

Wetland Delineation Report

Hahn Property
Town of Nepeuskun | Winnebago County, Wisconsin

Prepared For

DAVE HAHN

DECEMBER 13, 2016
McM. No. HI043-9-16-00878.00

TABLE OF CONTENTS

- I. INTRODUCTION
- II. METHODS
- III. RESULTS & DISCUSSION
- IV. CONCLUSIONS
- V. LITERATURE CITED

FIGURES

- Figure 1 Site Location & Topographic Map
- Figure 2 Winnebago County Soil Survey & WDNR Wetland Inventory Map
- Figure 3 Wetland Delineation Map

APPENDICES

- Appendix A COE Wetland Determination Data Forms
- Appendix B Wetland Photographs
- Appendix C Winnebago County Soil Resource Map & Hydric Soil Report

Wetland Delineation Report

Hahn Property
Town of Nepeuskun | Winnebago County, Wisconsin

Prepared For

DAVE HAHN

DECEMBER 13, 2016
McM. No. H1043-9-16-00878.00

I. INTRODUCTION

The project objective was to delineate wetlands located within the project area located on the western shore of Rush Lake off of an easement driveway accessed from CTH 'E'. The site is approximately 4.80 acres located in Section Twenty-Seven (27), Township Seventeen (17) North, Range Fourteen (14) East, Town of Nepeuskun, Winnebago County, Wisconsin. The location of the project and regional topography is shown on Figure 1. The contact person and address for this project is provided below:

Dave Hahn
N6919 Wilderness Way
Sussex, WI 53089

Phone: 262-527-8513
Email: mercrestor@hotmail.com

The wetland delineation was completed by Garek Holley, Environmental Scientist of McMAHON, on October 28, 2016. Mr. Holley has completed 38 hours of wetland delineation training that was sponsored by various regulatory agencies, including the Wisconsin Department of Natural Resources (DNR) and U.S. Army Corps of Engineers.

This report consists of a description of the methods used, results, conclusions and supporting documentation.

II. METHODS

The Winnebago County Soil Survey Map and Wisconsin DNR Wetland Inventory Map are shown on Figure 2. The wetland and project area are shown on Figure 3.

The wetland delineation was performed using the routine determination method in the Corps of Engineers Wetland Delineation Manual, 1987 and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, January, 2012. Furthermore, the resource, "Field Indicators of Hydric Soils in the United States, Guide for Identifying and Delineating Hydric Soils", Version 7.0, 2010, and the Version 7.0, 2015 Errata was also used for determining whether the soils were hydric. The report was prepared in accordance with document titled "Guidance for Submittal of Delineation Reports to the St. Paul District Army Corps of Engineers and the Wisconsin Department of Natural Resources", March 4, 2015.

Percent cover was used to measure dominant species of vegetation. The sampling plots were a 5 feet radius for herbaceous plants, 15 feet for shrubs and saplings which measure less than 3.5 inches DBH, and 30 feet for trees and woody vines. The "50/20 Rule" was used to determine the dominant species for each stratum.

Soil pits were completed in the field using a 16-inch spade shovel and a hand auger to a minimum depth of 20 inches, unless refusal was encountered. Test pits were left open to observe hydrologic conditions and later backfilled when activities were completed.

The wetland boundary was delineated based upon changes in vegetation, soil, hydrology, topography and professional judgment. The following documents were reviewed to aid in characterizing the vegetation, soil and hydrology of the project area prior to field delineation activities.

- Winnebago County Soil Survey
- 7.5 Minute Series Topographic Map
- Wisconsin Wetland Inventory Map
- USDA Field Office Climate Data

A total of five transects were completed to delineate wetlands within the project area. A total of nineteen sampling points were documented using COE Wetland Determination Forms. Copies of the forms are presented in Appendix A. The wetland boundaries and test pits were marked with labeled pin flags. Each pin flag was subsequently located with a Global Positioning System (GPS) capable of sub-foot accuracy. The points were then mapped using Geographic Information System (GIS) software to produce a wetland delineation map.

III. RESULTS & DISCUSSION

The project objective was to delineate wetlands located within on Hahn Property. The project area is 4.80 acres. Photographs of the wetlands are presented in Appendix B. The photos were taken on December 5, 2016; approximately a month and a half after field work was completed. Five wetlands, a total of 1.92 acres were delineated.

A USDA Wetness Evaluation Table was used to determine antecedent precipitation. This USDA climate data provides a range of normal precipitation for each month. The actual monthly precipitation is compared with this range to determine wetness conditions at the time of the wetland delineation. The Oshkosh WETS station received 2.55-inches of precipitation in October, indicating normal conditions. In September, 6.58-inches of precipitation were recorded, indicating wetter than normal conditions. In the month of August the station received 2.44-inches, indicating drier than normal conditions. Based on this data, the period prior to the field work was normal.

Figure 2 shows the Wisconsin Wetland Inventory Map for the project area. Wetlands are mapped within a majority of the project area, except for the western quarter. Rush Lake is located just east of the project area. Figure 2 also shows the Winnebago County Soil Survey Map. Soil Resource & Hydric Soil Reports are presented in Appendix C. The Soil Survey Map shows three different soil map units in the project area. The map units are listed below:

- Fox Silt Loam, 2 to 6% Slopes (FsB) – This soil is well drained. The map unit hydric category is nonhydric. It is not included on the County Hydric Soil List.
- Houghton Muck, Ponded, 0 to 2% Slopes (HW) – This soil is very poorly drained. The map unit hydric category is hydric; the cumulative percentage of components that meet the criteria for hydric soils is 100%. The component soil is included on the County Hydric Soil List.
- Ossian Silt Loam (Os) – This soil is poorly drained. The map unit hydric category is hydric; the cumulative percentage of components that meet the criteria for hydric soils is 100%. The component soil is included on the County Hydric Soil List.

Wetland #1 (0.20 acres), is a wooded swale extending from an emergent wetland. The wetland is surrounded by relatively significant contour breaks which help define the boundary. Indicators of hydrology found within Wetland 1 included Geomorphic Position (D2), FAC Neutral Test (D5), and Saturation (A3) in the northern section of the wetland. Soils consisted of a Depleted Matrix (F3) in the northern section and Thick Dark Surface (A12) up-gradient to the south. Vegetation within the wetland included *Populus tremuloides* and *Fraxinus pennsylvanica* in the tree layer and *Rhamnus cathartica* in the shrub and herbaceous layer. *Phalaris arundinacea* and *Pilea pumila* are found to the north near a clearing on the border of the project area. Defining the wetland extent was done in large part using the tree canopy and hydrology.

A profound break from wetland area was observed where vegetation transitioned to *Quercus spp.*, *Carya ovata*, *Prunus serotina*, and *Anemone quinquefolia*.

Wetland #2 (188 ft²) is a small extension of a wet meadow north of the project area. Observed hydrology indicators included Geomorphic Position (D3) and FAC Neutral Test (D5). Vegetation included *Fraxinus pennsylvanica*, *Rhamnus cathartica*, and *Phalaris arundinacea*.

Wetland #3 (241 ft²) is a depression in a topographically low wooded area. Like Wetland 1, Wetland 3 is defined by a steep contour break in addition to the tree and herbaceous vegetation. Hydrology indicators in the wetland included Dry-Season Water Table (C2), Geomorphic Position (D3), and the FAC Neutral Test (D5). Soils consisted of a thick dark surface described as a 20 inch A horizon, followed by a depleted B horizon. Vegetation within the wetland included *Fraxinus pennsylvanica* and *Rhamnus cathartica*. Adjacent upland species included *Quercus macrocarpa*, *Anemone quinquefolia*, *Prunus serotina*, and *Carya ovata*.

Wetland #4 (0.20 acres) is an emergent/wet meadow wetland located on the shore of Rush Lake. The wetland extends along the entire eastern shore of the property. A significant topographic break and hydrophytic vegetation were used to denote the boundary. Vegetation was primarily comprised of *Phalaris arundinacea* and *Typha angustifolia*.

Wetland #5 (1.51 acres) is an emergent/wet meadow wetland located on the shore of Rush Lake. The wetland extends along the entire southern shore of the property. A significant topographic break and hydrophytic vegetation were used to denote the boundary. Vegetation was primarily comprised of *Phalaris arundinacea* and *Typha angustifolia*. Soils, like much of the rest of the property, met the Thick Dark Surface (A12) hydric soil indicator.

The uplands within the project area consisted largely of a mature Oak/Hickory tree stand, with buckthorn in a majority of the understory. Since trees are good indicators of historic hydrology, it can be deduced that areas which are comprised primarily of Oak, Hickory, and Cherry are not susceptible to seasonal wetland conditions. Furthermore, in some upland areas, wetland criteria for vegetation and soils are met, however, the vegetation is skewed by the presence of buckthorn. Since buckthorn was established in the herbaceous layer and shrub layer, these pits automatically passed the Dominance Test despite the limited diversity and presence of upland trees. Thus, wetlands were primarily mapped by the presence hydrology indicators, and hydrophytic trees.

IV. CONCLUSIONS

McMAHON completed a wetland delineation on Hahn Property. Five wetlands, a total of 1.92 acres were mapped within the 4.80 acre project area. The final authorities for the wetland area are the appropriate State and Federal authorities.

V. LITERATURE CITED

1. Borman, Susan, Robert Korth and Jo Temte. 1997. Through the Looking Glass. Wisconsin Lakes Partnership, University of Wisconsin Stevens Point, Stevens Point, Wisconsin. 248 pp.
2. Crow, Garrett E. and C. Barre Hellquist. 2000. Aquatic and Wetland Plants of Northeastern North America. Volume One – Pteridophytes, Gymnosperms, and Angiosperms: Dicotyledons. The University of Wisconsin Press, Madison, Wisconsin. 480 pp.
3. Crow, Garrett E. and C. Barre Hellquist. 2000. Aquatic and Wetland Plants of North America. Volume Two – Angiosperms: Monocotyledons. The University of Wisconsin Press, Madison, Wisconsin. 400 pp.
4. Courtney, Booth and Zimmerman, James H. 1972. Wild Flowers and Weeds. D. Van Nostrand Company, New York, New York. 144 pp.
5. Eggers, Steve D. and Reed, Donald M. 1997 (Second Edition). Wetland Plants and Plant Communities of Minnesota & Wisconsin. U.S. Army Corps of Engineers – St. Paul District. 263 pp.
6. Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1, U.S. Army Corps of Engineer Waterways Experiment Station, Vicksburg, Miss.
7. Fassett, Norman C. 1951. Grasses of Wisconsin. The University of Wisconsin Press, 173 pp.
8. National Audubon Society. 1980. The Audubon Society Field Guide to North American Trees, Eastern Region. 714 pp.
9. Petrides, George A. and Wehr, Janet. 1988. (First Edition Expanded). Eastern Trees. Houghton Mifflin Company, Boston, New York. 424 pp.
10. Lichvar, R.W. 2012. The National Wetland Plant List. ERDC/CRREL TR-12-11. Hanover, NH: U.S. Army Corps of Engineers, Cold Regions Research and Engineering Laboratory.
11. Tekiela Stan. 2000. Wildflowers Of Wisconsin. Adventure Publications, Inc., Cambridge, Minnesota. 410 pp.
12. Voss, Edward G. 1972. Michigan Flora. Part I – Gymnosperms and Monocots. Cranbrook Institute of Science, Bloomfield Hills, Michigan. 488 pp.

13. Voss, Edward G. 1985. Michigan Flora. Part II – Dicots. Cranbrook Institute of Science, Bloomfield Hills, Michigan. 724 pp.
14. Voss, Edward G. 1996. Michigan Flora. Part III – Dicots. Cranbrook Institute of Science, Bloomfield Hills, Michigan. 622 pp.
15. Wetter, Mark A., Theodore S. Chochrane, Merel R. Black, Hugh. H. Iltis, and Paul E. Berry. 2001. Checklist of the Vascular Plants of Wisconsin. Wisconsin State Herbarium, Madison, Wisconsin. 258 pp.
16. Wisconsin Administrative Code. 1998. Chapter NR 103 Water Quality Standards for Wetlands. 3 pp.
17. WI Department of Administration. 1995. Basic Guide to Wisconsin's Wetlands and Their Boundaries. PUBL-WZ-029-94. 87 pp.



W:\PROJECTS\104316\0087\GIS\SitePlan\Fig1.mxd

Copyright © 2013 National Geographic Society, i-cubed



1 inch = 2,000 feet

McMAHON provides this drawing and data, regardless of form, as instruments of service. All rights including copyrights are retained by McMAHON. This client and/or recipient agrees to the fullest extent permitted by law to indemnify and hold McMAHON harmless for any reuse of or changes made to the original drawing or data without prior written consent by McMAHON.

