Wetland Delineation Report

Krueger Property

Town of Perry, Dane County, Wisconsin

June 21, 2021

Project Number: 20210478

506 Springdale Street | Mount Horeb, WI 53572 | www.heartlandecological.com

Krueger Property

Town of Perry, Dane County, Wisconsin

June 21, 2021

Prepared for:

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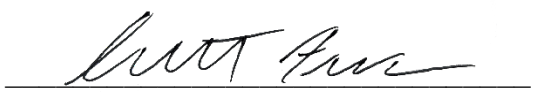

Scott Fuchs, Environmental Scientist

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1.0 Introduction

Heartland Ecological Group, Inc. ("Heartland") completed a wetland determination and delineation on the Krueger Property site on May 7, 2021 at the request of Brett Krueger. Fieldwork was completed by Scott Fuchs, Environmental Scientist (Appendix E, Qualifications). The 4.64-acre site (the "Study Area") is located along York Valley Road, approximately 1 mile north of its intersection with State Highway 39, in the southeast ¼ of Section 34, T5N, R6E, Town of Perry, Dane County, WI (Figure 1, Appendix A). The purpose of the wetland delineation was to determine the location and extent of wetlands within the Study Area.

Four (4) wetland areas totaling approximately 0.15 acres were delineated and mapped within the Study Area (Figure 6, Appendix A). Wetlands discussed in this report may be subject to federal regulation under the jurisdiction of the U.S. Army Corps of Engineers (USACE), state regulation under the jurisdiction of the WDNR, and local zoning authorities. Heartland recommends this report be submitted to local authorities, the WDNR, and USACE for final jurisdictional review and concurrence.

2.0 Methods

2.1 Wetlands

Wetlands were determined and delineated using the criteria and methods described in the USACE Wetlands Delineation Manual, T.R. Y-87-1 ("1987 Corps Manual") and the applicable *Regional Supplement to the Corps of Engineers Wetland Delineation Manual*. In addition, the *Guidance for Submittal of Delineation Reports to the St. Paul District USACE and the WDNR* (WDNR, 2015) was followed in completing the wetland delineation and report.

Determinations and delineations utilized available resources including the U.S. Geological Survey's (USGS) *WI 7.5 Minute Series (Topographic) Map* (Figure 2, Appendix A), the Natural Resource Conservation Service's (NRCS) Soil Survey Geographic Database (SSURGO), U.S. Department of Agriculture's (USDA) *Web Soil Survey* (Figure 3, Appendix A), the Wisconsin Department of Natural Resources' *Surface Water Data Viewer's* wetland indicator data layer (Figure 4, Appendix A), the WDNR's *Wisconsin Wetland Inventory* data layer (Figure 5, Appendix A), and aerial imagery available through the USDA Farm Service Agency's (FSA) National Agriculture Imagery Program (NAIP). The USGS *National Hydrography Dataset* is included on Figures 2 and 5, Appendix A.

Wetland determinations were completed on-site at sample points, often along transects, using the three (3) criteria (vegetation, soil, and hydrology) approach per the 1987 Corps Manual and the Regional Supplement. Procedures in these sources were followed to demonstrate that, under normal circumstances, wetlands were present or not present based on a predominance of hydrophytic vegetation, hydric soils, and wetland hydrology.

Recent weather conditions influence the visibility or presence of certain wetland hydrology indicators. An assessment of recent precipitation patterns helps to determine if climatic/hydrologic conditions were typical when the field investigation was completed. Therefore, a review of the antecedent precipitation in the three (3) months leading up to the field investigation was completed. Using a WETS analysis developed by the NRCS, the amounts of precipitation in these three (3) months were compared to averages and standard deviation thresholds over the past 30 years to generally represent if conditions encountered during the investigation were normal, wet, or dry. Recent precipitation events

in the week prior to the investigation were considered while interpreting wetland hydrology indicators. In some cases, the Palmer Drought Index was checked for long-term drought or moist conditions (NOAA, 2018).

The uppermost wetland boundary and sample points were identified and marked with wetland flagging and located with a Global Positioning System (GPS) capable of sub-meter accuracy. In some cases, wetland flagging was not utilized to mark the boundary and the location was only recorded with a GPS unit, particularly in active agricultural areas. The GPS data was then used to map the wetlands using ESRI ArcMap™ 10.6 software.

3.0 Results and Discussion

3.1 Desktop Review

Climatic Conditions

According to the WETS analysis using the previous three (3) months of precipitation data, conditions encountered at the time of the fieldwork were expected to be dry for the time of year (Appendix B). The Palmer Drought Index was checked on line and the long-term conditions at the time of the fieldwork were in the mild wetness range. Fieldwork was completed outside the dry-season based on long-term regional hydrology data utilized in the WebWIMP Climatic Water Balance web site.

General Topography and Land Use

West of York Valley Road, the topography within the Study Area was steeply sloping downhill to the east. East of York Valley Road, the topography was gently sloping to the east, towards an unnamed tributary of Kittleson Valley Creek. A topographic high of approximately 1,005 feet above mean sea level (msl) is present along the western boundary of the Study Area, and a topographic low of 930 feet above msl is present within the unnamed creek channel, which makes up a portion of the eastern boundary of the Study Area (Figures 2 and 6, Appendix A). Land cover and land use within the Study Area consists of woodlands, pasture, and agricultural outbuildings. Surrounding areas are primarily agricultural row cropping, pasture, and woodlands. General drainage is to the east towards the unnamed tributary of Kittleson Valley Creek.

Soil Mapping

Soils mapped by the NRCS Soil Survey within the Study Area and their hydric status are summarized in Table 1. Wetlands identified during the field investigation are located primarily within areas mapped as predominantly non-hydric soils (Figures 3 and 4, Appendix A).

Table 1. Summary of NRCS Mapped Soils within the Study Area

Soil symbol: Soil Unit Name	Soil Unit Component	Soil Unit Component Percentage	Landform	Hydric status
1130F: Lacrescent-Dunbarton complex, very stony, 30 to 60 percent slopes	Lacrescent-Very stony	50-70	Hills	No
	Dunbarton-Very stony	20-40	Hills	No
	Elevasil-St peter	1-10	Hills	No
	Boone-St peter	1-10	Hills	No
EmE2: Elkmound sandy loam, 20 to 30 percent slopes, eroded	Elkmound	100	Hills	No
HuA: Huntsville silt loam, 0 to 2 percent slopes	Huntsville	95	Flood plains	No
	Otter	5	Depressions	Yes
RaA: Radford silt loam, 0 to 3 percent slopes	Radford	80-95	Flood plains, drainageways	No
	Otter	2-8	Flood plains, drainageways	Yes
	Sable	2-5	Depressions	Yes
	Sebewa	1-4	Depressions	Yes
	Drummer	0-3	Depressions	Yes
SvD2: Seaton silt loam, driftless valley, 12 to 20 percent slopes, moderately eroded	Seaton	90-100	Knolls	No
	Greenridge	0-4	Knolls	No
	Council	0-3	Knolls	No
	Lambeau	0-3	Knolls	No

Wetland Mapping

The Wisconsin Wetlands Inventory (WWI) mapping (Figure 5, Appendix A) does not depict any wetlands within the Study Area. The NHD depicts the unnamed tributary of Kittleson Valley Creek along the eastern boundary of the Study Area.

3.2 Field Review

Four (4) wetlands were identified and delineated within the Study Area. Wetland determination data sheets (Appendix C) were completed at 7 sample points that were representative of the wetland and upland conditions near the boundary and where potential wetlands may be present based on the desktop review and field reconnaissance. Appendix D provides photographs, typically at the sample point locations of the wetlands and adjacent uplands. The wetland boundary and sample point locations are shown on Figure 6 (Appendix A) and the wetlands are summarized in Table 2 and detailed in the following sections.

