APPENDIX E

GLOSSARY

This page intentionally left blank.

Abstraction. That amount of rainfall which does not runoff due to infiltration, detention storage, or interception by vegetation.

> **Initial abstraction.** That amount of rainfall abstracted during the beginning of the storm. See Retention.

Acid soil. A soil giving an acid reaction throughout most or all of the portion occupied by roots (precisely, pH <7.0; practically, pH <6.6).

Alkaline soil. Any soil horizon having a pH greater than 7.3.

Amendment. Any materials, eg. gypsum, sawdust, lime or synthetic conditioner, worked into the soil to make it more productive.

Arid. Regions or climates that lack sufficient moisture for crop production without irrigation. The upper limits of precipitation vary according to temperature conditions. In temperate regions, an upper average annual limit is 8 to 10 inches.

Broadcast seeding. Scattering seed on the surface of the soil.

Buffer strip. 1. Unaffected areas between the mining operation and areas designated for other public or private use. 2. Strips of grass or other erosion resistant vegetation between or below surface or auger mining disturbance.

Canopy. The cover of leaves and branches formed by the tops or crowns of plants.

Check dams. Small dam constructed in a gully or other small water course to decrease the stream flow velocity, minimize channel scour, and promote deposition of sediment.

Clay. 1. Particle size or soil separate consisting of particles sizes <0.002 mm in equivalent diameter. 2. Soil textural class.

Compaction. The closing of the pore spaces among the particles of soil and rock, generally caused by running heavy equipment over the area as in the process of leveling the overburden material of strip mine banks.

Contour. An imaginary line connecting points of equal height above sea level as they follow the relief of the terrain.

Contour furrowing. A mechanical treatment for controlling erosion by creating trenches or furrows on the contour of the slope.

Contour stripping or surface mining. The removal of overburden and mining from a coal seam that crops out or approaches the surface at approximately the same elevation in steep or mountainous terrain.

Conveyance channel. A stabilized drainageway used to collect water from diversions and overland flow areas and to deliver it from the site to the established disposal area.

Cover, crop. A close growing crop grown primarily for the purpose of protecting and improving soil between periods of regular crop production.

Cover, ground. Any vegetation producing a protecting mat on or just above the soil surface.

Cover factor. The ratio of cover area to total area.

Curve number. Coefficients used for estimating surface runoff depth from rainstorms.

Density, vegetative. The percentage of ground surface that appears to be completely covered by vegetation when viewed directly from above.

Deposition. The accumulation of material dropped because of a slackening movement of the transporting agent - water.

Detachment. The removal of transportable fragments of soil material from a soil mass by an eroding agent, usually falling raindrops or running water. Through detachment soil particles are made ready for transport - soil erosion.

Direct seeding. A method of establishing a stand of vegetation by sowing seed on the ground surface.

Diversion. Channel constructed across the slope for the purpose of intercepting surface runoff. Changing the accustomed course of all or part of a stream.

Drop structure. A structure constructed across the channel to adjust the effective slope of the channel.

Erodibility. See Soil erodibility.

Erosion. 1. The wearing away of land surface by running water, wind, ice, or other geological agents, including such processes as gravitational creep. 2. Detachment and movement of soil or rock fragments by water, wind, ice, or gravity.

The following terms are used to describe different types of erosion:

Accelerated erosion. Erosion much more rapid than normal, natural, or geologic erosion, primarily as a result of the influence of the activities of man or, in some cases, of other animals or natural catastrophies that expose base surfaces, for example, fires.

Geological erosion. The normal or natural erosion caused by geological processes acting over long geologic periods and resulting in the wearing away of mountains, the building up of floodplains, coastal plains, etc. Syn: Natural erosion.

Gully erosion. The erosion process whereby water accumulates in narrow channels, over short periods, and removes the soil from this narrow area to considerable depths, ranging from 1 to 2 feet to as much as 75 to 100 feet.

Natural erosion. Wearing away of the earth's surface by water, ice, or other natural agents under natural environmental conditions of climate, vegetation, etc., undisturbed by man. Syn: Geological erosion.

Normal erosion. The gradual erosion of land used by man which does not greatly exceed natural erosion. See Natural erosion.

Rill erosion. An erosion process in which numerous small channels only several inches deep are formed. Occurs mainly on recently cultivated soils.

Sheet erosion. The removal of a fairly uniform layer of soil from the land surface by runoff water.

Splash erosion. The spattering of small soil particles caused by the impact of raindrops on wet soils. The loosened and spattered particles may or may not be removed subsequently by surface runoff.

Erosive. Refers to wind or water having sufficient velocity to cause erosion. Not to be confused with Erodible as a quality of soil.

Fertility. The quality of soil that enables it to provide nutrients in adequate amounts and in proper balance for the growth of specified plants when other growth factors, such as light, moisture, temperature, and the physical condition of the soil are favorable.

Filtering efficiency. Ratio of weight of sediment trapped in the filter material to the weight of incoming sediment.

Gravel. Aggregate consisting of mixed sizes of 1/4 inch to 3 inch parameters.

