# WETLAND DELINEATION REPORT

**Emerald Sky Dairy**
**Town of Emerald, St. Croix County, Wisconsin**

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# INTRODUCTION

Ecosystems, LLC (ecosystems) completed a wetland determination and delineation of the Emerald Sky Dairy project site located near Emerald, Wisconsin (hereinafter referred to as the project site or study area) on behalf of Emerald Sky Dairy LLC. More specifically, the project study area is approximately 150 acres located in Section 22, Township 30 North, Range 16 West in the Town of Emerald, St. Croix County, Wisconsin (Appendix A, Figure 1). The project consists of the proposed expansion of an existing dairy farm.

The purpose of the wetland determination and delineation was to identify the type and extent of wetlands within the study area. The wetland delineation was completed by Tim King of Ecosystems in early to mid May of 2016. The lead field delineator and report author of this wetland delineation is Assured through the Wisconsin Department of Natural Resources (WDNR) - Wetland Delineation Professional Assurance Program. As an Assured Delineator, Mr. King received advanced written concurrence from the WDNR for all wetland delineations conducted in the current calendar year. Nine wetlands, a stormwater pond, and associated ditches were identified and delineated within the study area. The wetlands and surface water features are located adjacent to an unnamed intermittent stream and large wetland complex which generally forms the southern boundary of 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 rests with the U.S. Army Corps of Engineers (USACE). Additionally, the WDNR has regulatory authority over all wetlands, navigable waters, and adjacent lands under Chapters 30 and 281 Wisconsin State Statutes, and Wisconsin Administrative Codes NR 103, 299, 350 and 353. Furthermore, municipalities, townships, and counties may have local zoning authority over certain areas or types of wetlands and waterways. The determination that a wetland or waterway is subject to regulatory jurisdiction is made independently by the agencies. This report will be submitted to the WDNR in accordance with the Assurance program requirements, and if necessary, the USACE.

# METHODS

## WETLANDS

Wetland determinations are based on the technical guidelines and methods described in the Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1 (1987), Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (USACE January 2012, Version 2.0) and related guidance document (USACE & WDNR 2015).

The wetland determination involved the use of offsite methods including review of available resources such as U.S. Geological Survey (USGS) topographic map, Natural Resources Conservation Service (NRCS) wetland and soil survey data, WDNR Wisconsin Wetland Inventory (WWI) mapping, offsite review of aerial photography using the NRCS Wisconsin Wetland Mapping Conventions (USDA NRCS 1998), St. Croix County GIS data, landowner/client data, and other sources of information to help identify wetlands and other aquatic resources.

Wetlands were identified onsite using routine determination methods when possible, and where necessary, Difficult Wetland Situation (i.e., Problem Area and/or Atypical Situation) procedures including land used for agriculture, diagnostic indicators of the three wetland parameters (vegetation, soil, and hydrology), and technical guidelines. According to methods and procedures described in the technical guidelines, areas under normal circumstances that have positive indicators from each parameter are considered wetlands. When normal circumstances are not present, determinations may be based on fewer parameters depending on the situation encountered and information currently available. A determination of whether or not normal circumstances are present was based on the USACE/WDNR guidance.

Antecedent precipitation conditions in the months prior to the field investigation were reviewed. The current year's precipitation data was compared to long-term (30-year) averages to determine if current conditions are dry, normal, or wet for the area using a WETS analysis as developed by the NRCS and other supplemental hydrologic data.

Wetlands and their boundaries and sample points were identified, delineated, located with a Global Positioning System (GPS) capable of sub-meter accuracy, and mapped using Geographical Information System (GIS) software. Fieldwork was conducted during the growing season and no conditions limited the performance of the wetland delineation.

## WATERWAYS

The presence of other aquatic or water resources was identified using available resources and onsite observations. This included identifying the general location and connections between wetlands and other water resources based on observations made incidental to the wetland data collection. Brief descriptions of waterways observed are included in the results section and in supporting documents.

# RESULTS

## SITE DESCRIPTION

The project site is located in the Western Prairie ecological landscapes in Northwest Wisconsin. The Western Prairie ecological landscape is entirely glaciated and major landforms are rolling till plain, end moraine, and some areas of outwash. The land type association is the Emerald Prairie and its characteristic landform pattern is undulating till plain. The site is located in the Upper Willow River watershed of the Mississippi River basin and in the St. Croix WDNR management unit.

Land use and cover is mainly agriculture, grassland, wetlands, waterways, and forests. Topography is nearly level to gently sloping and rolling. Soils are predominantly well and moderately drained and loamy with a silt loam surface over sandy loam till. In lower, wet areas, soils are somewhat poorly, poorly, and very poorly drained mucky, silt loam and often found over a restrictive layer composed of silty clay loam.

Wetlands are mapped by the WDNR on the WWI as emergent/wet meadow and forested (i.e., E1Ha, E1Hg, E1Ka, E1Kg, E1K, T3K, wetland point symbols, and excavated ponds) mainly within the southern half of the study area (Appendix A, Figure 2). The wetlands identified and delineated generally coincide with the wetlands mapped by the WDNR on the WWI, except farmed wetland areas are found in the central part of the study area and are more extensive compared to the WWI mapping. Soils mapped within the study area by the NRCS Soil Survey consist of well drained Santiago Silt Loam (SaB), 2-6 percent slopes, well drained Amery Loam (AmC2), 6-12% slopes, moderately well drained Freeon Silt Loam (FnB), 2-6% slopes, somewhat poorly drained Magnor Silt Loam (MaB), 0-4% slopes, poorly and very poorly drained Clyde Silt Loam (CyA), 0-3% slopes, and Adolph Silt Loam, 0-2% slopes (Appendix A, Figure 2). The wetlands identified during the field investigation are generally located within areas mapped by the NRCS as somewhat poorly, poorly, and very poorly drained soils and within other smaller areas of well drained soils where landscape position is appropriate to support wetlands.

Average precipitation for the region was obtained from the USDA Field Office Climate Data (http://efotg.sc.egov.usda.gov/efotg_locator.aspx ) for WETS Stations Baldwin (WI0486). Precipitation data was used for the analysis of antecedent precipitation conditions (i.e., WETS analysis). Based on the WETS analysis, antecedent hydrologic conditions during the delineation fieldwork from early to mid May were normal (Appendix D).

An offsite review of the study area was conducted using the NRCS Wisconsin Wetland Mapping Conventions. These procedures are used to help make wetland determinations on agricultural lands. This involved reviewing 23 years of aerial photography and associated antecedent precipitation data. Based on the aerial review, 100 percent of the years contained wetness signatures, which indicates that the site contains wetland. Consequently, onsite verification was necessary to make the final wetland determinations. A summary of the offsite review and aerial photography are contained in Appendix E.

## WETLANDS

Nine (9) wetlands, a stormwater pond, and associated drainage ditches were identified and delineated within the study area. Wetland boundaries and sample points are shown on Figure 2 contained in Appendix A. Wetland determination data forms were completed at a total of 66 sample points, along transects through the wetlands and adjacent uplands, and are contained in Appendix B. Photographs of the wetlands and adjacent uplands are contained in Appendix C. Wetlands identified and delineated are

summarized in Table 1 and described in the following sections.

**Table 1. Summary of Wetlands Identified within the Study Area**

| Wetland ID | Wetland Type | WDNR WWI Mapped | Acreage in Study Area | Adjacent Surface Waters |
|---|---|---|---|---|
| W1 | Wet Meadow, Shrub Carr, Hardwood Swamp & Farmed Wetland | E1Ka, E1Ha, E1Kg, E1Hg, T3K, Wet Symbol | 10.0 | Unnamed Intermittent Stream |
| W2 | Seasonally Flooded Basin (Farmed Wetland) | Wet Symbol | 0.16 | NA |
| W3 | Seasonally Flooded Basin (Farmed Wetland) | Wet Symbol | 0.08 | NA |
| W4 | Seasonally Flooded Basin (Farmed Wetland) | Wet Symbol | 0.24 | NA |
| W5 | Farmed Wetland | NA | 0.24 | NA |
| W6 | Wet Meadow, Shallow Marsh, Open Water Pond & Farmed Wetland (Partly Excavated & Filled) | E1Ka | 2.0 | Ditch D2 & D3 |
| W7 | Wet Meadow & Farmed Wetland (Partly Filled) | Wet Symbol | 1.0 | Ditch D3 & D4 |
| W8 | Filled Wetland | E1K | 0.95 | Ditch D4 |
| W9 | Wet Meadow | NA | 0.38 | Ditch D4 |
| Stormwater Pond | Open Water Pond/Hardwood Swamp & Shrub Car | NA | 3.5 | Ditch D1 & D2 & Unnamed Intermittent Stream |
| Ditches D1 – D4 | Ditch/Wet Meadow | E1Ka, E1K, Wet Symbol | Not Estimated | Stormwater Pond |

## Wetland 1 (W1)

Wetland W1 is composed of a wet meadow, shrub carr, hardwood swamp, and farmed wetland complex. The wetland is mapped by the WDNR as emergent/wet meadow (E1Ka, E1Ha, E1Kg, E1Hg) and forested (T3K) wetland on the WWI mapping (Appendix A, Figure 2). Portions of this wetland, specifically on the margin, are altered/managed for agriculture use (i.e., cultivated), and where necessary, was considered a Difficult Wetland Situation (i.e., Atypical Situation) which required additional procedures as described below and on the attached data forms. Additional sampling and analysis was necessary due to farming activities where vegetation, hydrology, and/or soils have been manipulated or physically altered, and as a result field indicators of one or more wetland parameters may be absent (e.g., vegetation), at least at certain times. This wetland extends beyond the study area limits to the south, west and east adjacent to an unnamed intermittent stream tributary to Dry Run.

***Vegetation***

Dominant plant species identified at multiple wetland sample points representing normal circumstances and/or unmanaged conditions include quaking aspen (*Populus tremuloides*) boxelder (*Acer negundo*) gray dogwood (*Cornus racemosa*), meadowsweet (*Spiraea alba*), meadow willow (*Salix petiolaris*), *Rubus idaeus* (red raspberry), reed canary grass (*Phalaris arundinacea*), orange jewelweed (*Impatiens capensis*), stinging nettle (*Urtica dioica*), and cleavers (*Galium aparine*). Other common species identified in the wetland are listed on data forms contained in Appendix B. Using the Rapid Test (Indicator 1), Dominance Test (Indicator 2), and Prevalence Index (Indicator 3), the hydrophytic vegetation criterion was met.

In farmed wetland areas where vegetation is significantly disturbed and routinely altered/managed for agricultural use (cultivated), Difficult Wetland Situation (Atypical Situation) – land used for agriculture, problematic hydrophytic vegetation (managed plant community) procedures were used. These areas were planted to corn in 2015, but were not planted prior to the field investigation. Dominant plant species identified at multiple farmed wetland sample points include common plantain (*Plantago major*), curly dock (*Rumex crispus*), dandelion (*Taraxacum officinale*), neckweed (*Veronica peregrina*), and lamb's quaters (*Chenopodium album*). The wetland determination in farmed wetland areas was based mainly on the presence of field indicators of hydric soil, wetland hydrology, and landscape position as described below and on the data forms. If left unmanaged, it's assumed that a wet meadow plant community would exist in the farmed wetland areas in the absence of manipulation or physical alteration to vegetation, hydrology and/or soils. This determination is further supported based on examination of adjacent, natural (less disturbed) reference wetlands having similar soils, hydrology, and landform, offsite review of aerial photography using NRCS Wetland Mapping Conventions, experience and professional judgment.

***Hydrology***

The presence of A2-high water table, A3-saturation, C3-oxidized rhizospheres on living roots and C6-recent iron reduction in tilled soils were observed as primary indicators of wetland hydrology. Secondary indicators of wetland hydrology consist of B6-surface soil cracks, B10-drainage patterns, C9-saturation visible on aerial imagery, D2-geomorphic position, D3-shallow aquitard, and D5-FAC neutral test. Therefore, the wetland hydrology criterion was met.

***Soils***

Soils at the wetland sample points are mapped by the NRCS as Freeon silt loam, Clyde silt loam, Magnor silt loam, and Santiago silt loam as previously described. Field indicators of hydric soil identified at multiple wetland sample points consist of A11-depleted below dark surface, F1-loamy mucky mineral, F3-depleted matrix, and F6-redox dark surface. The hydric soil criterion was met.

## Wetland 2 (W2)

Wetland W2 is a small seasonally flooded basin (farmed wetland) located in the central part of the study area. This wetland is mapped by the WDNR as a wetland too small to delineate (i.e., wet symbol) on the WWI mapping (Appendix A, Figure 2). Berms and spoil piles are located on the south edge of the wetland, which may have historically extended further to the south and/or east.

***Vegetation***

The dominant plant species identified at the wetland sample point is reed canary grass, dandelion, and curly dock. The herb stratum is composed of volunteer vegetation established between cultivations.

Other common species identified in the wetland are listed on data forms contained in Appendix B. Using the Dominance Test (Indicator 2), the hydrophytic vegetation criterion was met.

***Hydrology***

The presence of A1-surface water, A3-saturation, B4-algal mat or crust, B8-sparsely vegetated concave surface, and C6-recent iron reduction in tilled soils were observed as primary indicators of wetland hydrology. Secondary indicators of wetland hydrology consist of B6-surface soil cracks, C9-saturation visible on aerial imagery, D2-geomophic position, and D3-shallow aquitard. The wetland hydrology criterion was met.

***Soils***

Soils at the wetland sample points are mapped by the NRCS as Santiago silt loam as previously described. Field indicators of hydric soil identified at the wetland sample point consist of F6-redox dark surface. The hydric soil criterion was met.

## Wetland 3 (W3)

Wetland W3 is a small seasonably flooded basin (farmed wetland) located in the central part of the study area. The wetland is mapped by the WDNR as a wetland too small to delineate (i.e., wet symbol) on the WWI mapping (Appendix A, Figure 2). The wetland area has been historically/physically altered as described under the soils section below, but the alteration is insufficient to remove or obscure field indicators.

***Vegetation***

The dominant plant species identified at the wetland sample point consist of narrow-leaf cattail (*Typha angustifolia*), curly dock, and dandelion. The herb stratum is composed of volunteer vegetation established between cultivations. Other common species identified in the wetland are listed on data forms contained in Appendix B. Using the Dominance Test (Indicator 2), the hydrophytic vegetation criterion was met.

***Hydrology***

The presence of B4-algal mat or crust, B8-sparsely vegetated concave surface, and C6-recent iron reduction in tilled soils were observed as primary indicators of wetland hydrology. Secondary indicators of wetland hydrology consist of B6-surface soil cracks, C9-saturation visible on aerial imagery, D1-stunted or stressed plants, D2-geomophic position, and D3-shallow aquitard. The wetland hydrology criterion was met.

***Soils***

Approximately 12 inches of sediment or fill is present over the original soil surface. Soils at the wetland sample points are mapped by the NRCS as Santiago silt loam as previously described. Field indicators of hydric soil identified at the wetland sample point consist of F6-redox dark surface. The hydric soil criteria was met under current conditions. The original buried soil (12” – 25” depth) also contains field indicators of hydric soil including F6-redox dark surface and F3-depleted matrix that existed under previous conditions.

## Wetland 4 (W4)

Wetland W4 is a small seasonably flooded basin (farmed wetland) located in the central part of the

study area. The wetland is mapped by the WDNR as a wetland too small to delineate (i.e., wet symbol) on the WWI mapping (Appendix A, Figure 2).

***Vegetation***

The dominant plant species identified at this wetland sample point include broad-leaf cattail (*Typha latifolia*) and narrow-leaf cattail. Other common species identified in the wetland are listed on data forms contained in Appendix B. Using the Rapid Test (Indicator 1), the hydrophytic vegetation criterion was met.

***Hydrology***

The presence of A1-surface water, A2-high water table, A3-saturation, C3-oxidized rhizospheres on living roots, and C6-recent iron reduction in tilled soils were observed as primary indicators of wetland hydrology. Secondary indicators of wetland hydrology consist of B6-surface soil cracks, C9-saturation visible on aerial imagery, D2-geomophic position, D3-shallow aquitard, and D5-FAC neutral test. The wetland hydrology criterion was met.

***Soils***

Soils at the wetland sample points are mapped by the NRCS as Magnor silt loam as previously described. Field indicators of hydric soil identified at the sample point consist of F1-loamy mucky mineral and F6-redox dark surface. The hydric soil criteria was met.

## Wetland 5 (W5)

Wetland W5 is a small farmed wetland located in the west central part of the study area. The wetland is not mapped by the WDNR on the WWI mapping (Appendix A, Figure 2). The wetland is routinely altered/managed for agriculture use (i.e., cultivated) and was considered a Difficult Wetland Situation (i.e., Atypical Situation) which required additional procedures as described below and on the data forms. Additional sampling and analysis was necessary due to farming activities where vegetation, hydrology, and/or soils have been manipulated or physically altered, and as a result field indicators of one or more wetland parameters may be absent (e.g., vegetation and/or hydrology), at least at certain times.

***Vegetation***

No plant species were observed at the wetland sample point due to recent tilling that resulted in bare soil conditions. The area was planted to corn in 2015. Using the problematic hydrophytic vegetation indicator the hydrophytic vegetation criterion was met.

In farmed wetland areas where vegetation is significantly disturbed (i.e., cultivated), Difficult Wetland Situation (Atypical Situation) – land used for agriculture, problematic hydrophytic vegetation (managed plant community) procedures were used. The wetland determination in farmed wetland areas was based mainly on the presence of field indicators of hydric soil, wetland hydrology, and landscape position as described below and on the data forms. If left unmanaged, it's assumed that a wet meadow plant community would exist in the farmed wetland area in the absence of manipulation or physical alteration to vegetation, hydrology and/or soils. This determination is further supported based on examination of adjacent, natural (less disturbed) reference wetlands having similar soils, hydrology, and landform, offsite review of aerial photography using NRCS Wetland Mapping Conventions, experience and professional judgment.

***Hydrology***

The presence of C6-recent iron reduction in tilled soils was observed as a primary indicator of wetland hydrology. Secondary indicators of wetland hydrology consist of D2-geomorphic position and D3-shallow aquitard. Therefore, the wetland hydrology criterion was met. The wetland outlet is partly ditched to the south along the grass swale, which is insufficient to remove field indicators.

***Soils***

Soils at the wetland sample points are mapped by the NRCS as Magnor silt loam as previously described. The field indicator of hydric soil identified at this sample point consisted of A11-depleted below dark surface. The hydric soil criterion was met.

## Wetland 6 (W6)

Wetland W6 is composed of a wet meadow, shallow marsh, open water pond, and partly farmed wetland complex located in the east central part of the study area. The wetland is partially mapped by the WDNR as emergent/wet meadow (E1Ka) wetland on the WWI mapping (Appendix A, Figure 2). This wetland has been historically altered and fragmented by excavation/dredging, filling (e.g., dredged spoils disposal), conversion, farming, and alteration to drainage patterns. Consequently, this wetland was characterized and delineated as three wetland subparts or fragments which are separated by fill/dredged spoil piles located through the center of the wetland. The wetland is also located on the edge of a cut and fill areas to the south and north.

***Vegetation***

Dominant plant species identified at the wetland sample points include eastern cottonwood (*Populus deltoides*), pussy willow (*Salix discolor*), meadow willow, narrow-leaf cattail, broad-leaf cattail, reed canary grass, lake sedge (*Carex lacustris*) and common duckweed (*Lemna minor*). Other common species identified in the wetland are listed on data forms contained in Appendix B. Using the Rapid Test (Indicator 1) and Dominance Test (Indicator 2), the hydrophytic vegetation criterion was met.

***Hydrology***

The presence of A1-surface water, A2-high water table, A3-saturation, B2-sediment deposits, B4-algal mat or crust, B7-inundation visible on aerial imagery, and B8-sparesely vegetated concave surface were observed as primary indicators of wetland hydrology. Secondary indicators of wetland hydrology consist of B6-surface soil cracks, C9-saturation visible on aerial imagery, D2-geomophic position, D3-shallow aquitard, and D5-FAC neutral test. The wetland hydrology criterion was met. Wetland hydrology and drainage patterns have been altered by historic filling and presence of inlet and outlet drainage ditches (i.e., Ditch D3 and D2 respectively) as shown on Figure 2.

***Soils***

Soils at the wetland sample points are mapped by the NRCS as Magnor silt loam and Santiago silt loam as previously described. Field indicators of hydric soil identified at the wetland sample points consist of A12-thick dark surface, F1-loamy mucky mineral, F6-redox dark surface, and frequently ponded criteria #3 in areas historically excavated (e.g., open water pond) where problematic hydric soils were encountered.

## Wetland 7 (W7)

Wetland W7 is composed of a wet meadow and partly farmed wetland located in the east central part of the study area. The wetland is mapped by the WDNR as a wetland too small to delineate (i.e., wet

symbol) on the WWI mapping (Appendix A, Figure 2). The area is also mapped by the USDA NRCS as wetland on the wetland inventory mapping (Appendix F). The wetland is located on the edge of a cut/fill area.

***Vegetation***

Dominant plant species identified at the wetland sample points include sandbar will (*Salix interior*), reed canary grass, stinging nettle, and curly dock. Other common species identified in the wetland are listed on data forms contained in Appendix B. Using the Dominance Test (Indicator 2), the hydrophytic vegetation criterion was met.

***Hydrology***

The presence of A3-saturation and B4-algal mat or crust were observed as primary indicators of wetland hydrology. Secondary indicators of wetland hydrology consist of B6-surface soil cracks, D2-geomophic position, D3-shallow aquitard, and D5-FAC neutral test. The wetland hydrology criterion was met. Wetland hydrology and drainage patterns have been altered by historic filling and presence of inlet and outlet drainage ditches (i.e., Ditch D4 and D3 respectively) as shown on Figure 2.

***Soils***

Soils at the wetland sample points are mapped by the NRCS as Magnor silt loam. Field indicators of hydric soil identified at wetland sample points consist of A11-depleted below dark surface, A12-thick dark surface, F1-loamy mucky mineral, and F6-redox dark surface. The hydric soil criterion was met.

## Wetland 8 (W8)

Wetland W8 is a historically filled wetland located in the northeast part of the study area. The area is mapped by the WDNR as emergent/wet meadow (E1K) wetland on the WWI mapping (Appendix A, Figure 2). The area is also mapped as wetland ("W") by the USDA on their wetland inventory mapping (Appendix F). The wetland was likely filled in 2005 or 2006, based on offsite review of aerial photography and results of onsite investigation. This area is significantly disturbed, normal circumstances are not present, and is considered a Difficult Wetland Situation (i.e., Atypical Situation), which required additional procedures as described below and on the attached data forms. Specifically, this is a potential unauthorized activity as described in Section F of the USACE 87 Manual. Therefore, additional sampling and analysis were necessary due to previous alterations to vegetation, soils and hydrology, which resulted in the removal or covering of wetland indicators. Refer to the attached routine data form (W8-1w) for a description of current conditions and the attached Atypical Situation (Data Form 3) for descriptions of the type of alterations; effects on vegetation, soils, and hydrology; previous vegetation, soils, and hydrology that likely existed prior to filling; and determination of whether or not wetland criteria were previously met. The previous wetland boundary is based on WDNR WWI mapping, which generally correlates with review of historic aerial photography.

***Vegetation***

Dominant plant species identified at the sample point include red clover (*Trifolium pratense*), quackgrass (*Elymus* repens), curly dock, and dandelion. Other common species identified are listed on a data form contained in Appendix B. The hydrophytic vegetation criterion was not met under current conditions.

Original vegetation was covered by approximately 6.7 feet of fill in 2005 or 2006, which resulted in conversion from emergent/wet meadow (WDNR mapped E1K) wetland community to upland grass/forb community. The previous vegetation likely consisted of reed canary grass and stinging nettle which is

based on examination of adjacent, natural (less disturbed) reference wetland W7, sample point W7-1w, having similar soils, hydrology, and landform, and review of aerial photography. The hydrophytic vegetation criterion was met under previous conditions.

***Hydrology***

No indicators of wetland hydrology were observed; therefore, the wetland hydrology criterion was not met under current conditions.

The placement of approximately 6.7 feet of fill material over the original ground surface eliminated wetland hydrology. The original wetland hydrology was likely a saturated hydrologic regime based on review of adjacent reference wetland W7 and WDNR mapping (E1K) wet soil, palustrine. The wetland hydrology criterion was met under previous conditions. The wetland was in a drainage sequence and hydrologically connected to wetlands W7 and W9.

***Soils***

Soils at the wetland sample points are mapped by the NRCS as Magnor silt loam as previously described. No field indicators of hydric soil were identified; therefore, the hydric soil criterion was not met under current conditions.

A backhoe was used to dig a soil pit to a depth of approximately 8.3 feet to examine the depth of fill and characterize the buried soil profile. The original ground surface was covered by approximately 6.7 feet of sandy loam and rocky fill material. The buried soils consist of silt loam topsoil over silty clay loam. Hydric soil field indicators of the buried soils include F6-redox dark surface in the original topsoil layer and F3-depleted matrix in the underlying subsoil layer. The area is also mapped as a wet spot on the NRCS soil survey (Appendix F). The hydric soil criterion was met under previous conditions.

## Wetland 9 (W9)

Wetland W9 is a wet meadow located in the northeast part of the study area. The wetland is not mapped by the WDNR on the WWI mapping (Appendix A, Figure 2). The wetland is found in a swale at the toe slope between two berms on the south side of the manure storage pit.

***Vegetation***

Dominant plant species identified at the wetland sample point was reed canary grass. Other common species identified in the wetland are listed on data form contained in Appendix B. Using the Rapid Test (Indicator 1), the hydrophytic vegetation criterion was met.

***Hydrology***

The presence of A2-high water table and A3-saturation were observed as primary indicators of wetland hydrology. Secondary indicators of wetland hydrology consist of B10-drainage patterns, D2-geomophic position, and D5-FAC neutral test. The wetland hydrology criterion was met. The wetland outlet is hydrologically connected to Ditch D4.

***Soils***

Soils at the wetland sample point are mapped by the NRCS as Amery silt loam as previously described. Field indicators of hydric soil identified at the wetland sample point consist of F1-loamy mucky mineral and F6-redox dark surface. The hydric soil criterion was met.

### Stormwater Pond and Associated Ditches

This section includes a brief description of the stormwater pond and associated ditches identified and delineated within the study area. Specifically, an existing stormwater pond and associated conveyance ditches (D1 – D4) are located in the southeast part of the study area. The stormwater pond and associated ditches are not mapped as wetland by the WDNR on the WWI mapping (Appendix A, Figure 2). The pond consists of open water surrounded by a narrow wooded fringe (hardwood swamp/shrub carr) around the perimeter. The pond and ditches contain artificial wetlands to an extent. In some cases, these areas were considered Difficult Wetland Situations having problematic hydric soil – recently developed wetlands (i.e., artificial). These features were located and mapped as a blue line on Figure 2 in Appendix A. Additional field data was collected at sample points by the pond and within the ditches to further characterize these features (see data forms SP1 & D1-D4 in Appendix B).

The artificial wetlands located in and around various portions of the stormwater pond and associated conveyance ditches are potentially exempt from state regulation under Ch. NR 103.06(4) Wis. Admin. Code. For more information, refer to WDNR guidance for specific exemption determination procedures which are beyond the scope of this investigation. This typically includes completing and submitting an artificial wetland exemption request form (3500-120), checklist for artificial wetland exemption determinations, and applicable review fees to the WDNR for review and exemption determination. Note that certain areas, including those with wetland or stream history, may not be exempt.

### Wetland Boundaries

The wetland boundaries were determined based on results of offsite review and onsite field investigation. This includes identifying differences in vegetation, hydrology, soils and/or topography consisting of the following: 1) Transition from wetland plant communities (e.g., wet meadow, shrub carr, hardwood swamp, etc.) dominated by hydrophytic vegetation to upland communities (grassland, cropland, etc.) dominated by non-hydrophytic vegetation; 2) Transition from the presence of primary and/or secondary wetland hydrology indicators within the wetlands to lack of wetland hydrology indicators within the adjacent uplands; and/or 3) Transition from hydric to non-hydric soils. The transition from wetland to upland characteristics generally correlated with a somewhat well defined topographic break.

## UPLANDS

Uplands within the study area consist mainly of cropland and smaller amounts of grassland including upland grass swales. Croplands were planted to corn in 2015, and were largely uncultivated during the fieldwork. Upland sample point locations are illustrated on Figure 2 contained in Appendix A. Common plant species, soil profile descriptions, hydrology and other characteristics of the uplands are listed on the associated data forms contained in Appendix B.

## WATERWAYS

An unnamed intermittent stream tributary to Dry Run (stream) is mapped by the WDNR along the southern boundary of the study area. Other waterways or water bodies identified include the stormwater pond and associated ditches described above.

