# Wetland Delineation Report

Ian House Property
Town of Oshkosh | Winnebago County, Wisconsin

Prepared For

IAN HOUSE KATIKATI, NEW ZEALAND

**SEPTEMBER 29, 2017** 

McM. No. 10983-9-17-00709

SAB:



McMAHON ASSOCIATES, INC. 1445 McMAHON DRIVE | NEENAH, WI 54956 Mailing P.O. BOX 1025 | NEENAH, WI 54957-1025 PH 920.751.4200 FX 920.751.4284 MCMGRP.COM



September 29, 2017

Ms. Allison Willman Wisconsin Department of Natural Resources 625 E County Road Y, Suite 700 Oshkosh, WI 54901

Re:

Wetland Delineation Report

Ian House Property

Town of Oshkosh| Winnebago County, Wisconsin

McM. No. 10983-9-17-00709

Dear Ms. Willman:

Enclosed is the Wetland Delineation Report for the Ian House Property, Town of Oshkosh, Winnebago County, Wisconsin.

McMahon Associates, Inc. requests the Wisconsin Department of Natural Resources approval of the Wetland Delineation Report.

If you should have any further questions or comments, please feel free to contact me.

Respectfully,

McMahon Associates, Inc.

**Environmental Scientist** 

Environmental Scientist

SAB

Enclosure:

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#### I. INTRODUCTION

The project objective was to delineate wetlands located on the Ian House property to determine the buildable area. The property address is 2947 Ryf Road. The project area is located in Section Thirty-two (32), Township Nineteen (19) North, Range Sixteen (16) East, Town of Oshkosh, 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:

lan House 255 Tuapiro Road RD 3 Katikati 3170

Email: sailgb19@me.com

The Wetland Delineation was completed by Stacey Caplan, Environmental Scientist of McMahon Associates, Inc. (McMAHON) as lead delineator, and Garek Holley, Environmental Scientist of McMAHON. Mrs. Caplan and Mr. Holley have 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. Field work was completed on September 14, 2017.

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, A Guide for Identifying and Delineating Hydric Soils", Version 8.1, 2017 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 foot radius for herbaceous plants, a 15 foot radius for shrubs and saplings, and a 30 foot radius 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. Soil pits were dug to at least 20-inches in depth, 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 three transects were completed to delineate wetlands within the project area. A total of seven 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 surveyed. The points were then mapped using Geographic Information System (GIS) software to produce a wetland delineation map.

#### III. RESULTS & DISCUSSION

The project area is 3.6 acres. Photographs of the wetlands are presented in Appendix B. Three wetlands, a total of 2.21 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 4.05-inches of precipitation in August, indicating normal conditions. 2.22-inches of precipitation was recorded in the month of July, indicating drier than normal conditions. In the month of June the station received 7.08-inches, indicating wetter 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. The large majority of the project area is mapped as a forested wetland. 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 two (2) soil map units in the project area. The included map units are listed below:

- Manawa Silty Lay Loam, 0 to 3% Slopes (MaA) This soil is somewhat poorly drained. The map unit hydric category is predominantly nonhydric. The cumulative percentage of components that meet the criteria for hydric soils is 4%. The soil is included on the County Hydric Soil list as possibly containing the hydric component Poygan as an inclusion in depressions.
- Udorthents, 0 to 3% Slopes (UoA) This soil is somewhat poorly drained. The map unit hydric category is nonhydric. The cumulative percentage of components that meet the criteria for hydric soils is 0%. The soil is not included on the County Hydric Soil List.

During field work, the soils described above were not encountered. There was either no, or minimal topsoil at any of the test pits performed. At most test pit locations refusal was encountered before reaching 10-inches. A layer of red clay was present above the refusal. It appears the entire site was historically filled. Because of this, the wetland boundaries were largely delineated based on hydrology and vegetation.

Wetland 1 (2.05 acres) and Wetland 2 (6,491 S.F.) are forested wetlands dominated by *Fraxinus pennsylvanica*, *Salix nigra*, and *Populus deltoides*. The understory is largely barren, likely due to extended periods of inundation and saturation. In areas where the tree canopy was thinner, *Boehmeria cylindrical*, *Leersia virginica*, *Rhamnus cathartica*, and *Vitis riparia* were present. Hydrology indicators observed included moss trim lines (B16), Sparsely Vegetated Concave Surface (B8), Geomorphic Position (D2), and a positive FAC-Neutral Test (D5).

Wetland 3 (454 S.F.) is a forested wetland depression dominated by *Carex lacustris*. It appears Ryf road to the east and the gravel driveway to the north have created this pocket wetland.

The surrounding upland tree canopy was similar to that of that the wetlands, but the understory was more vegetated, suggesting the areas were not inundated or saturated for extended

periods of time. Dominant vegetation in the understory included *Rhamnus cathartica*, *Acer negundo*, *Glechoma hederacea*, *Carex pensylvanica*, and *Geum aleppicum*. The general landscape positions were also convex, and it appeared water would shed off of these areas to the wetland areas.

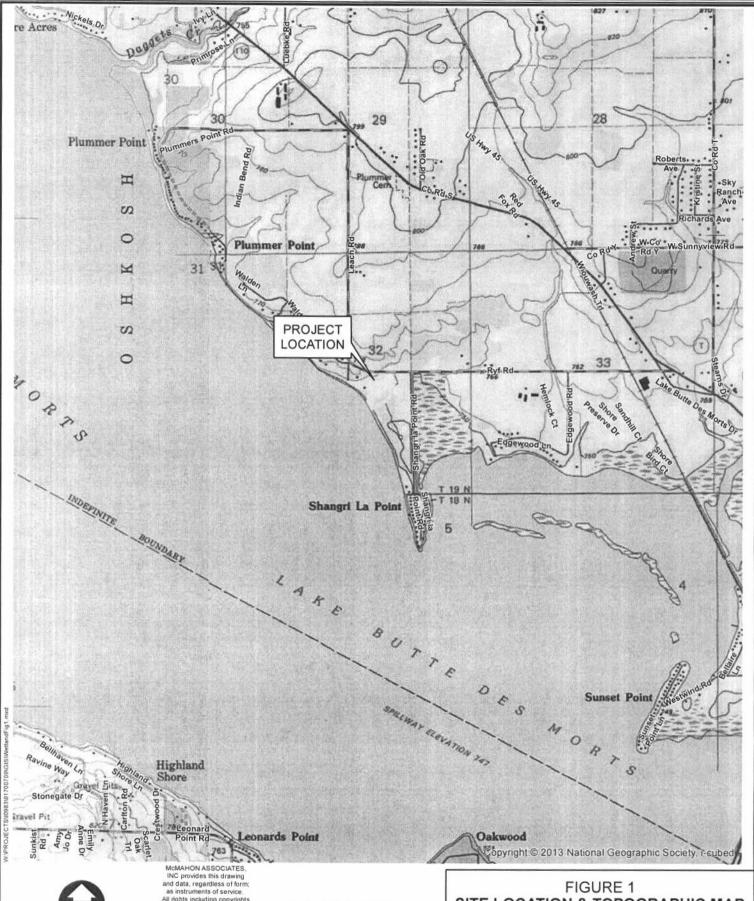
### IV. CONCLUSIONS

McMAHON completed a wetland delineation for the Ian House Property to determine the buildable area of the lot. Three wetlands, a total of 2.21 acres were mapped within the 3.6 acre project area. The final authorities for the wetland area are the appropriate State and Federal authorities.

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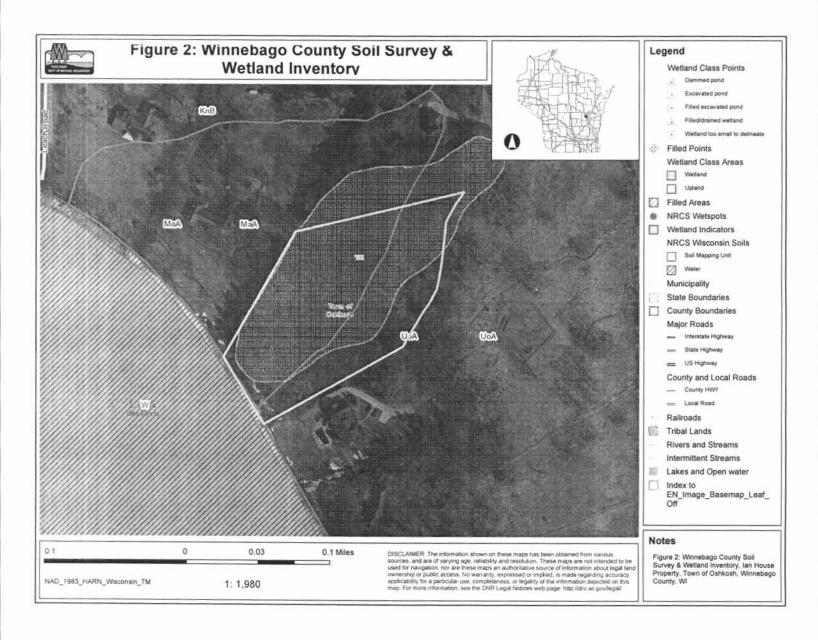
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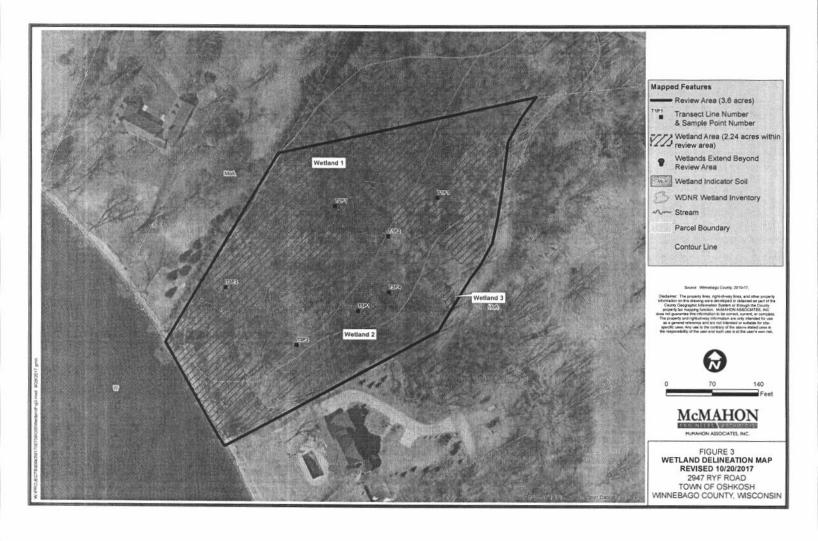
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ENGINEERS \ ARCHITECTS McMAHON ASSOCIATES, INC.

SITE LOCATION & TOPOGRAPHIC MAP IAN HOUSE PROPERTY TOWN OF OSHKOSH WINNEBAGO COUNTY, WI

I0983-9-17-00709.00 SEPTEMBER 2017





## **APPENDIX A**

COE Wetland Determination Data Forms

Project/Site: Ian House Property	City/County:	Oshkosh/Winnebago	Sampling Date: 9/14/2	017
Applicant/Owner: Ian House		State: WI	Sampling Point:	T1P1
Investigator(s): Stacey Henk, Garek Holley		Section, Township	, Range: Sec 32, T19N,	R16E
Landform (hillslope, terrace, etc.): Terrace	Lo		convex, none): concar	
	Long.:	Datum:		
Soil Map Unit Name UoA			Classification:	
Are climatic/hydrologic conditions of the site typical for			explain in remarks)	
Are vegetation, soil, or hydrolog		ly disturbed?	Are "normal	
Are vegetation, soil, or hydrolog	y naturally p	problematic?	circumstances" preser	nt? Yes
(If needed, explain any answers in remarks)				
SUMMARY OF FINDINGS				
SOMIMART OF FINDINGS				
Hydrophytic vegetation present?	In the nameles	d	42 V	
Hydric soil present?  Y	is the sampled	d area within a wetla	and? Y	_
	16			
Indicators of wetland hydrology present? Y	If yes, optiona	I wetland site ID:		
Remarks: (Explain alternative procedures here or in	a senarate report )			
remarks. (Explain alternative procedures here of in	a separate report.)			
C-11				
Soil was previously filled				
HYDROLOGY				
		Secon	ndary Indicators (minimur	m of two
Primary Indicators (minimum of one is required; chec		require	ed)	
	er-Stained Leaves (B9)	Sı	urface Soil Cracks (B6)	
[1 <del>8] [18] [18] [18] [18] [18] [18] [18] [1</del>	atic Fauna (B13)		rainage Patterns (B10)	
1	Deposits (B15)		oss Trim Lines (B16)	
	ogen Sulfide Odor (C1)	Years and the second se	y-Season Water Table (C	2)
	ized Rhizospheres on L		rayfish Burrows (C8)	
[1 <del>]</del>	s (C3)		aturation Visible on Aerial	Imagery
[ Parameter   1988   1984   19	ence of Reduced Iron (		(9)	
H <del></del>	ent Iron Reduction in Til		unted or Stressed Plants	(D1)
The state of the s	(C6)		eomorphic Position (D2)	
	Muck Surface (C7)		nallow Aquitard (D3)	
	r (Explain in Remarks)		AC-Neutral Test (D5)	
X Surface (B8)		M	icrotopographic Relief (D4	)
Field Observations:				
Surface water present? Yes No	X Depth (inches)	١.	Indicators of	
Water table present? Yes No	X Depth (inches)		wetland	
Saturation present? Yes No	X Depth (inches)		hydrology	
(includes capillary fringe)	Depti (inches)	/	present? Y	
(water capital) miga/			present?	
Describe recorded data (stream gauge, monitoring w	ell, aerial photos, prev	vious inspections), if	available:	
Remarks:				

