TF2 Test Indicator for Red Parent Material Soils

Revised Indicator

• Draft August 2, 2006; Summary of discussion from the Mid-Atlantic Hydric Soils Committee Field Trip.

• Incorporating edits, including those from John Galbraith and John Chibirka.

• Further revised January 17, 2007 at the meeting of the Mid-Atlantic Hydric Soils Committee

TF2. Problem Red Parent Materials. For testing in all LRRs in soils presumed to have formed in red parent materials that have demonstrated a low propensity for developing redoximorphic features.

In soils derived from parent material with a CCPI of <30 and a hue of 7.5YR or redder, the indicator occurs as a layer with a hue of 7.5YR or redder at least 10 cm (4 inches) thick, and starts within 25 cm of the surface. The matrix has a value and chroma of 4 or less, and meets one of the following cases:

Has 2 percent or more distinct or prominent redox depletions of chroma 2 or less.

If the matrix chroma is less than 3, has 2 percent or more redox concentrations occurring as soft masses and/or pore linings. If fine in size (<2mm) the concentrations must be prominent; if medium or larger, the concentrations may be either distinct or prominent.

If the matrix chroma is 4 or less, has 5 percent or more redox concentrations occurring as soft masses and/or pore linings. If fine in size (<2mm) the concentrations must be prominent; if medium or larger, the concentrations may be either distinct or prominent.

In order to confirm that it is appropriate to apply this indicator, testing should be conducted on some soil horizons in the area presumed to have formed from similar parent materials as the indicator layer to determine their Color Change Propensity Index (CCPI). This indicator is appropriate for use in soil horizon parent materials shown to have CCPI values below 30 (Rabenhorst and Parikh, 2000).

Mid-Atlantic User Notes: This indicator was developed for use in areas of red parent material, such as residuum or colluvium in the Piedmont Province Triassic lowlands section or the Paleozoic "red beds" of the Appalachian Mountains, and in alluvium derived from these materials that have demonstrated a low propensity for developing redoximorphic features. In order to confirm that it is appropriate to apply this indicator to particular soils, soils formed from similar parent materials in the area should have been evaluated to determine their Color Change Propensity Index (CCPI) and be shown to have CCPI values below 30 (Rabenhorst and Parikh, 2000.) It cannot be assumed that sediment overlying red colored bedrock is derived solely from that bedrock. In parent materials that have demonstrated a low propensity for developing redoximorphic features, the presence of redox depletions as pore linings or soft masses with chroma of 2 or less is further evidence of reducing conditions.