# CONCLUSION

Ecosystems LLC completed a wetland determination and delineation of the Emerald Sky Dairy project site located near Emerald, Wisconsin on behalf of Emerald Sky Dairy LLC. More specifically, the project study area is approximately 150 acres located in Section 22, Township 30 North, Range 16 West in the Town of Emerald, St. Croix County, Wisconsin. The project consists of the proposed expansion of an existing dairy farm.

The purpose of the wetland determination and delineation was to identify the type and extent of wetlands within the study area. Nine wetlands were identified and delineated within the study area in accordance with state and federal technical guidelines. Wetland boundaries and sample points were located with GPS and mapped using GIS. The wetlands are composed of wet meadow, seasonally flooded basin, shallow marsh, shallow – open water, shrub carr, hardwood swamp, and farmed wetlands. Adjacent uplands are composed of mainly cropland and some grassland. Waterways or other surface waters identified include a stormwater pond, associated conveyance ditches, and an unnamed intermittent stream tributary to Dry Run.

The information provided by Ecosystems regarding wetland boundaries is a scientific-based analysis of the wetland and upland conditions present on a site at the time of the fieldwork. The delineation was performed by highly experienced and qualified professionals using standard practices and sound professional judgment. The physical characteristics of a site can change over time, depending on the season, climate and recent precipitation patterns, vegetation patterns, drainage improvements, land management, manipulation and alteration, activities on adjacent parcels, and other human disturbances or natural events. Any of these factors can change the nature and extent of wetlands on a site. This report is limited to the identification of wetlands and other aquatic resources within the site that are regulated by local, state and/or federal agencies. The ultimate decision on wetland boundaries rests with the USACE and the WDNR or a local unit of government. As a result, wetland determinations and boundary delineations may be subject to review and jurisdictional or exemption determinations by a regulatory agency.

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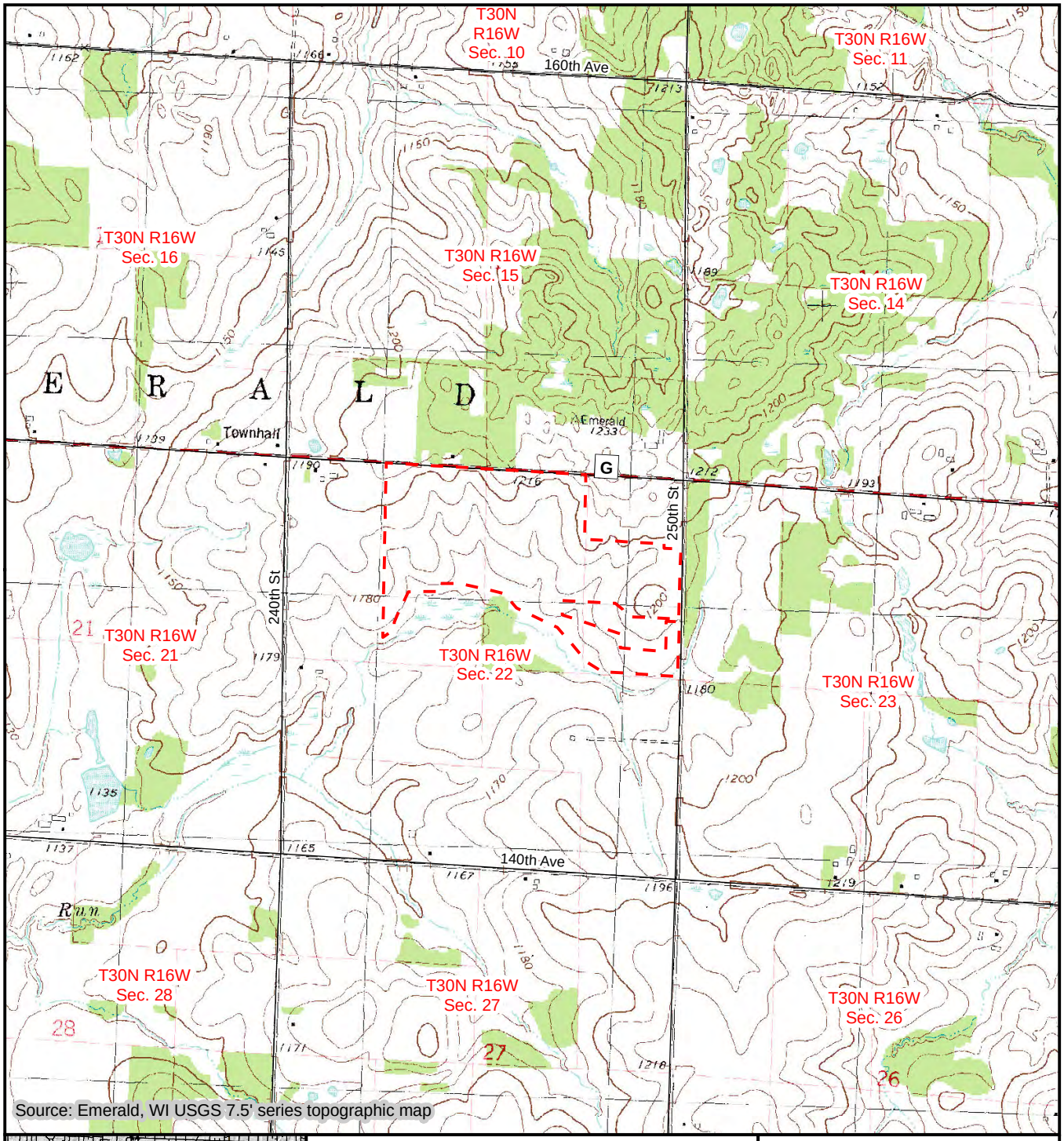
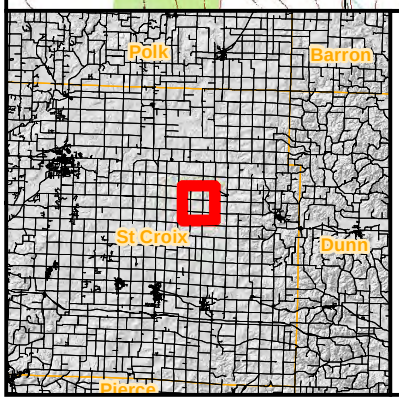
# APPENDIX A

## FIGURES




Approximate Study Area

Roadways

N

Miles
0 0.25 0.5

**Emerald Sky Dairy**
**Town of Emerald**
**St. Croix County, Wisconsin**

Figure 1.
Project Location Map

ecosystems, llc
P.O. Box 481 | Rice Lake, WI 54868

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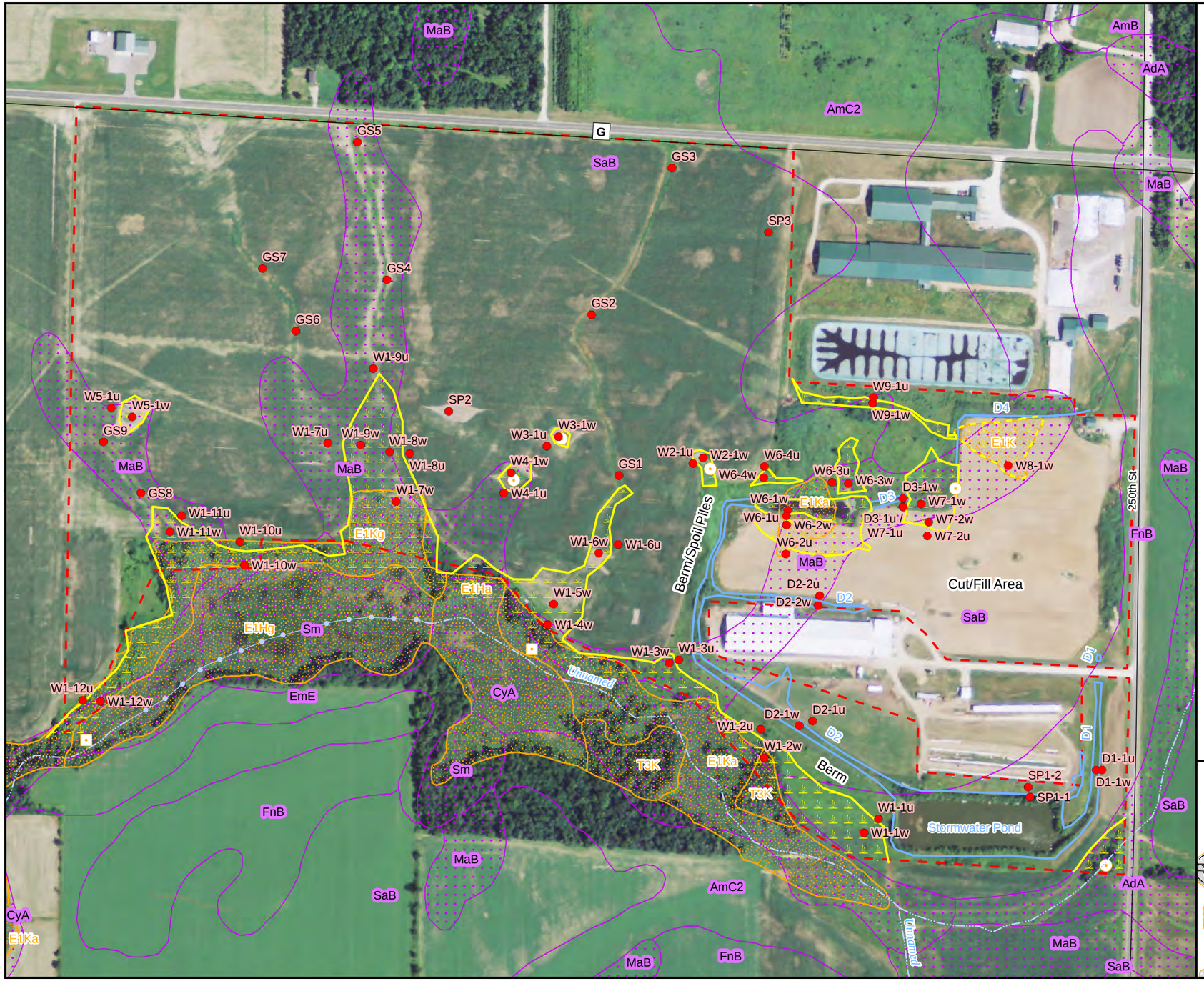
# Emerald Sky Dairy
# Town of Emerald, St. Croix County, Wisconsin

## Figure 2. Wetland Delineation Map




- Sample Point
- Ditch/Stormwater Pond
- Wetland Boundary
- Approximate Study Area
- Roadways
- NRCS Soil Survey Mapping
- WDNR Wetland Indicator Soil
- WDNR WWI Wetland Mapping
- Excavated Pond
- Wetland too small to delineate

WDNR 24K Hydrography

- Fluctuating
- Intermittent
- Perennial

N

Feet

0 400 800

*Source: NAIP Imagery, 2013*
*NRCS SSURGO Soils Data*
*WiDNR WWI Data*

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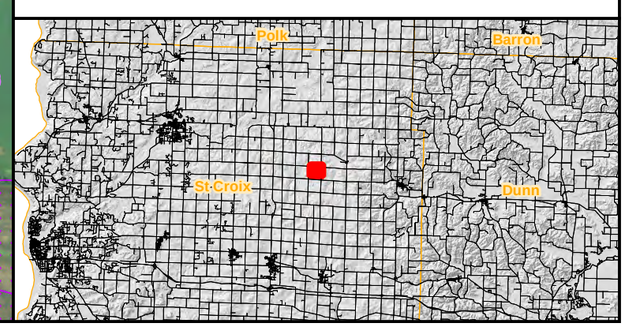


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# APPENDIX B

## WETLAND DETERMINATION DATA FORMS

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/4/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W1-1u
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Side Slope Local relief (concave, convex, none): Convex
Slope (%): 1-3 Lat.: Long.: Datum:
Soil Map Unit Name FnB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | N | **Is the sampled area within a wetland?** | N |
| Hydric soil present? | N | | |
| Indicators of wetland hydrology present? | N | If yes, optional wetland site ID: | |

Remarks: (Explain alternative procedures here or in a separate report.)

Upland grassland/old field

### HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes | ____ | No | X | Depth (inches): ____ |
| Water table present? | Yes | ____ | No | X | Depth (inches): ____ |
| Saturation present? (includes capillary fringe) | Yes | ____ | No | X | Depth (inches): ____ |

**Indicators of wetland hydrology present?** N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W1-1u

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Sapling/Shrub Stratum | Plot Size ( 15' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Acer negundo* | 2 | | FAC |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 2 | = Total Cover | |

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Poa pratensis* | 50 | Y | FACU |
| 2 | *Bromus inermis* | 30 | Y | UPL |
| 3 | *Elymus repens* | 10 | N | FACU |
| 4 | *Taraxacum officinale* | 5 | N | FACU |
| 5 | *Solidago canadensis* | 5 | N | FACU |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 100 | = Total Cover | |

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

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 1 |
| Herb Stratum | 20 | 50 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 2 | x 3 = | 6 |
| FACU species | 70 | x 4 = | 280 |
| UPL species | 30 | x 5 = | 150 |
| Column totals | 102 (A) | | 436 (B) |

Prevalence Index = B/A = 4.27

**Hydrophytic Vegetation Indicators:**

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

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** N

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

**SOIL** **Sampling Point:** W1-1u

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-10 | 10YR 3/2 | 100 | | | | | Silt Loam | |
| 10-20 | 7.5YR 4/4 | 100 | | | | | Silt Clay Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

Restrictive Layer (if observed):
Type: Silt Clay Loam
Depth (inches): 10

**Hydric soil present?** N

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/4/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W1-1w
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Toe Slope Local relief (concave, convex, none): Concave
Slope (%): 0-2 Lat.: Long.: Datum:
Soil Map Unit Name FnB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | Y | **Is the sampled area within a wetland?** | Y |
| Hydric soil present? | Y | | |
| Indicators of wetland hydrology present? | Y | If yes, optional wetland site ID: | W1 |

Remarks: (Explain alternative procedures here or in a separate report.)

Wet meadow at the sample point. Mapped as E1Ka immediately to the south.

### HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

| | | | | | | |
|---|---|---|---|---|---|---|
| Surface water present? | Yes | | No | X | Depth (inches): | |
| Water table present? | Yes | X | No | | Depth (inches): | 16 |
| Saturation present? (includes capillary fringe) | Yes | X | No | | Depth (inches): | 0 |

**Indicators of wetland hydrology present?** Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W1-1w

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Sapling/Shrub Stratum | Plot Size ( 15' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Salix petiolaris* | 10 | Y | FACW |
| 2 | *Spiraea alba* | 5 | Y | FACW |
| 3 | *Acer negundo* | 1 | N | FAC |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 16 | = Total Cover | |

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Phalaris arundinacea* | 100 | Y | FACW |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 100 | = Total Cover | |

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

**50/20 Thresholds**

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

**Dominance Test Worksheet**

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

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

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

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 115 | x 2 = | 230 |
| FAC species | 1 | x 3 = | 3 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 116 (A) | | 233 (B) |

Prevalence Index = B/A = 2.01

**Hydrophytic Vegetation Indicators:**

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

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** Y

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

**SOIL** **Sampling Point:** W1-1w

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-10 | 7.5YR 2.5/1 | 95 | 2.5YR 2.5/3 | 5 | C | M | Mucky Silt Loam | |
| 10-20 | 10YR 4/2 | 80 | 7.5YR 4/6 | 20 | C | M | Silt Loam | |
| 20-24 | 7.5YR 3/3 | 100 | | | | | Silt, Sand & Gravel | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

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

**Hydric soil present?** Y

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/5/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W1-2u
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Side Slope Local relief (concave, convex, none): Convex
Slope (%): 2-4 Lat.: Long.: Datum:
Soil Map Unit Name SaB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | Y | **Is the sampled area within a wetland?** | N |
| Hydric soil present? | N | | |
| Indicators of wetland hydrology present? | N | If yes, optional wetland site ID: | |

Remarks: (Explain alternative procedures here or in a separate report.)

Upland grassland/old field

### HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes | ____ | No | X | Depth (inches): ____ |
| Water table present? | Yes | ____ | No | X | Depth (inches): ____ |
| Saturation present? (includes capillary fringe) | Yes | ____ | No | X | Depth (inches): ____ |

**Indicators of wetland hydrology present?** N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W1-2u

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Sapling/Shrub Stratum | Plot Size ( 15' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Rubus idaeus* | 10 | Y | FAC |
| 2 | *Populus tremuloides* | 5 | Y | FAC |
| 3 | *Cornus racemosa* | 5 | Y | FAC |
| 4 | *Spiraea alba* | 2 | N | FACW |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 22 | = Total Cover | |

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Poa pratensis* | 40 | Y | FACU |
| 2 | *Bromus inermis* | 25 | Y | UPL |
| 3 | *Solidago canadensis* | 10 | N | FACU |
| 4 | *Taraxacum officinale* | 10 | N | FACU |
| 5 | *Solidago gigantea* | 5 | N | FACW |
| 6 | *Fragaria virginiana* | 5 | N | FACU |
| 7 | *Elymus repens* | 3 | N | FACU |
| 8 | *Phalaris arundinacea* | 2 | N | FACW |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 100 | = Total Cover | |

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

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 4 | 11 |
| Herb Stratum | 20 | 50 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

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

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

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

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 9 | x 2 = | 18 |
| FAC species | 20 | x 3 = | 60 |
| FACU species | 68 | x 4 = | 272 |
| UPL species | 25 | x 5 = | 125 |
| Column totals | 122 (A) | | 475 (B) |

Prevalence Index = B/A = 3.89

**Hydrophytic Vegetation Indicators:**

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

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** Y

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

**SOIL** **Sampling Point:** W1-2u

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-10 | 10YR 2/2 | 100 | | | | | Silt Loam | |
| 10-20 | 10YR 3/4 | 100 | | | | | Silt Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

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

**Hydric soil present?** N

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/5/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W1-2w
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Toe Slope Local relief (concave, convex, none): Concave
Slope (%): 0-2 Lat.: Long.: Datum:
Soil Map Unit Name: CyA NWI Classification: T3K
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | Y | **Is the sampled area within a wetland?** | Y |
| Hydric soil present? | Y | | |
| Indicators of wetland hydrology present? | Y | If yes, optional wetland site ID: | W1 |

Remarks: (Explain alternative procedures here or in a separate report.)

Hardwood swamp/wet meadow complex

### HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

| | | | | | | |
|---|---|---|---|---|---|---|
| Surface water present? | Yes | ____ | No | X | Depth (inches): | ____ |
| Water table present? | Yes | ____ | No | X | Depth (inches): | ____ |
| Saturation present? (includes capillary fringe) | Yes | X | No | ____ | Depth (inches): | 0 |

**Indicators of wetland hydrology present?** Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W1-2w

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Populus tremuloides* | 40 | Y | FAC |
| 2 | *Acer negundo* | 25 | Y | FAC |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 65 | = Total Cover | |

| Sapling/Shrub Stratum | Plot Size ( 15' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Populus tremuloides* | 20 | Y | FAC |
| 2 | *Cornus racemosa* | 20 | Y | FAC |
| 3 | *Rubus idaeus* | 10 | N | FAC |
| 4 | *Ribes hirtellum* | 5 | N | FACW |
| 5 | *Acer negundo* | 5 | N | FAC |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 60 | = Total Cover | |

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Impatiens capensis* | 50 | Y | FACW |
| 2 | *Galium aparine* | 20 | Y | FACU |
| 3 | *Phalaris arundinacea* | 20 | Y | FACW |
| 4 | *Urtica dioica* | 5 | N | FAC |
| 5 | *Hydrophyllum virginianum* | 5 | N | FAC |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 100 | = Total Cover | |

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

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 13 | 33 |
| Sapling/Shrub Stratum | 12 | 30 |
| Herb Stratum | 20 | 50 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

Number of Dominant Species that are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across all Strata: 7 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 85.71% (A/B)

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 75 | x 2 = | 150 |
| FAC species | 130 | x 3 = | 390 |
| FACU species | 20 | x 4 = | 80 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 225 (A) | | 620 (B) |

Prevalence Index = B/A = 2.76

**Hydrophytic Vegetation Indicators:**

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

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** Y

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

**SOIL** **Sampling Point:** W1-2w

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 2/1 | 98 | 2.5YR 2.5/3 | 2 | C | M | Mucky Silt Loam | |
| 12-24 | 10YR 4/2 | 70 | 7.5YR 4/6 | 30 | C | M | Silt Clay Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

Restrictive Layer (if observed):
Type: Silt Clay Loam
Depth (inches): 12

**Hydric soil present?** Y

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/5/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W1-3u
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Side Slope Local relief (concave, convex, none): Convex
Slope (%): 2-6 Lat.: Long.: Datum:
Soil Map Unit Name MaB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | N | **Is the sampled area within a wetland?** | N |
| Hydric soil present? | N | | |
| Indicators of wetland hydrology present? | N | If yes, optional wetland site ID: | |

Remarks: (Explain alternative procedures here or in a separate report.)

Upland grassland/berm

### HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes | ____ | No | X | Depth (inches): ____ |
| Water table present? | Yes | ____ | No | X | Depth (inches): ____ |
| Saturation present? (includes capillary fringe) | Yes | ____ | No | X | Depth (inches): ____ |

**Indicators of wetland hydrology present?** N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W1-3u

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Sapling/Shrub Stratum | Plot Size ( 15' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Rubus idaeus* | 10 | Y | FAC |
| 2 | *Rubus allegheniensis* | 2 | N | FACU |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 12 | = Total Cover | |

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Poa pratensis* | 40 | Y | FACU |
| 2 | *Bromus inermis* | 30 | Y | UPL |
| 3 | *Solidago canadensis* | 10 | N | FACU |
| 4 | *Taraxacum officinale* | 5 | N | FACU |
| 5 | *Pastinaca sativa* | 5 | N | UPL |
| 6 | *Phleum pratense* | 5 | N | FACU |
| 7 | *Elymus repens* | 5 | N | FACU |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 100 | = Total Cover | |

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

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 2 | 6 |
| Herb Stratum | 20 | 50 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

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

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

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

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 10 | x 3 = | 30 |
| FACU species | 67 | x 4 = | 268 |
| UPL species | 35 | x 5 = | 175 |
| Column totals | 112 (A) | | 473 (B) |

Prevalence Index = B/A = 4.22

**Hydrophytic Vegetation Indicators:**

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

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** N

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

**SOIL** **Sampling Point:** W1-3u

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-8 | 7.5YR 3/2 | 100 | | | | | Silt Loam | |
| 8-20 | 7.5YR 4/4 | 100 | | | | | Sandy Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

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

**Hydric soil present?** N

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/5/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W1-3w
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Foot Slope Local relief (concave, convex, none): Concave
Slope (%): 1-3 Lat.: Long.: Datum:
Soil Map Unit Name MaB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | Y | **Is the sampled area within a wetland?** | Y |
| Hydric soil present? | Y | | |
| Indicators of wetland hydrology present? | Y | If yes, optional wetland site ID: | W1 |

Remarks: (Explain alternative procedures here or in a separate report.)

Wet meadow

### HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes | ____ | No | X | Depth (inches): ____ |
| Water table present? | Yes | ____ | No | X | Depth (inches): ____ |
| Saturation present? (includes capillary fringe) | Yes | ____ | No | X | Depth (inches): ____ |

**Indicators of wetland hydrology present?** Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W1-3w

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Sapling/Shrub Stratum | Plot Size ( 15' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Spiraea alba* | 5 | Y | FACW |
| 2 | *Acer negundo* | 2 | Y | FAC |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 7 | = Total Cover | |

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Phalaris arundinacea* | 80 | Y | FACW |
| 2 | *Poa pratensis* | 10 | N | FACU |
| 3 | *Solidago gigantea* | 10 | N | FACW |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 100 | = Total Cover | |

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

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 1 | 4 |
| Herb Stratum | 20 | 50 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

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

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

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

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 95 | x 2 = | 190 |
| FAC species | 2 | x 3 = | 6 |
| FACU species | 10 | x 4 = | 40 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 107 (A) | | 236 (B) |

Prevalence Index = B/A = 2.21

**Hydrophytic Vegetation Indicators:**

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

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** Y

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

**SOIL** **Sampling Point:** W1-3w

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-10 | 10YR 2/2 | 95 | 7.5YR 4/6 | 5 | C | M | Silt Loam | |
| 10-20 | 10YR 4/3 | 60 | 7.5YR 4/6 | 40 | C | M | Silt Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

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

**Hydric soil present?** Y

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/5/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W1-4w
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Toe Slope Local relief (concave, convex, none): Concave
Slope (%): 0-2 Lat.: Long.: Datum:
Soil Map Unit Name MaB NWI Classification: E1Ka
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | Y | **Is the sampled area within a wetland?** | Y |
| Hydric soil present? | Y | | |
| Indicators of wetland hydrology present? | Y | If yes, optional wetland site ID: | W1 |

Remarks: (Explain alternative procedures here or in a separate report.)

Hardwood swamp/wet meadow complex

### HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

| | | | | | | |
|---|---|---|---|---|---|---|
| Surface water present? | Yes | ____ | No | X | Depth (inches): | ____ |
| Water table present? | Yes | ____ | No | X | Depth (inches): | ____ |
| Saturation present? (includes capillary fringe) | Yes | X | No | ____ | Depth (inches): | 12 |

**Indicators of wetland hydrology present?** Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W1-4w

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Populus tremuloides* | 50 | Y | FAC |
| 2 | *Acer negundo* | 10 | N | FAC |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 60 | = Total Cover | |

| Sapling/Shrub Stratum | Plot Size ( 15' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Cornus racemosa* | 30 | Y | FAC |
| 2 | *Acer negundo* | 20 | Y | FAC |
| 3 | *Rhamnus cathartica* | 10 | N | FAC |
| 4 | *Ribes missouriense* | 5 | N | UPL |
| 5 | *Viburnum lentago* | 5 | N | FAC |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 70 | = Total Cover | |

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Phalaris arundinacea* | 60 | Y | FACW |
| 2 | *Urtica dioica* | 20 | Y | FAC |
| 3 | *Impatiens capensis* | 20 | Y | FACW |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 100 | = Total Cover | |

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

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 12 | 30 |
| Sapling/Shrub Stratum | 14 | 35 |
| Herb Stratum | 20 | 50 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

Number of Dominant Species that are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across all Strata: 6 (B)

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

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 80 | x 2 = | 160 |
| FAC species | 145 | x 3 = | 435 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 5 | x 5 = | 25 |
| Column totals | 230 (A) | | 620 (B) |

Prevalence Index = B/A = 2.70

**Hydrophytic Vegetation Indicators:**

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

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** Y

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

**SOIL** **Sampling Point:** W1-4w

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 2/1 | 98 | 2.5YR 2.5/3 | 2 | C | M | Silt Loam | |
| 12-24 | 10YR 4/2 | 80 | 5YR 3/4 | 20 | C | M | Silt Clay Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

Restrictive Layer (if observed):
Type: Silt Clay Loam
Depth (inches): 12

**Hydric soil present?** Y

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/5/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W1-5w
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Toe Slope Local relief (concave, convex, none): Concave
Slope (%): 0-2 Lat.: Long.: Datum:
Soil Map Unit Name SaB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation X, soil , or hydrology significantly disturbed? Are "normal
Are vegetation , soil , or hydrology naturally problematic? circumstances" present? No
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | Y | **Is the sampled area within a wetland?** | Y |
| Hydric soil present? | Y | | |
| Indicators of wetland hydrology present? | Y | If yes, optional wetland site ID: | W1 |

Remarks: (Explain alternative procedures here or in a separate report.)

Farmed wetland - cropland. Difficult wetland situation (Atypical): land used for agriculture - problematic hydrophytic vegetation (managed plant community) procedures used. Planted to corn in 2015. Not planted at this time.

### HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

| | | | | | | |
|---|---|---|---|---|---|---|
| Surface water present? | Yes | | No | X | Depth (inches): | |
| Water table present? | Yes | | No | X | Depth (inches): | |
| Saturation present? (includes capillary fringe) | Yes | X | No | | Depth (inches): | 12 |

**Indicators of wetland hydrology present?** Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W1-5w

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

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

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Plantago major* | 10 | Y | FACU |
| 2 | *Rumex crispus* | 10 | Y | FAC |
| 3 | *Taraxacum officinale* | 10 | Y | FACU |
| 4 | *Phalaris arundinacea* | 5 | N | FACW |
| 5 | *Bromus inermis* | 5 | N | UPL |
| 6 | *Veronica peregrina* | 5 | N | FAC |
| 7 | *Acer rubrum* | 2 | N | FAC |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 47 | = Total Cover | |

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

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 9 | 24 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

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

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

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

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 5 | x 2 = | 10 |
| FAC species | 17 | x 3 = | 51 |
| FACU species | 20 | x 4 = | 80 |
| UPL species | 5 | x 5 = | 25 |
| Column totals | 47 (A) | | 166 (B) |

Prevalence Index = B/A = 3.53

**Hydrophytic Vegetation Indicators:**

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

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** Y

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

Vegetation is routinely altered/managed for agricultural use (cultivation). Wetland determination is based mainly on presence of indicators of hydric soil, wetland hydrology, and landscape position. If left unmanaged, it's assumed that this farmed wetland would be a wet meadow, which is further based on examination of adjacent reference wetland areas having similar soil, hydrology, and landform; and offsite review of aerial photography.