SOIL							Sa	ampling Point: T1P1
Daniela Don	inting (December		1					• • • • • • • • • • • • • • • • • • • •
Depth	Cription: (Descri	be to th		to docur		indicato	or or confirm the absence	e of indicators.)
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
0-3	7.5YR 3/2	100		70	1,755	1	L	
3-7	2.5YR 5/4	100					C	Refusal at 7"
	2.011.0.1	100					0	Neiusai at 7
			<del>                                     </del>		-			
			<del>                                     </del>					-
			<del>                                     </del>					<del> </del>
			<del>                                     </del>					
*Type: C=C	oncentration, D:	=Deplet	ion, RM=Reduce	d Matrix	x CS=C	overed c	or Coated Sand Grains	
**Location:	PL=Pore Lining,	M=Mat	trix		,,			
Hydric Soil	I Indicators:						Indicators for Pro	blematic Hydric Soils:
Hiss Blad Hyce Stra Dep Thice Sar Sar Sar Stri Dar 149	of hydrophytic ve	A4) 55) rk Suface (A12) ral (S1) ix (S4) ) LRR R,	Ce (A11) (LRI Loan Dep Red Dep Red MLRA	(LRR I) Dark S R R, MI my Muc R K, L) my Gley bleted M dox Dark lotted D dox Dep	yed Matr latrix (F3 k Surface lark Surfa ressions	A 149B) (S9) 9B eral (F1) rix (F2) 3) e (F6) face (F7) s (F8)	Coast Prairie R 5 cm Mucky Pe Dark Surface (S Polyvalue Below Thin Dark Surfa Iron-Manganes Piedmont Flood Mesic Spodic (C Red Parent Ma	ow Surface (S8) (LRR K, L) face (S9) (LRR K, L) face (S9) (LRR K, L) face Masses (F12) (LRR K, L, R) dplain Soils (F19) (MLRA 149B) (TA6) (MLRA 144A, 145, 149B) faterial (F21) Dark Surface (TF12) in Remarks)
Type: Depth (inch	Layer (if observe	ed):			•		Hydric soil prese	nt?Y
Remarks: Test pit	located in floo	dplain	forest, and site	e was	previou	usly fille	d.	

VEGETATION - U	se scientific r	ames o	f plan	ts			Sampling Po	int:	T1P1
							50/20 Thresholds		
Tree Stratum	Plot Size (	30	1	Absolute	Dominant	Indicator		20%	50%
rice otratum	r lot olze (	30	7	% Cover	Species	Status	Tree Stratum	20	49
1 Fraxinus penn				70	Y	FACW	Sapling/Shrub Stratum	2	4
2 Populus deltoi	des			20	Y	FAC	Herb Stratum	0	1
3 Salix nigra				5	N	OBL	Woody Vine Stratum	1	3
4 Acer negundo				3	N	FAC			
5							Dominance Test Workship	eet	
6							Number of Dominant		
7							Species that are OBL,		
8							FACW, or FAC:	5	(A)
9							Total Number of Dominant		
10							Species Across all Strata:	5	(B)
				98 =	Total Cover		Percent of Dominant		
							Species that are OBL,		
Sapling/Shrub	Plot Size (	15	1	Absolute	Dominant	Indicator	FACW, or FAC:	100.00	0% (A/B)
Stratum	riot Size (	15	,	% Cover	Species	Status	F		
1 Rhamnus cath	artica			5	Y	FAC	Prevalence Index Worksh	neet	
2 Acer negundo				3	Y	FAC	Total % Cover of:		
3							OBL species 5 x 1	= /	5
4			_		-		FACW species 72 x 2		44
5							FAC species 36 x 3		08
6							FACU species 0 x 4		0
7							UPL species 0 x 5		
8							Column totals 113 (A)	_	57 (B)
9			_				Prevalence Index = B/A =	2.27	
10									
				8 =	Total Cover				
							Hydrophytic Vegetation I	ndicator	rs:
Herb Stratum	Diet Cire /	-	ν.	Absolute	Dominant	Indicator	Rapid test for hydrophy		
nero Stratum	Plot Size (	5	)	% Cover	Species	Status	X Dominance test is >50	%	
1 Fraxinus penns	sylvanica			2		FACW	X Prevalence index is ≤3	.0*	
2					0.		Morphogical adaptation	ns* (prov	ride
3							supporting data in Rem	narks or	on a
4							separate sheet)		
5							Problematic hydrophyti	c vegeta	ation*
6							(explain)		
7							*Indicators of hydric soil and wetla	and hydrole	ogy must be
8							present, unless disturbed or probl	ematic	
9									
10							Definitions of Vegetation	Strata:	
11							Tree - Woody plants 3 in. (7.6 cm	) or more i	n diameter at
12							breast height (DBH), regardless of		n diameter at
13									
14							Sapling/shrub - Woody plants les	ss than 3 ir	n. DBH and
15					T		greater than 3.28 ft (1 m) tall.		
				2 =	Total Cover		Herb - All herbaceous (non-wood	v) nlants r	enardless of
Mondy Vine				Ab 1 4-	D		size, and woody plants less than		ogurare er
Woody Vine Stratum	Plot Size (	30	)	Absolute	Dominant	Indicator			
				% Cover	Species	Status	Woody vines - All woody vines g	reater than	3.28 ft in
1 Vitis riparia				5	Y	FAC	height.		
3									
4							6785 (7) 25 THE		
-							Hydrophytic		
5							vegetation		
				5_=	Total Cover		present? Y		
Remarks: (Include ph	noto numbers he	ere or on	a sepa	arate sheet)					

Project/Site: Ian House Property	City/County:	Oshkosh/Winnebago	Sampling Date: 9/14/2017
Applicant/Owner: Ian House	0.55	State: WI	Sampling Point: T1P2
Investigator(s): Stacey Henk, Garek Holley		Section, Township	, Range: Sec 32, T19N, R16E
Landform (hillslope, terrace, etc.): Backslope	e L	ocal relief (concave,	convex, none): convex
Slope (%): 2 Lat.:	Long.:	Datum:	
Soil Map Unit Name UoA		NWI C	Classification:
Are climatic/hydrologic conditions of the site ty			explain in remarks)
Are vegetation, soil, or hy		tly disturbed?	Are "normal
	drologynaturally	problematic?	circumstances" present? Yes
(If needed, explain any answers in remarks)			
SUMMARY OF FINDINGS			
SUMMART OF FINDINGS			
Hydrophytic vegetation present?	Y Is the sample	d area within a wetla	and? N
Hydric soil present?	N is the sample	d area within a wetia	ind?
Indicators of wetland hydrology present?		al wetland site ID:	
indicators of wetland hydrology present?	if yes, optiona	al wetland site ID:	*
Remarks: (Explain alternative procedures here	e or in a separate report.)		
3 1	or in a coparate roperti,		
Soil was previously filled			
Soli was previously lilled			
HYDROLOGY			
TTBROLOGT			1-11:1-1:1
Primary Indicators (minimum of one is required	d: abook all that apply)		dary Indicators (minimum of two
Surface Water (A1)	이 이 집에 하는 생각이 되었다. 얼마나 있는 것이 되었다면 하지만 하지만 하다니다. 그 모모 모모	require	
High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)		urface Soil Cracks (B6)
Saturation (A3)	Marl Deposits (B15)		rainage Patterns (B10) oss Trim Lines (B16)
Water Marks (B1)	Hydrogen Sulfide Odor (C1		
Sediment Deposits (B2)	Oxidized Rhizospheres on		y-Season Water Table (C2) ayfish Burrows (C8)
Drift Deposits (B3)	Roots (C3)		
Algal Mat or Crust (B4)	Presence of Reduced Iron		aturation Visible on Aerial Imagery
Iron Deposits (B5)	Recent Iron Reduction in T		unted or Stressed Plants (D1)
Inundation Visible on Aerial	Soils (C6)		eomorphic Position (D2)
Imagery (B7)	Thin Muck Surface (C7)		nallow Aquitard (D3)
Sparsely Vegetated Concave	Other (Explain in Remarks)		AC-Neutral Test (D5)
Surface (B8)	_ Curer (Explain III Nemarks)		crotopographic Relief (D4)
			crotopograpino rener (D4)
Field Observations:			
	No X Depth (inches	s):	Indicators of
	No X Depth (inches		wetland
	No X Depth (inches	s):	hydrology
(includes capillary fringe)			present? N
Describe recorded data (atracas access as a series			
Describe recorded data (stream gauge, monitor	oring well, aerial photos, pre	vious inspections), if	available:
Remarks:			

SOIL							58	ampling Point: T1P2
Profile Des	crintian: (Descri	ho to the	donth nooded	la danu	mont the	indicate	r or confirm the absence	a of indicators )
	Matrix	be to the		ox Fea		indicato	r or confirm the absence	e of indicators.)
Depth (Inches)		%				1**	Texture	Remarks
	Color (moist)		Color (moist)	%	Type*	Loc**		
0-3	7.5YR 4/2	100					L	
3-9	2.5YR 5/4	100					С	Refusal at 9"
					_			
					_			
					-			
				d Matri	x, CS=C	overed o	r Coated Sand Grains	
**Location:	PL=Pore Lining,	M=Mat	rix					
Hydric Soil	Indicators:						Indicators for Pro	blematic Hydric Soils:
Hist Black Hyce Strack Dep Thice Sar Sar Sar Stri Dar 149	of hydrophytic ve	A4) 55) rk Suface (A12) ral (S1) ix (S4)  LRR R,	(S8 Thir Loa (LR Loa e (A11) (LR Loa Dep Recommune (A11) (RR Commune (A11) (RR Commu	) (LRR n Dark in Dark	yed Matrix (F3 k Surface Park Surface pressions	A 149B) SS9) BB ral (F1) rix (F2) S) e (F6) ace (F7)	Coast Prairie R 5 cm Mucky Pe Dark Surface (\$ Polyvalue Belor Thin Dark Surfa Iron-Manganes Piedmont Flood Mesic Spodic (\$ Red Parent Ma	w Surface (S8) (LRR K, L) ace (S9) (LRR K, L) e Masses (F12) (LRR K, L, R) dplain Soils (F19) (MLRA 149B) TA6) (MLRA 144A, 145, 149B) terial (F21) lark Surface (TF12) in Remarks)
Restrictive I Type:	Layer (if observe	ed):					Hydric soil prese	nt? N
Depth (inch	es):				_		53 <b>.</b>	
Remarks:								
	gy does not si	upport (	the formation	of wet	land so	il		