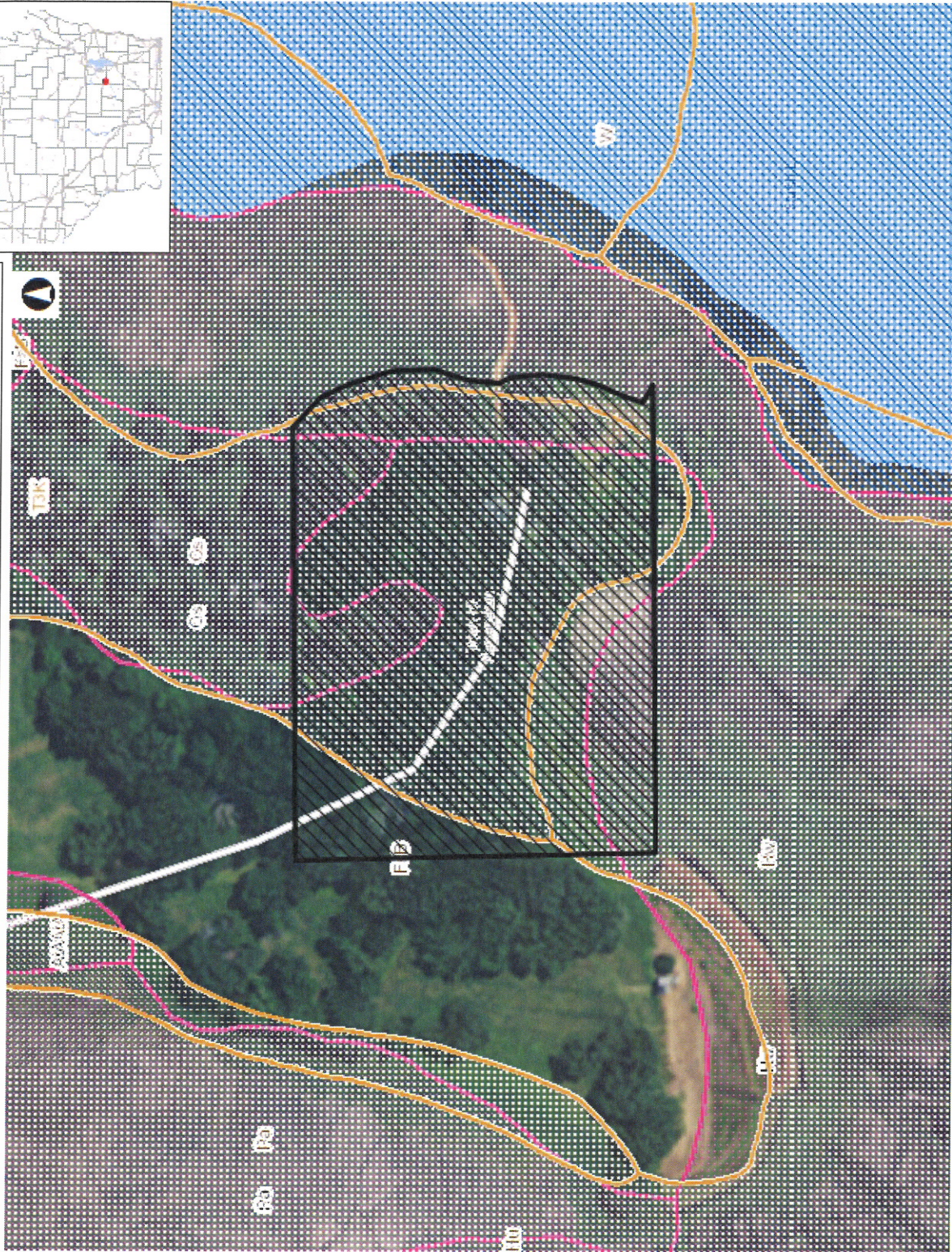


FIGURE 1
SITE LOCATION & TOPOGRAPHIC MAP
 DAVE HAHN PROPERTY
 TOWN OF NEPEUSKUN
 WINNEBAGO COUNTY, WI

H1043-9-16-00878.00 OCTOBER, 2016



Figure 2: Winnebago County Soil Survey & Wetland Inventory



Legend

- Wetland Class Points**
 - Dammed pond
 - Excavated pond
 - Filled excavated pond
 - Filled/draind wetland
 - Wetland too small to delineate
- Filled Points**
- Wetland Class Areas**
 - Wetland
 - Upland
- Filled Areas**
- NRCS Wetspots**
- Wetland Indicators**
- NRCS Wisconsin Soils**
 - Soil Mapping Unit
 - Water
- Municipality**
- State Boundaries**
- County Boundaries**
- Major Roads**
 - Interstate Highway
 - State Highway
 - US Highway
- County and Local Roads**
 - County HWY
 - Local Road
- Railroads**
- Tribal Lands**
- Major Roads**
 - County Road
 - Interstate HWY
 - State HWY
 - US HWY

Notes

DISCLAIMER: The information shown on these maps has been obtained from various sources, and are of varying age, reliability and resolution. These maps are not intended to be used for navigation, nor are these maps an authoritative source of information about legal land ownership or public access. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map. For more information, see the DNR Legal Notices web page: <http://dnr.wi.gov/legal/>

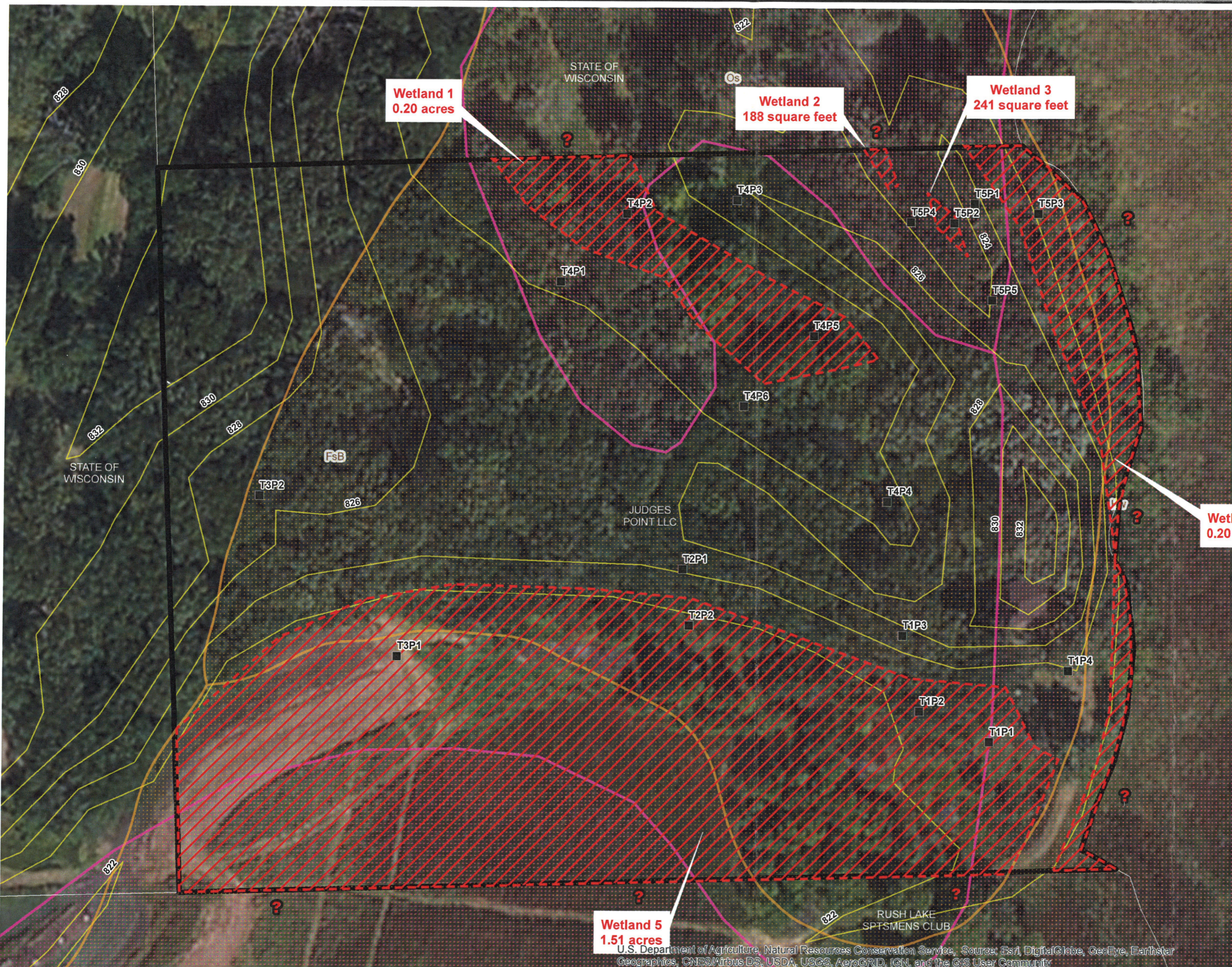
0.1 0 0.03 0.1 Miles

1: 1,980

NAD_1983_HARN_Wisconsin_TM
© Latitude Geographics Group Ltd.

Figure 2: Winnebago County Soil Survey & WDNR Wetland Inventory, Dave Hahn Property, Town of Nepeuskun, Winnebago County, WI

W:\PROJECTS\18640151\Wetland Delineation\GIS\WetlandFig3.mxd 4/21/2015 slh

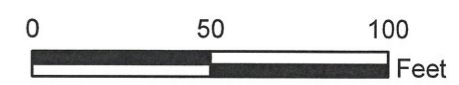


Mapped Features

- Review Area (4.80 acres)
- Wetland Area (1.92 acres)
- Wetland Indicator Soil
- WDNR Wetland Inventory
- Parcel Boundary
- 2ft Contours
- Wetlands Extend Beyond Review Area

Source: Winnebago County, 2010-14.

Disclaimer: The property lines, right-of-way lines, and other property information on this drawing were developed or obtained as part of the County Geographic Information System or through the County property tax mapping function. McMAHON does not guarantee this information to be correct, current, or complete. The property and right-of-way information are only intended for use as a general reference and are not intended or suitable for site-specific uses. Any use to the contrary of the above stated uses is the responsibility of the user and such use is at the user's own risk.



McMAHON
ENGINEERS ARCHITECTS

FIGURE 3
WETLAND DELINEATION MAP
DAVE HAHN PROPERTY
TOWN OF NEPEUSKUN
WINNEBAGO COUNTY

U.S. Department of Agriculture, Natural Resources Conservation Service. Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

APPENDIX A

COE WETLAND DETERMINATION DATA FORMS

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Dave Hahn Property City/County: Rush Lake/Winnebago Sampling Date: 10/28/2016
 Applicant/Owner: Dave Hahn State: WI Sampling Point: T1P1
 Investigator(s): Stacey Henk, Garek Holley Section, Township, Range: Sec 27, T17N, R14E
 Landform (hillslope, terrace, etc.): Footslope Local relief (concave, convex, none): concave
 Slope (%): 0-1 Lat.: _____ Long.: _____ Datum: _____
 Soil Map Unit Name: FsB NWI Classification: _____
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
 Are vegetation X, soil _____, or hydrology _____ significantly disturbed? Are "normal
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? circumstances" present? No
 (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>Y</u> Hydric soil present? <u>Y</u> Indicators of wetland hydrology present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) <p align="center">Mowed Lawn</p>	

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Microtopographic Relief (D4)
Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): _____ Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>7</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0</u> (includes capillary fringe)		Indicators of wetland hydrology present? <u>Y</u>
Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION - Use scientific names of plants

Sampling Point: T1P1

Tree Stratum		Plot Size (30)	Absolute % Cover	Dominant Species	Indicator Status
1	<i>Fraxinus pennsylvanica</i>		10	Y	FACW
2	<i>Populus tremuloides</i>		5	Y	FAC
3					
4					
5					
6					
7					
8					
9					
10					
			15	= Total Cover	

Sapling/Shrub Stratum		Plot Size (15)	Absolute % Cover	Dominant Species	Indicator Status
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
			0	= Total Cover	

