

## 627.04 Map Unit Components

(Note: Items a through c are omitted here but have not been changed)

### (d) Miscellaneous Areas.

**(1) Definition.** Miscellaneous areas are map unit components that have little or no identifiable soil as defined in *Soil Taxonomy* or are bodies of soil that are heavily contaminated by substances such as oil, radioactive elements, or heavy metals.

**(2) Application.** Use the names of miscellaneous areas as reference terms for map unit components as they are given in exhibit 627-1. **Use no other names unless they are approved.** The MLRA soil survey regional office (MO) requests additions to the list of miscellaneous areas in exhibit 627-1 or requests changes in the concepts of these areas. The National Soil Survey Center is responsible for approval.

**(3) Correlation.** Design and delineate map units that contain miscellaneous areas the same as other soil map units. Less documentation is generally needed for map units having only miscellaneous areas as major components.

The distinction between soils and miscellaneous areas is not always straightforward. Urban land and water are two miscellaneous areas that present correlation issues. In many instances, areas of urban land are underlain by recognizable soils. Similarly, some areas covered by water also support rooted subaquatic vegetation and meet the definition of soil (subaqueous soils). Judgment must be used to decide whether to recognize the soil or the miscellaneous area. In the case of urban land, the miscellaneous area is typically recognized when naming the map unit because it is the predominant determining factor for land use and management considerations. In the case of subaqueous soils, because the nature of the soils may be a critical consideration in the management of the resource, the map unit component chosen for correlation is a soil. In other instances where the management of the resource is not determined by an underlying subaqueous soil or where subaqueous soils do not occur (just non-vegetated sediment), the map unit component is correlated as the miscellaneous area water. The data needs of soil survey users are always a critical factor to consider when making basic correlation decisions about soils or miscellaneous areas.

**(4) Phases.** Miscellaneous areas may be phased in order to provide necessary interpretive information. Some common phase terms for miscellaneous areas include, but are not limited to, those presented in the following examples:

- Beaches, cobbly;
- Dumps, sanitary landfill;
- Lava flows, pahoehoe;
- Mined land, copper;
- Pits, quarry;
- Playas, frequently ponded;
- Rock outcrop, limestone;
- Urban land, loamy till substratum; and
- Water, saline.

The component name entered in the component table of the NASIS database is just the term for the miscellaneous area (“Rock outcrop,” “Playas,” “Pits,” etc.). Terms for locally defined phases are entered separately in the column for the “Local Phase” data element.

**(5) Data population.** The fact that miscellaneous areas, by definition, may not be soil does not preclude the population of key properties in the NASIS database. By populating data that can be documented and/or reliably estimated, interpretations can be generated. A suggested minimum data set that is tailored to the type of miscellaneous area includes:

- Component table: component name, local phase, taxon kind, major component flag, slope gradient, T factor, WEI, WEG, hydric condition, hydric rating, drainage class, nonirrigated LCC, frost action, initial subsidence, hydrologic group, corrosion concrete, and corrosion steel.
- Component child tables: geomorphic feature, hydric criterion, flooding (month, frequency, duration), ponding (frequency, duration, depth), parent material group, restrictions (kind, hardness, top and bottom depths, thickness), and surface fragments.
- Horizon table: horizon designation, top and bottom depths, Rock >10, Rock 3-10, sieves (# 4, 10, 40, & 200), total sand, sand fractions (vcos, cos, ms, fs, & vfs), total silt, total clay, OM, Db (0.1 or 0.33 & oven dry),  $K_{sat}$ , AWC, water content (0.1 or 0.33, 15 bar, & satiated), LEP, LL, PI, AASHTO group index, EC, and pH H<sub>2</sub>O.
- Horizon child tables: texture group, texture class or term used in lieu of texture, and texture modifier (required); horizon fragments, AASHTO, and Unified (optional).

**(6) Map unit descriptions.** Describe miscellaneous areas in the map unit description in terms of characteristics of the local area. Follow the generalized definitions given in exhibit 627-1 but do not reproduce prewritten descriptions. The descriptions of miscellaneous areas include:

- at least a rough composition of miscellaneous area (nonsoil) and soil components, where applicable;
- identification of minor soil components;
- the landform;
- the kinds of bedrock lithology;
- the nature of recent sediment; and
- drainage and runoff characteristics, if appropriate.

If a survey legend includes miscellaneous areas, measure the components, tabulate their acreages, and list their names in the interpretative tables for the survey publication. If the total acreage of map units composed mainly of miscellaneous areas is so small or of so little importance that they are not retained in the legend, combine these map units with adjoining map units in the correlation document. Populate the miscellaneous areas as minor components in the data mapunit or use special symbols on the map, as appropriate.