		arries or	plants				Sampling Poi	nt: T1P2
							50/20 Thresholds	
Tree Stratum	Diet Cire /	30	, ,	Absolute	Dominant	Indicator		20% 50%
ree Stratum	Plot Size (	30	) ,	% Cover	Species	Status	Tree Stratum	20 50
Fraxinus penns	sylvanica			90	Y	FACW	Sapling/Shrub Stratum	12 30
Populus deltoid	des			5	N	FAC	Herb Stratum	8 19
Salix nigra				5	N	OBL	Woody Vine Stratum	1 3
							Dominance Test Worksho	et
							Number of Dominant	
							Species that are OBL,	
					NR NR		FACW, or FAC:	4 (A)
							Total Number of Dominant	
							Species Across all Strata:	4(B)
			100	100	= Total Cover		Percent of Dominant	
							Species that are OBL,	
apling/Shrub	Dist Ciss /	45		Absolute	Dominant	Indicator	FACW, or FAC:	100.00% (A/I
Stratum	Plot Size (	15	) (	% Cover	Species	Status		,
Rhamnus catha	artica			50	Υ	FAC	Prevalence Index Worksh	not
	artica						THE RESIDENCE OF THE PROPERTY	eet
Acer negundo				10	N	FAC	Total % Cover of:	
							OBL species 5 x 1	
							FACW species 90 x 2	
							FAC species 100 x 3	
							FACU species 8 x 4	
							UPL species 0 x 5	
							Column totals 203 (A)	517 (B)
							Prevalence Index = B/A =	2.55
				60	Total Course			
			_	60	= Total Cover		Lhidasahida Vasattian I	diantaus.
				Abaalida	D	Indiante.	Hydrophytic Vegetation In	
Herb Stratum	Plot Size (	5	1	Absolute % Cover	Dominant	Indicator Status	Rapid test for hydrophy	
Rhamnus catha	artica			30	Species		X Dominance test is >50% X Prevalence index is ≤3.	
Lonicera x bella				5	Y	FACU		
Parthenocissus				3	N	FACU	Morphogical adaptation supporting data in Rem	
T ditironopidad	3 quirique iona						supporting data in Rein	arks or orr a
							Problematic hydrophyti	o vegetation*
							(explain)	c vegetation
								and be indeed a second of
			_				*Indicators of hydric soil and wetla present, unless disturbed or proble	
							process, armose dictarges of process	annau o
							Definitions of Vegetation	Strata:
								otrata.
							Tree - Woody plants 3 in. (7.6 cm)	or more in diamete
			= =					or more in diamete
							Tree - Woody plants 3 in. (7.6 cm breast height (DBH), regardless of	or more in diamete height.
				=	$\equiv$		Tree - Woody plants 3 in. (7.6 cm breast height (DBH), regardless of Sapling/shrub - Woody plants les	or more in diamete height.
				38	= Total Cover		Tree - Woody plants 3 in. (7.6 cm breast height (DBH), regardless of	or more in diamete height.
				38	= Total Cover		Tree - Woody plants 3 in. (7.6 cm breast height (DBH), regardless of Sapling/shrub - Woody plants les	or more in diamete height. s than 3 in. DBH ar
Voody Vine				ay 2000a		Indicator	Tree - Woody plants 3 in. (7.6 cm, breast height (DBH), regardless of Sapling/shrub - Woody plants les greater than 3.28 ft (1 m) tall.	or more in diameter height. s than 3 in. DBH ar
	Plot Size (	30	1 0	Absolute	Dominant	Indicator	Tree - Woody plants 3 in. (7.6 cm breast height (DBH), regardless of Sapling/shrub - Woody plants les greater than 3.28 ft (1 m) tall. Herb - All herbaceous (non-wood) size, and woody plants less than 3	or more in diameter height. s than 3 in. DBH ar p) plants, regardless 28 ft tall.
Stratum	Plot Size (	30	1 0	Absolute % Cover	Dominant Species	Status	Tree - Woody plants 3 in. (7.6 cm, breast height (DBH), regardless of Sapling/shrub - Woody plants les greater than 3.28 ft (1 m) tall.  Herb - All herbaceous (non-wood) size, and woody plants less than 3 Woody vines - All woody vines gr	or more in diameter height. s than 3 in. DBH ar p) plants, regardless 28 ft tall.
	Plot Size (	30	1 0	Absolute	Dominant		Tree - Woody plants 3 in. (7.6 cm breast height (DBH), regardless of Sapling/shrub - Woody plants les greater than 3.28 ft (1 m) tall. Herb - All herbaceous (non-wood) size, and woody plants less than 3	or more in diameter height. s than 3 in. DBH ar p) plants, regardless 28 ft tall.
Stratum	Plot Size (	30	1 0	Absolute % Cover	Dominant Species	Status	Tree - Woody plants 3 in. (7.6 cm, breast height (DBH), regardless of Sapling/shrub - Woody plants les greater than 3.28 ft (1 m) tall.  Herb - All herbaceous (non-wood) size, and woody plants less than 3 Woody vines - All woody vines gr	or more in diameter height. s than 3 in. DBH ar p) plants, regardless 28 ft tall.
Stratum	Plot Size (	30	1 0	Absolute % Cover	Dominant Species	Status	Tree - Woody plants 3 in. (7.6 cm breast height (DBH), regardless of Sapling/shrub - Woody plants les greater than 3.28 ft (1 m) tall.  Herb - All herbaceous (non-wood) size, and woody plants less than 3 Woody vines - All woody vines grheight.	or more in diameter height. s than 3 in. DBH ar p) plants, regardless 28 ft tall.
Stratum	Plot Size (	30	1 0	Absolute % Cover	Dominant Species	Status	Tree - Woody plants 3 in. (7.6 cm, breast height (DBH), regardless of Sapling/shrub - Woody plants les greater than 3.28 ft (1 m) tall.  Herb - All herbaceous (non-wood) size, and woody plants less than 3.  Woody vines - All woody vines grieght.  Hydrophytic	or more in diameter height. s than 3 in. DBH ar p) plants, regardless 28 ft tall.
Stratum	Plot Size (	30	1 0	Absolute % Cover 5	Dominant Species Y	Status	Tree - Woody plants 3 in. (7.6 cm, breast height (DBH), regardless of Sapling/shrub - Woody plants les greater than 3.28 ft (1 m) tall.  Herb - All herbaceous (non-woody size, and woody plants less than 3 Woody vines - All woody vines grheight.  Hydrophytic vegetation	or more in diameter height. s than 3 in. DBH ar p) plants, regardless 28 ft tall.
Stratum	Plot Size (	30	1 0	Absolute % Cover 5	Dominant Species	Status	Tree - Woody plants 3 in. (7.6 cm, breast height (DBH), regardless of Sapling/shrub - Woody plants les greater than 3.28 ft (1 m) tall.  Herb - All herbaceous (non-wood) size, and woody plants less than 3.  Woody vines - All woody vines grieght.  Hydrophytic	or more in diameter height. s than 3 in. DBH ar p) plants, regardless 28 ft tall.
Stratum Vitis riparia			, , = = = = =	Absolute % Cover 5	Dominant Species Y	Status	Tree - Woody plants 3 in. (7.6 cm, breast height (DBH), regardless of Sapling/shrub - Woody plants les greater than 3.28 ft (1 m) tall.  Herb - All herbaceous (non-woody size, and woody plants less than 3.20 moody vines of height.  Hydrophytic vegetation	or more in diameter height. s than 3 in. DBH ar p) plants, regardless 28 ft tall.
Stratum Vitis riparia			, , = = = = =	Absolute % Cover 5	Dominant Species Y	Status	Tree - Woody plants 3 in. (7.6 cm, breast height (DBH), regardless of Sapling/shrub - Woody plants les greater than 3.28 ft (1 m) tall.  Herb - All herbaceous (non-woody size, and woody plants less than 3.20 moody vines of height.  Hydrophytic vegetation	or more in diameter height. s than 3 in. DBH ar p) plants, regardless 28 ft tall.
Stratum Vitis riparia			, , = = = = =	Absolute % Cover 5	Dominant Species Y	Status	Tree - Woody plants 3 in. (7.6 cm, breast height (DBH), regardless of Sapling/shrub - Woody plants les greater than 3.28 ft (1 m) tall.  Herb - All herbaceous (non-woody size, and woody plants less than 3.20 moody vines of height.  Hydrophytic vegetation	or more in diameter height. s than 3 in. DBH ar p) plants, regardless 28 ft tall.
Stratum Vitis riparia			, , = = = = =	Absolute % Cover 5	Dominant Species Y	Status	Tree - Woody plants 3 in. (7.6 cm, breast height (DBH), regardless of Sapling/shrub - Woody plants les greater than 3.28 ft (1 m) tall.  Herb - All herbaceous (non-woody size, and woody plants less than 3.20 moody vines of height.  Hydrophytic vegetation	or more in diameter height. s than 3 in. DBH ar p) plants, regardless 28 ft tall.
			, , = = = = =	Absolute % Cover 5	Dominant Species Y	Status	Tree - Woody plants 3 in. (7.6 cm, breast height (DBH), regardless of Sapling/shrub - Woody plants les greater than 3.28 ft (1 m) tall.  Herb - All herbaceous (non-woody size, and woody plants less than 3.20 moody vines of height.  Hydrophytic vegetation	or more in diameter height. s than 3 in. DBH ar p) plants, regardless 28 ft tall.

Project/Site: Ian House Property	City/County:	Oshkosh/Winnebago	Sampling Date: 9/14/2017
Applicant/Owner: Ian House		State: WI	Sampling Point: T2P1
Investigator(s): Stacey Henk, Garek Holley		Section, Township,	Range: Sec 32, T19N, R16E
Landform (hillslope, terrace, etc.): Terrace	Lo	ocal relief (concave, c	convex, none): concave
Slope (%): 0-1 Lat.:	Long.:	Datum:	
Soil Map Unit NameMaA			lassification:
Are climatic/hydrologic conditions of the site			explain in remarks)
Are vegetation, soil, or		tly disturbed?	Are "normal
		problematic?	circumstances" present? Yes
(If needed, explain any answers in remarks)	)		
SUMMARY OF FINDINGS			
Hydrophytic vegetation present?	Y Is the sample	d area within a wetlar	nd? Y
Hydric soil present?	Y Is the sample.	a aroa manna a wollar	
Indicators of wetland hydrology present?	Y If was options	I wetland site ID:	
maistars of worlding flydrology prosent:	ii yes, optiona	ii wetiand site ib.	
Remarks: (Explain alternative procedures h	ere or in a separate report.)		
	,		
Soil was previously filled			
con was previously filled			
HYDROLOGY			
HIDROLOGI			
Driman Indicators (minimum of annia anni			dary Indicators (minimum of two
Primary Indicators (minimum of one is requi		require	
Surface Water (A1)	Water-Stained Leaves (B9)		face Soil Cracks (B6)
High Water Table (A2) Saturation (A3)	Aquatic Fauna (B13)		ninage Patterns (B10)
Water Marks (B1)	Marl Deposits (B15)		ss Trim Lines (B16)
Sediment Deposits (B2)	— Hydrogen Sulfide Odor (C1)		r-Season Water Table (C2)
Drift Deposits (B3)	Oxidized Rhizospheres on I		ryfish Burrows (C8)
Algal Mat or Crust (B4)	Presence of Reduced Iron (		turation Visible on Aerial Imagery
Iron Deposits (B5)			
Inundation Visible on Aerial	Recent Iron Reduction in Ti Soils (C6)		nted or Stressed Plants (D1) omorphic Position (D2)
Imagery (B7)	Thin Muck Surface (C7)		allow Aquitard (D3)
Sparsely Vegetated Concave	Other (Explain in Remarks)		C-Neutral Test (D5)
Surface (B8)	Other (Explain III Remarks)		crotopographic Relief (D4)
			notopographic Relief (D4)
Field Observations:			
Surface water present? Yes	No X Depth (inches	):	Indicators of
Water table present? Yes	No X Depth (inches		wetland
Saturation present? Yes	No X Depth (inches	):	hydrology
(includes capillary fringe)	1046 1056		present? Y
6 "			
Describe recorded data (stream gauge, mor	nitoring well, aerial photos, pre-	vious inspections), if a	available:
Remarks:			

