Plymouth, Hennepin County, Minnesota

Wetland Delineation Report

Prepared for

Jake Walesch

by

Kjolhaug Environmental Services Company, Inc.

(KES Project No. 2019-113)

September 27, 2019

Plymouth, Hennepin County, Minnesota

## **Wetland Delineation Report**

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Plymouth, Hennepin County, Minnesota

## **Wetland Delineation Report**

#### 1. WETLAND DELINEATION SUMMARY

- The 156.7-acre Hollydale Golf Course was inspected on August 14, 2019 for the presence and extent of wetland.
- The National Wetlands Inventory (NWI) map showed six wetlands on the site.
- The soil survey showed Muskego and Houghton (Hydric), Hamel (Partially Hydric), Klossner (Hydric), Cordova (Predominantly Hydric), Houghton (Hydric), Minnetonka (Hydric) and Glencoe (Hydric).
- The DNR Public Waters Inventory showed two DNR Public Wetlands (Unnamed 27-600 W and Unnamed 27-599 W) north of the site and one DNR Public Wetland (Unnamed 27-601 W) approximately 770 feet south of the site.
- The National Hydrography Dataset showed five Lake/Ponds within the site boundaries, as well as one Stream/River on the central and southeastern portion of the site.
- Nine wetlands were delineated within the site boundaries as summarized below in **Table 1**.

Table 1. Wetlands delineated on the Hollydale Golf Course

Wetland		Wetland T	ype	Dominant Vegetation	Size (Acres
ID	Circular 39	Cowardin	Eggers and Reed	Dominant Vegetation	Onsite)
1	Type 5	PUBGx	Excavated Open Water Wetland	Open water, narrow fringe of cattail, beggarticks, smartweed	0.48
2	Type 5	PUBGx	Excavated Open Water Wetland	Open water, narrow fringe of orange jewelweed, sandbar willow, redosier dogwood	0.09
3	Type 5	PUBGx	Excavated Open Water Wetland	Open water, duckweed	0.08
4	Type 3/2	PEM1C/PEM1A	Shallow Marsh, Wet Meadow	Cattail, reed canary grass and scattered green ash trees	0.04
5	Type 2	PEM1A	Wet Meadow	Fowl bluegrass, Kentucky bluegrass	0.08
6	Type 1/2/3/6	PFO1Ad/PEM1 Bd/PEM1Cd/PS S1Cd	Forested Seasonally Flooded Basin, Wet Meadow, Shallow Marsh, Shrub-Carr	Cattail and reed canary grass, orange jewelweed, arrowleaf tearthumb, redosier dogwood, black willow, stinging nettle, sedges	30.21
7	Type 5/2	PUBGx/PEM1A	Open Water, Wet Meadow	Open water with a narrow fringe of fowl bluegrass	0.18
8	Type 5	PUBGx	Open Water	Open water, duckweed	0.20
9	Type 5	PUBGx	Open Water	Open water with a narrow fringe of smartweed	0.21

#### 2. OVERVIEW

The 156.7-acre Hollydale Golf Course was inspected on August 14, 2019 for the presence and extent of wetland. The property was located in Section 8, Township 118 North, Range 22 West, City of Plymouth, Hennepin County, Minnesota. The site was situated north of MN State Highway 55, west of Vicksburg Lane North (**Figure 1**). The property corresponded to the following Hennepin County PID's: 0811822340014 and 0811822310001.

The site consisted of a golf course with greens, fairways, cart paths, clubhouse, and maintenance buildings. Topography of the site was hilly, sloping from 1020 ft MSL on the northeast portion of the site to 964 ft MSL on the southeast portion. Surrounding land use consisted single-family housing developments, woodland, schools and commercial buildings south of the site.

Nine wetlands were delineated within the site boundaries. The delineated wetland boundaries and existing conditions are shown on **Figure 2**.

**Appendix A** of this report includes a Joint Application Form for Activities Affecting Water Resources in Minnesota, which is submitted in request for: (1) a wetland boundary, No-Loss and wetland type determination under the Minnesota Wetland Conservation Act (WCA), and (2) delineation concurrence under Section 404 of the Federal Clean Water Act.

#### 3. METHODS

#### 3.1 Wetland Delineation

Wetlands were identified using the Routine Determination method described in the <u>Corps of Engineers</u> Wetlands <u>Delineation Manual</u> (Waterways Experiment Station, 1987) and the <u>Regional Supplement to the Corps of Engineers Wetland Delineation Manual</u>: Midwest Region (Version 2.0) as required under Section 404 of the Clean Water Act and the Minnesota Wetland Conservation Act.

Wetland boundaries were identified as the upper-most extent of wetland that met criteria for hydric soils, hydrophytic vegetation, and wetland hydrology. Wetland-upland boundaries were marked with pin flags that were located using Trimble Juno T41 GPS Units.

Soils, vegetation, and hydrology were documented at a representative location along the wetland-upland boundary. Plant species dominance was estimated based on the percent aerial or basal coverage visually estimated within a 30-foot radius for trees and vines, a 15-foot radius for the shrub layer, and a 5-foot radius for the herbaceous layer within the community type sampled.

Soils were characterized to a minimum depth of 24 inches (unless otherwise noted) using a Munsell Soil Color Book and standard soil texturing methodology. Hydric soil indicators used are from Field Indicators of Hydric Soils in the United States (USDA Natural Resources Conservation Service (NRCS) in cooperation with the National Technical Committee for Hydric Soils, Version 7, 2010).

Plants were identified using standard regional plant keys. Taxonomy and indicator status of plant species was taken from the <u>2015 National Wetland Plant List</u> (U.S. Army Corps of Engineers 2014. National Wetland Plant List, version 3.2, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH).

#### 4. RESULTS

#### 4.1 Review of NWI, Soils, Public Waters, and NHD Information

The <u>National Wetlands Inventory (NWI)</u> (Minnesota Geospatial Commons 2009-2014 and <u>U.S.</u> <u>Fish and Wildlife Service</u>) showed six wetlands on the site (**Figure 3**).

The <u>Soil Survey</u> (USDA NRCS 2015) showed Muskego and Houghton (Hydric), Hamel (Partially Hydric), Klossner (Hydric), Cordova (Predominantly Hydric), Houghton (Hydric), Minnetonka (Hydric) and Glencoe (Hydric). Soil types are listed in **Table 2** on the following page and a map showing soil types is included as **Figure 4**.

Table 2. Soil types mapped on the Hollydale Golf Course

Symbol	Soil Name	Acres	% of Area	% Hydric	Hydric Category
L50A	Muskego and Houghton soils	37.88	24.13	100	Hydric
L44A	Nessel loam	22.33	14.22	10	Predominantly Non-Hydric
L22C2	Lester loam, 6 to 10 percent slopes, moderately eroded	21.62	13.77	2	Predominantly Non-Hydric
L37B	Angus loam	16.66	10.61	5	Predominantly Non-Hydric
L22D2	Lester loam, 10 to 16 percent slopes, moderately eroded	14.97	9.54	0	Non-Hydric
L36A	Hamel, overwash-Hamel complex, 0 to 3 percent slopes	11.22	7.15	45	Partially Hydric
L49A	Klossner soils	10.53	6.71	100	Hydric
L23A	Cordova loam, 0 to 2 percent slopes	9.29	5.92	95	Predominantly Hydric
L14A	Houghton muck	5.85	3.73	100	Hydric
L9A	Minnetonka silty clay loam	3.80	2.42	100	Hydric
L45A	Dundas-Cordova complex	2.14	1.36	30	Predominantly Non-Hydric
L40B	Angus-Kilkenny complex	0.68	0.44	5	Predominantly Non-Hydric
L24A	Glencoe clay loam	0.35	0.22	100	Hydric
L22F	Lester loam, morainic, 25 to 35 percent slopes	0.04	0.02	5	Predominantly Non-Hydric

The Minnesota DNR Public Waters Inventory (Minnesota Department of Natural Resources 2015) showed two DNR Public Wetlands (Unnamed 27-600 W and Unnamed 27-599 W) north of the site and one DNR Public Wetland (Unnamed 27-601 W) approximately 770 feet south of the site (**Figure 5**).

The <u>National Hydrography Dataset</u> (U.S. Geological Survey 2015) showed five Lake/Ponds within the site boundaries, as well as one Stream/River on the central and southeastern portion of the site (**Figure 6**).

#### 4.2 Wetland Determinations and Delineations

Potential wetlands were evaluated during field observations on August 14, 2019. Nine wetlands were identified and delineated on the property (**Figure 2**). Corresponding data forms are included in **Appendix B**. The following descriptions of the wetlands and adjacent uplands reflects conditions observed at the time of the field visit. Herbaceous vegetation was actively growing. Precipitation conditions were within the normal range based on available 30-day rolling total precipitation and typical based on three-month antecedent precipitation data (**Appendix C**). A wetland boundary survey will be provided when it becomes available. Wetland descriptions are provided on the following page on **Table 3**.

**Table 3. Delineated Wetland Descriptions - Hollydale Golf Course** 

Wetland ID	Circular 39	Cowardin	Eggers and Reed	Dominant Vegetation	Adjacent Upland Vegetation	Observed Drainage Features	Observed Hydrology Indicat	Mapped NWI Wetland	Mapped Soil Series	Size (Acres Onsite)	Comments
1	Type 5	PUBGx	Excavated Open Water Wetland	Open water, narrow fringe of cattail, beggarticks, smartweed	Mowed golf course green dominated by Kentucky bluegrass with a lesser amount of white clover	Isolated basin; no inlets or outlets observed	Saturation, High Water Table, Geomorphic Position, FAC Neutral Test	PUBGx	Houghton, Hamel, Lester	0.48	Wetland 1 is an ornamental pond that was excavated in upland as described in Section 4.4 of the report.
2	Type 5	PUBGx	Excavated Open Water Wetland	Open water, narrow fringe of orange jewelweed, sandbar willow, redosier dogwood	Mowed golf course green dominated by Kentucky bluegrass	Isolated basin; no inlets or outlets observed	Saturation, High Water Table, Geomorphic Position, FAC Neutral Test	None	Hamel	0.09	Wetland 2 is an ornamental pond that was excavated in upland as described in Section 4.4 of the report.
3	Type 5	PUBGx	Excavated Open Water Wetland	Open water, duckweed	Mowed golf course green dominated by Kentucky bluegrass with a lesser amount of white clover	Isolated basin; no inlets or outlets observed	Saturation, High Water Table, Geomorphic Position, FAC Neutral Test	PUBGx	Lester	0.08	Wetland 3 is an ornamental pond that was excavated in upland as described in Section 4.4 of the report.
4	Type 3/2	PEM1C/PE M1A	Shallow Marsh, Wet Meadow	Cattail, reed canary grass and scattered green ash trees	Meadow dominated by creeping charlie, reed canary grass, smooth brome and common milkweed with scattered common buckthorn		Saturation, High Water Table, Geomorphic Position, FAC Neutral Test	None	Cordova	0.04	Wetland 4 was part of a linear wetland adjacent to the railroad.
5	Type 2	PEM1A	Wet Meadow	Fowl bluegrass, Kentucky bluegrass	Mowed golf course green dominated by Kentucky bluegrass	Wetland 4 extends offsite to the north, connecting with wetlands adjacent to the railroad tracks	Saturation, High Water Table, Geomorphic Position, FAC Neutral Test	None	Minnetonka	0.08	None
6	Type 1/2/3/6	PFO1Ad/PE M1Bd/PEM1 Cd/PSS1Cd	Forested Seasonally Flooded Basin, Wet Meadow, Shallow Marsh, Shrub-Carr	Cattail and reed canary grass, orange jewelweed, arrowleaf tearthumb, redosier dogwood, black willow, stinging nettle, sedges	Mowed golf course green dominated by Kentucky bluegrass with a lesser amount of common plantain, white clover and dandelion	Flows into a ditch network that drains into Bassett Creek approximately 2,000 feet south of the site	Saturation, High Water Table, Geomorphic Position, FAC Neutral Test	PABG/PSS1Ad/PEM1Ad /PFO1Ad/R2UBFx	Muskego and Houghton, Minnetonka	30.21	Wetland 6 contained an extensive ditch network and shows evidence of drainage.
7	Type 5/2	PUBGx/PEM 1A	I Open Water, Wet Meadow	Open water with a narrow fringe of fowl bluegrass	Mowed golf course green dominated by Kentucky bluegrass	Contains several inlets from the surrounding drain tile network; no outlets were observed	Saturation, High Water Table, Geomorphic Position, FAC Neutral Test, Water-Stained Leaves	PUBGx	Klossner	0.18	None
8	Type 5	PUBGx	Open Water	Open water, duckweed	Mowed golf course green dominated by Kentucky bluegrass with a lesser amount of white clover and scattered white spruce and quaking aspen trees	Isolated basin; no inlets or outlets observed	Saturation, High Water Table, Geomorphic Position, FAC Neutral Test	PUBGx	Nessel, Angus	0.20	Wetland 8 is an ornamental pond that was excavated in upland as described in Section 4.4 of the report.
9	Type 5	PUBGx	Open Water	Open water with a narrow fringe of smartweed	Mowed golf course green dominated by Kentucky bluegrass	Drains though a tile into a ditch north of the site	Saturation, High Water Table, Geomorphic Position, FAC Neutral Test	PUBGx	Glencoe, Minnetonka	0.21	None