Table 2. Summary of Wetlands Identified within the Study Area

Wetland ID	Wetland Description	*Surface Water Connections	*NR151 Protective Area	Acreage (on-site)
W-1	Sedge Meadow Stream Terrace	Contiguous to the unnamed tributary of Kittleson Valley Creek	Moderately susceptible, 50 feet	0.05
W-2	Sedge Meadow Stream Terrace	Contiguous to the unnamed tributary of Kittleson Valley Creek	Moderately susceptible, 50 feet	0.02
W-3	Sedge Meadow Depression	Potentially isolated	Moderately susceptible, 50 feet	0.01
W-4	Sedge Meadow Swale / Stream Terrace	Contiguous to the unnamed tributary of Kittleson Valley Creek	Moderately susceptible, 50 feet	0.07
**Classification based on Heartland's professional opinion. Jurisdictional authority of wetland and waterway protective areas under NR 151 lies with the WDNR. Local zoning authorities may have additional restrictions. USACE has authority for determining federal jurisdiction of wetlands and waterways.*				**0.15**

Wetlands 1, 2, and 4 (W-1, W-2, and W-4)

Wetlands 1, 2, and 4 (W-1, W-2, and W-4) are a combined 0.14-acres of sedge meadow vegetation located on stream terraces, swales, and/or stream meanders adjacent to the unnamed tributary of Kittleson Valley Creek.

Dominant vegetation observed in W-1, W-2, and W-4 consisted of fox sedge (*Carex vulpinoidea,* FACW) and awl-fruited sedge (*Carex stipata,* OBL).

The Redox Dark Surface (F6) hydric soil indicator was noted at sample points completed in W-1, W-2, and W-4.

The primary wetland hydrology indicators of High Water Table (A2) and Saturation (A3) were noted within W-1, W-2, and W-4, while secondary indicators included Geomorphic Position (D2) and a positive FAC-Neutral Test (D5). There is some evidence of groundwater discharge along the creek and these wetlands may be partially hydrologically supported by groundwater discharge.

Wetlands W-1, W-2, and W-4 are contiguous with the unnamed tributary of Kittleson Valley Creek, which makes up a portion of the eastern boundary of the Study Area. The boundaries of W-1, W-2, and W-4 generally followed poorly to moderately defined topographic breaks.

Wetland 3 (W-3)

Wetland W-3 is a small (0.01-acre) depression that is separated from the unnamed tributary of Kittleson Valley Creek and its adjacent wetlands by a berm.

Dominant vegetation observed in W-3 included fox sedge (*Carex vulpinoidea,* FACW), awl-fruited sedge (*Carex stipata,* OBL), and Kentucky bluegrass (*Poa pratensis,* FAC).

The Redox Dark Surface (F6) hydric soil indicator was observed within W-3, which is consistent with depressions within the NRCS-mapped Huntsville silt loam soil type.

No primary wetland hydrology indicators were noted in W-2, however the secondary indicators of Geomorphic Position (D2), and a positive FAC-Neutral Test (D5) were noted. The uppermost 3 inches of soil were saturated due to recent precipitation.

The boundaries of W-3 and followed a poorly defined topographic break and were mainly determined by the presence/absence of hydrophytic vegetation.

3.3 Other Considerations

This report is limited to the identification and delineation of wetlands within the Study Area. Other regulated environmental resources that result in land use restrictions may be present within the Study Area that were not evaluated by Heartland (e.g. navigable waterways, floodplains, cultural resources, and threatened or endangered species).

Wisconsin Act 183 provides exemptions to permitting requirements for certain nonfederal wetlands. Nonfederal wetlands are wetlands that are not subject to federal jurisdiction. Exemptions apply to projects in urban areas with wetland impacts up to 1-acre per parcel. An urban area is defined as an incorporated area; an area within ½ mile of an incorporated area; or an area served by a sewerage system. Exemptions for nonfederal wetlands also apply to projects in rural areas with wetland impacts up to three (3) acres per parcel. Exemptions in rural areas only apply to structures with an agricultural purpose such as buildings, roads, and driveways. The determination of federal and nonfederal wetlands MUST be made by the USACE through an Approved Jurisdictional Determination (AJD). This report may be submitted to the USACE to assist with their determination.

Wis. Adm. Code NR 151 ("NR 151") requires that a "protective area" (buffer) be determined from the Ordinary High-Water Mark (OHWM) of lakes, streams and rivers, or at the delineated boundary of wetlands. Per NR 151.12, the protective area width for "less susceptible" wetlands is determined by using 10% of the average wetland width, no less than 10 feet or more than 30 feet. "Moderately susceptible" wetlands, lakes, and perennial and intermittent streams identified on recent mapping require a protective area width of 50 feet; while "highly susceptible wetlands" are associated with outstanding or exceptional resource waters in areas of special natural resource interest and require protective area width of 75 feet. Table 2 above lists the potential wetland buffers per NR 151 for each wetland identified based on Heartland's professional opinion. Please note that jurisdictional authority on wetland and waterway protective areas under NR 151 lies with the WDNR. Local zoning authorities and regional planning organizations may have additional land use restrictions within or adjacent to wetlands.

4.0 Conclusion

Heartland completed a wetland determination and delineation within the Krueger Property on May 7, 2021 at the request of Brett Krueger. Fieldwork was completed by Scott Fuchs, Environmental Scientist (see Appendix E, Qualifications). The Study Area lies in Section 34, T5N, R6E, Town of Perry, Dane County, WI.

Three (3) wetland areas were delineated and mapped within the 4.64-acre Study Area. The wetlands, which may be classified as sedge meadows along an unnamed tributary to Kittleson Valley Creek and an isolated sedge meadow depression, total approximately 0.15 acres within the Study Area.

Wetlands and waterways discussed in this report may be subject to federal regulation under the jurisdiction of the U.S. Army Corps of Engineers (USACE), state regulation under the jurisdiction of the WDNR, and the local zoning authority. Heartland recommends this report be submitted to the USACE and WDNR for final jurisdictional review and concurrence. Review by local authorities may be necessary for determination of any applicable zoning and setback restrictions.

Heartland recommends that all applicable regulatory agency reviews and permits are obtained prior to beginning work within the Study Area or within or adjacent to wetlands or waterways. Heartland can assist with evaluating the need for additional environmental reviews, surveys, or regulatory agency coordination in consideration of the proposed activity and land use as requested but is outside of the scope of the wetland delineation.

Experienced and qualified professionals completed the wetland determination and delineation using standard practices and professional judgment. Wetland boundaries may be affected by conditions present within the Study Area at the time of the fieldwork. All final decisions on wetlands and their boundaries are made by the USACE, the WDNR, and/or sometimes a local unit of government. Wetland determination and boundary reviews by regulatory agencies may result in modifications to the findings presented to the Client. These modifications may result from varying conditions between the time the wetland delineation was completed and the time of the review. Factors that may influence the

findings may include but not limited to precipitation patterns, drainage modifications, changes or modification to vegetation, and the time of year.