SOIL	e Description: (Describe to the depth needed to doc pth Matrix Redox Ferences) Color (moist) % Color (moist) %  7.5YR 3/2 100  11 2.5YR 5/4 100  2: C=Concentration, D=Depletion, RM=Reduced Matrix ation: PL=Pore Lining, M=Matrix c Soil Indicators:  Histisol (A1) Polyvalue (S8) (LRF Histisol (A3) Thin Dark Hydrogen Sulfide (A4) (LRR R, M) Stratified Layers (A5) Depleted Below Dark Suface (A11) Camy Mineral (S1) Sandy Mucky Mineral (S1) Sandy Redox (S5) Depleted Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) (LRR R, MLRA 149B) ators of hydrophytic vegetation and weltand hydrologicitive Layer (if observed):				Sa	Sampling Point: T2P1			
Depth		be to th				indicato	or or confirm the absence	e of indicators.)	
(Inches)		%			Type*	Loc**	Texture	Remarks	
0-7			Color (molot)	70	1,750	1	L		
7-11							C	Refusal at 11"	
								Trondon at 11	
								<del> </del>	
								-	
*Type: C=C	oncentration, D	=Deplet	ion, RM=Reduce	d Matri	x, CS=C	overed o	r Coated Sand Grains	-	
Hydric Soi	I Indicators:						Indicators for Pro	blematic Hydric Soils:	
His Bla Hyd Stra Dep Thi Sar Sar Sar Stri Dar	tic Epipedon (A2 ck Histic (A3) drogen Sulfide (A atified Layers (A pleted Below Da ck Dark Surface ndy Mucky Miner ndy Gleyed Matrindy Redox (S5) pped Matrix (S6 ck Surface (S7) ( 9B)	A4) 55) rk Suface (A12) ral (S1) rix (S4) ) LRR R,	(S8 Thir Loa Ce (A11) (LR Loa Dep Reco	) (LRR n Dark see n Da	R, MLR/ Surface ( LRA 149 cky Mine yed Matrix (F3 k Surface Park Surface park Surface	A 149B) (S9) BB stral (F1) rix (F2) B) e (F6) ace (F7) s (F8)	Coast Prairie R 5 cm Mucky Pe Dark Surface (S Polyvalue Belo Thin Dark Surfa Iron-Manganes Piedmont Floor Mesic Spodic ( Red Parent Ma Very Shallow D X Other (Explain	w Surface (S8) (LRR K, L) ace (S9) (LRR K, L) be Masses (F12) (LRR K, L, R) dplain Soils (F19) (MLRA 149B) TA6) (MLRA 144A, 145, 149B) aterial (F21) Dark Surface (TF12) in Remarks)	
Restrictive Type: Depth (inch		ed):			-		Hydric soil prese	nt?Y	
Remarks:									
Soils are	e concave in a	flood	olain forest. T	he pre	sence (	ov hydr	ophytes defines the	soil as hydric	

		names of pla	11113			Sampling Po		T2P1
						50/20 Thresholds		
Tree Stratum	Plot Size (	30 )	Absolute	Dominant	Indicator		20%	50%
Fraxinus penn			% Cover	Species	Status	Tree Stratum	20	50
Fraxinus penr			90	Y	FACW	Sapling/Shrub Stratum	0	0
	ana		5	N	FACW	Herb Stratum	4	10
Salix nigra			5	N	OBL	Woody Vine Stratum	1	3
						Dominance Test Worksh	oot	_
						Number of Dominant	eet	
			. —			Species that are OBL,		
						FACW, or FAC:	4	(A)
						Total Number of Dominant		_ (' ')
				) <del> </del> S		Species Across all Strata:		(B)
			100	= Total Cover		Percent of Dominant		
						Species that are OBL,		
Sapling/Shrub	DI-1 0: 1	22 0	Absolute	Dominant	Indicator	FACW, or FAC:	100.009	% (A/I
Stratum	Plot Size (	15 )	% Cover	Species	Status		100.00	
						Prevalence Index Works	nont	
						<ul> <li>Salida of Mark Williams and Analysis and Analysis</li> </ul>	ieet	
						Total % Cover of: OBL species 20 x 1	- 20	
						OBL species 20 x 1 FACW species 100 x 2		
-						FAC species 5 x 3		
						FACU species 0 x 4		_
						UPL species 0 x 5		_
						Column totals 125 (A)		(B)
						Prevalence Index = B/A =	1.88	_ (5)
			-			Trevalence mack - birt	1.00	
			0	= Total Cover				
						Hydrophytic Vegetation I	ndicators	:
Herb Stratum	Plot Size (	5 )	Absolute	Dominant	Indicator	Rapid test for hydrophy		
	5050 X750	5 /	% Cover	Species	Status	X Dominance test is >50		
Boehmeria cy			15	Y	OBL	X Prevalence index is ≤3		
Leersia virgini	ca		5	Y	FACW	Morphogical adaptation		
3						supporting data in Ren	narks or o	n a
						separate sheet)		
3						Problematic hydrophyt	ic vegetat	ion*
,				-		(explain)		
3						*Indicators of hydric soil and wetli		y must b
						present, unless disturbed or prob	ematic	
						l .		
						Definitions of Vegetation	Strata:	
						Definitions of Vegetation		
						Tree - Woody plants 3 in. (7.6 cm	) or more in	diamete
						Charles All Charles And Committee Co	) or more in	diamete
						Tree - Woody plants 3 in. (7.6 cm breast height (DBH), regardless of	) or more in of height.	
						Tree - Woody plants 3 in. (7.6 cm	) or more in of height.	
3			20	= Total Cover		Tree - Woody plants 3 in. (7.6 cm breast height (DBH), regardless of Sapling/shrub - Woody plants le greater than 3.28 ft (1 m) tall.	o) or more in of height.	DBH an
3			20	= Total Cover		Tree - Woody plants 3 in. (7.6 cm breast height (DBH), regardless of Sapling/shrub - Woody plants le greater than 3.28 ft (1 m) tall. Herb - All herbaceous (non-wood	o) or more in if height. ss than 3 in. y) plants, re	DBH an
Woody Vine	Plot Size (	30 )	Absolute	= Total Cover	Indicator	Tree - Woody plants 3 in. (7.6 cm breast height (DBH), regardless of Sapling/shrub - Woody plants le greater than 3.28 ft (1 m) tall.	o) or more in if height. ss than 3 in. y) plants, re	DBH an
Woody Vine Stratum	Plot Size (	30 )	Absolute % Cover	Dominant Species	Status	Tree - Woody plants 3 in. (7.6 cm breast height (DBH), regardless of Sapling/shrub - Woody plants le greater than 3.28 ft (1 m) tall. Herb - All herbaceous (non-wood	o) or more in if height. ss than 3 in. y) plants, re 3.28 ft tall.	DBH and
Woody Vine Stratum Vitis riparia	Plot Size (	30 )	Absolute	Dominant		Tree - Woody plants 3 in. (7.6 cm breast height (DBH), regardless of Sapling/shrub - Woody plants le- greater than 3.28 ft (1 m) tall. Herb - All herbaceous (non-wood size, and woody plants less than	o) or more in if height. ss than 3 in. y) plants, re 3.28 ft tall.	DBH and
Woody Vine Stratum Vitis riparia	Plot Size (	30 )	Absolute % Cover	Dominant Species	Status	Tree - Woody plants 3 in. (7.6 cm breast height (DBH), regardless of Sapling/shrub - Woody plants le- greater than 3.28 ft (1 m) tall. Herb - All herbaceous (non-wood size, and woody plants less than	o) or more in if height. ss than 3 in. y) plants, re 3.28 ft tall.	DBH and
Woody Vine Stratum Vitis riparia	Plot Size (	30 )	Absolute % Cover	Dominant Species	Status	Tree - Woody plants 3 in. (7.6 cm breast height (DBH), regardless of Sapling/shrub - Woody plants le- greater than 3.28 ft (1 m) tall. Herb - All herbaceous (non-wood size, and woody plants less than	o) or more in if height. ss than 3 in. y) plants, re 3.28 ft tall.	DBH and
Woody Vine Stratum Vitis riparia	Plot Size (	30 )	Absolute % Cover	Dominant Species	Status	Tree - Woody plants 3 in. (7.6 cm breast height (DBH), regardless of Sapling/shrub - Woody plants le- greater than 3.28 ft (1 m) tall. Herb - All herbaceous (non-wood size, and woody plants less than	o) or more in if height. ss than 3 in. y) plants, re 3.28 ft tall.	DBH and
Woody Vine Stratum Vitis riparia	Plot Size (	30 )	Absolute % Cover	Dominant Species	Status	Tree - Woody plants 3 in. (7.6 cm breast height (DBH), regardless of Sapling/shrub - Woody plants legreater than 3.28 ft (1 m) tall.  Herb - All herbaceous (non-wood size, and woody plants less than woody vines - All woody vines gheight.	o) or more in if height. ss than 3 in. y) plants, re 3.28 ft tall.	DBH and
Woody Vine Stratum Vitis riparia	Plot Size (	30 )	Absolute % Cover 5	Dominant Species	Status	Tree - Woody plants 3 in. (7.6 cm breast height (DBH), regardless of Sapling/shrub - Woody plants le greater than 3.28 ft (1 m) tall.  Herb - All herbaceous (non-wood size, and woody plants less than woody vines - All woody vines gheight.  Hydrophytic	o) or more in if height. ss than 3 in. y) plants, re 3.28 ft tall.	DBH an
Woody Vine Stratum Vitis riparia			Absolute % Cover 5	Dominant Species Y	Status	Tree - Woody plants 3 in. (7.6 cm breast height (DBH), regardless of Sapling/shrub - Woody plants legreater than 3.28 ft (1 m) tall.  Herb - All herbaceous (non-wood size, and woody plants less than Woody vines - All woody vines gheight.  Hydrophytic vegetation	o) or more in if height. ss than 3 in. y) plants, re 3.28 ft tall.	DBH and
Woody Vine Stratum Vitis riparia			Absolute % Cover 5	Dominant Species Y	Status	Tree - Woody plants 3 in. (7.6 cm breast height (DBH), regardless of Sapling/shrub - Woody plants legreater than 3.28 ft (1 m) tall.  Herb - All herbaceous (non-wood size, and woody plants less than Woody vines - All woody vines gheight.  Hydrophytic vegetation	o) or more in if height. ss than 3 in. y) plants, re 3.28 ft tall.	DBH and
Woody Vine Stratum Vitis riparia			Absolute % Cover 5	Dominant Species Y	Status	Tree - Woody plants 3 in. (7.6 cm breast height (DBH), regardless of Sapling/shrub - Woody plants legreater than 3.28 ft (1 m) tall.  Herb - All herbaceous (non-wood size, and woody plants less than Woody vines - All woody vines gheight.  Hydrophytic vegetation	o) or more in if height. ss than 3 in. y) plants, re 3.28 ft tall.	DBH and
Woody Vine Stratum Vitis riparia			Absolute % Cover 5	Dominant Species Y	Status	Tree - Woody plants 3 in. (7.6 cm breast height (DBH), regardless of Sapling/shrub - Woody plants legreater than 3.28 ft (1 m) tall.  Herb - All herbaceous (non-wood size, and woody plants less than Woody vines - All woody vines gheight.  Hydrophytic vegetation	o) or more in if height. ss than 3 in. y) plants, re 3.28 ft tall.	DBH an
Woody Vine Stratum Vitis riparia			Absolute % Cover 5	Dominant Species Y	Status	Tree - Woody plants 3 in. (7.6 cm breast height (DBH), regardless of Sapling/shrub - Woody plants legreater than 3.28 ft (1 m) tall.  Herb - All herbaceous (non-wood size, and woody plants less than Woody vines - All woody vines gheight.  Hydrophytic vegetation	o) or more in if height. ss than 3 in. y) plants, re 3.28 ft tall.	DBH an

Project/Site: Ian House Property	City/County:	Oshkosh/Winnebago	Sampling Date: 9/14/2	2017
Applicant/Owner: Ian House		State: WI	Sampling Point:	T3P1
Investigator(s): Stacey Henk, Garek Holley			Range: Sec 32, T19N	
Landform (hillslope, terrace, etc.): Toeslope	Lo		convex, none): conca	
	ng.:	Datum:		
Soil Map Unit NameMaA			Classification:	
Are climatic/hydrologic conditions of the site typical for	this time of the year		explain in remarks)	
Are vegetation, soil, or hydrology		tly disturbed?	Are "normal	
Are vegetation , soil , or hydrology		problematic?	circumstances" prese	nt? Yes
(If needed, explain any answers in remarks)				
SUMMARY OF FINDINGS				
Hydrophytic vegetation present?	Is the sampled	d area within a wetla	and? Y	
Hydric soil present?				_
Indicators of wetland hydrology present?	If yes, optiona	l wetland site ID:		
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
Remarks: (Explain alternative procedures here or in a s	separate report.)			
	, , ,			
Cail was areviews by filled				
Soil was previously filled				
HYDROLOGY				
		Secon	dary Indicators (minimu	m of two
Primary Indicators (minimum of one is required; check	all that apply)	require		
	Stained Leaves (B9)	/ C 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	urface Soil Cracks (B6)	
	Fauna (B13)		ainage Patterns (B10)	
	eposits (B15)	X Mo	oss Trim Lines (B16)	
	en Sulfide Odor (C1)		y-Season Water Table (C	(2)
Sediment Deposits (B2) Oxidize	d Rhizospheres on L		ayfish Burrows (C8)	
Drift Deposits (B3) Roots (	그는 사람이 없었다. 그리고 있다면 하는 사람이 되었다면 없다.		aturation Visible on Aerial	Imagery
Algal Mat or Crust (B4) Present	ce of Reduced Iron (			3 ,
Iron Deposits (B5) Recent	Iron Reduction in Til	lled St	unted or Stressed Plants	(D1)
Inundation Visible on Aerial Soils (C	26)	X Ge	eomorphic Position (D2)	
Imagery (B7) Thin Mu	uck Surface (C7)	Sh	nallow Aquitard (D3)	
	Explain in Remarks)	X FA	AC-Neutral Test (D5)	
Surface (B8)		Mi	crotopographic Relief (D4	<b>1</b> )
Field Observations:				
	X Depth (inches)		Indicators of	1
Water table present? Yes No	X Depth (inches)		wetland	
	X Depth (inches)	):	hydrology	
(includes capillary fringe)			present? Y	
Describe recorded data (stream gauge, monitoring well	, aerial photos, prev	vious inspections), if	available:	
				-
Remarks:				

