Ft			In				
162----- Havertel	B	Occasional	Brief----	May-Aug	3.0-5.0	Apparent	Mar-Oct	>60	---	Low-----	High-----	Low.
163*: Hesperus Variant-	C	None-----	---	---	1.5-5.0	Apparent	May-Sep	>60	---	Moderate	High-----	Low.
Reget-----	C	None-----	---	---	>6.0	---	---	20-40	Soft	Moderate	High-----	Low.
164*: Hiland-----	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
Bowbac-----	C	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	High-----	Low.
165*: Hiland, moist----	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
Bowbac, moist----	C	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	High-----	Low.
166*: Hiland-----	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
Decolney-----	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
167*: Hiland, moist----	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
Vonalee, moist----	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
168*: Hilight-----	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Low.
Rock outcrop----	D	None-----	---	---	>6.0	---	---	0	Soft	---	---	---

See footnote at end of table.

Table 16.--Soil and Water Features--Continued

Soil name and map symbol	Hydro-logic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness		Uncoated steel	Concrete
					Ft			In				
169*, 170*: Jonpol-----	C	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	High-----	Low.
Platmak-----	C	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
171*, 172*: Kishona-----	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
Cambria-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
173*: Lambman-----	D	None-----	---	---	>6.0	---	---	10-20	Soft	Moderate	High-----	Low.
Hargreave-----	C	None-----	---	---	>6.0	---	---	20-40	Soft	Moderate	High-----	Low.
174*: Lucky-----	C	None-----	---	---	>6.0	---	---	20-40	Hard	Moderate	Moderate	Low.
Burgess-----	C	None-----	---	---	>6.0	---	---	20-40	Hard	Moderate	Low-----	Low.
Hazton-----	D	None-----	---	---	>6.0	---	---	10-20	Hard	Moderate	Moderate	Low.
175, 176, 177----- Moskee	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
178*, 179*: Moskee-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Noden-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	Low-----	Low.
180*: Moskee, dry-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.

See footnote at end of table.

Table 16.--Soil and Water Features--Continued

Soil name and map symbol	Hydro-logic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness		Uncoated steel	Concrete
					Ft			In				
180*: Noden, dry-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	Low-----	Low.
181*, 182*: Moskee-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Nuncho-----	C	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
183*: Moskee-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Worthington, moist	D	Occasional	Brief-----	Mar-Jun	0.5-1.5	Apparent	Mar-Jul	>60	---	High-----	High-----	High.
184*: Nathrop-----	C	None-----	---	---	>6.0	---	---	20-40	Hard	Moderate	High-----	Low.
Passcreek-----	C	None-----	---	---	>6.0	---	---	20-40	Hard	Moderate	High-----	Low.
Starley-----	D	None-----	---	---	>6.0	---	---	10-20	Hard	Moderate	High-----	Low.
185----- Nesda	C	Rare-----	---	---	1.5-5.0	Apparent	May-Sep	>60	---	Low-----	Moderate	Low.
186*: Nesda-----	A	None-----	---	---	>6.0	---	---	>60	---	Low-----	Moderate	Low.
Rubble land-----	A	None-----	---	---	>6.0	---	---	>40	Hard	---	---	---
187*: Nesda Variant----	A	Occasional	Brief-----	May-Aug	>6.0	---	---	>60	---	Low-----	High-----	Low.
Havertel-----	B	Occasional	Brief-----	May-Aug	3.0-5.0	Apparent	Mar-Oct	>60	---	Low-----	High-----	Low.

See footnote at end of table.

Table 16.--Soil and Water Features--Continued

Soil name and map symbol	Hydro-logic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness		Uncoated steel	Concrete
					<u>Ft</u>			<u>In</u>				
188*: Norbert-----	D	None-----	---	---	>6.0	---	---	10-20	Soft	Moderate	High-----	Low.
Doney-----	C	None-----	---	---	>6.0	---	---	20-40	Soft	Moderate	High-----	Low.
Rock outcrop----	D	None-----	---	---	>6.0	---	---	0	Soft	---	---	---
189*: Norbert-----	D	None-----	---	---	>6.0	---	---	10-20	Soft	Moderate	High-----	Low.
Eltzac-----	D	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	High-----	Low.
190*: Norbert-----	D	None-----	---	---	>6.0	---	---	10-20	Soft	Moderate	High-----	Low.
Reget-----	C	None-----	---	---	>6.0	---	---	20-40	Soft	Moderate	High-----	Low.
Savar-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
191*: Norbert-----	D	None-----	---	---	>6.0	---	---	10-20	Soft	Moderate	High-----	Low.
Rock outcrop----	D	None-----	---	---	>6.0	---	---	0	Soft	---	---	---
192, 193, 194, 195, 196----- Nuncho	C	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
197*, 198*: Nuncho-----	C	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Emigrant-----	C	None-----	---	---	>6.0	---	---	20-40	Soft	Moderate	High-----	Low.