5.0 References

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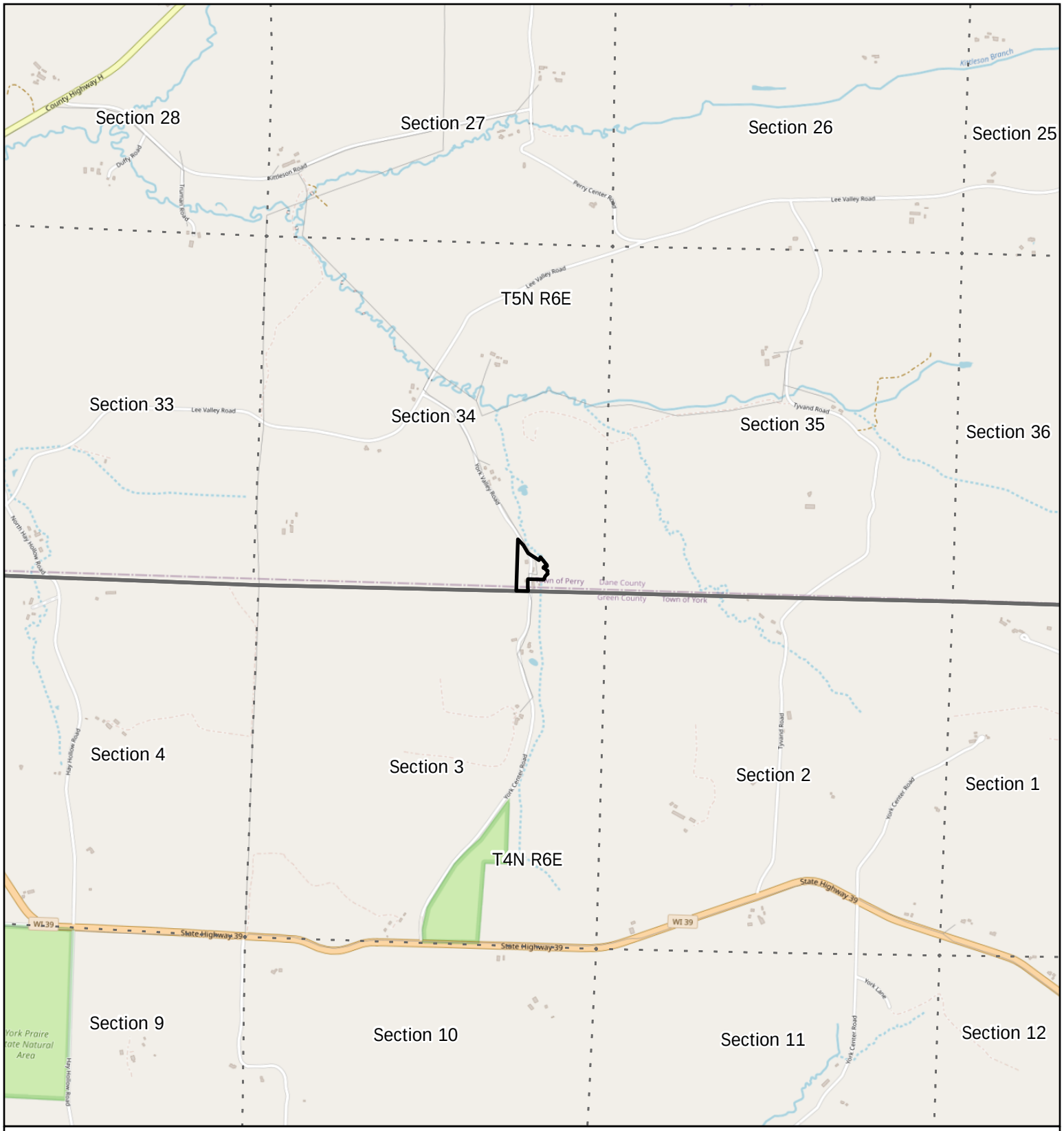
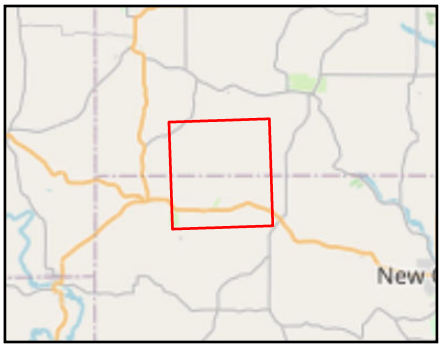
Appendix A | Figures





Study Area (4.64 ac)

Township

Section

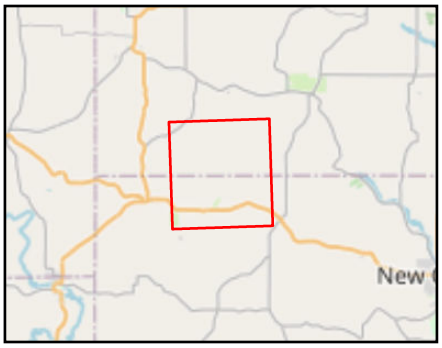
0 1,000 2,000 Ft

Heartland
ECOLOGICAL GROUP INC

Figure 1. Project Location

Krueger Property
Project #20210478
T5N, R6E, S34
T Perry, Dane Co

OpenStreetMap
ESRI



Study Area (4.64 ac)
Township
Section

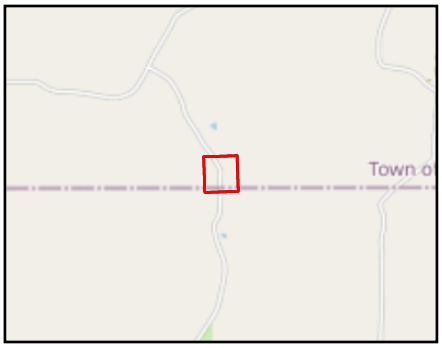
0 1,000 2,000 Ft

Heartland ECOLOGICAL GROUP INC

Figure 2. USGS Topography

Krueger Property
Project #20210478
T5N, R6E, S34
T Perry, Dane Co

USGSTopo
USGS



Study Area (4.64 ac)

NRCS Soil Survey Data

- Predominantly Hydric (85-100%)
- Partially Hydric (15-84%)
- Predominantly Non-Hydric (1-14%)
- Non-Hydric (0%)

0 50 100 Ft

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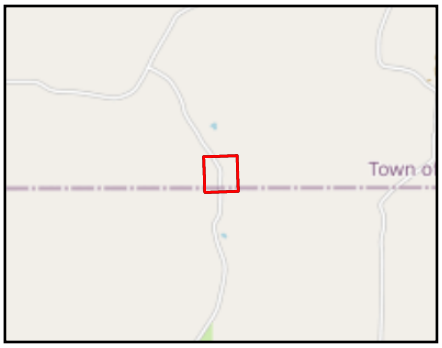
Figure 3. NRCS Hydric Soils

Krueger Property
Project #20210478
T5N, R6E, S34
T Perry, Dane Co

2020 NAIP
NRCS



Study Area (4.64 ac)

Maximum Extent Wetland Indicators

0 50 100 Ft

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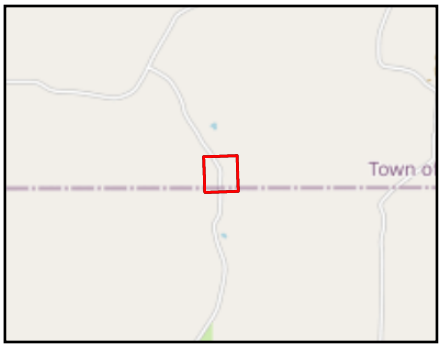
Figure 4. SWDV
Wetland Indicators