SOIL	e Description: (Describe to the depth needed of the Matrix Records)  Color (moist) % Color (moist)  2 7.5YR 4/2 50  2.5YR 5/4 50  7 2.5YR 5/4 95 2.5Y 7/1  Color (moist) % Color (moist)  Color (moist) % Color (moist) % Color (moist)  Color (moist) % Color (moist) % Color (moist)  Color (moist) % C				Sampling Point: T3P1				
	cription: (Descri	be to th				indicato	or or confirm the absence	e of indicators.)	
Depth				dox Fea			Texture	Remarks	
(Inches)			Color (moist)	%	Type*	Loc**		Nomano	
0-2	7.5YR 4/2	50					CL		
	2.5YR 5/4	50							
2-7	2.5YR 5/4	95	2.5Y 7/1	5	D	M	С		
*Type: C=C	oncentration, D	=Deplet	ion, RM=Reduce	ed Matri	x, CS=C	overed o	r Coated Sand Grains		
Hydric Soi	I Indicators:						Indicators for Pro	blematic Hydric Soils:	
								MANAGORAN PERINTER A CHIEFE (#MECANAGORA DA PORTO DE DAMAS)	
			Pol	yvalue l	Below Su	urface		0) (LRR K, L, MLRA 149B	
		?)			R, MLR	A CONTRACTOR OF THE PARTY OF TH		edox (A16) (LRR K, L, R)	
					Surface (			eat or Peat (S3) (LRR K, L, R)	
					LRA 149		Dark Surface (S		
					cky Mine	ral (F1)		w Surface (S8) (LRR K, L)	
				RK, L	yed Matr	iv (EQ)		e Masses (F12) (LRR K, L, R)	
					nyed iviati Matrix (F3			dplain Soils (F19) (MLRA 149B)	
					k Surface			TA6) (MLRA 144A, 145, 149B)	
		(0 .)			ark Surf				
		)			ressions			ark Surface (TF12)	
Da	rk Surface (S7) (	LRR R					X Other (Explain		
*Indicators	of hydrophytic ve	egetatio	n and weltand h	ydrolog	y must be	e presen	t, unless disturbed or pr	roblematic	
Postrictivo	Lavor /if absorte	·d).							
Type:	Layer (II observe	a).					Hydric soil prese	nt2 V	
	166).				-		nyaric soil prese	nt/ <u> </u>	
Dopui (moi					-				
Remarks:									
	e concave in a	flood	plain forest. T	he pre	sence (	of hydro	ophytes defines the s	soil as hydric	
						,	, 100 0000 10	20.1.20.1.7.1.10	

/EGETATION - Use scientific r	names of plan	nts			Sampling Po	int:	T3P1
					50/20 Thresholds		
Tree Stratum Plot Size (	30 )	Absolute	Dominant	Indicator	- 1000000 - 10	20%	50%
20 20 20 20 20 20 20 20 20 20 20 20 20 2	30 )	% Cover	Species	Status	Tree Stratum	21	53
1 Fraxinus pennsylvanica		75	ΥΥ	FACW	Sapling/Shrub Stratum	1	3
2 Salix nigra		20	N	OBL	Herb Stratum	3	7
3 Acer negundo		10	N	FAC	Woody Vine Stratum	0	0
4							
5					Dominance Test Worksh	eet	
7					Number of Dominant		
8					Species that are OBL, FACW, or FAC:	G	(4)
9					Total Number of Dominant	6	(A)
0					Species Across all Strata:		(B)
		105	= Total Cover				(5)
					Percent of Dominant Species that are OBL,		
Sapling/Shrub		Absolute	Dominant	Indicator	FACW, or FAC:	100.00	)% (A/B)
Stratum Plot Size (	15 )	% Cover	Species	Status	TAGVI, GITAG.	100.00	(100)
1 Rhamnus cathartica		5		FAC	Prevalence Index Works		
2			<u> </u>			ieet	
3					Total % Cover of:	_ ^	0
4					OBL species 20 x 1 FACW species 83 x 2		66
5					FAC species 21 x 3		3
6					FACU species 0 x 4		
7					UPL species 0 x 5		
8					Column totals 124 (A)		49 (B)
9			-		Prevalence Index = B/A =	2.01	
0							
		5	= Total Cover				
					Hydrophytic Vegetation I		
Herb Stratum Plot Size (	5 )	Absolute	Dominant	Indicator	Rapid test for hydrophy		tation
# 47 950 10 1550 F	,	% Cover	Species	Status	X Dominance test is >50		
1 Leersia virginica		5	Y	FACW	X Prevalence index is ≤3		22270
Vitis riparia     Fraxinus pennsylvanica		3	Y	FAC	Morphogical adaptation		
3 Fraxinus pennsylvanica 4 Rhamnus cathartica		3		FACW	supporting data in Ren	narks or	on a
5				FAC	separate sheet)		tion*
6					Problematic hydrophyti (explain)	ic vegeta	ation-
7						and to obtain	
8					*Indicators of hydric soil and wetle present, unless disturbed or prob		ogy must be
9					Posterial and the property of the property o		
0			%		Definitions of Vegetation	Strata:	
1							
2					Tree - Woody plants 3 in. (7.6 cm breast height (DBH), regardless of		n diameter at
3					breast neight (DBH), regardless c	i rieigiit.	
4					Sapling/shrub - Woody plants le:	ss than 3 ir	n. DBH and
5					greater than 3.28 ft (1 m) tall.		
		14:	= Total Cover		Herb - All herbaceous (non-wood	v) niants r	enardless of
Woody Vine		Ab 1 4-		1	size, and woody plants less than		egardiess of
Stratum Plot Size (	30 )	Absolute	Dominant	Indicator	The second of th		
1		% Cover	Species	Status	Woody vines - All woody vines g	reater than	3.28 ft in
2					height,		
3							
4							
5					Hydrophytic		
·			= Total Cause		vegetation		
		0	= Total Cover		present? Y	-	
emarks: (Include photo numbers he	ere or on a son	arate chaot)					
cinana, (include prioto riumbers ni	ere or orra sep	arate sileet)					

Project/Site: Ian House Property	City/County:	Oshkosh/Winnebago	Sampling Date: 9/14/20	017
Applicant/Owner: Ian House		State: WI	Sampling Point:	T3P2
Investigator(s): Stacey Henk, Garek Holley		Section, Township	, Range: Sec 32, T19N,	R16E
Landform (hillslope, terrace, etc.): Terrace	Lo	cal relief (concave,	convex, none): convex	(
	ng.:	Datum:		
Soil Map Unit NameMaA		NWI C	Classification:	
Are climatic/hydrologic conditions of the site typical for			explain in remarks)	
Are vegetation, soil, or hydrology		ly disturbed?	Are "normal	
Are vegetation, soil, or hydrology	naturally p	roblematic?	circumstances" presen	t? Yes
(If needed, explain any answers in remarks)				
SUMMARY OF FINDINGS				
724 0 4 2				
Hydrophytic vegetation present?  N	Is the sampled	d area within a wetla	ind? N	_
Hydric soil present? N				
Indicators of wetland hydrology present? N	If yes, optional	I wetland site ID:		
Remarks: (Explain alternative procedures here or in a s	eparate report )			
,-,-	oparato roporti,			
Soil was previously filled				
Soil was previously filled				
HYDROLOGY				
		Secon	dary Indicators (minimun	n of two
Primary Indicators (minimum of one is required; check a	all that apply)	require		
	Stained Leaves (B9)	10.000 mg/g/s	urface Soil Cracks (B6)	
. <del></del>	Fauna (B13)		ainage Patterns (B10)	
Saturation (A3) Marl De	posits (B15)		oss Trim Lines (B16)	
Water Marks (B1) Hydroge	en Sulfide Odor (C1)		y-Season Water Table (Ca	2)
Sediment Deposits (B2) Oxidize	d Rhizospheres on L	iving Cra	ayfish Burrows (C8)	
Drift Deposits (B3) Roots (	C3)	Sa	aturation Visible on Aerial I	magery
	ce of Reduced Iron (	C4)(C	9)	
	Iron Reduction in Til	lled Stu	unted or Stressed Plants (	D1)
Inundation Visible on Aerial Soils (C			eomorphic Position (D2)	
	ick Surface (C7)		nallow Aquitard (D3)	
	Explain in Remarks)		AC-Neutral Test (D5)	
Surface (B8)		Mie	crotopographic Relief (D4)	)
Field Observations:				
	X Depth (inches)	١٠.	Indicators of	
	X Depth (inches)		wetland	
	X Depth (inches)		hydrology	
(includes capillary fringe)		/	present? N	
			p. 1000.11.1	-
Describe recorded data (stream gauge, monitoring well	, aerial photos, prev	vious inspections), if	available:	
Remarks:				

SOIL							Sa	ampling Point: T3P2
		e 97 1044				100 CANO 121	921 882 87	
		be to th				indicato	or or confirm the absence	e of indicators.)
Depth (Inches)	Matrix Color (moist)	%	Color (moist)	lox Feat		Loc**	Texture	Remarks
0-1	7.5YR 4/2	25	Color (moist)	70	Type*	Loc	С	
0-1	2.5YR 5/4	75			-		C	
1-14	2.5YR 5/4	95	10YR 6/6	10	С	М	GRC	
1-14	2.511 5/4	95	1011/0/6	10	-	IVI	GRU	
					<del>                                     </del>			
					-			
		_			-			
					-			
					-			
					-			
					-			
*Type: C=C	Concentration D:	=Denlet	ion RM=Reduce	d Matri	v CS=C	overed o	r Coated Sand Grains	
**Location:	PL=Pore Lining,	M=Ma	trix	u Maul	x, 03-0	overeu c	Coaled Sand Grains	
	I Indicators:						Indicators for Pro	blematic Hydric Soils:
His Bla Hyd Stri Del Thi San San San Stri Dal		A4) 5) rk Sufa (A12) ral (S1) ix (S4) ) LRR R	Ce (A11) (LR Loa Dep Rec Dep Rec , MLRA	(LRR) n Dark (RR, Marmy Muc RR, L) amy Gle bleted M dox Dari bleted D dox Dep	Surface ( LRA 149 cky Mine ) yed Matrix (F3 k Surface) ark Surface perssions	A 149B) (S9) (S9) (S9) (S9) (S9) (S9) (S1) (F2) (S1) (F2) (S2) (F2) (S3) (F4) (F5) (F6) (F7)	Coast Prairie R 5 cm Mucky Pe Dark Surface (\$ Polyvalue Below Thin Dark Surfa Iron-Manganes Piedmont Flood Mesic Spodic (* Red Parent Ma	w Surface (S8) (LRR K, L) ace (S9) (LRR K, L) e Masses (F12) (LRR K, L, R) dplain Soils (F19) (MLRA 149B) TA6) (MLRA 144A, 145, 149B) terial (F21) bark Surface (TF12) in Remarks)
Restrictive Type: Depth (inch	Layer (if observe	ed):			-		Hydric soil prese	nt? N
Remarks:								