See footnote at end of table.

Table 16.--Soil and Water Features--Continued

Soil name and map symbol	Hydro-logic group	Flooding			High water table			Bedrock		Risk of corrosion		
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness	Potential frost action	Uncoated steel	Concrete
199----- Nuncho Variant	C	Rare-----	---	---	2.0-4.0	Apparent	May-Sep	>60	---	High-----	High-----	Low.
200*: Owen Creek-----	C	None-----	---	---	>6.0	---	---	20-40	Soft	Moderate	High-----	Low.
Echemoor-----	C	None-----	---	---	>6.0	---	---	20-40	Soft	Moderate	Low-----	Low.
Bynum-----	C	None-----	---	---	>6.0	---	---	20-40	Soft	Moderate	High-----	Low.
201*: Parmleed-----	C	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	High-----	Low.
Bidman-----	C	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
202*, 203*: Parmleed, moist--	C	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	High-----	Low.
Bidman, moist---	C	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
204*: Parmleed-----	C	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	High-----	Low.
Renohill-----	C	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	High-----	Low.
205*, 206*: Parmleed, moist--	C	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	High-----	Low.
Renohill, moist--	C	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	High-----	Low.
207*: Parmleed-----	C	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	High-----	Low.

See footnote at end of table.

Table 16.--Soil and Water Features--Continued

Soil name and map symbol	Hydro-logic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth Ft	Kind	Months	Depth In	Hardness		Uncoated steel	Concrete
207*: Worfka-----	D	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
208*, 209*: Parmleed, moist--	C	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	High-----	Low.
Worfka, moist----	D	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
210*: Parmleed, moist--	C	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	High-----	Low.
Worfka, moist----	D	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
Shingle Variant, moist-----	C	None-----	---	---	>6.0	---	---	10-20	Hard	Moderate	High-----	Low.
211*: Peritsa-----	C	None-----	---	---	>6.0	---	---	20-40	Soft	Moderate	High-----	Low.
Abac-----	D	None-----	---	---	>6.0	---	---	10-20	Soft	Moderate	High-----	Low.
212, 213----- Platmak	C	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
214----- Platmak, dry	C	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
215, 216, 217, 218----- Platsher	C	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.

See footnote at end of table.

Table 16.--Soil and Water Features--Continued

Soil name and map symbol	Hydro-logic group	Flooding			High water table			Bedrock		Risk of corrosion		
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness	Potential frost action	Uncoated steel	Concrete
					<u>Ft</u>		<u>In</u>					
219*, 220*, 221*: Platsher-----	C	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Wolfvar-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
222----- Platsher Variant	C	None-----	---	---	1.5-3.0	Apparent	Aug-Oct	>60	---	Low-----	High-----	Low.
223, 224, 225----- Recluse	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
226*: Recluse-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Bauxson-----	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
Baux-----	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	Moderate	Low.
227*, 228*: Reeder-----	C	None-----	---	---	>6.0	---	---	20-40	Soft	Moderate	High-----	Low.
Farnuf-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
229, 230----- Reget	C	None-----	---	---	>6.0	---	---	20-40	Soft	Moderate	High-----	Low.
231*: Reget-----	C	None-----	---	---	>6.0	---	---	20-40	Soft	Moderate	High-----	Low.
Savar-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.

See footnote at end of table.

