Assured Wetland Delineation Report

Vilas Road Wetland Delineation
Town of Cottage Grove, Dane County, Wisconsin
Stantec Project #: 193704691
Lead Delineator: Jeff Kraemer

Prepared for:
Reed and Leanne Widen
4141 Vilas Road
Cottage Grove, Wisconsin 53527

Prepared by:
Stantec Consulting Services Inc.
209 Commerce Parkway,
PO Box 128
Cottage Grove, Wisconsin 53527
Phone: (608) 839-1998
Fax: (608) 839-1995

October 27, 2016

Sign-off Sheet

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Prepared by  (signature)

Joshua Sulman, Environmental Scientist

Reviewed by  (signature)

Kate Remus, Environmental Scientist, WPIT

Reviewed by _____ (signature)

Jeff Kraemer, Principal

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1.0 INTRODUCTION

Stantec Consulting Services Inc. (Stantec) performed a wetland determination and delineation of the Vilas Road site (the "Study Area") on behalf of Reed and Leanne Widen. The wetland delineation was led by Jeff Kraemer of Stantec, an assured delineator qualified via the Wisconsin Department of Natural Resources (WDNR) Wetland Delineation Assurance Program, and assisted by Josh Sulman (see Appendix F for Delineator Qualifications). An initial site characterization was conducted on September 20, 2016 and finalized on October 13, 2016.

The Study Area is approximately 40.57 acres in size and located in Sections 16 and 17, Township 7 North, Range 11 East, Town of Cottage Grove, Dane County, Wisconsin. Specifically, the Study Area is located southwest of the intersection of Vilas Road and Clark Road (Figure 1). The purpose and objective of the wetland determination and delineation was to identify the extent and spatial arrangement of wetlands within the Study Area. Two wetland areas were identified within the Study Area.

Wetlands and waterways that are considered waters of the U.S. are subject to regulation under Section 404 of the Clean Water Act (CWA) and the jurisdictional regulatory authority lies with the U.S. Army Corps of Engineers (USACE). Additionally, the WDNR has regulatory authority over wetlands, navigable waters, and adjacent lands under Chapters 30 and 281 Wisconsin State Statutes, and Wisconsin Administrative Codes NR 103, 299, 350 and 353. Finally, counties, townships and municipalities may have local zoning authority over certain types of wetlands and waterways. Stantec recommends this report be submitted to local authorities, the WDNR and USACE for final jurisdictional review and concurrence. Delineations completed by a WDNR Assured Delineator do not need to obtain WDNR concurrence.

2.0 METHODS

2.1 WETLANDS

Wetland determinations were based on the criteria and methods outlined in the *U.S. Army Corps of Engineers Wetlands Delineation Manual,* Technical Report Y-87-1 (1987) and subsequent guidance documents, and applicable Regional Supplements to the *Corps of Engineers Wetland Delineation Manual*.

The wetland determination involved the use of available resources to assist in the assessment such as U.S. Geological Survey (USGS) topographic maps, U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) soil survey, WDNR Wisconsin Wetland Inventory (WWI) mapping, and aerial photography.

On-site wetland determinations were made using the three criteria (vegetation, soil, and hydrology) and technical approach defined in the USACE 1987 Manual and applicable Regional Supplement. According to procedures described in the 1987 Manual and applicable Regional Supplement, areas that under normal circumstances reflect a predominance of hydrophytic vegetation, hydric soils, and wetland hydrology (e.g., inundated or saturated soils) are considered wetlands.

Additionally, as climate plays an important role in the formation and identification of wetlands, the antecedent precipitation in the months leading up to the field investigations was reviewed. The current year's precipitation data was compared to long-term (30-year) precipitation averages and standard deviation to determine if precipitation was normal, wet, or dry for the area using a WETS analysis as developed by the NRCS.

A review of U.S. Department of Agriculture Farm Service Agency (FSA) annual aerial slides and other available aerial imagery was conducted for the Study Area to assist in the wetland determination because farmed areas with mapped poorly drained or somewhat poorly drained soils are present within the Study Area. The aerial imagery was reviewed for the appearance of wetland signatures. A wetland signature is field evidence, recorded by aerial imagery, of ponding, flooding, or impacts of saturation for sufficient duration, which meets wetland hydrology and possibly wetland vegetation criteria. Wetland signatures may vary based on the type and seasonal date of the aerial imagery. Signatures visible on FSA annual aerial slides in cropland for Wisconsin have been categorized as follows (USDA, NRCS 1998):

1. Hydrophytic vegetation (seen as a different color of green)
2. Surface water (usually black or white)
3. Drowned-out crops (bare soil or mud flats)
4. Differences in color due to different planting dates or isolated areas not farmed with the rest of the field
5. Inclusions of wet areas in set-aside program
6. Patches of greener color in "dry" years

7. Crop stress (yellow) or sparse canopy (light green)
8. Saturated soil visible on infrared (IR) slides or photos

The antecedent precipitation in the months leading up to each aerial image was reviewed and compared to long-term (30-year) precipitation averages and standard deviation to determine if each year was normal, wet, or dry using a WETS analysis (Appendix D).

Mapped poorly and somewhat poorly drained soils were identified within the Study Area and available aerial imagery was analyzed for signatures of wetness consistency in these areas (Off-Site Aerial Imagery Analysis in Appendix E). Areas within agricultural fields are typically identified as wetland if they contain hydric soils and 50% or more of the aerial images taken in the five (or more) most recent normal precipitation years show any of the wetland signatures listed above. However, while the focus of the analysis is on wetland signatures visible in normal precipitation years, years considered wet or dry for received precipitation were also analyzed. Wetland determinations and wetland boundaries are identified based on the aerial image having the largest wetland boundary during a "normal" rainfall year if signatures were apparent in at least 50% of the years (USDA, NRCS 1998).

The uppermost wetland boundary and sampling points were identified and surveyed with a Global Positioning System (GPS) capable of sub-meter accuracy and mapped using Geographical Information System (GIS) software.

3.0 RESULTS

3.1 SITE DESCRIPTION

The Study Area is comprised of wooded upland, mowed turfgrass lawn, a house and garage/pole barn, cultivated fields planted in soybeans in 2016, and two wetland areas. A paved driveway leading to the house and garage roughly bisects the Study Area from northeast to southwest. The Study Area is characterized by nearly level to steeply sloping topography. The southeastern portion of the Study Area is dominated by a steep wooded drumlin (ridge) oriented from north to south, while the western and northern portions of the Study Area are relatively flat. Elevation ranges from topographic highs of approximately 974 feet mean sea level (msl) at the top of the drumlin along the southern boundary of the Study Area, to topographic lows on the northwest of approximately 854 feet msl on the western boundary of the Study Area. The Study Area is bordered by Vilas Road on the east; woodland and adjacent residential properties on the south; a ditched waterway and agricultural fields to the west; and a wooded strip, residential property, and railroad tracks on the north.

Soils present 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 hydric/partially hyrdic and very poorly/poorly drained soils (Appendix A, Figures 2 and 3).

Table 1. Summary of Soils Identified within the Study Area

Soil symbol: Soil Unit Name	Soil Unit Component	Soil Unit Component Percentage	Landform	Hydric status
BbA: Batavia silt loam, gravelly substratum, 0 to 2 percent slopes	Batavia-Gravelly substratum	100	Outwash plains	No
Ho: Houghton muck	Houghton	100	Depressions on stream terraces	Yes
KeB: Kegonsa silt loam, 2 to 6 percent slopes	Kegonsa	100	Outwash plains	No
KrE2: Kidder soils, 20 to 35 percent slopes, eroded	Kidder-Loam	60	Drumlins, recessionial moraines, terminal moraines	No
	Kidder-Sandy loam	30	Drumlins, recessionial moraines, terminal moraines	No
Mc: Marshan silt loam	Marshan	100	Depressions on stream terraces	Yes
MdC2: McHenry silt loam, 6 to 12 percent slopes, eroded	McHenry-Eroded	85-95	Moraines	No
	Kendall	2-7	Drainageways	No
	Kidder-Eroded	3-8	Moraines	No
Os: Orion silt loam, wet	Orion variant-Wet	100	Depressions on stream terraces, flood plains on stream terraces	Yes
	Otter		Flood plains	Yes
Soil symbol: Soil Unit Name	**Soil Unit Component**	**Soil Unit Component Percentage**	**Landform**	**Hydric status**
	Wacousta		Drainageways	Yes
	Sable		Drainageways	Yes
SaA: Sable silty clay loam, 0 to 2 percent slopes	Sable	85-100	Swales	Yes
	Muscatune	0-6	Ground moraines	No
	Ipava	0-7	Ground moraines	No
	Buckhart	0-4	Knolls	No
	Elburn	0-3	Outwash plains	No
Wa: Wacousta silty clay loam, 0 to 2 percent slopes	Wacousta	80-90	Interdrumlins	Yes
	Sable	5-10	Interdrumlins	Yes
	Sebewa	5-10	Interdrumlins	Yes

The Wisconsin Wetland Inventory (WWI) map identifies one forested (T3K, T3/S3K, T3/E2K) wetland area occupying the western uncultivated portion of the Study Area, and one excavated pond in the eastern portion of the Study Area (Appendix A, Figure 4). The larger field delineated wetland (W-1) is located primarily within the area identified as wetland by WWI. The smaller field delineated wetland (W-2) is associated with the WWI-mapped excavated pond (Appendix A, Figure 5).

Average precipitation for the investigation area was obtained from the Dane County Regional Airport, Madison, WI National Weather Service (NWS) weather station (NWS station #WI837) and used for the WETS analyses, for the three-month periods preceding the two site investigations. A total of 21.56 inches of precipitation occurred in the three months preceding the October field investigation, compared to the long-term average of 11.34 inches. A total of 18.45 inches of precipitation occurred in the three months preceding the September field investigation, compared to the long-term average of 12.31 inches. Based on the WETS analyses, conditions were significantly wetter than normal for both site visits (Appendix D).

3.2 WETLANDS

Two wetlands were identified and delineated within the Study Area. Wetland determination data forms were completed for 13 sample points along transects through the wetlands and adjacent uplands and are contained in Appendix B. Photographs of the wetlands and adjacent lands are contained in Appendix C. The wetland boundary and sample point locations are shown on Figure 5 (Appendix A). The wetlands are summarized in Table 2 below and described in detail in the following sections.

Table 2. Summary of Wetlands Identified within the Study Area

Wetland	Wetland Type	Adjacent Surface Waters	Acreage (on-site)
Wetland 1 (W-1)	Forested Wetland (T3K, T3/S3K, T3/E2K) / Farmed Wetland / Wet Meadow	Wetland is directly adjacent to a ditched waterway, tributary to Door Creek, identified as a perennial stream in DNR 24k hydrography.	12.45 acres
Wetland 2 (W-2)	Excavated Pond (WWI) / Shallow Marsh/ Forested Wetland	No direct surface water connections observed. May have connection to W-1 via culvert under driveway.	0.40 acres

3.2.1 Wetland 1

Wetland 1 (W-1) is a complex of primarily forested wetland with smaller components of wet meadow and farmed wetland that occupies a relatively flat basin located in the western portion of the Study Area. The wetland is surrounded by cultivated fields, except for an area of upland forest on the east. Wetland 1 is directly adjacent to a perennial waterway, identified on USGS topographic maps (Appendix A, Figure 1) and in WDNR 24k Hydrography (Appendix A, Figure 5) as a perennial stream, which is tributary to Door Creek beyond the Study Area limits. The waterway has been ditched and straightened, presumably to enhance drainage of the surrounding agricultural fields.

Vegetation

Dominant plant species identified at the four sample points completed within the forested wetland portion of W-1 consist of box elder (*Acer negundo,* FAC), American elm (*Ulmus americana,* FACW), common buckthorn (*Rhamnus cathartica,* FAC), deadly nightshade (*Solanum dulcamara,* FAC), stinging nettle (*Urtica dioica,* FAC), reed canary grass (*Phalaris arundinacea,* FACW), riverbank grape (*Vitis riparia*, FAC), gray dogwood (*Cornus racemosa,* FAC), American currant (*Ribes americanum,* FACW) and, in the farmed portion of W-1, soybeans (*Glycine max,* UPL). Other common species identified in the wetland are listed on the data form contained in Appendix B. The dominant species within the wetland are comprised mostly of hydrophytic vegetation (OBL, FACW, and/or FAC) and meet the hydrophytic vegetation criterion.

Hydrology

The wetland appears to have a seasonally inundated hydroperiod within the northern farmed wetland/wet meadow portion, and a seasonally to perennially saturated hydroperiod within the remainder of the wetland. Primary indicators of wetland hydrology observed at sample points in the Farmed Wetland portion of W-1 consisted of Surface Water (A1), High Water Table (A2) and Saturation (A3). Saturation (A3) and Drift Deposits (B3) were observed as primary indicators in the Forested wetland portion. Secondary indicators of wetland hydrology observed within the Farmed Wetland portion included Saturation Visible on Aerial Imagery (C9), Stunted or Stressed Plants (D1) and Geomorphic Position (D2), while secondary indicators observed in the Forested

Wetland portion were Geomorphic Position (D2) and a positive FAC-Neutral Test (D5). Therefore, the wetland hydrology criterion was met.

Soils

Soils within the wetland are mapped by the NRCS as Sable silty clay loam (SaA), Wacousta silty clay loam (Wa), Marshan silt loam (Mc), McHenry silt loam (MdC2) and Houghton muck (Ho) (Appendix A, Figure 2). The soils observed at the sample points were largely consistent with mapped Wacousta and Sable series characteristics. However, sample points P4 and P7, which were placed within the well-drained McHenry silt loam, had soils that were consistent with the adjacent mapped very poorly drained Wacousta silty clay loam. Field indicators of hydric soil identified at sample points in W-1 consisted of NRCS field Indicators A11 - Depleted Below Dark Surface, A12 – Thick Dark Surface, F1 – Loamy Mucky Mineral, F3 – Depleted Matrix and F6 – Redox Dark Surface. Therefore, the hydric soil criterion was satisfied.

Wetland Boundary

The wetland boundary was determined based on distinct differences in vegetation, hydrology, soils, and topography consisting of the following: 1) Transition from a forested wetland community dominated by box elder, American elm, common buckthorn and riverbank grape, or a farmed wetland consisting of soybeans showing limited crop stress, to an upland forest community dominated by bur oak (*Quercus macrocarpa,* FACU), black cherry (*Prunus serotina,* FACU) and common buckthorn, or to upland agricultural field, consisting of a healthy soybean crop; 2) Transition from an area exhibiting wetland hydrology indicators within the wetland to a lack of wetland hydrology indicators within the adjacent upland; 3) Transition from soils exhibiting indicators of hydric soils to soils lacking hydric soil indicators; and 4) Transition from areas with consistent crop stress signatures in off-site aerial imagery in normal precipitation years, to areas lacking consistent wet signatures. The transition from wetland to upland characteristics generally correlated with a gradual topographic rise.

3.2.2 Wetland 2

Wetland 2 (W-2) is a small wetland located in the eastern portion of the Study Area. The majority of the wetland is comprised of an excavated pond, constructed in 2004-05, based on review of aerial imagery. The excavated pond includes a small area of shallow marsh vegetation along the margins. Remaining portions of W-2 consist of forested wetland. The wetland appears to be isolated from other surface waters under typical conditions. However, an outlet exists via a culvert under the driveway beyond the west boundary of W-2, which may accommodate ephemeral outflow to W-1.