Herb Stratum		Plot Size (5)	Absolute % Cover	Dominant Species	Indicator Status
1	<i>Phalaris arundinacea</i>		50	Y	FACW
2	<i>Agrostis gigantea</i>		30	Y	FACW
3	<i>Poa pratensis</i>		10	N	FACU
4	<i>Trifolium repens</i>		10	N	FACU
5	<i>Taraxacum officinale</i>		5	N	FACU
6	<i>Potentilla simplex</i>		5	N	FACU
7					
8					
9					
10					
11					
12					
13					
14					
15					
			110	= Total Cover	

Woody Vine Stratum		Plot Size (30)	Absolute % Cover	Dominant Species	Indicator Status
1					
2					
3					
4					
5					
			0	= Total Cover	

50/20 Thresholds		
	20%	50%
Tree Stratum	3	8
Sapling/Shrub Stratum	0	0
Herb Stratum	22	55
Woody Vine Stratum	0	0

Dominance Test Worksheet	
Number of Dominant Species that are OBL, FACW, or FAC:	4 (A)
Total Number of Dominant Species Across	4 (B)
Percent of Dominant Species that are OBL, FACW, or FAC:	100.00% (A/B)

Prevalence Index Worksheet	
Total % Cover of:	
OBL species	0 x 1 = 0
FACW species	90 x 2 = 180
FAC species	5 x 3 = 15
FACU species	30 x 4 = 120
UPL species	0 x 5 = 0
Column totals	125 (A) 315 (B)
Prevalence Index = B/A =	2.52

Hydrophytic Vegetation Indicators:
 Rapid test for hydrophytic vegetation
 Dominance test is >50%
 Prevalence index is ≤3.0*
 Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
 Problematic hydrophytic vegetation* (explain)
 *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:
Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Dave Hahn Property City/County: Rush Lake/Winnebago Sampling Date: 10/28/2016
 Applicant/Owner: Dave Hahn State: WI Sampling Point: T1P2
 Investigator(s): Stacey Henk, Garek Holley Section, Township, Range: Sec 27, T17N, R14E
 Landform (hillslope, terrace, etc.): Footslope-upgradient W of T1P1 Local relief (concave, convex, none): concave
 Slope (%): 0-2 Lat.: _____ Long.: _____ Datum: _____
 Soil Map Unit Name: FsB NWI Classification: _____
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
 Are vegetation X, soil _____, or hydrology _____ significantly disturbed? Are "normal
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? circumstances" present? No
 (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>Y</u> Hydric soil present? <u>Y</u> Indicators of wetland hydrology present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Mowed Lawn	

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on <input type="checkbox"/> Drift Deposits (B3) Living Roots (C3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Iron Deposits (B5) Recent Iron Reduction in Tilled <input type="checkbox"/> Inundation Visible on Aerial Soils (C6) Imagery (B7) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Sparsely Vegetated Concave <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Surface (B8)	Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Microtopographic Relief (D4)
Field Observations: Surface water present? Yes _____ No <u>X</u> Depth (inches): _____ Water table present? Yes <u>X</u> No _____ Depth (inches): <u>10</u> Saturation present? Yes <u>X</u> No _____ Depth (inches): <u>2</u> (includes capillary fringe)	Indicators of wetland hydrology present? <u>Y</u>
Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

SOIL

Sampling Point: T1P2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-11	10YR 2/1	100					SIL	
11-20	2.5Y 7/1	60	5Y 8/1	20	D	M	C	
			7.5YR 5/6	20	C	M		

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains
 **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- Histisol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR R, MLRA 149B)
- Polyvalue Below Surface (S8) (LRR R, MLRA)
- Thin Dark Surface (S9)
- Loamy Mucky Mineral (F1) (LRR K, L)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- Coast Prairie Redox (A16) (LRR K, L, R)
- 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- Polyvalue Below Surface (S8) (LRR K, L)
- Thin Dark Surface (S9) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Piedmont Floodplain Soils (F19) (MLRA 149B)
- Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- Red Parent Material (F21)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric soil present? Y

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: T1P2

Tree Stratum					Plot Size (30)		Absolute % Cover	Dominant Species	Indicator Status
1	<i>Fraxinus pennsylvanica</i>		10	Y	FACW				
2	<i>Populus tremuloides</i>		5	Y	FAC				
3									
4									
5									
6									
7									
8									
9									
10									
			15	=	Total Cover				
Sapling/Shrub Stratum					Plot Size (15)		Absolute % Cover	Dominant Species	Indicator Status
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
			0	=	Total Cover				
Herb Stratum					Plot Size (5)		Absolute % Cover	Dominant Species	Indicator Status
1	<i>Phalaris arundinacea</i>		40	Y	FACW				
2	<i>Agrostis gigantea</i>		30	Y	FACW				
3	<i>Poa pratensis</i>		25	Y	FACU				
4	<i>Taraxacum officinale</i>		10	N	FACU				
5	<i>Trifolium repens</i>		5	N	FACU				
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
			110	=	Total Cover				
Woody Vine Stratum					Plot Size (30)		Absolute % Cover	Dominant Species	Indicator Status
1									
2									
3									
4									
5									
			0	=	Total Cover				

50/20 Thresholds		
Tree Stratum	20%	50%
Sapling/Shrub Stratum	3	8
Herb Stratum	0	0
Woody Vine Stratum	22	55
	0	0
Dominance Test Worksheet		
Number of Dominant Species that are OBL, FACW, or FAC: <u>4</u> (A)		
Total Number of Dominant Species Across <u>5</u> (B)		
Percent of Dominant Species that are OBL, FACW, or FAC: <u>80.00%</u> (A/B)		
Prevalence Index Worksheet		
Total % Cover of:		
OBL species	0 x 1 =	0
FACW species	80 x 2 =	160
FAC species	5 x 3 =	15
FACU species	40 x 4 =	160
UPL species	0 x 5 =	0
Column totals	125 (A)	335 (B)
Prevalence Index = B/A = <u>2.68</u>		
Hydrophytic Vegetation Indicators:		
Rapid test for hydrophytic vegetation		
<input checked="" type="checkbox"/> Dominance test is >50%		
<input checked="" type="checkbox"/> Prevalence index is ≤3.0*		
Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)		
Problematic hydrophytic vegetation* (explain)		
*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic		
Definitions of Vegetation Strata:		
Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.		
Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.		
Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.		
Woody vines - All woody vines greater than 3.28 ft in height.		
Hydrophytic vegetation present? <u>Y</u>		

Remarks: (Include photo numbers here or on a separate sheet)

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Dave Hahn Property City/County: Rush Lake/Winnebago Sampling Date: 10/28/2016
 Applicant/Owner: Dave Hahn State: WI Sampling Point: T1P3
 Investigator(s): Stacey Henk, Garek Holley Section, Township, Range: Sec 27, T17N, R14E
 Landform (hillslope, terrace, etc.): Backslope-upgradient N of T1P2 Local relief (concave, convex, none): nonc
 Slope (%): 6 Lat.: _____ Long.: _____ Datum: _____
 Soil Map Unit Name: FsB NWI Classification: _____
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? circumstances" present? Yes
 (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u> N </u> Hydric soil present? <u> N </u> Indicators of wetland hydrology present? <u> N </u>	Is the sampled area within a wetland? <u> N </u> If yes, optional wetland site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Microtopographic Relief (D4)
Field Observations: Surface water present? Yes _____ No <u> X </u> Depth (inches): _____ Water table present? Yes _____ No <u> X </u> Depth (inches): _____ Saturation present? Yes _____ No <u> X </u> Depth (inches): _____ (includes capillary fringe)		Indicators of wetland hydrology present? <u> N </u>
Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Approximately 2ft upgradient of T1P2		

VEGETATION - Use scientific names of plants

Sampling Point: T1P3

Tree Stratum	Plot Size (30)	Absolute % Cover	Dominant Species	Indicator Status
1 <i>Quercus alba</i>		30	Y	FACU
2				
3				
4				
5				
6				
7				
8				
9				
10				
		30 = Total Cover		
Sapling/Shrub Stratum	Plot Size (15)	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
		0 = Total Cover		
Herb Stratum	Plot Size (5)	Absolute % Cover	Dominant Species	Indicator Status
1 <i>Poa pratensis</i>		60	Y	FACU
2 <i>Phalaris arundinacea</i>		40	Y	FACW
3 <i>Solidago canadensis</i>		10	N	FACU
4 <i>Fraxinus pennsylvanica</i>		5	N	FACW
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
		115 = Total Cover		
Woody Vine Stratum	Plot Size (30)	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				
		0 = Total Cover		

50/20 Thresholds

Tree Stratum	20%	50%
Sapling/Shrub Stratum	6	15
Herb Stratum	0	0
Woody Vine Stratum	23	58
	0	0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 33.33% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	45	x 2 =	90
FAC species	0	x 3 =	0
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column totals	145 (A)		490 (B)
Prevalence Index = B/A =		<u>3.38</u>	

Hydrophytic Vegetation Indicators:

Rapid test for hydrophytic vegetation

Dominance test is >50%

Prevalence index is ≤3.0*

Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Dave Hahn Property City/County: Rush Lake/Winnebago Sampling Date: 10/28/2016
 Applicant/Owner: Dave Hahn State: WI Sampling Point: T1P4
 Investigator(s): Stacey Henk, Garek Holley Section, Township, Range: Sec 27, T17N, R14E
 Landform (hillslope, terrace, etc.): Backslope-upgradient N of T1P1 Local relief (concave, convex, none): none
 Slope (%): 4 Lat.: _____ Long.: _____ Datum: _____
 Soil Map Unit Name: Hw NWI Classification: _____
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
 Are vegetation X, soil _____, or hydrology _____ significantly disturbed? Are "normal
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? circumstances" present? No
 (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u> N </u> Hydric soil present? <u> Y </u> Indicators of wetland hydrology present? <u> N </u>	Is the sampled area within a wetland? <u> N </u> If yes, optional wetland site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Mowed lawn	

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Living Roots (C3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Recent Iron Reduction in Tilled <input type="checkbox"/> Inundation Visible on Aerial <input type="checkbox"/> Soils (C6) Imagery (B7) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Sparsely Vegetated Concave <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Surface (B8)	Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Microtopographic Relief (D4)	Field Observations: Surface water present? Yes _____ No <u> X </u> Depth (inches): _____ Water table present? Yes _____ No <u> X </u> Depth (inches): _____ Saturation present? Yes _____ No <u> X </u> Depth (inches): _____ (includes capillary fringe)
Indicators of wetland hydrology present? <u> N </u>		
Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Approximately 1ft upgradient of T1P1		

VEGETATION - Use scientific names of plants

Sampling Point: T1P4

Tree Stratum					Plot Size (30)		Absolute % Cover	Dominant Species	Indicator Status
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
						0	= Total Cover		
Sapling/Shrub Stratum					Plot Size (15)		Absolute % Cover	Dominant Species	Indicator Status
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
						0	= Total Cover		
Herb Stratum					Plot Size (5)		Absolute % Cover	Dominant Species	Indicator Status
1	<i>Poa pratensis</i>					50	Y	FACU	
2	<i>Agrostis gigantea</i>					35	Y	FACW	
3	<i>Phalaris arundinacea</i>					10	N	FACW	
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
						95	= Total Cover		
Woody Vine Stratum					Plot Size (30)		Absolute % Cover	Dominant Species	Indicator Status
1									
2									
3									
4									
5									
						0	= Total Cover		

50/20 Thresholds

	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	19	48
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 50.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	45	x 2 =	90
FAC species	0	x 3 =	0
FACU species	50	x 4 =	200
UPL species	0	x 5 =	0
Column totals	95 (A)		290 (B)
Prevalence Index = B/A =			<u>3.05</u>

Hydrophytic Vegetation Indicators:

Rapid test for hydrophytic vegetation

Dominance test is >50%

Prevalence index is ≤3.0*

Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Dave Hahn Property City/County: Rush Lake/Winnebago Sampling Date: 10/28/2016
 Applicant/Owner: Dave Hahn State: WI Sampling Point: T2P1
 Investigator(s): Stacey Henk, Garek Holley Section, Township, Range: Sec 27, T17N, R14E
 Landform (hillslope, terrace, etc.): Shoulder Local relief (concave, convex, none): convex
 Slope (%): 6 Lat.: _____ Long.: _____ Datum: _____
 Soil Map Unit Name: FsB NWI Classification: _____
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? circumstances" present? Yes
 (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u> N </u> Hydric soil present? <u> N </u> Indicators of wetland hydrology present? <u> N </u>	Is the sampled area within a wetland? <u> N </u> If yes, optional wetland site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Microtopographic Relief (D4)
Field Observations: Surface water present? Yes <u> </u> No <u> X </u> Depth (inches): _____ Water table present? Yes <u> </u> No <u> X </u> Depth (inches): _____ Saturation present? Yes <u> </u> No <u> X </u> Depth (inches): _____ (includes capillary fringe)		Indicators of wetland hydrology present? <u> N </u>
Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION - Use scientific names of plants