**SOIL** **Sampling Point:** W1-5w

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 2/1 | 75 | 2.5YR 2.5/3 | 25 | C | PL/M | Silt Loam | |
| 12-24 | 10YR 4/2 | 70 | 5YR 3/4 | 30 | C | M | Silt Clay Loam | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

Restrictive Layer (if observed):
Type: Silt Clay Loam
Depth (inches): 12

**Hydric soil present?** Y

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/6/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W1-6u
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Side Slope Local relief (concave, convex, none): Convex
Slope (%): 2-4 Lat.: Long.: Datum:
Soil Map Unit Name SaB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation X , soil , or hydrology significantly disturbed? Are "normal
Are vegetation , soil , or hydrology naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | N | **Is the sampled area within a wetland?** | N |
| Hydric soil present? | N | | |
| Indicators of wetland hydrology present? | N | If yes, optional wetland site ID: | |

Remarks: (Explain alternative procedures here or in a separate report.)

Upland cropland

### HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes | | No | X | Depth (inches): |
| Water table present? | Yes | | No | X | Depth (inches): |
| Saturation present? (includes capillary fringe) | Yes | | No | X | Depth (inches): |

**Indicators of wetland hydrology present?** N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W1-6u

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

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

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Taraxacum officinale* | 5 | Y | FACU |
| 2 | *Dactylis glomerata* | 3 | Y | FACU |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 8 | = Total Cover | |

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

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 2 | 4 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 8 | x 4 = | 32 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 8 (A) | | 32 (B) |

Prevalence Index = B/A = 4.00

**Hydrophytic Vegetation Indicators:**

___ Rapid test for hydrophytic vegetation

___ Dominance test is >50%

___ Prevalence index is ≤3.0*

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

___ Problematic hydrophytic vegetation* (explain)

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** N

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

Planted to corn in 2015. Not planted at this time.

**SOIL** **Sampling Point:** W1-6u

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 2/2 | 100 | | | | | Silt Loam | |
| 12-16 | 7.5YR 3/4 | 100 | | | | | Sandy Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

Restrictive Layer (if observed):
Type: Rock
Depth (inches): 16

**Hydric soil present?** N

Remarks:
Boring refusal on rock; rocky soil.

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/6/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W1-6w
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Toe Slope Local relief (concave, convex, none): Concave
Slope (%): 0-2 Lat.: Long.: Datum:
Soil Map Unit Name SaB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation X, soil , or hydrology significantly disturbed? Are "normal
Are vegetation , soil , or hydrology naturally problematic? circumstances" present? No
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | Y | **Is the sampled area within a wetland?** | Y |
| Hydric soil present? | Y | | |
| Indicators of wetland hydrology present? | Y | If yes, optional wetland site ID: | W1 |

Remarks: (Explain alternative procedures here or in a separate report.)

Farmed wetland - cropland. Difficult wetland situation (Atypical): land used for agriculture - problematic hydrophytic vegetation (managed plant community) procedures used. Planted to corn in 2015. Not planted at this time.

### HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

| | | | | | | |
|---|---|---|---|---|---|---|
| Surface water present? | Yes | | No | X | Depth (inches): | |
| Water table present? | Yes | | No | X | Depth (inches): | |
| Saturation present? (includes capillary fringe) | Yes | X | No | | Depth (inches): | 12 |

**Indicators of wetland hydrology present?** Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W1-6w

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

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

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Taraxacum officinale* | 5 | Y | FACU |
| 2 | *Veronica peregrina* | 2 | Y | FAC |
| 3 | *Chenopodium album* | 2 | Y | FACU |
| 4 | *Acer negundo* | 1 | N | FAC |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 10 | = Total Cover | |

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

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 2 | 5 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

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

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

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

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 3 | x 3 = | 9 |
| FACU species | 7 | x 4 = | 28 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 10 (A) | | 37 (B) |

Prevalence Index = B/A = 3.70

**Hydrophytic Vegetation Indicators:**

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

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** Y

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

Vegetation is routinely altered/managed for agricultural use (cultivation). Wetland determination is based mainly on the presence of indicators of hydric soil, wetland hydrology, and landscape position. If left unmanaged, it's assumed that this farmed wetland would be a wet meadow, which is further based on examination of adjacent reference wetland areas having similar soil, hydrology, and landform; and offsite review of aerial photography.

**SOIL** **Sampling Point:** W1-6w

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-10 | 10YR 2/1 | 98 | 2.5YR 2.5/3 | 2 | C | M | Silt Loam | |
| 10-20 | 10YR 4/2 | 70 | 7.5YR 3/4 | 30 | C | M | Silt Clay Loam | |
| | | | | | | | | |
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*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains
**Location: PL=Pore Lining, M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

Restrictive Layer (if observed):
Type: Silt Clay Loam
Depth (inches): 10

**Hydric soil present?** Y

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/12/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W1-7u
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Foot Slope Local relief (concave, convex, none): Concave
Slope (%): 1-3 Lat.: Long.: Datum:
Soil Map Unit Name MaB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation X, soil , or hydrology significantly disturbed? Are "normal
Are vegetation , soil , or hydrology naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | N | **Is the sampled area within a wetland?** | N |
| Hydric soil present? | N | | |
| Indicators of wetland hydrology present? | N | If yes, optional wetland site ID: | |

Remarks: (Explain alternative procedures here or in a separate report.)

Upland cropland

### HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes | | No | X | Depth (inches): |
| Water table present? | Yes | | No | X | Depth (inches): |
| Saturation present? (includes capillary fringe) | Yes | | No | X | Depth (inches): |

**Indicators of wetland hydrology present?** N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W1-7u

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

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

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Veronica peregrina* | 2 | Y | FAC |
| 2 | *Taraxacum officinale* | 1 | Y | FACU |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 3 | = Total Cover | |

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

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 1 | 2 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

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

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

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

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 2 | x 3 = | 6 |
| FACU species | 1 | x 4 = | 4 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 3 (A) | | 10 (B) |

Prevalence Index = B/A = 3.33

**Hydrophytic Vegetation Indicators:**

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

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** N

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

Planted to corn in 2015. Recently tilled, not planted at this time.

**SOIL** **Sampling Point:** W1-7u

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-16 | 10YR 2/2 | 99 | 2.5YR 2.5/3 | 1 | C | M | Silt Loam | |
| 16-24 | 10YR 4/3 | 70 | 5YR 3/4 | 30 | C | M | Silt Clay Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

Restrictive Layer (if observed):
Type: Silt Clay Loam
Depth (inches): 16

**Hydric soil present?** N

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/12/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W1-7w
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Toe Slope Local relief (concave, convex, none): Concave
Slope (%): 0-2 Lat.: Long.: Datum:
Soil Map Unit Name MaB NWI Classification: E1Kg
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | Y | **Is the sampled area within a wetland?** | Y |
| Hydric soil present? | Y | | |
| Indicators of wetland hydrology present? | Y | If yes, optional wetland site ID: | W1 |

Remarks: (Explain alternative procedures here or in a separate report.)

Wet meadow

### HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

| | | | | | | |
|---|---|---|---|---|---|---|
| Surface water present? | Yes | ____ | No | X | Depth (inches): | |
| Water table present? | Yes | ____ | No | X | Depth (inches): | |
| Saturation present? (includes capillary fringe) | Yes | X | No | ____ | Depth (inches): | 0 |

**Indicators of wetland hydrology present?** Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W1-7w

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

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

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Phalaris arundinacea* | 100 | Y | FACW |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 100 | = Total Cover | |

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

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 20 | 50 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

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

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

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

**Prevalence Index Worksheet**

Total % Cover of:

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

Prevalence Index = B/A = 2.00

**Hydrophytic Vegetation Indicators:**

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

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** Y

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

**SOIL** **Sampling Point:** W1-7w

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-8 | 10YR 2/2 | 98 | 2.5YR 2.5/3 | 2 | C | M | Silt Loam | |
| 8-20 | 10YR 2/1 | 90 | 2.5YR 2.5/4 | 10 | C | M | Silt Loam | |
| 20-24 | 10YR 4/2 | 70 | 5YR 3/4 | 30 | C | M | Silt Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

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

**Hydric soil present?** Y

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/12/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W1-8u
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Side Slope Local relief (concave, convex, none): Convex
Slope (%): 2-6 Lat.: Long.: Datum:
Soil Map Unit Name SaB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation X , soil , or hydrology significantly disturbed? Are "normal
Are vegetation , soil , or hydrology naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | N | **Is the sampled area within a wetland?** | N |
| Hydric soil present? | N | | |
| Indicators of wetland hydrology present? | N | If yes, optional wetland site ID: | |

Remarks: (Explain alternative procedures here or in a separate report.)

Upland cropland

### HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes | | No | X | Depth (inches): |
| Water table present? | Yes | | No | X | Depth (inches): |
| Saturation present? (includes capillary fringe) | Yes | | No | X | Depth (inches): |

**Indicators of wetland hydrology present?** N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W1-8u

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

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

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Taraxacum officinale* | 5 | Y | FACU |
| 2 | *Veronica peregrina* | 1 | N | FAC |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 6 | = Total Cover | |

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

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 1 | 3 |
| Woody Vine Stratum | 0 | 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: 0.00% (A/B)

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 1 | x 3 = | 3 |
| FACU species | 5 | x 4 = | 20 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 6 (A) | | 23 (B) |

Prevalence Index = B/A = 3.83

**Hydrophytic Vegetation Indicators:**

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

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** N

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

Planted to corn in 2015. Not planted at this time.

**SOIL** **Sampling Point:** W1-8u

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-8 | 10YR 2/2 | 100 | | | | | Silt Loam | |
| 8-16 | 5YR 3/4 | 100 | | | | | Silt Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

Restrictive Layer (if observed):
Type: Rock
Depth (inches): 16

**Hydric soil present?** N

Remarks:
Boring refusal on rock; rocky soil.

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/12/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W1-8w
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Foot Slope/Drainageway Local relief (concave, convex, none): Concave
Slope (%): 0-2 Lat.: Long.: Datum:
Soil Map Unit Name MaB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation X, soil , or hydrology significantly disturbed? Are "normal
Are vegetation , soil , or hydrology naturally problematic? circumstances" present? No
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | Y | **Is the sampled area within a wetland?** | Y |
| Hydric soil present? | Y | | |
| Indicators of wetland hydrology present? | Y | If yes, optional wetland site ID: | W1 |

Remarks: (Explain alternative procedures here or in a separate report.)

Farmed wetland - cropland. Difficult wetland situation (Atypical): land used for agriculture - problematic hydrophytic vegetation (managed plant community) procedures used. Planted to corn in 2015. Not planted at this time.

### HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes | | No | X | Depth (inches): |
| Water table present? | Yes | | No | X | Depth (inches): |
| Saturation present? (includes capillary fringe) | Yes | | No | X | Depth (inches): |

**Indicators of wetland hydrology present?** Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Erosion rills/gullies in drainageway

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W1-8w

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

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

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Veronica peregrina* | 10 | Y | FAC |
| 2 | *Chenopodium album* | 5 | Y | FACU |
| 3 | *Taraxacum officinale* | 2 | N | FACU |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 17 | = Total Cover | |

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

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 3 | 9 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

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

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

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

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 10 | x 3 = | 30 |
| FACU species | 7 | x 4 = | 28 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 17 (A) | | 58 (B) |

Prevalence Index = B/A = 3.41

**Hydrophytic Vegetation Indicators:**

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

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** Y

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

Vegetation is routinely altered/managed for agricultural use (cultivation). Wetland determination is based mainly on presence of indicators of hydric soil, wetland hydrology, and landscape position. If left unmanaged, it's assumed that this farmed wetland would be a wet meadow, which is further based on examination of adjacent reference wetland areas having similar soil, hydrology, and landform; and offsite review of aerial photography.

**SOIL** **Sampling Point:** W1-8w

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-10 | 10YR 2/2 | 98 | 2.5YR 2.5/3 | 2 | C | M | Silt Loam | |
| 10-24 | 10YR 4/2 | 60 | 7.5YR 4/6 | 40 | C | M | Silt Clay Loam | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

Restrictive Layer (if observed):
Type: Silt Clay Loam
Depth (inches): 10

**Hydric soil present?** Y

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/12/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W1-9u
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Side Slope Local relief (concave, convex, none): Convex/Concave
Slope (%): 1-3 Lat.: Long.: Datum:
Soil Map Unit Name MaB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation X, soil , or hydrology significantly disturbed? Are "normal
Are vegetation , soil , or hydrology naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | N | **Is the sampled area within a wetland?** | N |
| Hydric soil present? | N | | |
| Indicators of wetland hydrology present? | Y | If yes, optional wetland site ID: | |

Remarks: (Explain alternative procedures here or in a separate report.)

Upland cropland

### HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes | | No | X | Depth (inches): |
| Water table present? | Yes | | No | X | Depth (inches): |
| Saturation present? (includes capillary fringe) | Yes | | No | X | Depth (inches): |

**Indicators of wetland hydrology present?** Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Drainageway on side slope

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W1-9u

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

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

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Taraxacum officinale* | 2 | Y | FACU |
| 2 | *Veronica peregrina* | 2 | Y | FAC |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 4 | = Total Cover | |

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

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 1 | 2 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

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

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

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

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 2 | x 3 = | 6 |
| FACU species | 2 | x 4 = | 8 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 4 (A) | | 14 (B) |

Prevalence Index = B/A = 3.50

**Hydrophytic Vegetation Indicators:**

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

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** N

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

Planted to corn in 2015. Not planted at this time.

**SOIL** **Sampling Point:** W1-9u

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 2/2 | 99 | 7.5YR 3/4 | 1 | C | M | Silt Loam | |
| 12-24 | 10YR 4/3 | 70 | 7.5YR 4/6 | 30 | C | M | Silt Clay Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

Restrictive Layer (if observed):
Type: Silt Clay Loam
Depth (inches): 12

**Hydric soil present?** N

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/12/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W1-9w
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Foot Slope Local relief (concave, convex, none): Concave
Slope (%): 0-2 Lat.: Long.: Datum:
Soil Map Unit Name MaB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation X , soil , or hydrology significantly disturbed? Are "normal
Are vegetation , soil , or hydrology naturally problematic? circumstances" present? No
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | Y | **Is the sampled area within a wetland?** | Y |
| Hydric soil present? | Y | | |
| Indicators of wetland hydrology present? | Y | If yes, optional wetland site ID: | W1 |

Remarks: (Explain alternative procedures here or in a separate report.)

Farmed wetland - cropland. Difficult wetland situation (Atypical): land used for agriculture - problematic hydrophytic vegetation (managed plant community) procedures used. Planted to corn in 2015. Recently tilled. Not planted at this time.

### HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes | | No | X | Depth (inches): |
| Water table present? | Yes | | No | X | Depth (inches): |
| Saturation present? (includes capillary fringe) | Yes | | No | X | Depth (inches): |

**Indicators of wetland hydrology present?** Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W1-9w

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

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

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Veronica peregrina* | 10 | Y | FAC |
| 2 | *Taraxacum officinale* | 5 | Y | FACU |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 15 | = Total Cover | |

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

**50/20 Thresholds**

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

**Dominance Test Worksheet**

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

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

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

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 10 | x 3 = | 30 |
| FACU species | 5 | x 4 = | 20 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 15 (A) | | 50 (B) |

Prevalence Index = B/A = 3.33

**Hydrophytic Vegetation Indicators:**

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

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** Y

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

Vegetation is routinely altered/managed for agricultural use (cultivation). Wetland determination is based mainly on presence of indicators of hydric soil, wetland hydrology, and landscape position. If left unmanaged, it's assumed that this farmed wetland would be a wet meadow, which is further based on examination of adjacent reference wetland areas having similar soil, hydrology, and landform; and offsite review of aerial photography.

**SOIL** **Sampling Point:** W1-9w

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-10 | 10YR 2/2 | 98 | 2.5YR 2.5/3 | 2 | C | M | Silt Loam | |
| 10-24 | 10YR 4/2 | 60 | 7.5YR 4/6 | 40 | C | M | Silt Clay Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

Restrictive Layer (if observed):
Type: Silt Clay Loam
Depth (inches): 10

**Hydric soil present?** Y

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/16/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W1-10u
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Side Slope Local relief (concave, convex, none): Convex
Slope (%): 2-4 Lat.: Long.: Datum:
Soil Map Unit Name SaB NWI Classification: E1Kg
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | N | **Is the sampled area within a wetland?** | N |
| Hydric soil present? | N | | |
| Indicators of wetland hydrology present? | N | If yes, optional wetland site ID: | |

Remarks: (Explain alternative procedures here or in a separate report.)

Upland grassland/brush thicket.

### HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes | ____ | No | X | Depth (inches): ____ |
| Water table present? | Yes | ____ | No | X | Depth (inches): ____ |
| Saturation present? (includes capillary fringe) | Yes | ____ | No | X | Depth (inches): ____ |

**Indicators of wetland hydrology present?** N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W1-10u

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Sapling/Shrub Stratum | Plot Size ( 15' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Zanthoxylum americanum* | 50 | Y | FACU |
| 2 | *Cornus racemosa* | 25 | Y | FAC |
| 3 | *Rubus allegheniensis* | 5 | N | FACU |
| 4 | *Viburnum lentago* | 5 | N | FAC |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 85 | = Total Cover | |

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Bromus inermis* | 30 | Y | UPL |
| 2 | *Poa pratensis* | 20 | Y | FACU |
| 3 | *Solidago canadensis* | 20 | Y | FACU |
| 4 | *Phalaris arundinacea* | 10 | N | FACW |
| 5 | *Taraxacum officinale* | 10 | N | FACU |
| 6 | *Solidago gigantea* | 5 | N | FACW |
| 7 | *Achillea millefolium* | 5 | N | FACU |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 100 | = Total Cover | |

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

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 17 | 43 |
| Herb Stratum | 20 | 50 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

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

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

Percent of Dominant Species that are OBL, FACW, or FAC: 20.00% (A/B)

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 15 | x 2 = | 30 |
| FAC species | 30 | x 3 = | 90 |
| FACU species | 110 | x 4 = | 440 |
| UPL species | 30 | x 5 = | 150 |
| Column totals | 185 (A) | | 710 (B) |

Prevalence Index = B/A = 3.84

**Hydrophytic Vegetation Indicators:**

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

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** N

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

**SOIL** **Sampling Point:** W1-10u

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-10 | 10YR 2/2 | 100 | | | | | Silt Loam | |
| 10-20 | 7.5YR 3/4 | 100 | | | | | Silt Clay Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

Restrictive Layer (if observed):
Type: Silt Clay Loam
Depth (inches): 10

**Hydric soil present?** N

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/16/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W1-10w
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Toe Slope Local relief (concave, convex, none): Concave
Slope (%): 0-2 Lat.: Long.: Datum:
Soil Map Unit Name: CyA NWI Classification: E1Kg
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | Y | **Is the sampled area within a wetland?** | Y |
| Hydric soil present? | Y | | |
| Indicators of wetland hydrology present? | Y | If yes, optional wetland site ID: | W1 |

Remarks: (Explain alternative procedures here or in a separate report.)

Shrub carr/Wet meadow

### HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

| | | | | | | |
|---|---|---|---|---|---|---|
| Surface water present? | Yes | | No | X | Depth (inches): | |
| Water table present? | Yes | X | No | | Depth (inches): | 6 |
| Saturation present? (includes capillary fringe) | Yes | X | No | | Depth (inches): | 0 |

**Indicators of wetland hydrology present?** Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W1-10w

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Ulmus americana* | 2 | | FACW |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 2 | = Total Cover | |

| Sapling/Shrub Stratum | Plot Size ( 15' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Spiraea alba* | 40 | Y | FACW |
| 2 | *Cornus racemosa* | 20 | Y | FAC |
| 3 | *Viburnum lentago* | 10 | N | FAC |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 70 | = Total Cover | |

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Phalaris arundinacea* | 90 | Y | FACW |
| 2 | *Spiraea alba* | 5 | N | FACW |
| 3 | *Urtica dioica* | 5 | N | FAC |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 100 | = Total Cover | |

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

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 1 |
| Sapling/Shrub Stratum | 14 | 35 |
| Herb Stratum | 20 | 50 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

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

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

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

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 137 | x 2 = | 274 |
| FAC species | 35 | x 3 = | 105 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 172 (A) | | 379 (B) |

Prevalence Index = B/A = 2.20

**Hydrophytic Vegetation Indicators:**

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

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** Y

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

**SOIL** **Sampling Point:** W1-10w

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-6 | 10YR 2/1 | 100 | | | | | Mucky Silt Loam | |
| 6-20 | 7.5YR 4/2 | 60 | 7.5YR 4/6 | 10 | C | M | Sandy Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains
**Location: PL=Pore Lining, M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

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

**Hydric soil present?** Y

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/16/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W1-11u
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Side Slope Local relief (concave, convex, none): Convex
Slope (%): 2-4 Lat.: Long.: Datum:
Soil Map Unit Name SaB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation X , soil , or hydrology significantly disturbed? Are "normal
Are vegetation , soil , or hydrology naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | N | **Is the sampled area within a wetland?** | N |
| Hydric soil present? | N | | |
| Indicators of wetland hydrology present? | N | If yes, optional wetland site ID: | |

Remarks: (Explain alternative procedures here or in a separate report.)

Upland cropland

### HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes | | No | X | Depth (inches): |
| Water table present? | Yes | | No | X | Depth (inches): |
| Saturation present? (includes capillary fringe) | Yes | | No | X | Depth (inches): |

**Indicators of wetland hydrology present?** N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W1-11u

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

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

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 0 | = Total Cover | |

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

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 0 | 0 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 0 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 0 (A) | | 0 (B) |

Prevalence Index = B/A =

**Hydrophytic Vegetation Indicators:**

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

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** N

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

Planted to corn in 2015. Recently tilled/cultivated (bare soil).

**SOIL** **Sampling Point:** W1-11u

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-10 | 10YR 2/2 | 100 | | | | | Silt Loam | |
| 10-20 | 7.5YR 3/4 | 100 | | | | | Silt Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

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

**Hydric soil present?** N

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/16/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W1-11w
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Foot/Toe Slope Local relief (concave, convex, none): Concave
Slope (%): 0-2 Lat.: Long.: Datum:
Soil Map Unit Name MaB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | Y | **Is the sampled area within a wetland?** | Y |
| Hydric soil present? | Y | | |
| Indicators of wetland hydrology present? | Y | If yes, optional wetland site ID: | W1 |

Remarks: (Explain alternative procedures here or in a separate report.)

Wet meadow/farmed wetland on margin. Directly adjacent to mapped E1Kg

### HYDROLOGY

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

| | | |
|---|---|---|
| ___ Surface Water (A1) | ___ Water-Stained Leaves (B9) | Secondary Indicators (minimum of two required) |
| ___ High Water Table (A2) | ___ Aquatic Fauna (B13) | X Surface Soil Cracks (B6) |
| ___ Saturation (A3) | ___ Marl Deposits (B15) | ___ Drainage Patterns (B10) |
| ___ Water Marks (B1) | ___ Hydrogen Sulfide Odor (C1) | ___ Moss Trim Lines (B16) |
| ___ Sediment Deposits (B2) | ___ Oxidized Rhizospheres on Living | ___ Dry-Season Water Table (C2) |
| ___ Drift Deposits (B3) | X Roots (C3) | ___ Crayfish Burrows (C8) |
| ___ Algal Mat or Crust (B4) | ___ Presence of Reduced Iron (C4) | X Saturation Visible on Aerial Imagery (C9) |
| ___ Iron Deposits (B5) | ___ Recent Iron Reduction in Tilled | ___ Stunted or Stressed Plants (D1) |
| ___ Inundation Visible on Aerial | X Soils (C6) | X Geomorphic Position (D2) |
| ___ Imagery (B7) | ___ Thin Muck Surface (C7) | ___ Shallow Aquitard (D3) |
| ___ Sparsely Vegetated Concave | ___ Other (Explain in Remarks) | X FAC-Neutral Test (D5) |
| ___ Surface (B8) | | ___ Microtopographic Relief (D4) |

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes ____ | No | X | Depth (inches): | |
| Water table present? | Yes ____ | No | X | Depth (inches): | |
| Saturation present? (includes capillary fringe) | Yes ____ | No | X | Depth (inches): | |

**Indicators of wetland hydrology present?** Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W1-11w

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

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

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Phalaris arundinacea* | 75 | Y | FACW |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 75 | = Total Cover | |

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

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 15 | 38 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

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

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

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

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 75 | x 2 = | 150 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 75 (A) | | 150 (B) |

Prevalence Index = B/A = 2.00

**Hydrophytic Vegetation Indicators:**

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

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** Y

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

Recently tilled/cultivated on wetland margin.

**SOIL** **Sampling Point:** W1-11w

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-24 | 10YR 2/2 | 95 | 2.5YR 2.5/3 | 5 | C | PL/M | Silt Loam | |
| 24-30 | 10YR 2/1 | 95 | 2.5YR 2.5/3 | 5 | C | M | Silt Loam | |
| 30-36 | 10YR 4/2 | 60 | 5YR 3/4 | 40 | C | M | Silt Clay Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

Restrictive Layer (if observed):
Type: Silt Clay Loam
Depth (inches): 30

**Hydric soil present?** Y

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/16/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W1-12u
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Side Slope Local relief (concave, convex, none): Convex
Slope (%): 2-4 Lat.: Long.: Datum:
Soil Map Unit Name SaB NWI Classification: E1Kg
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | N | **Is the sampled area within a wetland?** | N |
| Hydric soil present? | N | | |
| Indicators of wetland hydrology present? | N | If yes, optional wetland site ID: | |

Remarks: (Explain alternative procedures here or in a separate report.)

Upland grassland/shrub thicket on boundary of mapped E1Kg

### HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes | ____ | No | X | Depth (inches): ____ |
| Water table present? | Yes | ____ | No | X | Depth (inches): ____ |
| Saturation present? (includes capillary fringe) | Yes | ____ | No | X | Depth (inches): ____ |

**Indicators of wetland hydrology present?** N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W1-12u

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Quercus rubra* | 2 | | FACU |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 2 | = Total Cover | |

| Sapling/Shrub Stratum | Plot Size ( 15' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Rubus idaeus* | 20 | Y | FAC |
| 2 | *Acer negundo* | 10 | Y | FAC |
| 3 | *Cornus racemosa* | 5 | N | FAC |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 35 | = Total Cover | |

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Bromus inermis* | 20 | Y | UPL |
| 2 | *Elymus repens* | 20 | Y | FACU |
| 3 | *Solidago canadensis* | 20 | Y | FACU |
| 4 | *Taraxacum officinale* | 10 | N | FACU |
| 5 | *Phalaris arundinacea* | 10 | N | FACW |
| 6 | *Poa pratensis* | 10 | N | FACU |
| 7 | *Urtica dioica* | 5 | N | FAC |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 95 | = Total Cover | |

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

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 1 |
| Sapling/Shrub Stratum | 7 | 18 |
| Herb Stratum | 19 | 48 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

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

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

Percent of Dominant Species that are OBL, FACW, or FAC: 40.00% (A/B)

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 10 | x 2 = | 20 |
| FAC species | 40 | x 3 = | 120 |
| FACU species | 62 | x 4 = | 248 |
| UPL species | 20 | x 5 = | 100 |
| Column totals | 132 (A) | | 488 (B) |

Prevalence Index = B/A = 3.70

**Hydrophytic Vegetation Indicators:**

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

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** N

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

**SOIL** **Sampling Point:** W1-12u

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-6 | 10YR 2/2 | 100 | | | | | Sandy Loam | |
| 6-16 | 5YR 3/4 | 100 | | | | | Sandy Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

Restrictive Layer (if observed):
Type: Rock
Depth (inches): 16

**Hydric soil present?** N

Remarks:
Boring refusal on rock; rocky soil.

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/16/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W1-12w
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Toe Slope Local relief (concave, convex, none): Concave
Slope (%): 0-2 Lat.: Long.: Datum:
Soil Map Unit Name: CyA NWI Classification: E1Kg
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | Y | **Is the sampled area within a wetland?** | Y |
| Hydric soil present? | Y | | |
| Indicators of wetland hydrology present? | Y | If yes, optional wetland site ID: | W1 |

Remarks: (Explain alternative procedures here or in a separate report.)