#### 4.3 Other Areas

Other areas were investigated because they were: (1) observed to support a hydrophytic plant community, (2) had visible wetland hydrology indicators, (3) were shown as wetland on the NWI map, or (4) were depressional and mapped as hydric soil. Field investigation led to the conclusion that these areas were not wetland.

An area on the northern portion of the site was mapped as Cordova loam (Predominantly Hydric) on the soil survey (See **Figure 4**). This area was inspected in the field, and consisted of a hillslope golf course green dominated by Kentucky bluegrass, with a lesser amount of white clover, dandelion and white spruce trees.

An area on the central portion of the site was mapped with hydric soils including Houghton Muck (Hydric), Hamel (Partially Hydric) and Klossner (Hydric) on the soil survey (**See Figure 4**). This area was inspected in the field, and consisted of mowed golf course greens dominated by Kentucky bluegrass with a lesser amount of dandelion, common plantain, white clover and scattered white spruce trees. Although this area contained topographic depressions, it did not contain wetland plant communities, and was effectively drained by a network of drain tiles present onsite (**See Figure 2**). Because of the functional drainage system present within this area, Geomorphic Position does not apply. Although hydric soils were present, this area did not contain a wetland plant community, and did not meet one primary or two secondary indicators of wetland hydrology. Therefore, this area was determined to be upland.

#### 4.4 Incidental Wetlands Discussion

The Hollydale Golf Course site contains numerous excavated ornamental ponds, and a separate memorandum will be prepared to establish the regulatory status of those ponds under the Minnesota Wetland Conservation Act and Section 404 of the Clean Water Act. Historic aerial photos and historic USGS Topography Maps will be provided at that time.

#### 4.5 Request for Wetland Boundary and Jurisdictional Determination

**Appendix A** of this report includes a Joint Application Form for Activities Affecting Water Resources in Minnesota, which is submitted in request for: (1) a wetland boundary, No-Loss and wetland type determination under the Minnesota Wetland Conservation Act (WCA), and (2) delineation concurrence under Section 404 of the Federal Clean Water Act.

#### 5. CERTIFICATION OF DELINEATION

The procedures utilized in the described delineation are based on the U.S. Army Corps of Engineers 1987 Wetlands Delineation Manual as required under Section 404 of the Clean Water Act and the Minnesota Wetland Conservation Act. This wetland delineation and report were prepared in compliance with the regulatory standards in place at the time the work was performed.

Site boundaries indicated on figures within this report are approximate and do not constitute an official survey product.

Delineation completed by: A Kyle Uhler, GIS & Remote Sensing Specialist

MN Certified Wetland Delineator

Will Effertz, Natural Resources Assistant

Report prepared by: Adam Cameron, Wetland Ecologist/GIS Specialist

MN Certified Wetland Delineator No. 1321

Report reviewed by: \_\_\_\_\_\_ Date: September 27, 2019

Mark Kjolhaug, Professional Wetland Scientist No. 000845

## **Wetland Delineation Report**

## **FIGURES**

- 1. Site Location
- 2. Existing Conditions
- 3. National Wetlands Inventory
- 4. Soil Survey
- 5. DNR Protected Waters Inventory
- 6. National Hydrography Dataset

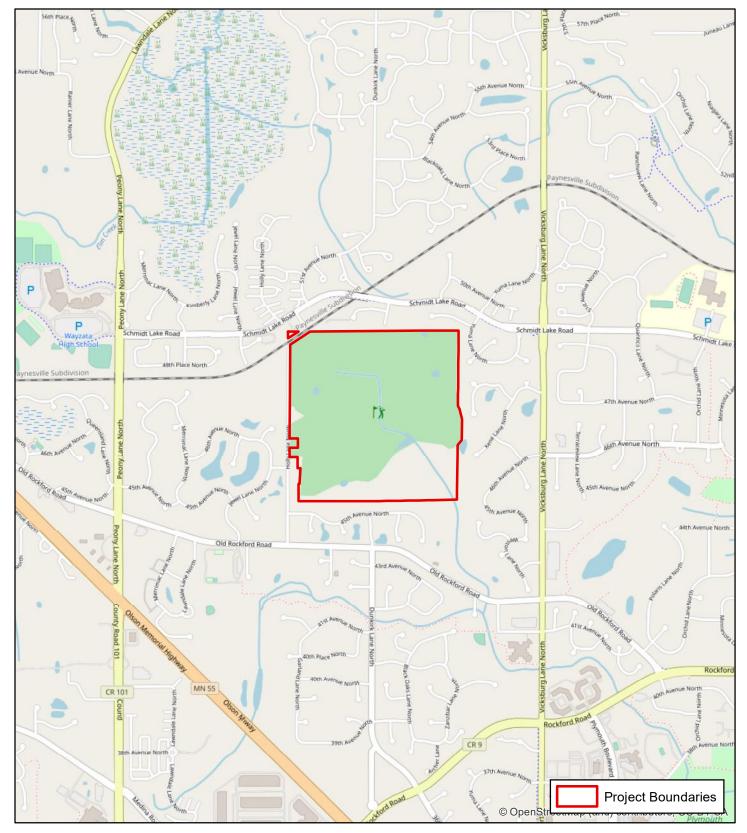
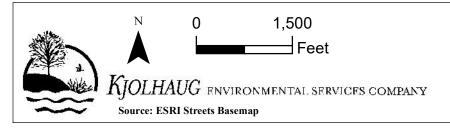


Figure 1 - Site Location Map



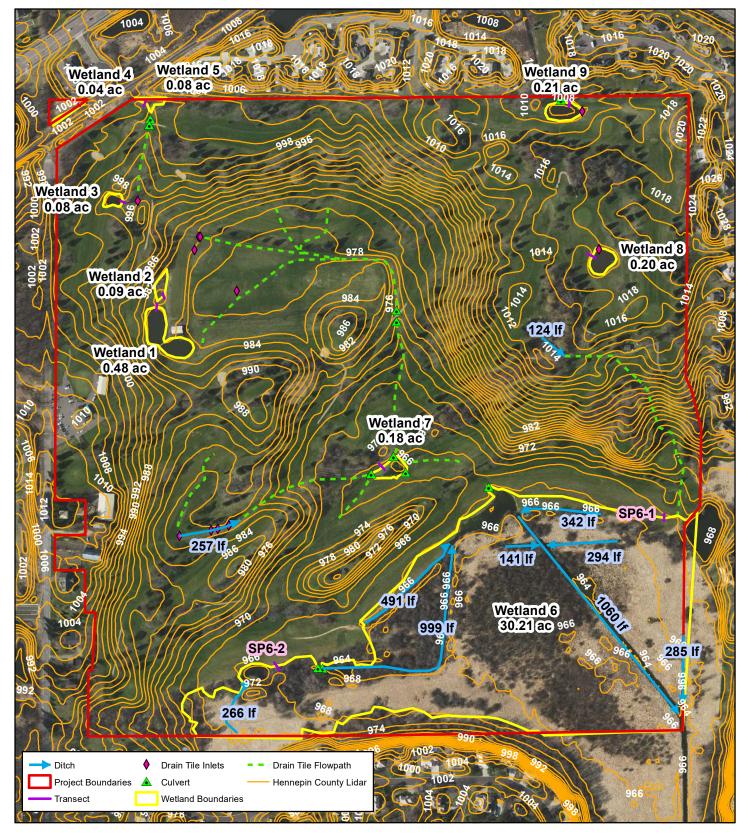


Figure 2 - Existing Conditions (2016 MNGEO Photo)



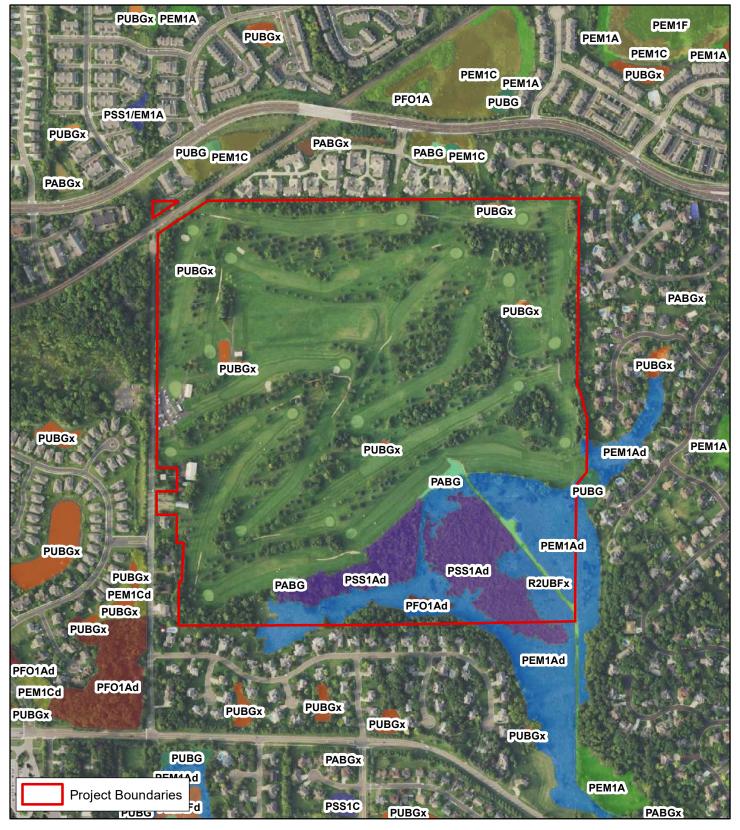
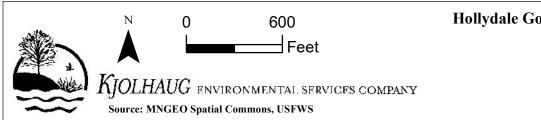


