SOIL CHEMICAL PROPERTIES

GENERAL

These estimates are given for the major layers of each soil in the survey area. The estimates of some characteristics and features that affect soil behavior are based on field observations and on test data for these and similar soils. Information in this table includes depth, cation exchange capacity, effective cation exchange capacity, soil reaction, calcium carbonate, and gypsum. See the National Soil Handbook Part 618 for specific criteria used.

PROPERTIES

Depth to the upper and lower boundaries of each layer is indicated.

Cation exchange capacity (CEC) is the amount of exchangeable cations that a soil can adsorb at pH 7.0. Soils that have a low cation exchange capacity hold fewer cations and may require more frequent applications of fertilizer and amendments than soils that have a high cation exchange capacity.

Effective cation exchange capacity (ECEC) is the sum of ammonium acetate (NH_4Oac) extractable bases plus KCl extractable aluminum used for soils that have pH <5.5. *Effective* CEC is a measure of cation exchange capacity that is particularly useful in soils which the ion exchange is largely a result of variable charge components such as allophane, kaolinite, hydrous iron and aluminum oxides, and organic matter, which results in the soils' CEC being, not a fixed number, but a function of pH.

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 in the laboratory.

Calcium carbonate equivalent is the quantity of carbonate (CO3) in the soil expressed as CaCO3 and as a weight percentage of the less than 2 mm size fraction.

Gypsum is the percent, by weight, of hydrated calcium sulfates in the <20 mm fraction of the soil. Gypsum is partially soluble in water and can be dissolved and removed by water. Soils high in gypsum, such as those with more than 10 percent gypsum, may collapse if the gypsum is removed by percolating water. Gypsum is corrosive to concrete.

REFERENCES

(1) National Soil Survey Handbook part 618.
http://soils.usda.gov/technical/handbook/

(2) Soil Data Mart.
http://soildatamart.nrcs.usda.gov/Survey.aspx?State=WV

(3) Web Soil Survey.
http://websoilsurvey.nrcs.usda.gov/app/