Shrub carr/wet meadow

### HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

| | | | | | | |
|---|---|---|---|---|---|---|
| Surface water present? | Yes | | No | X | Depth (inches): | |
| Water table present? | Yes | X | No | | Depth (inches): | 10 |
| Saturation present? (includes capillary fringe) | Yes | X | No | | Depth (inches): | 0 |

**Indicators of wetland hydrology present?** Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W1-12w

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Sapling/Shrub Stratum | Plot Size ( 15' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Spiraea alba* | 25 | Y | FACW |
| 2 | *Cornus racemosa* | 20 | Y | FAC |
| 3 | *Rubus idaeus* | 20 | Y | FAC |
| 4 | *Acer negundo* | 5 | N | FAC |
| 5 | *Populus tremuloides* | 2 | N | FAC |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 72 | = Total Cover | |

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Phalaris arundinacea* | 100 | Y | FACW |
| 2 | *Urtica dioica* | 5 | N | FAC |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 105 | = Total Cover | |

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

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 14 | 36 |
| Herb Stratum | 21 | 53 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

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

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

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

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 125 | x 2 = | 250 |
| FAC species | 52 | x 3 = | 156 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 177 (A) | | 406 (B) |

Prevalence Index = B/A = 2.29

**Hydrophytic Vegetation Indicators:**

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

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** Y

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

**SOIL** **Sampling Point:** W1-12w

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-8 | 10YR 2/1 | 98 | 2.5YR 2.5/3 | 2 | C | M | Mucky Silt Loam | |
| 8-20 | 10YR 4/2 | 60 | 5YR 4/6 | 40 | C | M | Silt Clay Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

Restrictive Layer (if observed):
Type: Silt Clay Loam
Depth (inches): 8

**Hydric soil present?** Y

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/6/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W2-1u
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Side Slope Local relief (concave, convex, none): Convex
Slope (%): 2-4 Lat.: Long.: Datum:
Soil Map Unit Name SAB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation X, soil , or hydrology significantly disturbed? Are "normal
Are vegetation , soil , or hydrology naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | N | **Is the sampled area within a wetland?** | N |
| Hydric soil present? | N | | |
| Indicators of wetland hydrology present? | N | If yes, optional wetland site ID: | |

Remarks: (Explain alternative procedures here or in a separate report.)

Upland cropland

### HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes | | No | X | Depth (inches): |
| Water table present? | Yes | | No | X | Depth (inches): |
| Saturation present? (includes capillary fringe) | Yes | | No | X | Depth (inches): |

**Indicators of wetland hydrology present?** N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W2-1u

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

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

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Taraxacum officinale* | 40 | Y | FACU |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 40 | = Total Cover | |

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

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 8 | 20 |
| Woody Vine Stratum | 0 | 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: 0.00% (A/B)

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 40 | x 4 = | 160 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 40 (A) | | 160 (B) |

Prevalence Index = B/A = 4.00

**Hydrophytic Vegetation Indicators:**

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

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** N

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

Planted to corn in 2015. Not planted at this time.

**SOIL** **Sampling Point:** W2-1u

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 2/1 | 100 | | | | | Silt Loam | |
| 12-16 | 10YR 3/3 | 98 | 5YR 3/4 | 2 | C | M | Silt Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

Restrictive Layer (if observed):
Type: Rock
Depth (inches): 16

**Hydric soil present?** N

Remarks:
Boring refusal on rock; rocky soil.

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/6/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W2-1w
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Toe Slope/Depression Local relief (concave, convex, none): Concave
Slope (%): 0-2 Lat.: Long.: Datum:
Soil Map Unit Name: SaB NWI Classification: Wet Symbol
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation X, soil , or hydrology significantly disturbed? Are "normal
Are vegetation , soil , or hydrology naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | Y | **Is the sampled area within a wetland?** | Y |
| Hydric soil present? | Y | | |
| Indicators of wetland hydrology present? | Y | If yes, optional wetland site ID: | W2 |

Remarks: (Explain alternative procedures here or in a separate report.)

Seasonally flooded basin/farmed wetland on margins. Mapped by WDNR as wetland too small to delineate on the WWI.

### HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

| | | | | | | |
|---|---|---|---|---|---|---|
| Surface water present? | Yes | X | No | | Depth (inches): | 1 |
| Water table present? | Yes | | No | X | Depth (inches): | |
| Saturation present? (includes capillary fringe) | Yes | X | No | | Depth (inches): | 2 |

**Indicators of wetland hydrology present?** Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturated at sample point on wetland margin. Surface water in central depression.

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W2-1w

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

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

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Phalaris arundinacea* | 5 | Y | FACW |
| 2 | *Taraxacum officinale* | 5 | Y | FACU |
| 3 | *Rumex crispus* | 3 | Y | FAC |
| 4 | *Urtica dioica* | 2 | N | FAC |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 15 | = Total Cover | |

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

**50/20 Thresholds**

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

**Dominance Test Worksheet**

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

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

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

**Prevalence Index Worksheet**

Total % Cover of:

| | | | | |
|---|---|---|---|---|
| OBL species | 0 | x 1 = | 0 | |
| FACW species | 5 | x 2 = | 10 | |
| FAC species | 5 | x 3 = | 15 | |
| FACU species | 5 | x 4 = | 20 | |
| UPL species | 0 | x 5 = | 0 | |
| Column totals | 15 | (A) | 45 | (B) |

Prevalence Index = B/A = 3.00

**Hydrophytic Vegetation Indicators:**

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

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** Y

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

Planted to corn in 2015, with evidence that most of the prior year crop was drowned out. Not planted at this time. Herb stratum composed of volunteer or weedy vegetation established between cultivations.

**SOIL** **Sampling Point:** W2-1w

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-24 | 10YR 2/1 | 85 | 7.5YR 4/6 | 5 | C | M | Silt Loam | |
| | | | 10YR 5/2 | 5 | D | M | Silt Loam | |
| | | | 2.5YR 2.5/3 | 5 | C | M | Silt Loam | |
| 24-30 | 10YR 3/1 | 80 | 5YR 3/4 | 20 | C | M | Silt Clay Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

Restrictive Layer (if observed):
Type: Silt Clay Loam
Depth (inches): 24

**Hydric soil present?** Y

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/6/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W3-1u
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Side Slope Local relief (concave, convex, none): Convex
Slope (%): 2-6 Lat.: Long.: Datum:
Soil Map Unit Name SaB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation X , soil , or hydrology significantly disturbed? Are "normal
Are vegetation , soil , or hydrology naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | N | **Is the sampled area within a wetland?** | N |
| Hydric soil present? | N | | |
| Indicators of wetland hydrology present? | N | If yes, optional wetland site ID: | |

Remarks: (Explain alternative procedures here or in a separate report.)

Upland cropland

### HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes | | No | X | Depth (inches): |
| Water table present? | Yes | | No | X | Depth (inches): |
| Saturation present? (includes capillary fringe) | Yes | | No | X | Depth (inches): |

**Indicators of wetland hydrology present?** N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W3-1u

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

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

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Taraxacum officinale* | 3 | Y | FACU |
| 2 | *Veronica peregrina* | 2 | Y | FAC |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 5 | = Total Cover | |

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

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 1 | 3 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

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

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

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

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 2 | x 3 = | 6 |
| FACU species | 3 | x 4 = | 12 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 5 (A) | | 18 (B) |

Prevalence Index = B/A = 3.60

**Hydrophytic Vegetation Indicators:**

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

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** N

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

Planted to corn in 2015. Not planted at this time.

**SOIL** **Sampling Point:** W3-1u

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-6 | 10YR 2/1 | 100 | | | | | Silt Loam | |
| 6-14 | 7.5YR 3/4 | 100 | | | | | Sandy Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

Restrictive Layer (if observed):
Type: Rock
Depth (inches): 14

**Hydric soil present?** N

Remarks:
Boring refusal on rock; rocky soil.

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/6/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W3-1w
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Toe Slope/Depression Local relief (concave, convex, none): Concave
Slope (%): 0-2 Lat.: Long.: Datum:
Soil Map Unit Name SaB NWI Classification: Wet Symbol
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation X, soil X, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | Y | **Is the sampled area within a wetland?** | Y |
| Hydric soil present? | Y | | |
| Indicators of wetland hydrology present? | Y | If yes, optional wetland site ID: | W3 |

Remarks: (Explain alternative procedures here or in a separate report.)

Seasonally flooded basin/farmed wetland. Mapped by WDNR as wetland too small to delineate on WWI.

### HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

| | | | | | | |
|---|---|---|---|---|---|---|
| Surface water present? | Yes | ____ | No | X | Depth (inches): | ____ |
| Water table present? | Yes | ____ | No | X | Depth (inches): | ____ |
| Saturation present? (includes capillary fringe) | Yes | X | No | ____ | Depth (inches): | 18 |

**Indicators of wetland hydrology present?** Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W3-1w

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

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

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Typha angustifolia* | 3 | Y | OBL |
| 2 | *Rumex crispus* | 2 | Y | FAC |
| 3 | *Taraxacum officinale* | 2 | Y | FACU |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 7 | = Total Cover | |

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

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 1 | 4 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

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

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

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

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 3 | x 1 = | 3 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 2 | x 3 = | 6 |
| FACU species | 2 | x 4 = | 8 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 7 (A) | | 17 (B) |

Prevalence Index = B/A = 2.43

**Hydrophytic Vegetation Indicators:**

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

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** Y

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

Corn planted in 2015, but it's evident that most of the prior year crop was drowned out in central depression. Not planted at this time. Herb stratum composed of volunteer or weedy vegetation established between cultivations.

**SOIL** **Sampling Point:** W3-1w

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-6 | 10YR 2/2 | 90 | 5YR 3/4 | 10 | C | M | Silt Loam | |
| 6-12 | 7.5YR 3/4 | 60 | | | | | Sandy Loam | |
| | 10YR 2/2 | 40 | | | | | Sandy Loam | |
| 12-18 | 10YR 2/1 | 95 | 2.5YR 2.5/3 | 5 | C | M | Silt Loam | |
| 18-21 | 10YR 3/1 | 80 | 5YR 3/4 | 20 | C | M | Silt Clay Loam | |
| 21-25 | 10YR 5/2 | 80 | 7.5YR 4/6 | 20 | C | M | Silt Clay Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

Restrictive Layer (if observed):
Type: Silt Clay Loam
Depth (inches): 18

**Hydric soil present?** Y

Remarks:
Approximately 12 inches of silt loam and sandy loam sediment and/or fill over a buried original surface (hydric soil). Nonetheless, field indicators of hydric soil are present under current conditions.

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/12/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W4-1u
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Side Slope Local relief (concave, convex, none): Convex
Slope (%): 2-4 Lat.: Long.: Datum:
Soil Map Unit Name MaB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation X , soil , or hydrology significantly disturbed? Are "normal
Are vegetation , soil , or hydrology naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | N | **Is the sampled area within a wetland?** | N |
| Hydric soil present? | N | | |
| Indicators of wetland hydrology present? | N | If yes, optional wetland site ID: | |

Remarks: (Explain alternative procedures here or in a separate report.)

Upland cropland

### HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes | | No | X | Depth (inches): |
| Water table present? | Yes | | No | X | Depth (inches): |
| Saturation present? (includes capillary fringe) | Yes | | No | X | Depth (inches): |

**Indicators of wetland hydrology present?** N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W4-1u

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

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

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Chenopodium album* | 7 | Y | FACU |
| 2 | *Taraxacum officinale* | 5 | Y | FACU |
| 3 | *Poa annua* | 2 | N | FACU |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 14 | = Total Cover | |

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

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 3 | 7 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 14 | x 4 = | 56 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 14 (A) | | 56 (B) |

Prevalence Index = B/A = 4.00

**Hydrophytic Vegetation Indicators:**

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

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** N

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

Planted to corn in 2015. Not planted at this time

**SOIL** **Sampling Point:** W4-1u

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-8 | 10YR 2/2 | 100 | | | | | Silt Loam | |
| 8-20 | 5YR 3/4 | 100 | | | | | Silt Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

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

**Hydric soil present?** N

Remarks:
Rocky soil

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/12/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W4-1w
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Toe Slope/Depression Local relief (concave, convex, none): Concave
Slope (%): 0-2 Lat.: Long.: Datum:
Soil Map Unit Name MaB NWI Classification: Wet Symbol
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation X , soil , or hydrology significantly disturbed? Are "normal
Are vegetation , soil , or hydrology naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | Y | **Is the sampled area within a wetland?** | Y |
| Hydric soil present? | Y | | |
| Indicators of wetland hydrology present? | Y | If yes, optional wetland site ID: | W4 |

Remarks: (Explain alternative procedures here or in a separate report.)

Seasonally flooded basin/farmed wetland on margins. Mapped by WDNR as wetland too small to delineate on WWI.

### HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

| | | | | | | |
|---|---|---|---|---|---|---|
| Surface water present? | Yes | X | No | | Depth (inches): | 2 |
| Water table present? | Yes | X | No | | Depth (inches): | 0 |
| Saturation present? (includes capillary fringe) | Yes | X | No | | Depth (inches): | 0 |

**Indicators of wetland hydrology present?** Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturated at sample point; surface water in central depression.

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W4-1w

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

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

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Typha latifolia* | 15 | Y | OBL |
| 2 | *Typha angustifolia* | 10 | Y | OBL |
| 3 | *Schoenoplectus tabernaemontani* | 2 | N | OBL |
| 4 | *Urtica dioica* | 2 | N | FAC |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 29 | = Total Cover | |

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

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 6 | 15 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

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

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

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

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 27 | x 1 = | 27 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 2 | x 3 = | 6 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 29 (A) | | 33 (B) |

Prevalence Index = B/A = 1.14

**Hydrophytic Vegetation Indicators:**

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

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** Y

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

Margins of wetland planted to corn in 2015. Not planted at this time.

**SOIL** **Sampling Point:** W4-1w

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-8 | 10YR 2/2 | 95 | 2.5YR 2.5/4 | 5 | C | PL/M | Mucky Silt Loam | |
| 8-20 | 10YR 2/1 | 95 | 2.5YR 2.5/4 | 5 | C | M | Mucky Silt Loam | |
| 20-24 | 10YR 5/2 | 60 | 7.5YR 4/6 | 40 | C | M | Silt Clay Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

Restrictive Layer (if observed):
Type: Silt Clay Loam
Depth (inches): 20

**Hydric soil present?** Y

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/16/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W5-1u
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Side Slope Local relief (concave, convex, none): Convex
Slope (%): 2-4 Lat.: Long.: Datum:
Soil Map Unit Name MaB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation X , soil , or hydrology significantly disturbed? Are "normal
Are vegetation , soil , or hydrology naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | N | **Is the sampled area within a wetland?** | N |
| Hydric soil present? | N | | |
| Indicators of wetland hydrology present? | N | If yes, optional wetland site ID: | |

Remarks: (Explain alternative procedures here or in a separate report.)

Upland cropland

### HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes | | No | X | Depth (inches): |
| Water table present? | Yes | | No | X | Depth (inches): |
| Saturation present? (includes capillary fringe) | Yes | | No | X | Depth (inches): |

**Indicators of wetland hydrology present?** N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W5-1u

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

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

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 0 | = Total Cover | |

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

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 0 | 0 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 0 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 0 (A) | | 0 (B) |

Prevalence Index = B/A =

**Hydrophytic Vegetation Indicators:**

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

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** N

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

Planted to corn in 2015. Recently tilled/cultivated (bare soil).

**SOIL** **Sampling Point:** W5-1u

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-10 | 10YR 2/2 | 100 | | | | | Silt Loam | |
| 10-20 | 7.5YR 3/4 | 100 | | | | | Silt Clay Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

Restrictive Layer (if observed):
Type: Silt Clay Loam
Depth (inches): 10

**Hydric soil present?** N

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/5/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W5-1w
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Foot/Toe Slope/Depression Local relief (concave, convex, none): Concave
Slope (%): 1-2 Lat.: Long.: Datum:
Soil Map Unit Name MaB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation X , soil , or hydrology significantly disturbed? Are "normal
Are vegetation , soil , or hydrology naturally problematic? circumstances" present? No
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | Y | **Is the sampled area within a wetland?** | Y |
| Hydric soil present? | Y | | |
| Indicators of wetland hydrology present? | Y | If yes, optional wetland site ID: | W5 |

Remarks: (Explain alternative procedures here or in a separate report.)

Farmed wetland - cropland. Difficult wetland situation (Atypical): land used for agriculture - problematic hydrophytic vegetation (managed plant community) procedures used. Planted to corn in 2015. Recently tilled/cultivated (bare soil conditions).

### HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes | | No | X | Depth (inches): |
| Water table present? | Yes | | No | X | Depth (inches): |
| Saturation present? (includes capillary fringe) | Yes | | No | X | Depth (inches): |

**Indicators of wetland hydrology present?** Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W5-1w

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

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

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 0 | = Total Cover | |

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

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 0 | 0 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 0 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 0 (A) | | 0 (B) |

Prevalence Index = B/A =

**Hydrophytic Vegetation Indicators:**

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

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** Y

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

Vegetation is routinely altered/managed for agricultural use (cultivation). Wetland determination is based mainly on presence of indicators of hydric soil, wetland hydrology, and landscape position. If left unmanaged, it's assumed that this farmed wetland would be a seasonally flooded basin or wet meadow, which is further based on examination of adjacent reference wetland areas having similar soil, hydrology, and landform; and offsite review of aerial photography.

**SOIL** **Sampling Point:** W5-1w

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 2/2 | 98 | 2.5YR 2.5/3 | 2 | C | M | Silt Loam | |
| 12-24 | 10YR 4/2 | 80 | 5YR 3/4 | 20 | C | M | Silt Clay Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

Restrictive Layer (if observed):
Type: Silt Clay Loam
Depth (inches): 12

**Hydric soil present?** Y

Remarks:
Bare soil, recently tilled/cultivated.

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/17/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W6-1u
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Summit/Knoll Local relief (concave, convex, none): Convex
Slope (%): 1-2 Lat.: Long.: Datum:
Soil Map Unit Name: MaB NWI Classification: E1Ka
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil X, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? No
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | N | **Is the sampled area within a wetland?** | N |
| Hydric soil present? | N | | |
| Indicators of wetland hydrology present? | Y | If yes, optional wetland site ID: | |

Remarks: (Explain alternative procedures here or in a separate report.)

Grassland/island. Potential historic wetland fill/spoils from adjacent pond excavation. This small artificial island or knoll is surrounded by wetland W6 and included within its acreage.

### HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

| | | | | | | |
|---|---|---|---|---|---|---|
| Surface water present? | Yes | ____ | No | X | Depth (inches): | ____ |
| Water table present? | Yes | ____ | No | X | Depth (inches): | ____ |
| Saturation present? (includes capillary fringe) | Yes | X | No | ____ | Depth (inches): | 12 |

**Indicators of wetland hydrology present?** Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W6-1u

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

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

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Poa pratensis* | 30 | Y | FACU |
| 2 | *Trifolium pratense* | 20 | Y | FACU |
| 3 | *Solidago canadensis* | 20 | Y | FACU |
| 4 | *Elymus repens* | 10 | N | FACU |
| 5 | *Phleum pratense* | 10 | N | FACU |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 90 | = Total Cover | |

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

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 18 | 45 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 90 | x 4 = | 360 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 90 (A) | | 360 (B) |

Prevalence Index = B/A = 4.00

**Hydrophytic Vegetation Indicators:**

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

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** N

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

**SOIL** **Sampling Point:** W6-1u

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 5YR 3/4 | 100 | | | | | Sandy Loam | |
| 12-24 | 5YR 3/4 | 98 | 7.5YR 3/4 | 2 | C | M | Sandy Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

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

**Hydric soil present?** N

Remarks:
Potential historic fill/spoils from adjacent pond excavation.

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/17/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W6-1w
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Toe Slope/Depression Local relief (concave, convex, none): Concave
Slope (%): 0-2 Lat.: Long.: Datum:
Soil Map Unit Name MaB NWI Classification: E1Ka
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation X, soil X, or hydrology X significantly disturbed? Are "normal
Are vegetation , soil , or hydrology naturally problematic? circumstances" present? No
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | Y | **Is the sampled area within a wetland?** | Y |
| Hydric soil present? | Y | | |
| Indicators of wetland hydrology present? | Y | If yes, optional wetland site ID: | W6 |

Remarks: (Explain alternative procedures here or in a separate report.)

Shallow, open water pond that has been excavated with dredged spoil piles placed on the north side and small island on south side.

### HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

| | | | | | | |
|---|---|---|---|---|---|---|
| Surface water present? | Yes | X | No | | Depth (inches): | 36+ |
| Water table present? | Yes | X | No | | Depth (inches): | 0 |
| Saturation present? (includes capillary fringe) | Yes | X | No | | Depth (inches): | 0 |

**Indicators of wetland hydrology present?** Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturated at sample point on pond margin. Surface water present in pond, >36" depth.

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W6-1w

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Sapling/Shrub Stratum | Plot Size ( 15' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Salix discolor* | 2 | Y | FACW |
| 2 | *Salix petiolaris* | 2 | Y | FACW |
| 3 | *Populus deltoides* | 2 | Y | FAC |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 6 | = Total Cover | |

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Typha angustifolia* | 10 | Y | OBL |
| 2 | *Phalaris arundinacea* | 10 | Y | FACW |
| 3 | *Typha latifolia* | 5 | Y | OBL |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 25 | = Total Cover | |

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

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 1 | 3 |
| Herb Stratum | 5 | 13 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

Number of Dominant Species that are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across all Strata: 6 (B)

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

**Prevalence Index Worksheet**

Total % Cover of:

| | | | | |
|---|---|---|---|---|
| OBL species | 15 | x 1 = | 15 | |
| FACW species | 14 | x 2 = | 28 | |
| FAC species | 2 | x 3 = | 6 | |
| FACU species | 0 | x 4 = | 0 | |
| UPL species | 0 | x 5 = | 0 | |
| Column totals | 31 | (A) | 49 | (B) |

Prevalence Index = B/A = 1.58

**Hydrophytic Vegetation Indicators:**

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

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** Y

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

**SOIL** **Sampling Point:** W6-1w

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-36 | 5YR 3/3 | 100 | | | | | Sandy Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

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

**Hydric soil present?** Y

Remarks:
Excavated pond - permanently ponded. Meets frequently ponded criteria #3

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/17/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W6-2u
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Side Slope Local relief (concave, convex, none): Convex
Slope (%): 2-6 Lat.: Long.: Datum:
Soil Map Unit Name MaB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil X, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | N | **Is the sampled area within a wetland?** | N |
| Hydric soil present? | N | | |
| Indicators of wetland hydrology present? | N | If yes, optional wetland site ID: | |

Remarks: (Explain alternative procedures here or in a separate report.)

Upland grassland. Historic cut/fill area.

### HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes | ____ | No | X | Depth (inches): ____ |
| Water table present? | Yes | ____ | No | X | Depth (inches): ____ |
| Saturation present? (includes capillary fringe) | Yes | ____ | No | X | Depth (inches): ____ |

**Indicators of wetland hydrology present?** N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W6-2u

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

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

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Taraxacum officinale* | 20 | Y | FACU |
| 2 | *Elymus repens* | 20 | Y | FACU |
| 3 | *Rumex crispus* | 20 | Y | FAC |
| 4 | *Trifolium pratense* | 10 | N | FACU |
| 5 | *Lolium perenne* | 10 | N | FACU |
| 6 | *Dactylis glomerata* | 5 | N | FACU |
| 7 | *Medicago sativa* | 5 | N | UPL |
| 8 | *Bromus inermis* | 5 | N | UPL |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 95 | = Total Cover | |

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

**50/20 Thresholds**

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

**Dominance Test Worksheet**

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

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

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

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 20 | x 3 = | 60 |
| FACU species | 65 | x 4 = | 260 |
| UPL species | 10 | x 5 = | 50 |
| Column totals | 95 (A) | | 370 (B) |

Prevalence Index = B/A = 3.89

**Hydrophytic Vegetation Indicators:**

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

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** N

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

**SOIL** **Sampling Point:** W6-2u

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-24 | 5YR 3/4 | 100 | | | | | Sandy Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

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

**Hydric soil present?** N

Remarks:
Rocky soil; historic cut/fill area.

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/17/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W6-2w
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Toe Slope Local relief (concave, convex, none): Concave
Slope (%): 0-2 Lat.: Long.: Datum:
Soil Map Unit Name MaB NWI Classification: E1Ka
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil X, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | Y | **Is the sampled area within a wetland?** | Y |
| Hydric soil present? | Y | | |
| Indicators of wetland hydrology present? | Y | If yes, optional wetland site ID: | W6 |

Remarks: (Explain alternative procedures here or in a separate report.)

Wet meadow/shallow marsh

### HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

| | | | | | | |
|---|---|---|---|---|---|---|
| Surface water present? | Yes | X | No | ____ | Depth (inches): | 6 |
| Water table present? | Yes | X | No | ____ | Depth (inches): | 0 |
| Saturation present? (includes capillary fringe) | Yes | X | No | ____ | Depth (inches): | 0 |

**Indicators of wetland hydrology present?** Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturated at sample point in wet meadow on margin. Surface water present in shallow marsh, which is hydrologically connected to the adjacnet excavated pond.

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W6-2w

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

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

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Phalaris arundinacea* | 70 | Y | FACW |
| 2 | *Lemna minor* | 30 | Y | OBL |
| 3 | *Schoenoplectus tabernaemontani* | 10 | N | OBL |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 110 | = Total Cover | |

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

**50/20 Thresholds**

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

**Dominance Test Worksheet**

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

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

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

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 40 | x 1 = | 40 |
| FACW species | 70 | x 2 = | 140 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 110 (A) | | 180 (B) |

Prevalence Index = B/A = 1.64

**Hydrophytic Vegetation Indicators:**

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

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** Y

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

**SOIL** **Sampling Point:** W6-2w

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-24 | 5YR 3/4 | 100 | | | | | Sandy Clay Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

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

**Hydric soil present?** ___Y___

Remarks:
Historic excavated area adjacent to the excavated pond. Meets frequently ponded criteria #3.

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/17/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W6-3u
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Side Slope Local relief (concave, convex, none): Convex
Slope (%): 2-4 Lat.: Long.: Datum:
Soil Map Unit Name MaB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | N | **Is the sampled area within a wetland?** | N |
| Hydric soil present? | N | | |
| Indicators of wetland hydrology present? | N | If yes, optional wetland site ID: | |

Remarks: (Explain alternative procedures here or in a separate report.)

Upland grassland, old field.

### HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes | ____ | No | X | Depth (inches): ____ |
| Water table present? | Yes | ____ | No | X | Depth (inches): ____ |
| Saturation present? (includes capillary fringe) | Yes | ____ | No | X | Depth (inches): ____ |

**Indicators of wetland hydrology present?** N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W6-3u

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

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

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Poa pratensis* | 60 | Y | FACU |
| 2 | *Solidago canadensis* | 20 | Y | FACU |
| 3 | *Taraxacum officinale* | 10 | N | FACU |
| 4 | *Bromus inermis* | 10 | N | UPL |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 100 | = Total Cover | |

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

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 20 | 50 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 90 | x 4 = | 360 |
| UPL species | 10 | x 5 = | 50 |
| Column totals | 100 (A) | | 410 (B) |

Prevalence Index = B/A = 4.10

**Hydrophytic Vegetation Indicators:**

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

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** N

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

**SOIL** **Sampling Point:** W6-3u

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-10 | 10YR 2/2 | 100 | | | | | Silt Loam | |
| 10-20 | 5YR 3/4 | 100 | | | | | Sandy Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

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

**Hydric soil present?** N

Remarks:
Rocky soil.

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/17/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W6-3w
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Toe Slope Local relief (concave, convex, none): Concave
Slope (%): 0-2 Lat.: Long.: Datum:
Soil Map Unit Name MaB NWI Classification: NA
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | Y | **Is the sampled area within a wetland?** | Y |
| Hydric soil present? | Y | | |
| Indicators of wetland hydrology present? | Y | If yes, optional wetland site ID: | W6 |

Remarks: (Explain alternative procedures here or in a separate report.)

Wet meadow (W6 reference wetland area). Less disturbed fragment of wetland W6 separated from excavated pond by spoil piles on south side.

### HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

| | | | | | | |
|---|---|---|---|---|---|---|
| Surface water present? | Yes | | No | X | Depth (inches): | |
| Water table present? | Yes | X | No | | Depth (inches): | 8 |
| Saturation present? (includes capillary fringe) | Yes | X | No | | Depth (inches): | 0 |

**Indicators of wetland hydrology present?** Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W6-3w

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Ulmus americana* | 2 | | FACW |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 2 | = Total Cover | |

| Sapling/Shrub Stratum | Plot Size ( 15' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Rubus idaeus* | 2 | | FAC |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 2 | = Total Cover | |

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Phalaris arundinacea* | 90 | Y | FACW |
| 2 | *Urtica dioica* | 5 | N | FAC |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 95 | = Total Cover | |

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

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 1 |
| Sapling/Shrub Stratum | 0 | 1 |
| Herb Stratum | 19 | 48 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

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

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

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

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 92 | x 2 = | 184 |
| FAC species | 7 | x 3 = | 21 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 99 (A) | | 205 (B) |

Prevalence Index = B/A = 2.07

**Hydrophytic Vegetation Indicators:**

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

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** Y

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

**SOIL** **Sampling Point:** W6-3w

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-8 | 10YR 2/1 | 95 | 2.5YR 2.5/3 | 5 | C | M | Mucky Silt Loam | |
| 8-16 | 10YR 2/1 | 90 | 2.5YR 2.5/3 | 10 | C | M | Silt Loam | |
| 16-24 | 10YR 4/1 | 60 | 7.5YR 4/6 | 40 | C | M | Silt Clay Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

Restrictive Layer (if observed):
Type: Silt Clay Loam
Depth (inches): 16

**Hydric soil present?** Y

Remarks:
Soil undisturbed

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/17/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W6-4u
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Side Slope Local relief (concave, convex, none): Convex
Slope (%): 2-4 Lat.: Long.: Datum:
Soil Map Unit Name SaB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | N | **Is the sampled area within a wetland?** | N |
| Hydric soil present? | N | | |
| Indicators of wetland hydrology present? | N | If yes, optional wetland site ID: | |

Remarks: (Explain alternative procedures here or in a separate report.)