Table 16.--Soil and Water Features--Continued

Soil name and map symbol	Hydro-logic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness		Uncoated steel	Concrete
					<u>Ft</u>			<u>In</u>				
232*: Reget Variant----	C	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Reget-----	C	None-----	---	---	>6.0	---	---	20-40	Soft	Moderate	High-----	Low.
233*: Renhill-----	C	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	High-----	Low.
Savageton-----	C	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	High-----	Low.
234*, 235*: Renhill, moist--	C	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	High-----	Low.
Savageton, moist-	C	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	High-----	Low.
236*: Renhill-----	C	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	High-----	Low.
Ulm, dry-----	C	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
237*: Renhill, moist--	C	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	High-----	Low.
Ulm-----	C	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
238*: Renhill-----	C	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	High-----	Low.
Worfka-----	D	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
239*: Renhill, moist--	C	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	High-----	Low.

See footnote at end of table.

Table 16.--Soil and Water Features--Continued

Soil name and map symbol	Hydro-logic group	Flooding		High water table			Bedrock			Risk of corrosion		
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness	Potential frost action	Uncoated steel	Concrete
					Ft		In					
239*: Worfka, moist----	D	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
240*: Renchill, moist--	C	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	High-----	Low.
Wyarno-----	C	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
241*: Rock outcrop----	D	None-----	---	---	>6.0	---	---	0	Hard	---	---	---
Agneston-----	C	None-----	---	---	>6.0	---	---	20-40	Hard	Moderate	Moderate	Moderate.
Rubble land----	A	None-----	---	---	>6.0	---	---	>40	Hard	---	---	---
242*: Rock outcrop----	D	None-----	---	---	>6.0	---	---	0	Hard	---	---	---
Starman-----	D	None-----	---	---	>6.0	---	---	10-20	Hard	Moderate	High-----	Low.
243*: Rock outcrop----	D	None-----	---	---	>6.0	---	---	0	Hard	---	---	---
Starman Variant--	D	None-----	---	---	>6.0	---	---	10-20	Hard	Moderate	High-----	Low.
244*: Samday, moist----	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Moderate.
Gayhart, moist---	C	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	High-----	Moderate.
Hilight, moist---	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Low.

See footnote at end of table.

Table 16.--Soil and Water Features--Continued

Soil name and map symbol	Hydro-logic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness		Uncoated steel	Concrete
					Ft			In				
245*: Samday-----	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Moderate.
Hilight-----	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Low.
246, 247, 248----- Savage	C	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
249*: Savage-----	C	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Farnuf-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
250*: Savage-----	C	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Korchea-----	B	Occasional	Brief-----	May-Jun	>6.0	---	---	>60	---	Moderate	High-----	Low.
251*: Savage-----	C	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Reget-----	C	None-----	---	---	>6.0	---	---	20-40	Soft	Moderate	High-----	Low.
252*: Searing-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Ringling-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Low.
253----- Shaak	C	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.

See footnote at end of table.

Table 16.--Soil and Water Features--Continued

Soil name and map symbol	Hydro- logic group	Flooding			High water table			Bedrock		Risk of corrosion		
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness	Potential frost action	Uncoated steel	Concrete
254*: Shingle, moist---	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Moderate.
Baux-----	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	Moderate	Low.
Rock outcrop---	D	None-----	---	---	>6.0	---	---	0	Soft	---	---	---
255*: Shingle-----	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Moderate.
Haverdad-----	B	Frequent---	Brief-----	Mar-Jun	>6.0	---	---	>60	---	Low-----	High-----	Low.
256*: Shingle, moist---	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Moderate.
Haverdad, moist--	B	Frequent---	Brief-----	Mar-Jun	>6.0	---	---	>60	---	Low-----	High-----	Low.
257*: Shingle-----	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Moderate.
Nihill-----	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
258*: Shingle, moist---	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Moderate.
Nihill, moist---	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
259*: Shingle, moist---	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Moderate.
Nuncho-----	C	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.

See footnote at end of table.

Table 16.--Soil and Water Features--Continued

Soil name and map symbol	Hydro-logic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness		Uncoated steel	Concrete
					Ft			In				
260*: Shingle-----	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Moderate.
Rock outcrop----	D	None-----	---	---	>6.0	---	---	0	Soft	---	---	---
261*: Shingle, moist---	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Moderate.
Rock outcrop----	D	None-----	---	---	>6.0	---	---	0	Soft	---	---	---
262*: Shingle-----	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Moderate.
Samday-----	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Moderate.
263*: Shingle, moist---	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Moderate.
Samday, moist---	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Moderate.
264*: Shingle-----	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Moderate.
Taluce-----	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Low.
265*: Shingle, moist---	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Moderate.
Taluce, moist---	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Low.
266*: Shingle-----	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Moderate.

