

Hydric Soils

Chester County, Pennsylvania

[This report lists only those map unit components that are rated as hydric. Dashes (---) in any column indicate that the data were not included in the database. Definitions of hydric criteria codes are included at the end of the report]

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
Ba:					
Baile silt loam	Baile	85	Depressions	Yes	2B3
BaB:					
Baile silt loam, 3 to 8 percent slopes	Baile	85	Depressions	Yes	2B3
BbB:					
Baile silt loam, 0 to 8 percent slopes, very stony	Baile, very stony	100	Depressions	Yes	2B3
Bo:					
Bowmansville-Knauers silt loam	Knauers	40	Flood plains	Yes	2B3, 3
CaA:					
Califon loam, 0 to 3 percent slopes	Fluvaquents	3	Flood plains	Yes	2B3
	Holly	3	Flood plains	Yes	2B3, 4
CaB:					
Califon loam, 3 to 8 percent slopes	Holly	3	Flood plains	Yes	2B3, 4
	Fluvaquents	1	Flood plains	Yes	2B3
CaC:					
Califon loam, 8 to 15 percent slopes	Holly	3	Valley floors	Yes	2B3, 4
	Fluvaquents	1	Flood plains	Yes	2B3
CbB:					
Califon loam, 0 to 8 percent slopes, extremely stony	Holly	3	Flood plains	Yes	2B3, 4
	Fluvaquents	1	Flood plains	Yes	2B3
CIA:					
Clarksburg silt loam, 0 to 3 percent slopes	Thorndale	5	Depressions	Yes	2B3
CIB:					
Clarksburg silt loam, 3 to 8 percent slopes	Thorndale	5	Depressions	Yes	2B3
Co:					
Codorus silt loam	Hatboro	4	Flood plains	Yes	2B3
	Baile	3	Depressions	Yes	2B3

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CpA:					
Cokesbury silt loam, 0 to 3 percent slopes	Cokesbury	85	Depressions	Yes	2B3
	Holly	3	Valley floors	Yes	2B3, 4
CpB:					
Cokesbury silt loam, 3 to 8 percent slopes	Cokesbury	90	Depressions	Yes	2B3
	Holly	3	Valley floors	Yes	2B3, 4
CqB:					
Cokesbury silt loam, 0 to 8 percent slopes, very stony	Cokesbury, very stony	90	Depressions	Yes	2B3
	Holly	3	Valley floors	Yes	2B3, 4
Cs:					
Comus silt loam	Holly	8	Flood plains	Yes	2B3
CyA:					
Croton silt loam, 0 to 3 percent slopes	Croton	90	Depressions	Yes	2B3
CyB:					
Croton silt loam, 3 to 8 percent slopes	Croton	90	Depressions	Yes	2B3
DfA:					
Duffield silt loam, 0 to 3 percent slopes	Thorndale	2	Depressions	Yes	2B3
DfB:					
Duffield silt loam, 3 to 8 percent slopes	Thorndale	2	Depressions	Yes	2B3
DrC:					
Duffield-Ryder silt loams, 8 to 15 percent slopes	Thorndale	3	Depressions	Yes	2B3
EdB:					
Edgemont channery loam, 3 to 8 percent slopes	Andover	3	Drainageways	Yes	2B3
EdC:					
Edgemont channery loam, 8 to 15 percent slopes	Andover	3	Drainageways	Yes	2B3
EdD:					
Edgemont channery loam, 15 to 25 percent slopes	Andover	3	Drainageways	Yes	2B3
ExB:					
Edgemont channery sandy loam, 0 to 8 percent slopes, extremely stony	Andover, extremely stony	3	Drainageways	Yes	2B3

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ExD: Edgemont channery sandy loam, 8 to 25 percent slopes, extremely stony	Andover, extremely stony	3	Drainageways	Yes	2B3
ExF: Edgemont channery sandy loam, 25 to 60 percent slopes, extremely stony	Andover, extremely stony	3	Drainageways	Yes	2B3
Gb: Gibraltar silt loam	Holly	5	Flood plains	Yes	2B3
GdA: Gladstone gravelly loam, 0 to 3 percent slopes	Cokesbury	1	Depressions	Yes	2B3
GdB: Gladstone gravelly loam, 3 to 8 percent slopes	Cokesbury	3	Depressions	Yes	2B3
GdC: Gladstone gravelly loam, 8 to 15 percent slopes	Cokesbury	5	Depressions	Yes	2B3
GdD: Gladstone gravelly loam, 15 to 25 percent slopes	Cokesbury	5	Depressions	Yes	2B3
GdE: Gladstone gravelly loam, 25 to 35 percent slopes	Cokesbury	3	Depressions	Yes	2B3
GfB: Gladstone gravelly loam, 0 to 8 percent slopes, very bouldery	Cokesbury	5	Depressions	Yes	2B3
GfD: Gladstone gravelly loam, 8 to 25 percent slopes, very bouldery	Cokesbury	5	Depressions	Yes	2B3
GfF: Gladstone gravelly loam, 25 to 50 percent slopes, very bouldery	Cokesbury	5	Depressions	Yes	2B3
GIA: Glenville silt loam, 0 to 3 percent slopes	Towhee	5	Depressions	Yes	2B3
GIB: Glenville silt loam, 3 to 8 percent slopes	Towhee	5	Depressions	Yes	2B3