Vegetation

Dominant plant species identified at the sample point completed within W-2 consist of cottonwood (*Populus deltoides*, FAC), box elder, and reed canary grass. Vegetation observed within the shallow marsh margin of the excavated pond is dominated by narrow-leaved cattail (*Typha angustifolia,* OBL) and the deeper portions of the pond support scattered white water-lily (*Nymphaea odorata*, OBL*)*. Other common species identified in the wetland are listed on the data form contained in Appendix B. The dominant species within the wetland are comprised mostly of hydrophytic vegetation (OBL, FACW, and/or FAC) and meet the hydrophytic vegetation criterion.

Hydrology

The wetland appears to have a perennially inundated hydroperiod within the central excavated portion and a seasonally saturated hydroperiod along the outer margin. Primary indicators of wetland hydrology were not observed at the sample point P3 within W-2. However secondary indicators of wetland hydrology were met and included Geomorphic Position (D2) and a positive FAC-Neutral Test (D5). Therefore, the wetland hydrology criterion was met.

Soils

Soils within the wetland are mapped by the NRCS as McHenry silt loam (MdC2), Batavia silt loam (BbA) and Wacousta silty clay loam (Wa). The majority of W-2, consisting of the excavated pond, is located within an area of mapped well-drained, non-hydric soils (Appendix A, Figure 2). The northern margin of W-2, consisting of the forested wetland portion, coincides with the mapped Wacousta series, a hydric, poorly drained soil. The soils observed at sample point P3 were generally consistent with the Wacousta series characteristics. Field indicators of hydric soil identified at the sample point consisted of NRCS field Indicator F6 – Redox Dark Surface. Therefore, the hydric soil criterion was satisfied.

Wetland Boundary

The wetland boundary was determined based on distinct differences in vegetation, hydrology, soils and topography consisting of the following: 1) Transition from a forested wetland community dominated by cottonwood, box elder, and reed canary grass, or an excavated pond dominated by narrow-leaved cattail and white water-lily, to an upland mowed lawn dominated by Kentucky bluegrass (*Poa pratensis,* FACU) or an upland forest community dominated by white oak (*Quercus alba*, FACU), black cherry, common buckthorn, and Bell's honeysuckle (*Lonicera X bella,* FACU); 2) Transition from an area exhibiting wetland hydrology indicators within the wetland to a lack of wetland hydrology indicators within the adjacent upland; and 3) Transition from soils exhibiting indicators of hydric soils to soils lacking hydric soil indicators. The transition from wetland to upland characteristics generally correlated with a well-defined topographic break along the margin of the excavated pond, and a gradual topographic rise along the margin of the forested wetland.

3.3 UPLAND

Upland within the Study Area consisted of cultivated agricultural land, upland forest, mowed turfgrass lawn, two buildings, and a paved driveway. Upland agricultural fields within the Study Area were characterized by a healthy soybean crop and a low coverage of weeds including common dandelion (*Taraxacum officinale,* FACU) and velvetleaf (*Abutilon theophrasti,* FACU). Additionally, there was a lack of consistent wet signatures during normal precipitation years as observed in a review of historic aerial imagery. Upland forest vegetation included typical upland canopy species such as white and bur oak, black cherry, and box elder; shrubby species including Bell's honeysuckle and common buckthorn; and herbaceous species such as garlic mustard (*Alliaria petiolata,* FACU), white avens (*Geum canadense,* FAC), and stickseed (*Hackelia virginiana*, FACU). Upland mowed lawn was dominated by Kentucky bluegrass. Uplands included areas of both mapped hydric and non-hydric soils, though indicators of wetland hydrology and hydrophytic vegetation were absent. Hydric soil indicators were observed at four of the seven upland sample point locations, and mapped hydric soil units extend across some upland portions of the Site. However, these areas lack hydrophytic vegetation and wetland hydrology indicators, even in a wetter than normal period, suggesting that these may be relict hydric soil indicators in areas that have been artificially drained.

3.4 OTHER ENVIRONMENTAL CONSIDERATIONS

This report is limited to the identification of state and/or federally regulated wetlands within the Study Area. However, there may be other regulated environmental features within the Study Area, including, but not limited to, historical or archeological features, endangered or threatened species, navigable waters and/or floodplains, etc. Federal, state, and local units of government and regional planning organizations may have regulatory authority to control or restrict land uses within or in close proximity to these features. Stantec can assist with identification and/or assessment of additional regulated resources at your request, to the extent that the work is within our range of expertise.

Specifically, in the state of Wisconsin, Wis. Adm. Code NR 151.12 requires that a "protective area" or buffer be determined from the top of the channel of lakes, streams and rivers, or at the delineated boundary of wetlands. In accordance with NR 151.12, the width of the "protective area" 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 USGS topographic maps or NRCS county soil survey maps (whichever is more current) require a protective buffer of 50 feet, and outstanding or exceptional resource waters, highly susceptible wetlands, and wetlands in areas of special natural resource interest require protective buffers of 75 feet. The wetlands identified within the Study Area are dominated by invasive plant species, specifically common buckthorn and reed canary grass. Therefore, based on the "protective buffer" standards provided by NR 151.12, it is Stantec's professional opinion that the wetland meets the criteria for less susceptible wetlands and the buffer from the wetland boundary would be 10 to 30 feet. However, the jurisdictional authority on wetland buffers rests with the WDNR. Local zoning authorities and/or a regional planning organization may have more restrictive buffers from wetlands than that imposed under NR 151.

4.0 CONCLUSION

Stantec performed a wetland determination and delineation of the Vilas Road site on behalf of Reed and Leanne Widen. The approximately 40-acre Study Area is located in Sections 16 and 17, Township 7 North, Range 11 East, Town of Cottage Grove, Dane County, Wisconsin. The purpose and objective of the wetland determination and delineation was to identify the extent and spatial arrangement of wetlands within the Study Area.

Two wetlands were identified and delineated within the Study Area in accordance with state and federal guidelines and were subsequently flagged, surveyed with GPS, and mapped using GIS software. There were a combined total of 12.84 acres of wetlands within the Study Area. Wetlands were mostly composed of forested wetland, farmed wetland, an excavated pond, and wet meadow. Adjacent uplands were composed of cultivated land, mowed turfgrass, upland forest, a residence, garage, and paved driveway.

The USACE has regulatory authority over Waters of the U.S. including adjacent wetlands, and the WDNR has regulatory authority over wetlands, navigable waters, and adjacent lands under Chapters 30 and 281 Wisconsin State Statutes, and Wisconsin Administrative Codes NR 103, 299, 350 and 353. Finally counties, townships and municipalities may have local zoning authority over certain types of wetlands and waterways.

Prior to beginning work at this site or disturbing or altering wetlands, waterways, or adjacent lands in any way, Stantec recommends that the owner obtain the necessary permits or other agency regulatory review and concurrence with regard to the proposed work to comply with applicable regulations. Stantec can assist with identification and/or assessment of additional regulated resources at your request, to the extent that the work is within our range of expertise.

The information provided by Stantec regarding wetland boundaries is a scientific-based analysis of the wetland and upland conditions present within the Study Area at the time of the fieldwork. The delineation was performed by experienced and qualified professionals using standard practices and sound professional judgment. The ultimate decision on wetland boundaries rests with the USACE and, in some cases, the WDNR or a local unit of government. As a result, there may be adjustments to boundaries based upon review by a regulatory agency. An agency determination can vary from time to time depending on various factors including, but not limited to recent precipitation patterns and the season of the year. In addition, the physical characteristics of the Study Area can change over time, depending on the weather, vegetation patterns, drainage activities on adjacent parcels, or other events. Any of these factors can change the nature and extent of wetlands within the Study Area.

5.0 REFERENCES

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Appendix A – Figures

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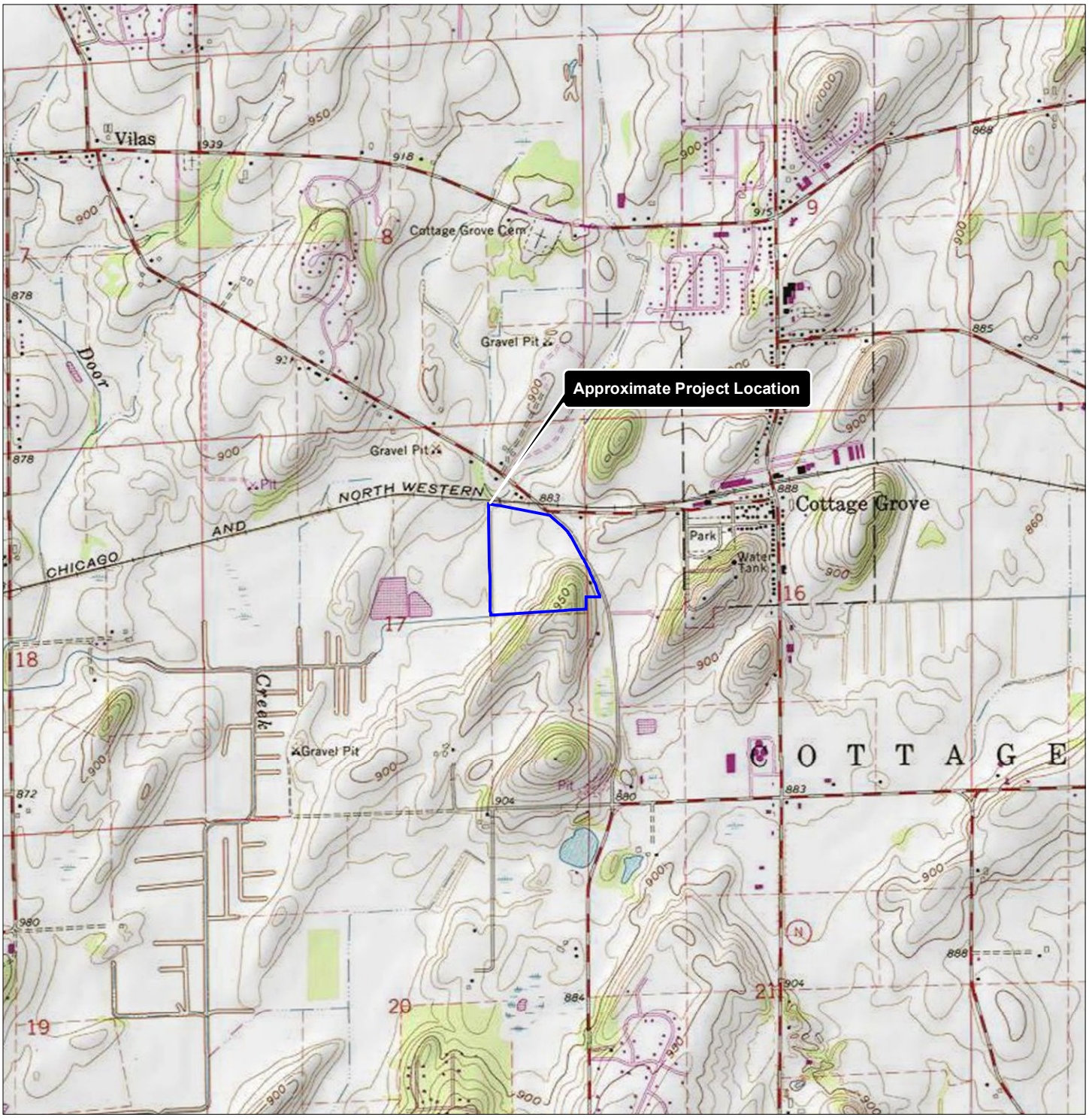

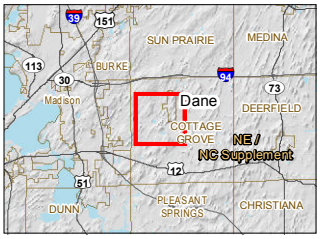

Notes

1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
2. Data Sources Include: Stantec, WDOT, WDNR
3. Background: USGS 7.5' Topographic Quadrangles

Legend

Approximate Project Boundary

Figure No.
1

Title
Project Location and Topography

Client/Project
Reed and Leanne Widen
Vilas Road
Wetland Delineation

Project Location
T7N, R11E, S17 & S16
T. of Cottage Grove,
Dane Co., WI

193704691
Prepared by BM on 2016-08-23
Technical Review by BT on 2016-08-23
Independent Review by JK on 2016-10-17

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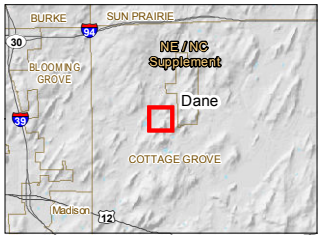
Stantec



Legend

- Approximate Project Boundary
- NRCS Soil Survey Data
- Hydric Ratings
  - Predominantly Hydric Soils
  - Partially Hydric Soils
  - Non-Hydric Soils
- DNR 24k Hydrography
  - Perennial Stream
  - Intermittent Stream
  - Waterbody

Notes

1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
2. Data Sources Include: Stantec, WDOT, WDNR, NRCS
3. Orthophotography: 2015 NAIP

Figure No.
2

Title
NRCS Soil Survey Data
Hydric Ratings

Client/Project
Reed and Leanne Widen
Vilas Road
Wetland Delineation

Project Location
T7N, R11E, S17 & S16
T. of Cottage Grove,
Dane Co., WI

193704691
Prepared by BM on 2016-08-23
Technical Review by BT on 2016-08-23
Independent Review by JK on 2016-10-17

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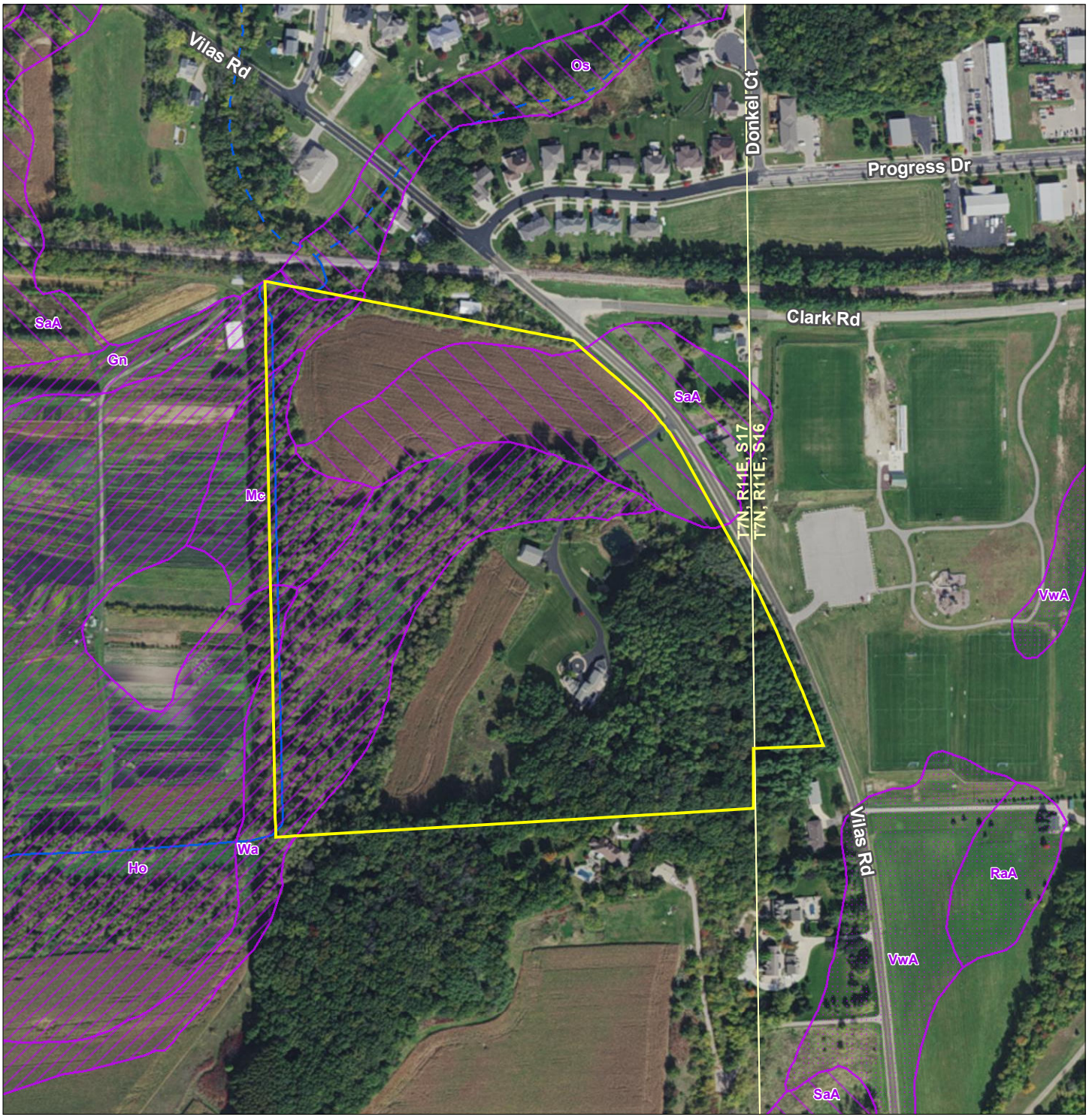
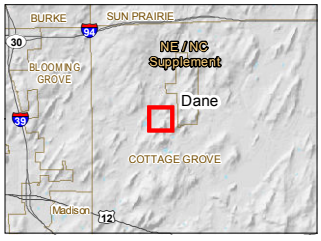




