LOCATION CHESTERTON CA

Established Series
Rev.GK-LAB-LCL
3/93

CHESTERTON SERIES

The Chesterton series are moderately well-drained, very slowly permeable soils on uplifted marine sediments and old terraces. They are gently sloping to moderately steep. Mean annual precipitation is 10 to 14 inches. Average annual temperature is 60 to 62 degrees F.

TAXONOMIC CLASS: Fine, kaolinitic, thermic Abruptic Durixeralfs

TYPICAL PEDON: Chesterton fine sandy loam. (Colors are for dry soil unless otherwise noted).

A11--0 to 7 inches; brown (10YR 5/3) fine sandy loam, dark brown (10YR 3/3) moist; weak fine granular structure; slightly hard, very friable, nonsticky, nonplastic; few very fine and fine roots; common fine tubular, many very fine interstitial pores; few rounded iron concretions; medium acid (pH 6.0); abrupt smooth boundary. (4 to 9 inches thick)

A12--7 to 15 inches; brown (7.5YR 4/4) fine sandy loam, dark brown (7.5YR 3/4) moist; weak fine and medium granular structure; slightly hard, very friable, nonsticky, nonplastic; few very fine and fine roots; many fine interstitial, common fine tubular pores; many rounded iron concretions; medium acid (pH 6.0); abrupt smooth boundary. (5 to 10 inches thick)

A2cn--15 to 19 inches; reddish yellow (7.5YR 6/6) heavy fine sandy loam, strong brown (7.5YR 5/6) moist; massive; slightly hard, friable, nonsticky, nonplastic; few very fine and fine roots; common very fine tubular pores; many rounded iron concretions; medium acid (pH 5.9); abrupt smooth boundary. (3 to 6 inches thick)

B21t--19 to 27 inches; mottled brown (7.5YR 5/4) and red (2.5YR 5/6) sandy clay, brown (7.5YR 4/4) and red (2.5YR 4/6) moist; weak coarse prismatic and weak angular blocky structure; very hard, firm, sticky, plastic; few very fine and fine roots; few very fine tubular, few very fine interstitial pores; common thin clay films on faces of peds; few rounded iron concretions; medium acid (pH 5.7); clear smooth boundary. (5 to 12 inches thick)

B22t--27 to 34 inches; mottled red (2.5YR 4/6) brown (10YR 5/3) and gray (5YR 5/1) sandy clay; moderate coarse prismatic and weak medium angular blocky structure; extremely hard, very firm, sticky, plastic; few very fine and fine roots; few very fine tubular, few very fine interstitial pores; common thin clay films on faces of peds; strongly acid (pH 5.2); abrupt wavy boundary. (5 to 9 inches thick)

Cm--34 to 42 inches; reticulate mottled, strongly cemented, iron-silica hardpan.

TYPE LOCATION: San Diego County, California; 2.5 miles northeast of La Jolla, California; 2,200 feet west of Miramar Road, 50 feet east of Genesee Avenue; NW 1/4 NE 1/4 sec. 17, T. 15 S., R. 3 W. (Projected).

RANGE IN CHARACTERISTICS: The mean annual soil temperature at a depth of 20 inches is about 62 degrees F. The soil between depths of 5 and 15 inches usually is moist in some part from about December 1 until late May and is continuously dry the rest of the year. Depth to the cemented horizon is 20 to 40 inches. Usually a few iron concretions are present in the upper A1 horizon and range up to 20 percent of the volume in the lower part of the A1 horizon. They are most numerous in or near the A2cn horizon where they constitute 10 to 40 percent of the volume. Concretions range in size from 2 to 8mm.

The Chesterton soils have brown, medium acid, fine sandy loam A1 horizons, reddish yellow, medium acid, heavy sandy loam A2cn horizons, mottled red, brown, and gray, medium and strongly acid, sandy clay B2t horizons over an iron-silica hardpan at a depth of 34 inches.

The A horizon is brown or dark brown in 10YR hue. It is sandy loam, loamy sand, or loamy fine sand. The average organic matter in this horizon is less than 1 percent. It is slightly or medium acid.

The B2t horizon is brown or yellowish brown or mottled gray to red (10YR 5/4; 7.5YR 5/4, 5/6; 5YR 5/1, 5/2, 5/3; 2.5YR 5/6, 4/6). It is sandy clay or heavy clay loam with 35 to 45 percent clay. The clay increase from the A horizon to the B2t horizon is 20 to 40 percent absolute. The upper boundary of the B2t horizon is clear or abrupt. The B2t horizon is slightly to strongly acid.

The duripan is strongly cemented in some parts and is indurated in some layers and coatings.

COMPETING SERIES: These are the Carlsbad, Clough, Gloria, Huichica, Keyes, Madera, Moda, Redding, San Joaquin, Tuscan, and Yokohl series. Carlsbad soils lack argillic horizons. Clough soils have more than 35 percent rock fragments in the B2t horizon. Gloria soils lack concretions and have illitic mineralogy. Huichica soils lack concretions and have less than 35 percent clay in the B2t horizon. Keyes, Madera, Tuscan, and Yokohl soils have transition horizons or lack abrupt A-B2t boundaries and also lack concretions. Moda soils have vermiculitic mineralogy and are alkaline in the lower part of the B2t horizons. San Joaquin soils lack concretions and have kaolinitic mineralogy. Redding soils lack concretions and the B2t horizon has solid hue of 5YR or 2.5YR.

GEOGRAPHIC SETTING: The Chesterton soils are gently sloping to moderately steep and are on uplifted marine sediments and old terraces at elevations of about 50 to 600 feet. The climate is one of dry, somewhat foggy summers and short mild moist winters. Mean annual precipitation is 10 to 14 inches. The average January temperature is 55 degrees F, average July temperature is 69 degrees F, and the average annual temperature is 60 to 62 degrees F. The frost-free season is 300 to 350 days.

GEOGRAPHICALLY ASSOCIATED SOILS: These are the competing Carlsbad soils and the Antioch, Olivenhain, Marina, and Stockpen soils. Antioch soils have hue of 10YR or yellower throughout and lack duripans. Olivenhain soils have more than 35 percent cobblestones and pebbles and lack duripans. Marina soils are sandy and lack argillic horizons and duripans. Stockpen soils have natric horizons and lack duripans.

DRAINAGE AND PERMEABILITY: Moderately well-drained; slow to medium runoff; very slow permeability. The duripan is probably impervious in places.

USE AND VEGETATION: Used for growing truck crops, flowers, and winter vegetables in areas where irrigation water is available and growing dry beans and grains. Vegetation in uncultivated areas is mainly chamise, sumac, black sage, and annual grasses and weeds.

DISTRIBUTION AND EXTENT: Along the coastline of southern California. The series is inextensive.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Davis, California

SERIES ESTABLISHED: San Diego County, California, 1973.

REMARKS: Chesterton soils were formerly classified as Planosols. In earlier mapping most of the Chesterton soils were included with delineations of the Carlsbad series.

Last revised by the state on 8/73.

National Cooperative Soil Survey
U.S.A.