Figure 3 - National Wetlands Inventory



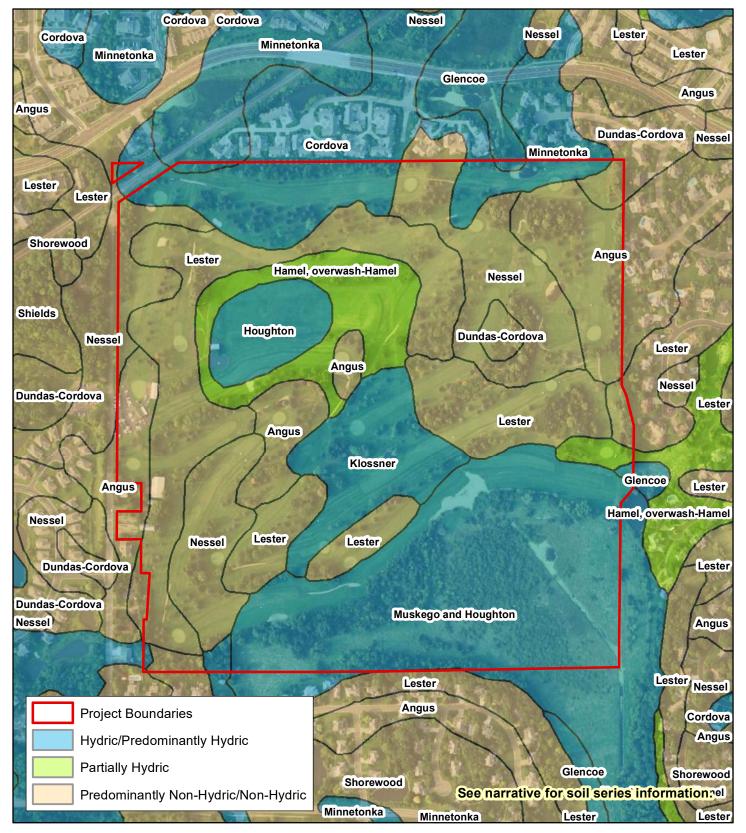
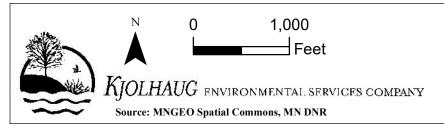


Figure 4 - Soil Survey





**Figure 5 - DNR Public Waters Inventory** 



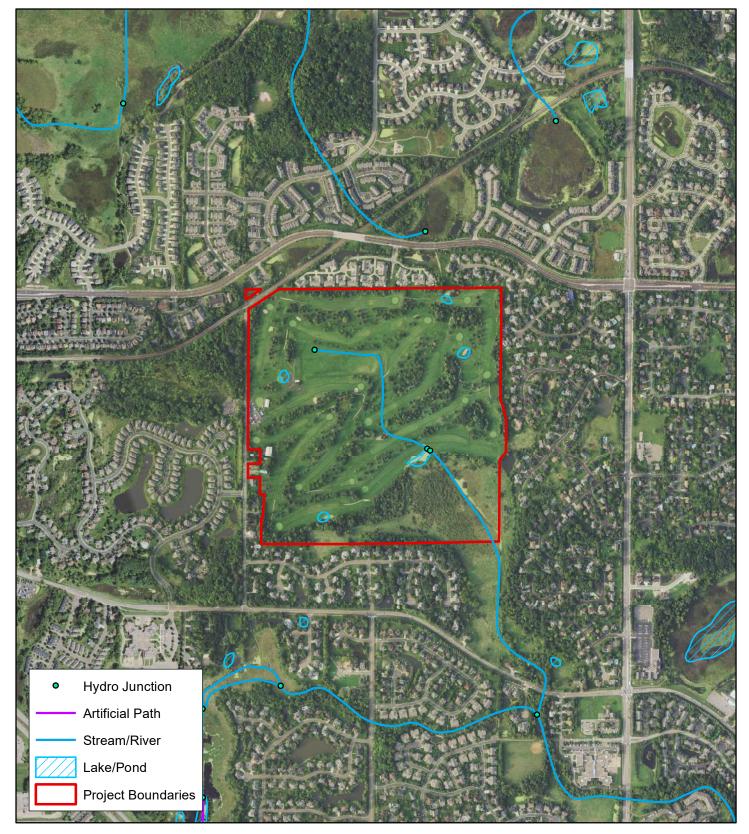
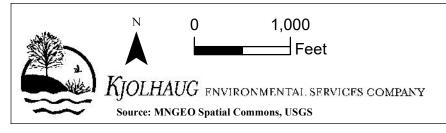


Figure 6 - National Hydrography Dataset



## **Wetland Delineation Report**

## **APPENDIX A**

Joint Application Form for Activities Affecting Water Resources in Minnesota

Project Name and/or Number: Hollydale Golf Course

## **PART ONE: Applicant Information**

If applicant is an entity (company, government entity, partnership, etc.), an authorized contact person must be identified. If the applicant is using an agent (consultant, lawyer, or other third party) and has authorized them to act on their behalf, the agent's contact information must also be provided.

Applicant/Landowner Name: Jake Walesch Hollydale GG Development, Inc.

Mailing Address: 10850 Old County Road 15, Suite 200, Plymouth MN 55441

Phone: 612-749-1360

E-mail Address: Jake@Jakewalesch.com

Authorized Contact (do not complete if same as above):

**Mailing Address:** 

Phone:

E-mail Address:

Agent Name: Adam Cameron

Mailing Address: 2500 Shadywood Road #130, Orono MN 55331

**Phone:** 952-401-8757 Ext. #106

E-mail Address: Adam@kjolhaugenv.com

#### **PART TWO: Site Location Information**

County: Hennepin City/Township: Plymouth

Parcel ID and/or Address: 0811822340014, 0811822310001

Legal Description (Section, Township, Range): S:8 T:118N R:22W

Lat/Long (decimal degrees):

Attach a map showing the location of the site in relation to local streets, roads, highways.

Approximate size of site (acres) or if a linear project, length (feet): 156.7

If you know that your proposal will require an individual Permit from the U.S. Army Corps of Engineers, you must provide the names and addresses of all property owners adjacent to the project site. This information may be provided by attaching a list to your application or by using block 25 of the Application for Department of the Army permit which can be obtained at:

http://www.mvp.usace.army.mil/Portals/57/docs/regulatory/RegulatoryDocs/engform 4345 2012oct.pdf

## **PART THREE: General Project/Site Information**

If this application is related to a delineation approval, exemption determination, jurisdictional determination, or other correspondence submitted *prior to* this application then describe that here and provide the Corps of Engineers project number.

Describe the project that is being proposed, the project purpose and need, and schedule for implementation and completion. The project description must fully describe the nature and scope of the proposed activity including a description of all project elements that effect aquatic resources (wetland, lake, tributary, etc.) and must also include plans and cross section or profile drawings showing the location, character, and dimensions of all proposed activities and aquatic resource impacts.

Project Name and/or Number: Hollydale Golf Course

## PART FOUR: Aquatic Resource Impact<sup>1</sup> Summary

If your proposed project involves a direct or indirect impact to an aquatic resource (wetland, lake, tributary, etc.) identify each impact in the table below. Include all anticipated impacts, including those expected to be temporary. Attach an overhead view map, aerial photo, and/or drawing showing all of the aquatic resources in the project area and the location(s) of the proposed impacts. Label each aquatic resource on the map with a reference number or letter and identify the impacts in the following table.

Aquatic Resource ID (as noted on overhead view)	Aquatic Resource Type (wetland, lake, tributary etc.)	drain or	Duration of Impact Permanent (P) or Temporary (T) <sup>1</sup>	Size of Impact <sup>2</sup>	Overall Size of Aquatic Resource <sup>3</sup>	Existing Plant Community Type(s) in Impact Area <sup>4</sup>	County, Major Watershed #, and Bank Service Area # of Impact Area <sup>5</sup>

<sup>&</sup>lt;sup>1</sup>If impacts are temporary; enter the duration of the impacts in days next to the "T". For example, a project with a temporary access fill that would be removed after 220 days would be entered "T (220)".

If any of the above identified impacts have already occurred, identify which impacts they are and the circumstances associated with each:

## **PART FIVE: Applicant Signature**

Check here if you are requesting a <u>pre-application</u> consultation with the Coprovided. Regulatory entities will not initiate a formal application review if this	
By signature below, I attest that the information in this application is complete authority to undertake the work described herein.  Holly dale GC Development, Inc.	and accurate. I further attest that I possess the
Signature: 113: President	Date: 9/27/19

I hereby authorize Kjolhaug Environmental to act on my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this application.

Impacts less than 0.01 acre should be reported in square feet. Impacts 0.01 acre or greater should be reported as acres and rounded to the nearest 0.01 acre. Tributary impacts must be reported in linear feet of impact and an area of impact by indicating first the linear feet of impact along the flowline of the stream followed by the area impact in parentheses). For example, a project that impacts 50 feet of a stream that is 6 feet wide would be reported as 50 ft (300 square feet).

<sup>&</sup>lt;sup>3</sup>This is generally only applicable if you are applying for a de minimis exemption under MN Rules 8420.0420 Subp. 8, otherwise enter "N/A".

<sup>&</sup>lt;sup>4</sup>Use Wetland Plants and Plant Community Types of Minnesota and Wisconsin 3<sup>rd</sup> Ed. as modified in MN Rules 8420.0405 Subp. 2.

<sup>&</sup>lt;sup>5</sup>Refer to Major Watershed and Bank Service Area maps in MN Rules 8420.0522 Subp. 7.

<sup>&</sup>lt;sup>1</sup> The term "impact" as used in this joint application form is a generic term used for disclosure purposes to identify activities that may require approval from one or more regulatory agencies. For purposes of this form it is not meant to indicate whether or not those activities may require mitigation/replacement.