Legend

- Approximate Project Boundary
- NRCS Soil Survey Data
- Wetland Indcator Soils
  - Very Poorly Drained
  - Poorly Drained
  - Somewhat Poorly Drained
- DNR 24k Hydrography
  - Perennial Stream
  - Intermittent Stream
  - Waterbody

Notes

1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
2. Data Sources Include: Stantec, WDOT, WDNR, NRCS
3. Orthophotography: 2015 NAIP

Figure No.
3

Title
NRCS Soil Survey Data
Wetland Indicator Soils

Client/Project
Reed and Leanne Widen
Vilas Road
Wetland Delineation

Project Location
T7N, R11E, S17 & S16
T. of Cottage Grove,
Dane Co., WI

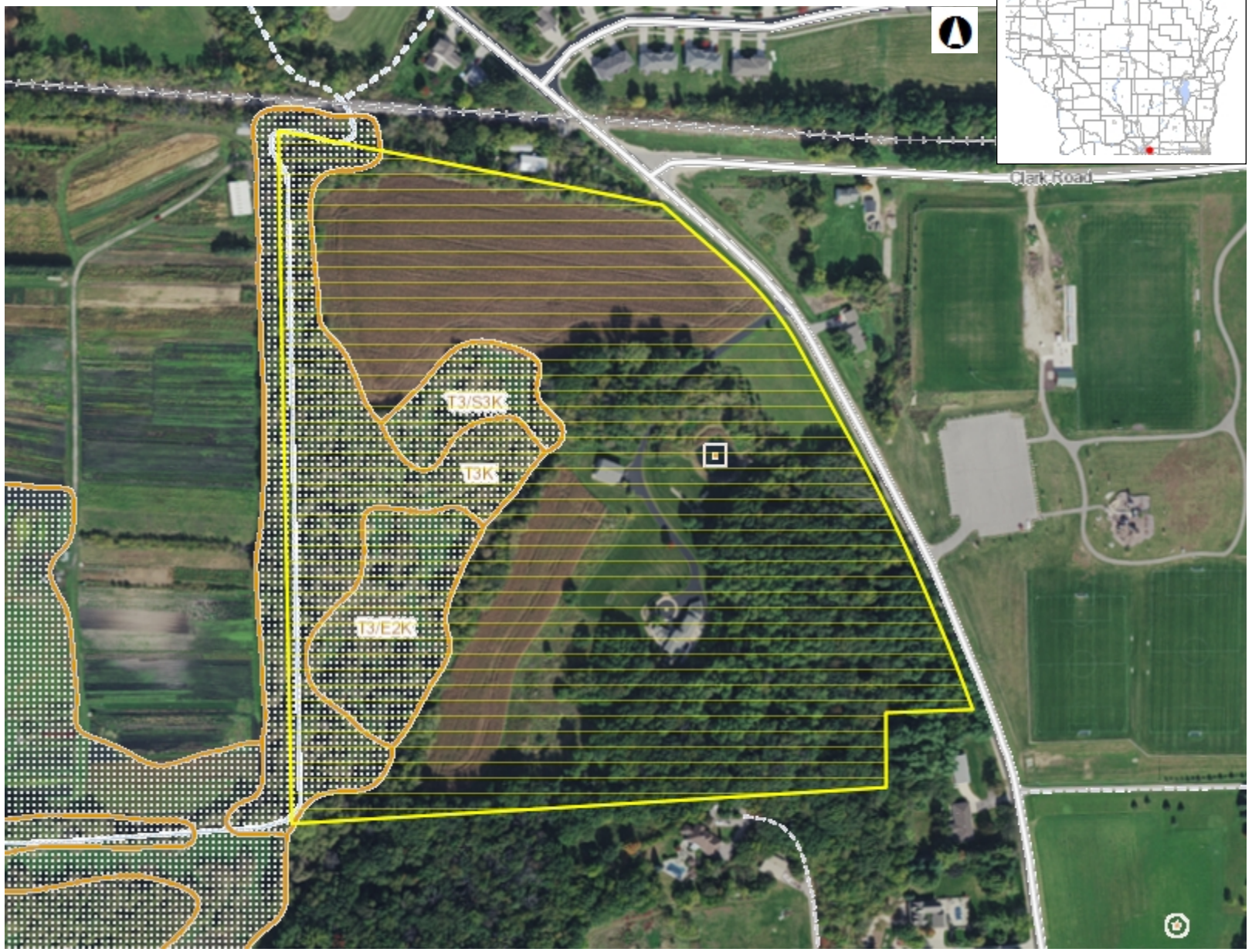
193704691
Prepared by BM on 2016-08-23
Technical Review by BT on 2016-08-23
Independent Review by JK on 2016-10-17

0 200 400 Feet
1:4,800 (at original document size of 8.5x11)

N

Stantec

Figure 4. WWI



Legend

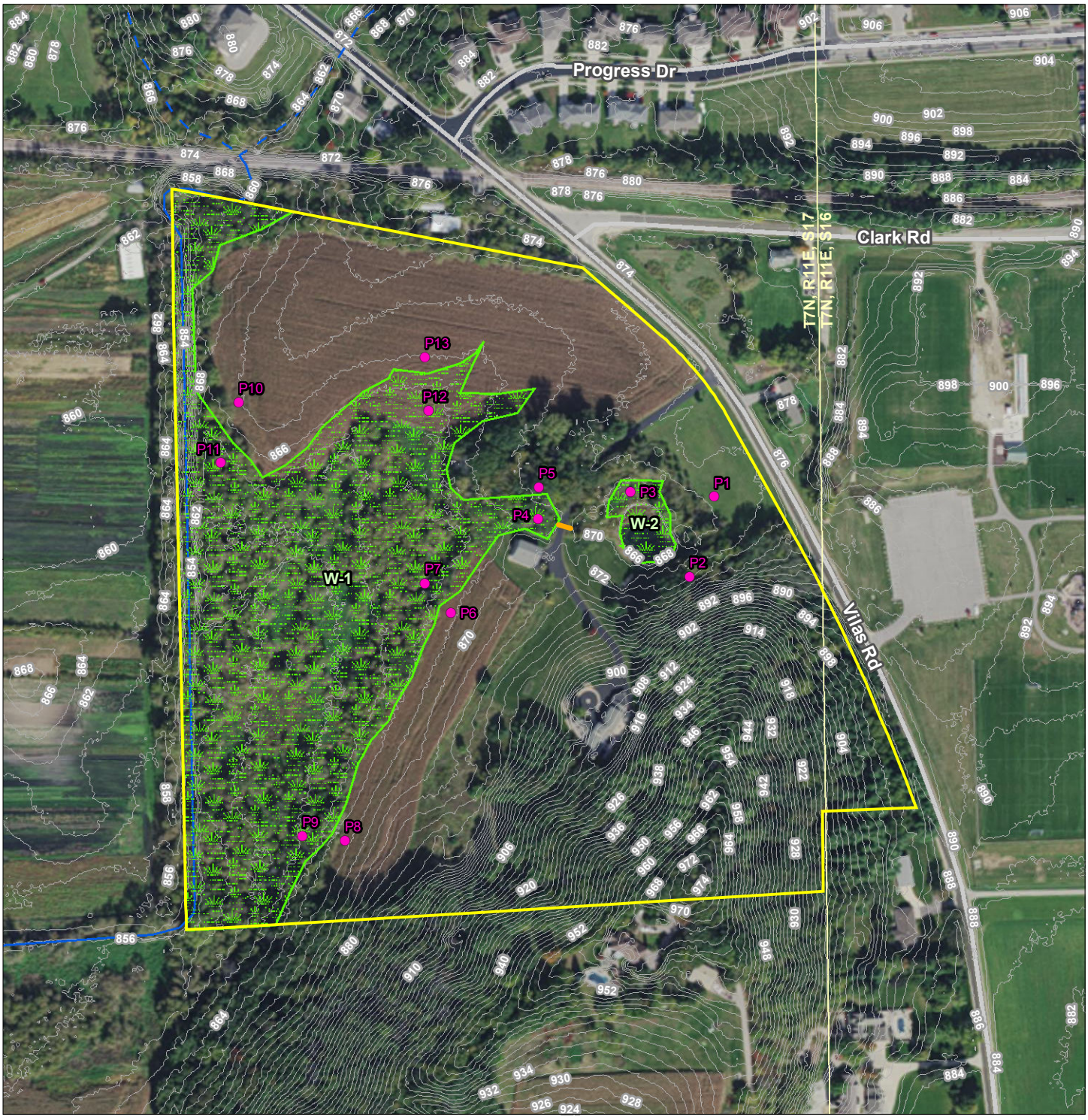
- Wetland Class Points
  - Dammed pond
  - Excavated pond
  - Filled excavated pond
  - Filled/drained wetland
  - Wetland too small to delineate
- Filled Points
- Wetland Class Areas
  - Wetland
  - Upland
- Filled Areas
- Municipality
- State Boundaries
- County Boundaries
- Major Roads
  - Interstate Highway
  - State Highway
  - US Highway
- County and Local Roads
  - County HWY
  - Local Road
- Railroads
- Tribal Lands
- Rivers and Streams
- Intermittent Streams
- Lakes and Open water

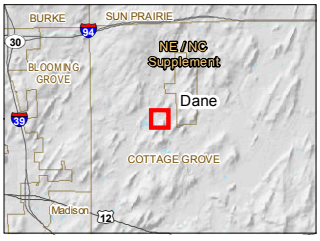
Notes

0.1 0 0.06 0.1 Miles

NAD_1983_HARN_Wisconsin_TM

1: 3,960





Notes

1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
2. Data Sources Include: Stantec, WDOT, WDNR
3. Orthophotography: ESRI

Legend

- Approximate Project Boundary
- Sample Point
- Culvert
- 2ft Elevation Contours
- Field Delineated Wetland

DNR 24k Hydrography

- Perennial Stream
- Intermittent Stream
- Waterbody

Figure No.
5

Title
Field Collected Data

Client/Project
Reed and Leanne Widen
Vilas Road
Wetland Delineation

Project Location
T7N, R11E, S17 & S16
T. of Cottage Grove,
Dane Co., WI

193704691
Prepared by BT on 2016-10-17
Technical Review by JD on 2016-10-17
Independent Review by JK on 2016-10-17

0 150 300 Feet
1:3,600 (at original document size of 8.5x11)

N

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Appendix B – Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM
Northcentral-Northeast Region

Project/Site:	Vilas Road	Stantec Project #:	193704691	Date:	10/13/16
Applicant:	Reed and Leanne Widen			County:	Dane
Investigator #1:	Jeff Kraemer	Investigator #2:	Josh Sulman	State:	Wisconsin
Soil Unit:	Sable silty clay loam	NWI/WWI Classification:		Wetland ID:	adj. W-2
Landform:	Dip	Local Relief:	Linear	Sample Point:	P1
Slope (%):	0-2	Latitude: N/A	Longitude: N/A	Community ID:	Upland mowed lawn
			Datum: N/A	Section:	17
				Township:	7N
				Range:	11E

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

Are Vegetation ☑, Soil ☐, or Hydrology ☐ significantly disturbed?
Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic?

Are normal circumstances present? ☐ Yes ☑ No

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	☐ Yes ☑ No	Hydric Soils Present?	☑ Yes ☐ No
Wetland Hydrology Present?	☐ Yes ☑ No	Is This Sampling Point Within A Wetland?	☐ **Yes** ☑ **No**

Remarks: Based on results of a WETS analysis, conditions are wetter than normal for this time of year. Sample point is located in mowed turfgrass, about 25 ft. east of unmowed old field edge.

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☑):

Primary:
- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☐ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:
- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☐ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☐ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☐ Yes	☑ No	Depth:	(in.)
Water Table Present?	☐ Yes	☑ No	Depth:	(in.)
Saturation Present?	☐ Yes	☑ No	Depth:	(in.)

Wetland Hydrology Present? ☐ Yes ☑ No

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

Remarks:

SOILS

Map Unit Name: Sable silty clay loam — Series Drainage Class: poorly

Taxonomy (Subgroup): Typic Endoaquolls

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)		Matrix %	Redox Features Color (Moist)		Redox Features %	Redox Features Type	Redox Features Location	Texture (e.g. clay, sand, loam)
0	6	1	10YR	3/2	100	--	--	--	--	--	silt loam
6	13	2	10YR	3/2	95	10YR	3/4	5	C	M	silt loam
13	17	3	10YR	2/1	80	--	--	--	--	--	loam
13	17	3	10YR	4/2	15	10YR	4/4	5	C	M	--
17	22	4	10YR	4/1	95	10YR	4/4	5	C	M	sandy clay loam
22	24	5	7.5YR	5/1	90	7.5YR	5/6	10	C	M	clay loam
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐):
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ S7 - Dark Surface (LRR R, MLRA 149B)
- ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B)
- ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B)
- ☐ S11 - High Chroma Sands
- ☐ F1 - Loamy Mucky Mineral (LRR K, L)
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☑ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B)
- ☐ A16 - Coast Prairie Redox (LRR K, L, R)
- ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R)
- ☐ S7 - Dark Surface (LRR K, L, M)
- ☐ S8 - Polyvalue Below Surface (LRR K, L)
- ☐ S9 - Thin Dark Surface (LRR K, L)
- ☐ F12 - Iron-Manganese Masses (LRR K, L, R)
- ☐ F19 - Piedmont Floodplain Soils (MLRA 149B)
- ☐ F21 - Red Parent Material
- ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B)
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (If Observed) Type: N/A Depth: N/A

Hydric Soil Present? ☑ Yes ☐ No

Remarks: Horizon 3 consists of a mixed matrix.