Krueger Property
Project #20210478
T5N, R6E, S34
T Perry, Dane Co

2020 NAIP
WDNR



Study Area (4.64 ac)
WWI Wetlands (No Features in Map Extent)
NHD Waterway

0 50 100 Ft

Heartland
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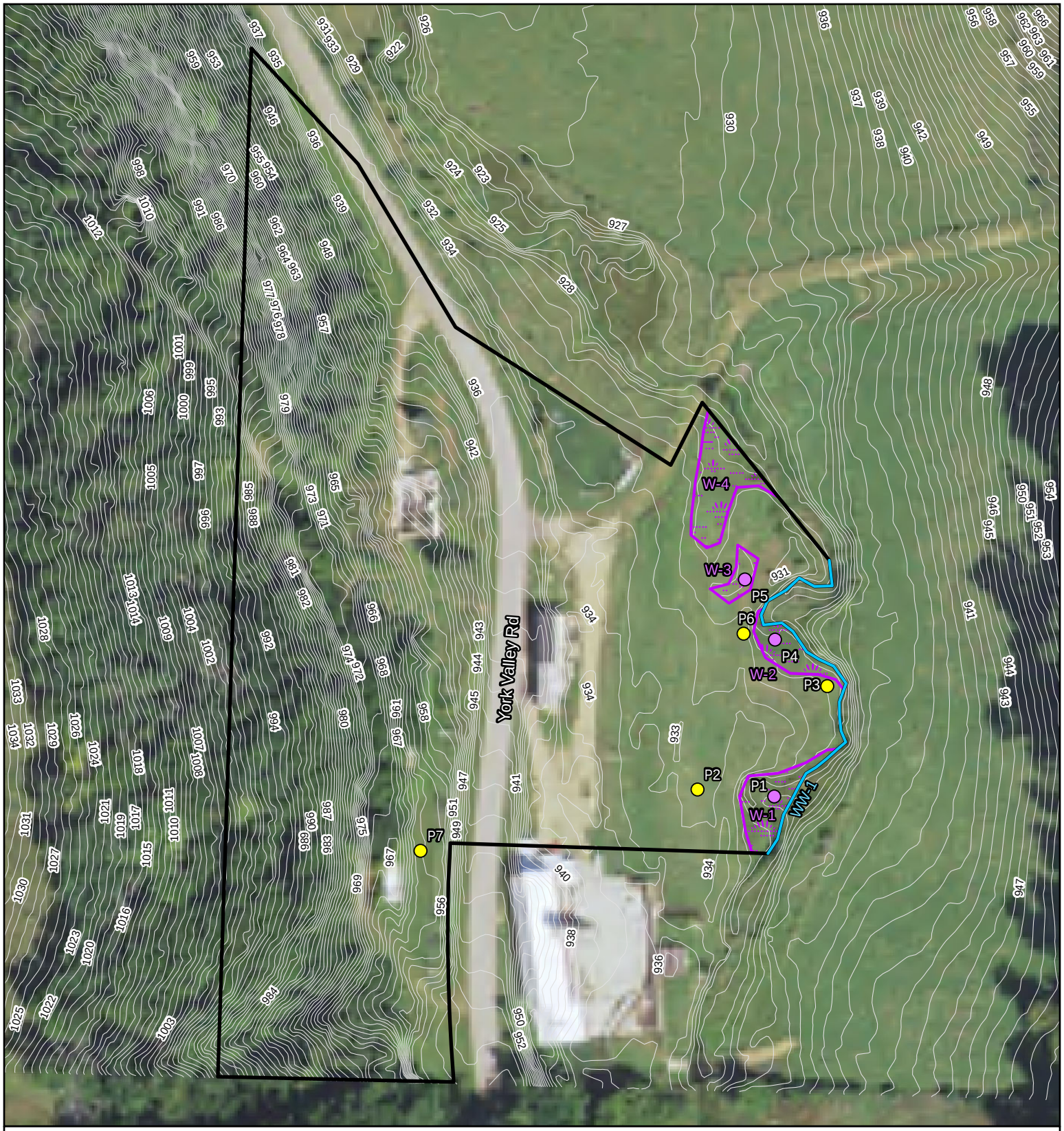
Figure 5. Wisconsin Wetland Inventory

Krueger Property
Project #20210478
T5N, R6E, S34
T Perry, Dane Co

2020 NAIP
WDNR, USGS



Study Area (4.64 ac)

Dane Co 1' Contours

Waterways

Field Delineated Wetlands (0.15 ac)

Sample Points

Upland

Wetland

0 50 100 Ft

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Figure 6. Field Delineated Wetlands

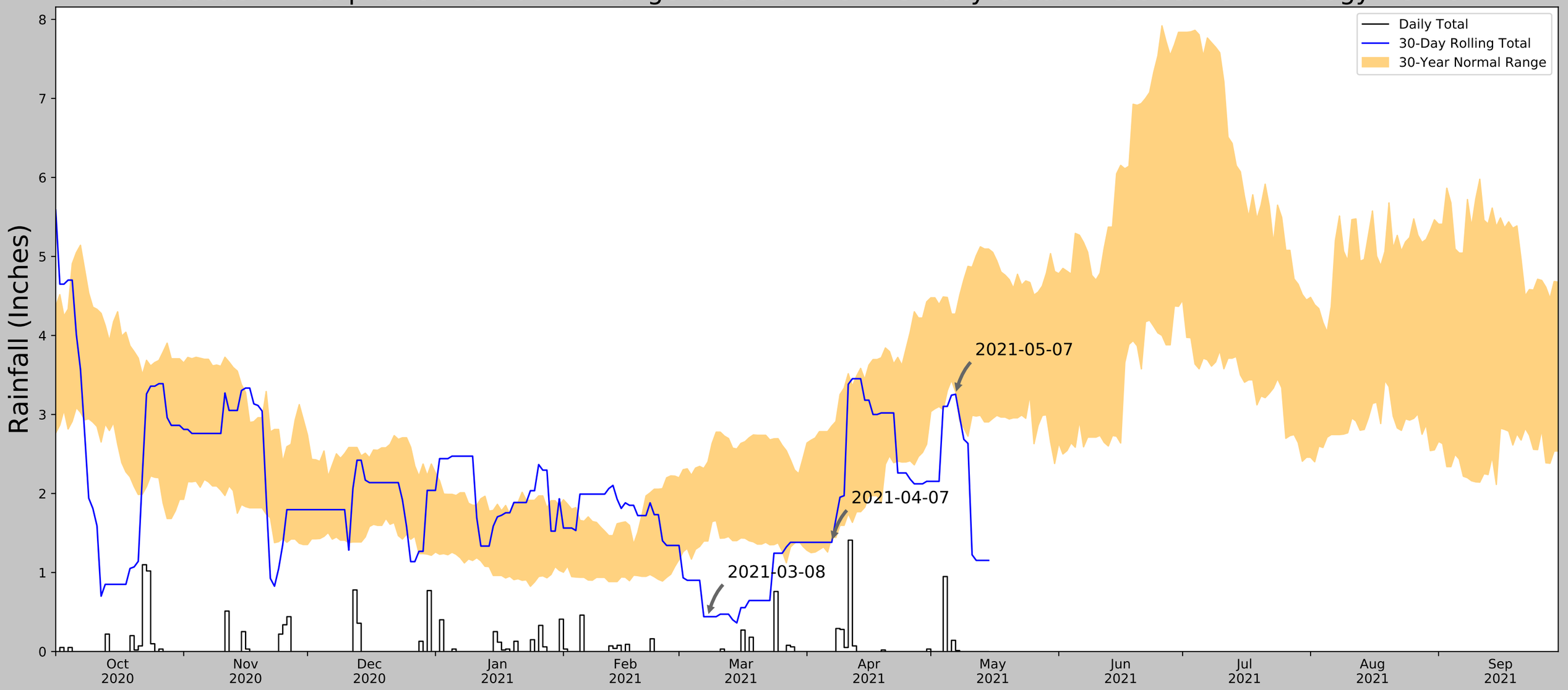
Krueger Property
Project #20210478
T5N, R6E, S34
T Perry, Dane Co

2020 NAIP
Dane Co, HEG

Brett Krueger
Krueger Property
Project #: 20210478
June 21, 2021

Appendix B | WETS Analysis

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	42.85819, -89.76317
Observation Date	2021-05-07
Elevation (ft)	931.53
Drought Index (PDSI)	Mild wetness (2021-04)
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2021-05-07	3.288189	4.270866	3.255906	Dry	1	3	3
2021-04-07	1.452756	2.853543	1.38189	Dry	1	2	2
2021-03-08	1.398032	2.400394	0.440945	Dry	1	1	1
Result							Drier than Normal - 6