See footnote at end of table.

Table 16.--Soil and Water Features--Continued

Soil name and map symbol	Hydro-logic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness		Uncoated steel	Concrete
					Ft			In				
266*: Theedle-----	C	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	High-----	Low.
267*: Shingle, moist---	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Moderate.
Theedle, moist---	C	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	High-----	Low.
268*: Shingle-----	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Moderate.
Theedle-----	C	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	High-----	Low.
Kishona-----	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
269*: Shingle, moist---	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Moderate.
Theedle, moist---	C	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	High-----	Low.
Kishona, moist---	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
270*: Shingle, moist---	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Moderate.
Theedle, moist---	C	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	High-----	Low.
Rock outcrop----	D	None-----	---	---	>6.0	---	---	0	Soft	---	---	---
271*: Shingle-----	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Moderate.

See footnote at end of table.

Table 16.--Soil and Water Features--Continued

Soil name and map symbol	Hydro- logic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness		Uncoated steel	Concrete
271*: Wibaux-----	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	Moderate	Low.
272*: Shingle, cool----	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Moderate.
Wibaux, cool----	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	Moderate	Low.
273*: Shingle-----	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Moderate.
Worf-----	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Low.
274*: Shingle, moist---	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Moderate.
Worf, moist-----	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Low.
275----- Sinkson	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
276*: Spearman-----	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
Wibaux-----	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	Moderate	Low.
277*: Taluze-----	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Low.
Tulloch-----	B	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	Moderate	Low.
Rock outcrop----	D	None-----	---	---	>6.0	---	---	0	Hard	---	---	---

See footnote at end of table.

Table 16.--Soil and Water Features--Continued

Soil name and map symbol	Hydro- logic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth Ft	Kind	Months	Depth In	Hardness		Uncoated steel	Concrete
278*:												
Taluca-----	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Low.
Tulloch-----	B	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	Moderate	Low.
Vonalee-----	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
279*:												
Taluca, moist---	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Low.
Tulloch, moist---	B	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	Moderate	Low.
Vonalee, moist---	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
280*:												
Taluca Variant---	C	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Low.
Treoff-----	D	None-----	---	---	>6.0	---	---	10-20	Soft	Moderate	High-----	Low.
Theedle Variant--	B	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	High-----	Low.
281*:												
Theedle-----	C	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	High-----	Low.
Kishona-----	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
282*, 283*:												
Theedle, moist---	C	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	High-----	Low.
Kishona, moist---	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.

See footnote at end of table.

Table 16.--Soil and Water Features--Continued

Soil name and map symbol	Hydro-logic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness		Uncoated steel	Concrete
					<u>Ft</u>			<u>In</u>				
284*: Tolman-----	D	None-----	---	---	>6.0	---	---	10-20	Hard	Moderate	High-----	Low.
Beeno-----	C	None-----	---	---	>6.0	---	---	20-40	Soft	Moderate	Moderate	Low.
Beenom-----	C	None-----	---	---	>6.0	---	---	10-20	Hard	Moderate	High-----	Low.
285*: Trimad-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Doney-----	C	None-----	---	---	>6.0	---	---	20-40	Soft	Moderate	High-----	Low.
Wayden-----	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Low.
286*: Trimad-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Trivar-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
287*: Trimad-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Twin Creek-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
288----- Twin Creek	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
289----- Twin Creek Variant	C	Rare-----	---	---	1.5-3.0	Apparent	Apr-Nov	>60	---	Moderate	High-----	Moderate.

See footnote at end of table.

Table 16.--Soil and Water Features--Continued

Soil name and map symbol	Hydro- logic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness		Uncoated steel	Concrete
290, 291----- Ulm	C	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
292, 293----- Ulm, dry	C	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
294*: Urban land.												
Kishona, moist---	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
Clarkelen-----	B	Rare-----	---	---	4.0-6.0	Apparent	Mar-May	>60	---	Low-----	High-----	Low.
295*: Urban land.												
Platsher-----	C	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Wolfvar-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
296*: Urban land.												
Wyarno-----	C	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Nuncho-----	C	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
297*: Ustic Torriorthents.												
Pits.												