WETLAND DETERMINATION DATA FORM
Northcentral-Northeast Region

Project/Site: Vilas Road | Wetland ID: adj. W-2 | Sample Point: P1

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Herb Stratum (Plot size: 2 meter radius)

1.	*POA PRATENSIS*	90	Y	FACU
2.	*TARAXACUM OFFICINALE*	2	N	FACU
3.	*TRIFOLIUM REPENS*	1	N	FACU
4.	*PLANTAGO MAJOR*	1	N	FACU
5.	--	--	--	--
6	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	94		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
	Total Cover =	0		

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%*** (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	0	x 1 =	0
FACW spp.	0	x 2 =	0
FAC spp.	0	x 3 =	0
FACU spp.	94	x 4 =	376
UPL spp.	0	x 5 =	0
Total	94 (A)		376 (B)

Prevalence Index = B/A = ***4.000***

Hydrophytic Vegetation Indicators:

- ☐ Yes ☑ No Rapid Test for Hydrophytic Vegetation
- ☐ Yes ☑ No Dominance Test is > 50%
- ☐ Yes ☑ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☑ No Morphological Adaptations (Explain) *
- ☐ Yes ☑ No Problem Hydrophytic Vegetation (Explain) *

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

Definitions of Vegetation Strata:

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

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

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

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

Hydrophytic Vegetation Present ☐ Yes ☑ No

Remarks: Vegetation is routinely mowed. Nearby unmowed old field vegetation is dominated by non-hydrophytic vegetation including smooth brome, Canada goldenrod.

Additional Remarks:

WETLAND DETERMINATION DATA FORM
Northcentral-Northeast Region

Project/Site:	Vilas Road	Stantec Project #:	193704691	Date:	10/13/16
Applicant:	Reed and Leanne Widen			County:	Dane
Investigator #1:	Jeff Kraemer	Investigator #2:	Josh Sulman	State:	Wisconsin
Soil Unit:	McHenry silt loam	NWI/WWI Classification:		Wetland ID:	adj. W-2
Landform:	Footslope	Local Relief:	Concave	Sample Point:	P2
Slope (%):	3	Latitude: N/A	Longitude: N/A	Datum: N/A	Community ID: Upland Mesic Forest
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks)			☐ Yes ☑ No	Section:	17
Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed?		Are normal circumstances present?		Township:	7N
Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic?		☑ Yes ☐ No		Range:	11E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	☐ Yes ☑ No	Hydric Soils Present?	☐ Yes ☑ No
Wetland Hydrology Present?	☐ Yes ☑ No	Is This Sampling Point Within A Wetland?	☐ **Yes** ☑ **No**

Remarks: Based on results of a WETS analysis, conditions are wetter than normal for this time of year. Sample point located at base of slope of wooded drumlin. A strip of mowed lawn 20 feet northwest of sample point separates woods from excavated pond and assoc. wetland (W-2).

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☑):

Primary:
- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☐ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:
- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☐ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☐ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☐ Yes	☑ No	Depth:	(in.)
Water Table Present?	☐ Yes	☑ No	Depth:	(in.)
Saturation Present?	☐ Yes	☑ No	Depth:	(in.)

Wetland Hydrology Present? ☐ Yes ☑ No

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

Remarks:

SOILS

Map Unit Name: McHenry silt loam — Series Drainage Class: well

Taxonomy (Subgroup): Typic Hapludalfs

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)		Matrix %	Redox Features Color (Moist)		Redox Features %	Redox Features Type	Redox Features Location	Texture (e.g. clay, sand, loam)
0	8	1	10YR	3/2	100	--	--	--	--	--	silt loam
8	10	2	10YR	3/2	60	--	--	--	--	--	silt loam
8	10	2	10YR	5/3	35	10YR	4/6	5	C	M	silt loam
10	16	3	10YR	5/3	95	10YR	4/6	5	C	M	silt loam
16	20	4	10YR	5/3	95	10YR	4/6	5	C	M	loam
20	24	5	10YR	4/3	90	10YR	4/6	10	C	M	loam
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☑):
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ S7 - Dark Surface (LRR R, MLRA 149B)
- ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B)
- ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B)
- ☐ S11 - High Chroma Sands
- ☐ F1 - Loamy Mucky Mineral (LRR K, L)
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B)
- ☐ A16 - Coast Prairie Redox (LRR K, L, R)
- ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R)
- ☐ S7 - Dark Surface (LRR K, L, M)
- ☐ S8 - Polyvalue Below Surface (LRR K, L)
- ☐ S9 - Thin Dark Surface (LRR K, L)
- ☐ F12 - Iron-Manganese Masses (LRR K, L, R)
- ☐ F19 - Piedmont Floodplain Soils (MLRA 149B)
- ☐ F21 - Red Parent Material
- ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B)
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (If Observed) Type: N/A Depth: N/A

Hydric Soil Present? ☐ Yes ☑ No

Remarks: Horizon 5 contains 10% coarse fragments

WETLAND DETERMINATION DATA FORM
Northcentral-Northeast Region

Project/Site: Vilas Road | Wetland ID: adj. W-2 | Sample Point: P2

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	*Prunus serotina*	50	Y	FACU
2.	*Quercus alba*	20	Y	FACU
3.	*Acer negundo*	10	N	FAC
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	80		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	*RHAMNUS CATHARTICA*	60	Y	FAC
2.	*LONICERA X BELLA*	15	Y	FACU
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	75		

Herb Stratum (Plot size: 2 meter radius)

1.	*RHAMNUS CATHARTICA*	60	Y	FAC
2.	*Cornus racemosa*	5	N	FAC
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	65		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
	Total Cover =	0		

Remarks:

Dominance Test Worksheet

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

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ***40%*** (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	0	x 1 =	0
FACW spp.	0	x 2 =	0
FAC spp.	135	x 3 =	405
FACU spp.	85	x 4 =	340
UPL spp.	0	x 5 =	0
Total	220 (A)		745 (B)

Prevalence Index = B/A = ***3.386***

Hydrophytic Vegetation Indicators:

- ☐ Yes ☑ No Rapid Test for Hydrophytic Vegetation
- ☐ Yes ☑ No Dominance Test is > 50%
- ☐ Yes ☑ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☑ No Morphological Adaptations (Explain) *
- ☐ Yes ☑ No Problem Hydrophytic Vegetation (Explain) *

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

Definitions of Vegetation Strata:

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

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

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

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

Hydrophytic Vegetation Present ☐ Yes ☑ No

Additional Remarks:

WETLAND DETERMINATION DATA FORM
Northcentral-Northeast Region

Project/Site:	Vilas Road	Stantec Project #:	193704691	Date:	10/13/16
Applicant:	Reed and Leanne Widen			County:	Dane
Investigator #1:	Jeff Kraemer	Investigator #2:	Josh Sulman	State:	Wisconsin
Soil Unit:	Wacousta silty clay loam	NWI/WWI Classification:	none	Wetland ID:	W-2
Landform:	Depression	Local Relief:	Concave	Sample Point:	P3
Slope (%):	0	Latitude: N/A	Longitude: N/A	Datum: N/A	Community ID: Forested Wetland
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks)			☐ Yes ☑ No	Section:	17
Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed?		Are normal circumstances present?		Township:	7N
Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic?		☑ Yes ☐ No		Range:	11E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	☑ Yes ☐ No	Hydric Soils Present?	☑ Yes ☐ No
Wetland Hydrology Present?	☑ Yes ☐ No	Is This Sampling Point Within A Wetland?	☑ **Yes** ☐ **No**

Remarks: Based on results of a WETS analysis, conditions are wetter than normal for this time of year. Sample point is located in lightly wooded wetland 25 feet north of excavated pond.

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐):

Primary:
- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☐ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:
- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☑ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☑ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☐ Yes	☑ No	Depth:	(in.)
Water Table Present?	☐ Yes	☑ No	Depth:	(in.)
Saturation Present?	☐ Yes	☑ No	Depth:	(in.)

Wetland Hydrology Present? ☑ Yes ☐ No

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

Remarks:

SOILS

Map Unit Name: Wacousta silty clay loam — Series Drainage Class: very poorly

Taxonomy (Subgroup): Typic Endoaquolls

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)		Matrix %	Redox Features Color (Moist)		Redox Features %	Redox Features Type	Redox Features Location	Texture (e.g. clay, sand, loam)
0	4	1	10YR	3/1	100	--	--	--	--	--	silt loam
4	20	2	10YR	3/1	95	10YR	3/4	5	C	PL	silty clay loam
20	26	3	10YR	5/1	98	10YR	5/6	2	C	M	clay loam
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐):
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ S7 - Dark Surface (LRR R, MLRA 149B)
- ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B)
- ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B)
- ☐ S11 - High Chroma Sands
- ☐ F1 - Loamy Mucky Mineral (LRR K, L)
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☑ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B)
- ☐ A16 - Coast Prairie Redox (LRR K, L, R)
- ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R)
- ☐ S7 - Dark Surface (LRR K, L, M)
- ☐ S8 - Polyvalue Below Surface (LRR K, L)
- ☐ S9 - Thin Dark Surface (LRR K, L)
- ☐ F12 - Iron-Manganese Masses (LRR K, L, R)
- ☐ F19 - Piedmont Floodplain Soils (MLRA 149B)
- ☐ F21 - Red Parent Material
- ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B)
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (If Observed) Type: N/A Depth: N/A

Hydric Soil Present? ☑ Yes ☐ No

Remarks:

WETLAND DETERMINATION DATA FORM
Northcentral-Northeast Region

Project/Site: Vilas Road | Wetland ID: W-2 | Sample Point: P3

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	*Acer negundo*	20	Y	FAC
2.	*Populus deltoides*	10	Y	FAC
3.	*Ulmus americana*	5	N	FACW
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	35		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	*Sambucus nigra*	2	N	FACW
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	2		

Herb Stratum (Plot size: 2 meter radius)

1.	*PHALARIS ARUNDINACEA*	80	Y	FACW
2.	*Impatiens capensis*	20	N	FACW
3.	*CIRSIUM ARVENSE*	15	N	FACU
4.	*Urtica dioica*	5	N	FAC
5.	*Symphyotrichum lanceolatum*	2	N	FACW
6	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	122		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
	Total Cover =	0		

Remarks:

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%*** (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	0	x 1 =	0
FACW spp.	109	x 2 =	218
FAC spp.	35	x 3 =	105
FACU spp.	15	x 4 =	60
UPL spp.	0	x 5 =	0
Total	159 (A)		383 (B)

Prevalence Index = B/A = ***2.409***

Hydrophytic Vegetation Indicators:

☐ Yes	☑ No	Rapid Test for Hydrophytic Vegetation
☑ Yes	☐ No	Dominance Test is > 50%
☑ Yes	☐ No	Prevalence Index is ≤ 3.0 *
☐ Yes	☑ No	Morphological Adaptations (Explain) *
☐ Yes	☑ No	Problem Hydrophytic Vegetation (Explain) *

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

Definitions of Vegetation Strata:

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

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

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

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

Hydrophytic Vegetation Present ☑ Yes ☐ No

Additional Remarks:

WETLAND DETERMINATION DATA FORM
Northcentral-Northeast Region

Project/Site:	Vilas Road	Stantec Project #:	193704691	Date:	10/13/16
Applicant:	Reed and Leanne Widen			County:	Dane
Investigator #1:	Jeff Kraemer	Investigator #2:	Josh Sulman	State:	Wisconsin
Soil Unit:	Wacousta silty clay loam	NWI/WWI Classification:	none	Wetland ID:	W-1
Landform:	Depression	Local Relief:	Concave	Sample Point:	P4
Slope (%):	0	Latitude: N/A	Longitude: N/A	Datum: N/A	Community ID: Forested Wetland
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks)			☐ Yes ☑ No	Section:	17
Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed?		Are normal circumstances present?		Township:	7N
Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic?		☑ Yes ☐ No		Range:	11E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	☑ Yes ☐ No	Hydric Soils Present?	☑ Yes ☐ No
Wetland Hydrology Present?	☑ Yes ☐ No	Is This Sampling Point Within A Wetland?	☑ **Yes** ☐ **No**

Remarks: Based on results of a WETS analysis, conditions are wetter than normal for this time of year. Sample point located in seasonal drainageway extending east from W-1, 30 ft. north of existing garage.

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐):

Primary:
- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☐ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☑ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:
- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☑ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☑ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☐ Yes	☑ No	Depth:	(in.)
Water Table Present?	☐ Yes	☑ No	Depth:	(in.)
Saturation Present?	☐ Yes	☑ No	Depth:	(in.)

Wetland Hydrology Present? ☑ Yes ☐ No

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

Remarks: Sample point located in seasonal drainageway, fed by culvert under driveway, descending west into main body of W-1.

SOILS

Map Unit Name: Wacousta silty clay loam — Series Drainage Class: very poorly

Taxonomy (Subgroup): Typic Endoaquolls

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)		Matrix %	Redox Features Color (Moist)		Redox Features %	Redox Features Type	Redox Features Location	Texture (e.g. clay, sand, loam)
0	8	1	10YR	2/1	92	10YR	3/4	8	C	M	silt loam
8	14	2	10YR	2/1	90	10YR	3/4	4	C	M	silty clay loam
8	14	2	--	--	--	10YR	4/1	6	D	M	silty clay loam
14	24	3	10YR	5/1	95	10YR	5/6	5	C	M	clay loam
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐):
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A11 - Depleted Below Dark Surface
- ☑ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ S7 - Dark Surface (LRR R, MLRA 149B)
- ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B)
- ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B)
- ☐ S11 - High Chroma Sands
- ☐ F1 - Loamy Mucky Mineral (LRR K, L)
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☑ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B)
- ☐ A16 - Coast Prairie Redox (LRR K, L, R)
- ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R)
- ☐ S7 - Dark Surface (LRR K, L, M)
- ☐ S8 - Polyvalue Below Surface (LRR K, L)
- ☐ S9 - Thin Dark Surface (LRR K, L)
- ☐ F12 - Iron-Manganese Masses (LRR K, L, R)
- ☐ F19 - Piedmont Floodplain Soils (MLRA 149B)
- ☐ F21 - Red Parent Material
- ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B)
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (If Observed) Type: N/A Depth: N/A

Hydric Soil Present? ☑ Yes ☐ No

Remarks: Soils at sample point are generally consistent with the mapped Wacousta silty clay loam.