Sampling Point: T2P1

Tree Stratum	Plot Size (30)	Absolute % Cover	Dominant Species	Indicator Status
1	<i>Quercus macrocarpa</i>	50	Y	FACU
2				
3				
4				
5				
6				
7				
8				
9				
10				
		50 = Total Cover		

Sapling/Shrub Stratum	Plot Size (15)	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
		0 = Total Cover		

Herb Stratum	Plot Size (5)	Absolute % Cover	Dominant Species	Indicator Status
1	<i>Rhamnus cathartica</i>	60	Y	FAC
2	<i>Phalaris arundinacea</i>	20	N	FACW
3	<i>Poa pratensis</i>	20	N	FACU
4	<i>Agrostis gigantea</i>	10	N	FACW
5	<i>Fraxinus pennsylvanica</i>	5	N	FACW
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
		115 = Total Cover		

Woody Vine Stratum	Plot Size (30)	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				
		0 = Total Cover		

50/20 Thresholds		
	20%	50%
Tree Stratum	10	25
Sapling/Shrub Stratum	0	0
Herb Stratum	23	58
Woody Vine Stratum	0	0

Dominance Test Worksheet	
Number of Dominant Species that are OBL, FACW, or FAC:	1 (A)
Total Number of Dominant Species Across	2 (B)
Percent of Dominant Species that are OBL, FACW, or FAC:	50.00% (A/B)

Prevalence Index Worksheet	
Total % Cover of:	
OBL species	0 x 1 = 0
FACW species	35 x 2 = 70
FAC species	60 x 3 = 180
FACU species	70 x 4 = 280
UPL species	0 x 5 = 0
Column totals	165 (A) 530 (B)
Prevalence Index = B/A =	3.21

Hydrophytic Vegetation Indicators:

- Rapid test for hydrophytic vegetation
- Dominance test is >50%
- Prevalence index is ≤3.0*
- Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Dave Hahn Property City/County: Rush Lake/Winnebago Sampling Date: 10/28/2016
 Applicant/Owner: Dave Hahn State: WI Sampling Point: T2P2
 Investigator(s): Stacey Henk, Garek Holley Section, Township, Range: Sec 27, T17N, R14E
 Landform (hillslope, terrace, etc.): Footslope-downgradient S of T2P1 Local relief (concave, convex, none): concave
 Slope (%): 2 Lat.: _____ Long.: _____ Datum: _____
 Soil Map Unit Name: FsB NWI Classification: _____
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? circumstances" present? Yes
 (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>Y</u> Hydric soil present? <u>Y</u> Indicators of wetland hydrology present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Roots (C3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Recent Iron Reduction in Tilled <input type="checkbox"/> Inundation Visible on Aerial <input type="checkbox"/> Soils (C6) Imagery (B7) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Sparsely Vegetated Concave <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Surface (B8)	Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input checked="" type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Microtopographic Relief (D4)
Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): _____ Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>14</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>8</u> (includes capillary fringe)	Indicators of wetland hydrology present? <u>Y</u>
Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: <u>Approximately 2 ft downgradient of T2P1</u>	

VEGETATION - Use scientific names of plants

Sampling Point: T2P2

Tree Stratum					Plot Size (30)		Absolute % Cover	Dominant Species	Indicator Status
1	<i>Fraxinus pennsylvanica</i>		10	Y	FACW				
2	<i>Populus deltoides</i>		5	Y	FAC				
3									
4									
5									
6									
7									
8									
9									
10			15	= Total Cover					
Sapling/Shrub Stratum					Plot Size (15)		Absolute % Cover	Dominant Species	Indicator Status
1	<i>Rhamnus cathartica</i>		40	Y	FAC				
2									
3									
4									
5									
6									
7									
8									
9									
10			40	= Total Cover					
Herb Stratum					Plot Size (5)		Absolute % Cover	Dominant Species	Indicator Status
1	<i>Phalaris arundinacea</i>		60	Y	FACW				
2	<i>Rhamnus cathartica</i>		50	Y	FAC				
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15			110	= Total Cover					
Woody Vine Stratum					Plot Size (30)		Absolute % Cover	Dominant Species	Indicator Status
1									
2									
3									
4									
5			0	= Total Cover					

50/20 Thresholds	20%	50%
Tree Stratum	3	8
Sapling/Shrub Stratum	8	20
Herb Stratum	22	55
Woody Vine Stratum	0	0

Dominance Test Worksheet	
Number of Dominant Species that are OBL, FACW, or FAC: <u>5</u> (A)	
Total Number of Dominant Species Across <u>5</u> (B)	
Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)	

Prevalence Index Worksheet	
Total % Cover of:	
OBL species	<u>0</u> x 1 = <u>0</u>
FACW species	<u>70</u> x 2 = <u>140</u>
FAC species	<u>95</u> x 3 = <u>285</u>
FACU species	<u>0</u> x 4 = <u>0</u>
UPL species	<u>0</u> x 5 = <u>0</u>
Column totals	<u>165</u> (A) <u>425</u> (B)
Prevalence Index = B/A = <u>2.58</u>	

Hydrophytic Vegetation Indicators:	
Rapid test for hydrophytic vegetation	
<input checked="" type="checkbox"/> Dominance test is >50%	
<input checked="" type="checkbox"/> Prevalence index is ≤3.0*	
Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)	
<input type="checkbox"/> Problematic hydrophytic vegetation* (explain)	
*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	

Definitions of Vegetation Strata:	
Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.	
Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
Woody vines - All woody vines greater than 3.28 ft in height.	

Hydrophytic vegetation present?	<u>Y</u>
--	----------

Remarks: (Include photo numbers here or on a separate sheet)

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Dave Hahn Property City/County: Rush Lake/Winnebago Sampling Date: 10/28/2016
 Applicant/Owner: Dave Hahn State: WI Sampling Point: T3P1
 Investigator(s): Stacey Henk, Garek Holley Section, Township, Range: Sec 27, T17N, R14E
 Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): concave
 Slope (%): 0-1 Lat.: _____ Long.: _____ Datum: _____
 Soil Map Unit Name: FsB NWI Classification: _____
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? circumstances" present? Yes
 (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>Y</u> Hydric soil present? <u>Y</u> Indicators of wetland hydrology present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) <div style="border: 1px solid black; padding: 5px; min-height: 40px;"> Rapid Test </div>	

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) _____ Water-Stained Leaves (B9) <input checked="" type="checkbox"/> High Water Table (A2) _____ Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living _____ Drift Deposits (B3) _____ Roots (C3) _____ Algal Mat or Crust (B4) _____ Presence of Reduced Iron (C4) _____ Iron Deposits (B5) _____ Recent Iron Reduction in Tilled _____ Inundation Visible on Aerial _____ Soils (C6) Imagery (B7) _____ Thin Muck Surface (C7) _____ Sparsely Vegetated Concave _____ Other (Explain in Remarks) _____ Surface (B8)	Secondary Indicators (minimum of two required) _____ Surface Soil Cracks (B6) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) _____ Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) _____ Microtopographic Relief (D4)	Field Observations: Surface water present? Yes <u>X</u> No _____ Depth (inches): <u>0.5</u> Water table present? Yes <u>X</u> No _____ Depth (inches): <u>0</u> Saturation present? Yes <u>X</u> No _____ Depth (inches): <u>0</u> (includes capillary fringe)
		Indicators of wetland hydrology present? <u>Y</u>
Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available: <div style="border: 1px solid black; height: 40px;"></div>		
Remarks:		

VEGETATION - Use scientific names of plants

Sampling Point: T3P1

Tree Stratum	Plot Size (30)	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Sapling/Shrub Stratum	Plot Size (15)	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Herb Stratum	Plot Size (5)	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

Woody Vine Stratum	Plot Size (30)	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				

50/20 Thresholds

	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	22	55
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	10	x 1 =	10
FACW species	100	x 2 =	200
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	110	(A)	210 (B)

Prevalence Index = B/A = 1.91

Hydrophytic Vegetation Indicators:

Rapid test for hydrophytic vegetation

Dominance test is >50%

Prevalence index is ≤3.0*

Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Dave Hahn Property City/County: Rush Lake/Winnebago Sampling Date: 10/28/2016
 Applicant/Owner: Dave Hahn State: WI Sampling Point: T3P2
 Investigator(s): Stacey Henk, Garek Holley Section, Township, Range: Sec 27, T17N, R14E
 Landform (hillslope, terrace, etc.): Backslope-upgradient N of T3P1 Local relief (concave, convex, none): none
 Slope (%): 3 Lat.: _____ Long.: _____ Datum: _____
 Soil Map Unit Name: FsB NWI Classification: _____
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? circumstances" present? Yes
 (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u> N </u> Hydric soil present? <u> N </u> Indicators of wetland hydrology present? <u> N </u>	Is the sampled area within a wetland? <u> N </u> If yes, optional wetland site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Microtopographic Relief (D4)
Field Observations: Surface water present? Yes <u> </u> No <u> X </u> Depth (inches): _____ Water table present? Yes <u> </u> No <u> X </u> Depth (inches): _____ Saturation present? Yes <u> </u> No <u> X </u> Depth (inches): _____ (includes capillary fringe)		Indicators of wetland hydrology present? <u> N </u>
Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION - Use scientific names of plants

Sampling Point: T3P2

Tree Stratum					Plot Size (30)		Absolute % Cover	Dominant Species	Indicator Status
1	<i>Quercus alba</i>		50	Y	FACU				
2	<i>Quercus rubra</i>		20	Y	FACU				
3	<i>Carya ovata</i>		10	N	FACU				
4									
5									
6									
7									
8									
9									
10			80	= Total Cover					

Sapling/Shrub Stratum					Plot Size (15)		Absolute % Cover	Dominant Species	Indicator Status
1	<i>Rhamnus cathartica</i>		40	Y	FAC				
2									
3									
4									
5									
6									
7									
8									
9									
10			40	= Total Cover					

Herb Stratum					Plot Size (5)		Absolute % Cover	Dominant Species	Indicator Status
1	<i>Rhamnus cathartica</i>		70	Y	FAC				
2	<i>Phalaris arundinacea</i>		10	N	FACW				
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15			80	= Total Cover					

Woody Vine Stratum					Plot Size (30)		Absolute % Cover	Dominant Species	Indicator Status
1									
2									
3									
4									
5			0	= Total Cover					

50/20 Thresholds

Tree Stratum	20%	50%
Sapling/Shrub Stratum	16	40
Herb Stratum	8	20
Woody Vine Stratum	16	40
	0	0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across: 4 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 50.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	110	x 3 =	330
FACU species	80	x 4 =	320
UPL species	0	x 5 =	0
Column totals	200	(A)	670
Prevalence Index = B/A =	<u>3.35</u>		

Hydrophytic Vegetation Indicators:

Rapid test for hydrophytic vegetation

Dominance test is >50%

Prevalence index is ≤3.0*

Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Dave Hahn Property City/County: Rush Lake/Winnebago Sampling Date: 10/28/2016
 Applicant/Owner: Dave Hahn State: WI Sampling Point: T4P1
 Investigator(s): Stacey Henk, Garek Holley Section, Township, Range: Sec 27, T17N, R14E
 Landform (hillslope, terrace, etc.): Backslope Local relief (concave, convex, none): none
 Slope (%): 4 Lat.: _____ Long.: _____ Datum: _____
 Soil Map Unit Name: Os NWI Classification: _____
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? circumstances" present? Yes
 (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>Y</u> Hydric soil present? <u>Y</u> Indicators of wetland hydrology present? <u>N</u>	Is the sampled area within a wetland? <u>N</u> If yes, optional wetland site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) <div style="height: 40px;"></div>	

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Microtopographic Relief (D4)
Field Observations: Surface water present? Yes _____ No <u>X</u> Depth (inches): _____ Water table present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)		Indicators of wetland hydrology present? <u>N</u>
Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available: <div style="height: 40px;"></div>		
Remarks: <div style="height: 40px;"></div>		