Project Name and/or Number: Hollydale Golf Course

## **Attachment A** Request for Delineation Review, Wetland Type Determination, or **Jurisdictional Determination**

(Corps) and/or the Wetland Conservation Act Local Government Unit (LGU) provide me with the following (check all that apply):
Wetland Type Confirmation
Delineation Concurrence. Concurrence with a delineation is a written notification from the Corps and a decision from the LGU concurring, not concurring, or commenting on the boundaries of the aquatic resources delineated on the property. Delineation concurrences are generally valid for five years unless site conditions change. Under this request alone, the Corps will not address the jurisdictional status of the aquatic resources on the property, only the boundaries of the resources within the review area (including wetlands, tributaries, lakes, etc.).
Preliminary Jurisdictional Determination. A preliminary jurisdictional determination (PJD) is a non-binding written indication from the Corps that waters, including wetlands, identified on a parcel may be waters of the United States. For purposes of computation of impacts and compensatory mitigation requirements, a permit decision made on the basis of a PJD will treat all waters and wetlands in the review area as if they are jurisdictional waters of the U.S. PJDs are advisory in nature and may not be appealed.
Approved Jurisdictional Determination. An approved jurisdictional determination (AJD) is an official Corps determination that jurisdictional waters of the United States are either present or absent on the property. AJDs can generally be relied upon by the affected party for five years. An AJD may be appealed through the Corps administrative appeal process.
In order for the Corps and LGU to process your request, the wetland delineation must be prepared in accordance with the 1987 Corps of Engineers Wetland Delineation Manual, any approved Regional Supplements to the 1987 Manual, and the <i>Guidelines for Submitting Wetland Delineations in Minnesota</i> (2013). <a href="http://www.mvp.usace.army.mil/Missions/Regulatory/DelineationJDGuidance.aspx">http://www.mvp.usace.army.mil/Missions/Regulatory/DelineationJDGuidance.aspx</a>

## **Wetland Delineation Report**

## APPENDIX B

**Wetland Delineation Data Forms** 

Project/Site Hollydale Golf Course	City/C	County: F	Plymouth/He	nnepin	Sampling Date:	08/14/2019
Applicant/Owner: See Joint Application Form		State:	MN		Sampling Point:	SP1-1U
Investigator(s): Kyle Uhler & Will Effertz		Secti	ion, Townshi	p, Range	: S8 T1	18N R22W
Landform (hillslope, terrace, etc.): Hillslope		Local r	elief (concav	e, conve	x, none):	Linear
Slope (%): 1 to 4 Lat:		Long:			Datum:	
Soil Map Unit Name Hamel Consociation			۱WI	Classifica	tion:	None
Are climatic/hydrologic conditions of the site typical for thi	is time of	f the year?	Υ (	If no, exp	lain in remarks)	
Are vegetation X, soil X, or hydrology		significantly	disturbed?		Are "normal circun	nstances"
Are vegetation , soil , or hydrology		naturally pr	oblematic?			present? No
SUMMARY OF FINDINGS				(If nee	ded, explain any ar	nswers in remarks.)
Hydrophytic vegetation present? N						
Hydric soil present?		Is the s	ampled area	a within a	a wetland?	N
Indicators of wetland hydrology present? N		If yes, or	otional wetla	nd site ID	:	
Remarks: (Explain alternative procedures here or in a sep	parate re	eport.)				
30-day precipitation rolling total is within norm	mal ran	ige. Precip		•		hod is typical.
VEGETATION Use scientific names of plants.						
'	solute	Dominant	Indicator	Domin	nance Test Worksl	heet
	Cover	Species	Staus		of Dominant Specie OBL, FACW, or FAC	
2					Number of Domina cies Across all Strat	nt ,
4					of Dominant Specie	``
5	0 =	Total Cove			OBL, FACW, or FA	
Sapling/Shrub stratur (Plot size: 15 )		Total Cove	ı	Preval	ence Index Works	sheet
1					6 Cover of:	
2				OBL s	pecies 0 x	1 = 0
3				FACW	species 0 x	2 = 0
4				FAC s	pecies 55 x	3 = 165
5					·	4 = 140
	0 =	Total Cover	r			5 = 0
Herb stratum (Plot size: 5 )					n totals 90 (A	′ <u>—</u> `′
	55	<u>Y</u>	FAC	Preval	ence Index = B/A =	3.39
2 Trifolium repens	35	Y	FACU	Hydro	phytic Vegetation	Indicators:
4				_	priytic vegetation	
5					minance test is >5	
6					evalence index is ≤	
7				Mc	orphogical adaptation	ons* (provide
8					pporting data in Re	
9				se	parate sheet)	
10					oblematic hydrophy	tic vegetation*
	90 =	Total Cove	r	— (e)	rplain)	
Woody vine stratum (Plot size: 15 ) 1					present, unless disturb	etland hydrology must be ed or problematic
2				_	drophytic	
	0 =	Total Cover	r		getation esent? N	_
Remarks: (Include photo numbers here or on a separate	sheet)					

SOIL Sampling Point: SP1-1U

Profile Desc	ription: (Descri	be to the	e depth needed t	o docun	nent the	indicato	r or confirm	the absence	of indicators.)
Depth	<u>Matrix</u>		Red	dox Feat	<u>ures</u>				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Tex	ture	Remarks
0 to 4	10YR 2/2	100					Mucky Loa	am	
4 to 12	10YR 2/2	55					Clay Loam	1	Disturbed
	10YR 3/1	45					Clay Loam	)	Disturbed
12 to 24	10YR 2/1	100					Clay Loam	)	
							,		
*T 0 0	)	Danisti	DM Dadica	-1. N.A 4 1	MO M	0 -	0	**! 4:	DI Dans Linian M. Matrix
	il Indicators:	= Depletio	on, RM = Reduce	a Matrix,	IVIS = IVIS	asked Sa			PL = Pore Lining, M = Matrix ematic Hydric Soils:
	isol (A1)		San	dy Glave	ed Matrix	(\$4)			dox (A16) (LRR K, L, R)
	ic Epipedon (A2)			dy Redo		(04)		k Surface (S7	
	ck Histic (A3)			oped Mat	. ,				Masses (F12) (LRR K, L, R)
	rogen Sulfide (A4	<b>!</b> )		•	ky Minera	ıl (F1)		=	k Surface (TF12)
	tified Layers (A5)				ed Matrix			er (explain in	· · · · · · · · · · · · · · · · · · ·
2 cr	n Muck (A10)		— Dep	leted Ma	atrix (F3)	` '			,
Dep	leted Below Dark	Surface	(A11) Red	lox Dark	Surface	(F6)			
Thic	ck Dark Surface (	A12)	Dep	leted Da	ırk Surfac	ce (F7)	*Indi	cators of hydr	ophytic vegetation and weltand
	dy Mucky Minera	. ,		lox Depre	essions (	F8)			e present, unless disturbed or
5 cr	n Mucky Peat or I	Peat (S3)							problematic
Restrictive I	Layer (if observe	ed):							
Type:					_		Hydrid	c soil presen	t?Y
Depth (inche	es):				-				
Remarks:									
111/2221									
HYDROLO									
_	drology Indicato								
-	•	of one is	required; check a				<u>.</u>		dicators (minimum of two required)
	Water (A1)			•	Fauna (B	,			Soil Cracks (B6)
Saturatio	ter Table (A2)				uatic Plan	its (B14) Odor (C1	\		Patterns (B10) son Water Table (C2)
	arks (B1)		-				) Living Roots		Burrows (C8)
	t Deposits (B2)			(C3)	i ixilizospi	ileies oii	Living 10003		n Visible on Aerial Imagery (C9)
	osits (B3)		-		e of Redu	iced Iron	(C4)		or Stressed Plants (D1)
	t or Crust (B4)			i			illed Soils		phic Position (D2)
Iron Dep	osits (B5)			(C6)				FAC-Neu	ıtral Test (D5)
	on Visible on Aeria		· · · · · · · · · · · · · · · · · · ·		ck Surfac				
	Vegetated Conca		e (B8)	_	r Well Da				
	tained Leaves (B9)	)	-	Other (E	xplain in I	Remarks)			
Field Obser		\/	NI-	V	Donth "	nobes!			
Surface water	•	Yes	No	X	Depth (i			. l	dicators of wetland
Water table   Saturation pi		Yes Yes	No No	X	Depth (i				dicators of wetland drology present?
(includes car		100			- Dobui (I			·   '''	
		m gauge	, monitoring well,	aerial ph	otos. pre	evious ins	spections), if	available:	
		gg0	,		-, p. c		, , ,		
Remarks:									

Project/Site Hollydale Golf Course	City/0	County:	Plymouth/Her	nnepin S	ampling Date:	08/14/2019	
Applicant/Owner: See Joint Application Form		State:	MN	I S	Sampling Point: SP1-1		
Investigator(s): Kyle Uhler & Will Effertz		Section, Township, Range: S8 T118N R22W					
Landform (hillslope, terrace, etc.): Depression	n	Local	relief (concav	/e, convex, i	none):	Concave	
Slope (%): 0 to 3 Lat:		Long:		D	Datum:		
Soil Map Unit Name Hamel Consociation			\WI (	Classificatio	n:	PUBGx	
Are climatic/hydrologic conditions of the site typical for thi	is time c	of the year?	Υ (	If no, explai	n in remarks)		
Are vegetation X , soil , or hydrology		significantl	y disturbed?	А	re "normal circum	nstances"	
Are vegetation , soil , or hydrology		naturally p	oblematic?			present? No	
SUMMARY OF FINDINGS				(If neede	d, explain any an	swers in remarks.)	
Hydrophytic vegetation present? Y							
Hydric soil present? Y		Is the s	sampled area	a within a w	vetland?	Υ	
Indicators of wetland hydrology present? Y		If yes, o	ptional wetlar	nd site ID:	Wetland 1		
Remarks: (Explain alternative procedures here or in a sep	parate r	eport.)					
30-day precipitation rolling total is within nor	mal rai	nge. Preci		-		hod is typical.	
Sample point was on the		of a mand	ured lawn v	within golf	course.		
<b>VEGETATION</b> Use scientific names of plants.				_			
	solute	Dominant	Indicator	Dominar	nce Test Worksh	neet	
Tree Stratum (Plot size: 30 ) % (	Cover	Species	Staus		f Dominant Specie BL, FACW, or FAC		
2					umber of Dominar		
3					es Across all Strata	``	
					f Dominant Specie	es C: 100.00% (A/B)	
	0 =	Total Cove		lilat ale Ot	SL, FACW, OF FAC	J. 100.00% (A/B)	
Sapling/Shrub stratur (Plot size: 15 )		- Total Cove	1	Prevaler	nce Index Works	sheet	
1				Total % (			
2				OBL spe	cies 3 x	1 = 3	
3				FACW s	pecies 2 x	2 = 4	
4				FAC spe	cies 80 x	3 = 240	
5				FACU sp		4 = 60	
	0 =	= Total Cove	r	UPL spe		5 = 0	
Herb stratum (Plot size: 5 )				Column t		· — · · ·	
	80	<u>Y</u>	FAC	Prevalen	ce Index = B/A =	3.07	
2 <u>Digitaria ischaemum</u> 3 <u>typha x glauca</u>	15 3	N	FACU OBL	Hydronh	ytic Vegetation	Indicators	
4 Bidens frondosa	2	N	FACW	-	d test for hydroph		
5			17.011	l — ·	inance test is >50		
6					alence index is ≤		
7				— Morn	hogical adaptatio	ons* (provide	
8					orting data in Rei	"	
9				sepa	rate sheet)		
10					lematic hydrophy	tic vegetation*	
<u> </u>	100 =	= Total Cove	r	(expl	ain)		
Woody vine stratum (Plot size:15) 1					of hydric soil and we esent, unless disturbe	etland hydrology must be ed or problematic	
2					ophytic		
	0 =	= Total Cove	r	vege pres	etation ent?		
Remarks: (Include photo numbers here or on a separate	sheet)			1	-		
	,						