WETLAND DETERMINATION DATA FORM
Northcentral-Northeast Region

Project/Site: Vilas Road | Wetland ID: W-1 | Sample Point: P4

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	*Acer negundo*	20	Y	FAC
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	20		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	*RHAMNUS CATHARTICA*	80	Y	FAC
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	80		

Herb Stratum (Plot size: 2 meter radius)

1.	*Ribes americanum*	40	Y	FACW
2.	*RHAMNUS CATHARTICA*	10	N	FAC
3.	*Geum canadense*	10	N	FAC
4.	--	--	--	--
5.	--	--	--	--
6	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	60		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
	Total Cover =	0		

Remarks:

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%*** (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	0	x 1 =	0
FACW spp.	40	x 2 =	80
FAC spp.	120	x 3 =	360
FACU spp.	0	x 4 =	0
UPL spp.	0	x 5 =	0
Total	160 (A)		440 (B)

Prevalence Index = B/A = ***2.750***

Hydrophytic Vegetation Indicators:

☐ Yes	☑ No	Rapid Test for Hydrophytic Vegetation
☑ Yes	☐ No	Dominance Test is > 50%
☑ Yes	☐ No	Prevalence Index is ≤ 3.0 *
☐ Yes	☑ No	Morphological Adaptations (Explain) *
☐ Yes	☑ No	Problem Hydrophytic Vegetation (Explain) *

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

Definitions of Vegetation Strata:

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

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

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

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

Hydrophytic Vegetation Present ☑ Yes ☐ No

Additional Remarks:

WETLAND DETERMINATION DATA FORM
Northcentral-Northeast Region

Project/Site:	Vilas Road	Stantec Project #:	193704691	Date:	10/13/16
Applicant:	Reed and Leanne Widen			County:	Dane
Investigator #1:	Jeff Kraemer	Investigator #2:	Josh Sulman	State:	Wisconsin
Soil Unit:	Wacousta silty clay loam	NWI/WWI Classification:	none	Wetland ID:	adj. W-1
Landform:	Terrace	Local Relief:	Linear	Sample Point:	P5
Slope (%):	0	Latitude: N/A	Longitude: N/A	Community ID:	Upland Forest
			Datum: N/A	Section:	17
				Township:	7N
				Range:	11E

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

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed?
Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic?

Are normal circumstances present? ☑ Yes ☐ No

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	☐ Yes ☑ No	Hydric Soils Present?	☐ Yes ☑ No
Wetland Hydrology Present?	☐ Yes ☑ No	Is This Sampling Point Within A Wetland?	☐ **Yes** ☑ **No**

Remarks: Based on results of a WETS analysis, conditions are wetter than normal for this time of year. Sample point located in oak forest with brushy understory.

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☑):

Primary:
- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☐ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:
- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☐ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☐ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☐ Yes	☑ No	Depth:	(in.)
Water Table Present?	☐ Yes	☑ No	Depth:	(in.)
Saturation Present?	☐ Yes	☑ No	Depth:	(in.)

Wetland Hydrology Present? ☐ Yes ☑ No

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

Remarks:

SOILS

Map Unit Name: Wacousta silty clay loam — Series Drainage Class: very poorly

Taxonomy (Subgroup): Typic Endoaquolls

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)		Matrix %	Redox Features Color (Moist)		Redox Features %	Redox Features Type	Redox Features Location	Texture (e.g. clay, sand, loam)
0	6	1	10YR	2/2	100	--	--	--	--	--	silt loam
6	16	2	10YR	3/2	100	--	--	--	--	--	silt loam
16	24	3	10YR	4/2	90	10YR	4/6	10	C	M	clay loam
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☑):
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ S7 - Dark Surface (LRR R, MLRA 149B)
- ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B)
- ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B)
- ☐ S11 - High Chroma Sands
- ☐ F1 - Loamy Mucky Mineral (LRR K, L)
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B)
- ☐ A16 - Coast Prairie Redox (LRR K, L, R)
- ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R)
- ☐ S7 - Dark Surface (LRR K, L, M)
- ☐ S8 - Polyvalue Below Surface (LRR K, L)
- ☐ S9 - Thin Dark Surface (LRR K, L)
- ☐ F12 - Iron-Manganese Masses (LRR K, L, R)
- ☐ F19 - Piedmont Floodplain Soils (MLRA 149B)
- ☐ F21 - Red Parent Material
- ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B)
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (If Observed) Type: N/A Depth: N/A

Hydric Soil Present? ☐ Yes ☑ No

Remarks: Soils at the sample point appear to be somewhat better drained than the typical mapped Wacousta Series, lacking signs of redox in the upper 16 inches.

WETLAND DETERMINATION DATA FORM
Northcentral-Northeast Region

Project/Site: Vilas Road | Wetland ID: adj. W-1 | Sample Point: P5

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	*Quercus macrocarpa*	60	Y	FACU
2.	*Acer negundo*	20	N	FAC
3.	*Prunus serotina*	10	N	FACU
4.	*Ulmus americana*	8	N	FACW
5.	*ACER PLATANOIDES*	5	N	UPL
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	103		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	*Prunus serotina*	30	Y	FACU
2.	*RHAMNUS CATHARTICA*	10	Y	FAC
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	40		

Herb Stratum (Plot size: 2 meter radius)

1.	*RHAMNUS CATHARTICA*	25	Y	FAC
2.	*Prunus serotina*	10	N	FACU
3.	*Geum canadense*	10	N	FAC
4.	*Hackelia virginiana*	5	N	FACU
5.	*ALLIARIA PETIOLATA*	5	N	FACU
6	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	55		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
	Total Cover =	0		

Remarks:

Dominance Test Worksheet

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: ***50%*** (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	0	x 1 =	0
FACW spp.	8	x 2 =	16
FAC spp.	65	x 3 =	195
FACU spp.	120	x 4 =	480
UPL spp.	5	x 5 =	25
Total	198 (A)		716 (B)

Prevalence Index = B/A = ***3.616***

Hydrophytic Vegetation Indicators:

- ☐ Yes ☑ No Rapid Test for Hydrophytic Vegetation
- ☐ Yes ☑ No Dominance Test is > 50%
- ☐ Yes ☑ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☑ No Morphological Adaptations (Explain) *
- ☐ Yes ☑ No Problem Hydrophytic Vegetation (Explain) *

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

Definitions of Vegetation Strata:

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

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

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

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

Hydrophytic Vegetation Present ☐ Yes ☑ No

Additional Remarks:

WETLAND DETERMINATION DATA FORM
Northcentral-Northeast Region

Project/Site:	Vilas Road	Stantec Project #:	193704691	Date:	10/13/16
Applicant:	Reed and Leanne Widen			County:	Dane
Investigator #1:	Jeff Kraemer	Investigator #2:	Josh Sulman	State:	Wisconsin
Soil Unit:	McHenry silt loam	NWI/WWI Classification:		Wetland ID:	W-1
Landform:	Footslope	Local Relief:	Linear	Sample Point:	P6
Slope (%):	3	Latitude: N/A	Longitude: N/A	Datum: N/A	Community ID: Upland Ag Field
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks)			☐ Yes ☑ No	Section:	17
Are Vegetation ☑, Soil ☐, or Hydrology ☐ significantly disturbed?		Are normal circumstances present?		Township:	7N
Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic?		☐ Yes ☑ No		Range:	11E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	☐ Yes ☑ No	Hydric Soils Present?	☐ Yes ☑ No
Wetland Hydrology Present?	☐ Yes ☑ No	Is This Sampling Point Within A Wetland?	☐ **Yes** ☑ **No**

Remarks: Based on results of a WETS analysis, conditions are wetter than normal for this time of year. Sample point located in soybean field with standing healthy crop.

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☑):

Primary:
- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☐ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:
- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☐ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☐ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☐ Yes	☑ No	Depth:	(in.)
Water Table Present?	☐ Yes	☑ No	Depth:	(in.)
Saturation Present?	☐ Yes	☑ No	Depth:	(in.)

Wetland Hydrology Present? ☐ Yes ☑ No

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

Remarks: Review of aerial imagery for the sample point location indicated a lack of wet signatures in most normal years.

SOILS

Map Unit Name: McHenry silt loam — Series Drainage Class: well

Taxonomy (Subgroup): Typic Hapludalfs

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)		Matrix %	Redox Features Color (Moist)		Redox Features %	Redox Features Type	Redox Features Location	Texture (e.g. clay, sand, loam)
0	8	1	10YR	3/2	98	10YR	3/3	2	C	M	silty clay loam
8	12	2	10YR	2/1	90	--	--	--	--	--	--
8	12	2	10YR	3/1	10	--	--	--	--	--	--
12	18	3	10YR	3/1	95	10YR	3/6	5	C	M	clay loam
18	24	4	10YR	4/1	90	10YR	5/8	10	C	M	clay loam
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☑):
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ S7 - Dark Surface (LRR R, MLRA 149B)
- ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B)
- ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B)
- ☐ S11 - High Chroma Sands
- ☐ F1 - Loamy Mucky Mineral (LRR K, L)
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B)
- ☐ A16 - Coast Prairie Redox (LRR K, L, R)
- ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R)
- ☐ S7 - Dark Surface (LRR K, L, M)
- ☐ S8 - Polyvalue Below Surface (LRR K, L)
- ☐ S9 - Thin Dark Surface (LRR K, L)
- ☐ F12 - Iron-Manganese Masses (LRR K, L, R)
- ☐ F19 - Piedmont Floodplain Soils (MLRA 149B)
- ☐ F21 - Red Parent Material
- ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B)
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (If Observed) Type: N/A Depth: N/A

Hydric Soil Present? ☐ Yes ☑ No

Remarks: Horizon 2 consists of a mixed matrix.

WETLAND DETERMINATION DATA FORM
Northcentral-Northeast Region

Project/Site: Vilas Road | Wetland ID: W-1 | Sample Point: P6

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Herb Stratum (Plot size: 2 meter radius)

1.	*GLYCINE MAX*	80	Y	UPL
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	80		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
	Total Cover =	0		

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%*** (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	0	x 1 =	0
FACW spp.	0	x 2 =	0
FAC spp.	0	x 3 =	0
FACU spp.	0	x 4 =	0
UPL spp.	80	x 5 =	400
Total	80 (A)		400 (B)

Prevalence Index = B/A = ***5.000***

Hydrophytic Vegetation Indicators:

- ☐ Yes ☑ No Rapid Test for Hydrophytic Vegetation
- ☐ Yes ☑ No Dominance Test is > 50%
- ☐ Yes ☑ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☑ No Morphological Adaptations (Explain) *
- ☐ Yes ☑ No Problem Hydrophytic Vegetation (Explain) *

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

Definitions of Vegetation Strata:

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

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

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

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

Hydrophytic Vegetation Present ☐ Yes ☑ No

Remarks: Soybeans at the sample point are 3 feet tall, with no crop stress and no weeds present.

Additional Remarks:

WETLAND DETERMINATION DATA FORM
Northcentral-Northeast Region

Project/Site:	Vilas Road	Stantec Project #:	193704691	Date:	10/13/16
Applicant:	Reed and Leanne Widen			County:	Dane
Investigator #1:	Jeff Kraemer	Investigator #2:	Josh Sulman	State:	Wisconsin
Soil Unit:	McHenry silt loam	NWI/WWI Classification:	T3K	Wetland ID:	W-1
Landform:	Depression	Local Relief:	Concave	Sample Point:	P7
Slope (%):	0	Latitude: N/A	Longitude: N/A	Datum: N/A	Community ID: Forested Wetland
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks)			☐ Yes ☑ No	Section:	17
Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed?		Are normal circumstances present?		Township:	7N
Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic?		☐ Yes ☐ No		Range:	11E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	☑ Yes ☐ No	Hydric Soils Present?	☑ Yes ☐ No
Wetland Hydrology Present?	☑ Yes ☐ No	Is This Sampling Point Within A Wetland?	☑ **Yes** ☐ **No**

Remarks: Based on results of a WETS analysis, conditions are wetter than normal for this time of year. Sample point located at east edge of extensive forested wetland.

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐):

Primary:
- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☑ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:
- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☑ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☑ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☐ Yes	☑ No	Depth:		(in.)
Water Table Present?	☑ Yes	☐ No	Depth:	20	(in.)
Saturation Present?	☑ Yes	☐ No	Depth:	0	(in.)

Wetland Hydrology Present? ☑ Yes ☐ No

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

Remarks:

SOILS

Map Unit Name: McHenry silt loam — Series Drainage Class: well

Taxonomy (Subgroup): Typic Hapludalfs

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)		Matrix %	Redox Features Color (Moist)		Redox Features %	Redox Features Type	Redox Features Location	Texture (e.g. clay, sand, loam)
0	20	1	10YR	2/1	100	--	--	--	--	--	mucky loam
20	26	2	5Y	5/1	98	10YR	5/6	2	C	PL	clay loam
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐):
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A11 - Depleted Below Dark Surface
- ☑ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ S7 - Dark Surface (LRR R, MLRA 149B)
- ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B)
- ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B)
- ☐ S11 - High Chroma Sands
- ☑ F1 - Loamy Mucky Mineral (LRR K, L)
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B)
- ☐ A16 - Coast Prairie Redox (LRR K, L, R)
- ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R)
- ☐ S7 - Dark Surface (LRR K, L, M)
- ☐ S8 - Polyvalue Below Surface (LRR K, L)
- ☐ S9 - Thin Dark Surface (LRR K, L)
- ☐ F12 - Iron-Manganese Masses (LRR K, L, R)
- ☐ F19 - Piedmont Floodplain Soils (MLRA 149B)
- ☐ F21 - Red Parent Material
- ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B)
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (If Observed) Type: N/A Depth: N/A

Hydric Soil Present? ☑ Yes ☐ No

Remarks: Soils observed at the sample point are not consistent with mapped McHenry series charaacteristics; rather they are similar to the Wacousta Series mapped just to the west.

WETLAND DETERMINATION DATA FORM
Northcentral-Northeast Region

Project/Site: Vilas Road | Wetland ID: W-1 | Sample Point: P7

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	*Acer negundo*	60	Y	FAC
2.	*RHAMNUS CATHARTICA*	10	N	FAC
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	70		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	*RHAMNUS CATHARTICA*	25	Y	FAC
2.	*Sambucus nigra*	4	N	FACW
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	29		

Herb Stratum (Plot size: 2 meter radius)

1.	*Urtica dioica*	40	Y	FAC
2.	*PHALARIS ARUNDINACEA*	20	Y	FACW
3.	*Pilea pumila*	5	N	FACW
4.	*ALLIARIA PETIOLATA*	5	N	FACU
5.	*Galium aparine*	5	N	FACU
6	*Geum canadense*	2	N	FAC
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	77		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
	Total Cover =	0		

Remarks: Bare ground/moss covers 50% of herb stratum at sample point.

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: ***100%*** (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	0	x 1 =	0
FACW spp.	29	x 2 =	58
FAC spp.	137	x 3 =	411
FACU spp.	10	x 4 =	40
UPL spp.	0	x 5 =	0
Total	176 (A)		509 (B)

Prevalence Index = B/A = ***2.892***

Hydrophytic Vegetation Indicators:

- ☐ Yes ☑ No Rapid Test for Hydrophytic Vegetation
- ☑ Yes ☐ No Dominance Test is > 50%
- ☑ Yes ☐ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☑ No Morphological Adaptations (Explain) *
- ☐ Yes ☑ No Problem Hydrophytic Vegetation (Explain) *

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

Definitions of Vegetation Strata:

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

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

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

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

Hydrophytic Vegetation Present ☑ Yes ☐ No

Additional Remarks:

WETLAND DETERMINATION DATA FORM
Northcentral-Northeast Region

Project/Site:	Vilas Road	Stantec Project #:	193704691	Date:	10/13/16
Applicant:	Reed and Leanne Widen			County:	Dane
Investigator #1:	Jeff Kraemer	Investigator #2:	Josh Sulman	State:	Wisconsin
Soil Unit:	McHenry silt loam	NWI/WWI Classification:	none	Wetland ID:	adj. to W-1
Landform:	Footslope	Local Relief:	Linear	Sample Point:	P8
Slope (%):	3	Latitude: N/A	Longitude: N/A	Datum: N/A	Community ID: Upland Ag Field
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks)			☐ Yes ☑ No	Section:	17
Are Vegetation ☑, Soil ☐, or Hydrology ☐ significantly disturbed?		Are normal circumstances present?		Township:	7N
Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic?		☐ Yes ☑ No		Range:	11E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	☐ Yes ☑ No	Hydric Soils Present?	☑ Yes ☐ No
Wetland Hydrology Present?	☐ Yes ☑ No	Is This Sampling Point Within A Wetland?	☐ **Yes** ☑ **No**

Remarks: Based on results of a WETS analysis, conditions are wetter than normal for this time of year. Sample point located in soybean field with standing, healthy crop.