VEGETATION - Use scientific names of plants

Sampling Point: T4P1

Tree Stratum					50/20 Thresholds		
Plot Size (30)		Absolute % Cover	Dominant Species	Indicator Status	20%	50%	
1	<i>Rhamnus cathartica</i>	25	Y	FAC	10	25	
2	<i>Quercus alba</i>	15	Y	FACU	6	15	
3	<i>Fraxinus pennsylvanica</i>	10	Y	FACW	12	30	
4					0	0	
5							
6							
7							
8							
9							
10							
		50	= Total Cover				
Sapling/Shrub Stratum					Dominance Test Worksheet		
Plot Size (15)		Absolute % Cover	Dominant Species	Indicator Status	Number of Dominant Species that are OBL, FACW, or FAC: <u>4</u> (A)		
1	<i>Rhamnus cathartica</i>	30	Y	FAC	Total Number of Dominant Species Across <u>5</u> (B)		
2					Percent of Dominant Species that are OBL, FACW, or FAC: <u>80.00%</u> (A/B)		
3							
4							
5							
6							
7							
8							
9							
10							
		30	= Total Cover				
Herb Stratum					Prevalence Index Worksheet		
Plot Size (5)		Absolute % Cover	Dominant Species	Indicator Status	Total % Cover of:		
1	<i>Rhamnus cathartica</i>	60	Y	FAC	OBL species	0	x 1 = 0
2					FACW species	10	x 2 = 20
3					FAC species	115	x 3 = 345
4					FACU species	15	x 4 = 60
5					UPL species	0	x 5 = 0
6					Column totals	140 (A)	425 (B)
7					Prevalence Index = B/A = <u>3.04</u>		
8							
9							
10							
11							
12							
13							
14							
15							
		60	= Total Cover				
Woody Vine Stratum					Hydrophytic Vegetation Indicators:		
Plot Size (30)		Absolute % Cover	Dominant Species	Indicator Status	<input type="checkbox"/> Rapid test for hydrophytic vegetation <input checked="" type="checkbox"/> Dominance test is >50% <input type="checkbox"/> Prevalence index is ≤3.0* <input type="checkbox"/> Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic hydrophytic vegetation* (explain)		
1					*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic		
2							
3							
4							
5							
		0	= Total Cover				
Definitions of Vegetation Strata:					Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines - All woody vines greater than 3.28 ft in height.		
					Hydrophytic vegetation present? <u>Y</u>		

Remarks: (Include photo numbers here or on a separate sheet)

VEGETATION - Use scientific names of plants

Sampling Point: T4P2

Tree Stratum					Plot Size (30)		Absolute % Cover	Dominant Species	Indicator Status
1	<i>Fraxinus pennsylvanica</i>		15	Y	FACW				
2	<i>Rhamnus cathartica</i>		10	Y	FAC				
3									
4									
5									
6									
7									
8									
9									
10			25	= Total Cover					
Sapling/Shrub Stratum					Plot Size (15)		Absolute % Cover	Dominant Species	Indicator Status
1	<i>Rhamnus cathartica</i>		40	Y	FAC				
2									
3									
4									
5									
6									
7									
8									
9									
10			40	= Total Cover					
Herb Stratum					Plot Size (5)		Absolute % Cover	Dominant Species	Indicator Status
1	<i>Pilea pumila</i>		30	Y	FACW				
2	<i>Rhamnus cathartica</i>		25	Y	FAC				
3	<i>Phalaris arundinacea</i>		10	N	FACW				
4	<i>Solidago gigantea</i>		5	N	FACW				
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15			70	= Total Cover					
Woody Vine Stratum					Plot Size (30)		Absolute % Cover	Dominant Species	Indicator Status
1									
2									
3									
4									
5									
			0	= Total Cover					

50/20 Thresholds

Tree Stratum	20%	50%
Sapling/Shrub Stratum	5	13
Herb Stratum	8	20
Woody Vine Stratum	14	35
	0	0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across 5 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	60	x 2 =	120
FAC species	75	x 3 =	225
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	135	(A)	345
Prevalence Index = B/A =	<u>2.56</u>		

Hydrophytic Vegetation Indicators:

Rapid test for hydrophytic vegetation

Dominance test is >50%

Prevalence index is ≤3.0*

Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Dave Hahn Property City/County: Rush Lake/Winnebago Sampling Date: 10/28/2016
 Applicant/Owner: Dave Hahn State: WI Sampling Point: T4P3
 Investigator(s): Stacey Henk, Garek Holley Section, Township, Range: Sec 27, T17N, R14E
 Landform (hillslope, terrace, etc.): Shoulder-upgradient E of T4P2 Local relief (concave, convex, none): convex
 Slope (%): 4 Lat.: _____ Long.: _____ Datum: _____
 Soil Map Unit Name: FsB NWI Classification: _____
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? circumstances" present? Yes
 (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>Y</u> Hydric soil present? <u>N</u> Indicators of wetland hydrology present? <u>N</u>	Is the sampled area within a wetland? <u>N</u> If yes, optional wetland site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Microtopographic Relief (D4)
Field Observations: Surface water present? Yes _____ No <u>X</u> Depth (inches): _____ Water table present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)		Indicators of wetland hydrology present? <u>N</u>
Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION - Use scientific names of plants

Sampling Point: T4P3

Tree Stratum		Plot Size (30)	Absolute % Cover	Dominant Species	Indicator Status
1	<i>Quercus macrocarpa</i>		20	Y	FACU
2	<i>Prunus serotina</i>		10	Y	FACU
3	<i>Rhamnus cathartica</i>		10	Y	FAC
4	<i>Quercus alba</i>		5	N	FACU
5					
6					
7					
8					
9					
10					
			45	=	Total Cover
Sapling/Shrub Stratum		Plot Size (15)	Absolute % Cover	Dominant Species	Indicator Status
1	<i>Rhamnus cathartica</i>		30	Y	FAC
2					
3					
4					
5					
6					
7					
8					
9					
10					
			30	=	Total Cover
Herb Stratum		Plot Size (5)	Absolute % Cover	Dominant Species	Indicator Status
1	<i>Rhamnus cathartica</i>		50	Y	FAC
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
			50	=	Total Cover
Woody Vine Stratum		Plot Size (30)	Absolute % Cover	Dominant Species	Indicator Status
1					
2					
3					
4					
5					
			0	=	Total Cover

50/20 Thresholds

	20%	50%
Tree Stratum	9	23
Sapling/Shrub Stratum	6	15
Herb Stratum	10	25
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across: 5 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 60.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	90	x 3 =	270
FACU species	35	x 4 =	140
UPL species	0	x 5 =	0
Column totals	125	(A)	410 (B)
Prevalence Index = B/A =	<u>3.28</u>		

Hydrophytic Vegetation Indicators:

Rapid test for hydrophytic vegetation

Dominance test is >50%

Prevalence index is ≤3.0*

Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Dave Hahn Property City/County: Rush Lake/Winnebago Sampling Date: 10/28/2016
 Applicant/Owner: Dave Hahn State: WI Sampling Point: T4P4
 Investigator(s): Stacey Henk, Garek Holley Section, Township, Range: Sec 27, T17N, R14E
 Landform (hillslope, terrace, etc.): Backslope-S of wetland 1 Local relief (concave, convex, none): none
 Slope (%): 3 Lat.: _____ Long.: _____ Datum: _____
 Soil Map Unit Name: FsB NWI Classification: _____
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? circumstances" present? Yes
 (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u> N </u> Hydric soil present? <u> N </u> Indicators of wetland hydrology present? <u> N </u>	Is the sampled area within a wetland? <u> N </u> If yes, optional wetland site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Roots (C3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Recent Iron Reduction in Tilled <input type="checkbox"/> Inundation Visible on Aerial <input type="checkbox"/> Soils (C6) Imagery (B7) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Sparsely Vegetated Concave <input type="checkbox"/> Other (Explain in Remarks) Surface (B8)	Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Microtopographic Relief (D4)	Field Observations: Surface water present? Yes _____ No <u> X </u> Depth (inches): _____ Water table present? Yes _____ No <u> X </u> Depth (inches): _____ Saturation present? Yes _____ No <u> X </u> Depth (inches): _____ (includes capillary fringe)
Indicators of wetland hydrology present? <u> N </u>		Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
Remarks:		

SOIL

Sampling Point: T4P4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-15	7.5YR 3/1	100						
15-24	2.5Y 6/2	80						
	7.5YR 3/1	20						

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains

**Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- Histisol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR R, MLRA 149B)
- Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- Thin Dark Surface (S9)
- Loamy Mucky Mineral (F1) (LRR K, L)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- Coast Prairie Redox (A16) (LRR K, L, R)
- 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- Polyvalue Below Surface (S8) (LRR K, L)
- Thin Dark Surface (S9) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Piedmont Floodplain Soils (F19) (MLRA 149B)
- Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- Red Parent Material (F21)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
 Type: _____
 Depth (inches): _____

Hydric soil present? N

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: T4P4

Tree Stratum		Plot Size (30)	Absolute % Cover	Dominant Species	Indicator Status
1	<i>Prunus serotina</i>		20	Y	FACU
2	<i>Quercus alba</i>		10	Y	FACU
3	<i>Rhamnus cathartica</i>		10	Y	FAC
4	<i>Carya ovata</i>		5	N	FACU
5	<i>Quercus macrocarpa</i>		5	N	FACU
6					
7					
8					
9					
10					
			50	= Total Cover	
Sapling/Shrub Stratum		Plot Size (15)	Absolute % Cover	Dominant Species	Indicator Status
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
			0	= Total Cover	
Herb Stratum		Plot Size (5)	Absolute % Cover	Dominant Species	Indicator Status
1	<i>Rhamnus cathartica</i>		80	Y	FAC
2	<i>Phalaris arundinacea</i>		15	N	FACW
3	<i>Asclepias syriaca</i>		10	N	UPL
4	<i>Carex vulpinoidea</i>		10	N	OBL
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
			115	= Total Cover	
Woody Vine Stratum		Plot Size (30)	Absolute % Cover	Dominant Species	Indicator Status
1					
2					
3					
4					
5					
			0	= Total Cover	

50/20 Thresholds

Tree Stratum	20%	50%
Sapling/Shrub Stratum	10	25
Herb Stratum	0	0
Woody Vine Stratum	23	58
	0	0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across: 4 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 50.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	10	x 1 =	10
FACW species	15	x 2 =	30
FAC species	90	x 3 =	270
FACU species	40	x 4 =	160
UPL species	10	x 5 =	50
Column totals	165 (A)		520 (B)

Prevalence Index = B/A = 3.15

Hydrophytic Vegetation Indicators:

Rapid test for hydrophytic vegetation

Dominance test is >50%

Prevalence index is ≤3.0*

Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Dave Hahn Property City/County: Rush Lake/Winnebago Sampling Date: 10/28/2016
 Applicant/Owner: Dave Hahn State: WI Sampling Point: T4P5
 Investigator(s): Stacey Henk, Garek Holley Section, Township, Range: Sec 27, T17N, R14E
 Landform (hillslope, terrace, etc.): Toeslope-SE of T4P2 Local relief (concave, convex, none): concave
 Slope (%): 0-1 Lat.: _____ Long.: _____ Datum: _____
 Soil Map Unit Name: FsB NWI Classification: _____
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? circumstances" present? Yes
 (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>Y</u> Hydric soil present? <u>Y</u> Indicators of wetland hydrology present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Microtopographic Relief (D4)
Field Observations: Surface water present? Yes _____ No <u>X</u> Depth (inches): _____ Water table present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation present? Yes <u>X</u> No _____ Depth (inches): <u>18</u> (includes capillary fringe)		Indicators of wetland hydrology present? <u>Y</u>
Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION - Use scientific names of plants

Sampling Point: T4P5

Tree Stratum					Plot Size (30)		Absolute % Cover	Dominant Species	Indicator Status
1	<i>Rhamnus cathartica</i>			15	Y	FAC			
2	<i>Fraxinus pennsylvanica</i>			10	Y	FACW			
3									
4									
5									
6									
7									
8									
9									
10									
				25	= Total Cover				
Sapling/Shrub Stratum					Plot Size (15)		Absolute % Cover	Dominant Species	Indicator Status
1	<i>Rhamnus cathartica</i>			30	Y	FAC			
2									
3									
4									
5									
6									
7									
8									
9									
10									
				30	= Total Cover				
Herb Stratum					Plot Size (5)		Absolute % Cover	Dominant Species	Indicator Status
1	<i>Rhamnus cathartica</i>			20	Y	FAC			
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
				20	= Total Cover				
Woody Vine Stratum					Plot Size (30)		Absolute % Cover	Dominant Species	Indicator Status
1									
2									
3									
4									
5									
				0	= Total Cover				

50/20 Thresholds	20%	50%
Tree Stratum	5	13
Sapling/Shrub Stratum	6	15
Herb Stratum	4	10
Woody Vine Stratum	0	0

Dominance Test Worksheet		
Number of Dominant Species that are OBL, FACW, or FAC: <u>4</u> (A)		
Total Number of Dominant Species Across <u>4</u> (B)		
Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)		

Prevalence Index Worksheet		
Total % Cover of:		
OBL species	0 x 1 =	0
FACW species	10 x 2 =	20
FAC species	65 x 3 =	195
FACU species	0 x 4 =	0
UPL species	0 x 5 =	0
Column totals	<u>75</u> (A)	<u>215</u> (B)
Prevalence Index = B/A = <u>2.87</u>		

Hydrophytic Vegetation Indicators:	
<input type="checkbox"/>	Rapid test for hydrophytic vegetation
<input checked="" type="checkbox"/>	Dominance test is >50%
<input checked="" type="checkbox"/>	Prevalence index is ≤3.0*
<input type="checkbox"/>	Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
<input type="checkbox"/>	Problematic hydrophytic vegetation* (explain)
*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	

Definitions of Vegetation Strata:	
Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.	
Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
Woody vines - All woody vines greater than 3.28 ft in height.	