SOIL Sampling Point: SP1-1W

Profile Desc	cription: (Descri	be to the	e depth needed t	o docun	nent the	indicato	r or confirm	the absence	of indicators.)
Depth	<u>Matrix</u>		Red	dox Feat	<u>ures</u>				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Tex	ture	Remarks
0 to 4	10YR 2/1	100					Mucky Loa	am	
4 to 10	10YR 2/1	80	5G 5/1	15	D	М	Clay Loam	1	
			10YR 4/6	5	С	М	Clay Loam	1	
			10111 1/0				0.00	•	
*Type: C = C	Concentration, D =	Depletion	on, RM = Reduce	d Matrix,	MS = Ma	asked Sa	nd Grains.	**Location:	PL = Pore Lining, M = Matrix
Hydric So	il Indicators:						Indicato	rs for Proble	ematic Hydric Soils:
Hist	tisol (A1)		Sar	dy Gleye	ed Matrix	(S4)	Coa	st Prairie Red	dox (A16) ( <b>LRR K, L, R</b> )
	tic Epipedon (A2)			dy Redo				k Surface (S7	
	ck Histic (A3)			oped Mat	. ,			=	Masses (F12) (LRR K, L, R)
	Irogen Sulfide (A4				ky Minera				k Surface (TF12)
	atified Layers (A5)				ed Matrix	(F2)	Oth	er (explain in	remarks)
	m Muck (A10)			leted Ma		,			-
· ·	leted Below Dark		` '		Surface	. ,			
	ck Dark Surface (/	•			ırk Surfa				ophytic vegetation and weltand
	ndy Mucky Minera n Mucky Peat or F			iox Depre	essions (	(۲8)	hyd	rology must b	e present, unless disturbed or problematic
	<u> </u>	, ,							problematic
	Layer (if observe	ed):							
Type:					•		Hydrid	soil presen	t? <u>Y</u>
Depth (inche	es):				-				
Remarks:									
Likely De	epleted below o	lark sur	face						
HYDROLO	OGY								
Wetland Hy	drology Indicato	rs:							
Primary India	cators (minimum o	of one is	required; check a	ll that ap	ply)		9	Secondary Ind	dicators (minimum of two required)
Surface	Water (A1)		•	Aquatic I	Fauna (B	13)	<del>-</del>	Surface	Soil Cracks (B6)
X High Wa	ter Table (A2)			True Aqu	uatic Plar	nts (B14)		Drainage	Patterns (B10)
X Saturation	on (A3)			Hydroge	n Sulfide	Odor (C1	)	Dry-Seas	son Water Table (C2)
Water M	arks (B1)				l Rhizosp	heres on	Living Roots		Burrows (C8)
	t Deposits (B2)			(C3)					n Visible on Aerial Imagery (C9)
	oosits (B3)			i)		iced Iron			or Stressed Plants (D1)
	t or Crust (B4)				ron Redu	iction in Ti	illed Soils		phic Position (D2)
	osits (B5) on Visible on Aeria	llmagery	(B7)	(C6)	ck Surfac	o (C7)		X FAC-Net	utral Test (D5)
	Vegetated Conca				r Well Da				
	tained Leaves (B9)			_		Remarks)			
Field Obser	. ,	'							
Surface water		Yes	No	Χ	Depth (i	nches):			
Water table	•	Yes	X No		Depth (i		5	Inc	licators of wetland
Saturation p	•	Yes	X No		Depth (i		0		/drology present?
	includes capillary fringe)								
Describe rec	Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:								
	•	- 3		•	•		•		
Remarks:									

Project/Site Hollydale Golf Course	City/C	County: I	Plymouth/Her	nnepin	Sampling Date:	08/14/2019		
Applicant/Owner: See Joint Application Form		State:	MN		Sampling Point: SP2-1U			
Investigator(s): Kyle Uhler & Will Effertz		Section, Township, Range: S8 T118N R22W						
Landform (hillslope, terrace, etc.): Hillslope		Local	elief (concav	e, convex	, none):	Linear		
Slope (%): 1 to 4 Lat:		Long:			Datum:			
Soil Map Unit Name Hamel Consociation			/WI	Classificat	ion:	None		
Are climatic/hydrologic conditions of the site typical for thi	is time o	f the year?	Υ (	If no, expla	ain in remarks)			
Are vegetation $X$ , soil $X$ , or hydrology		significantly	/ disturbed?		Are "normal circun	nstances"		
Are vegetation , soil , or hydrology	,	naturally pr	oblematic?			present? No		
SUMMARY OF FINDINGS				(If need	led, explain any ar	nswers in remarks.)		
Hydrophytic vegetation present? N								
Hydric soil present? N		Is the s	ampled area	a within a	wetland?	N		
Indicators of wetland hydrology present?		If yes, o	otional wetlar	nd site ID:	_			
Remarks: (Explain alternative procedures here or in a sep	parate re	eport.)						
30-day precipitation rolling total is within nor	mal rar	ige. Precij		-		hod is typical.		
Sample point is located		a mancu	red lawn wi	ithin golf	course.			
<b>VEGETATION</b> Use scientific names of plants.				_				
	solute	Dominant	Indicator	Domina	ance Test Works	neet		
Tree Stratum (Plot size: 30 ) % (	Cover	Species	Staus		of Dominant Specie DBL, FACW, or FAC			
2 3					Number of Domina ies Across all Strat			
					of Dominant Specie	` ' '		
5					DBL, FACW, or FAC			
<u> </u>	0 =	Total Cove	r					
Sapling/Shrub stratur (Plot size: 15 )					ence Index Works	sheet		
					Cover of:	4		
2				OBL sp FACW		1 = 0 $2 = 0$		
				FAC sp		3 = 240		
5				FACU s		4 = 80		
	0 =	Total Cove	r	UPL sp		5 = 0		
Herb stratum (Plot size: 5 )				Column	totals 100 (A	A) 320 (B)		
1 Poa Pratensis	80	Υ	FAC	Prevale	nce Index = B/A =	3.20		
2 Trifolium repens	20	Υ	FACU					
3				Hydrop	hytic Vegetation	Indicators:		
4				l — ·	oid test for hydroph			
5					minance test is >5			
6				Pre	valence index is ≤	3.0*		
					phogical adaptation			
8					porting data in Re arate sheet)	marks or on a		
10					blematic hydrophy	tic vocatation*		
	100 =	Total Cove	r		olain)	tic vegetation		
Woody vine stratum (Plot size: 15 )					rs of hydric soil and w resent, unless disturb	retland hydrology must be led or problematic		
2				Нус	drophytic			
	0 =	Total Cove	r	_	etation sent? N			
Remarks: (Include photo numbers here or on a separate	sheet)			Į	<del></del>	<del>_</del>		
	2301)							

SOIL	Sampling Point:	SP2-1U
SUIL	Sampling Point:	SP2-1U

Profile Desc	cription: (Descri	be to the	e depth needed t	o docun	nent the	indicato	r or confirm	the absence	of indicators.)
Depth	<u>Matrix</u>		Red	dox Feat	ures				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Tex	ture	Remarks
0 to 12	10YR 2/2	100					Loam		
12 to 18	10YR 2/1	100					Clay Loam	1	
18 to 27	10YR 3/1	100					Clay Loam	)	
	Concentration, D =	= Depletion	on, RM = Reduce	d Matrix,	MS = Ma	asked Sa			PL = Pore Lining, M = Matrix
_	il Indicators:								ematic Hydric Soils:
	tisol (A1)			-	ed Matrix	(S4)			dox (A16) (LRR K, L, R)
	tic Epipedon (A2)			dy Redo	. ,			k Surface (S7	
	ck Histic (A3)	13		oped Ma	. ,	1 (54)		=	Masses (F12) (LRR K, L, R)
	Irogen Sulfide (A4			•	ky Minera	, ,			k Surface (TF12)
	atified Layers (A5) m Muck (A10)			oleted Ma	ed Matrix	. (FZ)		er (explain in	remarks)
	oleted Below Dark	Surface			Surface	(F6)			
	ck Dark Surface (				rk Surface	` '	*In di	actors of buds	ophytic vegetation and weltand
	ndy Mucky Minera	,			essions (	` '		•	e present, unless disturbed or
	n Mucky Peat or I	. ,			(	/	,	. 0.09)	problematic
	Layer (if observe	, ,				1			
Type:	Layer (II Observe	u).					Hydrid	soil presen	t? N
Depth (inche	es):				-		riyanı	o don proden	··· <u>···</u>
Remarks:									
rtomanto.									
HYDROLO	OGY								
Wetland Hy	drology Indicato	rs:							
Primary India	cators (minimum	of one is	required; check a	ll that ap	ply)		9	Secondary Inc	dicators (minimum of two required)
Surface	Water (A1)		•	Aquatic I	Fauna (B	13)	<del>-</del>	Surface S	Soil Cracks (B6)
High Wa	ter Table (A2)			True Aqu	uatic Plan	ts (B14)		Drainage	Patterns (B10)
Saturation	` '					Odor (C1			son Water Table (C2)
	arks (B1)				l Rhizospl	heres on	Living Roots		Burrows (C8)
	nt Deposits (B2)			(C3)	( D . 1		(0.4)		n Visible on Aerial Imagery (C9)
	osits (B3) t or Crust (B4)					iced Iron	(C4) illed Soils		or Stressed Plants (D1) whic Position (D2)
	osits (B5)			(C6)	ion Redu	CHOITHIT	illeu Solis		utral Test (D5)
	on Visible on Aeria	l Imagery	(B7)		ck Surfac	e (C7)			a. 1961 (29)
	Vegetated Conca		· · · · · · · · · · · · · · · · · · ·		r Well Da	` ,			
Water-S	tained Leaves (B9)	)		Other (E	xplain in l	Remarks)			
Field Obser	vations:								
Surface water	er present?	Yes	No	X	Depth (i	nches):		.	
Water table		Yes	No	X	Depth (i	-			licators of wetland
Saturation p		Yes	No	X	Depth (i	nches):		. hy	/drology present? N
(includes cap									
Describe rec	corded data (strea	m gauge	, monitoring well,	aerial ph	otos, pre	evious ins	pections), if a	available:	
Remarks:									