Upland grassland, edge of cropland.

### HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes | ____ | No | X | Depth (inches): ____ |
| Water table present? | Yes | ____ | No | X | Depth (inches): ____ |
| Saturation present? (includes capillary fringe) | Yes | ____ | No | X | Depth (inches): ____ |

**Indicators of wetland hydrology present?** N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W6-4u

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

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

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Poa pratensis* | 40 | Y | FACU |
| 2 | *Taraxacum officinale* | 40 | Y | FACU |
| 3 | *Elymus repens* | 20 | Y | FACU |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 100 | = Total Cover | |

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

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 20 | 50 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 100 | x 4 = | 400 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 100 (A) | | 400 (B) |

Prevalence Index = B/A = 4.00

**Hydrophytic Vegetation Indicators:**

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

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** N

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

**SOIL** **Sampling Point:** W6-4u

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-10 | 10YR 2/2 | 100 | | | | | Silt Loam | |
| 10-16 | 5YR 3/4 | 70 | | | | | Silt Loam | |
| 10-16 | 5YR 4/6 | 30 | | | | | Silt Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

Restrictive Layer (if observed):
Type: Rock
Depth (inches): 16

**Hydric soil present?** N

Remarks:
Boring refusal on rock; rocky soil.

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/17/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W6-4w
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Toe Slope Local relief (concave, convex, none): Concave
Slope (%): 0-2 Lat.: Long.: Datum:
Soil Map Unit Name SaB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | Y | **Is the sampled area within a wetland?** | Y |
| Hydric soil present? | Y | | |
| Indicators of wetland hydrology present? | Y | If yes, optional wetland site ID: | W6 |

Remarks: (Explain alternative procedures here or in a separate report.)

Wet/sedge meadow. Fragment of wetland W6 separated from the excavated pond by spoil piles to the south

### HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

| | | | | | | |
|---|---|---|---|---|---|---|
| Surface water present? | Yes | ____ | No | X | Depth (inches): | ____ |
| Water table present? | Yes | ____ | No | X | Depth (inches): | ____ |
| Saturation present? (includes capillary fringe) | Yes | X | No | ____ | Depth (inches): | 4 |

**Indicators of wetland hydrology present?** Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W6-4w

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Sapling/Shrub Stratum | Plot Size ( 15' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Salix petiolaris* | 1 | | FACW |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 1 | = Total Cover | |

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Carex lacustris* | 15 | Y | OBL |
| 2 | *Phalaris arundinacea* | 5 | Y | FACW |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 20 | = Total Cover | |

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

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 1 |
| Herb Stratum | 4 | 10 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

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

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

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

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 15 | x 1 = | 15 |
| FACW species | 6 | x 2 = | 12 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 21 (A) | | 27 (B) |

Prevalence Index = B/A = 1.29

**Hydrophytic Vegetation Indicators:**

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

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** Y

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

Stinging nettle, giant ragweed, and reed canary grass are also dominant along the south edge and on dredged spoil piles. Spoil piles are 8-10 feet high and 20-30 feet wide between wetland W6 fragmented areas.

**SOIL** **Sampling Point:** W6-4w

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-16 | 10YR 2/2 | 95 | 2.5YR 2.5/3 | 5 | C | M | Silt Loam | |
| 16-24 | 10YR 4/2 | 70 | 5YR 3/4 | 30 | C | M | Silt Clay Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

Restrictive Layer (if observed):
Type: Silt Clay Loam
Depth (inches): 16

**Hydric soil present?** Y

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/18/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W7-1u
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Side Slope Local relief (concave, convex, none): Convex
Slope (%): 2-4 Lat.: Long.: Datum:
Soil Map Unit Name MaB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | N | **Is the sampled area within a wetland?** | N |
| Hydric soil present? | N | | |
| Indicators of wetland hydrology present? | N | If yes, optional wetland site ID: | |

Remarks: (Explain alternative procedures here or in a separate report.)

Upland grassland. Cut/fill area. Also sample pt D3-1u

### HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes | ____ | No | X | Depth (inches): ____ |
| Water table present? | Yes | ____ | No | X | Depth (inches): ____ |
| Saturation present? (includes capillary fringe) | Yes | ____ | No | X | Depth (inches): ____ |

**Indicators of wetland hydrology present?** N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W7-1u

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Sapling/Shrub Stratum | Plot Size ( 15' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Quercus rubra* | 1 | | FACU |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 1 | = Total Cover | |

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Poa pratensis* | 40 | Y | FACU |
| 2 | *Bromus inermis* | 30 | Y | UPL |
| 3 | *Taraxacum officinale* | 20 | Y | FACU |
| 4 | *Solidago canadensis* | 10 | N | FACU |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 100 | = Total Cover | |

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

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 1 |
| Herb Stratum | 20 | 50 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 71 | x 4 = | 284 |
| UPL species | 30 | x 5 = | 150 |
| Column totals | 101 (A) | | 434 (B) |

Prevalence Index = B/A = 4.30

**Hydrophytic Vegetation Indicators:**

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

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** N

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

**SOIL** **Sampling Point:** W7-1u

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-16 | 7.5YR 2.5/2 | 98 | 7.5YR 3/4 | 2 | C | M | Silt Loam | |
| 16-20 | 10YR 4/3 | 80 | 7.5YR 4/6 | 20 | C | M | Silt Clay Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

Restrictive Layer (if observed):
Type: Silt Clay Loam
Depth (inches): 16

**Hydric soil present?** N

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/18/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W7-1w
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Toe Slope Local relief (concave, convex, none): Concave
Slope (%): 0-2 Lat.: Long.: Datum:
Soil Map Unit Name MaB NWI Classification: Wet Symbol
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | Y | **Is the sampled area within a wetland?** | Y |
| Hydric soil present? | Y | | |
| Indicators of wetland hydrology present? | Y | If yes, optional wetland site ID: | W7 |

Remarks: (Explain alternative procedures here or in a separate report.)

Wet meadow (W7 reference wetland area). Mapped by WDNR as wetland too small to delineate on WWI. Mapped by USDA as wetland on the FSA wetland inventory map.

### HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

| | | | | | | |
|---|---|---|---|---|---|---|
| Surface water present? | Yes | ____ | No | X | Depth (inches): | ____ |
| Water table present? | Yes | ____ | No | X | Depth (inches): | ____ |
| Saturation present? (includes capillary fringe) | Yes | X | No | ____ | Depth (inches): | 0 |

**Indicators of wetland hydrology present?** Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W7-1w

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Sapling/Shrub Stratum | Plot Size ( 15' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Salix interior* | 5 | Y | FACW |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 5 | = Total Cover | |

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Phalaris arundinacea* | 80 | Y | FACW |
| 2 | *Urtica dioica* | 20 | Y | FAC |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 100 | = Total Cover | |

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

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 1 | 3 |
| Herb Stratum | 20 | 50 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

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

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

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

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 85 | x 2 = | 170 |
| FAC species | 20 | x 3 = | 60 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 105 (A) | | 230 (B) |

Prevalence Index = B/A = 2.19

**Hydrophytic Vegetation Indicators:**

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

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** Y

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

**SOIL** **Sampling Point:** W7-1w

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-6 | 10YR 2/1 | 90 | 2.5YR 2.5/3 | 10 | C | M | Mucky Silt Loam | |
| 6-18 | 10YR 2/1 | 90 | 2.5YR 2.5/3 | 10 | C | M | Silt Loam | |
| 18-24 | 10YR 5/2 | 60 | 7.5YR 4/6 | 20 | C | M | Silt Clay Loam | |
| | 10YR 2/1 | 20 | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

Restrictive Layer (if observed):
Type: Silt Clay Loam
Depth (inches): 18

**Hydric soil present?** Y

Remarks:
Soil undisturbed.

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/18/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W7-2u
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Side Slope Local relief (concave, convex, none): Convex
Slope (%): 2-4 Lat.: Long.: Datum:
Soil Map Unit Name SaB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | N | **Is the sampled area within a wetland?** | N |
| Hydric soil present? | N | | |
| Indicators of wetland hydrology present? | N | If yes, optional wetland site ID: | |

Remarks: (Explain alternative procedures here or in a separate report.)

Upland grassland. Historic cut/fill area.

### HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes | ____ | No | X | Depth (inches): ____ |
| Water table present? | Yes | ____ | No | X | Depth (inches): ____ |
| Saturation present? (includes capillary fringe) | Yes | ____ | No | X | Depth (inches): ____ |

**Indicators of wetland hydrology present?** N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W7-2u

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

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

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Trifolium pratense* | 40 | Y | FACU |
| 2 | *Taraxacum officinale* | 20 | Y | FACU |
| 3 | *Elymus repens* | 20 | Y | FACU |
| 4 | *Lolium perenne* | 10 | N | FACU |
| 5 | *Dactylis glomerata* | 10 | N | FACU |
| 6 | *Rumex crispus* | 5 | N | FAC |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 105 | = Total Cover | |

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

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 21 | 53 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 5 | x 3 = | 15 |
| FACU species | 100 | x 4 = | 400 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 105 (A) | | 415 (B) |

Prevalence Index = B/A = 3.95

**Hydrophytic Vegetation Indicators:**

___ Rapid test for hydrophytic vegetation

___ Dominance test is >50%

___ Prevalence index is ≤3.0*

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

___ Problematic hydrophytic vegetation* (explain)

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** N

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

**SOIL** **Sampling Point:** W7-2u

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 7.5YR 3/3 | 100 | | | | | Silt Loam | |
| 12-20 | 10YR 4/3 | 80 | 7.5YR 4/6 | 20 | C | M | Silt Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

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

**Hydric soil present?** N

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/18/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W7-2w
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Toe Slope Local relief (concave, convex, none): Concave
Slope (%): 0-2 Lat.: Long.: Datum:
Soil Map Unit Name MaB NWI Classification: Wet Symbol
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | Y | **Is the sampled area within a wetland?** | Y |
| Hydric soil present? | Y | | |
| Indicators of wetland hydrology present? | Y | If yes, optional wetland site ID: | W7 |

Remarks: (Explain alternative procedures here or in a separate report.)

Farmed wetland/wet meadow. Historic cut/fill area. Mapped by WDNR as wetland too small to delineate on WWI.

### HYDROLOGY

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes | ____ | No | X | Depth (inches): ____ |
| Water table present? | Yes | ____ | No | X | Depth (inches): ____ |
| Saturation present? (includes capillary fringe) | Yes | ____ | No | X | Depth (inches): ____ |

**Indicators of wetland hydrology present?** Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W7-2w

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

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

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Rumex crispus* | 60 | Y | FAC |
| 2 | *Taraxacum officinale* | 20 | N | FACU |
| 3 | *Phalaris arundinacea* | 10 | N | FACW |
| 4 | *Elymus repens* | 10 | N | FACU |
| 5 | *Lolium perenne* | 5 | N | FACU |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 105 | = Total Cover | |

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

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 21 | 53 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

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

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

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

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 10 | x 2 = | 20 |
| FAC species | 60 | x 3 = | 180 |
| FACU species | 35 | x 4 = | 140 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 105 (A) | | 340 (B) |

Prevalence Index = B/A = 3.24

**Hydrophytic Vegetation Indicators:**

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

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

**Definitions of Vegetation Strata:**

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

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

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

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

**Hydrophytic vegetation present?** Y

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

**SOIL** **Sampling Point:** W7-2w

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

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 2/2 | 90 | 5YR 3/4 | 10 | C | M | Silt Loam | |
| 12-24 | 10YR 4/2 | 70 | 7.5YR 4/6 | 30 | C | M | Silt Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils:**

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

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

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

**Hydric soil present?** Y

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/18/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W8-1w
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Level to Gently Sloping Local relief (concave, convex, none): Convex
Slope (%): 0-2 Lat.: Long.: Datum:
Soil Map Unit Name MaB NWI Classification: E1K
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation X, soil X, or hydrology X significantly disturbed? Are "normal
Are vegetation , soil , or hydrology naturally problematic? circumstances" present? No
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | N | **Is the sampled area within a wetland?** | N |
| Hydric soil present? | N | | |
| Indicators of wetland hydrology present? | N | If yes, optional wetland site ID: | |

Remarks: (Explain alternative procedures here or in a separate report.)

Difficult wetland situation (Atypical). See attached Atypical Situations Data Form 3. Historic filled wetland. Mapped by WDNR as E1K wetland on WWI, mapped by NRCS as a wet spot on soil survey, and mapped by USDA as wetland (W) on FSA wetland inventory mapping.

### HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Microtopographic Relief (D4)

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes | | No | X | Depth (inches): |
| Water table present? | Yes | | No | X | Depth (inches): |
| Saturation present? (includes capillary fringe) | Yes | | No | X | Depth (inches): |

**Indicators of wetland hydrology present?** N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Placement of 6 to 7 feet of fill in wetland has removed wetland hydrology. See attached data form 3.

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W8-1w

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Sapling/Shrub Stratum | Plot Size ( 15' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Trifolium pratense* | 20 | Y | FACU |
| 2 | *Rumex crispus* | 20 | Y | FAC |
| 3 | *Taraxacum officinale* | 20 | Y | FACU |
| 4 | *Elymus repens* | 20 | Y | FACU |
| 5 | *Dactylis glomerata* | 10 | N | FACU |
| 6 | *Alopecurus pratensis* | 5 | N | FAC |
| 7 | *Lolium perenne* | 5 | N | FACU |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 100 | = Total Cover | |

| Woody Vine Stratum | Plot Size ( ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| | | 0 | = Total Cover | |

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 20 | 50 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 4 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 25.00% (A/B)

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 25 | x 3 = | 75 |
| FACU species | 75 | x 4 = | 300 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 100 (A) | | 375 (B) |

Prevalence Index = B/A = 3.75

**Hydrophytic Vegetation Indicators:**

___ Rapid test for hydrophytic vegetation
___ Dominance test is >50%
___ Prevalence index is ≤3.0*
___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

**Definitions of Vegetation Strata:**

**Tree** - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** - All woody vines greater than 3.28 ft in height.

**Hydrophytic vegetation present?** N

Remarks: (Include photo numbers here or on a separate sheet)

Historic fill area. Likely converted from wet meadow wetland to upland grass/forb community. See attached data form 3.

**SOIL** **Sampling Point:** W8-1w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-80 | 5YR 3/4 | 100 | | | | | Sandy Loam | Fill |
| 80-90 | 10YR 2/1 | 90 | 5YR 3/4 | 5 | C | M | Silt Loam | |
| | | | 10YR 4/1 | 5 | D | M | Silt Loam | |
| 90-100 | 10YR 4/1 | 60 | 7.5YR 4/6 | 40 | C | | Silt Clay Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains
**Location: PL=Pore Lining, M=Matrix

**Hydric Soil Indicators:**

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

**Hydric soil present?** N

Remarks:

Approx. 6.7 feet of fill was placed over original surface in 2005 or 2006. A backhoe was used to excavate 8+ feet to examine original soil, which was found at a depth of 80 inches and confirmed to be a buried hydric soil. See attached data form 3.

# DATA FORM 3
# ATYPICAL SITUATIONS

| Applicant Name: Emerald Sky Dairy | Project Name: Emerald Sky Dairy | Application No.: |
|---|---|---|

Location: St. Croix County, WI  Sample Point: W8-1w  Date: 5/18/16  By: Tim K.

**A. VEGETATION:**

1. Type of Alteration: Wetland vegetation covered by approximately 6.7 feet of fill in 2005 or 2006, based on review of aerial photography.

2. Effect on Vegetation: Converted from emergent wet meadow wetland to upland grass/forb community.

3. Previous Vegetation: Previous wetland vegetation likely included reed canary grass and stinging nettle (see reference wetland 7, sample point W7-1w). Mapped by WDNR as E1K wetland on WWI. Mapped by USDA as wetland (W) on the wetland inventory.

4. Hydrophytic Vegetation? Yes_X__ No___

**B. SOILS:**

1. Type of Alteration: Original ground surface covered by approximately 6.7 feet of fill.

2. Effect on Soils: Converted from hydric to non-hydric soil. Upper 6.7 feet of fill soils are sandy loam and rock with no field indicators of hydric soil.

3. Previous Soils: Buried hydric soils are silt loam over silt clay loam. Hydric soil indicators of the buried soils include redox dark surface (F6) and depleted matrix (F3). Refer to soil profile description on data form W8-1w and also the adjacent reference wetland data form W7-1w. Mapped as wet spot on NRCS soil survey.

4. Hydric Soils? Yes_X_ No___

**C. HYDROLOGY:**

1. Type of Alteration: Approx. 6.7 feet of fill placed over original wetland surface eliminated wetland hydrology.

2. Effect on Hydrology: Converted from saturated hydrologic regime to no wetland hydrology.

3. Previous Hydrology: Saturated soil (refer to reference wetland W7-1w)

4. Wetland Hydrology? Yes_X__ No___

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/18/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W9-1u
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Side Slope/Berm Local relief (concave, convex, none): Convex
Slope (%): 6-12 Lat.: Long.: Datum:
Soil Map Unit Name AmC2 NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | N | **Is the sampled area within a wetland?** | N |
| Hydric soil present? | N | | |
| Indicators of wetland hydrology present? | N | If yes, optional wetland site ID: | |

Remarks: (Explain alternative procedures here or in a separate report.)

Upland grass berm.

### HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Microtopographic Relief (D4)

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes | ____ | No | X | Depth (inches): ____ |
| Water table present? | Yes | ____ | No | X | Depth (inches): ____ |
| Saturation present? (includes capillary fringe) | Yes | ____ | No | X | Depth (inches): ____ |

**Indicators of wetland hydrology present?** N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W9-1u

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Acer negundo* | 2 | | FAC |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 2 | = Total Cover | |

| Sapling/Shrub Stratum | Plot Size ( 15' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Rhus hirta* | 40 | Y | UPL |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 40 | = Total Cover | |

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Poa pratensis* | 50 | Y | FACU |
| 2 | *Bromus inermis* | 25 | Y | UPL |
| 3 | *Cirsium arvense* | 20 | Y | FACU |
| 4 | *Taraxacum officinale* | 5 | N | FACU |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 100 | = Total Cover | |

| Woody Vine Stratum | Plot Size ( ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| | | 0 | = Total Cover | |

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 1 |
| Sapling/Shrub Stratum | 8 | 20 |
| Herb Stratum | 20 | 50 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 4 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

**Prevalence Index Worksheet**

Total % Cover of:

| | | | | |
|---|---|---|---|---|
| OBL species | 0 | x 1 = | 0 | |
| FACW species | 0 | x 2 = | 0 | |
| FAC species | 2 | x 3 = | 6 | |
| FACU species | 75 | x 4 = | 300 | |
| UPL species | 65 | x 5 = | 325 | |
| Column totals | 142 | (A) | 631 | (B) |

Prevalence Index = B/A = 4.44

**Hydrophytic Vegetation Indicators:**

___ Rapid test for hydrophytic vegetation
___ Dominance test is >50%
___ Prevalence index is ≤3.0*
___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

**Definitions of Vegetation Strata:**

**Tree** - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** - All woody vines greater than 3.28 ft in height.

**Hydrophytic vegetation present?** N

Remarks: (Include photo numbers here or on a separate sheet)

**SOIL** **Sampling Point:** W9-1u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-16 | 10YR 2/2 | 100 | | | | | Silt Loam | |
| 16-20 | 7.5YR 3/3 | 100 | | | | | Silt Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains
**Location: PL=Pore Lining, M=Matrix

**Hydric Soil Indicators:**

___ Histisol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Suface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) (**LRR R, MLRA 149B**)
___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils:**

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L**
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

**Hydric soil present?** N

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/18/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: W9-1w
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Toe Slope/Swale Local relief (concave, convex, none): Concave
Slope (%): 0-2 Lat.: Long.: Datum:
Soil Map Unit Name AmC2/SaB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | Y | **Is the sampled area within a wetland?** | Y |
| Hydric soil present? | Y | | |
| Indicators of wetland hydrology present? | Y | If yes, optional wetland site ID: | W9 |

Remarks: (Explain alternative procedures here or in a separate report.)

Wet meadow.

### HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Microtopographic Relief (D4)

Field Observations:

| | | | | | | |
|---|---|---|---|---|---|---|
| Surface water present? | Yes | | No | X | Depth (inches): | |
| Water table present? | Yes | X | No | | Depth (inches): | 2 |
| Saturation present? (includes capillary fringe) | Yes | X | No | | Depth (inches): | 0 |

**Indicators of wetland hydrology present?** Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** W9-1w

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Acer negundo* | 5 | Y | FAC |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 5 | = Total Cover | |

| Sapling/Shrub Stratum | Plot Size ( 15' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Phalaris arundinacea* | 80 | Y | FACW |
| 2 | *Carex stricta* | 10 | N | OBL |
| 3 | *Barbarea vulgaris* | 5 | N | FAC |
| 4 | *Poa pratensis* | 5 | N | FACU |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 100 | = Total Cover | |

| Woody Vine Stratum | Plot Size ( ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| | | 0 | = Total Cover | |

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 1 | 3 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 20 | 50 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 10 | x 1 = | 10 |
| FACW species | 80 | x 2 = | 160 |
| FAC species | 10 | x 3 = | 30 |
| FACU species | 5 | x 4 = | 20 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 105 (A) | | 220 (B) |

Prevalence Index = B/A = 2.10

**Hydrophytic Vegetation Indicators:**

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

**Definitions of Vegetation Strata:**

**Tree** - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** - All woody vines greater than 3.28 ft in height.

**Hydrophytic vegetation present?** Y

Remarks: (Include photo numbers here or on a separate sheet)

**SOIL** **Sampling Point:** W9-1w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-8 | 10YR 2/1 | 95 | 2.5YR 2.5/3 | 5 | C | M | Mucky Silt Loam | |
| 8-24 | 10YR 2/1 | 95 | 2.5YR 2.5/3 | 5 | C | M | Silt Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains
**Location: PL=Pore Lining, M=Matrix

**Hydric Soil Indicators:**

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1)
- X (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

**Hydric soil present?** Y

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/4/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: D1-1u
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Side Slope Local relief (concave, convex, none): Convex
Slope (%): 6-12 Lat.: Long.: Datum:
Soil Map Unit Name FnB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | N | **Is the sampled area within a wetland?** | N |
| Hydric soil present? | N | | |
| Indicators of wetland hydrology present? | N | If yes, optional wetland site ID: | |

Remarks: (Explain alternative procedures here or in a separate report.)

Grassland on side slope of ditch near edge of cropland.

### HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Microtopographic Relief (D4)

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes | ____ | No | X | Depth (inches): ____ |
| Water table present? | Yes | ____ | No | X | Depth (inches): ____ |
| Saturation present? (includes capillary fringe) | Yes | ____ | No | X | Depth (inches): ____ |

**Indicators of wetland hydrology present?** N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** D1-1u

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Sapling/Shrub Stratum | Plot Size ( 15' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Poa pratensis* | 70 | Y | FACU |
| 2 | *Elymus repens* | 10 | N | FACU |
| 3 | *Bromus inermis* | 5 | N | UPL |
| 4 | *Taraxacum officinale* | 5 | N | FACU |
| 5 | *Solidago canadensis* | 5 | N | FACU |
| 6 | *Asclepias syriaca* | 5 | N | UPL |
| 7 | *Cirsium arvense* | 5 | N | FACU |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 105 | = Total Cover | |

| Woody Vine Stratum | Plot Size ( ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| | | 0 | = Total Cover | |

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 21 | 53 |
| Woody Vine Stratum | 0 | 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: 0.00% (A/B)

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 95 | x 4 = | 380 |
| UPL species | 10 | x 5 = | 50 |
| Column totals | 105 (A) | | 430 (B) |

Prevalence Index = B/A = 4.10

**Hydrophytic Vegetation Indicators:**

___ Rapid test for hydrophytic vegetation
___ Dominance test is >50%
___ Prevalence index is ≤3.0*
___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

**Definitions of Vegetation Strata:**

**Tree** - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** - All woody vines greater than 3.28 ft in height.

**Hydrophytic vegetation present?** N

Remarks: (Include photo numbers here or on a separate sheet)

**SOIL** **Sampling Point:** D1-1u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-10 | 10YR 3/2 | 100 | | | | | Silt Loam | |
| 10-20 | 5YR 3/4 | 100 | | | | | Sandy Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains
**Location: PL=Pore Lining, M=Matrix

**Hydric Soil Indicators:**

___ Histisol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Suface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) (**LRR R, MLRA 149B**)
___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils:**

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L**
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

**Hydric soil present?** N

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/4/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: D1-1w
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Toe Slope/Ditch Local relief (concave, convex, none): Concave
Slope (%): 0-2 Lat.: Long.: Datum:
Soil Map Unit Name FnB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation X, soil X, or hydrology X significantly disturbed? Are "normal
Are vegetation , soil , or hydrology naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | Y | **Is the sampled area within a wetland?** | Y |
| Hydric soil present? | Y | | |
| Indicators of wetland hydrology present? | Y | If yes, optional wetland site ID: | D1 |

Remarks: (Explain alternative procedures here or in a separate report.)

Wet meadow in man-made ditch, drains south to stormwater pond. Potential exempt artificial wetland under NR 103.06(4). Refer to WDNR guidance for specific exemption determination procedures.

### HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- Microtopographic Relief (D4)

Field Observations:

| | | | | | | |
|---|---|---|---|---|---|---|
| Surface water present? | Yes | X | No | | Depth (inches): | 2 |
| Water table present? | Yes | X | No | | Depth (inches): | 0 |
| Saturation present? (includes capillary fringe) | Yes | X | No | | Depth (inches): | 0 |

**Indicators of wetland hydrology present?** Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturated at sample point. Surface water present in ditch channel.

**VEGETATION** - Use scientific names of plants

**Sampling Point:** D1-1w

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Sapling/Shrub Stratum | Plot Size ( 15' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Phalaris arundinacea* | 90 | Y | FACW |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 90 | = Total Cover | |

| Woody Vine Stratum | Plot Size ( ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| | | 0 | = Total Cover | |

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 18 | 45 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 90 | x 2 = | 180 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 90 (A) | | 180 (B) |

Prevalence Index = B/A = 2.00

**Hydrophytic Vegetation Indicators:**

- X Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

**Definitions of Vegetation Strata:**

**Tree** - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** - All woody vines greater than 3.28 ft in height.

**Hydrophytic vegetation present?** Y

Remarks: (Include photo numbers here or on a separate sheet)

**SOIL** **Sampling Point:** D1-1w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-10 | 10YR 3/2 | 90 | 5YR 3/4 | 10 | C | M | Mucky Silt Loam | |
| 10-20 | 5YR 4/4 | 100 | | | | | Sandy Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains
**Location: PL=Pore Lining, M=Matrix

**Hydric Soil Indicators:**

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1)
- X (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

**Hydric soil present?** Y

Remarks:
Excavated ditch

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/4/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: D2-1u
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Side Slope Local relief (concave, convex, none): Convex
Slope (%): 2-4 Lat.: Long.: Datum:
Soil Map Unit Name SaB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | N | **Is the sampled area within a wetland?** | N |
| Hydric soil present? | N | | |
| Indicators of wetland hydrology present? | N | If yes, optional wetland site ID: | |

Remarks: (Explain alternative procedures here or in a separate report.)

Upland grassland/pasture.

### HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Microtopographic Relief (D4)

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes | ____ | No | X | Depth (inches): ____ |
| Water table present? | Yes | ____ | No | X | Depth (inches): ____ |
| Saturation present? (includes capillary fringe) | Yes | ____ | No | X | Depth (inches): ____ |

**Indicators of wetland hydrology present?** N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** D2-1u

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Sapling/Shrub Stratum | Plot Size ( 15' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Taraxacum officinale* | 40 | Y | FACU |
| 2 | *Poa pratensis* | 30 | Y | FACU |
| 3 | *Elymus repens* | 20 | Y | FACU |
| 4 | *Trifolium pratense* | 10 | N | FACU |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 100 | = Total Cover | |

| Woody Vine Stratum | Plot Size ( ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| | | 0 | = Total Cover | |

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 20 | 50 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 100 | x 4 = | 400 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 100 (A) | | 400 (B) |

Prevalence Index = B/A = 4.00

**Hydrophytic Vegetation Indicators:**

___ Rapid test for hydrophytic vegetation
___ Dominance test is >50%
___ Prevalence index is ≤3.0*
___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

**Definitions of Vegetation Strata:**

**Tree** - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** - All woody vines greater than 3.28 ft in height.

**Hydrophytic vegetation present?** N

Remarks: (Include photo numbers here or on a separate sheet)

**SOIL** **Sampling Point:** D2-1u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-16 | 10YR 3/2 | 100 | | | | | Silt Loam | |
| 16-20 | 7.5YR 4/4 | 100 | | | | | Silt Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains
**Location: PL=Pore Lining, M=Matrix

**Hydric Soil Indicators:**

___ Histisol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Suface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) (**LRR R, MLRA 149B**)
___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils:**

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L**
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

**Hydric soil present?** N

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/4/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: D2-1w
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Toe Slope/Ditch Local relief (concave, convex, none): Concave
Slope (%): 0-2 Lat.: Long.: Datum:
Soil Map Unit Name FnB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | Y | **Is the sampled area within a wetland?** | Y |
| Hydric soil present? | Y | | |
| Indicators of wetland hydrology present? | Y | If yes, optional wetland site ID: | D2 |

Remarks: (Explain alternative procedures here or in a separate report.)

Wet meadow in ditch with berm on south side, drains SE to stormwater pond. Potential exempt artificial wetland under NR 103.06(4). Refer to WDNR guidance for specific exemption determination procedures. Other segments of ditch D2 may have wetland history to the west and north of the barn and cut/fill area.

### HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- X Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Microtopographic Relief (D4)

Field Observations:

| | | | | | | |
|---|---|---|---|---|---|---|
| Surface water present? | Yes | X | No | ____ | Depth (inches): | 2 |
| Water table present? | Yes | X | No | ____ | Depth (inches): | 4 |
| Saturation present? (includes capillary fringe) | Yes | X | No | ____ | Depth (inches): | 0 |

**Indicators of wetland hydrology present?** Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturated at sample point. Surface water present in ditch channel. Altered drainage patterns.

**VEGETATION** - Use scientific names of plants

**Sampling Point:** D2-1w

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Sapling/Shrub Stratum | Plot Size ( 15' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Phalaris arundinacea* | 30 | Y | FACW |
| 2 | *Elymus repens* | 30 | Y | FACU |
| 3 | *Ambrosia trifida* | 20 | Y | FAC |
| 4 | *Cirsium arvense* | 5 | N | FACU |
| 5 | *Bromus inermis* | 3 | N | UPL |
| 6 | *Taraxacum officinale* | 2 | N | FACU |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 90 | = Total Cover | |

| Woody Vine Stratum | Plot Size ( ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| | | 0 | = Total Cover | |

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 18 | 45 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 66.67% (A/B)

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 30 | x 2 = | 60 |
| FAC species | 20 | x 3 = | 60 |
| FACU species | 37 | x 4 = | 148 |
| UPL species | 3 | x 5 = | 15 |
| Column totals | 90 (A) | | 283 (B) |

Prevalence Index = B/A = 3.14

**Hydrophytic Vegetation Indicators:**

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- ___ Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

**Definitions of Vegetation Strata:**

**Tree** - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** - All woody vines greater than 3.28 ft in height.

**Hydrophytic vegetation present?** Y

Remarks: (Include photo numbers here or on a separate sheet)

**SOIL** **Sampling Point:** D2-1w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-8 | 7.5YR 3/2 | 98 | 2.5YR 2.5/3 | 2 | C | M | Mucky Silt Loam | |
| 8-16 | 7.5YR 3/2 | 100 | | | | | Silt Loam | |
| 16-20 | 7.5YR 3/3 | 100 | | | | | Sandy Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains
**Location: PL=Pore Lining, M=Matrix

**Hydric Soil Indicators:**

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1)
- X (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

**Hydric soil present?** Y

Remarks:
Excavated ditch with berm on the south side.

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/17/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: D2-2u
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Side Slope Local relief (concave, convex, none): Convex
Slope (%): 2-4 Lat.: Long.: Datum:
Soil Map Unit Name MaB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil X, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | N | **Is the sampled area within a wetland?** | N |
| Hydric soil present? | N | | |
| Indicators of wetland hydrology present? | N | If yes, optional wetland site ID: | |

Remarks: (Explain alternative procedures here or in a separate report.)

Upland grassland on side slope of man-made ditch at edge of cut/fill area.

### HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Microtopographic Relief (D4)

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes | ____ | No | X | Depth (inches): ____ |
| Water table present? | Yes | ____ | No | X | Depth (inches): ____ |
| Saturation present? (includes capillary fringe) | Yes | ____ | No | X | Depth (inches): ____ |

**Indicators of wetland hydrology present?** N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** D2-2u

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Sapling/Shrub Stratum | Plot Size ( 15' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Poa pratensis* | 70 | Y | FACU |
| 2 | *Phleum pratense* | 10 | N | FACU |
| 3 | *Elymus repens* | 10 | N | FACU |
| 4 | *Bromus inermis* | 5 | N | UPL |
| 5 | *Taraxacum officinale* | 5 | N | FACU |
| 6 | *Phalaris arundinacea* | 2 | N | FACW |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 102 | = Total Cover | |

| Woody Vine Stratum | Plot Size ( ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| | | 0 | = Total Cover | |

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 20 | 51 |
| Woody Vine Stratum | 0 | 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: 0.00% (A/B)

**Prevalence Index Worksheet**

Total % Cover of:

| | | | | |
|---|---|---|---|---|
| OBL species | 0 | x 1 = | 0 | |
| FACW species | 2 | x 2 = | 4 | |
| FAC species | 0 | x 3 = | 0 | |
| FACU species | 95 | x 4 = | 380 | |
| UPL species | 5 | x 5 = | 25 | |
| Column totals | 102 | (A) | 409 | (B) |

Prevalence Index = B/A = 4.01

**Hydrophytic Vegetation Indicators:**

___ Rapid test for hydrophytic vegetation

___ Dominance test is >50%

___ Prevalence index is ≤3.0*

___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)

___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

**Definitions of Vegetation Strata:**

**Tree** - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** - All woody vines greater than 3.28 ft in height.

**Hydrophytic vegetation present?** N

Remarks: (Include photo numbers here or on a separate sheet)

**SOIL** **Sampling Point:** D2-2u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-14 | 5YR 3/4 | 100 | | | | | Sandy Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains
**Location: PL=Pore Lining, M=Matrix

**Hydric Soil Indicators:**

___ Histisol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Suface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) (**LRR R, MLRA 149B**)
___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils:**

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L**
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: Rock
Depth (inches): 14

**Hydric soil present?** N

Remarks:
Rocky fill material; boring refusal on rock.

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/17/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: D2-2w
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Toe Slope/Ditch Local relief (concave, convex, none): Concave
Slope (%): 0-2 Lat.: Long.: Datum:
Soil Map Unit Name: MaB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil X, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes
Are vegetation ____, soil ____, or hydrology ____ naturally problematic?
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | Y | **Is the sampled area within a wetland?** | Y |
| Hydric soil present? | Y | | |
| Indicators of wetland hydrology present? | Y | If yes, optional wetland site ID: | D2 |

Remarks: (Explain alternative procedures here or in a separate report.)

Difficult wetland situation - problematic hydric soil - recently developed wetland in man-made ditch. Potential exempt artificial wetland under NR 103.06(4). Refer to WDNR guidance for specific exemption determination procedures. Part of D2 may have wetland history to the west and north.

### HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- X Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Microtopographic Relief (D4)

Field Observations:

| | | | | | | |
|---|---|---|---|---|---|---|
| Surface water present? | Yes | X | No | ____ | Depth (inches): | 1 |
| Water table present? | Yes | X | No | ____ | Depth (inches): | 12 |
| Saturation present? (includes capillary fringe) | Yes | X | No | ____ | Depth (inches): | 0 |

**Indicators of wetland hydrology present?** Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturated at sample point. Surface water in ditch channel. Altered drainage patterns.

**VEGETATION** - Use scientific names of plants

**Sampling Point:** D2-2w

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Sapling/Shrub Stratum | Plot Size ( 15' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Phalaris arundinacea* | 90 | Y | FACW |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 90 | = Total Cover | |

| Woody Vine Stratum | Plot Size ( ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| | | 0 | = Total Cover | |

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 18 | 45 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 90 | x 2 = | 180 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 90 (A) | | 180 (B) |

Prevalence Index = B/A = 2.00

**Hydrophytic Vegetation Indicators:**

- X Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

**Definitions of Vegetation Strata:**

**Tree** - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** - All woody vines greater than 3.28 ft in height.

**Hydrophytic vegetation present?** Y

Remarks: (Include photo numbers here or on a separate sheet)

**SOIL** **Sampling Point:** D2-2w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-1 | 10YR 2/2 | 100 | | | | | Organic matter | |
| 1-12 | 5YR 3/4 | 100 | | | | | Sandy Loam | |
| 12-20 | 5YR 3/4 | 95 | 5YR 4/6 | 5 | C | M | Sandy Clay Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains
**Location: PL=Pore Lining, M=Matrix

**Hydric Soil Indicators:**

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- X Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: Sandy Clay Loam
Depth (inches): 12

**Hydric soil present?** Y

Remarks:
Problematic hydric soils-recently developed wetland. Excavated, man-made drainage ditch - soil considered to be hydric.

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/18/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: D3-1w
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Toe Slope/Ditch Local relief (concave, convex, none): Concave
Slope (%): 0-2 Lat.: Long.: Datum:
Soil Map Unit Name MaB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | Y | **Is the sampled area within a wetland?** | Y |
| Hydric soil present? | Y | | |
| Indicators of wetland hydrology present? | Y | If yes, optional wetland site ID: | D3 |

Remarks: (Explain alternative procedures here or in a separate report.)

Wet meadow in drainage ditch. Ditch likely has wetland history and is connected to wetlands W6 & W7.

### HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Microtopographic Relief (D4)

Field Observations:

| | | | | | | |
|---|---|---|---|---|---|---|
| Surface water present? | Yes | X | No | ____ | Depth (inches): | 2 |
| Water table present? | Yes | X | No | ____ | Depth (inches): | 0 |
| Saturation present? (includes capillary fringe) | Yes | X | No | ____ | Depth (inches): | 0 |

**Indicators of wetland hydrology present?** Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Saturated at sample point. Surface water in ditch channel.

**VEGETATION** - Use scientific names of plants

**Sampling Point:** D3-1w

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Sapling/Shrub Stratum | Plot Size ( 15' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Urtica dioica* | 70 | Y | FAC |
| 2 | *Phalaris arundinacea* | 20 | Y | FACW |
| 3 | *Ambrosia trifida* | 10 | N | FAC |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 100 | = Total Cover | |

| Woody Vine Stratum | Plot Size ( ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| | | 0 | = Total Cover | |

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 20 | 50 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 20 | x 2 = | 40 |
| FAC species | 80 | x 3 = | 240 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 100 (A) | | 280 (B) |

Prevalence Index = B/A = 2.80

**Hydrophytic Vegetation Indicators:**

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

**Definitions of Vegetation Strata:**

**Tree** - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** - All woody vines greater than 3.28 ft in height.

**Hydrophytic vegetation present?** Y

Remarks: (Include photo numbers here or on a separate sheet)

Giant ragweed (Ambrosia trifida) also present (dominant in 2015). See adjacent upland sample point W7-1u/D3-1u

**SOIL** **Sampling Point:** D3-1w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-8 | 10YR 2/2 | 95 | 2.5YR 2.5/3 | 5 | C | M | Mucky Silt Loam | |
| 8-16 | 10YR 4/1 | 80 | 5R 3/4 | 20 | C | M | Silt Loam | |
| 16-20 | 2.5YR 4/1 | 70 | 2.5YR 2.5/3 | 30 | C | M | Silt Loam | |
| 20-24 | 10YR 4/3 | 80 | 7.5YR 3/4 | 20 | C | M | Silt Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains
**Location: PL=Pore Lining, M=Matrix

**Hydric Soil Indicators:**

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

**Hydric soil present?** ___Y___

Remarks:
Excavated ditch. Spoils/berm on the north side of ditch. Cut/fill area located to the south.

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/18/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: D4-1w
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Toe Slope/Ditch Local relief (concave, convex, none): Concave
Slope (%): 0-2 Lat.: Long.: Datum:
Soil Map Unit Name MaB NWI Classification: E1K
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | Y | **Is the sampled area within a wetland?** | Y |
| Hydric soil present? | Y | | |
| Indicators of wetland hydrology present? | Y | If yes, optional wetland site ID: | D4 |

Remarks: (Explain alternative procedures here or in a separate report.)

Wet meadow in ditch. Ditch likely has wetland history and is connected to W7, 8 & 9. Although, short segment of D4, between W7 and W8/9 is potentially artificial exempt wetland under NR 103.06(4). Refer to WDNR guidance for specific exemption determination procedures.

### HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Microtopographic Relief (D4)

Field Observations:

| | | | | | | |
|---|---|---|---|---|---|---|
| Surface water present? | Yes | X | No | | Depth (inches): | 2 |
| Water table present? | Yes | | No | X | Depth (inches): | |
| Saturation present? (includes capillary fringe) | Yes | X | No | | Depth (inches): | 0 |

**Indicators of wetland hydrology present?** Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Surface water present in ditch channel.

**VEGETATION** - Use scientific names of plants

**Sampling Point:** D4-1w

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Sapling/Shrub Stratum | Plot Size ( 15' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Ambrosia trifida* | 60 | Y | FAC |
| 2 | *Urtica dioica* | 20 | Y | FAC |
| 3 | *Phalaris arundinacea* | 20 | Y | FACW |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 100 | = Total Cover | |

| Woody Vine Stratum | Plot Size ( ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| | | 0 | = Total Cover | |

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 20 | 50 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

Number of Dominant Species that are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 20 | x 2 = | 40 |
| FAC species | 80 | x 3 = | 240 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 100 (A) | | 280 (B) |

Prevalence Index = B/A = 2.80

**Hydrophytic Vegetation Indicators:**

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

**Definitions of Vegetation Strata:**

**Tree** - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** - All woody vines greater than 3.28 ft in height.

**Hydrophytic vegetation present?** Y

Remarks: (Include photo numbers here or on a separate sheet)

**SOIL** **Sampling Point:** D4-1w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains
**Location: PL=Pore Lining, M=Matrix

**Hydric Soil Indicators:**

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- X Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

**Hydric soil present?** Y

Remarks:
Soil not sampled in ditch. Hydric soil assumed.

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/4/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: SP1-1
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Toe Slope/Depression Local relief (concave, convex, none): Concave
Slope (%): 0-2 Lat.: Long.: Datum:
Soil Map Unit Name: FnB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil X, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes
Are vegetation ____, soil ____, or hydrology ____ naturally problematic?
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | Y | **Is the sampled area within a wetland?** | Y |
| Hydric soil present? | Y | | |
| Indicators of wetland hydrology present? | Y | If yes, optional wetland site ID: | Stormwater Pond |

Remarks: (Explain alternative procedures here or in a separate report.)
Difficult wetland situation - problematic hydric soil - recently developed wetland in/around man-made, artificial stormwater pond. Artificial pond is potentially exempt under NR 103.06(4). Refer to WDNR guidance for specific exemption determination procedures. Hardwood swamp/shrub carr community established around pond margin.

### HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Microtopographic Relief (D4)

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes | ____ | No | X | Depth (inches): ____ |
| Water table present? | Yes | ____ | No | X | Depth (inches): ____ |
| Saturation present? (includes capillary fringe) | Yes | ____ | No | X | Depth (inches): ____ |

**Indicators of wetland hydrology present?** Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Open water in adjacent pond, depth undetermined.

**VEGETATION** - Use scientific names of plants

**Sampling Point:** SP1-1

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Populus deltoides* | 20 | Y | FAC |
| 2 | *Ulmus americana* | 10 | Y | FACW |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 30 | = Total Cover | |

| Sapling/Shrub Stratum | Plot Size ( 15' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Salix interior* | 30 | Y | FACW |
| 2 | *Rubus idaeus* | 20 | Y | FAC |
| 3 | *Salix petiolaris* | 10 | N | FACW |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 60 | = Total Cover | |

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Poa pratensis* | 40 | Y | FACU |
| 2 | *Solidago gigantea* | 20 | Y | FACW |
| 3 | *Taraxacum officinale* | 20 | Y | FACU |
| 4 | *Pastinaca sativa* | 10 | N | UPL |
| 5 | *Barbarea vulgaris* | 5 | N | FAC |
| 6 | *Phleum pratense* | 5 | N | FACU |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 100 | = Total Cover | |

| Woody Vine Stratum | Plot Size ( ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| | | 0 | = Total Cover | |

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 6 | 15 |
| Sapling/Shrub Stratum | 12 | 30 |
| Herb Stratum | 20 | 50 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

Number of Dominant Species that are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across all Strata: 7 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 71.43% (A/B)

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 70 | x 2 = | 140 |
| FAC species | 45 | x 3 = | 135 |
| FACU species | 65 | x 4 = | 260 |
| UPL species | 10 | x 5 = | 50 |
| Column totals | 190 (A) | | 585 (B) |

Prevalence Index = B/A = 3.08

**Hydrophytic Vegetation Indicators:**

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- ___ Prevalence index is ≤3.0*
- ___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

**Definitions of Vegetation Strata:**

**Tree** - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** - All woody vines greater than 3.28 ft in height.

**Hydrophytic vegetation present?** Y

Remarks: (Include photo numbers here or on a separate sheet)

Woody vegetation established along a narrow strip around the pond perimeter

**SOIL** **Sampling Point:** SP1-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-4 | 7.5YR 3/3 | 100 | | | | | Sandy Loam | |
| 4-24 | 7.5YR 3/4 | 98 | 7.5YR 4/6 | 2 | C | M | Sandy Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains
**Location: PL=Pore Lining, M=Matrix

**Hydric Soil Indicators:**

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- X Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

**Hydric soil present?** Y

Remarks:

Problematic hydric soils-recently developed wetland. Excavated, man-made stormwater pond - soil considered to be hydric.

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/4/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: SP1-2
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Side Slope Local relief (concave, convex, none): Convex
Slope (%): 6-12 Lat.: Long.: Datum:
Soil Map Unit Name FnB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | N | **Is the sampled area within a wetland?** | N |
| Hydric soil present? | N | | |
| Indicators of wetland hydrology present? | N | If yes, optional wetland site ID: | |

Remarks: (Explain alternative procedures here or in a separate report.)

Upland grassland/backslope.

### HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Microtopographic Relief (D4)

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes | ____ | No | X | Depth (inches): ____ |
| Water table present? | Yes | ____ | No | X | Depth (inches): ____ |
| Saturation present? (includes capillary fringe) | Yes | ____ | No | X | Depth (inches): ____ |

**Indicators of wetland hydrology present?** N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** SP1-2

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Sapling/Shrub Stratum | Plot Size ( 15' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Salix interior* | 2 | | FACW |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 2 | = Total Cover | |

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Elymus repens* | 40 | Y | FACU |
| 2 | *Poa pratensis* | 30 | Y | FACU |
| 3 | *Taraxacum officinale* | 10 | N | FACU |
| 4 | *Cirsium arvense* | 10 | N | FACU |
| 5 | *Pastinaca sativa* | 5 | N | UPL |
| 6 | *Barbarea vulgaris* | 2 | N | FAC |
| 7 | *Bromus inermis* | 2 | N | UPL |
| 8 | *Dactylis glomerata* | 2 | N | FACU |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 101 | = Total Cover | |

| Woody Vine Stratum | Plot Size ( ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| | | 0 | = Total Cover | |

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 1 |
| Herb Stratum | 20 | 51 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 2 | x 2 = | 4 |
| FAC species | 2 | x 3 = | 6 |
| FACU species | 92 | x 4 = | 368 |
| UPL species | 7 | x 5 = | 35 |
| Column totals | 103 (A) | | 413 (B) |

Prevalence Index = B/A = 4.01

**Hydrophytic Vegetation Indicators:**

___ Rapid test for hydrophytic vegetation
___ Dominance test is >50%
___ Prevalence index is ≤3.0*
___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

**Definitions of Vegetation Strata:**

**Tree** - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** - All woody vines greater than 3.28 ft in height.

**Hydrophytic vegetation present?** N

Remarks: (Include photo numbers here or on a separate sheet)

**SOIL** **Sampling Point:** SP1-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-3 | 7.5YR 3/3 | 100 | | | | | Silt Loam | |
| 3-20 | 7.5YR 3/4 | 100 | | | | | Sandy Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains
**Location: PL=Pore Lining, M=Matrix

**Hydric Soil Indicators:**

___ Histisol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Suface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) (**LRR R, MLRA 149B**)
___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils:**

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L**
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

**Hydric soil present?** N

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/12/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: SP2
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Toe Slope/Depression Local relief (concave, convex, none): Concave
Slope (%): 0-2 Lat.: Long.: Datum:
Soil Map Unit Name SaB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation X , soil , or hydrology significantly disturbed? Are "normal
Are vegetation , soil , or hydrology naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | N | **Is the sampled area within a wetland?** | N |
| Hydric soil present? | N | | |
| Indicators of wetland hydrology present? | N | If yes, optional wetland site ID: | |

Remarks: (Explain alternative procedures here or in a separate report.)

Upland cropland, sample point in low spot in field.

### HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Microtopographic Relief (D4)

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes | | No | X | Depth (inches): |
| Water table present? | Yes | | No | X | Depth (inches): |
| Saturation present? (includes capillary fringe) | Yes | | No | X | Depth (inches): |

**Indicators of wetland hydrology present?** N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** SP2

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Sapling/Shrub Stratum | Plot Size ( 15' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Veronica peregrina* | 5 | Y | FAC |
| 2 | *Taraxacum officinale* | 5 | Y | FACU |
| 3 | *Chenopodium album* | 3 | Y | FACU |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 13 | = Total Cover | |

| Woody Vine Stratum | Plot Size ( ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| | | 0 | = Total Cover | |

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 3 | 7 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 33.33% (A/B)

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 5 | x 3 = | 15 |
| FACU species | 8 | x 4 = | 32 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 13 (A) | | 47 (B) |

Prevalence Index = B/A = 3.62

**Hydrophytic Vegetation Indicators:**

___ Rapid test for hydrophytic vegetation

___ Dominance test is >50%

___ Prevalence index is ≤3.0*

___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)

___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

**Definitions of Vegetation Strata:**

**Tree** - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** - All woody vines greater than 3.28 ft in height.

**Hydrophytic vegetation present?** N

Remarks: (Include photo numbers here or on a separate sheet)

Planted to corn in 2015. Not planted at this time.

**SOIL** **Sampling Point:** SP2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 2/2 | 100 | | | | | Silt Loam | |
| 12-24 | 10YR 4/3 | 90 | 7.5YR 3/4 | 10 | C | M | Silt Clay Loam | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains
**Location: PL=Pore Lining, M=Matrix

**Hydric Soil Indicators:**

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: Silt Clay Loam
Depth (inches): 12

**Hydric soil present?** N

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/6/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: SP3
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Foot Slope Local relief (concave, convex, none): Concave
Slope (%): 1-4 Lat.: Long.: Datum:
Soil Map Unit Name SaB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation X, soil , or hydrology significantly disturbed? Are "normal
Are vegetation , soil , or hydrology naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | N | **Is the sampled area within a wetland?** | N |
| Hydric soil present? | N | | |
| Indicators of wetland hydrology present? | N | If yes, optional wetland site ID: | |

Remarks: (Explain alternative procedures here or in a separate report.)

Upland cropland. Low spot in field where runoff discharges from buildings to east.

### HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Microtopographic Relief (D4)

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes | | No | X | Depth (inches): |
| Water table present? | Yes | | No | X | Depth (inches): |
| Saturation present? (includes capillary fringe) | Yes | | No | X | Depth (inches): |

**Indicators of wetland hydrology present?** N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** SP3

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Sapling/Shrub Stratum | Plot Size ( 15' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Taraxacum officinale* | 2 | Y | FACU |
| 2 | *Chenopodium album* | 2 | Y | FACU |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 4 | = Total Cover | |

| Woody Vine Stratum | Plot Size ( ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| | | 0 | = Total Cover | |

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 1 | 2 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 4 | x 4 = | 16 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 4 (A) | | 16 (B) |

Prevalence Index = B/A = 4.00

**Hydrophytic Vegetation Indicators:**

___ Rapid test for hydrophytic vegetation
___ Dominance test is >50%
___ Prevalence index is ≤3.0*
___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

**Definitions of Vegetation Strata:**

**Tree** - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** - All woody vines greater than 3.28 ft in height.

**Hydrophytic vegetation present?** N

Remarks: (Include photo numbers here or on a separate sheet)

Planted to corn in 2015. Not planted at this time.

**SOIL** **Sampling Point:** SP3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 2/2 | 100 | | | | | Silt Loam | |
| 12-20 | 7.5YR 4/4 | 98 | 7.5YR 4/6 | 2 | C | M | Silt Clay Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains
**Location: PL=Pore Lining, M=Matrix

**Hydric Soil Indicators:**

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: Silt Clay Loam
Depth (inches): 12

**Hydric soil present?** N

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/6/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: GS-1
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Foot Slope/Swale Local relief (concave, convex, none): Concave
Slope (%): 1-3 Lat.: Long.: Datum:
Soil Map Unit Name FnB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | N | **Is the sampled area within a wetland?** | N |
| Hydric soil present? | N | | |
| Indicators of wetland hydrology present? | Y | If yes, optional wetland site ID: | |

Remarks: (Explain alternative procedures here or in a separate report.)

Vegetated upland grass swale near boundary of farmed wetland.

### HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Microtopographic Relief (D4)

Field Observations:

| | | | | | | |
|---|---|---|---|---|---|---|
| Surface water present? | Yes | ____ | No | X | Depth (inches): | |
| Water table present? | Yes | ____ | No | X | Depth (inches): | |
| Saturation present? (includes capillary fringe) | Yes | X | No | ____ | Depth (inches): | 16 |

**Indicators of wetland hydrology present?** Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Soil erosion (rill/gullies) observed.

**VEGETATION** - Use scientific names of plants

**Sampling Point:** GS-1

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Sapling/Shrub Stratum | Plot Size ( 15' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Acer negundo* | 2 | | FAC |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 2 | = Total Cover | |

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Elymus repens* | 75 | Y | FACU |
| 2 | *Bromus inermis* | 10 | N | UPL |
| 3 | *Taraxacum officinale* | 5 | N | FACU |
| 4 | *Dactylis glomerata* | 5 | N | FACU |
| 5 | *Cirsium arvense* | 5 | N | FACU |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 100 | = Total Cover | |

| Woody Vine Stratum | Plot Size ( ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| | | 0 | = Total Cover | |

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 1 |
| Herb Stratum | 20 | 50 |
| Woody Vine Stratum | 0 | 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: 0.00% (A/B)

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 2 | x 3 = | 6 |
| FACU species | 90 | x 4 = | 360 |
| UPL species | 10 | x 5 = | 50 |
| Column totals | 102 (A) | | 416 (B) |

Prevalence Index = B/A = 4.08

**Hydrophytic Vegetation Indicators:**

___ Rapid test for hydrophytic vegetation
___ Dominance test is >50%
___ Prevalence index is ≤3.0*
___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

**Definitions of Vegetation Strata:**

**Tree** - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** - All woody vines greater than 3.28 ft in height.

**Hydrophytic vegetation present?** N

Remarks: (Include photo numbers here or on a separate sheet)

Managed grass swale, not cropped.

**SOIL** **Sampling Point:** GS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-16 | 10YR 2/2 | 100 | | | | | Silt Loam | |
| 16-20 | 10YR 4/3 | 70 | 7.5YR 3/4 | 30 | C | M | Silt Clay Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains
**Location: PL=Pore Lining, M=Matrix

**Hydric Soil Indicators:**

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: Silt Clay Loam / Rock
Depth (inches): 16 / 20

**Hydric soil present?** N

Remarks:
Rocky soil. Boring refusal on rock.

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/6/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: GS-2
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Swale on Side Slope Local relief (concave, convex, none): Concave
Slope (%): 1-3 Lat.: Long.: Datum:
Soil Map Unit Name SaB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | N | **Is the sampled area within a wetland?** | N |
| Hydric soil present? | N | | |
| Indicators of wetland hydrology present? | N | If yes, optional wetland site ID: | |

Remarks: (Explain alternative procedures here or in a separate report.)

Vegetated upland grass swale, not cropped.

### HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Microtopographic Relief (D4)

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes | ____ | No | X | Depth (inches): ____ |
| Water table present? | Yes | ____ | No | X | Depth (inches): ____ |
| Saturation present? (includes capillary fringe) | Yes | ____ | No | X | Depth (inches): ____ |

**Indicators of wetland hydrology present?** N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** GS-2

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Sapling/Shrub Stratum | Plot Size ( 15' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Elymus repens* | 70 | Y | FACU |
| 2 | *Taraxacum officinale* | 10 | N | FACU |
| 3 | *Dactylis glomerata* | 10 | N | FACU |
| 4 | *Cirsium arvense* | 5 | N | FACU |
| 5 | *Bromus inermis* | 5 | N | UPL |
| 6 | *Urtica dioica* | 2 | N | FAC |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 102 | = Total Cover | |

| Woody Vine Stratum | Plot Size ( ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| | | 0 | = Total Cover | |

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 20 | 51 |
| Woody Vine Stratum | 0 | 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: 0.00% (A/B)

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 2 | x 3 = | 6 |
| FACU species | 95 | x 4 = | 380 |
| UPL species | 5 | x 5 = | 25 |
| Column totals | 102 (A) | | 411 (B) |

Prevalence Index = B/A = 4.03

**Hydrophytic Vegetation Indicators:**

___ Rapid test for hydrophytic vegetation
___ Dominance test is >50%
___ Prevalence index is ≤3.0*
___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

**Definitions of Vegetation Strata:**

**Tree** - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** - All woody vines greater than 3.28 ft in height.

**Hydrophytic vegetation present?** N

Remarks: (Include photo numbers here or on a separate sheet)

**SOIL** **Sampling Point:** GS-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 2/2 | 100 | | | | | Silt Loam | |
| 12-20 | 10YR 3/3 | 80 | 7.5YR 3/4 | 15 | C | M | Sandy Clay Loam | |
| | | | 10YR 4/2 | 5 | D | M | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains
**Location: PL=Pore Lining, M=Matrix

**Hydric Soil Indicators:**

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: Sandy Clay Loam
Depth (inches): 12

**Hydric soil present?** N

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/16/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: GS-3
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Swale on Side Slope Local relief (concave, convex, none): Concave
Slope (%): 1-3 Lat.: Long.: Datum:
Soil Map Unit Name SaB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | N | **Is the sampled area within a wetland?** | N |
| Hydric soil present? | N | | |
| Indicators of wetland hydrology present? | N | If yes, optional wetland site ID: | |

Remarks: (Explain alternative procedures here or in a separate report.)

Vegetated upland grass swale, not cropped.

### HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Microtopographic Relief (D4)

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes | ____ | No | X | Depth (inches): ____ |
| Water table present? | Yes | ____ | No | X | Depth (inches): ____ |
| Saturation present? (includes capillary fringe) | Yes | ____ | No | X | Depth (inches): ____ |

**Indicators of wetland hydrology present?** N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** GS-3

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Sapling/Shrub Stratum | Plot Size ( 15' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Bromus inermis* | 40 | Y | UPL |
| 2 | *Elymus repens* | 25 | Y | FACU |
| 3 | *Poa pratensis* | 10 | N | FACU |
| 4 | *Taraxacum officinale* | 10 | N | FACU |
| 5 | *Dactylis glomerata* | 10 | N | FACU |
| 6 | *Cirsium arvense* | 5 | N | FACU |
| 7 | *Pastinaca sativa* | 2 | N | UPL |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 102 | = Total Cover | |

| Woody Vine Stratum | Plot Size ( ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| | | 0 | = Total Cover | |

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 20 | 51 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 60 | x 4 = | 240 |
| UPL species | 42 | x 5 = | 210 |
| Column totals | 102 (A) | | 450 (B) |

Prevalence Index = B/A = 4.41

**Hydrophytic Vegetation Indicators:**

___ Rapid test for hydrophytic vegetation
___ Dominance test is >50%
___ Prevalence index is ≤3.0*
___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

**Definitions of Vegetation Strata:**

**Tree** - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** - All woody vines greater than 3.28 ft in height.

**Hydrophytic vegetation present?** N

Remarks: (Include photo numbers here or on a separate sheet)

**SOIL** **Sampling Point:** GS-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-8 | 10YR 2/2 | 98 | 5YR 3/4 | 2 | C | M | Silt Loam | |
| 8-16 | 5YR 3/4 | 100 | | | | | Sandy Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains
**Location: PL=Pore Lining, M=Matrix

**Hydric Soil Indicators:**

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: Rock
Depth (inches): 16

**Hydric soil present?** N

Remarks:
Rocky soil, boring refusal on rock

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/12/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: GS-4
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Swale on Side Slope Local relief (concave, convex, none): Concave
Slope (%): 1-3 Lat.: Long.: Datum:
Soil Map Unit Name MaB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | N | **Is the sampled area within a wetland?** | N |
| Hydric soil present? | N | | |
| Indicators of wetland hydrology present? | N | If yes, optional wetland site ID: | |

Remarks: (Explain alternative procedures here or in a separate report.)

Vegetated upland grass swale, not cropped.

### HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Microtopographic Relief (D4)

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes | ____ | No | X | Depth (inches): ____ |
| Water table present? | Yes | ____ | No | X | Depth (inches): ____ |
| Saturation present? (includes capillary fringe) | Yes | ____ | No | X | Depth (inches): ____ |

**Indicators of wetland hydrology present?** N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** GS-4

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Sapling/Shrub Stratum | Plot Size ( 15' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Elymus repens* | 75 | Y | FACU |
| 2 | *Taraxacum officinale* | 10 | N | FACU |
| 3 | *Equisetum arvense* | 10 | N | FAC |
| 4 | *Rumex crispus* | 2 | N | FAC |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 97 | = Total Cover | |

| Woody Vine Stratum | Plot Size ( ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| | | 0 | = Total Cover | |

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 19 | 49 |
| Woody Vine Stratum | 0 | 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: 0.00% (A/B)

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 12 | x 3 = | 36 |
| FACU species | 85 | x 4 = | 340 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 97 (A) | | 376 (B) |

Prevalence Index = B/A = 3.88

**Hydrophytic Vegetation Indicators:**

___ Rapid test for hydrophytic vegetation
___ Dominance test is >50%
___ Prevalence index is ≤3.0*
___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

**Definitions of Vegetation Strata:**

**Tree** - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** - All woody vines greater than 3.28 ft in height.

**Hydrophytic vegetation present?** N

Remarks: (Include photo numbers here or on a separate sheet)

**SOIL** **Sampling Point:** GS-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 2/2 | 100 | | | | | Silt Loam | |
| 12-16 | 10YR 2/2 | 98 | 2.5YR 2.5/3 | 2 | C | M | Silt Loam | |
| 16-24 | 10YR 4/2 | 80 | 5YR 3/4 | 20 | C | M | Silt Clay Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains
**Location: PL=Pore Lining, M=Matrix

**Hydric Soil Indicators:**

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: Silt Clay Loam
Depth (inches): 16

**Hydric soil present?** N

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/16/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: GS-5
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Swale on Side Slope Local relief (concave, convex, none): Concave/Convex
Slope (%): 1-4 Lat.: Long.: Datum:
Soil Map Unit Name MaB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | N | **Is the sampled area within a wetland?** | N |
| Hydric soil present? | N | | |
| Indicators of wetland hydrology present? | N | If yes, optional wetland site ID: | |

Remarks: (Explain alternative procedures here or in a separate report.)

Vegetated upland grass swale, not cropped.

### HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Microtopographic Relief (D4)

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes | ____ | No | X | Depth (inches): ____ |
| Water table present? | Yes | ____ | No | X | Depth (inches): ____ |
| Saturation present? (includes capillary fringe) | Yes | ____ | No | X | Depth (inches): ____ |

**Indicators of wetland hydrology present?** N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** GS-5

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Sapling/Shrub Stratum | Plot Size ( 15' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Phalaris arundinacea* | 25 | Y | FACW |
| 2 | *Elymus repens* | 25 | Y | FACU |
| 3 | *Taraxacum officinale* | 25 | Y | FACU |
| 4 | *Pastinaca sativa* | 10 | N | UPL |
| 5 | *Cirsium arvense* | 10 | N | FACU |
| 6 | *Poa pratensis* | 5 | N | FACU |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 100 | = Total Cover | |

| Woody Vine Stratum | Plot Size ( ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| | | 0 | = Total Cover | |

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 20 | 50 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 33.33% (A/B)

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 25 | x 2 = | 50 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 65 | x 4 = | 260 |
| UPL species | 10 | x 5 = | 50 |
| Column totals | 100 (A) | | 360 (B) |

Prevalence Index = B/A = 3.60

**Hydrophytic Vegetation Indicators:**

___ Rapid test for hydrophytic vegetation
___ Dominance test is >50%
___ Prevalence index is ≤3.0*
___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

**Definitions of Vegetation Strata:**

**Tree** - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** - All woody vines greater than 3.28 ft in height.

**Hydrophytic vegetation present?** N

Remarks: (Include photo numbers here or on a separate sheet)

**SOIL** **Sampling Point:** GS-5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-10 | 10YR 2/2 | 100 | | | | | Silt Loam | |
| 10-20 | 10YR 4/3 | 80 | 7.5YR 4/6 | 20 | C | M | Silt Clay Loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains
**Location: PL=Pore Lining, M=Matrix

**Hydric Soil Indicators:**

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: Silt Clay Loam
Depth (inches): 10

**Hydric soil present?** N

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/16/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: GS-6
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Swale on Side Slope Local relief (concave, convex, none): Concave/Convex
Slope (%): 2-4 Lat.: Long.: Datum:
Soil Map Unit Name SaB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | N | **Is the sampled area within a wetland?** | N |
| Hydric soil present? | N | | |
| Indicators of wetland hydrology present? | N | If yes, optional wetland site ID: | |

Remarks: (Explain alternative procedures here or in a separate report.)

Vegetated upland grass swale, not cropped.

### HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Microtopographic Relief (D4)

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes | ____ | No | X | Depth (inches): ____ |
| Water table present? | Yes | ____ | No | X | Depth (inches): ____ |
| Saturation present? (includes capillary fringe) | Yes | ____ | No | X | Depth (inches): ____ |

**Indicators of wetland hydrology present?** N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** GS-6

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Sapling/Shrub Stratum | Plot Size ( 15' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Elymus repens* | 90 | Y | FACU |
| 2 | *Taraxacum officinale* | 10 | N | FACU |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 100 | = Total Cover | |

| Woody Vine Stratum | Plot Size ( ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| | | 0 | = Total Cover | |

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 20 | 50 |
| Woody Vine Stratum | 0 | 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: 0.00% (A/B)

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 100 | x 4 = | 400 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 100 (A) | | 400 (B) |

Prevalence Index = B/A = 4.00

**Hydrophytic Vegetation Indicators:**

___ Rapid test for hydrophytic vegetation
___ Dominance test is >50%
___ Prevalence index is ≤3.0*
___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

**Definitions of Vegetation Strata:**

**Tree** - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** - All woody vines greater than 3.28 ft in height.

**Hydrophytic vegetation present?** N

Remarks: (Include photo numbers here or on a separate sheet)

**SOIL** **Sampling Point:** GS-6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 2/2 | 100 | | | | | Silt Loam | |
| 12-20 | 10YR 4/3 | 95 | 7.5YR 3/4 | 5 | C | M | Silt Clay Loam | |
| | | | | | | | | |
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| | | | | | | | | |

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains
**Location: PL=Pore Lining, M=Matrix

**Hydric Soil Indicators:**

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: Silt Clay Loam
Depth (inches): 12

**Hydric soil present?** N

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/16/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: GS-7
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Swale on Side Slope Local relief (concave, convex, none): Concave/Convex
Slope (%): 2-4 Lat.: Long.: Datum:
Soil Map Unit Name SaB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | N | **Is the sampled area within a wetland?** | N |
| Hydric soil present? | N | | |
| Indicators of wetland hydrology present? | N | If yes, optional wetland site ID: | |

Remarks: (Explain alternative procedures here or in a separate report.)

Vegetated upland grass swale, not cropped.

### HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Microtopographic Relief (D4)

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes | ____ | No | X | Depth (inches): ____ |
| Water table present? | Yes | ____ | No | X | Depth (inches): ____ |
| Saturation present? (includes capillary fringe) | Yes | ____ | No | X | Depth (inches): ____ |

**Indicators of wetland hydrology present?** N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** GS-7

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Sapling/Shrub Stratum | Plot Size ( 15' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Elymus repens* | 90 | Y | FACU |
| 2 | *Taraxacum officinale* | 5 | N | FACU |
| 3 | *Cirsium arvense* | 5 | N | FACU |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 100 | = Total Cover | |

| Woody Vine Stratum | Plot Size ( ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| | | 0 | = Total Cover | |

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 20 | 50 |
| Woody Vine Stratum | 0 | 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: 0.00% (A/B)

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 100 | x 4 = | 400 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 100 (A) | | 400 (B) |

Prevalence Index = B/A = 4.00

**Hydrophytic Vegetation Indicators:**

___ Rapid test for hydrophytic vegetation
___ Dominance test is >50%
___ Prevalence index is ≤3.0*
___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

**Definitions of Vegetation Strata:**

**Tree** - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** - All woody vines greater than 3.28 ft in height.

**Hydrophytic vegetation present?** N

Remarks: (Include photo numbers here or on a separate sheet)

**SOIL** **Sampling Point:** GS-7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 2/2 | 100 | | | | | Silt Loam | |
| 12-24 | 10YR 4/4 | 98 | 7.5YR 3/4 | 2 | C | M | Silt Clay Loam | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains
**Location: PL=Pore Lining, M=Matrix

**Hydric Soil Indicators:**

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: Silt Clay Loam
Depth (inches): 12

**Hydric soil present?** N

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/16/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: GS-8
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Swale on Side Slope Local relief (concave, convex, none): Concave
Slope (%): 1-4 Lat.: Long.: Datum:
Soil Map Unit Name MaB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | N | **Is the sampled area within a wetland?** | N |
| Hydric soil present? | N | | |
| Indicators of wetland hydrology present? | N | If yes, optional wetland site ID: | |

Remarks: (Explain alternative procedures here or in a separate report.)

Vegetated upland grass swale, not cropped.

### HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Microtopographic Relief (D4)

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes | ____ | No | X | Depth (inches): ____ |
| Water table present? | Yes | ____ | No | X | Depth (inches): ____ |
| Saturation present? (includes capillary fringe) | Yes | ____ | No | X | Depth (inches): ____ |

**Indicators of wetland hydrology present?** N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** - Use scientific names of plants

**Sampling Point:** GS-8

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Sapling/Shrub Stratum | Plot Size ( 15' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Elymus repens* | 80 | Y | FACU |
| 2 | *Cirsium arvense* | 10 | N | FACU |
| 3 | *Taraxacum officinale* | 5 | N | FACU |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 95 | = Total Cover | |

| Woody Vine Stratum | Plot Size ( ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| | | 0 | = Total Cover | |

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 19 | 48 |
| Woody Vine Stratum | 0 | 0 |

**Dominance Test Worksheet**

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

**Prevalence Index Worksheet**

Total % Cover of:

| | | | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 95 | x 4 = | 380 |
| UPL species | 0 | x 5 = | 0 |
| Column totals | 95 (A) | | 380 (B) |

Prevalence Index = B/A = 4.00

**Hydrophytic Vegetation Indicators:**

___ Rapid test for hydrophytic vegetation
___ Dominance test is >50%
___ Prevalence index is ≤3.0*
___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

**Definitions of Vegetation Strata:**

**Tree** - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** - All woody vines greater than 3.28 ft in height.

**Hydrophytic vegetation present?** N

Remarks: (Include photo numbers here or on a separate sheet)

**SOIL** **Sampling Point:** GS-8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-16 | 10YR 2/2 | 100 | | | | | Silt Loam | |
| 16-24 | 10YR 4/2 | 80 | 7.5YR 4/6 | 20 | C | M | Silt Clay Loam | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains
**Location: PL=Pore Lining, M=Matrix

**Hydric Soil Indicators:**

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: Silt Clay Loam
Depth (inches): 16

**Hydric soil present?** N

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Emerald Sky Dairy City/County: St. Croix Sampling Date: 5/16/16
Applicant/Owner: Emerald Sky Dairy State: WI Sampling Point: GS-9
Investigator(s): Tim King Section, Township, Range: Sec 22, T30N, R16W
Landform (hillslope, terrace, etc.): Swale on Side Slope Local relief (concave, convex, none): Concave/Convex
Slope (%): 1-4 Lat.: Long.: Datum:
Soil Map Unit Name MaB NWI Classification: N/A
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? circumstances" present? Yes
(If needed, explain any answers in remarks)

### SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic vegetation present? | N | **Is the sampled area within a wetland?** | N |
| Hydric soil present? | N | | |
| Indicators of wetland hydrology present? | N | If yes, optional wetland site ID: | |

Remarks: (Explain alternative procedures here or in a separate report.)

Vegetated upland grass swale, not cropped.

### HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Microtopographic Relief (D4)

Field Observations:

| | | | | | |
|---|---|---|---|---|---|
| Surface water present? | Yes | ____ | No | X | Depth (inches): ____ |
| Water table present? | Yes | ____ | No | X | Depth (inches): ____ |
| Saturation present? (includes capillary fringe) | Yes | ____ | No | X | Depth (inches): ____ |

**Indicators of wetland hydrology present?** N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Ditches present adjacent to swale.

**VEGETATION** - Use scientific names of plants

**Sampling Point:** GS-9

| Tree Stratum | Plot Size ( 30' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Sapling/Shrub Stratum | Plot Size ( 15' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| | | 0 | = Total Cover | |

| Herb Stratum | Plot Size ( 5' ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | *Bromus inermis* | 70 | Y | UPL |
| 2 | *Elymus repens* | 10 | N | FACU |
| 3 | *Poa pratensis* | 10 | N | FACU |
| 4 | *Taraxacum officinale* | 5 | N | FACU |
| 5 | *Cirsium arvense* | 5 | N | FACU |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| | | 100 | = Total Cover | |

| Woody Vine Stratum | Plot Size ( ) | Absolute % Cover | Dominant Species | Indicator Status |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| | | 0 | = Total Cover | |

**50/20 Thresholds**

| | 20% | 50% |
|---|---|---|
| Tree Stratum | 0 | 0 |
| Sapling/Shrub Stratum | 0 | 0 |
| Herb Stratum | 20 | 50 |
| Woody Vine Stratum | 0 | 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: 0.00% (A/B)

**Prevalence Index Worksheet**

Total % Cover of:

| | | | | |
|---|---|---|---|---|
| OBL species | 0 | x 1 = | 0 | |
| FACW species | 0 | x 2 = | 0 | |
| FAC species | 0 | x 3 = | 0 | |
| FACU species | 30 | x 4 = | 120 | |
| UPL species | 70 | x 5 = | 350 | |
| Column totals | 100 | (A) | 470 | (B) |

Prevalence Index = B/A = 4.70

**Hydrophytic Vegetation Indicators:**

___ Rapid test for hydrophytic vegetation

___ Dominance test is >50%

___ Prevalence index is ≤3.0*

___ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)

___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

**Definitions of Vegetation Strata:**

**Tree** - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** - All woody vines greater than 3.28 ft in height.

**Hydrophytic vegetation present?** N

Remarks: (Include photo numbers here or on a separate sheet)

**SOIL** **Sampling Point:** GS-9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

| Depth (Inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type* | Loc** | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-16 | 10YR 2/2 | 100 | | | | | Silt Loam | |
| 16-24 | 10YR 4/3 | 70 | 7.5YR 4/6 | 25 | C | M | Silt Clay Loam | |
| 16-24 | | | 10YR 4/2 | 5 | D | M | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains
**Location: PL=Pore Lining, M=Matrix

**Hydric Soil Indicators:**

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: Silt Clay Loam
Depth (inches): 16

**Hydric soil present?** N

Remarks:

# APPENDIX C

## SITE PHOTOGRAPHS

# Appendix C. Site Photographs

1. Wetland W1 – Wet Meadow

2. Wetland W1 – Wet Meadow

3. Wetland W1 – Shrub Carr

4. Wetland W1 – Hardwood Swamp

5. Wetland W1 – Farmed Wetland

6. Wetland W2 – Seasonally Flooded Basin/Farmed Wetland

# Appendix C. Site Photographs

7. Wetland W3 – Seasonally Flooded Basin/Farmed Wetland

8. Wetland W4 – Seasonally Flooded Basin/Farmed Wetland

9. Wetland W5 – Farmed Wetland

10. Wetland W6 – Open Water Pond/Spoil Piles

11. Wetland W6 – Wet Meadow/Shallow Marsh

12. Wetland W6 - Wet Meadow (Reference)

# Appendix C. Site Photographs

13. Wetland W7 – Wet Meadow (Reference)

14. Wetland W8 – Filled Wetland

15. Wetland W9 – Wet Meadow

16. Misc. Sample Point SP2 – Upland Cropland

17. Stormwater Pond

18. Ditch D1

# Appendix C. Site Photographs

19. Ditch D2

20. Ditch D3

21. Ditch D4

22. GS1 – Upland Grass Swale

23. GS4 – Upland Grass Swale

24. GS6 – Upland Grass Swale

# Appendix C. Site Photographs

25. GS8 – Upland Grass Swale

# APPENDIX D

## ANTECEDENT HYDROLOGY (WETS) ANALYSIS

## WETS Analysis Worksheet

Project Name: Emerald Sky Dairy
Project No.: 16004
Date: 5/3/2016
Period of Interest: February-April 2016
WETS Station: Baldwin (WI0486)
County/State: St. Croix County Wisconsin

**Long Term Precipitation Data (From WETS Station)[1]**

| | Month | 30% Chance less than | Average | 30% Chance more than |
|---|---|---|---|---|
| 1st prior month: | April | 1.61 | 2.64 | 3.20 |
| 2nd prior month: | March | 1.09 | 1.83 | 2.22 |
| 3rd prior month: | February | 0.39 | 0.81 | 0.99 |
| | | Sum = | **5.28** | |

**Site Climate Condition Determination**

| Site Precip (in) | Condition Dry/Normal[2]/Wet | Condition[3] Value | Month Weight | Product |
|---|---|---|---|---|
| 1.62 | Normal | 2 | 3 | 6 |
| 2.35 | Wet | 3 | 2 | 6 |
| 0.71 | Normal | 2 | 1 | 2 |
| Sum = **4.68** | | | Sum[4] = | **14** |

[1] Precipitation Data Source: USDA Field Office Climate Data: http://efotg.sc.egov.usda.gov/efotg_locator.aspx

[2] Normal precipitation with 30% to 70% probability of occurrence

[3] Condition value:
Dry = 1
Normal = 2
Wet = 3

[4] 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 | |

Determination:

| | |
|---|---|
| | Dry |
| **X** | Normal |
| | Wet |

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

## OFFSITE REVIEW

# OFF-SITE REVIEW

**Project Name/Site: Emerald Sky Dairy**
**Project Number: 16004**
**Project Location: Town of Emerald, St. Croix Co., WI**
**Review Date: 4/25/2016**

| Year | Monthly Rainfall (inches)[1] | | | Condition[2] | Cropped Status[3] | Wetness Signature[4] | Interpretation Codes[5]/Comments |
|---|---|---|---|---|---|---|---|
| | April | May | June | | | | |
| 1979 | 1.24 | 5.07 | 4.76 | Normal | CR/NC | Y | 6a, 6b, 6d |
| 1980 | 1.51 | 1.46 | 6.57 | Normal | CR/NC | Y | 6a, 66b, 6d |
| 1981 | 3.44 | 2.37 | 4.21 | Normal | CR/NC | Y | 6a, 6d |
| 1982 | 2.21 | 4.54 | 2.13 | Normal | CR/NC | Y | 6a, 6d |
| 1983 | 3.42 | 3.01 | 1.88 | Normal | CR/NC | Y | 6a, 6b, 6d |
| 1984 | 4.06 | 2.08 | 5.67 | Normal | CR/NC | Y | 6a, 6b, 6d, 5 |
| 1985 | 2.46 | 3.15 | 2.56 | Dry | CR/NC | Y | 6a, 6b, 6d |
| 1986 | 6.16 | 1.96 | 5.22 | Normal | CR/NC | Y | 6a, 6b,6d |
| 1987 | 0.40 | 3.99 | 3.22 | Normal | CR/NC | Y | 6a, 6b 6d |
| 1988 | 1.14 | 3.45 | 3.31 | Normal | CR/NC | Y | 6a, 6b, 6d, 3 |
| 1989 | 1.86 | 4.59 | 2.67 | Normal | CR/NC | Y | 6a, 6b, 6d |
| 1990 | 4.53 | 4.50 | 10.84 | Wet | CR/NC | Y | 6a, 6b, 6d |
| 1991 | 2.95 | 6.34 | 4.70 | Normal | CR/NC | Y | 6a, 6b, 6d, 1 |
| 1992 | 3.35 | 1.17 | 3.94 | Normal | CR/NC | Y | 6a, 6b, 6d, 1 |
| 1995 | 2.18 | 2.72 | 1.23 | Dry | CR/NC | Y | 6a, 6b, 6d, 1 |
| 1996 | 1.18 | 2.64 | 6.02 | Normal | CR/NC | Y | 6a, 6b, 6d, 1 |
| 2005 | 1.59 | 3.42 | 6.46 | Normal | CR/NC | Y | 6a, 6d, 5 |
| 2006 | 3.20 | 2.01 | 2.53 | Dry | CR/NC | Y | 6a, 6d, 3 |
| 2008 | 4.00 | 2.42 | 5.29 | Normal | CR/NC | Y | 6a, 6b, 6d, 1, 3 |
| 2010 | 2.04 | 3.14 | 7.94 | Wet | CR/NC | Y | 6a, 6b, 6d, 1, 5 |
| 2012 | 2.75 | 5.76 | 4.36 | Normal | CR/NC | Y | 6a, 6b, 6d, 1, 3 |
| 2013 | 3.47 | 4.61 | 5.65 | Wet | CR/NC | Y | 6a, 6b, 6d, 1, 3 |
| 2015 | 2.10 | 4.42 | 5.64 | Wet | CR/NC | Y | 6a, 6b, 6d, 1, 3, 5 |
| **# of years** | 23 | | | | | **100** | **Percent occurrence of wetness signatures** |
| **30% chance less than** | 1.61 | 2.26 | 3.20 | | | **Y** | **50% or more show wetness signatures** |
| **30 Year Average** | 2.64 | 3.44 | 4.58 | | | **Y** | **30% or more show wetness signatures and area is on WDNR WWI or NRCS wetland inventory** |
| **30% chance more than** | 3.20 | 4.13 | 5.45 | | | **Y** | **Analysis indicates the site contains a wetland[6]** |

[1]Precipitation data from WETS weather station, Baldwin WI0486, St. Croix Co., WI. Assumption is made that FSA slides are taken in July; therefore, analysis focuses on three months prior.

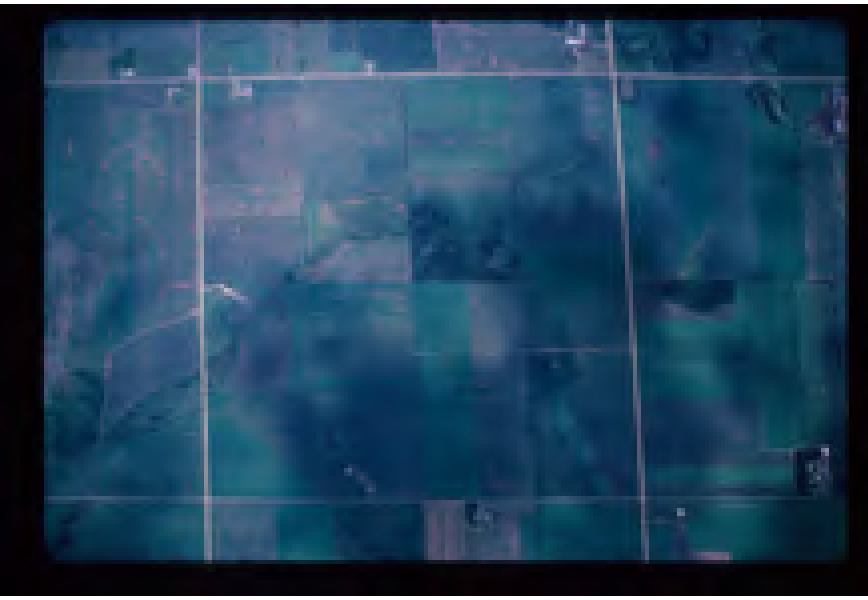
[2]Condition: Dry Normal Wet

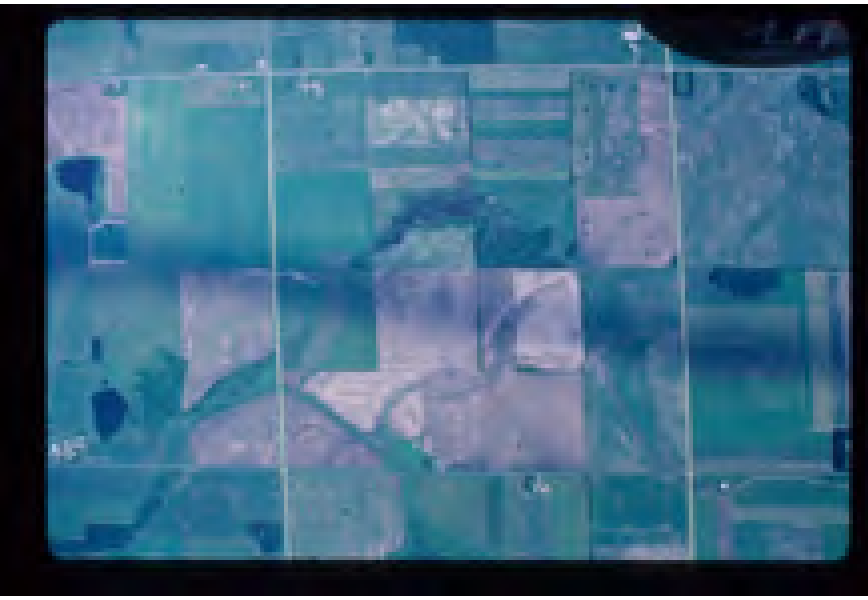
[3] CR = cropped (row crop or tilled), NC = not cropped (hay, pasture, fallow, etc.)