Hydrophytic vegetation present?	<u>Y</u>
--	----------

Remarks: (Include photo numbers here or on a separate sheet)

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Dave Hahn Property City/County: Rush Lake/Winnebago Sampling Date: 10/28/2016
 Applicant/Owner: Dave Hahn State: WI Sampling Point: T4P6
 Investigator(s): Stacey Henk, Garek Holley Section, Township, Range: Sec 27, T17N, R14E
 Landform (hillslope, terrace, etc.): Backslope-upgradient SW of T4P5 Local relief (concave, convex, none): none
 Slope (%): 5 Lat.: _____ Long.: _____ Datum: _____
 Soil Map Unit Name: FsB NWI Classification: _____
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? circumstances" present? Yes
 (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>Y</u> Hydric soil present? <u>N</u> Indicators of wetland hydrology present? <u>N</u>	Is the sampled area within a wetland? <u>N</u> If yes, optional wetland site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Roots (C3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Recent Iron Reduction in Tilled <input type="checkbox"/> Inundation Visible on Aerial <input type="checkbox"/> Soils (C6) Imagery (B7) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Sparsely Vegetated Concave <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Surface (B8)	Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Microtopographic Relief (D4)
Field Observations: Surface water present? Yes _____ No <u>X</u> Depth (inches): _____ Water table present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Indicators of wetland hydrology present? <u>N</u>
Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

SOIL

Sampling Point: T4P6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-8	10YR 2/1	100					SL	
8-15	10YR 4/2	100					SCL	
15-22	5Y 7/1	75	7.5YR 5/6	25	C	M	LS	

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains

**Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils:
<input type="checkbox"/> Histisol (A1)	<input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Dark Surface (S7) (LRR K, L)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	<input type="checkbox"/> Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric soil present? <u> N </u>
--	-----------------------------------

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: T4P6

Tree Stratum		Plot Size (30)	Absolute % Cover	Dominant Species	Indicator Status
1	<i>Carya ovata</i>		30	Y	FACU
2	<i>Rhamnus cathartica</i>		15	Y	FAC
3	<i>Prunus serotina</i>		10	N	FACU
4	<i>Quercus macrocarpa</i>		10	N	FACU
5					
6					
7					
8					
9					
10					
			65	= Total Cover	
Sapling/Shrub Stratum		Plot Size (15)	Absolute % Cover	Dominant Species	Indicator Status
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
			0	= Total Cover	
Herb Stratum		Plot Size (5)	Absolute % Cover	Dominant Species	Indicator Status
1	<i>Rhamnus cathartica</i>		80	Y	FAC
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
			80	= Total Cover	
Woody Vine Stratum		Plot Size (30)	Absolute % Cover	Dominant Species	Indicator Status
1					
2					
3					
4					
5					
			0	= Total Cover	

50/20 Thresholds

Tree Stratum	20%	50%
Sapling/Shrub Stratum	13	33
Herb Stratum	0	0
Woody Vine Stratum	16	40
	0	0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 66.67% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	95	x 3 =	285	
FACU species	50	x 4 =	200	
UPL species	0	x 5 =	0	
Column totals	145	(A)	485	(B)

Prevalence Index = B/A = 3.34

Hydrophytic Vegetation Indicators:

Rapid test for hydrophytic vegetation

Dominance test is >50%

Prevalence index is ≤3.0*

Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Dave Hahn Property City/County: Rush Lake/Winnebago Sampling Date: 10/28/2016
 Applicant/Owner: Dave Hahn State: WI Sampling Point T5P1
 Investigator(s): Stacey Henk, Garek Holley Section, Township, Range: Sec 27, T17N, R14E
 Landform (hillslope, terrace, etc.): Backslope Local relief (concave, convex, none): none
 Slope (%): 15 Lat.: _____ Long.: _____ Datum: _____
 Soil Map Unit Name: Os NWI Classification: _____
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? circumstances" present? Yes
 (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>Y</u> Hydric soil present? <u>N</u> Indicators of wetland hydrology present? <u>N</u>	Is the sampled area within a wetland? <u>N</u> If yes, optional wetland site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Roots (C3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Recent Iron Reduction in Tilled <input type="checkbox"/> Inundation Visible on Aerial <input type="checkbox"/> Soils (C6) <input type="checkbox"/> Imagery (B7) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Sparsely Vegetated Concave <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Surface (B8)	Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery <input type="checkbox"/> (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Microtopographic Relief (D4)	Field Observations: Surface water present? Yes _____ No <u>X</u> Depth (inches): _____ Water table present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)
		Indicators of wetland hydrology present? <u>N</u>
Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION - Use scientific names of plants

Sampling Point: T5P1

Tree Stratum					Plot Size (30)		Absolute % Cover	Dominant Species	Indicator Status
1	<i>Rhamnus cathartica</i>		25	Y	FAC				
2									
3									
4									
5									
6									
7									
8									
9									
10			25	= Total Cover					
Sapling/Shrub Stratum					Plot Size (15)		Absolute % Cover	Dominant Species	Indicator Status
1	<i>Rhamnus cathartica</i>		10	Y	FAC				
2									
3									
4									
5									
6									
7									
8									
9									
10			10	= Total Cover					
Herb Stratum					Plot Size (5)		Absolute % Cover	Dominant Species	Indicator Status
1	<i>Rhamnus cathartica</i>		15	Y	FAC				
2	<i>Hydrophyllum virginianum</i>		5	Y	FAC				
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15			20	= Total Cover					
Woody Vine Stratum					Plot Size (30)		Absolute % Cover	Dominant Species	Indicator Status
1									
2									
3									
4									
5			0	= Total Cover					

50/20 Thresholds		
	20%	50%
Tree Stratum	5	13
Sapling/Shrub Stratum	2	5
Herb Stratum	4	10
Woody Vine Stratum	0	0
Dominance Test Worksheet		
Number of Dominant Species that are OBL, FACW, or FAC: <u>4</u> (A)		
Total Number of Dominant Species Across <u>4</u> (B)		
Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)		
Prevalence Index Worksheet		
Total % Cover of:		
OBL species	0 x 1 =	0
FACW species	0 x 2 =	0
FAC species	55 x 3 =	165
FACU species	0 x 4 =	0
UPL species	0 x 5 =	0
Column totals	55 (A)	165 (B)
Prevalence Index = B/A = <u>3.00</u>		
Hydrophytic Vegetation Indicators:		
Rapid test for hydrophytic vegetation		
<input checked="" type="checkbox"/> Dominance test is >50%		
<input checked="" type="checkbox"/> Prevalence index is ≤3.0*		
Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)		
<input type="checkbox"/> Problematic hydrophytic vegetation* (explain)		
*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic		
Definitions of Vegetation Strata:		
Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.		
Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.		
Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.		
Woody vines - All woody vines greater than 3.28 ft in height.		
Hydrophytic vegetation present? <u>Y</u>		

Remarks: (Include photo numbers here or on a separate sheet)

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Dave Hahn Property City/County: Rush Lake/Winnebago Sampling Date: 10/28/2016
 Applicant/Owner: Dave Hahn State: WI Sampling Point: T5P2
 Investigator(s): Stacey Henk, Garek Holley Section, Township, Range: Sec 27, T17N, R14E
 Landform (hillslope, terrace, etc.): Footslope-downgradient W of T5P1 Local relief (concave, convex, none): concave
 Slope (%): 2 Lat.: _____ Long.: _____ Datum: _____
 Soil Map Unit Name: _____ NWI Classification: _____
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? circumstances" present? Yes
 (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>Y</u> Hydric soil present? <u>Y</u> Indicators of wetland hydrology present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input checked="" type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Microtopographic Relief (D4)
Field Observations: Surface water present? Yes _____ No <u>X</u> Depth (inches): _____ Water table present? Yes <u>X</u> No _____ Depth (inches): <u>20</u> Saturation present? Yes <u>X</u> No _____ Depth (Inches): <u>20</u> (includes capillary fringe)		Indicators of wetland hydrology present? <u>Y</u>
Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION - Use scientific names of plants

Sampling Point: T5P2

Tree Stratum					Plot Size (30)		Absolute % Cover	Dominant Species	Indicator Status
1	<i>Fraxinus pennsylvanica</i>					20	Y	FACW	
2	<i>Tilia americana</i>					10	Y	FACU	
3	<i>Rhamnus cathartica</i>					10	Y	FAC	
4									
5									
6									
7									
8									
9									
10									
						40	= Total Cover		
Sapling/Shrub Stratum					Plot Size (15)		Absolute % Cover	Dominant Species	Indicator Status
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
						0	= Total Cover		
Herb Stratum					Plot Size (5)		Absolute % Cover	Dominant Species	Indicator Status
1	<i>Rhamnus cathartica</i>					40	Y	FAC	
2	<i>Fraxinus pennsylvanica</i>					15	Y	FACW	
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
						55	= Total Cover		
Woody Vine Stratum					Plot Size (30)		Absolute % Cover	Dominant Species	Indicator Status
1									
2									
3									
4									
5									
						0	= Total Cover		

50/20 Thresholds		20%	50%
Tree Stratum		8	20
Sapling/Shrub Stratum		0	0
Herb Stratum		11	28
Woody Vine Stratum		0	0

Dominance Test Worksheet	
Number of Dominant Species that are OBL, FACW, or FAC: <u>4</u> (A)	
Total Number of Dominant Species Across <u>5</u> (B)	
Percent of Dominant Species that are OBL, FACW, or FAC: <u>80.00%</u> (A/B)	

Prevalence Index Worksheet	
Total % Cover of:	
OBL species	<u>0</u> x 1 = <u>0</u>
FACW species	<u>35</u> x 2 = <u>70</u>
FAC species	<u>50</u> x 3 = <u>150</u>
FACU species	<u>10</u> x 4 = <u>40</u>
UPL species	<u>0</u> x 5 = <u>0</u>
Column totals	<u>95</u> (A) <u>260</u> (B)
Prevalence Index = B/A = <u>2.74</u>	

Hydrophytic Vegetation Indicators:	
Rapid test for hydrophytic vegetation	
<input checked="" type="checkbox"/>	Dominance test is >50%
<input checked="" type="checkbox"/>	Prevalence index is ≤3.0*
Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)	
<input type="checkbox"/>	Problematic hydrophytic vegetation* (explain)
*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	

Definitions of Vegetation Strata:	
Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.	
Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
Woody vines - All woody vines greater than 3.28 ft in height.	