Figure and tables made by the
Antecedent Precipitation Tool
Version 1.0

Written by Jason Deters
U.S. Army Corps of Engineers

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days (Normal)	Days (Antecedent)
MONROE WWTP	42.5992, -89.6669	991.142	18.55	59.612	9.453	10912	89
NEW GLARUS 1.9 NNW	42.8363, -89.6535	901.903	5.758	29.627	2.762	0	1
MOUNT HOREB 3.6 SSW	42.9616, -89.7642	1162.074	7.145	230.544	4.863	288	0
MT HOREB	42.9881, -89.7419	1030.84	9.04	99.31	4.966	152	0
BELLEVILLE 1.7 ESE	42.8489, -89.5068	873.032	13.002	58.498	6.611	1	0

Brett Krueger
Krueger Property
Project #: 20210478
June 21, 2021

Appendix C | Wetland Determination Data Sheets

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Krueger Property | City/County: T Perry / Dane Co | Sampling Date: 5/7/2021

Applicant/Owner: Brett Krueger | State: WI | Sampling Point: P1

Investigator(s): Scott Fuchs, Heartland Ecological Group | Section, Township, Range: T5N, R6E, S34

Landform (hillside, terrace, etc.): Old Stream Meander | Local relief (concave, convex, none): Concave

Slope (%): 1 - 3 | Lat: | Long: | Datum:

Soil Map Unit Name: Huntsville silt loam (HuA) | NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
A WETS analysis was performed and indicates that conditions are in the drier than normal range. Sample point recorded within an old stream meander - low lying area adjacent to current stream channel.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5ft)			
1. *Carex vulpinoidea*	80	Yes	FACW
2. *Pastinaca sativa*	10	No	UPL
3. *Glyceria grandis*	5	No	OBL
4. *Glechoma hederacea*	3	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
	98	=Total Cover	
Woody Vine Stratum (Plot size: 30ft)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	80	x 2 =	160
FAC species	0	x 3 =	0
FACU species	3	x 4 =	12
UPL species	10	x 5 =	50
Column Totals:	98 (A)		227 (B)

Prevalence Index = B/A = 2.32

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
Vegetation within the old meander dominated by Car vul.

SOIL

Sampling Point: P1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 12	10YR 2/1	95	10YR 3/6	5	C	M	Loamy/Clayey	MSiL
12 - 20	10YR 2/1	100					Loamy/Clayey	SiL

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ 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)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes X No ___ Depth (inches): 10

Saturation Present? Yes X No ___ Depth (inches): 8

(includes capillary fringe)

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Some evidence of groundwater discharge along the stream.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Krueger Property City/County: T Perry / Dane Co Sampling Date: 5/7/2021

Applicant/Owner: Brett Krueger State: WI Sampling Point: P2

Investigator(s): Scott Fuchs, Heartland Ecological Group Section, Township, Range: T5N, R6E, S34

Landform (hillside, terrace, etc.): Gentle sideslope Local relief (concave, convex, none): None/Linear

Slope (%): 1 - 3 Lat: Long: Datum:

Soil Map Unit Name: Huntsville silt loam (HuA) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
A WETS analysis was performed and indicates that conditions are in the drier than normal range. Sample point recorded within a pasture ~30 feet west of the old stream meander.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5ft)			
1. *Lolium perenne*	90	Yes	FACU
2. *Poa pratensis*	25	Yes	FAC
3. *Taraxacum officinale*	5	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	120 =Total Cover		
Woody Vine Stratum (Plot size: 30ft)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	25	x 3 =	75
FACU species	95	x 4 =	380
UPL species	0	x 5 =	0
Column Totals:	120 (A)		455 (B)

Prevalence Index = B/A = 3.79

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ____ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
Pasture vegetation present. Landowner says that this area sometimes used for pasture.

SOIL

Sampling Point: P2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/1	100					Loamy/Clayey	SiL
6 - 18	10YR 2/2	100					Loamy/Clayey	SiL
18 - 24	10YR 2/2	95	10YR 3/6	5	C	M	Loamy/Clayey	SiL

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ 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)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 24

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No wetland hydrology indicators observed.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Krueger Property City/County: T Perry / Dane Co Sampling Date: 5/7/2021

Applicant/Owner: Brett Krueger State: WI Sampling Point: P3

Investigator(s): Scott Fuchs, Heartland Ecological Group Section, Township, Range: T5N, R6E, S34

Landform (hillside, terrace, etc.): Stream terrace Local relief (concave, convex, none): Concave

Slope (%): 3 - 5 Lat: Long: Datum:

Soil Map Unit Name: Huntsville silt loam (HuA) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
A WETS analysis was performed and indicates that conditions are in the drier than normal range. Sample point recorded on stream terrace ~10 feet west of the stream channel.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5ft)			
1. *Glechoma hederacea*	50	Yes	FACU
2. *Lolium perenne*	20	Yes	FACU
3. *Poa pratensis*	20	Yes	FAC
4. *Trifolium pratense*	10	No	FACU
5. *Taraxacum officinale*	3	No	FACU
6.			
7.			
8.			
9.			
10.			
	103	=Total Cover	
Woody Vine Stratum (Plot size: 30ft)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	20	x 3 =	60
FACU species	83	x 4 =	332
UPL species	0	x 5 =	0
Column Totals:	103 (A)		392 (B)
Prevalence Index = B/A =			3.81

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ____ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
Upland pasture grasses/vegetation.

SOIL

Sampling Point: P3

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 10	10YR 2/1	92	10YR 3/6	8	C	M	Loamy/Clayey	SiL
10 -18	10YR 2/1	92	10YR 3/6	8	C	M	Loamy/Clayey	SiCL
18 - 24	10YR 2/1	90	10YR 3/6	5	C	M	Loamy/Clayey	SiC (w/20% gravel)
			10YR 4/6	5	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ 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)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes X	No ___	Depth (inches): 20
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 18

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Krueger Property City/County: T Perry / Dane Co Sampling Date: 5/7/2021

Applicant/Owner: Brett Krueger State: WI Sampling Point: P4

Investigator(s): Scott Fuchs, Heartland Ecological Group Section, Township, Range: T5N, R6E, S34

Landform (hillside, terrace, etc.): Stream terrace Local relief (concave, convex, none): Concave

Slope (%): 3 - 5 Lat: Long: Datum:

Soil Map Unit Name: Huntsville silt loam (HuA) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
A WETS analysis was performed and indicates that conditions are in the drier than normal range. Sample point recorded on a stream terrace. Wetland area consits of a small area adjacent to the stream channel.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5ft)			
1. *Carex stipata*	40	Yes	OBL
2. *Carex vulpinoidea*	40	Yes	FACW
3. *Phalaris arundinacea*	20	No	FACW
4. *Pastinaca sativa*	5	No	UPL
5. *Poa pratensis*	5	No	FAC
6. *Glechoma hederacea*	3	No	FACU
7.			
8.			
9.			
10.			
	113	=Total Cover	
Woody Vine Stratum (Plot size: 30ft)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	40	x 1 =	40
FACW species	60	x 2 =	120
FAC species	5	x 3 =	15
FACU species	3	x 4 =	12
UPL species	5	x 5 =	25
Column Totals:	113 (A)		212 (B)

Prevalence Index = B/A = 1.88

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
Sedge meadow vegetation present adjacent to the creek channel.