Absolute	Stratum 21 ing/Shrub Stratum 0 Stratum 24 ody Vine Stratum 0 sinance Test Worksheet aber of Dominant cies that are OBL,	50% 54 0
Prestratum	Stratum 21 ing/Shrub Stratum 0 Stratum 24 ody Vine Stratum 0 sinance Test Worksheet aber of Dominant cies that are OBL,	54
Acer negundo	ing/Shrub Stratum 0 Stratum 24 dy Vine Stratum 0 sinance Test Worksheet aber of Dominant cies that are OBL,	
Frackinus pennsylvanica   30	o Stratum 24 ody Vine Stratum 0  inance Test Worksheet aber of Dominant cies that are OBL,	0
Salix nigra	dy Vine Stratum 0  inance Test Worksheet ber of Dominant cies that are OBL,	
Catalpa speciosa	inance Test Worksheet aber of Dominant cies that are OBL,	60
Dom Num Species Species Status    107	ber of Dominant cies that are OBL,	0
Total Cover   Species   Status   Species   S	ber of Dominant cies that are OBL,	
Species   Species   Status   S	cies that are OBL,	
Sapling/Shrub Stratum Plot Size ( 15 ) Absolute Stratum Plot Size ( 15 ) Absolute Stratum Plot Size ( 15 ) Absolute Stratum  Prev Total OBL L Colu Prev Species Status  Hydi  Indicator Species Status FAC		
Total Cover Species Status    107	N EAO.	
Species appling/Shrub Stratum Plot Size ( 15 ) Absolute Stratum Plot Size ( 15 ) Absolute Stratum Plot Size ( 5 ) Absolute Stratum Plot Size ( 5 ) Absolute Species Status Prev Grace Glechoma hederacea Gournal Species Status Grace Gournal Species Status Grace Gournal Species Status Grace Gournal Grace Gournal Grace Grace Gournal Grace Grace Grace Gournal Grace Grace Gournal Grac	W, or FAC: 2	(A)
Sapling/Shrub Stratum Plot Size ( 15 ) Absolute Stratum Plot Size ( 15 ) Absolute Stratum Prev Tota OBL FAC FAC FAC FAC Gelechoma hederacea Garex pensylvanica Geum aleppicum Carex blanda Rhamnus cathartica  Dominant Species Status Frev Tota OBL FAC	Number of Dominant	_
Sapling/Shrub Stratum Plot Size ( 15 ) Absolute Stratum Plot Size ( 15 ) Absolute Stratum Prev Tota OBL FAC FAC FAC FAC Gelechoma hederacea Garex pensylvanica Geum aleppicum Carex blanda Rhamnus cathartica  Dominant Species Status Frev Tota OBL FAC	cies Across all Strata: 4	(B)
Sapling/Shrub Stratum  Plot Size ( 15 ) Absolute % Cover Species  Species  Status  Prev Total OBL FAC FAC UPL Cover Species  Status  Prev Total OBL FAC FAC UPL Cover Species  Status  Frev Total Cover FAC UPL Cover Species Status  FAC FAC UPL Species Status  FAC FAC UPL Species Status FAC FAC UPL Species Status FAC FAC Species Status Indicator Species Status	ent of Dominant	- ' '
Absolute   Dominant   Indicator   Species   Status	cies that are OBL,	
Stratum	W, or FAC: 50.00%	/Δ:
Prev   Tota	VV, 01 FAC	_ (~
Total OBL FAC FAC FAC UPL Columns of the provided for the		
O	alence Index Worksheet	
Total Cover	I % Cover of:	
Tree   Post Stratum	species 5 x 1 = 5	
Total Cover	W species 30 x 2 = 60	_
Total Cover	species 90 x 3 = 270	_
O	U species 62 x 4 = 248	
Columbre	species 40 x 5 = 200	_
Prevalence   Pre	mn totals 227 (A) 783	_ (B
O	alence Index = B/A = 3.45	_ ,_
Absolute   Dominant   Indicator   Species   Status   Species   Species   Status   Species   Sp		_
Absolute % Cover Species Status  Glechoma hederacea 60 Y FACU  Geum aleppicum 10 N FAC  Carex blanda 5 N FAC  Rhamnus cathartica 5 N FAC   Tree breas  Sapling greate  Stratum Plot Size ( 30 ) Absolute % Cover Species Status  Absolute % Cover Species Status  FACU  Indicator Species Status  FACU  Indicator Species Status  Indicator Species Status  Indicator Species Status  Woody Vine Stratum Plot Size ( 30 ) Absolute Stratus  Noody Vine Stratum Plot Size ( 30 ) Absolute Species Status		
Herb Stratum Plot Size ( 5 ) Absolute % Cover Species Status  Glechoma hederacea 60 Y FACU Carex pensylvanica 40 Y UPL Geum aleppicum 10 N FAC Carex blanda 5 N FAC Rhamnus cathartica 5 N FAC  (*Indice prese breas:	rophytic Vegetation Indicators:	
Stratum   Plot Size ( 3 )   % Cover   Species   Status   FACU	Rapid test for hydrophytic vegetati	
Section   Sect	Dominance test is >50%	
Carex pensylvanica  Geum aleppicum  10 N FAC S S N FAC S S N FAC S S Sapling greate  Woody Vine Stratum  Plot Size ( 30 ) Absolute Stratum  Plot Size ( 30 ) Absolute Stratus  Moody Vine Stratus  Absolute Species  Satus  Moody Vine Stratus	Prevalence index is ≤3.0*	
Geum aleppicum Carex blanda S N FAC S Rhamnus cathartica S N FAC  Indicator prese  Woody Vine Stratum Plot Size ( 30 ) Absolute Stratum Plot Size ( 30 ) Absolute Stratus Species Status  Indicator Species Status  N FAC  Indicator Species Status  Woodheight	Morphogical adaptations* (provide	
Carex blanda  Rhamnus cathartica  5 N FAC  Indicator prese  Defining greate  Woody Vine Stratum  Plot Size ( 30 )  Absolute % Cover  Species  Status  N FAC  Indicator Species  Status  Indicator Status	supporting data in Remarks or on	
Rhamnus cathartica 5 N FAC 'Indicest prese prese breas Sapling greate Woody Vine Stratum Plot Size ( 30 ) Absolute Stratum Plot Size ( 30 ) Absolute Stratum Species Status Woodheight	separate sheet)	а
Voody Vine Stratum Plot Size ( 30 ) Absolute Stratum Plot Size ( 30 ) Absolute Stratum Species Status Voodheight		*
Voody Vine Stratum Plot Size ( 30 ) Absolute Stratum Plot Size ( 30 ) Species Status Voodheight	Problematic hydrophytic vegetatio	иг
Defining the present of the present	explain)	
Noody Vine Stratum Plot Size ( 30 ) Absolute Stratum Plot Size ( 30 ) Species Status Plot Size ( 30 ) Absolute Stratum Species Status Plot Size ( 30 ) Absolute Species Species Status Plot Size ( 30 ) Absolute Species Species Status Plot Size ( 30 ) Absolute Species Species Species Species Species Species Species Species Sp	ators of hydric soil and wetland hydrology	must
Noody Vine Plot Size ( 30 ) Absolute Dominant Indicator Stratum Plot Size ( 30 ) Stratum Plot Size ( 30 ) Herb Size, a Wood height	nt, unless disturbed or problematic	
Noody Vine Plot Size ( 30 ) Absolute Dominant Indicator Stratum Plot Size ( 30 ) Stratum Plot Size ( 30 ) Herb Size, a Wood height	-141	
Noody Vine Stratum Plot Size ( 30 ) Absolute Species Status breas Sapling greate Herb Size, a Wood height	nitions of Vegetation Strata:	
Noody Vine Stratum Plot Size ( 30 ) Absolute Species Status breas Sapling greate Herb Size, a Wood height	Woody plants 3 in. (7.6 cm) or more in di	iame
Noody Vine Plot Size ( 30 ) Absolute Dominant Indicator Stratum Plot Size ( 30 ) % Cover Species Status Woodheight	t height (DBH), regardless of height.	
Noody Vine Plot Size ( 30 ) Absolute Dominant Indicator Stratum Plot Size ( 30 ) % Cover Species Status Wood height	• , , •	
Noody Vine Stratum Plot Size ( 30 ) Absolute Dominant Species Status Woodheight	ng/shrub - Woody plants less than 3 in. D	BH a
Noody Vine Stratum Plot Size ( 30 ) Absolute Dominant Indicator Species Status Woodheight	er than 3.28 ft (1 m) tall.	
Noody Vine Stratum Plot Size ( 30 ) Absolute Dominant Indicator Stratus Wood height	All barbanasus (pag wandu) plants spar	ordios
Stratum Plot Size ( 30 ) Absolute Dominant Indicator Stratus Wood height	<ul> <li>All herbaceous (non-woody) plants, rega</li> <li>and woody plants less than 3.28 ft tall.</li> </ul>	ardies
Stratum % Cover Species Status Wood height	and woody plants less than 5.20 it tall.	
height	ly vines - All woody vines greater than 3.2	28 ft i
	dudronhutic	
	Hydrophytic	
	regetation	
0 = Total Cover	present? N	
parke: (Include phote numbers here as an a const-ttt)		
narks: (Include photo numbers here or on a separate sheet)		

Project/Site: Ian House Property	City/County: Oshkosh/Winnebago Sampling Date: 9/14/2017
Applicant/Owner: Ian House	State: WI Sampling Point: T3P3
Investigator(s): Stacey Henk, Garek Holley	Section, Township, Range: Sec 32, T19N, R16E
Landform (hillslope, terrace, etc.): Toeslope	Local relief (concave, convex, none): concave
Slope (%): 0-1 Lat.: Lor	g.: Datum:
Soil Map Unit NameMaA	NWI Classification:
Are climatic/hydrologic conditions of the site typical for the	
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	
SUMMARY OF FINDINGS	
Hudrophutia vagatatian assault	
Hydrophytic vegetation present?	Is the sampled area within a wetland?
Hydric soil present?	
Indicators of wetland hydrology present? Y	If yes, optional wetland site ID:
Pamarka: (Evalain alternative procedures have as in a	
Remarks: (Explain alternative procedures here or in a s	eparate report.)
	-
Soil was previously filled	
HYDROLOGY	
	Secondary Indicators (minimum of two
Primary Indicators (minimum of one is required; check a	
	tained Leaves (B9) Surface Soil Cracks (B6)
	Fauna (B13) Drainage Patterns (B10)
Saturation (A3) Marl De	posits (B15) Moss Trim Lines (B16)
Water Marks (B1) Hydroge	en Sulfide Odor (C1) Dry-Season Water Table (C2)
Sediment Deposits (B2) Oxidized	Rhizospheres on Living Crayfish Burrows (C8)
Drift Deposits (B3) Roots (C	Saturation Visible on Aerial Imagery
	e of Reduced Iron (C4) (C9)
H	ron Reduction in Tilled Stunted or Stressed Plants (D1)
Inundation Visible on Aerial Soils (C	· · · · · · · · · · · · · · · · · · ·
11 <del>1 12</del> J. J. 1 1 1 1 1 J. J. 1 1 J. J. 1 1 J.	ck Surface (C7) Shallow Aquitard (D3)
	xplain in Remarks) X FAC-Neutral Test (D5)
X Surface (B8)	Microtopographic Relief (D4)
Field Observations:	
	( Darth (factors)
	Depth (inches): Indicators of
Water table present? Yes No No Saturation present? Yes No	
Saturation present? Yes No	Depth (inches): hydrology
(includes capillary linge)	present? Y
Describe recorded data (stream gauge, monitoring well,	aerial photos, previous inspections), if available:
Total Total Control of Control of Good Control of Contr	acrial priotos, previous inspections), il avaliable.
Remarks:	
	· ·

SOIL							Sa	ampling Point: T3P3	
Drofilo Doo	orintian: (Deceri	h a ta th				i 1 i 1 -		- Al-di-d	
Depth	Matrix	be to th		to docu		indicato	or or confirm the absence	e of indicators.)	_
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks	
0-5	7.5YR 2.5/1	100			T .		FSL	Refusal at 5"	_
									_
									_
									_
									_
*Type: C=C	oncentration, D	-Deplet	ion, RM=Reduce	d Matri	x, CS=C	overed o	or Coated Sand Grains		
	PL=Pore Lining,	м=ма	trix						_
Hydric Soi	Indicators:						Indicators for Pro	blematic Hydric Soils:	
His Bla Bla Hyo Stra Dep Thin Sar Sar Sar Dar 149		A4) 5) rk Sufac (A12) ral (S1) x (S4)	(S8	) (LRR in Dark ( R R, M imy Muc R K, L) imy Gle bleted M dox Dark bleted D dox Dep	yed Matri Matrix (F3 k Surface Park Surfa pressions	A 149B) S9) B ral (F1) ix (F2) ) e (F6) ace (F7) (F8)	Coast Prairie R 5 cm Mucky Pe Dark Surface (S Polyvalue Belov Thin Dark Surfa Iron-Manganes Piedmont Flood Mesic Spodic (S Red Parent Ma	w Surface (S8) (LRR K, L) ace (S9) (LRR K, L) e Masses (F12) (LRR K, L, R dplain Soils (F19) (MLRA 149 TA6) (MLRA 144A, 145, 149E derial (F21) bark Surface (TF12) in Remarks)	t) B)
Restrictive Type: Depth (inch	Layer (if observe	ed):			-		Hydric soil prese	nt?Y	
Remarks:	p. 580) surveyoran						200		_
Test pit	in a floodplain	forest	t that supports	a don	ninance	of hyd	rophytes.		