Hydrophytic vegetation present?	<u>Y</u>
--	----------

Remarks: (Include photo numbers here or on a separate sheet)

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Dave Hahn Property City/County: Rush Lake/Winnebago Sampling Date: 10/28/2016
 Applicant/Owner: Dave Hahn State: WI Sampling Point: T5P3
 Investigator(s): Stacey Henk, Garek Holley Section, Township, Range: Sec 27, T17N, R14E
 Landform (hillslope, terrace, etc.): Toeslope-downgradient E of T5P1 Local relief (concave, convex, none): concave
 Slope (%): 0-1 Lat.: _____ Long.: _____ Datum: _____
 Soil Map Unit Name: Hw NWI Classification: _____
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? circumstances" present? Yes
 (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>Y</u> Hydric soil present? <u>Y</u> Indicators of wetland hydrology present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Rapid Test	

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) _____ Water-Stained Leaves (B9) <input checked="" type="checkbox"/> High Water Table (A2) _____ Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living _____ Drift Deposits (B3) _____ Roots (C3) _____ Algal Mat or Crust (B4) _____ Presence of Reduced Iron (C4) _____ Iron Deposits (B5) _____ Recent Iron Reduction in Tilled _____ Inundation Visible on Aerial _____ Soils (C6) Imagery (B7) _____ Thin Muck Surface (C7) _____ Sparsely Vegetated Concave _____ Other (Explain in Remarks) _____ Surface (B8)	Secondary Indicators (minimum of two required) _____ Surface Soil Cracks (B6) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery _____ (C9) _____ Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) _____ Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) _____ Microtopographic Relief (D4)
Field Observations: Surface water present? Yes <u>X</u> No _____ Depth (inches): <u>1</u> Water table present? Yes <u>X</u> No _____ Depth (inches): <u>0</u> Saturation present? Yes <u>X</u> No _____ Depth (inches): <u>0</u> (includes capillary fringe)	Indicators of wetland hydrology present? <u>Y</u>
Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available: _____	
Remarks: Shore of Rush Lake	

VEGETATION - Use scientific names of plants

Sampling Point: T5P3

Tree Stratum	Plot Size (30)	Absolute % Cover	Dominant Species	Indicator Status
1 <i>Fraxinus pennsylvanica</i>		15	Y	FACW
2				
3				
4				
5				
6				
7				
8				
9				
10				
		15 = Total Cover		
Sapling/Shrub Stratum	Plot Size (15)	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
		0 = Total Cover		
Herb Stratum	Plot Size (5)	Absolute % Cover	Dominant Species	Indicator Status
1 <i>Phalaris arundinacea</i>		100	Y	FACW
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
		100 = Total Cover		
Woody Vine Stratum	Plot Size (30)	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				
		0 = Total Cover		

50/20 Thresholds

	20%	50%
Tree Stratum	3	8
Sapling/Shrub Stratum	0	0
Herb Stratum	20	50
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	115	x 2 =	230
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	115 (A)		230 (B)
Prevalence Index = B/A =		<u>2.00</u>	

Hydrophytic Vegetation Indicators:

Rapid test for hydrophytic vegetation

Dominance test is >50%

Prevalence index is ≤3.0*

Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Dave Hahn Property City/County: Rush Lake/Winnebago Sampling Date: 10/28/2016
 Applicant/Owner: Dave Hahn State: WI Sampling Point: T5P4
 Investigator(s): Stacey Henk, Garek Holley Section, Township, Range: Sec 27, T17N, R14E
 Landform (hillslope, terrace, etc.): Footslope Local relief (concave, convex, none): none
 Slope (%): 3 Lat.: _____ Long.: _____ Datum: _____
 Soil Map Unit Name: Os NWI Classification: _____
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? circumstances" present? Yes
 (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>Y</u> Hydric soil present? <u>Y</u> Indicators of wetland hydrology present? <u>N</u>	Is the sampled area within a wetland? <u>N</u> If yes, optional wetland site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Microtopographic Relief (D4)
Field Observations: Surface water present? Yes _____ No <u>X</u> Depth (inches): _____ Water table present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation present? Yes <u>X</u> No _____ Depth (inches): <u>20</u> (includes capillary fringe)		Indicators of wetland hydrology present? <u>N</u>
Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION - Use scientific names of plants

Sampling Point: T5P4

Tree Stratum		Plot Size (30)	Absolute % Cover	Dominant Species	Indicator Status
1	<i>Rhamnus cathartica</i>		25	Y	FAC
2	<i>Prunus serotina</i>		5	N	FACU
3					
4					
5					
6					
7					
8					
9					
10					
			30	=	Total Cover
Sapling/Shrub Stratum		Plot Size (15)	Absolute % Cover	Dominant Species	Indicator Status
1	<i>Rhamnus cathartica</i>		50	Y	FAC
2					
3					
4					
5					
6					
7					
8					
9					
10					
			50	=	Total Cover
Herb Stratum		Plot Size (5)	Absolute % Cover	Dominant Species	Indicator Status
1	<i>Rhamnus cathartica</i>		50	Y	FAC
2	<i>Prunus serotina</i>		10	N	FACU
3	<i>Fraxinus pennsylvanica</i>		10	N	FACW
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
			70	=	Total Cover
Woody Vine Stratum		Plot Size (30)	Absolute % Cover	Dominant Species	Indicator Status
1					
2					
3					
4					
5					
			0	=	Total Cover

50/20 Thresholds

	20%	50%
Tree Stratum	6	15
Sapling/Shrub Stratum	10	25
Herb Stratum	14	35
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	125	x 3 =	375
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column totals	150 (A)		455 (B)

Prevalence Index = B/A = 3.03

Hydrophytic Vegetation Indicators:

Rapid test for hydrophytic vegetation

Dominance test is >50%

Prevalence index is ≤3.0*

Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Dave Hahn Property City/County: Rush Lake/Winnebago Sampling Date: 10/28/2016
 Applicant/Owner: Dave Hahn State: WI Sampling Point: T5P5
 Investigator(s): Stacey Henk, Garek Holley Section, Township, Range: Sec 27, T17N, R14E
 Landform (hillslope, terrace, etc.): Backslope-upgradient S of T5P2 Local relief (concave, convex, none): concave
 Slope (%): 3 Lat.: _____ Long.: _____ Datum: _____
 Soil Map Unit Name: Os NWI Classification: _____
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? circumstances" present? Yes
 (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>Y</u> Hydric soil present? <u>Y</u> Indicators of wetland hydrology present? <u>N</u>	Is the sampled area within a wetland? <u>N</u> If yes, optional wetland site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Roots (C3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Recent Iron Reduction in Tilled <input type="checkbox"/> Inundation Visible on Aerial <input type="checkbox"/> Soils (C6) <input type="checkbox"/> Imagery (B7) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Sparsely Vegetated Concave <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Surface (B8)	Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery <input type="checkbox"/> (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Microtopographic Relief (D4)	Field Observations: Surface water present? Yes _____ No <u>X</u> Depth (inches): _____ Water table present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)
Indicators of wetland hydrology present? <u>N</u>		
Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION - Use scientific names of plants

Sampling Point: T5P5

Tree Stratum		Plot Size (30)	Absolute % Cover	Dominant Species	Indicator Status
1	<i>Rhamnus cathartica</i>		30	Y	FAC
2	<i>Quercus macrocarpa</i>		10	Y	FACU
3					
4					
5					
6					
7					
8					
9					
10					
			40	= Total Cover	
Sapling/Shrub Stratum		Plot Size (15)	Absolute % Cover	Dominant Species	Indicator Status
1	<i>Rhamnus cathartica</i>		40	Y	FAC
2					
3					
4					
5					
6					
7					
8					
9					
10					
			40	= Total Cover	
Herb Stratum		Plot Size (5)	Absolute % Cover	Dominant Species	Indicator Status
1	<i>Rhamnus cathartica</i>		40	Y	FAC
2	<i>Anemone quinquefolia</i>		30	Y	FACU
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
			70	= Total Cover	
Woody Vine Stratum		Plot Size (30)	Absolute % Cover	Dominant Species	Indicator Status
1					
2					
3					
4					
5					
			0	= Total Cover	

50/20 Thresholds

Tree Stratum	20%	50%
Sapling/Shrub Stratum	8	20
Herb Stratum	14	35
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across 5 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 60.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	110	x 3 =	330	
FACU species	40	x 4 =	160	
UPL species	0	x 5 =	0	
Column totals	150	(A)	490	(B)

Prevalence Index = B/A = 3.27

Hydrophytic Vegetation Indicators:

Rapid test for hydrophytic vegetation

Dominance test is >50%

Prevalence index is ≤3.0*

Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

APPENDIX B

WETLAND PHOTOGRAPHS



Photo 1: Viewing east at Wetland 4; the shore of Rush Lake



Photo 2: Viewing northwest at the south side of Wetland 3



Photo 3: Viewing west at Wetland 2



Photo 4: Viewing east at upland from the driveway on the west side of the property



Photo 5: Viewing south at Wetland 5; the shore of
Rush Lake



Photo 6: Viewing north at the southern region of
Wetland 1 near T4P5



Photo 7: Viewing southeast at Wetland 5 in a
mowed lawn area near T1P3

APPENDIX C

WINNEBAGO COUNTY SOIL RESOURCE MAP & HYDRIC SOIL REPORT



United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for **Winnebago County, Wisconsin**



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<http://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means

for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

Preface	2
Soil Map	5
Soil Map.....	6
Legend.....	7
Map Unit Legend.....	8
Map Unit Descriptions.....	8
Winnebago County, Wisconsin.....	10
FsB—Fox silt loam, 2 to 6 percent slopes.....	10
Hw—Houghton muck, ponded, 0 to 2 percent slopes.....	11
Os—Ossian silt loam.....	12
Soil Information for All Uses	14
Soil Properties and Qualities.....	14
Soil Qualities and Features.....	14
Drainage Class.....	14
Soil Reports.....	18
Land Classifications.....	18
Hydric Rating by Map Unit (WI).....	18
Hydric Soils.....	20
References	23

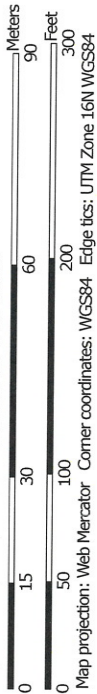
Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map











































Map Scale: 1:1,030 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

 Area of Interest (AOI)	 Spoil Area
 Soils	 Stony Spot
 Soil Map Unit Polygons	 Very Stony Spot
 Soil Map Unit Lines	 Wet Spot
 Soil Map Unit Points	 Other
 Special Point Features	 Special Line Features
 Blowout	 Streams and Canals
 Borrow Pit	 Transportation
 Clay Spot	 Rails
 Closed Depression	 Interstate Highways
 Gravel Pit	 US Routes
 Gravelly Spot	 Major Roads
 Landfill	 Local Roads
 Lava Flow	 Background
 Marsh or swamp	 Aerial Photography
 Mire or Quarry	
 Miscellaneous Water	
 Perennial Water	
 Rock Outcrop	
 Saline Spot	
 Sandy Spot	
 Severely Eroded Spot	
 Sinkhole	
 Slide or Slip	
 Sodic Spot	

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Winnebago County, Wisconsin
 Survey Area Data: Version 13, Sep 28, 2016

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 29, 2011—Sep 6, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Winnebago County, Wisconsin (WI139)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
FsB	Fox silt loam, 2 to 6 percent slopes	3.3	68.2%
Hw	Houghton muck, ponded, 0 to 2 percent slopes	1.0	21.5%
Os	Ossian silt loam	0.5	10.3%
Totals for Area of Interest		4.8	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If

Custom Soil Resource Report

intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Winnebago County, Wisconsin

FsB—Fox silt loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 2tjx0
Elevation: 570 to 1,150 feet
Mean annual precipitation: 31 to 37 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 124 to 176 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Fox and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Fox

Setting

Landform: Outwash plains
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loess over loamy glaciofluvial deposits over sandy and gravelly outwash

Typical profile

Ap - 0 to 7 inches: silt loam
Bt1 - 7 to 21 inches: silty clay loam
2Bt2 - 21 to 31 inches: sandy clay loam
3C - 31 to 79 inches: stratified sand to gravel

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: 30 to 40 inches to strongly contrasting textural stratification
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 45 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 5.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Hydric soil rating: No

Custom Soil Resource Report

Minor Components

Casco

Percent of map unit: 8 percent
Landform: Outwash plains
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

St. charles, gravelly substratum

Percent of map unit: 7 percent
Landform: Outwash plains
Hydric soil rating: No

Hw—Houghton muck, ponded, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2szfh
Elevation: 660 to 1,020 feet
Mean annual precipitation: 31 to 33 inches
Mean annual air temperature: 43 to 46 degrees F
Frost-free period: 140 to 192 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Houghton, muck, ponded, and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Houghton, Muck, Ponded

Setting

Landform: Depressions
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Herbaceous organic material

Typical profile

Oa - 0 to 79 inches: muck

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high
(0.14 to 5.95 in/hr)
Depth to water table: About 0 inches

Custom Soil Resource Report

Frequency of flooding: None
Frequency of ponding: Frequent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very high (about 23.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: A/D
Hydric soil rating: Yes

Minor Components

Houghton, muck

Percent of map unit: 3 percent
Landform: Lakebeds (relict)
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Adrian

Percent of map unit: 1 percent
Landform: Lakebeds (relict)
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Palms, muck, ponded

Percent of map unit: 1 percent
Landform: Interdrumlins
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Os—Ossian silt loam

Map Unit Setting

National map unit symbol: g5z8
Elevation: 730 to 1,000 feet
Mean annual precipitation: 28 to 34 inches
Mean annual air temperature: 43 to 46 degrees F
Frost-free period: 135 to 155 days
Farmland classification: Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season