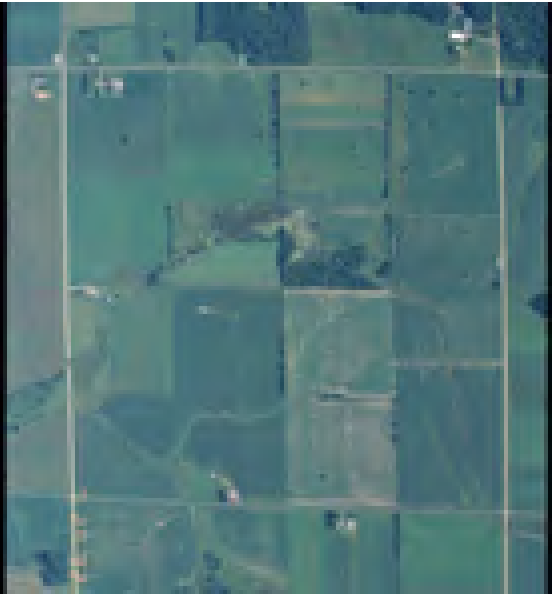
[4] Y = wetness signature present (+ = strong, - = weak); N = No wetness signature

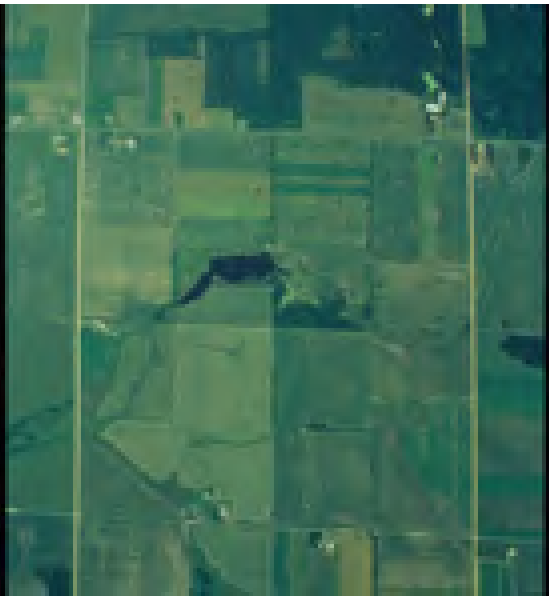
[5] Interpretation Codes - Feature: 1=water, 2=mud flat, 3=bare spot, 4=drowned crop, 5=planted late; Color: 6a=dark green, 6b=light green, 6c=yellow, 6d=brown, 6e=black; Manipulation: 7a=ditched, 7b=tiled, 7c=filled, 7d=tree/brush removal,

[6]On-site verification is required for final determination/delineation.










15
14
G
Town of Emerald
22
23
250TH ST
N
0
200
400
600ft
DISCLAIMER: This map is not guaranteed to be accurate, correct, current, or complete and conclusions drawn are the responsibility of the user.


Emerald Sky Dairy
2006 Aerial
Legend
250th St
Google earth
Image USDA Farm Service Agency
N
1000 ft

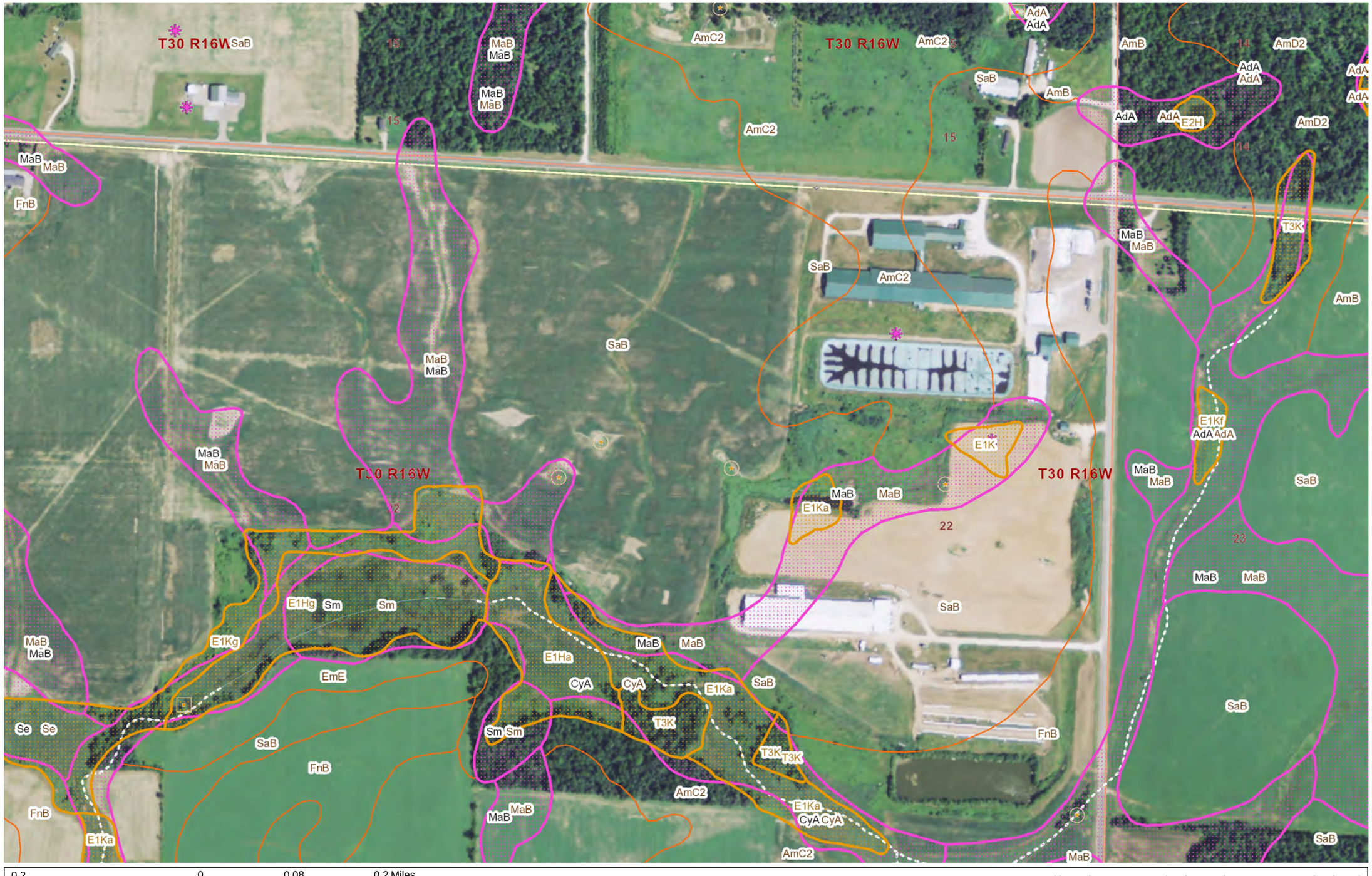

15
14
G
250TH ST
22
23
N
0
200
400
600ft
DISCLAIMER: This map is not guaranteed to be accurate, correct, current, or complete and conclusions drawn are the responsibility of the user.


15
14
G
22
23
250th St
N
0
200
400
600ft
DISCLAIMER: This map is not guaranteed to be accurate, correct, current, or complete and conclusions drawn are the responsibility of the user.


Emerald Sky Dairy
2012 Aerial
Legend
250th St
N
1000 ft
Google earth

Geocortex Essentials for ArcGIS Server

# Surface Water Data Viewer Map




## Legend

- Waterway & Wetland Alteratior
- Wetland Identifications and Co
- Navigability Determinations
  - Yes
  - Yes with Agricultural Exemption
  - No
- 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
- NRCS Wetspots
- Wetland Indicators
- NRCS Wisconsin Soils
  - Soil Mapping Unit
  - Water
- Intermittent Streams
- Township
- Section
- Cities, Towns & Villages
  - City
  - Village
  - Civil Town
- Rivers and Streams
- Open Water

1: 4,800

N

0.2 0 0.08 0.2 Miles

NAD_1983_HARN_Wisconsin_TM



This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

THIS MAP IS NOT TO BE USED FOR NAVIGATION

**Notes**


CSM VOL 23, PG 5487
CSM VOL 21, PG 5272
CSM VOL 23, PG 5470
CSM VOL 15 PG 4059
CSM VOL 14 PG 3
15
14
G
CSM VOL 4 PG 1141
CSM VO 10 PG 2809
NE - NW
NW - NE
NE - NE
Town of Emerald
22
23
SE - NW
SW - NE
SE - NE
N
0 200 400 600ft
DISCLAIMER: This map is not guaranteed to be accurate, correct, current, or complete and conclusions drawn are the responsibility of the user.
NE - SW
NW - SE
NE - SE

# APPENDIX F

## USDA NRCS WETLAND & SOILS DATA

# Wetland Inventory

Date: 5/24/2016

Customer(s): Emerald Sky Dairy(Op)
Todd Tuls (Ow)

BALDWIN SERVICE CENTER
USDA - NRCS
Assisted By: LRB
St.Croix County, WI

Legal Description: T30N R16 W SEC 22 - EMERALD

**Legend**

- Emerald Sky Dairy
- SECTIONS - St. Croix_109

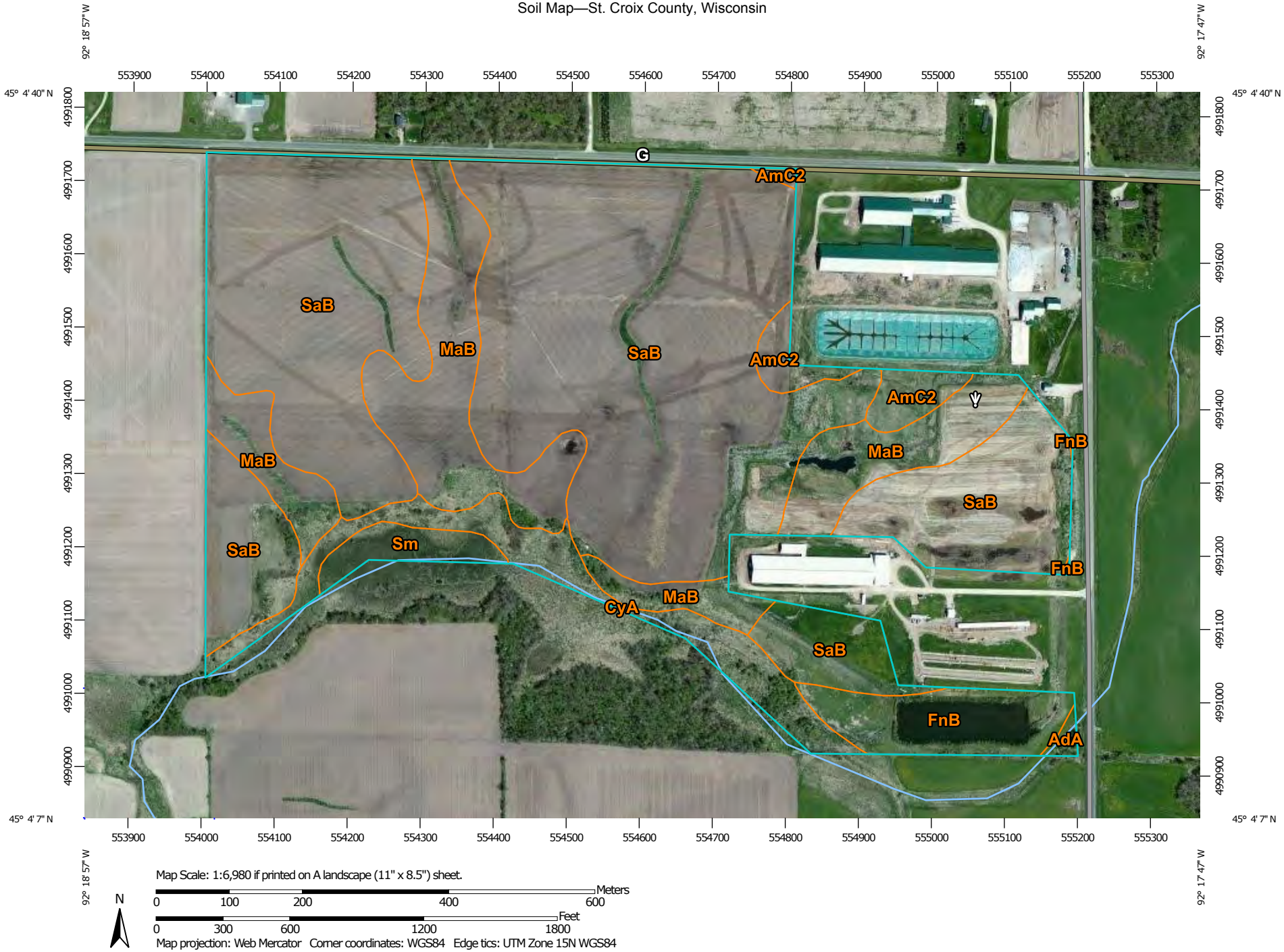
N

1:10,000

620 0 620 1,240 1,860 2,480

Feet

USDA




Map Scale: 1:6,980 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 100 200 400 600

Feet: 0 300 600 1200 1800

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84

## MAP LEGEND

**Area of Interest (AOI)**
- Area of Interest (AOI)

**Soils**
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

**Special Point Features**
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

**Water Features**
- Streams and Canals

**Transportation**
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

**Background**
- Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: St. Croix County, Wisconsin
Survey Area Data: Version 11, Sep 17, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Data not available.

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

# Map Unit Legend

| St. Croix County, Wisconsin (WI109) | | | |
|---|---|---|---|
| **Map Unit Symbol** | **Map Unit Name** | **Acres in AOI** | **Percent of AOI** |
| AdA | Adolph silt loam, 0 to 2 percent slopes | 0.4 | 0.3% |
| AmC2 | Amery loam, 6 to 12 percent slopes, eroded | 3.7 | 2.4% |
| CyA | Clyde silt loam, 0 to 3 percent slopes | 9.2 | 5.9% |
| FnB | Freeon silt loam, 2 to 6 percent slopes | 7.1 | 4.5% |
| MaB | Magnor silt loam, 0 to 4 percent slopes | 27.3 | 17.5% |
| SaB | Santiago silt loam, 2 to 6 percent slopes | 105.7 | 67.7% |
| Sm | Seelyeville muck | 2.8 | 1.8% |
| **Totals for Area of Interest** | | **156.2** | **100.0%** |

# Map Unit Description (Brief, Generated)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this report, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

The Map Unit Description (Brief, Generated) report displays a generated description of the major soils that occur in a map unit. Descriptions of non-soil (miscellaneous areas) and minor map unit components are not included. This description is generated from the underlying soil attribute data.

Additional information about the map units described in this report is available in other Soil Data Mart reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the Soil Data Mart reports define some of the properties included in the map unit descriptions.

# Report—Map Unit Description (Brief, Generated)

## St. Croix County, Wisconsin

**Map Unit:** AdA—Adolph silt loam, 0 to 2 percent slopes

**Component:** Adolph (100%)

The Adolph component makes up 100 percent of the map unit. Slopes are 0 to 2 percent. This component is on drainageways on ground moraines, depressions on ground moraines. The parent material consists of silty drift over loamy till. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is very low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during April, May, November. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 8 percent.

**Map Unit:** AmC2—Amery loam, 6 to 12 percent slopes, eroded

**Component:** Amery, deep to dense layer (100%)

The Amery, deep to dense layer component makes up 100 percent of the map unit. Slopes are 6 to 12 percent. This component is on end moraines, ground moraines. The parent material consists of loamy drift over loamy till. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is very low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

**Map Unit:** CyA—Clyde silt loam, 0 to 3 percent slopes

**Component:** Clyde (100%)

The Clyde component makes up 100 percent of the map unit. Slopes are 0 to 3 percent. This component is on drainageways on ground moraines. The parent material consists of silty drift over loamy till. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is moderate. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during April, May, November. Organic matter content in the surface horizon is about 8 percent. Nonirrigated land capability classification is 2w. This soil meets hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 13 percent.

**Map Unit:** FnB—Freeon silt loam, 2 to 6 percent slopes

**Component:** Freeon (100%)

The Freeon component makes up 100 percent of the map unit. Slopes are 2 to 6 percent. This component is on ground moraines. The parent material consists of loess over loamy till. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is very low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during April. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

**Map Unit:** MaB—Magnor silt loam, 0 to 4 percent slopes

**Component:** Magnor (80%)

The Magnor component makes up 80 percent of the map unit. Slopes are 0 to 4 percent. This component is on ground moraines on till plains. The parent material consists of loess and/or silty lacustrine deposits over dense sandy loam till. Depth to a root restrictive layer, densic material, is 39 to 59 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during April. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.

**Component:** Freeon (8%)

Generated brief soil descriptions are created for major soil components. The Freeon soil is a minor component.

**Component:** Cebana (4%)

Generated brief soil descriptions are created for major soil components. The Cebana soil is a minor component.

**Component:** Pesabic (2%)

Generated brief soil descriptions are created for major soil components. The Pesabic soil is a minor component.

**Component:** Capitola (2%)

Generated brief soil descriptions are created for major soil components. The Capitola soil is a minor component.

**Component:** Almena (2%)

Generated brief soil descriptions are created for major soil components. The Almena soil is a minor component.

**Component:** Magnor, very stony (2%)

Generated brief soil descriptions are created for major soil components. The Magnor soil is a minor component.

**Map Unit:** SaB—Santiago silt loam, 2 to 6 percent slopes

**Component:** Santiago (100%)

The Santiago component makes up 100 percent of the map unit. Slopes are 2 to 6 percent. This component is on ground moraines. The parent material consists of loamy drift and/or loess over loamy till. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

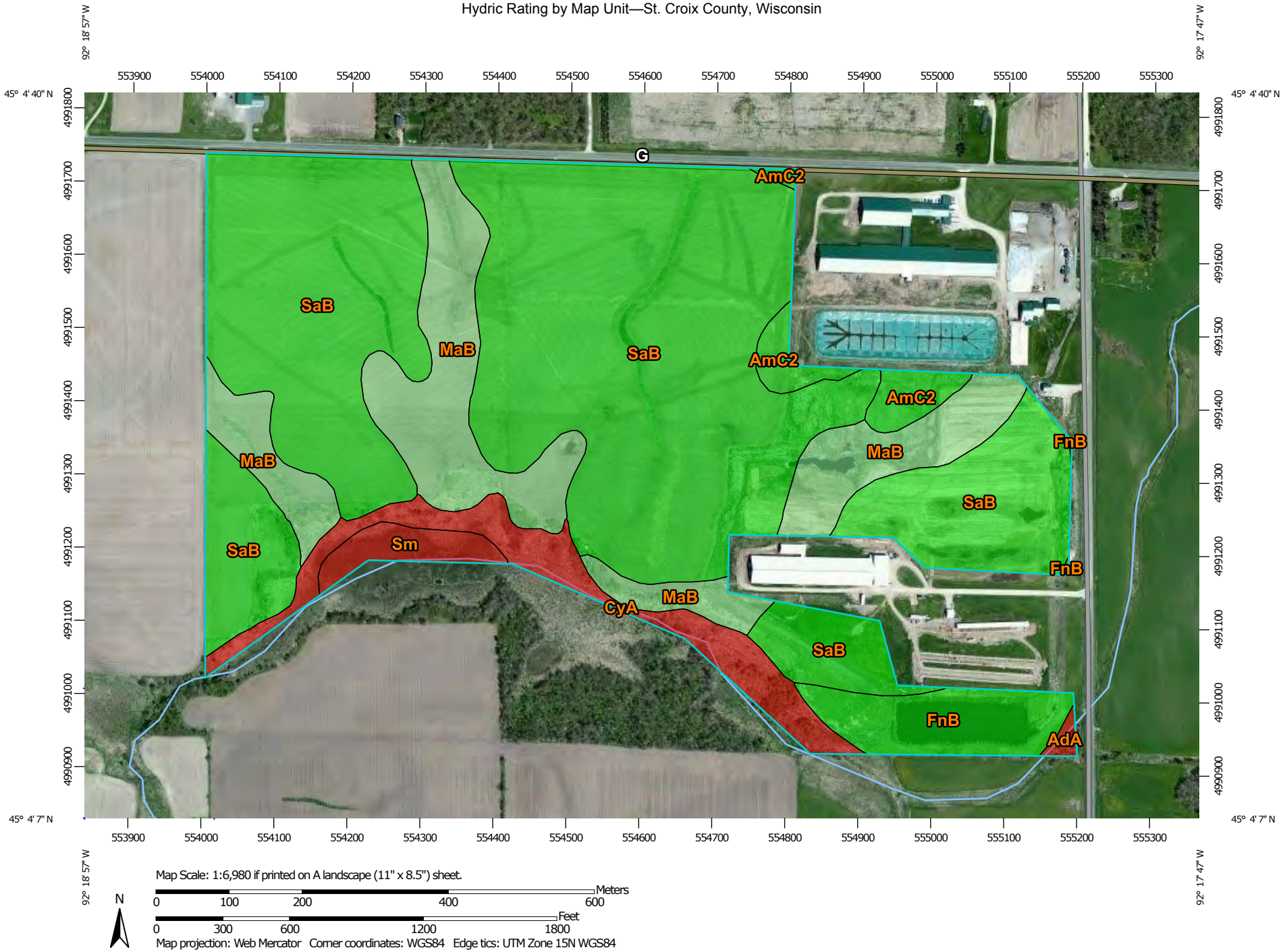
**Map Unit:** Sm—Seelyeville muck

**Component:** Seelyeville (100%)

The Seelyeville component makes up 100 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on flood plains, drainageways on flood plains. The parent material consists of organic material. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is low. This soil is frequently flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during April, May, November. Organic matter content in the surface horizon is about 62 percent. Nonirrigated land capability classification is 3w. This soil meets hydric criteria.

## Data Source Information

Soil Survey Area: St. Croix County, Wisconsin
Survey Area Data: Version 11, Sep 17, 2015


92° 18' 57" W
92° 17' 47" W
45° 4' 40" N
45° 4' 7" N
553900
554000
554100
554200
554300
554400
554500
554600
554700
554800
554900
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4991800
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4991400
4991300
4991200
4991100
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G
AmC2
SaB
MaB
Sm
CyA
FnB
AdA
Map Scale: 1:6,980 if printed on A landscape (11" x 8.5") sheet.
N
Meters
0 100 200 400 600
Feet
0 300 600 1200 1800
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84

## MAP LEGEND

**Area of Interest (AOI)**
- Area of Interest (AOI)

**Soils**

**Soil Rating Polygons**
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

**Soil Rating Lines**
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

**Soil Rating Points**
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

**Water Features**
- Streams and Canals

**Transportation**
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

**Background**
- Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: St. Croix County, Wisconsin
Survey Area Data: Version 11, Sep 17, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Data not available.

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

# Hydric Rating by Map Unit

| Hydric Rating by Map Unit— Summary by Map Unit — St. Croix County, Wisconsin (WI109) | | | | |
|---|---|---|---|---|
| **Map unit symbol** | **Map unit name** | **Rating** | **Acres in AOI** | **Percent of AOI** |
| AdA | Adolph silt loam, 0 to 2 percent slopes | 100 | 0.4 | 0.3% |
| AmC2 | Amery loam, 6 to 12 percent slopes, eroded | 0 | 3.7 | 2.4% |
| CyA | Clyde silt loam, 0 to 3 percent slopes | 100 | 9.2 | 5.9% |
| FnB | Freeon silt loam, 2 to 6 percent slopes | 0 | 7.1 | 4.5% |
| MaB | Magnor silt loam, 0 to 4 percent slopes | 6 | 27.3 | 17.5% |
| SaB | Santiago silt loam, 2 to 6 percent slopes | 0 | 105.7 | 67.7% |
| Sm | Seelyeville muck | 100 | 2.8 | 1.8% |
| **Totals for Area of Interest** | | | **156.2** | **100.0%** |

## Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

## Rating Options

*Aggregation Method:* Percent Present

*Component Percent Cutoff:* *None Specified*

*Tie-break Rule:* Lower

# Hydric Rating by Map Unit (WI)

This Hydric Soil Category rating indicates the components of map units that meet the criteria for hydric soils. Map units are composed of one or more major soil components or soil types that generally make up 20 percent or more of the map unit and are listed in the map unit name, and they may also have one or more minor contrasting soil components that generally make up less than 20 percent of the map unit. Each major and minor map unit component that meets the hydric criteria is rated **hydric.** The map unit class ratings based on the hydric components present are: WI Hydric, WI Predominantly Hydric, WI Partially Hydric, WI Predominantly Nonhydric, and WI Nonhydric. The report also shows the total representative percentage of each map unit that the hydric components comprise.

*"WI Hydric"* means that all major and minor components listed for a given map unit are rated as being hydric. *"WI Predominantly Hydric"* means that all major components listed for a given map unit are rated as hydric, and at least one contrasting minor component is not rated hydric.*"WI Partially Hydric"* means that at least one major component listed for a given map unit is rated as hydric, and at least one other major component is not rated hydric. *"WI Predominantly Nonhydric"* means that no major component listed for a given map unit is rated as hydric, and at least one contrasting minor component is rated hydric. *"WI Nonhydric"* means no major or minor components for the map unit are rated hydric. The assumption is that the map unit is nonhydric even if none of the components within the map unit have been rated.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

If soils are wet enough for a long enough period of time to be considered hydric, they typically exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Vasilas, Hurt, and Noble, 2010).

The NTCHS has developed criteria to identify those soil properties unique to hydric soils (Federal Register, 2012). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria use selected soil properties that are described in “Field Indicators of Hydric Soils in the United States” (Vasilas, Hurt, and Noble, 2010), "Soil Taxonomy" (Soil Survey Staff, 1999), "Keys to Soil Taxonomy" (Soil Survey Staff, 2010), and the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

The criteria for hydric soils are represented by codes, for example, 2 or 3. Definitions for the codes are as follows:

1. All Histels except for Folistels, and Histosols except for Folists.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
   A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
   B. Show evidence that the soil meets the definition of a hydric soil;
3. Soils that are frequently ponded for long or very long duration during the growing season.
   A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
   B. Show evidence that the soil meets the definition of a hydric soil;
4. Map unit components that are frequently flooded for long duration or very long duration during the growing season that:
   A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
   B. Show evidence that the soil meets the definition of a hydric soil;

Hydric Condition: Food Security Act information regarding the ability to grow a commodity crop without removing woody vegetation or manipulating hydrology.

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. February, 28, 2012. Hydric soils of the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Vasilas, L.M., G.W. Hurt, and C.V. Noble, editors. Version 7.0, 2010. Field indicators of hydric soils in the United States.

## Report—Hydric Rating by Map Unit (WI)

| Hydric Rating by Map Unit (WI)–St. Croix County, Wisconsin | | | |
|---|---|---|---|
| **Map Unit Symbol** | **Map Unit Name** | **Hydric Percent of Map Unit** | **Hydric Category** |
| AdA | Adolph silt loam, 0 to 2 percent slopes | 100 | WI Hydric |
| AmC2 | Amery loam, 6 to 12 percent slopes, eroded | 0 | WI Nonhydric |
| CyA | Clyde silt loam, 0 to 3 percent slopes | 100 | WI Hydric |
| FnB | Freeon silt loam, 2 to 6 percent slopes | 0 | WI Nonhydric |
| MaB | Magnor silt loam, 0 to 4 percent slopes | 6 | WI Predominantly Nonydric |
| SaB | Santiago silt loam, 2 to 6 percent slopes | 0 | WI Nonhydric |
| Sm | Seelyeville muck | 100 | WI Hydric |

## Data Source Information

Soil Survey Area: St. Croix County, Wisconsin
Survey Area Data: Version 11, Sep 17, 2015