Stantec Consulting Services Inc.
209 Commerce Parkway, PO Box 128, Cottage Grove WI 53527-8955

November 30, 2023
File: 193709908

Attention: John and Sara Bothum
1450 Pleasant Hill Road
Stoughton, WI 53589

Reference: Summary of Bothum Farm Assured Wetland Determination
Town of Dunkirk, Dane County, Wisconsin

Dear John and Sara Bothum ,

Stantec Consulting Services Inc. (Stantec) completed a wetland determination of an approximately 2-acre site (the "Study Area") on your behalf. The Study Area is located east of the intersection of Schroeder Lane and Pleasant Hill Road, in the Town of Dunkirk, Dane County, Wisconsin, Section 2, Township 5 North, Range 11 East (Figure 1). The wetland determination was completed by Kate Remus of Stantec, an assured delineator qualified via the Wisconsin Department of Natural Resources (WDNR) Wetland Delineation Assurance Program, on November 21, 2023 (see Attachment A for delineator qualifications).

The field review was completed outside of the 2023 growing season, but based on conditions observed, there were no wetlands identified within the Study Area. A summary of the methods used and results of the field investigation are summarized below.

Methods

The wetland determination was made using the three criteria (vegetation, soil, and hydrology) and technical approach defined in the *Corps of Engineers Wetlands Delineation Manual,* Technical Report Y-87-1 (1987) and subsequent guidance documents, and applicable Regional Supplement to the *Corps of Engineers Wetland Delineation Manual*. According to procedures described in the 1987 Manual and the Northcentral and Northeast Regional Supplement (2012), 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.

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 (Attachment B, Figures 1-4).

As recent weather patterns influence the visibility and presence of some wetland hydrology indicators, the antecedent precipitation in the three months leading up to the field investigation was reviewed. The current

year's precipitation data were compared to the most recent 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 (Attachment C).

Since farmed areas associated with WWI mapped wetlands and indicator soils are mapped within the Study Area, a review of U.S. Department of Agriculture Farm Service Agency (FSA) annual aerial imagery and other available aerial imagery was also conducted (Attachment D). The aerial imagery was reviewed for the appearance of wetland signatures. Wetness signatures are characteristics viewed in aerial imagery that correlate with the presence of wetland hydrology. Wetness signatures may vary based on the type and seasonal date of the aerial imagery.

As part of the imagery review, the climatic condition of each aerial image was reviewed by comparing the antecedent precipitation in the three months leading up to the capture date of the image to long-term (30-year) precipitation averages using a WETS analysis for each imagery year. This comparison was made to determine if the climatic condition for a given year was normal, wet, or dry.

Additionally, WWI mapping and topography within the Study Area was reviewed in conjunction with an analysis of available aerial imagery for wetness signatures in these areas. Areas within agricultural fields are typically identified as wetland if they contain a combination of hydric soils, show wetness signatures in most normal precipitation years, and/or exhibit other hydrology indicators, as detailed in USACE/BWSR guidance (2016). If aerial imagery from five normal years was not available, an equal number of wet and dry years were analyzed.

The sample points completed during the field investigation were identified and surveyed with a Global Positioning System (GPS) capable of sub-meter accuracy and mapped using Geographical Information System (GIS) software.

Results

A review of desktop resources found soils mapped within the Study Area by the NRCS Soil Survey of Dane County include Dresden silt loam (DsC2), Elburn silt loam (EgA), and Kegonsa silt loam (KeB) (Attachment B, Figure 2). The Elburn series can contain hydric inclusions in drainageways but is mapped as a predominantly non-hydric soil. The WDNR WWI mapping (Attachment B, Figure 3) identifies wetland and indicator soils within the Study Area that correspond with the area of mapped Elburn silt loam.

The topography of the site ranges from topographic highs of approximately 890-900ft mean sea level (msl) in the eastern and western portions of the Study Area, with topographic lows of approximately 884ft msl near the center of the Study Area. The topographic low point corresponds with the area of mapped Elburn silt loam, as well as the mapped WWI wetland and indicator soils, and is associated with a broad relatively flat draw between topographic high points. A review of available aerial imagery from 2001-2021 (Attachment D) showed consistent wetness signatures only during wet years, but no wetness signatures

during normal years within the cropped field. The wet year wetness signatures aligned with the area of mapped Elburn silt loam, mapped WWI wetland and indicator soils, and the topographic low point of the Study Area. Additionally, the antecedent precipitation was checked for the three-month period preceding the field investigation and was considered to be wetter than normal based on a WETS analysis (Attachment C). Only 0.82 inches of precipitation was received from November 1-20, 2023, and conditions appeared to be trending towards normal during the site visit.