SOIL

Sampling Point: P4

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 2/1	100					Loamy/Clayey	SiL
6 - 18	10YR 2/1	90	10YR 3/6	10	C	M	Loamy/Clayey	SiL

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Gravel

Depth (inches): 18

Hydric Soil Present? **Yes** X **No** ___

Remarks:
Could not sample below 18 inches due to rock/gravel.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ 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)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___		
Water Table Present?	Yes X	No ___	Depth (inches): 14		
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 12	**Wetland Hydrology Present?**	**Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
There is some evidence of groundwater discharge along the creek channel. This wetland are potentially supported by groundwater discharge.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Krueger Property | City/County: T Perry / Dane Co | Sampling Date: 5/7/2021

Applicant/Owner: Brett Krueger | State: WI | Sampling Point: P5

Investigator(s): Scott Fuchs, Heartland Ecological Group | Section, Township, Range: T5N, R6E, S34

Landform (hillside, terrace, etc.): Depression | Local relief (concave, convex, none): Concave

Slope (%): 1 - 3 | Lat: | Long: | Datum:

Soil Map Unit Name: Huntsville silt loam (HuA) | NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology X naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
A WETS analysis was performed and indicates that conditions are in the drier than normal range. Sample point recorded in a crescent-shaped depression that is separated from the stream channel by a berm.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5ft)			
1. *Carex vulpinoidea*	30	Yes	FACW
2. *Carex stipata*	30	Yes	OBL
3. *Poa pratensis*	25	Yes	FAC
4. *Phalaris arundinacea*	10	No	FACW
5. *Pastinaca sativa*	3	No	UPL
6. *Rumex crispus*	3	No	FAC
7.			
8.			
9.			
10.			
	101	=Total Cover	
Woody Vine Stratum (Plot size: 30ft)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	40	x 2 =	80
FAC species	28	x 3 =	84
FACU species	0	x 4 =	0
UPL species	3	x 5 =	15
Column Totals:	101 (A)		209 (B)

Prevalence Index = B/A = 2.07

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
Wetland sedges dominating within the depression.

SOIL

Sampling Point: P5

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 14	10YR 2/1	95	10YR 3/6	5	C	M	Loamy/Clayey	SiL
14 - 22	10YR 3/1	90	10YR 3/6	10	C	M	Loamy/Clayey	SiL

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ 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)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___		
Water Table Present?	Yes ___	No X	Depth (inches): ___		
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 3	**Wetland Hydrology Present?**	**Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Uppermost 3 inches of soil saturated from recent rain but no hydrology indicators related to a water table observed, which is unexpected. Climate conditions have been drier than normal this spring - naturally problematic.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Krueger Property City/County: T Perry / Dane Co Sampling Date: 5/7/2021

Applicant/Owner: Brett Krueger State: WI Sampling Point: P6

Investigator(s): Scott Fuchs, Heartland Ecological Group Section, Township, Range: T5N, R6E, S34

Landform (hillside, terrace, etc.): Berm Local relief (concave, convex, none): Convex

Slope (%): 3 - 5 Lat: Long: Datum:

Soil Map Unit Name: Hunstville silt loam (HuA) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area within a Wetland?** **Yes** **No X**
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks:
A WETS analysis was performed and indicates that conditions are in the drier than normal range. Sample point recorded on a berm just west of the creek channel.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5ft)			
1. *Lolium perenne*	80	Yes	FACU
2. *Trifolium pratense*	15	No	FACU
3. *Poa pratensis*	10	No	FAC
4. *Taraxacum officinale*	10	No	FACU
5. *Pastinaca sativa*	5	No	UPL
6. *Glechoma hederacea*	5	No	FACU
7.			
8.			
9.			
10.			
	125	=Total Cover	
Woody Vine Stratum (Plot size: 30ft)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	110	x 4 =	440
UPL species	5	x 5 =	25
Column Totals:	125 (A)		495 (B)

Prevalence Index = B/A = 3.96

Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
- 2 - Dominance Test is >50%
- 3 - Prevalence Index is ≤3.0[1]
- 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** **No X**

Remarks: (Include photo numbers here or on a separate sheet.)
Pasture vegetation present on the berm.

SOIL

Sampling Point: P6

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 20	10YR 2/2	100					Loamy/Clayey	SiL

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ 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)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No wetland hydrology indicators observed.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Krueger Property City/County: T Perry / Dane Co Sampling Date: 5/7/2021

Applicant/Owner: Brett Krueger State: WI Sampling Point: P7

Investigator(s): Scott Fuchs, Heartland Ecological Group Section, Township, Range: T5N, R6E, S34

Landform (hillside, terrace, etc.): Terrace / Old Driving Lane Local relief (concave, convex, none): None

Slope (%): 1 - 3 Lat: Long: Datum:

Soil Map Unit Name: Radford silt loam (RaA) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
A WETS analysis was performed and indicates that conditions are in the drier than normal range. Sample point recorded within an old driving lane present on a steep sideslope. Obviously not a wetland area, but documented due to wetland indicator soils mapped in this location.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus americana*	10	Yes	FACW
2. *Juglans nigra*	10	Yes	FACU
3. *Acer negundo*	10	Yes	FAC
4.			
5.			
	30	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15ft)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
Herb Stratum (Plot size: 5ft)			
1. *Poa pratensis*	60	Yes	FAC
2. *Trifolium repens*	15	No	FACU
3. *Viola sororia*	15	No	FAC
4. *Erigeron annuus*	10	No	FACU
5. *Taraxacum officinale*	5	No	FACU
6. *Arctium minus*	2	No	FACU
7. *Leonurus cardiaca*	2	No	UPL
8.			
9.			
10.			
	109	=Total Cover	
Woody Vine Stratum (Plot size: 30ft)			
1.			
2.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	85	x 3 =	255
FACU species	42	x 4 =	168
UPL species	2	x 5 =	10
Column Totals:	139 (A)		453 (B)

Prevalence Index = B/A = 3.26

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

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

SOIL

Sampling Point: P7

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 3/2	100					Loamy/Clayey	L

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Compacted Gravel

Depth (inches): 6

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

Could not sample below 6 inches due to compacted gravel.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ 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)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No wetland hydrology indicators observed.

Brett Krueger
Krueger Property
Project #: 20210478
June 21, 2021

Appendix D | Site Photographs

Photo #1 Sample point P1

Photo #2 Sample point P1

Photo #3 Sample point P1

Photo #4 Sample point P1

Photo #5 Sample point P2

Photo #6 Sample point P2

Photo #7 Sample point P2

Photo #8 Sample point P2

Photo #9 Sample point P3

Photo #10 Sample point P3

Photo #11 Sample point P3

Photo #12 Sample point P3

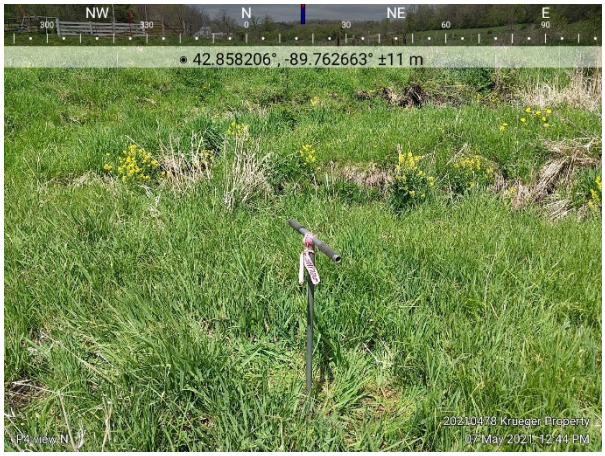


Photo #13 Sample point P4

Photo #14 Sample point P4

Photo #15 Sample point P4

Photo #16 Sample point P4

Photo #17 Sample point P5

Photo #18 Sample point P5

Photo #19 Sample point P5

Photo #20 Sample point P5

Photo #21 Sample point P6

Photo #22 Sample point P6

Photo #23 Sample point P6

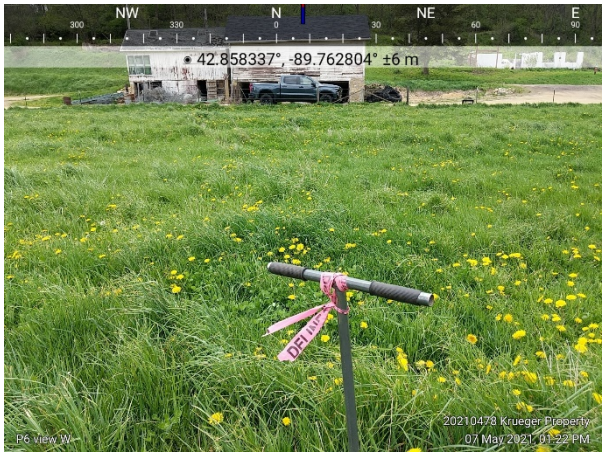


Photo #24 Sample point P6

Photo #25 Sample point P7

Photo #26 Sample point P7

Photo #27 Sample point P7

Photo #28 Sample point P7

Photo #29 Waterway

Photo #30 Waterway

Photo #31 Waterway

Brett Krueger
Krueger Property
Project #: 20210478
June 21, 2021

Appendix E | Delineator Qualifications

Scott Fuchs

Environmental Scientist
506 Springdale Street
Mount Horeb, WI 53572
scott@heartlandecological.com
(608) 490-2450