See footnote at end of table.

Table 16.--Soil and Water Features--Continued

Soil name and map symbol	Hydro-logic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth Ft	Kind	Months	Depth In	Hardness		Uncoated steel	Concrete
298----- Wayden	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Low.
299*: Wetterdon-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
Recluse-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
300*: Wibaux-----	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	Moderate	Low.
Reddale-----	D	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
301----- Windham	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
302, 303----- Wolf	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
304*: Worfka-----	D	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
Shingle-----	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Moderate.
Samday-----	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Moderate.
305*: Worfka, moist----	D	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
Shingle, moist----	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Moderate.
Samday, moist----	D	None-----	---	---	>6.0	---	---	10-20	Soft	Low-----	High-----	Moderate.

See footnote at end of table.

Table 16.--Soil and Water Features--Continued

Soil name and map symbol	Hydro-logic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness		Uncoated steel	Concrete
					Ft			In				
306----- Worthington	D	Occasional	Brief-----	Mar-Jun	0.5-1.5	Apparent	Mar-Jul	>60	---	High-----	High-----	High.
307*: Worthington-----	D	Occasional	Brief-----	Mar-Jun	0.5-1.5	Apparent	Mar-Jul	>60	---	High-----	High-----	High.
Recluse-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
308*: Worthington Variant-----	D	Rare-----	---	---	0-1.0	Apparent	Jan-Dec	>60	---	Moderate	Moderate	Low.
Assinniboine Variant-----	B	Rare-----	---	---	2.0-3.0	Apparent	Mar-Nov	>60	---	Low-----	Low-----	Low.
309, 310, 311----- Wyarno	C	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
312, 313, 314----- Wyarno, dry	C	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
315----- Zigweid	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
316*: Zigweid-----	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
Cambria-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
317*: Zigweid-----	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.

See footnote at end of table.

Table 16.--Soil and Water Features--Continued

Soil name and map symbol	Hydro- logic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth <u>Ft</u>	Kind	Months	Depth <u>In</u>	Hardness		Uncoated steel	Concrete
317*: Kishona-----	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Moderate.
Cambria-----	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.
318*, 319*, 320*: Zigweid, moist---	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
Kishona, moist---	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Low.
Cambria, moist---	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Low.

* See description of the map unit for composition and behavior characteristics of the map unit.

Table 17.--Classification of the Soils

(An asterisk in the first column indicates that the soil is a taxadjunct to the series in one or more of the map units. See text for a description of those characteristics of the soil that are outside the range of the series)