Project/Site Hollydale Golf Course	City/0	County:	Plymouth/He	nnepin s	Sampling Date: 08/14/2019		
Applicant/Owner: See Joint Application Form		State:	MN	1 5	Sampling Point:	SP2-1W	
Investigator(s): Kyle Uhler & Will Effertz		Sect	ion, Townshi	ip, Range:	S8 T1	18N R22W	
Landform (hillslope, terrace, etc.): Depression	n	Local	relief (concav	ve, convex,	none):	Concave	
Slope (%): 0 to 3 Lat:		Long:		1	Datum:		
Soil Map Unit Name Hamel Consociation			\WI	Classificati	on:	None	
Are climatic/hydrologic conditions of the site typical for this	s time c	of the year?	Y (	If no, expla	in in remarks)		
Are vegetation , soil , or hydrology		significantl	y disturbed?	4	Are "normal circu	mstances"	
Are vegetation , soil , or hydrology		naturally pi	oblematic?			present? Yes	
SUMMARY OF FINDINGS				(If neede	ed, explain any a	nswers in remarks.)	
Hydrophytic vegetation present? Y							
Hydric soil present? Y		Is the s	sampled area	a within a	wetland?	Υ	
Indicators of wetland hydrology present?		If yes, o	ptional wetlar	nd site ID:	Wetland 2		
Remarks: (Explain alternative procedures here or in a sep	parate r	eport.)		-		<del></del>	
30-day precipitation rolling total is within norr	mal rai	nge. Preci		-		thod is typical.	
Sample point was on the	edge	of a mand	ured lawn	within gol	f course.		
<b>VEGETATION</b> Use scientific names of plants.				_			
	solute	Dominant	Indicator	Domina	nce Test Works	heet	
Tree Stratum (Plot size: 30 ) % (	Cover	Species	Staus		of Dominant Speci BL, FACW, or FA		
2 3					Number of Domina		
					es Across all Stra	``	
5					of Dominant Speci BL, FACW, or FA	es .C: 100.00% (A/B)	
	0 =	Total Cove	r				
Sapling/Shrub stratur (Plot size: 15 )				Prevale	nce Index Work	sheet	
1 Salix interior	10	Y	FACW	Total %	Cover of:		
				OBL spe			
3				FACW		2 = 90	
5				FAC spe		3 = 0 $4 = 0$	
	10 =	Total Cove		UPL spe		(5 = 0	
Herb stratum (Plot size: 5 )		. 514. 5515	•	Column		A) 125 (B)	
	35	Υ	OBL		nce Index = B/A =	<del></del> ' ' '	
	25	<u> </u>	FACW	1 1014101	noo maax – Birt -	1.00	
	10	N	FACW	Hydrop	hytic Vegetatior	n Indicators:	
4				Rap	id test for hydrop	hytic vegetation	
5				X Don	ninance test is >5	50%	
6				X Prev	/alence index is s	≦3.0*	
7				Mor	phogical adaptati	ons* (provide	
8					porting data in Re	emarks or on a	
9					arate sheet)		
10	70	Total Cause			olematic hydroph	ytic vegetation*	
Woody vine stratum (Plot size: 15 )	70 =	= Total Cove	·r	— (exp	olain)		
1					s of hydric soil and versent, unless distur	vetland hydrology must b bed or problematic	
2				-	rophytic		
	0 =	= Total Cove	r	_	etation sent? Y		
Remarks: (Include photo numbers here or on a separate s	sheet)			1			
	,						

SOIL	Sampling Point:	SP2-1W
50H	Sambling Point:	SP7-17//

Profile Desc	ription: (Descri	be to the	e depth needed	to docun	nent the	indicato	r or confirm	the absence	of indicators.)	
Depth	<u>Matrix</u>		<u>Re</u>	dox Feat	<u>ures</u>					
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Tex	ture	Remarks	
0 to 2	10YR 2/1	100					Mucky Loa	ım		
2 to 10	10YR 2/1	100					Loam			
10 to 24	N 2.5/	100					Clay Loam			
*T 0 0	)	Danisti	DM Dadica	al NA a tais s	NO N	0 -	0	**! 4:	DI Dana Linia a M. Matria	
	concentration, D =	= Depletio	on, RIVI = Reduce	a iviatrix,	IVIS = IVIS	asked Sa			PL = Pore Lining, M = Matrix ematic Hydric Soils:	
_			Sar	ndy Glave	ad Matrix	(\$4)			-	
	Histisol (A1) Sandy Gleyed Matrix (S4) Coast Prairie Redox (A16) (LRR K, L, R) Histic Epipedon (A2) Sandy Redox (S5) Dark Surface (S7) (LRR K, L)									
	ck Histic (A3)			pped Ma	. ,				Masses (F12) (LRR K, L, R)	
	rogen Sulfide (A4	<b>!</b> )		ımy Muck	, ,	ıl (F1)		_	k Surface (TF12)	
	tified Layers (A5)			my Gleye	-			er (explain in	, ,	
2 cr	n Muck (A10)		— De	oleted Ma	trix (F3)				,	
Dep	leted Below Dark	Surface	(A11) Red	dox Dark	Surface	(F6)				
Thic	Thick Dark Surface (A12)  Depleted Dark Surface (F7)  *Indicators of hydrophytic vegetation and weltand									
	dy Mucky Minera	` '		dox Depre	essions (	F8)	hydi	rology must b	e present, unless disturbed or	
5 cr	n Mucky Peat or I	Peat (S3)	)						problematic	
Restrictive	Layer (if observe	ed):								
Type:					_		Hydric	soil presen	t? <u>Y</u>	
Depth (inche	es):									
Remarks:										
Likely De	epleted below o	lark sur	face							
	•									
HYDROLO										
_	drology Indicato									
-	cators (minimum o	of one is	required; check a				2		dicators (minimum of two required)	
	Water (A1)			•	Fauna (B	,	·		Soil Cracks (B6)	
	ter Table (A2)			True Aqu			,		Patterns (B10)	
X Saturation	arks (B1)					Odor (C1	) Living Roots		son Water Table (C2) Burrows (C8)	
	t Deposits (B2)			(C3)	Kilizospi	neres on	LIVING ROOLS		n Visible on Aerial Imagery (C9)	
	osits (B3)				e of Redu	iced Iron	(C4)		or Stressed Plants (D1)	
	t or Crust (B4)			_			illed Soils		phic Position (D2)	
	osits (B5)			(C6)			·	X FAC-Neu	utral Test (D5)	
	on Visible on Aeria			-	ck Surfac		<u>'</u>			
	Vegetated Conca		e (B8)	_	r Well Da					
	tained Leaves (B9)	)		Other (E	xplain in I	Remarks)				
Field Obser		Voc	No	~	Donth /:	nchoc\:				
Surface wate Water table	•	Yes Yes	X No	X	Depth (i	-	15	Inc	dicators of wetland	
Saturation p		Yes	X No		Depth (i	-	0		/drology present?	
(includes cap		. 00			(I			·  ,		
	orded data (strea	m gauge	, monitoring well.	aerial ph	otos, pre	evious ins	pections), if a	available:		
		595	. 5,	1	, ,		//	-		
Remarks:										

Project/Site Hollydale Golf Course	City/Coun	ity: P	lymouth/Her	nnepin	Sampling Date:	08/14/2019
Applicant/Owner: See Joint Application Form		State:	MN		Sampling Point:	SP3-1U
Investigator(s): Kyle Uhler & Will Effertz		Section	on, Townshi	p, Range:	S8 T1	18N R22W
Landform (hillslope, terrace, etc.): Hillslope		Local re	elief (concav	e, convex	, none):	Linear
Slope (%): 1 to 4 Lat:	Lor	ng:			Datum:	
Soil Map Unit Name Hamel Consociation			۱WI (	Classificat	ion:	None
Are climatic/hydrologic conditions of the site typical for this	s time of the	year?	Υ (Ι	If no, expla	ain in remarks)	
Are vegetation X, soil X, or hydrology	sigr	nificantly	disturbed?		Are "normal circu	mstances"
Are vegetation , soil , or hydrology	nati	urally pro	oblematic?			present? No
SUMMARY OF FINDINGS				(If need	led, explain any a	inswers in remarks.)
Hydrophytic vegetation present? N						
Hydric soil present? Y		Is the sa	ampled area	a within a	wetland?	N
Indicators of wetland hydrology present? N	l:	f yes, op	tional wetlar	nd site ID:		
Remarks: (Explain alternative procedures here or in a sep	arate report	t.)				
30-day precipitation rolling total is within norr Sample point is located	nal range.	Precip		-		thod is typical.
VEGETATION Use scientific names of plants.	· within a r	nanoan	oa lawii wi	triiir goii		
	solute Dor	minant	Indicator	Domin:	ance Test Works	sheet
		minant ecies	Staus		of Dominant Speci	
1					OBL, FACW, or FA	
					Number of Dominaties Across all Stra	
4				Percent	of Dominant Speci	ies
5				that are 0	DBL, FACW, or FA	AC: 50.00% (A/B)
	0 = Tota	al Cover				
Sapling/Shrub stratun (Plot size: 15 )					ence Index Work	sheet
					Cover of:	. 1 0
3				OBL sp		<pre>&lt; 1 = 0</pre>
				FAC sp		3 = 240
5				FACU		× 4 = 80
	0 = Tota	al Cover		UPL sp	ecies 0	× 5 = 0
Herb stratum (Plot size: 5 )				Column	totals 100 (	(A) 320 (B)
1 Poa Pratensis	80	Υ	FAC	Prevale	ence Index = B/A	= 3.20
2 Trifolium repens	20	Υ	FACU			
3					hytic Vegetation	
				I —	oid test for hydrop	, ,
5	<del></del>				minance test is >5 valence index is :	
7	<del></del>			l —		
8					rphogical adaptat porting data in Re	
9					parate sheet)	omanto or on a
10				Pro	blematic hydroph	ytic vegetation*
	00 = Tota	al Cover			plain)	
Woody vine stratum (Plot size: 15 )					rs of hydric soil and v	wetland hydrology must be bed or problematic
2					drophytic	
	0 = Tota	al Cover		_	jetation sent? N	
Remarks: (Include photo numbers here or on a separate s	sheet)			1	·	<u> </u>
	•					

SOIL Sampling Point: SP3-1U

Profile Desc	ription: (Descri	be to the	e depth needed t	o docun	nent the	indicato	r or confirm	the absence	of indicators.)
Depth	Depth <u>Matrix</u> <u>Redox Features</u>								
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Tex	ture	Remarks
0 to 5	10YR 2/2	100					Loam		
5 to 18	10YR 5/2	95	10YR 4/6	5	С	М	Clay Loam	)	
							,		
*Type: C = C	concentration, D =	= Depletion	on, RM = Reduce	d Matrix,	MS = Ma	asked Sa	nd Grains.	**Location:	PL = Pore Lining, M = Matrix
Hydric So	il Indicators:						Indicato	ors for Proble	matic Hydric Soils:
Hist	isol (A1)		Sar	ndy Gleye	ed Matrix	(S4)	Coa	ast Prairie Rec	lox (A16) ( <b>LRR K, L, R</b> )
Hist	ic Epipedon (A2)			ndy Redo				k Surface (S7	
	ck Histic (A3)			pped Mat				-	Masses (F12) (LRR K, L, R)
	rogen Sulfide (A4			my Muck	-				k Surface (TF12)
	tified Layers (A5)			my Gleye		(F2)	Oth	er (explain in i	remarks)
	n Muck (A10)			oleted Ma		<b></b> .			,
	leted Below Dark			dox Dark		. ,			
	ck Dark Surface (	,		oleted Da		, ,		•	ophytic vegetation and weltand
	dy Mucky Minera n Mucky Peat or I	. ,		dox Depre	essions (	F8)	hyd		e present, unless disturbed or problematic
	ii wucky Peat or i	Pear (SS)	)						problematic
	Layer (if observe	ed):							
Type:	,				-		Hydrid	c soil present	? <u>Y</u>
Depth (inche	es):				•				
HYDROLO	)GY								
Wetland Hy	drology Indicato	rs:							
_			required; check a	II that ap	ply)		(	Secondary Inc	licators (minimum of two required)
-	Water (A1)				<del></del> Fauna (B¹	13)	-	•	Soil Cracks (B6)
High Wa	ter Table (A2)			•	uatic Plan	,			Patterns (B10)
Saturation				Hydroge	n Sulfide	Odor (C1	)		on Water Table (C2)
Water M	arks (B1)				Rhizospl	heres on l	Living Roots	Crayfish I	Burrows (C8)
	t Deposits (B2)			(C3)					n Visible on Aerial Imagery (C9)
	osits (B3)			•		ced Iron			or Stressed Plants (D1)
	t or Crust (B4)				ron Redu	ction in Ti	illed Soils		hic Position (D2)
	osits (B5) on Visible on Aeria	l Imagery	(B7)	(C6)	ck Surfac	e (C7)		FAC-Neu	tral Test (D5)
	Vegetated Conca	• •	· ·	-	r Well Da				
· · ·	tained Leaves (B9)					Remarks)			
Field Obser	vations:			•	•				
Surface water		Yes	No	Х	Depth (i	nches):			
Water table	•	Yes	X No		Depth (i		18	Ind	icators of wetland
Saturation pr	resent?	Yes	X No		Depth (i	nches):	18	hy	drology present? N
(includes cap	oillary fringe)				='				
Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:									
Remarks:	Remarks:								