Scott is an environmental scientist with expertise in botany, wetland assessment, natural plant communities of Wisconsin, and geographic information systems (GIS). Scott has been involved in the field of ecological restoration and conservation for over five years working as a field restoration ecologist and crew leader, ecology research assistant, wetland delineator, and GIS administrator. Since joining Heartland, Scott has provided support for completion of hundreds of wetland delineations and determinations, served as lead delineator on numerous delineations that were subsequently confirmed by WI DNR wetland regulatory staff, prepared wetland and waterway permit applications to the DNR and USACE, and performed vegetation and hydrology monitoring and reporting for wetland mitigation projects. Scott also provides technical support by assisting with natural area restoration planning, monitoring and management, developing GIS based project mapping, collecting and interpreting historic aerial imagery, and performing analysis of GIS data sets.

His experience includes: wetland determination and delineation, long-term vegetation and wildlife monitoring and reporting, collecting and processing monitoring well hydrology data, wetland mitigation bank viability analysis and planning, preparing state artificial wetland exemption requests, preparing wetland and waterway permit applications, compiling wetland delineation reports, rare species surveys, invasive species control, conducting prescribed burns, and invasive herbaceous, shrub, and tree removal.

Education

BS, Biology (Emphasis in Ecology), University of Wisconsin – Whitewater, Whitewater, WI, 2015

Basic Wetland Delineation Training, Continuing Education and Extension, UW-La Crosse, La Crosse WI, 2019

Advanced Wetland Delineation Training, Continuing Education and Extension, UW-La Crosse, La Crosse WI, 2019

Critical Methods in Wetland Delineation, Continuing Education and Extension, UW-La Crosse, Madison WI, 2019, 2020, 2021

Certifications and Training

Wildland Fire Fighter Type 2, National Wildfire Coordinating Group, Incident Management Specialists, LLC, Madison WI, 2017

Level One Chainsaw Safety Training, Forest Industry Safety & Training Alliance, Eau Claire WI, 2016

Certified Pesticide Applicator (Category 6), Wisconsin Department of Trade and Consumer Protection, Madison WI, 2016

Project Experience

Wetland Determinations and Delineations

Nuemann Development: Port Washington Road Subdivision, Ozaukee Co., WI
Performed a wetland determination and delineation within a 50-acre agricultural field. Compiled historic information to support an approved WI Act 183 artificial wetland exemption for wetlands located on site.

1520 LLC: Port Washington Road Commercial Development, Ozaukee Co., WI
Performed a wetland determination and delineation within a highly disturbed 3-acre parcel containing clayey soils that was subsequently confirmed by WI DNR wetland regulatory staff. Compiled historic information to support an approved WI Act 183 artificial wetland exemption for wetlands located on site.

Private Landowner: Bear Creek Wetland Delineation and Driveway Crossing Permitting, Monroe Co., WI
Performed a wetland determination and delineation along a section of Bear Creek with several old oxbows to support culvert installation and minor wetland disturbance permitting for the purposes of installation of a rural driveway. This wetland delineation was subsequently confirmed by WI DNR wetland regulatory staff and was utilized in obtaining necessary state and federal permits. Prepared and obtained culvert installation and general wetland disturbance permits from the WI DNR and USACE.

Hydrology Monitoring Well Data Analysis

Wisconsin DNR: Soik ILF Mitigation Site, Portage County, WI
Performed collection and processing of data from 14 monitoring wells present on a 60-acre ILF mitigation site. Performed analysis of hydrology data to determine if the site's wetland hydrology standard was met. Summarized results and created graphical representations of hydrology monitoring for end-of-year reporting to the WDNR and USACE.

Bear Development: Barnes Prairie Mitigation Bank Site, Kenosha Co., WI
Performed collection and processing of data from 46 hydrology monitoring wells located throughout a 230-acre agricultural field. Analyzed data to determine if wetland hydrology was present in the location of the sampling wells. Produced graphical representations of precipitation and ground water level data.

Wisconsin DNR: Evansville ILF Mitigation Bank Site, Rock Co., WI
Performed collection and processing of data from 9 hydrology monitoring wells within agricultural fields, disturbed wet meadow, and shrub-carr communities across a 40-acre site. Analyzed data to determine if wetland hydrology was present in the location of the sampling wells and to compile baseline information prior to wetland restoration work. Produced graphical representations of precipitation and ground water level data.

Vegetation, Wildlife, and Rare Species Monitoring

Wisconsin DNR: Soik ILF Mitigation Site, Portage County, WI
Established quantitative vegetation monitoring plots and performed vegetation monitoring of a 60-acre wetland mitigation bank in Wisconsin's central sands region. Vegetation monitoring was completed to assess progression of the site towards meeting regulatory performance standards. Vegetation monitoring including sample plot surveys and timed meander surveys. The results were summarized to assess the various performance metrics across a variety of wetland vegetative community and compensation types.

Kreyer Creek Compensatory Wetland Mitigation Bank Site, Monroe County, WI
Conducted quantitative vegetation monitoring of this 200+ acre compensatory wetland mitigation site. Vegetation monitoring was completed to assess progression of the site towards meeting regulatory performance standards. Vegetation monitoring including sample plot surveys and timed meander surveys. The results were summarized to assess the various performance metrics including florist quality assessments and diversity, invasive and noninvasive species relative cover, and prevalence indices of hydrophytic vegetation. The vegetation data and results were incorporate into the annual monitoring report required by the U.S. Army Corps of Engineers and Interagency Review Team.

Nantucket Conservation Foundation: Head of the Plains, Nantucket County, MA
Conducted vegetation monitoring, small mammal live-trapping, and insect pitfall trapping to collect data that is being used in a longitudinal study exploring the viability of different ecological management and restoration techniques in sandplain grassland habitat, a globally rare ecological community.

Nantucket Conservation Foundation: Head of the Plains, Nantucket County, MA
Installed acoustic bat monitoring devices and regularly downloaded the recorded data to determine the presence of different bat species. Assisted in mist-netting and radio telemetry tracking of federally threatened northern long-eared bats. Performed emergence counts of bat roosting locations discovered via radio telemetry tracking.

Nantucket Conservation Foundation: Coatue, Nantucket County, MA
Conducted vegetation monitoring for a graduate level study investigating the effects of cormorant nesting on plant communities in remote sand dune/shoal habitats.

Ecological Restoration and Invasive Species Management

Big Hollow Compensatory Wetland Mitigation Bank, Sauk County, WI
Assisted with the development of a Compensation Site Plan (CSP) for a nearly 200-acre compensatory wetland mitigation bank site as part of the Mitigation Banking Instrument (MBI). Completed various technical components of the CSP including assessment of the overall site characteristics and history, vegetation restoration plan, development of regulatory performance standards, and monitoring and management plan. Completed all site mapping and plans utilizing GIS.