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☑):

Primary:
- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☐ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:
- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☐ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☐ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☐ Yes	☑ No	Depth:	(in.)
Water Table Present?	☐ Yes	☑ No	Depth:	(in.)
Saturation Present?	☐ Yes	☑ No	Depth:	(in.)

Wetland Hydrology Present? ☐ Yes ☑ No

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

Remarks: Review of aerial imagery for the sample point location shows a lack of wet signatures in most normal years.

SOILS

Map Unit Name: McHenry silt loam — Series Drainage Class: well

Taxonomy (Subgroup): Typic Hapludalfs

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)		Matrix %	Redox Features Color (Moist)		Redox Features %	Redox Features Type	Redox Features Location	Texture (e.g. clay, sand, loam)
0	10	1	10YR	3/2	90	10YR	3/3	4	C	M	silt loam
10	18	2	10YR	4/2	95	10YR	4/6	5	C	M	silty clay loam
18	24	3	10YR	5/1	95	10YR	5/8	5	C	M	clay loam
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐):
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☑ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ S7 - Dark Surface (LRR R, MLRA 149B)
- ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B)
- ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B)
- ☐ S11 - High Chroma Sands
- ☐ F1 - Loamy Mucky Mineral (LRR K, L)
- ☐ F2 - Loamy Gleyed Matrix
- ☑ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B)
- ☐ A16 - Coast Prairie Redox (LRR K, L, R)
- ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R)
- ☐ S7 - Dark Surface (LRR K, L, M)
- ☐ S8 - Polyvalue Below Surface (LRR K, L)
- ☐ S9 - Thin Dark Surface (LRR K, L)
- ☐ F12 - Iron-Manganese Masses (LRR K, L, R)
- ☐ F19 - Piedmont Floodplain Soils (MLRA 149B)
- ☐ F21 - Red Parent Material
- ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B)
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (If Observed) Type: N/A Depth: N/A

Hydric Soil Present? ☑ Yes ☐ No

Remarks:

WETLAND DETERMINATION DATA FORM
Northcentral-Northeast Region

Project/Site: Vilas Road | Wetland ID: adj. to W-1 | Sample Point: P8

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Herb Stratum (Plot size: 2 meter radius)

1.	*GLYCINE MAX*	80	Y	UPL
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	80		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
	Total Cover =	0		

Remarks: Healthy soy crop at sample point, showing no crop stress, no weeds.

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%*** (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	0	x 1 =	0
FACW spp.	0	x 2 =	0
FAC spp.	0	x 3 =	0
FACU spp.	0	x 4 =	0
UPL spp.	80	x 5 =	400
Total	80 (A)		400 (B)

Prevalence Index = B/A = ***5.000***

Hydrophytic Vegetation Indicators:

- ☐ Yes ☑ No Rapid Test for Hydrophytic Vegetation
- ☐ Yes ☑ No Dominance Test is > 50%
- ☐ Yes ☑ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☑ No Morphological Adaptations (Explain) *
- ☐ Yes ☑ No Problem Hydrophytic Vegetation (Explain) *

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

Definitions of Vegetation Strata:

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

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

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

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

Hydrophytic Vegetation Present ☐ Yes ☑ No

Additional Remarks:

WETLAND DETERMINATION DATA FORM
Northcentral-Northeast Region

Project/Site:	Vilas Road	Stantec Project #:	193704691	Date:	10/13/16
Applicant:	Reed and Leanne Widen			County:	Dane
Investigator #1:	Jeff Kraemer	Investigator #2:	Josh Sulman	State:	Wisconsin
Soil Unit:	Wacousta silty clay loam	NWI/WWI Classification:	S3K	Wetland ID:	W-1
Landform:	Toeslope	Local Relief:	Concave	Sample Point:	P9
Slope (%):	0	Latitude: N/A	Longitude: N/A	Datum: N/A	Community ID: Forested Wetland
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks)			☐ Yes ☑ No	Section:	17
Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed?		Are normal circumstances present?		Township:	7N
Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic?		☑ Yes ☐ No		Range:	11E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	☑ Yes ☐ No	Hydric Soils Present?	☑ Yes ☐ No
Wetland Hydrology Present?	☑ Yes ☐ No	Is This Sampling Point Within A Wetland?	☑ **Yes** ☐ **No**

Remarks: Based on results of a WETS analysis, conditions are wetter than normal for this time of year. Sample point located in forested wetland at base of slope.

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐):

Primary:
- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☐ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:
- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☑ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☑ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☐ Yes	☑ No	Depth:	(in.)
Water Table Present?	☑ Yes	☐ No	Depth: 18	(in.)
Saturation Present?	☑ Yes	☐ No	Depth: 14	(in.)

Wetland Hydrology Present? ☑ Yes ☐ No

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

Remarks:

SOILS

Map Unit Name: Wacousta silty clay loam — Series Drainage Class: very poorly

Taxonomy (Subgroup): Typic Endoaquolls

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)		Matrix %	Redox Features Color (Moist)		Redox Features %	Redox Features Type	Redox Features Location	Texture (e.g. clay, sand, loam)
0	8	1	10YR	2/1	100	--	--	--	--	--	mucky loam
8	12	2	10YR	3/1	100	--	--	--	--	--	silty clay loam
12	24	3	5Y	5/2	90	5Y	6/1	10	D	M	clay loam
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐):
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☒ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ S7 - Dark Surface (LRR R, MLRA 149B)
- ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B)
- ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B)
- ☐ S11 - High Chroma Sands
- ☑ F1 - Loamy Mucky Mineral (LRR K, L)
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B)
- ☐ A16 - Coast Prairie Redox (LRR K, L, R)
- ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R)
- ☐ S7 - Dark Surface (LRR K, L, M)
- ☐ S8 - Polyvalue Below Surface (LRR K, L)
- ☐ S9 - Thin Dark Surface (LRR K, L)
- ☐ F12 - Iron-Manganese Masses (LRR K, L, R)
- ☐ F19 - Piedmont Floodplain Soils (MLRA 149B)
- ☐ F21 - Red Parent Material
- ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B)
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (If Observed) Type: N/A Depth: N/A

Hydric Soil Present? ☑ Yes ☐ No

Remarks:

WETLAND DETERMINATION DATA FORM
Northcentral-Northeast Region

Project/Site: Vilas Road | Wetland ID: W-1 | Sample Point: P9

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	*Ulmus americana*	60	Y	FACW
2.	*Acer negundo*	20	Y	FAC
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	80		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	*Cornus racemosa*	10	Y	FAC
2.	*RHAMNUS CATHARTICA*	5	Y	FAC
3.	*Ulmus americana*	5	Y	FACW
4.	*LONICERA X BELLA*	2	N	FACU
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	22		

Herb Stratum (Plot size: 2 meter radius)

1.	*Geum canadense*	50	Y	FAC
2.	*ALLIARIA PETIOLATA*	25	Y	FACU
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	75		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	*Vitis riparia*	5	Y	FAC
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
	Total Cover =	5		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ***88%*** (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	0	x 1 =	0
FACW spp.	65	x 2 =	130
FAC spp.	90	x 3 =	270
FACU spp.	27	x 4 =	108
UPL spp.	0	x 5 =	0
Total	182 (A)		508 (B)

Prevalence Index = B/A = ***2.791***

Hydrophytic Vegetation Indicators:

- ☐ Yes ☑ No Rapid Test for Hydrophytic Vegetation
- ☑ Yes ☐ No Dominance Test is > 50%
- ☑ Yes ☐ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☑ No Morphological Adaptations (Explain) *
- ☐ Yes ☑ No Problem Hydrophytic Vegetation (Explain) *

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

Definitions of Vegetation Strata:

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

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

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

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

Hydrophytic Vegetation Present ☑ Yes ☐ No

Additional Remarks:

WETLAND DETERMINATION DATA FORM
Northcentral-Northeast Region

Project/Site:	Vilas Road	Stantec Project #:	193704691	Date:	10/13/16
Applicant:	Reed and Leanne Widen			County:	Dane
Investigator #1:	Jeff Kraemer	Investigator #2:	Josh Sulman	State:	Wisconsin
Soil Unit:	Sable silty clay loam	NWI/WWI Classification:		Wetland ID:	adj. W-1
Landform:	Rise	Local Relief:	Convex	Sample Point:	P10
Slope (%):		Latitude: N/A	Longitude: N/A	Datum: N/A	Community ID: Upland Ag Field
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks)			☐ Yes ☑ No	Section:	17
Are Vegetation ☑, Soil ☐, or Hydrology ☐ significantly disturbed?		Are normal circumstances present?		Township:	7N
Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic?		☐ Yes ☑ No		Range:	11E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	☐ Yes ☑ No	Hydric Soils Present?	☑ Yes ☐ No
Wetland Hydrology Present?	☐ Yes ☑ No	Is This Sampling Point Within A Wetland?	☐ **Yes** ☑ **No**

Remarks: Based on results of a WETS analysis, conditions are wetter than normal for this time of year. Sample point is located in soybean field with healthy standing crop.

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☑):

Primary:
- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☐ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:
- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☐ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☐ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☐ Yes	☑ No	Depth:	(in.)
Water Table Present?	☐ Yes	☑ No	Depth:	(in.)
Saturation Present?	☐ Yes	☑ No	Depth:	(in.)

Wetland Hydrology Present? ☐ Yes ☑ No

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

Remarks: Review of aerial imagery for sample point location indicates a lack of consistent wet signatures in normal years.

SOILS

Map Unit Name: Sable silty clay loam — Series Drainage Class: poorly

Taxonomy (Subgroup): Typic Endoaquolls

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)		Matrix %	Redox Features Color (Moist)		Redox Features %	Redox Features Type	Redox Features Location	Texture (e.g. clay, sand, loam)
0	10	1	10YR	4/2	97	10YR	3/3	3	C	M	silt loam
10	18	2	10YR	6/1	95	7.5YR	4/6	5	C	M	silty clay loam
18	24	3	10YR	6/1	90	7.5YR	4/6	10	C	M	silty clay loam
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐):
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ S7 - Dark Surface (LRR R, MLRA 149B)
- ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B)
- ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B)
- ☐ S11 - High Chroma Sands
- ☐ F1 - Loamy Mucky Mineral (LRR K, L)
- ☐ F2 - Loamy Gleyed Matrix
- ☑ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B)
- ☐ A16 - Coast Prairie Redox (LRR K, L, R)
- ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R)
- ☐ S7 - Dark Surface (LRR K, L, M)
- ☐ S8 - Polyvalue Below Surface (LRR K, L)
- ☐ S9 - Thin Dark Surface (LRR K, L)
- ☐ F12 - Iron-Manganese Masses (LRR K, L, R)
- ☐ F19 - Piedmont Floodplain Soils (MLRA 149B)
- ☐ F21 - Red Parent Material
- ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B)
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (If Observed) Type: N/A Depth: N/A

Hydric Soil Present? ☑ Yes ☐ No

Remarks:

WETLAND DETERMINATION DATA FORM
Northcentral-Northeast Region

Project/Site: Vilas Road | Wetland ID: adj. W-1 | Sample Point: P10

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Herb Stratum (Plot size: 2 meter radius)

1.	*GLYCINE MAX*	70	Y	UPL
2.	*TARAXACUM OFFICINALE*	2	N	FACU
3.	*Vitis riparia*	1	N	FAC
4.	*ABUTILON THEOPHRASTI*	1	N	FACU
5.	--	--	--	--
6	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	74		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
	Total Cover =	0		

Remarks: Soybean crop at sample point showed no signs of crop stress. Weeds present at low density, are overall predominantly non-hydrophytic.

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%* (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	0	x 1 =	0
FACW spp.	0	x 2 =	0
FAC spp.	1	x 3 =	3
FACU spp.	3	x 4 =	12
UPL spp.	70	x 5 =	350
Total	74 (A)		365 (B)

Prevalence Index = B/A = *4.932*

Hydrophytic Vegetation Indicators:

- ☐ Yes ☑ No Rapid Test for Hydrophytic Vegetation
- ☐ Yes ☑ No Dominance Test is > 50%
- ☐ Yes ☑ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☑ No Morphological Adaptations (Explain) *
- ☐ Yes ☑ No Problem Hydrophytic Vegetation (Explain) *

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

Definitions of Vegetation Strata:

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

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

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

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

Hydrophytic Vegetation Present ☐ Yes ☑ No

Additional Remarks:

WETLAND DETERMINATION DATA FORM
Northcentral-Northeast Region

Project/Site:	Vilas Road	Stantec Project #:	193704691	Date:	10/13/16
Applicant:	Reed and Leanne Widen			County:	Dane
Investigator #1:	Jeff Kraemer	Investigator #2:	Josh Sulman	State:	Wisconsin
Soil Unit:	Marshan silt loam	NWI/WWI Classification:	T3K	Wetland ID:	W-1
Landform:	Depression	Local Relief:	Concave	Sample Point:	P11
Slope (%):	0	Latitude: N/A / Longitude: N/A	Datum: N/A	Community ID:	Forested Wetland
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks)		☐ Yes ☑ No		Section:	17
Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed?		Are normal circumstances present?		Township:	7N
Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic?		☑ Yes ☐ No		Range:	11E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	☑ Yes ☐ No	Hydric Soils Present?	☑ Yes ☐ No
Wetland Hydrology Present?	☑ Yes ☐ No	Is This Sampling Point Within A Wetland?	☑ **Yes** ☐ **No**

Remarks: Based on results of a WETS analysis, conditions are wetter than normal for this time of year. Sample point located in forested wetland, east of ditched waterway, west of ag field edge.

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐):

Primary:
- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☐ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:
- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☑ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☑ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☐ Yes	☑ No	Depth:	(in.)
Water Table Present?	☐ Yes	☑ No	Depth:	(in.)
Saturation Present?	☐ Yes	☑ No	Depth:	(in.)

Wetland Hydrology Present? ☑ Yes ☐ No

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

Remarks: Hydroperiod likely reduced as result of lateral effect of drainage ditch to west.