**(7) Spot symbols.** Some miscellaneous areas are too small to be delineated as polygons on soil maps. Their presence can be shown with standard or ad hoc “spot” symbols, provided they are identified consistently. Standard landform and miscellaneous surface features or ad hoc features are special map symbols that locate miscellaneous areas when these areas are less than the minimum size for a map unit. See exhibit 627-5 for the list of these features which includes their names, symbols, digital labels, and descriptions. Their primary use is for orienting and locating features on the map to those on the ground. Point or linear map units can also be used for bodies of miscellaneous areas which are cartographically too small or narrow to delineate on soil maps with a traditional, closed polygon.

## **Miscellaneous Areas (Exhibit 627-1)**

Miscellaneous areas have essentially no soil or are bodies of soil that are heavily contaminated by toxic substances. They can result from active erosion and deposition, flooding and ponding, unfavorable edaphic conditions, or human activities. Some miscellaneous areas can be made productive, but only after major reclamation efforts. The paragraphs below discuss the 20 miscellaneous areas that are approved for use as component names. No other miscellaneous area names are used. See part 627.04 (d) (2) for the process to revise the list of areas. Phase terms used with the approved list of miscellaneous areas are entered as local phases in the NASIS component table. Phase terms are not populated in the component name column of the database. Map unit names can consist of the concatenated miscellaneous area name and the local phase term (e.g. "Water, saline"). Local phase terms are developed as needed and have no finite limit or national approval process.

Badland is moderately steep to very steep barren land that is dissected by many intermittent drainage channels. Ordinarily, the areas are not stony. Badland is most common in semiarid and arid regions where streams and surface runoff cut into soft bedrock such as shale. Local relief generally ranges from 10 and 200 meters in height. Potential runoff is very high, and erosion is active.

Beaches are sandy, gravelly, or cobbly shores that are washed and rewashed by waves. The areas may be partly covered with water during high tides or storms.

Chutes are elongated areas on steep mountain slopes that lack vegetation. The vegetation has been removed by avalanche or mass movement activity. Chutes consist of exposed bedrock, rock fragments, and large woody debris. Their slopes are parallel to the slope of the mountain, and their lengths are at least ten times their widths.

Cinder land is areas composed of loose cinders and other scoriaceous tephra. The water-holding capacity of this tephra is very low, and the trafficability is poor. Cinder land is commonly associated with cinder cone volcanoes, but not all cinder land occurs on the flanks of volcanic hills or mountains.

Dams are artificial structures, oriented across a watercourse or natural drainage area, for the purpose of impounding or diverting water.

Dumps are areas of smoothed or uneven accumulations or piles of waste rock and general refuse. Some dumps that are closely associated with pits are mapped as a complex map unit of dumps and pits.

Dune land consists of sand in ridges and intervening troughs that shift with the wind.

Glaciers are large masses of ice that formed, at least in part, on land by the compaction and recrystallization of snow. They may be moving slowly downslope or outward in all directions because of the stress of their own weight; or, they may be retreating or be stagnant. Rocks and some earthy material may be on the surface of or imbedded within the ice. Permanent snowfields are associated with glaciers in some regions.

Lava flows are areas covered with barren lava. In most humid regions the flows are of Holocene age, but in arid and very cold regions they may be older. Some flows have sharp, jagged surfaces, crevices, and angular blocks that are characteristic of slow-moving, viscous lava. The Hawaiian term for a basaltic lava flow with these features is "aa." Other lava flows are relatively smooth and have a ropy, glazed surface due to hotter eruption temperatures, lower viscosity, and rapid flow rates. The Hawaiian term for this form of lava flow is "pahoehoe." A little earthy material, ash, cinders, or accumulations of organic material may be in a few fractures

and sheltered pockets, but the flows are virtually devoid of soil. Lava flows have no vegetation other than lichens or other plant life growing in small pockets.

Mined land is areas which are significantly altered by mining activities. Soil material and rock has been moved into, out of, or within the areas designated. Because access to mined land may be limited by permissions or hazardous materials, identification of soil components can be difficult or impossible. Mined land may also have associated small excavations which could be correlated and delineated as pits if needed.

Oil-waste land consists of areas where liquid oily wastes, principally of salt water and oil, have accumulated. It includes slush pits and adjacent areas that are affected by the liquid wastes. The land is barren, although some of it can be reclaimed at high cost.

Pits are open excavations from which soil and commonly underlying material have been removed, exposing either rock or other material. Common kinds of pits are those that result from mining, gravel operations, and quarries. Commonly, pits are closely associated with dumps.