Gully. See Erosion.

Hardpan. A hardened soil layer in the lower A or in the B horizon caused by cementation of soil particles with organic matter or with materials such as silica, sesquioxides, or calcium carbonate. The hardness does not change appreciably with changes in moisture content, and pieces of the hard layer do not slake in water.

Hydraulic conductivity. See Permeability.

Hydraulic radius. Ratio of cross section area to wetted perimeter.

Hydrograph. Graph showing the variation in time of some hydrological observation data.

Hydrology. The science that relates to the water systems of the earth.

Hydroseeding. Dissemination of seed hydraulically in a water medium. Mulch, lime, and fertilizer can be incorporated into the sprayed mixture.

Hyetograph. Chart displaying temporal or areal distribution of precipitation.

Infiltration. The flow of a liquid into a substance through pores or other openings, connoting flow into a soil in contradistinction to percolation, which connotes flow through a porous substance.

Inlet. The upstream end of any structure through which water may flow.

Intermittent stream. A stream or portion of a stream that flows only in direct response to precipitation. It receives little or no water from springs and no long-continued supply from melting snow or other sources. It is dry for a large part of the year, ordinarily more than 3 months.

Isopluvial map. Map showing contour lines of equal precipitation, often defined on an average annual basis.

Land imprinting. Mechanical treatment for controlling erosion by creating a geometric surface resulting in microbasins and v-furrows.

Lime. Lime, from the strictly chemical standpoint, refers to only one compound, calcium oxide (CaO); however, the term lime is commonly used in agriculture to include a great variety of materials that are usually composed of the oxide, hydroxide, or carbonate of calcium or of calcium and magnesium. The most commonly used forms of agricultural lime are ground limestone (carbonates), hydrated lime (hydroxides), burnt lime (oxides), marl, and oyster shells.

Mulch. Natural or artifical material used to provide more desirable moisture and temperature relationships for plant growth. It is also used to control unwanted vegetation.

Overland flow. Water usually storm runoff, flowing in a thin layer over the ground surface.

Overland flow detachment. See Detachment.

Particle size distribution. The amount of the various soil separates or individual soil particles in a soil sample, usually expressed as percent weight of clay, silt and sand (or subdivisions thereof).

Permeability. The quality of a soil horizon that enables water or air to move through it. The permeability of a soil may be limited by the presence of one nearly impermeable horizon even though the others are permeable.

pH. A numerical measure of the hydrogen ion concentration. It is used to indicate acidity and alkalinity. The neutral point is pH 7.0; pH values below 7.0 indicate acid conditions and those above 7.0 indicate alkaline conditions.

Pitting. Mechanical treatment for controlling erosion by creating small basins or pit on the contour of the slope.

Physical process. Describes the occurrence or continuing development which involve change of a physical entity usually at or near the earth's surface; caused by forces or agents such as water, wind, gravity, temperature differential.

Rainfall detachment. See Detachment.

Rainfall excess. That portion of rainfall that becomes runoff discharged from an area.

Reclamation. The process of reconverting mined land to its former or other productive uses.

Regrading. The movement of earth over a surface or depression to change the slope of the land surface.

Rehabilitation. Implies that the land will be returned to a form and productivity in conformity with a prior land use plan, including a stable ecological state that does not contribute substantially to environmental deterioration and is consistent with surrounding esthetic values.

Retardance classification. A qualitative description of the resistance to flow offered by various types of vegetation.

Retention. The amount of precipitation on a drainage area that does not escape as runoff. It is the difference between the total precipitation and total runoff.

Revegetation. Plants or growth that replaces original ground cover following land disturbance.

Revetment. A facing of stone or other material, either permanent or temporary, placed along the edge of a stream to stabilize the bank and protect it from the erosive action of the stream.

Rill. See Erosion.

Ripping. Erosion control mechanical treatment which shatters subsoil layers thereby increasing soil water movement.

Riprap. Broken rock, cobbles, or boulders placed on earth surfaces, such as the face of a dam or the bank of a stream, for protection against the action of water (waves). Also applied to brush or pole mattresses, or brush and stone, or other similar materials used for soil erosion control.

Rock-fill dam. A dam composed of loose rock usually dumped in place, often with the upstream part constructed of handpacked or derrick-placed rock and faced with rolled earth or with an impervious surface of concrete, timber, or steel.

Runoff. That portion of the precipitation on a drainage area that is discharged from the area in stream channels. Types include surface runoff, ground water runoff, or seepage.

Saline soil. Non-sodic soil containing sufficient soluble salts to impair productivity.

Sand. 1. A particle size or soil separate consisting of particle sizes 0.05 to 2.0 mm in equivalent diameter. 2. Soil textural class.

Scarify. To loosen or stir the surface soil without turning it over. Also, in the case of legume seeds, abrasion of the hard coat to decrease time required for germination.

Sediment. Solid material, both mineral and organic, that is in suspension, is being transported, or has been moved from its site of origin by air, water, gravity, or ice and has come to rest on the earth's surface either above or below sea level.

Sediment delivery. The total amount of sediment discharged by the flow during a given time interval. The total amount of sediment discharged from a watershed measured at a downstream point.

Sediment supply. The total amount of sediment detached by raindrop impact and overland flow.

Sediment transport capacity. The rate at which the stream is capable of carrying sediment.

Sediment yield. The total amount of sediment that passes any section of a stream.

Seedbed. The soil prepared by natural or artificial means to promote the germination of seed and the growth of seedlings.

Semiarid. A term applied to regions or climates where moisture is normally greater than under arid conditions (>8 to 10 inches) but still definitely limiting to the growth of most crops. Dryland farming methods or irrigation generally is required for crop production. The upper limit of average annual precipitation in the temperate semiarid regions is as low as 15 to 20 inches.

Side slopes. The slope of the sides of a canal, dam, or embankment. It is customary to name the horizontal distance first as 1.5 to 1.0, or frequently 1-1/2:1, meaning a horizontal distance of 1.5 feet to 1 foot vertical.

Silt. 1. A particle size or soil separate consisting of particle sizes 0.002 to 0.05 mm in equivalent diameter. 2. A soil textural class.

SIMSED model. Simplified sediment yield model. A simplified procedural method for estimating on-site soil loss; a mathematical model based on physical processes.

Sheet flow. See Overland flow.

Sodded waterway. Grassed waterway vegetated by sodding with adapted grass species.

Sodic soil. Non-saline soil containing sodium which interferes with plant growth.

Soil. 1. The unconsolidated mineral and organic material on the immediate surface of the earth that serves as a natural medium for the growth of land plants. 2. The unconsolidated mineral matter on the surface of the earth that has been subjected to and influenced by genetic and environmental factors of parent material, climate (including moisture and temperature effects), macro- and micro-organisms, and topography, all acting over a period of time and producing a product soil that differs from the material from which it is derived in many physical, chemical, biological, and morphological properties and characteristics. 3. A kind of soil; that is, the collection of soils that are alike in specified combinations of characteristics. Kinds of soil are given names in the system of soil classification. The terms the soil and soil are collective.

Soil erodibility. A physical property of soil expressing its susceptibility to erosion due to raindrop splash and sheet wash processes.

Soil series. The basic unit of soil classification being a subdivision of a family and consisting of soils that are essentially alike in all major profile characteristics except the texture of the A horizon.

Soil structure. The combination or arrangement of primary soil particles into secondary particles, units, or peds.

Soil textural classification. General class of a soil denoting a particular percentage of clay, silt and sand, eg. loam, clay loam. Note: clay, silt and sand are particle sizes as well as a textural class.

Subsoil. The B horizon of soils with distinct profiles. In soils with weak profile develoment, the subsoil can be defined as the sol below the plowed soil (or its equivalent of surface soil) in which roots normally grow. Although a common term, it cannot be defined accurately. It has been carried over from early days when soil was conceived only as the plowed soil and that under it as subsoil.

Surface soil. That part of the upper soil of arable soils commonly stirred by tillage implements or an equivalent depth (5 to 8 inches) in nonarable soils.

Suspended solids. Sediment that is in suspension in water but that will physically settle out under quiescent conditions (as differentiated from dissolved material).

Tacking (mulch). The process of binding mulch fibers together by the addition of a sprayed chemical compound.

Terrace. An embankment or combination of an embankment and channel constructed across a slope to control erosion by diverting.

Terrace outlet channel. Channel, usually having a vegetative cover, into which the flow from one or more terraces is discharged and conveyed from the field.

Terrace types.

Absorptive: A ridge type of terrace used primarily for moisture conservation.

Bench: A terrace approximately on the contour, having a steep or vertical drop to the slope below, and having a horizontal or gentle sloping part. It is adapted to steeper slopes.

Drainage: A broad, channel-type terrace used primarily to conduct water from the area at a low velocity. It is adapted to less absorptive soil and regions of high rainfall.

Topsoil. The unconsolidated earthy material that exists in its natural state above the rock strata and that is or can be made favorable to the growth of desirable vegetation.

Toxic spoil. Includes acid spoil with pH below 4.0. Also refers to spoil having amounts of minerals such as aluminum, manganese, and iron that adversely affect plant growth.

Type I storm distribution. A design model for the time distribution of storm rainfall for the coastal side of the Sierra Nevada and Cascade Mountains, and Alaska and Hawaii.

Type II storm distribution. A design model of the time distribution of storm rainfall for the remaining states, Puerto Rico, and Virgin Islands. (See Type I).

Toe berm. A berm of "bench" of compacted and vegetated soil constructed at the toe of the slope.

Universal Soil Loss Equation. An equation used for predicting soil loss and designing erosion control systems; A = RKLSCP where A = average annual soil loss; R = rainfall factor, K = erodibility factor; L = length of slope; S = % of slope; C = cropping and management factor; and P = conservation factor.

Watersheds. Total land area above a given point on a stream or waterway that contributes runoff to that point.

Printed on Recycled Paper

☆U.S. GOVERNMENT PRINTING OFFICE: 1998–843-981