EGETATION - L	Jse scientific n	names of pla	ants			Sampling Po	int:	T3P3
						50/20 Thresholds		
Tree Stratum	Plot Size (	30 )	Absolute	Dominant	Indicator		20%	50%
rice Stratum	FIOL SIZE (	30 )	% Cover	Species	Status	Tree Stratum	17	43
<ol> <li>Acer negundo</li> </ol>	)		70	Y	FAC	Sapling/Shrub Stratum	0	0
2 Fraxinus penr	nsylvanica		10	N	FACW	Herb Stratum	1	2
3 Salix nigra			5	N	OBL	Woody Vine Stratum	2	5
								97.9
5						Dominance Test Worksh	eet	
-						Number of Dominant		
						Species that are OBL,		
						FACW, or FAC:	2	(A)
						Total Number of Dominant		(//)
						Species Across all Strata:		(B)
			85 :	= Total Cover				— (b)
				- Total Cover		Percent of Dominant		
						Species that are OBL,		
Sapling/Shrub	Plot Size (	15 )	Absolute	Dominant	Indicator	FACW, or FAC:	100.00	)%_ (A/B)
Stratum	1 101 0120 (	15 )	% Cover	Species	Status			
						Prevalence Index Works	hoot	
							icci	
						Total % Cover of:		- 1
						OBL species 5 x 1		
						FACW species 10 x 2		
						FAC species 83 x 3		49
						FACU species 0 x 4		
			_			UPL species 0 x 5		
						Column totals 98 (A)	27	74 (B)
						Prevalence Index = B/A =	2.80	
			0 :	= Total Cover				
						Hydrophytic Vegetation I	ndicator	'S'
		Name of the last o	Absolute	Dominant	Indicator	Rapid test for hydrophy		
Herb Stratum	Plot Size (	5 )	% Cover	Species	Status	X Dominance test is >50		1000011
Rhamnus cath	nartica		3	Орсою	FAC	X Prevalence index is ≤3		
- manna out	raitioa				UPL	I ——		ido
					UPL	Morphogical adaptation		
						supporting data in Ren	narks or o	on a
						separate sheet)	3 10	22 - 51
						Problematic hydrophyt	ic vegeta	ation*
						(explain)		
						*Indicators of hydric soil and wetle	and hydrold	ogy must be
						present, unless disturbed or prob	lematic	
						Definitions of Vegetation	Strata:	
						Tree - Woody plants 3 in. (7.6 cm		n diameter
						breast height (DBH), regardless of	of height.	
						Sapling/shrub - Woody plants le	on then 2 is	DDU and
				-		greater than 3.28 ft (1 m) tall.	ss trian o ii	i. Don and
			3 :	= Total Cover		g. sales trial s.zo it (1 m) tall.		
				Total Covel		Herb - All herbaceous (non-wood	ly) plants, r	egardless o
Moody Vino			Abadata	Damin	land:t-	size, and woody plants less than		300
Woody Vine	Plot Size (	30 )	Absolute	Dominant	Indicator			
Stratum			% Cover	Species	Status	Woody vines - All woody vines g	reater than	3.28 ft in
Vitis riparia			10	Y	FAC	height.		
			S (25-2)	·				
						Hydrophytic		
				-				
				Total Com		vegetation		
			10 =	= Total Cover		present? Y	_	
narks: (Include pl	noto numbers he	ere or on a se	parate sheet)					
			2 (52)					

Applicant/Owner: Ian House Investigator(s): Stacey Henk, Garek Holley Section, Township, Range: Sea 32, THR, RISE Landform (hillslope, terrace, etc.): Backslope Local relief (concave, convex, none): Convex Soli Map Unit NameUoA. Are climatichydrologic conditions of the site typical for this time of the year? Are vegetation, soli, or hydrology significantly disturbed? Are vegetation, soli, or hydrology naturally problematic? (If needed, explain any answers in remarks)  SUMMARY OF FINDINGS  Hydric soli present?  Primary indicators of wetland hydrology present?  No if yes, optional wetland site ID:  Femarks: (Explain alternative procedures here or in a separate report.)  Soil was previously filled  HYDROLOGY  Primary indicators (minimum of one is required, check all that apply) Surface Water (A1) Water Stained Leaves (89) Surface Water (A1) High Water Table (A2) Aqualise Fauna (813) Saturation (A3) Mari Deposits (815) Moss Trim Lines (816) Drinage Patterns (810) Drinage Patterns (810) Drinage Patterns (810) Drinage Patterns (810) Saturation (A3) Agal Mat or Crust (84) Presence of Reduced Iron (C4) Iron Deposits (85) Agal Mat or Crust (84) Presence of Reduced Iron (C4) Iron Deposits (85) Agal Mat or Crust (84) Presence of Reduced Iron (C4) Iron Deposits (85) Agal Mat or Crust (84) Presence of Reduced Iron (C4) Iron Deposits (85) Microtopographic Relief (D4)  Field Observations: Surface Real Paths (D1) Saturation Present? Yes No X Depth (inches): Indicators of wetland Water Marks:  Indicators of wetland	Project/Site: Ian House Property	City/County:	Oshkosh/Winnebago	Sampling Date: 9/14/2017	
Investigator(s): Stacey Henk, Garek Holley Section, Township, Range: Sec 32, T19N, R16E Landform (hillstope, terrace, etc.): Backslope Local relief (concave, convex, none): convex	Applicant/Owner: Ian House	100			
Solid May Unit NameUoA			Section, Township	, Range: Sec 32, T19N, R16E	
Soil Map Unit NameUoA Are climatic/hydrologic conditions of the site typical for this time of the year? Yes Are vegetation, soil, or hydrology	Landform (hillslope, terrace, etc.): Backslope	Lo	ocal relief (concave, o	convex, none): convex	
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		Long.:			
Are vegetation soil or hydrology alignificantly disturbed? Are "normal circumstances" present? Yes (If needed, explain any answers in remarks)    Summary OF Findings			NWI C	lassification:	
Are vegetation, soil, or hydrology				and the second s	
Summary of Findings					
Hydrophytic vegetation present?   Y	,,	ynaturally p	roblematic?	circumstances" present? Ye	es
Hydrophytic vegetation present? Hydric soil present? Indicators of wetland hydrology present?  Remarks: (Explain alternative procedures here or in a separate report.)  Figure 1. Soil was previously filled  HYDROLOGY  Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1) Water-Stained Leaves (B9) High Water Table (A2) Aquatic Fauna (B13) 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) Iron Deposits (B5) Iron Deposits (B5) Recent Iron Reduction in Tilled Solls (C6) Iron Deposits (B5) Inudation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8)  Drift Deposits (B3) Cost (C6) Cost (C7) Cost (C8) Cost (C9)	(If needed, explain any answers in remarks)				
Hydrophytic vegetation present? Hydric soil present? Indicators of wetland hydrology present?  Remarks: (Explain alternative procedures here or in a separate report.)  Figure 1. Soil was previously filled  HYDROLOGY  Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1) Water-Stained Leaves (B9) High Water Table (A2) Aquatic Fauna (B13) 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) Iron Deposits (B5) Iron Deposits (B5) Recent Iron Reduction in Tilled Solls (C6) Iron Deposits (B5) Inudation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8)  Drift Deposits (B3) Cost (C6) Cost (C7) Cost (C8) Cost (C9)					
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Hydric soil present? Indicators of wetland hydrology present? N If yes, optional wetland site ID:  Remarks: (Explain alternative procedures here or in a separate report.)  Soil was previously filled  HYDROLOGY  Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1) High Water Table (A2) High Water Table (A2) Aquatic Fauna (B13) Marl Deposits (B15) Moss Trim Lines (B16) Water Marks (B1) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Sediment Deposits (B3) Point Deposits (B3) Roots (C3) Algal Mat or Crust (B4) Iron Deposits (B4) Presence of Reduced Iron (C4) Iron Deposits (B4) Soils (C6) Geomorphic Position (D2) Inudation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8)  Field Observations: Surface water present? Ves No X Depth (inches): Indicators (minimum of two required) Secondary Indicators (minimum of two required) Secondary Indicators (minimum of two required) Surface (B4) Surface (C7) Shallow Aquitard (D3) Field Observations: Surface water present? Ves No X Depth (inches): Indicators of wetland hydrology present? N  Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	COMMENT OF THE DINGS				
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Saturation (A3)  Water Marks (B1)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial  Imagery (B7)  Sparsely Vegetated Concave  Surface (B8)  Field Observations:  Surface water present?  Water table present?  Yes  No  X  Depth (inches):  Surface (B7)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Saturation Visible on Aerial Imagery  (C9)  Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  X  FAC-Neutral Test (D5)  Microtopographic Relief (D4)  Field Observations:  Surface water present?  Yes  No  X  Depth (inches):  Indicators of  Water table present?  Yes  No  X  Depth (inches):  Indicators of  Wetland  hydrology  present?  N  Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:				2010 2010 100 100 100 100 100 100 100 10	
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	(includes capillary fringe)		(i <del></del>		
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Remarks:	Describe recorded data (stream gauge, monitoring w	ell, aerial photos, prev	vious inspections), if	available:	
Remarks:					
Remarks:					
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	iveniains.				

SUIL							Sa	impling Point: T3P4
Profile Desc	cription: (Descri	ihe to the	denth needed	to docu	ment the	indicate	or or confirm the absence	e of indicators )
Depth	Matrix	100 10 1110		lox Feat		illulcate		
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
0-2	7.5YR 4/2	60	,		1		CL	Refusal at 2"
	5YR 5/4	40						
					<u> </u>			
*Type: C=C	oncentration, D	=Depletion	on, RM=Reduce	d Matri	x, CS=C	overed c	r Coated Sand Grains	
	PL=Pore Lining							
Hydric Soil	Indicators:						Indicators for Prof	olematic Hydric Soils:
Hist Blace Hyde Stra Dep Thice San San San Stri Dar 149	of hydrophytic v	A4) 5) rk Suface (A12) ral (S1) ix (S4)  LRR R,	(S8	) (LRR n Dark S R R, M my Muc R K, L) my Gle bleted M dox Dark bleted D dox Dep	yed Mati flatrix (F3 k Surface park Surf pressions	A 149B) (S9) 9B pral (F1) rix (F2) 3) e (F6) ace (F7) 5 (F8)	Coast Prairie R 5 cm Mucky Pe Dark Surface (S Polyvalue Belov Thin Dark Surfa Iron-Manganese Piedmont Flood Mesic Spodic (1 Red Parent Mat	w Surface (S8) (LRR K, L) ace (S9) (LRR K, L) e Masses (F12) (LRR K, L, R) lplain Soils (F19) (MLRA 149B) rA6) (MLRA 144A, 145, 149B) terial (F21) ark Surface (TF12) n Remarks)
Restrictive I Type: Depth (inch	Layer (if observe	ed):			-		Hydric soil preser	nt?N
Remarks:								

VEGETATION - Use scientific names of	olants			Sampling Po	int:	T3P4
				50/20 Thresholds		
Tree Stratum Plot Size ( 30	Absolute	Dominant	Indicator	1 1 200 1 20	20%	50%
1100 01010111 1101 0120 (	% Cover	Species	Status	Tree Stratum	21	53
1 Acer negundo	60	Y	FAC	Sapling/Shrub Stratum	2	5
2 Fraxinus pennsylvanica	40	Y	FACW	Herb Stratum	9	22
3 Salix nigra	5	N	OBL	Woody Vine Stratum	2	5
4						
5				Dominance Test Workship	eet	
5				Number of Dominant		
8				Species that are OBL,	-	/41
9				FACW, or FAC:	5	(A)
10				Total Number of Dominant		(D)
	105	= Total Cover		Species Across all Strata:	5	(B)
	105	- Total Cover		Percent of Dominant		
Conline/Chr.th				Species that are OBL,	400.00	
Sapling/Shrub Plot Size ( 15	Absolute	Dominant	Indicator	FACW, or FAC:	100.00	)%_ (A/B)
	% Cover	Species	Status			
1 Rhamnus cathartica	10	Y	FAC	Prevalence Index Worksh	neet	
2				Total % Cover of:		
3				OBL species5x 1	=	5
4				FACW species 45 x 2	= 9	0
5				FAC species 113 x 3	-	39
6				FACU species 5 x 4	_	0
7				UPL species 0 x 5		
8				Column totals 168 (A)		64 (B)
9	_			Prevalence Index = B/A =	2.70	
10						
	10	Total Cover				
	A10000 A100			Hydrophytic Vegetation I		
Herb Stratum Plot Size ( 5	) Absolute	Dominant	Indicator	Rapid test for hydrophy		tation
1 Cours alanniaum	% Cover	Species	Status	X Dominance test is >50		
1 Geum aleppicum 2 Fraxinus pennsylvanica		Y	FAC	X Prevalence index is ≤3		
3 Rhamnus cathartica	5 3	N	FACW	Morphogical adaptation	***	
4 Parthenocissus quinquefolia	$-\frac{3}{3}$	N	FACU	supporting data in Ren	iarks or	on a
5 Lonicera x bella	$-\frac{3}{2}$	N	FACU	separate sheet) Problematic hydrophyti	o vocanto	tion*
6			FACO	(explain)	c vegeta	ition-
7						
8				*Indicators of hydric soil and wetla present, unless disturbed or probl		ogy must be
9				present, unless distarbed or probl	emade	
10				Definitions of Vegetation	Strata:	
11						
12				Tree - Woody plants 3 in. (7.6 cm		n diameter at
13				breast height (DBH), regardless of	f height.	
14				Sapling/shrub - Woody plants les	ss than 3 in	n. DBH and
15				greater than 3.28 ft (1 m) tall.		
	43 :	Total Cover				2 9
				Herb - All herbaceous (non-wood		egardless of
Woody Vine Plot Size ( 30	Absolute	Dominant	Indicator	size, and woody plants less than	3.28 π tall.	
Stratum	% Cover	Species	Status	Woody vines - All woody vines q	reater than	3.28 ft in
1 Vitis riparia	10	Y	FAC	height.		
2						
3						
4				Hydrophytic		
5				vegetation		
	10 =	Total Cover		present? Y		
Remarks: (Include photo numbers here or on a	separate sheet)					
50						
						1/1