Project/Site Hollydale Golf Course	City/Cou	unty: P	lymouth/Her	nnepin S	Sampling Date:	08/14/2019			
Applicant/Owner: See Joint Application Form		State:	MN	S	Sampling Point:	SP3-1W			
Investigator(s): Kyle Uhler & Will Effertz		Section	on, Township	p, Range:	S8 T1	18N R22W			
Landform (hillslope, terrace, etc.): Depression		Local re	elief (concav	e, convex,	none):	Concave			
Slope (%): 0 to 3 Lat:		ong:		[	Datum:				
Soil Map Unit Name Hamel Consociation			NMI (	Classification	on:	PUBGx			
Are climatic/hydrologic conditions of the site typical for this	time of th	ne year?	Y (I	If no, expla	in in remarks)				
Are vegetation X , soil , or hydrology	si	gnificantly	disturbed?	Δ	Are "normal circu	mstances"			
Are vegetation , soil , or hydrology		aturally pro	blematic?	,	no noma onoa	present? No			
SUMMARY OF FINDINGS				(If neede	ed, explain any a	nswers in remarks.)			
Hydrophytic vegetation present? Y									
Hydric soil present? Y		Is the sa	ampled area	a within a	wetland?	Υ			
Indicators of wetland hydrology present? Y			-		Wetland 3				
Remarks: (Explain alternative procedures here or in a sepa	arate reno	ort )		_					
30-day precipitation rolling total is within normal range. Precipitation from gridded database method is typical.									
Sample point was on the	_			•		and to typican			
VEGETATION Use scientific names of plants.									
	olute D	ominant	Indicator	Domina	nce Test Works	heet			
		Species	Staus		of Dominant Speci				
1					BL, FACW, or FA				
2				Total N	Number of Domina	ant			
3				Speci	es Across all Stra	ta: 2 (B)			
4					of Dominant Speci				
5	<del></del>	-1-1-0		that are O	BL, FACW, or FA	C: 100.00% (A/B)			
	0 = To	otal Cover		Provolo	nce Index Work	choot			
Sapling/Shrub stratun (Plot size: 15 )					Cover of:	Sneet			
				OBL spe		1 = 70			
3				FACW s		2 = 0			
4				FAC spe		3 = 30			
5				FACU s	pecies 0 x	4 = 0			
	0 = To	otal Cover		UPL spe		5 = 0			
Herb stratum (Plot size: 5 )				Column	totals 80 (	A) <u>100</u> (B)			
1 Lemna minor 4	10	Υ	OBL	Prevaler	nce Index = B/A =	= 1.25			
	30	<u>Y</u>	OBL						
	10	<u>N</u> .	FAC		hytic Vegetation				
				l —	id test for hydrop ninance test is >5	, ,			
5					/alence index is s				
7				l —					
8	, ,				phogical adaptati porting data in Re				
9					arate sheet)	mand or on a			
10				Prob	olematic hydroph	ytic vegetation*			
	30 = To	otal Cover		(exp					
Woody vine stratum (Plot size: 15 )				*Indicators	s of hydric soil and v	vetland hydrology must be			
1					esent, unless disturl	ped or problematic			
2					rophytic				
	0 = To	otal Cover		_	etation sent? Y				
Demorka (Indude photo purchase have as as a series of	hoot\					<u> </u>			
Remarks: (Include photo numbers here or on a separate s	neet)								

SOIL Sampling Point: SP3-1W

Profile Desc	cription: (Descri	be to the	e depth needed t	o docun	nent the	indicato	r or confirm	the absence	of indicators.)	
Depth	<u>Matrix</u>		Re	dox Feat	<u>ures</u>					
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Tex	ture	Remarks	
0 to 12	10YR 2/1	94	10YR 4/6	3	С	М	Loam		Mucky Surface	
			10YR 4/1	3	D	М	Loam		-	
12 to 24	10YR 2/1	100					Clay Loam	1		
12 10 24	1011(2/1	100					Olay Loan			
*Type: C = C	Concentration, D =	= Depletion	on, RM = Reduce	d Matrix,	MS = Ma	asked Sa	nd Grains.	**Location:	PL = Pore Lining, M = Matrix	
	il Indicators:								ematic Hydric Soils:	
Hist	tisol (A1)		Sar	ndy Gleye	ed Matrix	(S4)	Coa	ast Prairie Red	dox (A16) ( <b>LRR K, L, R</b> )	
Hist	Histic Epipedon (A2) Sandy Redox (S5) Dark Surface (S7) (LRR K, L)									
Blac	ck Histic (A3)		Stri	pped Ma	trix (S6)		Iron	-Manganese	Masses (F12) (LRR K, L, R)	
Hyd	Irogen Sulfide (A4	1)	Loa	my Muck	ky Minera	al (F1)	Ver	y Shallow Dai	rk Surface (TF12)	
Stra	atified Layers (A5)		Loa	my Gleye	ed Matrix	(F2)	Oth	er (explain in	remarks)	
	n Muck (A10)			oleted Ma	atrix (F3)		<u> </u>			
Depleted Below Dark Surface (A11) X Redox Dark Surface (F6)										
Thick Dark Surface (A12)  Depleted Dark Surface (F7)  *Indicators of hydrophytic vegetation and weltand										
	idy Mucky Minera			dox Depre	essions (	(F8)	hyd	rology must b	e present, unless disturbed or	
5 cr	n Mucky Peat or I	Peat (S3)							problematic	
Restrictive	Layer (if observe	ed):								
Type:							Hydri	c soil presen	t? Y	
Depth (inche	es):				•					
Remarks:					•					
	epleted below o	lark cur	faco							
LIKEIY DE	spieted below c	iaik Sui	iace							
HYDROLO	OGY									
	drology Indicato	rs.								
1	cators (minimum o		required: check a	II that an	nlv)			Socondary In	dicators (minimum of two required)	
-	Water (A1)	JI UHE IS	required, crieck a		<u>ріу)</u> Fauna (B	13)	<u>:</u>		Soil Cracks (B6)	
	iter Table (A2)			_	гаина (в uatic Plar				Patterns (B10)	
X Saturation				-		Odor (C1	)		son Water Table (C2)	
	arks (B1)						Living Roots		Burrows (C8)	
	nt Deposits (B2)			(C3)	i i i i i i i i i i i i i i i i i i i	110100 011	Living 1100to		n Visible on Aerial Imagery (C9)	
	oosits (B3)				e of Redu	ced Iron	(C4)		or Stressed Plants (D1)	
	t or Crust (B4)			-			illed Soils		phic Position (D2)	
	osits (B5)			(C6)					utral Test (D5)	
Inundation	on Visible on Aeria	l Imagery	(B7)	Thin Mu	ck Surfac	e (C7)				
Sparsely	Vegetated Conca	ve Surfac	e (B8)	Gauge o	r Well Da	ata (D9)				
Water-S	tained Leaves (B9)	)		Other (E	xplain in	Remarks)	)			
Field Obser	vations:			-						
Surface water	er present?	Yes	No	X	Depth (i	nches):				
Water table		Yes	X No		Depth (i		5	- 1	dicators of wetland	
Saturation p		Yes	X No		Depth (i	nches):	0	hy	ydrology present? Y	
(includes ca	pillary fringe)									
Describe red	corded data (strea	ım gauge	, monitoring well,	aerial ph	otos, pre	evious ins	spections), if a	available:		
Dame !										
Remarks:										

Project/Site Hollydale Golf Course	City/	/County: F	Plymouth/He	nnepin	Sampling Date:	08/14/2019			
Applicant/Owner: See Joint Application Form		State:	MN	1	Sampling Point:	SP4-1U			
Investigator(s): Kyle Uhler & Will Effertz		Secti	ion, Townshi	p, Range	:S8 T11	18N R22W			
Landform (hillslope, terrace, etc.):	Hillslope	Local r	elief (concav	ve, conve	x, none):	Linear			
Slope (%): 1 to 4 Lat:		Long:			Datum:				
Soil Map Unit Name Cordova Consociation			- NWI	Classifica	ation:	None			
Are climatic/hydrologic conditions of the site typi	ical for this time	of the year?	Υ (	If no, exp	lain in remarks)				
Are vegetation, soil, or h	ydrology	significantly	disturbed?		Are "normal circun	nstances"			
Are vegetation , soil , or h	ydrology	naturally pr	oblematic?			present? Yes			
SUMMARY OF FINDINGS				(If nee	ded, explain any an	nswers in remarks.)			
Hydrophytic vegetation present?	N	<u> </u>							
Hydric soil present?	N	Is the s	ampled area	a within a	a wetland?	N			
Indicators of wetland hydrology present?	N	If yes, or	ptional wetla	nd site ID	: <u></u>				
Remarks: (Explain alternative procedures here	or in a separate i	report.)							
30-day precipitation rolling total is within normal range. Precipitation from gridded database method is typical.									
VEGETATION Use scientific names of	f plants.								
	Absolute	Dominant	Indicator	Domin	nance Test Worksh	heet			
Tree Stratum (Plot size: 30	.) % Cover	Species	Staus		r of Dominant Specie OBL, FACW, or FAC				
2 3					I Number of Dominal				
4					t of Dominant Specie	``			
5		Tatal Covo			OBL, FACW, or FAC				
Sapling/Shrub stratur (Plot size: 15	,0	= Total Cove	ſ	Proval	lence Index Works	shoot			
Sapling/Shrub stratur (Plot size: 15 1 Rhamnus cathartica	<sup>)</sup> 50	Υ	FAC		% Cover of:	meet			
2		<u> </u>	17.0			1 = 0			
3					·	2 = 0			
4						3 = 150			
5					·	4 = 220			
	50	= Total Cove	r		·	5 = 0			
Herb stratum (Plot size: 5	)				in totals 105 (A	· — ` ·			
1 Solidago canadensis	35	<u>Y</u>	FACU	Preval	ence Index = B/A =	3.52			
2 Parthenocissus quinquefolia	20	<u> </u>	FACU	Undro	Warntation	I diagtaus.			
3				-	phytic Vegetation apid test for hydroph				
5					ominance test is >50				
6					evalence index is ≤				
7				<b> </b> —	orphogical adaptation				
8					pporting data in Re	**			
9				se	parate sheet)				
10					oblematic hydrophy	tic vegetation*			
Distriction (Distriction 45	<u>55</u>	= Total Cove	r	(ex	xplain)				
Woody vine stratum (Plot size: 15	<u> </u>				present, unless disturb	retland hydrology must be ed or problematic			
2				-	drophytic				
	0	= Total Cove	ſ		getation esent? N	<u></u>			
Remarks: (Include photo numbers here or on a	separate sheet)								