SOILS

Map Unit Name: Marshan silt loam — Series Drainage Class: very poorly

Taxonomy (Subgroup): Typic Endoaquolls

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)		Matrix %	Redox Features Color (Moist)		Redox Features %	Redox Features Type	Redox Features Location	Texture (e.g. clay, sand, loam)
0	8	1	10YR	2/1	100	--	--	--	--	--	mucky loam
8	24	2	10YR	5/1	100	--	--	--	--	--	clay loam
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐):
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☑ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ S7 - Dark Surface (LRR R, MLRA 149B)
- ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B)
- ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B)
- ☐ S11 - High Chroma Sands
- ☑ F1 - Loamy Mucky Mineral (LRR K, L)
- ☐ F2 - Loamy Gleyed Matrix
- ☑ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B)
- ☐ A16 - Coast Prairie Redox (LRR K, L, R)
- ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R)
- ☐ S7 - Dark Surface (LRR K, L, M)
- ☐ S8 - Polyvalue Below Surface (LRR K, L)
- ☐ S9 - Thin Dark Surface (LRR K, L)
- ☐ F12 - Iron-Manganese Masses (LRR K, L, R)
- ☐ F19 - Piedmont Floodplain Soils (MLRA 149B)
- ☐ F21 - Red Parent Material
- ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B)
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (If Observed) Type: N/A Depth: N/A

Hydric Soil Present? ☑ Yes ☐ No

Remarks:

WETLAND DETERMINATION DATA FORM
Northcentral-Northeast Region

Project/Site: Vilas Road | Wetland ID: W-1 | Sample Point: P11

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	*Acer negundo*	70	Y	FAC
2.	*Ulmus americana*	20	Y	FACW
3.	*MORUS ALBA*	10	N	FACU
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	100		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	*RHAMNUS CATHARTICA*	30	Y	FAC
2.	*Acer negundo*	15	Y	FAC
3.	*MORUS ALBA*	5	N	FACU
4.	*Sambucus nigra*	4	N	FACW
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	54		

Herb Stratum (Plot size: 2 meter radius)

1.	*SOLANUM DULCAMARA*	70	Y	FAC
2.	*Geum canadense*	25	N	FAC
3.	*ARCTIUM MINUS*	15	N	FACU
4.	*Hackelia virginiana*	10	N	FACU
5.	*Fallopia scandens*	8	N	FAC
6	*Bidens frondosa*	5	N	FACW
7.	*Symphyotrichum lateriflorum*	2	N	FAC
8.	*PHALARIS ARUNDINACEA*	2	N	FACW
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	137		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
	Total Cover =	0		

Dominance Test Worksheet

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

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ***100%*** (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	0	x 1 =	0
FACW spp.	31	x 2 =	62
FAC spp.	220	x 3 =	660
FACU spp.	40	x 4 =	160
UPL spp.	0	x 5 =	0
Total	291 (A)		882 (B)

Prevalence Index = B/A = ***3.031***

Hydrophytic Vegetation Indicators:

- ☐ Yes ☑ No Rapid Test for Hydrophytic Vegetation
- ☑ Yes ☐ No Dominance Test is > 50%
- ☐ Yes ☑ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☑ No Morphological Adaptations (Explain) *
- ☐ Yes ☑ No Problem Hydrophytic Vegetation (Explain) *

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

Definitions of Vegetation Strata:

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

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

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

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

Hydrophytic Vegetation Present ☑ Yes ☐ No

Remarks: Vegetation meets hydrophytic criterion based on dominance test, although not by prevalence index, due to high coverage by FACU species. Vegetation likely responding to artificial drainage effects from ditch to west.

Additional Remarks:

WETLAND DETERMINATION DATA FORM
Northcentral-Northeast Region

Project/Site:	Vilas Road	Stantec Project #:	193704691	Date:	10/13/16
Applicant:	Reed and Leanne Widen			County:	Dane
Investigator #1:	Jeff Kraemer	Investigator #2:	Josh Sulman	State:	Wisconsin
Soil Unit:	Sable silty clay loam	NWI/WWI Classification:		Wetland ID:	W-1
Landform:	Dip	Local Relief:	Concave	Sample Point:	P12
Slope (%):	1	Latitude: N/A	Longitude: N/A	Datum: N/A	Community ID: Farmed Wetland
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks)			☐ Yes ☑ No	Section:	17
Are Vegetation ☑, Soil ☐, or Hydrology ☐ significantly disturbed?		Are normal circumstances present?		Township:	7N
Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic?		☐ Yes ☑ No		Range:	11E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	☑ Yes ☐ No	Hydric Soils Present?	☑ Yes ☐ No
Wetland Hydrology Present?	☑ Yes ☐ No	Is This Sampling Point Within A Wetland?	☑ **Yes** ☐ **No**

Remarks: Based on results of a WETS analysis, conditions are wetter than normal for this time of year. Sample point is located within flooded portion of soybean field. Vegetation significantly disturbed due to cultivation, thus wetland determination made on basis of wetland hydrology and soils.

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐):

Primary:
- ☑ A1 - Surface Water
- ☑ A2 - High Water Table
- ☑ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:
- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☑ C9 - Saturation Visible on Aerial Imagery
- ☑ D1 - Stunted or Stressed Plants
- ☑ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☐ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☑ Yes ☐ No	Depth:	0.5	(in.)
Water Table Present?	☑ Yes ☐ No	Depth:	0	(in.)
Saturation Present?	☑ Yes ☐ No	Depth:	0	(in.)

Wetland Hydrology Present? ☑ Yes ☐ No

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

Remarks: Review of aerial imagery for the sample point location showed wet signatures for most (10 of 13 reviewed) normal years, and 3 of 5 dry years. Crop stress visible in aerial imagery; current crop of soy dropped its leaves early in wetland relative to non-wetland portion of field.

SOILS

Map Unit Name: Sable silty clay loam — Series Drainage Class: poorly

Taxonomy (Subgroup): Typic Endoaquolls

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)		Matrix %	Redox Features Color (Moist)		Redox Features %	Redox Features Type	Redox Features Location	Texture (e.g. clay, sand, loam)
0	8	1	10YR	3/1	95	10YR	3/4	5	C	M	silty clay loam
8	12	2	10YR	2/1	100	--	--	--	--	--	silty clay loam
12	24	3	10YR	5/1	92	10YR	5/6	8	C	M	silty clay
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐):
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☑ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ S7 - Dark Surface (LRR R, MLRA 149B)
- ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B)
- ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B)
- ☐ S11 - High Chroma Sands
- ☐ F1 - Loamy Mucky Mineral (LRR K, L)
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☑ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B)
- ☐ A16 - Coast Prairie Redox (LRR K, L, R)
- ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R)
- ☐ S7 - Dark Surface (LRR K, L, M)
- ☐ S8 - Polyvalue Below Surface (LRR K, L)
- ☐ S9 - Thin Dark Surface (LRR K, L)
- ☐ F12 - Iron-Manganese Masses (LRR K, L, R)
- ☐ F19 - Piedmont Floodplain Soils (MLRA 149B)
- ☐ F21 - Red Parent Material
- ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B)
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (If Observed) Type: N/A Depth: N/A

Hydric Soil Present? ☑ Yes ☐ No

Remarks: Soils observed at the sample point are generally consistent with Sable series characteristics.

WETLAND DETERMINATION DATA FORM
Northcentral-Northeast Region

Project/Site: Vilas Road | Wetland ID: W-1 | Sample Point: P12

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Herb Stratum (Plot size: 2 meter radius)

1.	*GLYCINE MAX*	70	Y	UPL
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	70		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
	Total Cover =	0		

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%*** (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	0	x 1 =	0
FACW spp.	0	x 2 =	0
FAC spp.	0	x 3 =	0
FACU spp.	0	x 4 =	0
UPL spp.	70	x 5 =	350
Total	70 (A)		350 (B)

Prevalence Index = B/A = ***5.000***

Hydrophytic Vegetation Indicators:

- ☐ Yes ☑ No Rapid Test for Hydrophytic Vegetation
- ☐ Yes ☑ No Dominance Test is > 50%
- ☐ Yes ☑ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☑ No Morphological Adaptations (Explain) *
- ☑ Yes ☐ No Problem Hydrophytic Vegetation (Explain) *

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

Definitions of Vegetation Strata:

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

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

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

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

Hydrophytic Vegetation Present ☑ Yes ☐ No

Remarks: Current year's soy crop appears to have senesced and dropped its leaves early in response to saturation / high water table. Vegetation at sample point is disturbed due to cultivation.

Additional Remarks:

Wetland determination made on basis of consistent wet signatures in normal years; hydric soils; and disturbed vegetation (farmed). It is unusual to have primary indicators of wetland hydrology in what is typically the Dry Season, but abnormally wet conditions were present. Thus, the presence of wet signatures under normal precipitation conditions provide stronger evidence that this sample point location is in wetland.

WETLAND DETERMINATION DATA FORM
Northcentral-Northeast Region

Project/Site:	Vilas Road	Stantec Project #:	193704691	Date:	10/13/16
Applicant:	Reed and Leanne Widen			County:	Dane
Investigator #1:	Jeff Kraemer	Investigator #2:	Josh Sulman	State:	Wisconsin
Soil Unit:	Sable silty clay loam	NWI/WWI Classification:	none	Wetland ID:	Adj. W-1
Landform:	Rise	Local Relief:	--	Sample Point:	P13
Slope (%):	1	Latitude: N/A	Longitude: N/A	Community ID:	Upland Ag Field
			Datum: N/A	Section:	17
				Township:	7N
				Range:	11E

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

Are Vegetation ☑, Soil ☐, or Hydrology ☐ significantly disturbed?
Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic?

Are normal circumstances present? ☐ Yes ☑ No

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	☐ Yes ☑ No	Hydric Soils Present?	☑ Yes ☐ No
Wetland Hydrology Present?	☐ Yes ☑ No	Is This Sampling Point Within A Wetland?	☐ **Yes** ☑ **No**

Remarks: Based on results of a WETS analysis, conditions are wetter than normal for this time of year. Sample point is located on slight rise in soybean field north of flooded farmed wetland.

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☑):

Primary:
- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☐ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:
- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☐ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☐ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth:	(in.)
Water Table Present?	☐ Yes ☑ No	Depth:	(in.)
Saturation Present?	☐ Yes ☑ No	Depth:	(in.)

Wetland Hydrology Present? ☐ Yes ☑ No

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

Remarks: Sample point is located on a slight topographic rise, in a location without consistent wet signatures, based on the results of an aerial imagery review.

SOILS

Map Unit Name: Sable silty clay loam — Series Drainage Class: poorly

Taxonomy (Subgroup): Typic Endoaquolls

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)		Matrix %	Redox Features Color (Moist)		Redox Features %	Redox Features Type	Redox Features Location	Texture (e.g. clay, sand, loam)
0	8	1	10YR	3/1	100	--	--	--	--	--	silty clay loam
8	18	2	5Y	5/2	80	10YR	5/6	20	C	M	silty clay
18	24	3	5Y	5/2	95	10YR	5/6	20	C	M	silty clay
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐):
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☑ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ S7 - Dark Surface (LRR R, MLRA 149B)
- ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B)
- ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B)
- ☐ S11 - High Chroma Sands
- ☐ F1 - Loamy Mucky Mineral (LRR K, L)
- ☐ F2 - Loamy Gleyed Matrix
- ☑ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils [1]
- ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B)
- ☐ A16 - Coast Prairie Redox (LRR K, L, R)
- ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R)
- ☐ S7 - Dark Surface (LRR K, L, M)
- ☐ S8 - Polyvalue Below Surface (LRR K, L)
- ☐ S9 - Thin Dark Surface (LRR K, L)
- ☐ F12 - Iron-Manganese Masses (LRR K, L, R)
- ☐ F19 - Piedmont Floodplain Soils (MLRA 149B)
- ☐ F21 - Red Parent Material
- ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B)
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (If Observed) Type: N/A Depth: N/A

Hydric Soil Present? ☑ Yes ☐ No

Remarks: Soils observed at the sample point are consistent with Sable Series characteristics.

WETLAND DETERMINATION DATA FORM
Northcentral-Northeast Region

Project/Site: Vilas Road | Wetland ID: Adj. W-1 | Sample Point: P13

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Herb Stratum (Plot size: 2 meter radius)

1.	*GLYCINE MAX*	70	Y	UPL
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	70		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
	Total Cover =	0		

Remarks: Healthy soy crop at sample point, no crop stress or weeds present.

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%*** (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	0	x 1 =	0
FACW spp.	0	x 2 =	0
FAC spp.	0	x 3 =	0
FACU spp.	0	x 4 =	0
UPL spp.	70	x 5 =	350
Total	70 (A)		350 (B)

Prevalence Index = B/A = ***5.000***

Hydrophytic Vegetation Indicators:

- ☐ Yes ☑ No Rapid Test for Hydrophytic Vegetation
- ☐ Yes ☑ No Dominance Test is > 50%
- ☐ Yes ☑ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☑ No Morphological Adaptations (Explain) *
- ☐ Yes ☑ No Problem Hydrophytic Vegetation (Explain) *

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

Definitions of Vegetation Strata:

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

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

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

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

Hydrophytic Vegetation Present ☐ Yes ☑ No

Additional Remarks:

Appendix C – Site Photographs

Photo 1. Overview of north soybean field from driveway, view west.

Photo 2. Upland mowed lawn at P1, view south.

Photo 3. Upland Forest at P2, view west

Photo 4. Upland Forest at P5, view west

Photo 5. South upland field, P8 view southwest.

Photo 6. North upland field, P13 view west.

Photo 7. W-1 forested wetland: P4 view west.

Photo 8. W-1 forested wetland: P7 view west.

Photo 9. W-1 forested wetland, west of P9: view west.

Photo 10. W-1 farmed wetland: P12 view north.

Photo 11. Ditch waterway, west edge of W-1, view upstream (north).

Photo 12. Ditch waterway, west edge of W-1, view downstream (south).

Photo 13. W-2 excavated pond, view west.

Photo 14. W-2 excavated pond, view north.

Photo 15. W-2 forested wetland: P3, view east.

Photo 16. W-2 forested wetland: P3, view west.

Appendix D – WETS Analysis

WETS Analysis Worksheet

Project Name: Vilas Road
Project Number: 193704691
Period of interest: June - August
Station: MADISON DANE RGNL AP, WI837
County: Dane County, WI

Long-term rainfall records (from WETS table)

	Month	3 years in 10 less than	Normal	3 years in 10 greater than
1st month prior:	August	3.07	4.33	5.12
2nd month prior:	July	2.88	3.93	4.62
3rd month prior:	June	2.36	4.05	4.92
		Sum =	**12.31**	

Site determination

Site Rainfall (in)	Condition Dry/Normal*/Wet	Condition** Value	Month Weight	Product
7.87	Wet	3	3	9
5.23	Wet	3	2	6
5.35	Wet	3	1	3
Sum = **18.45**			Sum*** =	**18**

*Normal precipitation with 30% to 70% probability of occurrence

Determination: **X** Wet ____ Dry ____ Normal

**Condition value:

Dry =	1
Normal =	2
Wet =	3

***If sum is:

6 to 9	then period has been drier than normal
10 to 14	then period has been normal
15 to 18	then period has been wetter than normal

Precipitation data source: USDA Field Office Climate Data

Reference: Donald E.Woodward, ed. 1997. *Hydrology Tools for Wetland Determination* , Chapter 19. Engineering Field Handbook. U.S. Department of Agriculture, Natural Resources Conservation Service, Fort Worth, TX.

WETS Analysis Worksheet

Project Name: Vilas Road
Project Number: 193704691
Period of interest: July - September
Station: MADISON DANE RGNL AP, WI837
County: Dane County, WI

Long-term rainfall records (from WETS table)

	Month	3 years in 10 less than	Normal	3 years in 10 greater than
1st month prior:	September	1.58	3.08	3.77
2nd month prior:	August	3.07	4.33	5.12
3rd month prior:	July	2.88	3.93	4.62
		Sum =	**11.34**	

Site determination

Site Rainfall (in)	Condition Dry/Normal*/Wet	Condition** Value	Month Weight	Product
8.46	Wet	3	3	9
7.87	Wet	3	2	6
5.23	Wet	3	1	3
Sum = **21.56**			Sum*** =	**18**

*Normal precipitation with 30% to 70% probability of occurrence

Determination: **X** Wet ____ Dry ____ Normal

**Condition value:
Dry = 1
Normal = 2
Wet = 3

***If sum is:

6 to 9	then period has been drier than normal
10 to 14	then period has been normal
15 to 18	then period has been wetter than normal

Precipitation data source: USDA Field Office Climate Data

Reference: Donald E.Woodward, ed. 1997. *Hydrology Tools for Wetland Determination* , Chapter 19. Engineering Field Handbook. U.S. Department of Agriculture, Natural Resources Conservation Service, Fort Worth, TX.