Custom Soil Resource Report

Map Unit Composition

Ossian and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ossian

Setting

Landform: Depressions, drainageways

Landform position (two-dimensional): Toeslope

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Silty alluvium

Typical profile

Ap,A12 - 0 to 12 inches: silt loam

B2g,B3g,C - 12 to 60 inches: silt loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Poorly drained

Runoff class: Low

*Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)*

Depth to water table: About 0 to 6 inches

Frequency of flooding: Frequent

Frequency of ponding: Frequent

Calcium carbonate, maximum in profile: 15 percent

Available water storage in profile: Very high (about 12.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: B/D

Other vegetative classification: High AWC, high water table (G095BY007WI)

Hydric soil rating: Yes

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

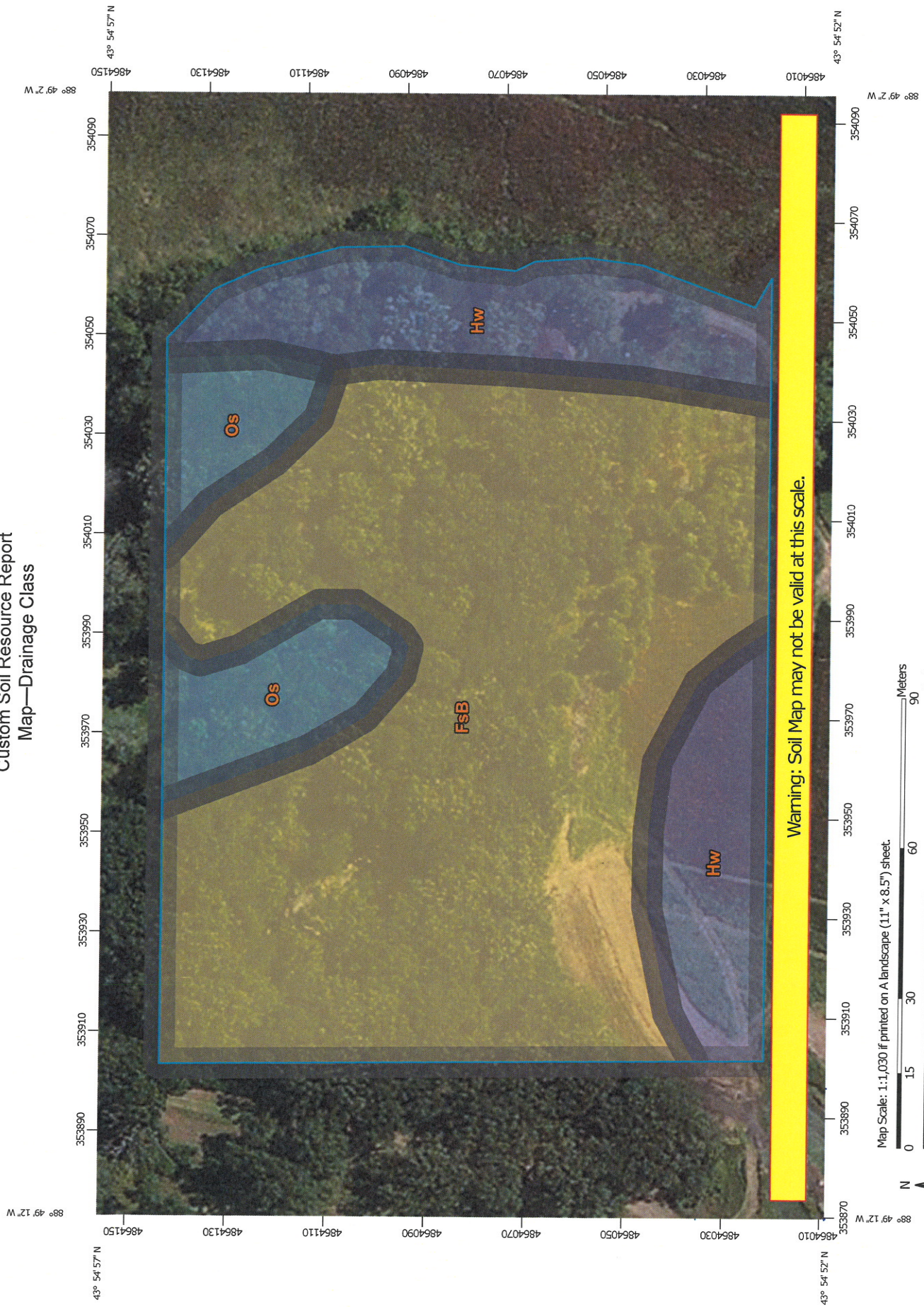
Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

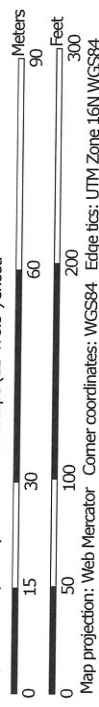
Drainage Class

"Drainage class (natural)" refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized-excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained. These classes are defined in the "Soil Survey Manual."













































Custom Soil Resource Report Map—Drainage Class



Map Scale: 1:1,030 if printed on A landscape (11" x 8.5") sheet.



MAP LEGEND

-  Area of Interest (AOI)
 - Soils**
 - Soil Rating Polygons**
 -  Excessively drained
 -  Somewhat excessively drained
 -  Well drained
 -  Moderately well drained
 -  Somewhat poorly drained
 -  Poorly drained
 -  Very poorly drained
 -  Subaqueous
 -  Not rated or not available
 - Soil Rating Lines**
 -  Excessively drained
 -  Somewhat excessively drained
 -  Well drained
 -  Moderately well drained
 -  Somewhat poorly drained
 -  Poorly drained
 -  Very poorly drained
 -  Subaqueous
 -  Not rated or not available
 - Soil Rating Points**
 -  Excessively drained
 -  Somewhat excessively drained
 -  Well drained
 -  Moderately well drained
 -  Somewhat poorly drained
 -  Poorly drained
 -  Very poorly drained
 -  Subaqueous
 -  Not rated or not available
-  Excessively drained
 -  Somewhat excessively drained
 -  Well drained
 -  Moderately well drained
 -  Somewhat poorly drained
 -  Poorly drained
 -  Very poorly drained
 -  Subaqueous
 -  Not rated or not available
- Water Features**
 -  Streams and Canals
 - Transportation**
 -  Rails
 -  Interstate Highways
 -  US Routes
 -  Major Roads
 -  Local Roads
 - Background**
 -  Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Winnebago County, Wisconsin
 Survey Area Data: Version 13, Sep 28, 2016

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 29, 2011—Sep 6, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Custom Soil Resource Report

Table—Drainage Class

Drainage Class— Summary by Map Unit — Winnebago County, Wisconsin (WI139)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
FsB	Fox silt loam, 2 to 6 percent slopes	Well drained	3.3	68.2%
Hw	Houghton muck, ponded, 0 to 2 percent slopes	Very poorly drained	1.0	21.5%
Os	Ossian silt loam	Poorly drained	0.5	10.3%
Totals for Area of Interest			4.8	100.0%

Rating Options—Drainage Class

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Soil Reports

The Soil Reports section includes various formatted tabular and narrative reports (tables) containing data for each selected soil map unit and each component of each unit. No aggregation of data has occurred as is done in reports in the Soil Properties and Qualities and Suitabilities and Limitations sections.

The reports contain soil interpretive information as well as basic soil properties and qualities. A description of each report (table) is included.

Land Classifications

This folder contains a collection of tabular reports that present a variety of soil groupings. The reports (tables) include all selected map units and components for each map unit. Land classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

Hydric Rating by Map Unit (WI)

This Hydric Soil Category rating indicates the components of map units that meet the criteria for hydric soils. Map units are composed of one or more major soil components or soil types that generally make up 20 percent or more of the map unit and are listed in the map unit name, and they may also have one or more minor contrasting soil components that generally make up less than 20 percent of the map unit. Each major and minor map unit component that meets the hydric criteria is rated **hydric**. The map unit class ratings based on the hydric components present are: WI Hydric, WI Predominantly Hydric, WI Partially Hydric, WI Predominantly Nonhydric, and WI Nonhydric. The report also shows the total representative percentage of each map unit that the hydric components comprise.

"WI Hydric" means that all major and minor components listed for a given map unit are rated as being hydric. *"WI Predominantly Hydric"* means that all major components listed for a given map unit are rated as hydric, and at least one contrasting minor component is not rated hydric. *"WI Partially Hydric"* means that at least one major component listed for a given map unit is rated as hydric, and at least one other major component is not rated hydric. *"WI Predominantly Nonhydric"* means that no major component listed for a given map unit is rated as hydric, and at least one contrasting minor component is rated hydric. *"WI Nonhydric"* means no major or minor components for the map unit are rated hydric. The assumption is that the map unit is nonhydric even if none of the components within the map unit have been rated.

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). Under natural conditions, these soils are either saturated or

Custom Soil Resource Report

inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

If soils are wet enough for a long enough period of time to be considered hydric, they typically 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" (Vasilas, Hurt, and Noble, 2010).

The NTCHS has developed criteria to identify those soil properties unique to hydric soils (Federal Register, 2012). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria use selected soil properties that are described in "Field Indicators of Hydric Soils in the United States" (Vasilas, Hurt, and Noble, 2010), "Soil Taxonomy" (Soil Survey Staff, 1999), "Keys to Soil Taxonomy" (Soil Survey Staff, 2010), and the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

The criteria for hydric soils are represented by codes, for example, 2 or 3. Definitions for the codes are as follows:

1. All Histels except for Folistels, and Histosols except for Folistels.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
 - A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
 - B. Show evidence that the soil meets the definition of a hydric soil;
3. Soils that are frequently ponded for long or very long duration during the growing season.
 - A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
 - B. Show evidence that the soil meets the definition of a hydric soil;
4. Map unit components that are frequently flooded for long duration or very long duration during the growing season that:
 - A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
 - B. Show evidence that the soil meets the definition of a hydric soil;

Hydric Condition: Food Security Act information regarding the ability to grow a commodity crop without removing woody vegetation or manipulating hydrology.

References:

- Federal Register. July 13, 1994. Changes in hydric soils of the United States.
- Federal Register. February, 28, 2012. Hydric soils of the United States.
- Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.
- 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.
- Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.
- Vasilas, L.M., G.W. Hurt, and C.V. Noble, editors. Version 7.0, 2010. Field indicators of hydric soils in the United States.

Report—Hydric Rating by Map Unit (WI)

Hydric Rating by Map Unit (WI)—Winnebago County, Wisconsin			
Map Unit Symbol	Map Unit Name	Hydric Percent of Map Unit	Hydric Category
FsB	Fox silt loam, 2 to 6 percent slopes	0	WI Nonhydric
Hw	Houghton muck, ponded, 0 to 2 percent slopes	100	WI Hydric
Os	Ossian silt loam	100	WI Hydric

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, 2006) 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 Vasilas, 2006).

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

Custom Soil Resource Report

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, 2). Definitions for the codes are as follows:

1. All Histels except for Folistels, and Histosols except for Folists.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
 - A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
 - B. Show evidence that the soil meets the definition of a hydric soil;
3. Soils that are frequently ponded for long or very long duration during the growing season.
 - A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
 - B. Show evidence that the soil meets the definition of a hydric soil;
4. Map unit components that are frequently flooded for long duration or very long duration during the growing season that:
 - A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
 - B. Show evidence that the soil meets the definition of a hydric soil;

Hydric Condition: Food Security Act information regarding the ability to grow a commodity crop without removing woody vegetation or manipulating hydrology.

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., and L.M. Vasilas, editors. Version 6.0, 2006. 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. 2006. Keys to soil taxonomy. 10th 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.

Custom Soil Resource Report

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

Report—Hydric Soils

Hydric Soils—Winnebago County, Wisconsin				
Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric criteria
Hw—Houghton muck, ponded, 0 to 2 percent slopes				
	Houghton, muck, ponded	95	Depressions	1, 3
	Houghton, muck	3	Lakebeds (relict)	1, 3
	Adrian	1	Lakebeds (relict)	1, 3
	Palms, muck, ponded	1	Interdrumlins	1, 3
Os—Ossian silt loam				
	Ossian	100	Depressions, drainageways	2, 3

References

- American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.
- American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.
- 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. July 13, 1994. Changes in hydric soils of the United States.
- Federal Register. September 18, 2002. Hydric soils of the United States.
- Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. 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. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262
- 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. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577
- Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580
- 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.
- United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374
- United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084>

Custom Soil Resource Report

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf