

HYDRIC SOIL INTERPRETATIONS
HYDRIC SOILS LIST
Franklin County, Kansas

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In this section, hydric soils are defined and described and the hydric soils in the survey area are listed. 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 each 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 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, 1995). These criteria are used to identify a phase of a soil series that normally is associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (USDA, 1999) and "Keys to Soil Taxonomy" (USDA, 1998) and in the "Soil Survey Manual" (USDA, 1993).

If soils are wet enough for a long enough period 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 in this survey area are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and others, 1996).

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 in the Hydric Soil Interpretations table meet the definition of hydric soils and, in addition, have at least one of the hydric soil indicators. 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, 1996).

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

These map units, in general, do not meet the definition of hydric soils because they do not have one of the hydric soil indicators. A portion of these map units, however, may include hydric soils. Onsite investigation is recommended to determine whether hydric soils occur and the location of the included hydric soils.

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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
003DB: DENNIS SILT LOAM, 1 TO 4 PERCENT SLOPES	DENNIS	No	hillslope	---	---	---	---
	ERAM	No	hillslope	---	---	---	---
	KENOMA	No	divide	---	---	---	---
	OKEMAH	No	hillslope	---	---	---	---
003EC: ERAM SILTY CLAY LOAM, 4 TO 7 PERCENT SLOPES	TALIHINA	No	hillslope	---	---	---	---
	ERAM	No	hillslope	---	---	---	---
003LA: LANTON SILTY CLAY LOAM, OCCASIONALLY FLOODED	LANTON	No	flood plain	---	---	---	---
	MASON	No	terrace	---	---	---	---
031EC: ERAM SILT LOAM, 3 TO 7 PERCENT SLOPES	OSAGE	Yes	flood plain	2B3	YES	NO	NO
	ERAM	No	hillslope	---	---	---	---
139CM: CLARESON-ERAM COMPLEX, 3 TO 15 PERCENT SLOPES	BATES	No	hillslope	---	---	---	---
	RINGO	No	hillslope	---	---	---	---
	CLARESON	No	hillslope	---	---	---	---
602CB: CATOOSA SILT LOAM, 1 TO 3 PERCENT SLOPES	ERAM	No	hillslope	---	---	---	---
	ROCK OUTCROP	Unranked	---	---	---	---	---
	BATES	No	hillslope	---	---	---	---
602CM: CLARESON-ROCK OUTCROP COMPLEX, 2 TO 15 PERCENT SLOPES	CATOOSA	No	ridge	---	---	---	---
	CLARESON	No	hillslope	---	---	---	---
	ERAM	No	hillslope	---	---	---	---
602LA: LANTON SILT LOAM, OCCASIONALLY FLOODED	CLARESON	No	hillslope	---	---	---	---
	ROCK OUTCROP	Unranked	ridge	---	---	---	---
	CATOOSA	No	hillslope	---	---	---	---
	ERAM	No	hillslope	---	---	---	---
	LEBO	No	hillslope	---	---	---	---
602VC: VERDIGRIS SILT LOAM, 0 TO 2 PERCENT SLOPES, FREQUENTLY FLOODED	CLARESON	No	hillslope	---	---	---	---
	LANTON	No	flood plain	---	---	---	---
1366: CLARESON-ROCK OUTCROP COMPLEX, 2 TO 15 PERCENT SLOPES	OSAGE	Yes	flood plain	2B3	YES	NO	NO
	SUMMIT	No	---	---	---	---	---
	CLARESON	No	hillslope	---	---	---	---
2326: KENOMA SILT LOAM, 1 TO 4 PERCENT SLOPES	ROCK OUTCROP	Unranked	hillslope	---	---	---	---
	ERAM	Unranked	hillslope	---	---	---	---
	LEBO	Unranked	hillslope	---	---	---	---
	SUMMIT	Unranked	hillslope	---	---	---	---
	WAGSTAFF	Unranked	hillslope	---	---	---	---
	KENOMA	Unranked	hillslope	---	---	---	---
2540: LEANNA SILT LOAM, 0 TO 2 PERCENT SLOPES, OCCASIONALLY FLOODED	ERAM	Unranked	hillslope	---	---	---	---
	WOODSON	Unranked	hillslope	---	---	---	---
	LEANNA	Unranked	flood plain	---	---	---	---
3494: SUMMIT SILTY CLAY LOAM, 1 TO 4 PERCENT SLOPES	MASON	Unranked	stream terrace	---	---	---	---
	OSAGE	Unranked	flood plain	3,2B3	YES	NO	YES
	VERDIGRIS	Unranked	flood plain	---	---	---	---
3815: VERDIGRIS SILT LOAM, 0 TO 2 PERCENT SLOPES, FREQUENTLY FLOODED	SUMMIT	No	hillslope	---	---	---	---
	KENOMA	Unranked	hillslope	---	---	---	---
	WAGSTAFF	Unranked	hillslope	---	---	---	---
3815: VERDIGRIS SILT LOAM, 0 TO 2 PERCENT SLOPES, FREQUENTLY FLOODED	VERDIGRIS	Unranked	flood plain	---	---	---	---
	SUMMIT	Unranked	hillslope	---	---	---	---
	OSAGE	Unranked	flood plain	3,2B3	YES	NO	YES

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Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
3816: VERDIGRIS SILT LOAM, 0 TO 2 PERCENT SLOPES, OCCASIONALLY FLOODED	VERDIGRIS	Unranked	flood plain	---	---	---	---
	OSAGE	Unranked	flood plain	3,2B3	YES	NO	YES
3951: WOODSON SILT LOAM, 1 TO 3 PERCENT SLOPES	WOODSON	Unranked	paleoterrace	---	---	---	---
	KENOMA SUMMIT	Unranked Unranked	hillslope hillslope	---	---	---	---
AED: ARENTS, EARTHEN DAM	ARENTS, EARTHEN DAM	Unranked	---	---	---	---	---
Bc: BATES LOAM, 1 TO 4 PERCENT SLOPES	BATES	No	hillslope	---	---	---	---
	DENNIS KENOMA	No Unranked	hillslope hillslope	---	---	---	---
Bd: BATES-COLLINSVILLE LOAMS, 3 TO 7 PERCENT SLOPES	BATES	No	hillslope	---	---	---	---
	COLLINSVILLE DENNIS ERAM	No No No	hillslope hillslope hillslope	---	---	---	---
	BATES	No	hillslope	---	---	---	---
Bh: BATES-COLLINSVILLE LOAMS, 7 TO 12 PERCENT SLOPES	BATES	No	hillslope	---	---	---	---
	COLLINSVILLE DENNIS ERAM OLPE	No No No No	hillslope hillslope hillslope paleoterrace	---	---	---	---
	BATES	No	hillslope	---	---	---	---
	COLLINSVILLE DENNIS ERAM OLPE	No No No No	hillslope hillslope hillslope paleoterrace	---	---	---	---
Bo: BOLIVAR-HECTOR LOAMS, 2 TO 6 PERCENT SLOPES	BOLIVAR	No	hillslope	---	---	---	---
	HECTOR WELDA	No Unranked	hillslope hillslope	---	---	---	---
Bs: BOLIVAR-HECTOR LOAMS, 6 TO 12 PERCENT SLOPES	BOLIVAR	No	hillslope	---	---	---	---
	HECTOR WELDA	No Unranked	hillslope hillslope	---	---	---	---
Cm: CLARESON-ERAM SILTY CLAY LOAMS, 3 TO 15 PERCENT SLOPES	CLARESON	No	hillslope	---	---	---	---
	ERAM BATES ROCK OUTCROP	No No Unranked	hillslope hillslope hillslope	---	---	---	---
	CLARESON	No	hillslope	---	---	---	---
Dc: DENNIS SILT LOAM, 2 TO 5 PERCENT SLOPES	DENNIS	No	hillslope	---	---	---	---
	BATES WOODSON	No No	hillslope divide	---	---	---	---
Dn: DENNIS-BATES COMPLEX, 2 TO 6 PERCENT SLOPES	DENNIS	No	hillslope	---	---	---	---
	BATES ERAM OSAGE	No No Yes	hillslope hillslope flood plain	---	---	---	---
	DENNIS	No	hillslope	---	---	---	---
Do: DENNIS-BATES COMPLEX, 3 TO 6 PERCENT SLOPES, ERODED	BATES ERAM	No No	hillslope hillslope	---	---	---	---
	ERAM	No	hillslope	---	---	---	---
	DENNIS	No	hillslope	---	---	---	---
Ea: ERAM-LEBO SILTY CLAY LOAMS, 7 TO 12 PERCENT SLOPES	ERAM	No	hillslope	---	---	---	---
	LEBO CLARESON DENNIS	No No No	hillslope hillslope hillslope	---	---	---	---
	ERAM	No	hillslope	---	---	---	---
	LULA BATES KENOMA OLPE	No No Unranked No	hillslope hillslope hillslope paleoterrace	---	---	---	---
Ec: ERAM-LULA COMPLEX, 3 TO 7 PERCENT SLOPES	ERAM	No	hillslope	---	---	---	---
	LULA BATES KENOMA OLPE	No No Unranked No	hillslope hillslope hillslope paleoterrace	---	---	---	---
	ERAM	No	hillslope	---	---	---	---
	LULA BATES KENOMA OLPE	No No Unranked No	hillslope hillslope hillslope paleoterrace	---	---	---	---

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				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
INT: AQUOLLS	AQUOLLS	Yes	depression, terrace	3,2B3	YES	NO	YES
Ke: KENOMA SILT LOAM, 1 TO 4 PERCENT SLOPES	KENOMA	No	hillslope	---	---	---	---
	LULA OLPE	No No	hillslope paleoterrace	---	---	---	---
Le: LEANNA SILT LOAM, OCCASIONALLY FLOODED	LEANNA	No	flood plain	---	---	---	---
	HEPLER OSAGE	No Yes	flood plain flood plain	---	---	---	---
Ln: LEBO-ROCK OUTCROP COMPLEX, 20 TO 40 PERCENT SLOPES	LEBO	No	hillslope	---	---	---	---
	ROCK OUTCROP CLARESON	Unranked No	ridge hillslope	---	---	---	---
Lo: LULA SILT LOAM, 0 TO 2 PERCENT SLOPES	LULA	No	hillslope	---	---	---	---
	CLARESON KENOMA	No No	hillslope hillslope	---	---	---	---
LU: LULA SILT LOAM, 1 TO 3 PERCENT SLOPES	LULA	No	hillslope	---	---	---	---
	DWIGHT ERAM KENOMA	No No No	hillslope hillslope divide	---	---	---	---
M-W: MISCELLANEOUS WATER	MISCELLANEOUS WATER	Unranked	---	---	---	---	---
Mb: MASON SILT LOAM, 0 TO 2 PERCENT SLOPES, RARELY FLOODED	MASON	No	stream terrace	---	---	---	---
	OSAGE WELDA	Yes Unranked	flood plain hillslope	2B3 ---	YES ---	NO ---	NO ---
Oe: OLPE-KENOMA COMPLEX, 1 TO 5 PERCENT SLOPES	OLPE	No	paleoterrace	---	---	---	---
	KENOMA BATES ERAM LULA	No No No No	hillslope hillslope hillslope hillslope	---	---	---	---
Os: OSAGE SILTY CLAY LOAM, 0 TO 2 PERCENT SLOPES, OCCASIONALLY FLOODED	OSAGE	Yes	flood plain	2B3	YES	NO	NO
	LEANNA MASON VERDIGRIS	No No No	flood plain stream terrace flood plain	---	---	---	---
Ov: OSAGE SILTY CLAY, OCCASIONALLY FLOODED	OSAGE	Yes	flood plain	2B3	YES	NO	NO
	VERDIGRIS	No	flood plain	---	---	---	---
Pt: PITS, QUARRIES	Pits, quarries	Unranked	---	---	---	---	---
Sn: SUMMIT SILTY CLAY LOAM, 1 TO 3 PERCENT SLOPES	SUMMIT	No	hillslope	---	---	---	---
So: SUMMIT SILTY CLAY LOAM, 3 TO 7 PERCENT SLOPES	SUMMIT	No	hillslope	---	---	---	---
	CLARESON LEBO LULA	No No No	hillslope hillslope hillslope	---	---	---	---
Vb: VERDIGRIS SILT LOAM, 0 TO 2 PERCENT SLOPES, OCCASIONALLY FLOODED	VERDIGRIS	No	flood plain	---	---	---	---
	LEANNA MASON OSAGE	No No Yes	flood plain stream terrace flood plain	---	---	---	---
				2B3	YES	NO	NO

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				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
Vc: VERDIGRIS SILT LOAM, CHANNELED	VERDIGRIS	No	flood plain	---	---	---	---
	BATES	No	hillside	---	---	---	---
	ERAM	No	hillside	---	---	---	---
	OSAGE	Yes	flood plain	2B3,4	YES	YES	NO
W: WATER	ROCK OUTCROP	No	---	---	---	---	---
	WATER	Yes	---	4,3	NO	YES	YES
Wb: WELDA SILT LOAM, 2 TO 6 PERCENT SLOPES	WELDA	No	hillslope	---	---	---	---
	BOLIVAR	No	hillslope	---	---	---	---
	MASON	No	stream terrace	---	---	---	---
Wo: WOODSON SILT LOAM, 0 TO 1 PERCENT SLOPES	WOODSON	No	divide	---	---	---	---
	ZAAR	No	hillslope	---	---	---	---
Wt: WOODSON SILT LOAM, 1 TO 3 PERCENT SLOPES	WOODSON	No	divide	---	---	---	---

FOOTNOTE: There may be small areas of included soils or miscellaneous areas that are significant to use and management of the soil; yet are too small to delineate on the soil map at the map's original scale. These may be designated as spot symbols and are defined in the published Soil Survey Report or the USDA-NRCS Technical Guide, Part II.

Areas mapped as water or any map unit that contains one of the following conventional symbols is considered a hydric soil map unit: marshes or swamps; wet spots; depressions; streams, lakes and ponds.

1. All Histosols except Folists, or
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Aquisalids, Pachic subgroups, or Cumulic subgroups that are:
 - a. Somewhat poorly drained with a water table equal to 0.0 foot (ft) from the surface during the growing season, or
 - b. poorly drained or very poorly drained and have either:
 - (1) water table equal to 0.0 ft during the growing season if textures are coarse sand, sand, or fine sand in all layers within 20 inches (in), or for other soils
 - (2) water table at less than or equal to 0.5 ft from the surface during the growing season if permeability is equal to or greater than 6.0 in/hour (h) in all layers within 20 in, or
 - (3) water table at less than or equal to 1.0 ft from the surface during the growing season if permeability is less than 6.0 in/h in any layer within 20 in, or
3. Soils that are frequently ponded for long duration or very long duration during the growing season, or
4. Soils that are frequently flooded for long duration or very long duration during the growing season.