Appendix E – Off-Site Aerial Imagery Analysis

Off-Site Aerial Photography Review[1]

Vilas Road Wetland Delineation - Cottage Grove, WI

Project Location: Sections 16 & 17, Township 7N, Range 11E, Dane County

Year	Monthly Rainfall in Inches [2]			Relative Wetness	Cropped[3]?	Wetness Signature[4,5,2]	Interpretation
1980	2.36	2.08	3.43	**Normal**	**CR**	**N**	No wetness signatures observed
1981	3.42	0.64	4.99	**Normal**	**CR**	**Y+ 5, 6a, 6b**	wet signature across central portion of north field, west side of south field
1982	3.26	4.34	3.40	**Normal**	**CR**	**Y-, 6a**	wet signature across central portion of north field
1983	2.23	4.21	1.85	**Normal**	**CR**	**Y+, 3, 5, 6a**	wet signature across central portion of north field
1985	1.52	3.35	3.06	**Normal**	**CR**	**Y-, 6a**	wet signatures in central & NW portions of north field; west edge of south field
1990	1.90	5.35	4.88	**Normal**	**CR**	**Y-, 6e**	wet signature across central portion of north field
1994	2.57	1.33	5.66	**Normal**	**CR**	**Y-, 6c**	stressed crop visible in southern portion of north field
1995	4.14	3.92	1.22	**Normal**	**CR**	**N**	No wetness signatures observed
1997	2.50	1.94	5.23	**Normal**	**CR**	**Y-, 3**	wet signature, south edge north field
2002	3.45	2.92	3.70	**Normal**	**CR**	**Y+, 6a**	dark green across eastern 2/3 of north field; house built
2004	1.76	10.84	3.93	**Normal**	**CR**	**Y-, 3**	wet signature in south central portion of north field
2005	1.68	3.96	1.65	**Normal**	**CR**	**Y-, 5**	central portion of north field, W side of south field green, rest of fields brown; excavated pond; add. dist., south portion of south field
2006	5.04	4.61	2.29	**Normal**	**CR**	**N**	No wetness signatures observed

Does slide/aerial photo analysis indicate the site is a wetland?

Yes: wet signatures were most commonly seen in the south-central portion of the north ag field, across the field to the north edge, and on the west edge of the south ag field. The excavated pond first appeared in 2005.
10 out of 13 most the recent "normal" precipitation years had wetland signatures present in south-central portion of north field
3 out of 13 most the recent "normal" precipitation years had wetland signatures present in west edge of south field

DRY
NORMAL
WET

[1] Farm Service Agency (FSA) slides are used for this review unless otherwise noted. Assumption is made that FSA slides are taken in July; as a result, precipitation analysis focuses on three r

[2] Precipitation data from NWS weather station #WI837 - Dane County Regional Airport, Madison, WI

[3] CR = cropped (row crop or tilled), NC = not cropped (hay, pasture, fallow, etc.)

[4] Y = wetness signature present (+ = strong, - = weak); N = No wetness signature

[5] Interpretation Codes - Feature: 1=water, 2=mud flat, 3=bare spot, 4=drowned crop, 5=planted late; Color: 6a=dark green, 6b=light green, 6c=yellow, 6d=brown, 6e=black; Manipulation: 7a=ditched, 7b=tiled, 7c=filled, 7d=tree/brush removal, 8=plowed/tilled; Other: write explanation as needed

Appendix F– Delineator Qualifications

Jeffrey D. Kraemer W.P.I.T.

Senior Scientist / Project Manager

Mr. Kraemer specializes in environmental regulatory support and policy. He has substantial experience working with the local, state, and federal regulatory agencies on complex, often controversial projects. Mr. Kraemer has substantial experience assisting clients at the project planning level to identify and plan for environmental regulatory implications and risk across many industry sectors with particular expertise in the utility and private development industries. Mr. Kraemer has a thorough understanding of the technical and regulatory aspects of environmental projects. His experience includes: Project critical issues analysis/permitting feasibly assessments; Wetland and other natural resource investigations, mitigation planning, and permitting; Clean Water Act and Endangered Species Act studies and consultation; and National Environmental Policy Act documentation (EA/EIS).

In addition to environmental regulatory expertise, Mr. Kraemer has a strong technical background in wetland ecology and botany and manages Stantec's Midwest ecological restoration implementation group. This group is responsible for building, managing, and monitoring natural area restoration projects such as wetland mitigation. Mr. Kraemer is an assured wetland professional through the Wisconsin Department of Natural Resources Wetland Delineation Professional Assurance Initiative and has extensive environmental consulting experience as both a field ecologist and project manager.

EDUCATION

Wetland Training Institute, Training, Wetland Soils and Hydrology, 2003

Vegetation of Wisconsin Workshop, Training, UW-Milwaukee, 2000

Wetland Delineation Training Workshop, Continuing Education and Extension, UW-La Crosse, 2001

Identification of Sedges Workshop, Training, UW-Milwaukee, 2001

Environmental Corridor Delineation Workshop, Training, Southeastern Wisconsin Regional Planning Commission (SEWRPC), 2004

M.S. – Biological Sciences (Emphasis in Wetland Ecology), University of Wisconsin, Milwaukee, Wisconsin, 2003

B.S. – Biological Sciences (Emphasis in Aquatic Biology), University of Wisconsin, La Crosse, Wisconsin, 1999

Assured Wetland Delineator, Milwaukee, Wisconsin, 2008

REGISTRATIONS

Professionally Assured Wetland Delineator, Wisconsin Department of Natural Resources

Wetland Professional in Training (WPIT), Society of Wetland Scientists Certification Program

MEMBERSHIPS

Member, Society of Wetland Scientists

Member, Wisconsin Wetlands Association

PROJECT EXPERIENCE

Commercial / Retail Development

Commercial Development, Windsor, Wisconsin

Completed wetland delineation/evaluation, wetland permitting, and wetland mitigation planning in support of the commercial development project.

Fitchburg Technology Campus, Fitchburg, Wisconsin

Completed woodland assessment, tree survey, and woodland restoration and management plan in support of retail and commercial development project.

Jeffrey D. Kraemer W.P.I.T.

Senior Scientist / Project Manager

Conventional Power

Edgewater Generation Facility, Sheboygan, Wisconsin

Managed and coordinated environmental regulatory process for expansion of existing fly-ash disposal facility which required approvals from the USACE and WDNR for wetland impacts associated with the project.

Waukegan Power Station, Lake County, Illinois

Provided threatened and endangered species consultation and wetland surveying along Lake Michigan shorelines for permitting a dredging activity and expansion of the facility.

Nelson Dewey Power Generation Facility Expansion Project, Caseville, Wisconsin

Completed comprehensive field evaluations of wetlands in preparation of NEPA documentation for expansion of the facility.

Waukegan Power Generation Facility Expansion Project, Lake County, Illinois

Completed field evaluations of wetlands and threatened and endangered species in coordination with Section 404 permitting requirements for expansion of the facility.

Invasive Species Survey, Prairie Du Sac, Wisconsin

Conducted a purple loosestrife survey on Lake Wisconsin shorelines and wetlands in order to develop a purple loosestrife management plan in support of the hydroelectric facility FERC licensing.

Ecosystem Restoration

Campus Facility Native Landscape Management, Milwaukee County, Wisconsin

Managed and coordinated development of a native landscape plan for the 50 acres of open space surrounding Northwestern Mutual's campus facility. The plan consisted of wetland, woodland, and prairie restoration. Following completion and approval of the plan, continued to manage and coordinate the implementation of native landscape installation and long-term management.

Threatened Plant Species Consultation, Port Wing, Wisconsin

Completed comprehensive study of a threatened plant species population (Petasites sagittutus) in support of STH 13 Reconstruction project including preparation of relocation and monitoring plan, physical relocation of plants, and follow-up annual monitoring. This project resulted in one of the first documented, successful relocation of this species after five years of monitoring.

Neptune Wetland Mitigation Site, Richland County, Wisconsin

Completed annual comprehensive vegetation surveys, mapping, performance evaluations, and reporting of a 50-acre wetland mitigation bank site.

Lake Koshkonong Water Level and Wetland Studies, Lake Koshkonong, Wisconsin

Developed and conducted wetland studies for development of a water level management plan: E. prairie fringed orchid hydrology study; Floodplain forest/hydrology study; Floristic quality assessment/vegetation mapping within 4000 acres of wetlands.

Wildcat Mountain Wetland Mitigation Monitoring, Vernon County, Wisconsin

Completed comprehensive vegetation surveys, mapping, performance evaluations, and reporting of 38-acre mitigation site.

Jug Creek Wetland Mitigation Monitoring, Vernon County, Wisconsin

Completed comprehensive vegetation surveys, mapping, performance evaluations, and reporting of 10-acre mitigation site.

Wetland Mitigation Bank Monitoring and Remediation, Oakdale, Wisconsin

Completed annual mitigation site monitoring, vegetation surveys, and performance evaluations of 60-acre mitigation bank site. Completed mitigation remediation management plan for compliance with USACE performance standards.

Samuelson Fen Restoration, Portage, Indiana

Developed restoration plan to restore a degraded 30-acre fen, conducted vegetation surveys, floristic quality assessments and hydrology monitoring.

** denotes projects completed with other firms*

Jeffrey D. Kraemer W.P.I.T.

Senior Scientist / Project Manager

Healthcare

Badger Prairie Health Care Center Expansion Project, Verona, Wisconsin

Completed wetland delineation/evaluations and wetland permitting in support of the expansion of the healthcare facility.

Oil and Gas Pipelines

New Gas Pipeline Project, Wausau, Wisconsin

Completed environmental surveys along proposed gas pipeline corridor including environmental assessments, threatened and endangered plant species survey, and identification of wetland and upland community types.

Southern Access Expansion Project, Wisconsin

Crude Petroleum Pipeline Project. Completed wetland delineations and habitat assessments along a 343 mile proposed crude petroleum pipeline corridor through Wisconsin as part of Enbridge Energy's Southern Access Expansion Program.

Power Transmission & Distribution

ComEd Prairie Programs, Various Locations, Illinois

Project manager for supporting ComEd's Prairie Program. ComEd initiated this program to restore native prairie habitats within their electric transmission Rights-of-way (ROW) and buffers. Stantec manages this program in coordination with ComEd which includes development of native management plans; coordination with site stewards; development of annual budgets; development of performance standards, and identifying new sites and stewards for program expansion. Stantec's implementation services include a full range of prairie restoration and management including preparing and installing new prairies and managing existing prairies through herbiciding, mowing, shrub removal; and prescribed burning. Currently there are over 100 acres of ROW within the prairie program in various stages of development.

Prairie Program

Project manager for supporting ComEd's Prairie Program. ComEd initiated this program to restore native prairie habitats within their electric transmission Rights-of-way (ROW) and buffers. Stantec manages this program in coordination with ComEd which includes development of native management plans; coordination with site stewards; development of annual budgets; development of performance standards, and identifying new sites and stewards for program expansion. Stantec's implementation services include a full range of prairie restoration and management including preparing and installing new prairies and managing existing prairies through herbiciding, mowing, shrub removal; and prescribed burning. Currently there are over 100 acres of ROW within the prairie program in various stages of development.

Electric Transmission Line Projects

Managed support for environmental and GIS services to gain regulatory approvals for new transmission lines. Provided project support for: transmission line siting; critical issues analysis; route matrices; GIS data acquisition and mapping services, coordination of regulatory agency meetings, completion of field wetland delineations; threatened and endangered species; biological assessment and Section 404 permitting, CPCN approvals; community advisory and public workshop support, and expert witness testimony.
LaSalle-Ottawa, LaSalle County, IL;
Wood River Refinery, Madison County, IL;
Rockwood-Big River, Jefferson County, MO;
Saddle Creek 73, Franklin County, MO.
Havana Rebuild, Mason County, IL

345 kV Transmission Line Project, Wisconsin

Arrowhead to Weston. Completed wetland delineations, threatened and endangered plant surveys, and habitat assessments along a 208 mile proposed new transmission line.

Endangered Species Support, Wisconsin

Conducted Karner Blue butterfly surveys (federally endangered) along transmission line right-of-ways.

Residential Development

Country View Estates, DeForest, Wisconsin

Completed wetland delineation/evaluation, wetland permitting, and mitigation planning in support of a 400-acre mixed residential/commercial/recreational development project.

** denotes projects completed with other firms*

Jeffrey D. Kraemer W.P.I.T.

Senior Scientist / Project Manager

Northeast Neighborhood Plan, Fitchburg, Wisconsin
Developed wetland protection standards for the City of Fitchburg's NE Neighborhood Plan.

Wesenberg Development, New Glarus, Wisconsin
Conducted threatened and endangered plant species surveys, wetland delineations, and floristic quality assessment in support of the residential development.

Westwynde Development, Sun Prairie, Wisconsin
Completed wetland delineation/evaluations, wetland permitting, wetland mitigation planning, and upland prairie restoration planning in support of the residential development.

Westshore Development Restoration Design, Oconomowoc, Wisconsin
Designed a 30-acre upland habitat enhancement and wetland restoration plan in support of gaining regulatory approvals for residential development.

Warehouse / Light Industrial

Manufacturing Facility Expansion Project, Arcadia, Wisconsin
Developed and gained WDNR/USACE approval for 35-acre wetland mitigation plan in support of wetland impact application for expansion of the manufacturing facility; continue to monitor and coordinate implementation of mitigation plan.

Industrial Facility Expansion Project, Hustisford, Wisconsin
Completed wetland delineation/evaluation, wetland permitting, and wetland mitigation planning in support of the expansion of the industrial facility.

Trucking Facility Expansion, Franklin, Wisconsin
Completed wetland delineation/evaluation, wetland permitting, and wetland mitigation design for expansion of the trucking facility.

** denotes projects completed with other firms*

Jeffrey D. Kraemer W.P.I.T.

Senior Scientist / Project Manager

PUBLICATIONS

Presentation. Lake Koshkonong Wetlands: Diversity, Floristic Quality, and Community Mapping. *Lake Koshkonong Wetland Association*, 2006.

Presentation. Management of the Eastern Prairie Fringed Orchid in the Lake Koshkonong Wetlands. *Lake Koshkonong Wetland Association*, 2006.

Presentation. Lake Koshkonong Water Level Controversy: A Balance between Recreation and Wetland Protection. *WWA Annual Science Forum*, 2005.

Presentation. Lake Koshkonong Water Levels and Growth Rate of Trees in Bordering Floodplain Forests.. *Lake Koshkonong Wetland Association*, 2005.

Presentation. Floodplain forest hydrology and management implications: Lake Koshkonong as a case study. *Wisconsin Wetlands Association Annual Science Forum*, 2004.

Kraemer, J. Using wetland plants as indicators of fine scale variation in hydrology: the plant community-environment relationship in sedge meadows. *Master's Thesis defense*, 2003.

Presentation. Effects of invasive plant species on natural communities. *UW-Milwaukee, Biology Department*, 2001.