Soil name	Family or higher taxonomic class
Abac-----	Loamy, mixed (calcareous), frigid, shallow Typic Ustorthents
Absted-----	Fine, montmorillonitic, mesic Haplustollic Natrargids
Agneston-----	Loamy-skeletal, mixed Typic Cryoboralfs
Arnegard-----	Fine-loamy, mixed Pachic Haploborolls
Arvada-----	Fine, montmorillonitic, mesic Ustollic Natrargids
Assinniboine-----	Fine-loamy, mixed Aridic Argiborolls
Assinniboine Variant-----	Fine-loamy over sandy or sandy-skeletal, mixed Pachic Argiborolls
Bahl-----	Fine, montmorillonitic (calcareous), mesic Ustertic Torriorthents
Baux-----	Loamy-skeletal over fragmental, mixed, mesic Aridic Haplustolls
Bauxson-----	Fine-loamy over fragmental, mixed, mesic Aridic Argiustolls
Beeno-----	Fine-loamy, mixed Typic Argiborolls
*Beenom-----	Loamy, mixed Lithic Argiborolls
Bidman-----	Fine, montmorillonitic, mesic Ustollic Paleargids
Big Horn-----	Fine, montmorillonitic, mesic Ustollic Paleargids
Bowbac-----	Fine-loamy, mixed, mesic Ustollic Haplargids
Burgess-----	Coarse-loamy, mixed Argic Cryoborolls
Bynum-----	Fine-loamy, mixed Typic Cryoborolls
Cambria-----	Fine-loamy, mixed, mesic Ustollic Haplargids
Cedak-----	Fine-loamy, mixed, mesic Aridic Argiustolls
Clarkelen-----	Coarse-loamy, mixed (calcareous), mesic Ustic Torrifluvents
Cloud Peak-----	Loamy-skeletal, mixed Typic Cryoboralfs
Cloud Peak Variant-----	Fine-loamy over sandy or sandy-skeletal, mixed Mollic Eutroboralfs
Coaliams-----	Fine-loamy, mixed, mesic Torrifluventic Haplustolls
Cushman-----	Fine-loamy, mixed, mesic Ustollic Haplargids
Daast-----	Coarse-loamy, mixed, frigid Typic Ustochrepts
Daast Variant-----	Mixed, frigid Lithic Ustipsamments
Decolney-----	Fine-loamy, mixed, mesic Ustollic Haplargids
Doney-----	Fine-loamy, mixed, frigid Typic Ustochrepts
Doney Variant-----	Loamy, mixed (calcareous), frigid, shallow Typic Ustorthents
Draknab-----	Sandy, mixed, mesic Ustic Torrifluvents
Echemoor-----	Fine-loamy, mixed Argic Pachic Cryoborolls
Eltzac-----	Very fine, montmorillonitic, frigid Udorthentic Chromusterts
Emigrant-----	Fine, montmorillonitic, mesic Aridic Argiustolls
*Farnuf-----	Fine-loamy, mixed Typic Argiborolls
Farnuf Variant-----	Fine-loamy, mixed Typic Argiborolls
Forkwood-----	Fine-loamy, mixed, mesic Ustollic Haplargids
Gayhart-----	Fine, montmorillonitic (calcareous), mesic Ustic Torriorthents
Granile-----	Loamy-skeletal, mixed Typic Cryoboralfs
Hardhart-----	Loamy-skeletal, carbonatic Calcic Cryoborolls
*Hargreave-----	Fine-loamy, mixed, mesic Aridic Argiustolls
Harlan-----	Fine-loamy, mixed, mesic Aridic Argiustolls
*Haverdad-----	Fine-loamy, mixed (calcareous), mesic Ustic Torrifluvents
Havertel-----	Fine-silty over sandy or sandy-skeletal, mixed, mesic Fluventic Haplustolls
Hazton-----	Loamy, mixed Lithic Cryoborolls
Hesperus Variant-----	Fine-loamy, mixed Pachic Argiborolls
Hiland-----	Fine-loamy, mixed, mesic Ustollic Haplargids
Hilight-----	Clayey, montmorillonitic, nonacid, mesic, shallow Ustic Torriorthents
Jonpol-----	Fine, montmorillonitic, mesic Aridic Paleustolls