Good Oak Ecological Services, Numerous Locations Throughout Dane County and Surrounding Areas, WI
Performed invasive species management and ecological restoration activities in prairie, oak savanna, and oak woodland habitats throughout Dane County and surrounding areas. Activities included chemical and mechanical control of invasive species, invasive brush and tree removal with chainsaws and brush cutters, prescribed burns on small to medium (1-15 acres) sized prairies and oak woodlands, native vegetation seeding, and erosion control installation.

UW-Madison, UW-Madison Lakeshore Preserve, Dane County, WI
Performed invasive species management on thistle, garlic mustard, dame's rocket, and porcelain berry via chemical spraying and cut-and-treat methods.

Nantucket Conservation Foundation: Head of the Plains, Sanford Farm / Ram Pasture, Madequecham Valley, Nantucket County, MA
Performed cut-and-treat management of invasive Phragmites in salt marsh habitats.

Brett Krueger
Krueger Property
Project #: 20210478
June 21, 2021

Appendix F | WDNR Delineation Confirmation Letter

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
2300 N Dr Martin L King Jr Dr.
Milwaukee, , 53212

Tony Evers, Governor
Preston D. Cole, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

06/18/2021

Brett Krueger
W7650 State Highway 39
Blanchardville, WI 53516

WIC-SC-2021-13-01978

RE: Wetland Delineation Report for "Krueger Property" located in the Town of Perry, Dane County

Dear Mr. Krueger:

We have received and reviewed the wetland delineation report prepared for the above-mentioned site by Heartland Ecological Group. This letter will serve as confirmation that the wetland boundaries as shown on the included wetland delineation map are acceptable. This finding is based upon a June 8, 2021 field visit. Any filling or grading within these areas will require DNR approvals. Our wetland confirmation is valid for five years unless altered site conditions warrant a new wetland delineation be conducted. Be sure to send a copy of the report, as well as any approved revisions, to the U.S. Army Corps of Engineers.

If there is a navigable stream identified on the property. DNR Chapter 30 permits will be needed if earthwork (filling, dredging, etc.) or structures (culverts, bridges, erosion control, etc.) are proposed in or adjacent to the waterway.

If you are planning development on the property, you are required to avoid take of endangered and threatened species, or obtain an incidental take authorization or permit, to comply with the state's Endangered Species Law. To ensure compliance with the law, you should submit an endangered resources review form (Form 1700-047), available at http://dnr.wi.gov/topic/ERReview/Review.html. The Endangered Resources Program will provide a review response letter identifying any endangered and threatened species and any conditions that must be followed to address potential incidental take.

In addition to contacting WDNR, be sure to contact your local zoning office and U.S. Army Corps of Engineers to determine if any local or federal permits may be required for your project.

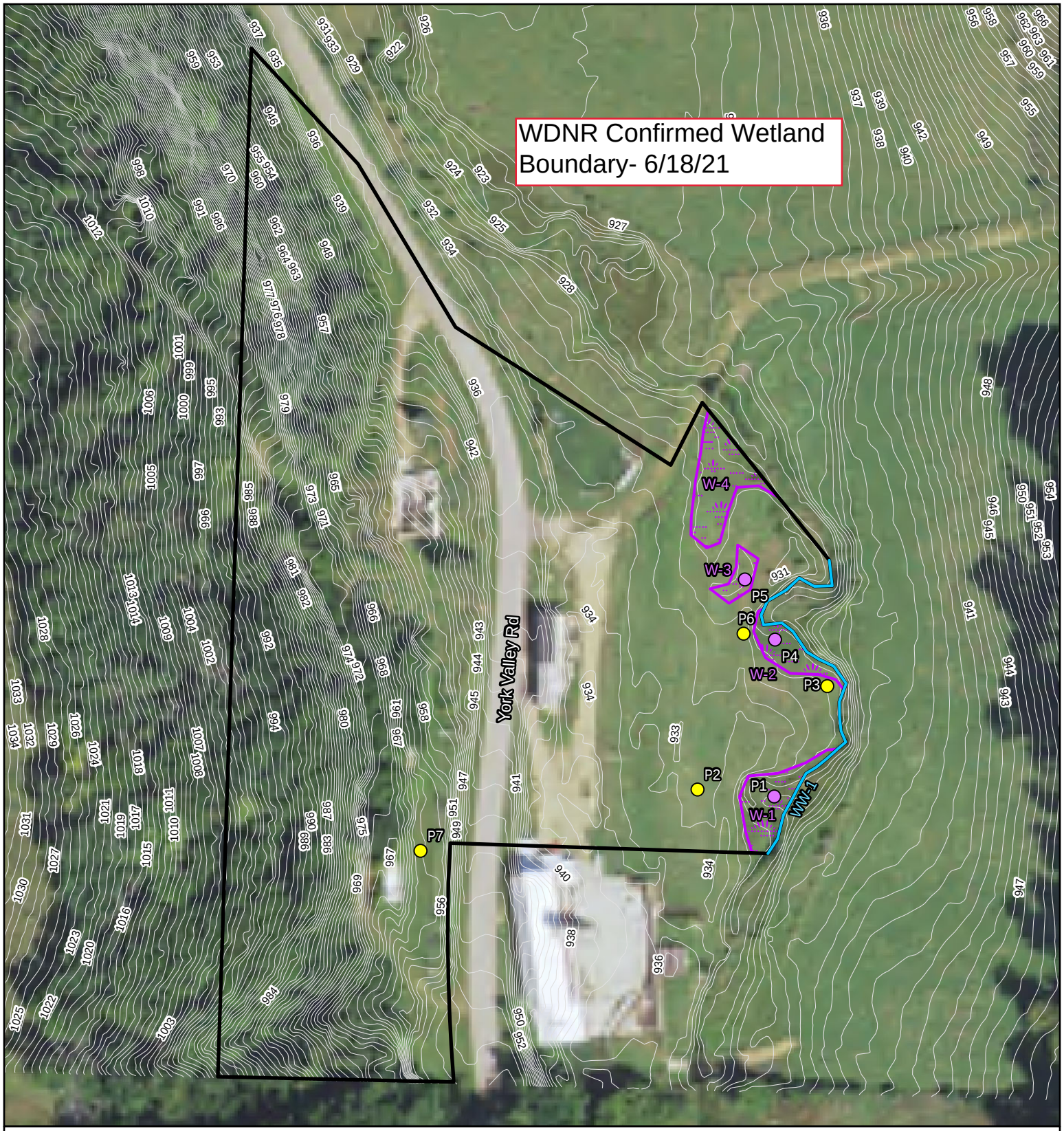
If you have any questions, please call me at (414) 308-6780 or email kara.brooks@wisconsin.gov.

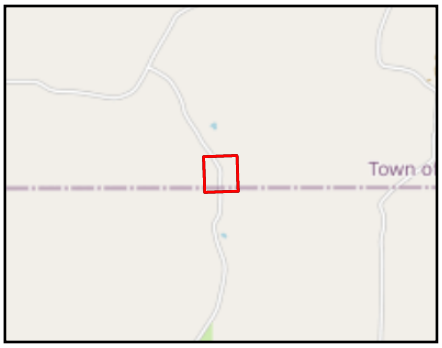
Sincerely,

Kara Brooks
Wetland Identification Specialist

Copy to:

USACE Project Manager
Scott Fuchs, Heartland Ecological Group





Study Area (4.64 ac)

Dane Co 1' Contours

Waterways

Field Delineated Wetlands (0.15 ac)

Sample Points

Upland

Wetland

0 50 100 Ft

Heartland ECOLOGICAL GROUP INC

Figure 6. Field Delineated Wetlands

Krueger Property
Project #20210478
T5N, R6E, S34
T Perry, Dane Co

2020 NAIP
Dane Co, HEG