Based on aerial imagery, the Study Area consists of an agricultural field, access drive, and tree/fence line between fields. During the site visit, the agricultural field was found to have been planted to corn in 2023 and the field had been recently harvested with corn stubble and remnants remaining on site. Vegetation observed along the fence/tree line in the higher topography areas included hackberry (*Celtis occidentalis,* FAC), black cherry (*Prunus serotina*, FACU), and box elder (*Acer negundo*, FAC) in the canopy, common buckthorn (*Rhamnus cathartica*, FAC) in the shrub layer, and smooth brome (*Bromus inermis,* UPL), burdock (*Actium minus,* FACU), and Queen Anne's-lace (*Daucus carota*, UPL) common in the herb layer. Where the topography was lower, reed canary grass (*Phalaris arundinacea*, FACW), smooth brome, giant ragweed (*Ambrosia trifida,* FAC), and sandbar willow (*Salix interior,* FACW) shrubs were common.

Two wetland determination sample points were completed within the Study Area to document non-wetland conditions (Attachment B, Figure 4). The data sheets completed for the sample points are provided in Attachment E. Representative photographs of the Study Area are included in Attachment F.

Sample point SP1 was recorded within the area of WWI mapped wetland and indicator soils within the active agricultural field of the Study Area, which corresponded to where wetness signatures were observed during wet years in the review of aerial imagery. During the field review, there was no stunting or stress observed in the remnant corn crop material and no volunteer vegetation was observed. Further, no wetland hydrology or hydric soil indicators were observed within the 36-inch deep soil pit.

Sample point SP2 was placed within an area of unmanaged vegetation along the fence/tree line between the gravel access drive and additional agricultural field to the south. SP2 was located near a culvert under the driveway which appears to facilitate overland flow during wet periods between the fields north and south of the driveway. The hydrophytic vegetation criteria was met with dominance of reed canary grass, sandbar willow, and elderberry (*Sambucus nigra,* FACW) and wetland hydrology was met with two secondary indicators present (Geomorphic Position-D2 and a positive FAC-Neutral Test-D5). Despite meeting two of the three wetland criteria, SP2 was determined to be non-wetland based on the lack of hydric soil indicators. If wetland hydrologic conditions were indeed present for a long enough duration to support wetland conditions, then hydric soil indicators should have been present. The dominance of reed canary grass and sandbar willow is not always indicative of wetland conditions as reed canary grass is often planted as a pasture grass and both species are common weedy species across Wisconsin that can be found in a variety of upland and wetland habitat conditions. Additionally, based on the aerial imagery review, the area of SP2 likely conveys overland flow during wet years or high precipitation events, which might also contribute to the presence of FACW species in this portion of the Study Area. Overall, no

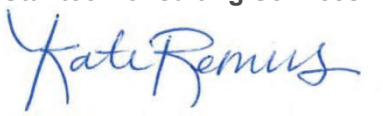
primary indicators of wetland hydrology and no hydric soil indicators were observed at either of the sample points and no wetlands were delineated within the Study Area.

In summary, based on the results of the on-site investigation, it was determined that no wetlands are present within the Study Area. However, since the field investigation was completed outside of the 2023 growing season, it is possible that any regulatory agencies using this report to support their decisions for the Study Area may request a wetland confirmation during the 2024 growing season.

Please contact me if you have any questions regarding this wetland determination.

Regards,

Stantec Consulting Services Inc.



Kate Remus; PWS, WDNR Assured Wetland Delineator
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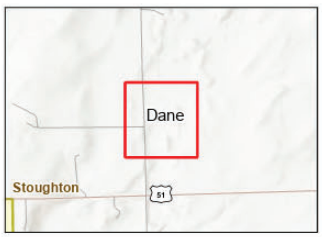
Attachments:
Attachment A – Delineator Qualifications
Attachment B – Figures 1-4
Attachment C – WETS Analysis
Attachment D – Aerial Imagery Review
Attachment E – Wetland Determination Data Forms
Attachment F – Study Area Photographs



Legend

- Project Boundary
- 2ft Elevation Contour
- Sample Point

DNR 24k Hydrography*

- Perennial Stream
- Intermittent Stream
- Waterbody

0 100 200 Feet

(At original document size of 8.5x11)
1:2,400

N

Stantec

Project Location
T5N, R11E, S2
T. of Dunkirk, Dane Co., WI

Prepared by DBB on 2023-11-14
TR by ML on 2023-11-27
IR by KR on 2023-11-27

Client/Project 193709908
John and Sara Bothum
Bothum Farm Wetland Delineation

Figure No.
4

Title
Field Collected Data

Notes
1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
2. Data Sources: Stantec, John and Sara Bothum, USGS, Esri, WDNR, WisDOT
3. Background: NAIP 2022

*No Features Within Data Frame