## **APPENDIX B**

Wetland Photographs



Photo 1: Viewing Wetland 1 near T1P2



Photo 3: Viewing north towards Wetland 1 near west end of project area



Photo 2: Moss trim lines near T1P1



Photo 4: Viewing east at upland driveway



Photo 5: Viewing south towards T3P1



Photo 7: Viewing north toward Wetland 1 boundary near T3P3



Photo 6: Viewing west towards T3P2



Photo 8: Viewing at Wetland 2 where it intersects the driveway

## **APPENDIX C**

Winnebago County Soil Resource Map & Soil Reports



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 (https://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

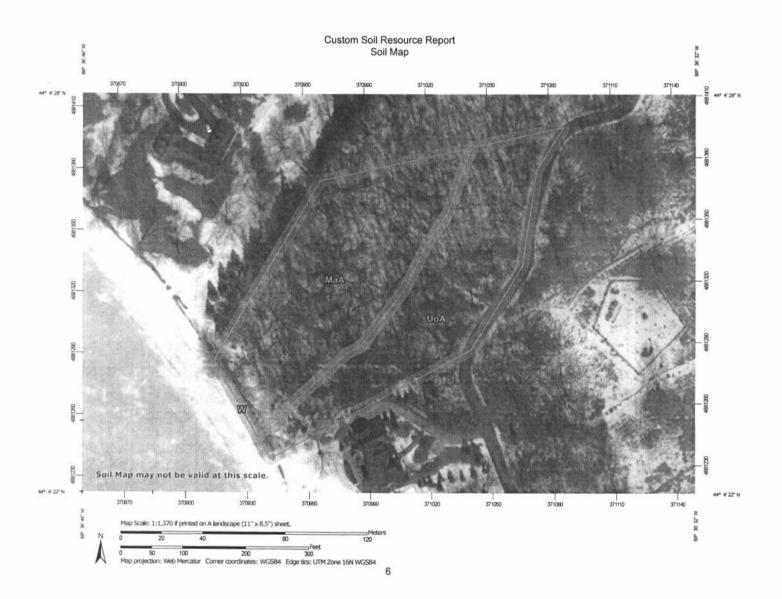
alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington,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

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# 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.



#### MAP LEGEND MAP INFORMATION Spoil Area Area of Interest (AOI) The soil surveys that comprise your AOI were mapped at Area of Interest (AOI) 0 Stony Spot Soils (3) Very Stony Spot Warning: Soil Map may not be valid at this scale. Soil Map Unit Polygons \$ Wet Spot Soil Map Unit Lines 100 Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil Other Δ Soil Map Unit Points Special Line Features line placement. The maps do not show the small areas of Special Point Features contrasting soils that could have been shown at a more detailed scale. Water Features Blowout 403 Streams and Canals Borrow Pit Transportation Please rely on the bar scale on each map sheet for map Clay Spot × Rails +++ measurements. Closed Depression 0 Interstate Highways Source of Map: Natural Resources Conservation Service Gravel Pit X US Routes Web Soil Survey URL: Coordinate System: Web Mercator (EPSG:3857) 2 Gravelly Spot Major Roads 0 Landfill Local Roads Maps from the Web Soil Survey are based on the Web Mercator Lava Flow projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the A Background Marsh or swamp Aerial Photography عليه Albers equal-area conic projection, should be used if more Mine or Quarry accurate calculations of distance or area are required. 杂 Miscellaneous Water 0 This product is generated from the USDA-NRCS certified data as of the version date(s) listed below. Perennial Water 0 Rock Outcrop Soil Survey Area: Winnebago County, Wisconsin Survey Area Data: Version 13, Sep 28, 2016 Saline Spot + Sandy Spot : -: Soil map units are labeled (as space allows) for map scales Severely Eroded Spot 1:50,000 or larger. . Sinkhole 0 Date(s) aerial images were photographed: Jun 16, 2011-Mar Slide or Slip 11, 2017 30 Sodic Spot 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	
MaA	Manawa silty clay loam, 0 to 3 percent slopes	1.9	53.8%	
UoA	Udorthents, 0 to 3 percent slopes	1.7	46.1%	
W	Water greater than 40 acres	0.0	0.0%	
Totals for Area of Interest		3.6	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 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

#### MaA-Manawa silty clay loam, 0 to 3 percent slopes

#### Map Unit Setting

National map unit symbol: 2t732 Elevation: 730 to 1,000 feet

Mean annual precipitation: 29 to 34 inches Mean annual air temperature: 43 to 46 degrees F

Frost-free period: 135 to 194 days

Farmland classification: Prime farmland if drained

#### Map Unit Composition

Manawa and similar soils: 90 percent Minor components: 10 percent

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

#### **Description of Manawa**

#### Setting

Landform: Drainageways

Landform position (two-dimensional): Footslope Landform position (three-dimensional): Base slope

Down-slope shape: Linear Across-slope shape: Concave

Parent material: Clayey till over calcareous, dense clayey till

#### Typical profile

Ap - 0 to 9 inches: silty clay loam Bt - 9 to 35 inches: silty clay Cd - 35 to 79 inches: silty clay

#### Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: 31 to 36 inches to densic material

Natural drainage class: Somewhat poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to

moderately high (0.06 to 0.20 in/hr)

Depth to water table: About 7 to 24 inches

Frequency of flooding: Rare Frequency of ponding: Occasional

Calcium carbonate, maximum in profile: 30 percent

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0

mmhos/cm)

Available water storage in profile: Low (about 5.1 inches)

#### Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: D Hydric soil rating: No

#### **Minor Components**

#### Kewaunee

Percent of map unit: 6 percent Landform: Ground moraines

Landform position (two-dimensional): Backslope, summit Landform position (three-dimensional): Side slope

Down-slope shape: Convex Across-slope shape: Convex

Hydric soil rating: No

#### Poygan

Percent of map unit: 4 percent Landform: Depressions

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Dip

Down-slope shape: Concave Across-slope shape: Concave

Hydric soil rating: Yes

#### UoA-Udorthents, 0 to 3 percent slopes

#### Map Unit Setting

National map unit symbol: g5zp 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: Not prime farmland

#### Map Unit Composition

Udorthents and similar soils: 100 percent

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

#### Description of Udorthents

#### Typical profile

H1 - 0 to 10 inches: silty clay loam

#### Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches Natural drainage class: Somewhat poorly drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00

to 1.98 in/hr)

Depth to water table: About 20 to 39 inches

Frequency of flooding: None Frequency of ponding: None

#### Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: C Hydric soil rating: No

#### W-Water greater than 40 acres

#### Map Unit Setting

National map unit symbol: g5zq 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: Not prime farmland

#### Map Unit Composition

Water: 100 percent

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

#### **Description of Water**

#### Properties and qualities

Frequency of flooding: Very frequent Frequency of ponding: Frequent

# Soil Information for All Uses

# Soil Properties and Qualities

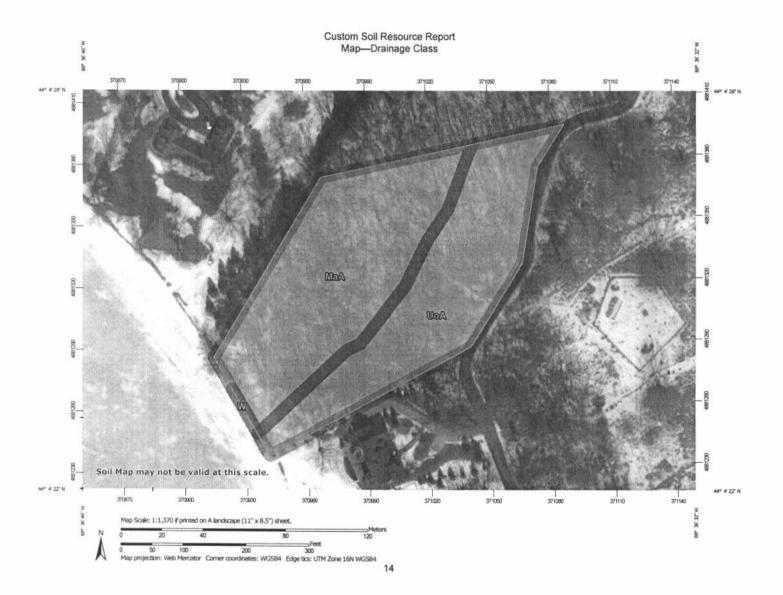
The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual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



#### MAP LEGEND MAP INFORMATION Area of Interest (AOI) The soil surveys that comprise your AOI were mapped at Excessively drained Area of Interest (AOI) Somewhat excessively drained 100 Soils ■ Well drained Warning: Soil Map may not be valid at this scale. Soil Rating Polygons Excessively drained ■ Moderately well drained Enlargement of maps beyond the scale of mapping can cause Somewhat excessively Somewhat poorty drained misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of Poorly drained Well drained contrasting soils that could have been shown at a more detailed Moderately well drained Very poorly drained scale. Subaqueous Somewhat poorly drained Please rely on the bar scale on each map sheet for map Not rated or not available Poorly drained 000 measurements. Water Features Very poorly drained Source of Map: Natural Resources Conservation Service Streams and Canals Subaqueous Web Soil Survey URL: Transportation Coordinate System: Web Mercator (EPSG:3857) Not rated or not available +++ Rails Soil Rating Lines Maps from the Web Soil Survey are based on the Web Mercator Interstate Highways Excessively drained projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the US Routes stream Somewhat excessively Albers equal-area conic projection, should be used if more Major Roads drained accurate calculations of distance or area are required. Well drained Local Roads Moderately well drained Background This product is generated from the USDA-NRCS certified data as of the version date(s) listed below. Somewhat poorly drained Aerial Photography Poorly drained Soil Survey Area: Winnebago County, Wisconsin Survey Area Data: Version 13, Sep 28, 2016 Very poorly drained Subaqueous Soil map units are labeled (as space allows) for map scales 1:50,000 or larger. Not rated or not available Soil Rating Points Date(s) aerial images were photographed: Jun 16, 2011-Mar 11, 2017 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.

# Table—Drainage Class

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
MaA	Manawa silty clay loam, 0 to 3 percent slopes	Somewhat poorly drained	1.9	53.8%
UoA	Udorthents, 0 to 3 percent slopes	Somewhat poorly drained	1.7	46.1%
W	Water greater than 40 acres		0.0	0.0%
Totals for Area of Interest		3.6	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 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:

- All Histels except for Folistels, and Histosols except for Folists.
- 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)

Map Unit Symbol	Map Unit Name	Hydric Percent of Map Unit	Hydric Category
MaA	Manawa silty clay loam, 0 to 3 percent slopes		WI Predominantly Nonydric
UoA	Udorthents, 0 to 3 percent slopes 0		WI Nonhydric
W	Water greater than 40 acres	0	WI Nonhydric

#### **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 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.
- 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;
- 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.

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Hydric Soils–Winnebago County, Wisconsin				
Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric criteria
MaA—Manawa silty clay loam, 0 to 3 percent slopes				
	Poygan	4	Depressions	2, 3

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