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B21t—12 to 16 inches; brown (10YR 5/3) fine sandy loam, brown (10YR 4/3) moist; moderate medium prismatic structure parting to moderate medium subangular blocky; hard, friable; few thin clay films on faces of peds; neutral; clear smooth boundary.

B22t—16 to 22 inches; yellowish brown (10YR 5/4) fine sandy loam, brown (10YR 4/3) moist; moderate medium prismatic structure parting to weak medium subangular blocky; hard, friable; few thin clay films on faces of peds; neutral; gradual smooth boundary.

B3—22 to 28 inches; light yellowish brown (10YR 6/4) fine sandy loam, yellowish brown (10YR 5/4) moist; weak coarse subangular blocky structure; slightly hard, very friable; calcareous; mildly alkaline; clear smooth boundary.

Cca—28 to 60 inches; light yellowish brown (10YR 6/4) sandy loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, very friable; some visible lime in fine filaments or threads; calcareous; moderately alkaline.

Thickness of the solum ranges from 18 to 37 inches. Coarse fragments make up 0 to 10 percent of the solum. Depth to free carbonates ranges from 12 to 24 inches.

The A horizon has value of 5 or 6 dry and 3 to 5 moist and chroma of 2 or 3. It is loamy sand or sandy loam. The B2t horizon is commonly fine sandy loam that is 10 to 18 percent clay. The C horizon ranges from coarse loamy sand to sandy loam.

Weld series

The Weld series consists of deep, well drained soils that formed in calcareous eolian deposits. Weld soils are on smooth plains. Slopes are 0 to 5 percent.

Weld soils are near the Adena, Colby, Nunn, and Wiley soils. Adena soils have a light colored surface layer and solum less than 15 inches thick. Colby soils lack a B horizon. Wiley soils have a light colored surface layer and less clay in the B2t horizon. Nunn soils lack an abrupt textural boundary between the A and B horizon.

Typical pedon of Weld loam, 1 to 3 percent slopes, 2,470 feet south and 200 feet west of northeast corner sec. 35, T. 1 N., R. 61 W.

Ap—0 to 8 inches; brown (10YR 5/3) loam, dark brown (10YR 3/3) moist; moderate medium granular structure; hard, friable; neutral; abrupt smooth boundary.

B21t—8 to 12 inches; brown (10YR 5/3) light clay, brown (10YR 4/3) moist; strong fine prismatic structure parting to strong fine angular blocky; very hard, firm; many moderately thick clay films on faces of peds; neutral; clear smooth boundary.

B22t—12 to 15 inches; pale brown (10YR 6/3) heavy clay loam, brown (10YR 4/3) moist; strong fine prismatic structure parting to strong fine angular blocky; very hard, firm; many moderately thick clay films on faces of peds; neutral; clear smooth boundary.

B3ca—15 to 28 inches; very pale brown (10YR 7/3) loam, pale brown (10YR 6/3) moist; moderate medium prismatic structure parting to moderate medium subangular blocky; hard, friable; few thin clay films on faces of some peds; some visible lime occurring in fine soft masses; calcareous; moderately alkaline; clear smooth boundary.

Cca—28 to 60 inches; very pale brown (10YR 7/3) silt loam, pale brown (10YR 6/3) moist; massive; slightly hard, friable; some visible lime in fine filaments or threads; calcareous; moderately alkaline.

Thickness of the solum ranges from 20 to 39 inches. Depth to free carbonates ranges from 10 to 20 inches.

The A horizon has value of 4 or 5 dry and 2 or 3 moist and chroma of 2 or 3. The B2t horizon is commonly light clay or heavy clay loam that is 35 to 45 percent clay. The C horizon is commonly silt loam or loam.

Wiley series

The Wiley series consists of deep, well drained soils that formed in calcareous eolian deposits. Wiley soils are on plains. Slopes are 0 to 5 percent.

Wiley soils are similar to the Renohill and Ulm soils and are near the Colby, Heldt, and Weld soils. Renohill soils have shale between 20 and 40 inches. Ulm, Heldt, and Weld soils are more than 35 percent clay in the B2 horizon. Colby soils lack a B horizon.

Typical pedon of Wiley silt loam in an area of Wiley-Colby complex, 1 to 3 percent slopes, in the northeast quarter sec. 34, T. 3 N., R. 68 W.

Ap—0 to 11 inches; pale brown (10YR 6/3) silt loam, dark grayish brown (10YR 4/2) moist; weak fine granular structure; very hard, friable; calcareous; mildly alkaline; clear smooth boundary.

B2t—11 to 24 inches; pale brown (10YR 6/3) silty clay loam, brown (10YR 5/3) moist; weak medium prismatic structure parting to moderate medium subangular blocky; very hard, firm; few thin clay films on faces of peds; calcareous; moderately alkaline; gradual smooth boundary.

B3ca—24 to 34 inches; pale brown (10YR 6/3) silty clay loam, brown (10YR 5/3) moist; weak medium prismatic structure parting to moderate medium subangular blocky; very hard, firm; some visible lime in fine filaments and seams; calcareous; moderately alkaline; gradual smooth boundary.

Cca—34 to 60 inches; very pale brown (10YR 7/3) silty clay loam, brown (10YR 5/3) moist; massive; very hard, friable; some visible lime in fine soft masses; calcareous; moderately alkaline.

Thickness of the solum ranges from 16 to 40 inches. Typically these soils have free carbonates at the surface.

The A horizon has hue of 10YR or 2.5Y, value of 5 to 7 dry and 3 to 5 moist, and chroma of 2 or 3. The B2t horizon is commonly silty clay loam that is 28 to 35 percent clay. The C horizon is commonly silty clay loam or silt loam.

References

- (1) American Association of State Highway (and Transportation) Officials. 1970. Standard specifications for highway materials and methods of sampling and testing. Ed. 10, 2 vol., illus.
- (2) American Society for Testing and Materials. 1974. Methods for classification of soils for engineering purposes. ASTM Stand. D 2487-69. In 1974 Annual Book of ASTM Standards, Part 19, 464 pp., illus.
- (3) Colorado Department of Agriculture. 1975. Colorado agricultural statistics, 1974 Preliminary, 1973 Final Bull. 1-75.
- (4) United States Department of Agriculture. 1951. Soil survey manual. U. S. Dep. Agric. Handb. 18, 503 pp., illus. (Supplements replacing pp. 173-188 issued May 1962)
- (5) United States Department of Agriculture. 1975. Soil Taxonomy. A basic system of soil classification for making soil surveys. Soil Conserv. Service, U. S. Dep. Agric. Handb. 436, 754 pp., illus.

Glossary

ABC soil. A soil having an A, a B, and a C horizon.

AC soil. A soil having only an A and a C horizon. Commonly such soil formed in recent alluvium or on steep rocky slopes.

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.