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Ha: Hatboro silt loam	Hatboro	80	Flood plains	Yes	2B3
	Othello	3	Terraces	Yes	2B3
	Nanticoke	1	Tidal flats	Yes	2B3, 3
	Towhee	1	Depressions	Yes	2B3
Ho: Holly silt loam	Holly	90	Flood plains	Yes	2B3, 4
	Brinkerton	2	Depressions	Yes	2B3
JoB: Joanna loam, 3 to 8 percent slopes	Croton	5	Depressions	Yes	2B3
JoC: Joanna loam, 8 to 15 percent slopes	Croton	5	Depressions	Yes	2B3
JoD: Joanna loam, 15 to 25 percent slopes	Croton	5	Depressions	Yes	2B3
JpB: Joanna loam, 0 to 8 percent slopes, extremely stony	Croton	4	Depressions	Yes	2B3
JpD: Joanna loam, 8 to 25 percent slopes, extremely stony	Croton	2	Depressions	Yes	2B3
JpF: Joanna loam, 25 to 50 percent slopes, extremely stony	Croton	2	Depressions	Yes	2B3
LbA: Lamington silt loam, 0 to 3 percent slopes	Lamington	85	Terraces	Yes	2B3
LcB: Lawrenceville silt loam, 3 to 8 percent slopes	Doylestown	1	Drainageways	Yes	2B3
LhB: Lehigh channery silt loam, 3 to 8 percent slopes	Croton	3	Depressions	Yes	2B3
	Doylestown, extremely stony	1	Drainageways	Yes	2B3

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LhC:					
Lehigh channery silt loam, 8 to 15 percent slopes	Croton	2	Depressions	Yes	2B3
	Doylestown	1	Drainageways	Yes	2B3
LkB:					
Lehigh channery silt loam, 0 to 8 percent slopes, extremely stony	Croton, extremely stony	1	Depressions	Yes	2B3
Ln:					
Lindside silt loam	Holly	12	Flood plains	Yes	2B3
McA:					
Mattapex silt loam, 0 to 3 percent slopes	Hatboro	1	Flood plains	Yes	2B3
	Othello	1	Terraces	Yes	2B3
MIA:					
Mount Lucas silt loam, 0 to 3 percent slopes	Watchung	5	Depressions	Yes	2B3
MIB:					
Mount Lucas silt loam, 3 to 8 percent slopes	Watchung	5	Depressions	Yes	2B3
MIC:					
Mount Lucas silt loam, 8 to 15 percent slopes	Watchung	5	Depressions	Yes	2B3
MnB:					
Mount Lucas silt loam, 0 to 8 percent slopes, extremely stony	Towhee, very stony	5	Depressions	Yes	2B3
MuB:					
Murrill gravelly loam, 3 to 8 percent slopes	Thorndale	2	Depressions	Yes	2B3
NeB:					
Neshaminy silt loam, 3 to 8 percent slopes	Towhee	5	Depressions	Yes	2B3
NeC:					
Neshaminy silt loam, 8 to 15 percent slopes	Towhee	5	Depressions	Yes	2B3
NeD:					
Neshaminy silt loam, 15 to 25 percent slopes	Towhee	5	Depressions	Yes	2B3
NfB:					
Neshaminy gravelly silt loam, 0 to 8 percent slopes, extremely bouldery	Towhee	5	Depressions	Yes	2B3
NfD:					
Neshaminy gravelly silt loam, 8 to 25 percent slopes, extremely bouldery	Towhee	5	Depressions	Yes	2B3