Table 17.--Classification of the Soils--Continued

Soil name	Family or higher taxonomic class
Kirtley-----	Fine-loamy, mixed, mesic Aridic Argiustolls
Kishona-----	Fine-loamy, mixed (calcareous), mesic Ustic Torriorthents
*Korchea-----	Fine-loamy, mixed (calcareous), frigid Mollic Ustifluvents
Lambman-----	Loamy, mixed, mesic, shallow Aridic Argiustolls
Lucky-----	Fine-loamy, mixed Argic Cryoborolls
Moskee-----	Fine-loamy, mixed, mesic Aridic Argiustolls
Nathrop-----	Loamy-skeletal, mixed Argic Cryoborolls
Nesda-----	Sandy-skeletal, mixed Fluventic Haploborolls
Nesda Variant-----	Sandy-skeletal, mixed, mesic Fluventic Haplustolls
Nihill-----	Loamy-skeletal, mixed (calcareous), mesic Ustic Torriorthents
Noden-----	Fine-loamy, mixed, mesic Aridic Argiustolls
Norbert-----	Clayey, montmorillonitic (calcareous), frigid, shallow Typic Ustorthents
Nuncho-----	Fine, montmorillonitic, mesic Aridic Argiustolls
Nuncho Variant-----	Fine, montmorillonitic, mesic Aridic Argiustolls
Owen Creek-----	Fine, montmorillonitic Argic Cryoborolls
Pamleed-----	Fine, montmorillonitic, mesic Ustollic Paleargids
Passcreek-----	Fine-loamy, mixed Argic Cryoborolls
Peritsa-----	Fine-silty, mixed Typic Haploborolls
Platmak-----	Fine, montmorillonitic, mesic Aridic Paleustolls
Platsher-----	Fine, montmorillonitic, mesic Aridic Paleustolls
Platsher Variant-----	Fine, montmorillonitic, mesic Aquic Paleustolls
Recluse-----	Fine-loamy, mixed, mesic Aridic Argiustolls
Reddale-----	Clayey over fragmental, montmorillonitic, mesic Ustollic Paleargids
Reeder-----	Fine-loamy, mixed Typic Argiborolls
Reget-----	Fine, montmorillonitic Typic Argiborolls
Reget Variant-----	Fine, montmorillonitic Typic Argiborolls
Renohill-----	Fine, montmorillonitic, mesic Ustollic Haplargids
Ringling-----	Loamy-skeletal over fragmental, mixed Typic Haploborolls
Samday-----	Clayey, montmorillonitic (calcareous), mesic, shallow Ustic Torriorthents
Savage-----	Fine, montmorillonitic Typic Argiborolls
Savageton-----	Fine, montmorillonitic, mesic Ustollic Camborthids
Savar-----	Fine, montmorillonitic Pachic Argiborolls
*Searing-----	Fine-loamy over fragmental, mixed Typic Haploborolls
Shaak-----	Fine, montmorillonitic Abruptic Argiborolls
Shingle-----	Loamy, mixed (calcareous), mesic, shallow Ustic Torriorthents
Shingle Variant-----	Loamy, mixed (calcareous), mesic Lithic Ustic Torriorthents
Sinkson-----	Fine-loamy, mixed (calcareous), frigid Ustic Torriorthents
Spearman-----	Fine-loamy over fragmental, mixed, mesic Aridic Haplustolls
Starley-----	Loamy-skeletal, mixed Lithic Cryoborolls
Starman-----	Loamy-skeletal, mixed (calcareous) Lithic Cryorthents
Starman Variant-----	Loamy-skeletal, mixed (calcareous), frigid Lithic Ustic Torriorthents
Taluce-----	Loamy, mixed (calcareous), mesic, shallow Ustic Torriorthents
Taluce Variant-----	Sandy, mixed, mesic, shallow Aridic Haplustolls
Theedle-----	Fine-loamy, mixed (calcareous), mesic Ustic Torriorthents
Theedle Variant-----	Coarse-loamy, mixed, mesic Aridic Haplustolls
Tolman-----	Loamy-skeletal, mixed Lithic Argiborolls
Treoff-----	Loamy, mixed, mesic, shallow Torriorthentic Haplustolls
Trimad-----	Loamy-skeletal, mixed Aridic Calciborolls
Trivar-----	Coarse-loamy, mixed Typic Calciborolls
Tulloch-----	Mixed, mesic Ustic Torripsamments
Twin Creek-----	Fine-loamy, mixed Typic Haploborolls
Twin Creek Variant-----	Fine-loamy, mixed Aquic Argiborolls

Table 17.--Classification of the Soils--Continued

Soil name	Family or higher taxonomic class
Ulm-----	Fine, montmorillonitic, mesic Ustollic Haplargids
Vonalee-----	Coarse-loamy, mixed, mesic Ustollic Haplargids
Wayden-----	Clayey, montmorillonitic (calcareous), frigid, shallow Typic Ustorthents
Wetterdon-----	Fine-loamy, mixed, mesic Pachic Argiustolls
Wibaux-----	Loamy-skeletal over fragmental, mixed, nonacid, mesic Ustic Torriorthents
Windham-----	Loamy-skeletal, carbonatic Typic Calciborolls
Wolf-----	Fine-loamy, mixed, mesic Aridic Argiustolls
Wolfvar-----	Fine-loamy over sandy or sandy-skeletal, mixed, mesic Aridic Argiustolls
Worf-----	Loamy, mixed, mesic, shallow Ustollic Haplargids
Worfka-----	Clayey, montmorillonitic, mesic, shallow Ustollic Haplargids
Worthenton-----	Fine, montmorillonitic, mesic Typic Argiaquolls
Worthenton Variant-----	Fine-loamy over sandy or sandy-skeletal, mixed, frigid Typic Argiaquolls
Wyarno-----	Fine, montmorillonitic, mesic Ustollic Haplargids
Zigweid-----	Fine-loamy, mixed, mesic Ustollic Camborthids

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