Playas are barren flats in closed basins in arid regions. The largest playas occupy the dry beds of ancient, pluvial lakes. The sediments in playas are mainly fine-grained lacustrine deposits that accumulate from silt and clay particles settling in still water. Many playas are subject to removal of sediments by wind action and are a local source of fine particulate matter. Many playas are saline, sodic, or both and may have mineral crusts of soluble salts. Some nearly level playas are subject to intermittent ponding following periods of heavy precipitation and/or snowmelt. The water table may be near the surface at times, or it may remain at depth.

Riverwash is unstabilized sandy, silty, clayey, or gravelly sediment that is flooded, washed, and reworked so frequently by rivers or streams that little or no vegetation can become established. The recent deposition of fresh alluvium precludes soil development.

Rock outcrop consists of exposures of barren bedrock, other than lava flows, chutes, and rock-lined pits. Some areas are large and are only broken by small areas of soil. Most rock outcrops are hard rock, but some are soft.

Rubble land consists of areas of cobbles, flagstones, stones, and boulders in deposits of sufficient thickness and instability to significantly limit the establishment of vegetation. Rubble land is commonly at the base of mountains but in some areas consists of deposits of large rock fragments left on mountainsides by glaciation (e.g., cirques) or by periglacial processes.

Salt flats are undrained, barren flats that have surface deposits of crystalline salt overlying stratified, very strongly saline sediment. Salt flats are in closed basins in arid regions. The water table may be near the surface at times.

Slickens are accumulations of fine textured mineral material, such as that separated in placer mine and ore mill operations. Slickens from ore mills consist largely of freshly ground rock that commonly has undergone chemical treatment during the milling process. Slickens are usually confined in specially constructed basins and are often contaminated with metallic compounds.

Urban land is land covered by pavement, buildings, storage tanks, bridges, and other impervious, human-manufactured surfaces and structures. Pavement is a hard layered surface of concrete or asphalt that forms a walkway, road, street, highway lane, runway, parking lot, or similar paved area. Urban land can occur in urban areas such as large cities and industrial centers as well as in suburban neighborhoods and rural towns. If correlated properly, urban land consists of 100 percent impervious surface. Older soil surveys correlating urban land with a less strict concept may consist of as little as 75 percent impervious surface. Some modern soil surveys require identification of the materials below urban land. Urban land is an anthropogenic type of miscellaneous area which does not necessarily represent a permanent condition.

Water includes streams, lakes, ponds, and estuaries more than about 2.5 meters deep or less than 2.5 meters deep and lacks either distinguishable horizons or rooted vegetation in the bottom sediment. These areas are covered with water in most years, at least during the period that is warm enough for plants to grow. Many areas are covered throughout the year. Pits and playas that contain water most of the time are mapped as water.

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Notes:

4/18/2010, JVC

The revised exhibit above has 1 new miscellaneous area (MA) which is “Mined land.” There are 7 miscellaneous areas which have been deleted from the list. Details on the added and deleted MAs are presented below:

#### Added MA

Mined land – Added at the request of Kit Paris as a new type of MA to encompass many mined areas which do not fit the concepts of pits and dumps. Use of this new type of MA makes the deleted “Uranium mined land” (presented below) a phase of mined land.

#### Deleted MA

Blownout land – There are about 53,000 acres of this MA. It is used mainly in older soil surveys in Montana, the Dakotas, Hawaii, and New Mexico. It is recommended to recorrelate blownout land to soil components during map unit update projects.

Cirque land – There are about 44,000 acres of this MA. It is used mainly in Wyoming and Colorado. It is recommended to recorrelate cirque land components to either rock outcrop or rubble land.

Gullied land – There are about 1,256,171 acres of this MA. It is used mainly in southern and western states such as Mississippi and California, respectively, but eastern and Midwestern states have also correlated gullied land. It is difficult to make a general recommendation on recorrelating this MA since it probably has been mapped broadly even within a state.

Gypsum land – There are about 417,031 acres of this MA. It is used mainly in New Mexico. About one-third of the total acreage occurs in the old White Sands Missile Range soil survey which is currently being updated for the DOD. It is recommended to recorrelate most gypsum land components to soils. Some gypsum land components on steep slopes may be correlated to rock outcrop.

Scoria land – There are about 1,655 acres of this MA. It is used only in North Dakota. It is recommended to recorrelate scoria land to soils and/or rock outcrop components.

Slickspots – There are about 536,352 acres of this MA (16,646 spelled as two words; 519,706 spelled as one word). It is used mainly in North Dakota, Wyoming, Colorado, and Montana. It is recommended to recorrelate slickspots to sodic or saline-sodic soils.

Uranium mined land – There are about 3,934 acres of this MA. It is used only in the soil survey of McKinley County Area, New Mexico (NM692). There is only a single map unit which is “265--Uranium mined lands.” It is recommended to recorrelate this MA as a component of mined land and use uranium as the local phase term.