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NfF: Neshaminy gravelly silt loam, 25 to 60 percent slopes, extremely bouldery	Towhee	5	Depressions	Yes	2B3
PfC: Penn channery silt loam, 8 to 15 percent slopes	Croton	5	Depressions	Yes	2B3
RaB: Raritan silt loam, 3 to 8 percent slopes	Lamington	5	Terraces	Yes	2B3
ReA: Readington silt loam, 0 to 3 percent slopes	Croton	4	Depressions	Yes	2B3
ReB: Readington silt loam, 3 to 8 percent slopes	Croton	4	Depressions	Yes	2B3
Ro: Rowland silt loam	Knauers	1	Flood plains	Yes	2B3, 3
Th: Thorndale silt loam	Thorndale	100	Depressions, Drainageways, Valleys	Yes	2B3
ToA: Towhee silt loam, 0 to 3 percent slopes	Towhee	90	Depressions	Yes	2B3
ToB: Towhee silt loam, 3 to 8 percent slopes	Towhee	90	Depressions	Yes	2B3
TxB: Towhee silt loam, 0 to 8 percent slopes, very stony	Towhee, very stony	90	Depressions	Yes	2B3
Udp: Udorthents, sanitary landfill	Nanticoke	1	Tidal flats	Yes	2B3, 3
	Othello	1	Terraces	Yes	2B3
UdsB: Udorthents, schist and gneiss, 0 to 8 percent slopes	Hatboro	1	Flood plains	Yes	2B3
UdtB: Udorthents, shale and sandstone, 0 to 8 percent slopes	Doylestown	1	Drainageways	Yes	2B3
UrbB: Urban land-Baile complex, 0 to 8 percent slopes	Baile	30	Depressions	Yes	2B3

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UrfB: Urban land-Cokesbury complex, 0 to 8 percent slopes	Cokesbury	30	Depressions	Yes	2B3
UrfD: Urban land-Cokesbury complex, 8 to 25 percent slopes	Cokesbury	30	Depressions	Yes	2B3
UrhB: Urban land-Duffield complex, 0 to 8 percent slopes	Thorndale	2	Depressions	Yes	2B3
UrlB: Urban land-Gladstone complex, 0 to 8 percent slopes	Cokesbury	5	Depressions	Yes	2B3
UrlD: Urban land-Gladstone complex, 8 to 25 percent slopes	Cokesbury	5	Depressions	Yes	2B3
Uro: Urban land-Hatboro complex	Hatboro	30	Flood plains	Yes	2B3
Urp: Urban land-Holly complex	Holly	30	Flood plains	Yes	2B3, 4
UrxB: Urban land-Penn complex, 0 to 8 percent slopes	Croton	4	Depressions	Yes	2B3
UrxD: Urban land-Penn complex, 8 to 25 percent slopes	Croton	4	Depressions	Yes	2B3
UryB: Urban land-Towhee complex, 0 to 8 percent slopes	Towhee	30	Depressions	Yes	2B3
WaA: Watchung silt loam, 0 to 3 percent slopes	Watchung, silt loam	80	Depressions	Yes	2B3
	Dunning	4	Flood plains	Yes	2B3
	Hatboro	3	Flood plains	Yes	2B3
	Croton	2	Depressions	Yes	2B3
WaB: Watchung silt loam, 3 to 8 percent slopes	Watchung, silt loam	80	Depressions	Yes	2B3
	Croton	4	Depressions	Yes	2B3
	Hatboro	4	Flood plains	Yes	2B3

Hydric Soils

This table lists the map unit components that are rated as hydric soils in the survey area. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 2002).

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for all of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2003) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and others, 2002).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units dominantly made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

The criteria for hydric soils are represented by codes in the table (for example, 2B3). Definitions for the codes are as follows:

1. All Histels except for Folistels, and Histosols except for Folist.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
 - A. are somewhat poorly drained and have a water table at the surface (0.0 feet) during the growing season, or
 - B. are poorly drained or very poorly drained and have either:
 - 1) a water table at the surface (0.0 feet) during the growing season if textures are coarse sand, sand, or fine sand in all layers within a depth of 20 inches, or
 - 2) a water table at a depth of 0.5 foot or less during the growing season if permeability is equal to or greater than 6.0 in/hr in all layers within a depth of 20 inches, or
 - 3) a water table at a depth of 1.0 foot or less during the growing season if permeability is less than 6.0 in/hr in any layer within a depth of 20 inches.
3. Soils that are frequently ponded for long or very long duration during the growing season.
4. Soils that are frequently flooded for long or very long duration during the growing season.

References:

- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.
- Federal Register. September 18, 2002. Hydric soils of the United States.
- Federal Register. July 13, 1994. Changes in hydric soils of the United States.
- Hurt, G.W., P.M. Whited, and R.F. Pringle, editors. Version 5.0, 2002. Field indicators of hydric soils in the United States.
- National Research Council. 1995. Wetlands: Characteristics and boundaries.
- Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.
- Soil Survey Staff. 2003. Keys to soil taxonomy. 9th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.
- Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.
- Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.
- United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.