

Hydric Soil—Soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part.

- temperature
- microbial (organics)
- saturation
- time

Technical Standard—Designed to:

- Evaluate the function of wetland restoration, mitigation, creation, and construction
- Evaluate onsite the current functional hydric status of a soil
- With appropriate regional data modify, validate, eliminate, or adopt hydric soil field indicators for the region.

- Anaerobic Conditions
 - Eh meter/electrodes
 - Visible evidence of Fe or Mn migration
 - Alpha Alpha Dipyridyl indicator
 - IRIS, MRIS tubes
- Growing season
- Saturated
 - Wells, piezometers

Indicators----- <http://soils.usda.gov/use/hydric/>

- Designed to identify boundary conditions
- Require morphologic changes (visible)
- Loss of Fe³⁺, Mn⁴⁺
- Depletions, Concentrations
- Gleying (color indicator)
 - Munsell Color Books
 - Hue, Value Chroma
- Organic Matter accumulation
- Difficult to use
 - High chroma materials
 - High pH
 - Low organic matter
 - Young
 - Altered

Reduction-Oxidation Table (Adapted from the Redox Ladder)

What is being reduced = the available electron acceptor	Byproduct of the oxidation-reduction process	Relative yield of energy from the oxidation-reduction process	Are the conditions aerobic (oxygen is present) or anaerobic (oxygen not present)
<u>oxygen</u> O_2	<u>carbon dioxide</u> CO_2	100	<u>aerobic</u>
<u>nitrate</u> NO_3	<u>nitrogen</u> N	93	<u>anaerobic</u>
<u>manganese (IV)</u> Mn^{4+}	<u>manganese (II)</u> Mn^{2+}	87	<u>anaerobic</u>
<u>iron (III)</u> Fe^{3+}	<u>iron (II)</u> Fe^{2+}	84	<u>anaerobic</u>
<u>sulfate</u> SO_4	<u>hydrogen sulfide</u> HS	6	<u>anaerobic</u>
<u>carbon dioxide</u> CO_2	<u>methane</u> CH_4	3	<u>anaerobic</u>