SOIL	Sampling Point:	SP4-1U
3UIL	Salipiliu Folii.	5P4-1U

Profile Desc	cription: (Descri	be to the	e depth needed t	o docun	nent the	indicato	r or confirm the	absence	of indicators.)
Depth	Matrix			dox Feat					·
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture		Remarks
0 to 8	10YR 2/2	100					Loam		
8 to 16	10YR 3/2	100					Clay Loam		
16 to 24	10YR 4/1	95	10YR 4/6	5	С	М	Clay Loam		
							,		
						_			
	Concentration, D =	= Depletion	on, RM = Reduce	d Matrix,	MS = Ma	asked Sa			PL = Pore Lining, M = Matrix
_	il Indicators:		Com	du Clave	al Matrice	(C4)			matic Hydric Soils:
	isol (A1)			dy Gleye		(S4)			ox (A16) ( <b>LRR K, L, R</b> )
Histic Epipedon (A2) Sandy Redox (S5) Dark Surface (S7) (LRR K, L) Iron-Manganese Masses (F12) (LRR K, L, R)									
	rogen Sulfide (A4	1)		my Muck		l (F1)		-	Surface (TF12)
	tified Layers (A5)			my Gleye	-			explain in r	· · · · · · · · · · · · · · · · · · ·
	n Muck (A10)			leted Ma		( -)		,,,p	
Depleted Below Dark Surface (A11) Redox Dark Surface (F6)									
Thic	ck Dark Surface (	A12)	Dep	leted Da	rk Surfac	ce (F7)	*Indicato	rs of hydro	pphytic vegetation and weltand
San	Sandy Mucky Mineral (S1)  Redox Depressions (F8)  hydrology must be present, unless disturbed or								
5 cr	n Mucky Peat or F	Peat (S3)	<u> </u>					ı	problematic
Restrictive	Layer (if observe	ed):							
Type:							Hydric so	il present	? N
Depth (inche	es):								
Remarks:						<u> </u>			
HYDROLO									
	drology Indicato								
-	cators (minimum o	of one is	required; check a				Seco	-	icators (minimum of two required)
	Water (A1)			•	Fauna (B	,			oil Cracks (B6)
Saturatio	ter Table (A2)				uatic Plan	its (B14) Odor (C1		_	Patterns (B10) on Water Table (C2)
	arks (B1)						Living Roots	-	Burrows (C8)
	t Deposits (B2)			(C3)	TTTTLZOSPI	110103 011		_ ′	No Visible on Aerial Imagery (C9)
	osits (B3)			Presence	e of Redu	iced Iron	(C4)	_	r Stressed Plants (D1)
Algal Ma	t or Crust (B4)			Recent I	ron Redu	ction in T	lled Soils	Geomorph	nic Position (D2)
	osits (B5)		<u>—</u>	(C6)				FAC-Neut	tral Test (D5)
	on Visible on Aeria	0 ,	` '		ck Surfac	` '			
	Vegetated Concar		e (B8)	_	r Well Da	ita (D9) Remarks)			
	tained Leaves (B9)	)		Other (E	хріантін	Remarks)		1	
Field Obser Surface water		Yes	No	Х	Depth (i	nches).			
Water table	•	Yes	No	$\frac{\lambda}{X}$	Depth (i	,		Indi	icators of wetland
Saturation p		Yes	No	X	Depth (i	-			drology present?
(includes cap					· · · ·				
Describe rec	orded data (strea	m gauge	e, monitoring well,	aerial ph	otos, pre	evious ins	pections), if avail	able:	
Remarks:									

Project/Site Hollydale Golf Course	City/County:	Plymouth/He	nnepin Sampling	Date: 0	8/14/2019
Applicant/Owner: See Joint Application Form		MN	I Sampling	Point:	SP4-1W
Investigator(s): Kyle Uhler & Will Effertz Section, To			ship, Range: S8 T118N R22W		
Landform (hillslope, terrace, etc.): Depression	Local	relief (concav	ve, convex, none):	none): Concave	
Slope (%): 0 to 3 Lat:	Long:		Datum:		
Soil Map Unit Name Minnetonka Consociation		NWI Classification: PUBGx			
Are climatic/hydrologic conditions of the site typical for this til	me of the year?	Y (	If no, explain in rem	arks)	
Are vegetation , soil , or hydrology	significant	tly disturbed?	Are "norm	nal circumstan	ces"
Are vegetation , soil , or hydrology					
SUMMARY OF FINDINGS			(If needed, expla	in any answers	s in remarks.)
Hydrophytic vegetation present? Y					
Hydric soil present? Y	Is the	Is the sampled area within a wetland?			
Indicators of wetland hydrology present? Y	If yes,	optional wetla	nd site ID: W	etland 4	
Remarks: (Explain alternative procedures here or in a separa	ate report.)		<u> </u>		-
30-day precipitation rolling total is within norma Sample point was on the ed	I range. Prec	•	-		is typical.
VEGETATION Use scientific names of plants.	ago or a man		Within gon oodrot		
Absolu	ıta Daminant	Indicator	Dominance Tes	t Workshoot	
Tree Stratum (Plot size: 30 ) % Cov		Staus	Number of Domina		
1 Acer negundo 50	Υ	FAC	that are OBL, FAC		3 (A)
2			Total Number o	f Dominant	``
3			Species Across	s all Strata:	3 (B)
4			Percent of Domina		
5			that are OBL, FAC	W, or FAC: 10	)0.00% (A/B)
50	= Total Cov	er		M 1 1 4	
Sapling/Shrub stratun (Plot size: 15 )			Prevalence Inde		
			OBL species	40 x1=	40
3			FACW species	30 x 2 =	60
4			FAC species	50 x 3 =	150
5			FACU species	0 x 4 =	0
0	= Total Cov	er	UPL species	0 x 5 =	0
Herb stratum (Plot size: 5 )			Column totals	120 (A)	250 (B)
1 Typha x glauca 40	Y	OBL	Prevalence Index	x = B/A =	2.08
2 Phalaris arundinacea 30	Y	FACW			
3			Hydrophytic Ve	_	
5		- ——	X Dominance t	r hydrophytic v	regetation
			X Prevalence is		
7			_		provido
8				adaptations* ( ata in Remarks	
9			separate she		
10			Problematic	hydrophytic ve	getation*
	= Total Cov	er	(explain)		
Woody vine stratum (Plot size:15) 1			*Indicators of hydric present, unle	soil and wetland ess disturbed or p	
2			Hydrophytic	;	
0	= Total Cov	er	vegetation present?	Y	
Remarks: (Include photo numbers here or on a separate she	et)		1		
	•				

SOIL Sampling Point: SP4-1W

Profile Desc	ription: (Descri	be to the	e depth needed t	o docun	nent the	indicato	r or confirm	the absence	of indicators.)
Depth	<u>Matrix</u>		Red	dox Feat	<u>ures</u>				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Tex	ture	Remarks
0 to 4	10YR 2/1						Loam		Mucky Surface
4 to 8	10YR 3/1	95	10YR 4/6	5	С	М	Loam		
8 to 16	10YR 7/1	80	10YR 6/6	20	С	М	Clay Loam	1	
16 to 24	N 7/	80	10YR 6/6	20	С	М	Clay Loam	1	
							,		
*Tvpo: C = C	ancontration D -	Doplotic	n PM – Poduco	d Motrix	NAS - NA	acked Se	nd Crains	**Logation:	PL = Pore Lining, M = Matrix
	il Indicators:	Depletic	on, RM = Reduced	J Mali IX,	IVIS = IVIS	askeu Sa			ematic Hydric Soils:
_	isol (A1)		San	dv Gleve	ed Matrix	(S4)			dox (A16) (LRR K, L, R)
	ic Epipedon (A2)			dy Redo		(0.)		k Surface (S7	
	ck Histic (A3)			oped Mat				•	Masses (F12) (LRR K, L, R)
Hyd	rogen Sulfide (A4	·)	Loa	my Muck	ky Minera	ıl (F1)	Ver	y Shallow Dar	k Surface (TF12)
Stra	tified Layers (A5)				ed Matrix	(F2)	Oth	er (explain in	remarks)
	n Muck (A10)			leted Ma	, ,				
	leted Below Dark				Surface	. ,			
	k Dark Surface (	•			rk Surfac	, ,			ophytic vegetation and weltand
	dy Mucky Minera n Mucky Peat or F	. ,		iox Depre	essions (	F8)	hyd		e present, unless disturbed or problematic
		, ,							problematic
	_ayer (if observe	ed):							
Type:	0):				<u>-</u> '		Hydri	c soil presen	t? <u> </u>
Depth (inche	S).				•				
Remarks:									
HYDROLO	ng V								
	drology Indicato	re:							1
1	0,		required; check a	ll that an	nlu)			Caaandan da	
	<i>N</i> ater (A1)	or one is	required, check a		<u>piy)</u> Fauna (B	13)	<u>:</u>		dicators (minimum of two required) Soil Cracks (B6)
	ter Table (A2)				Jatic Plan				Patterns (B10)
X Saturatio						Odor (C1	)		con Water Table (C2)
	arks (B1)						Living Roots		Burrows (C8)
Sedimen	t Deposits (B2)			(C3)	·		•	Saturatio	n Visible on Aerial Imagery (C9)
	osits (B3)			Presence	e of Redu	iced Iron	(C4)		or Stressed Plants (D1)
	t or Crust (B4)				ron Redu	ction in T	lled Soils		phic Position (D2)
	osits (B5)	Ilmogori	(P7)	(C6)	ale Courfo a	o (C7)		X FAC-Neu	tral Test (D5)
	on Visible on Aerial Vegetated Conca				ck Surfac r Well Da				
	ained Leaves (B9)					na (D9) Remarks)			
Field Obser	` ′				-				
Surface water		Yes	No	Х	Depth (i	nches):			
Water table	•	Yes	X No		Depth (i	-	8	Inc	licators of wetland
Saturation pr	esent?	Yes	X No		Depth (i	nches):	0	hy	drology present? Y
(includes cap	oillary fringe)								
Describe rec	orded data (strea	m gauge	, monitoring well,	aerial ph	otos, pre	evious ins	pections), if	available:	
Remarks:									

Project/Site Hollydale Golf Course	City/Cou	nty: P	lymouth/Her	nnepin S	ampling Date:	08/14/2019
Applicant/Owner: See Joint Application Form		State:	MN	S	ampling Point:	SP5-1U
Investigator(s): Kyle Uhler & Will Effertz		Section	on, Township	p, Range:	S8 T11	18N R22W
Landform (hillslope, terrace, etc.): Hillslope		Local re	elief (concav	e, convex, i	none):	Linear
Slope (%): 1 to 4 Lat:		ng:		D	Datum:	
Soil Map Unit Name Minnetonka Consociation			NMI (	Classificatio	n:	None
Are climatic/hydrologic conditions of the site typical for this	s time of th	e year?	<u>Y</u> (I	If no, explai	n in remarks)	
Are vegetation $X$ , soil $X$ , or hydrology	sig	nificantly	disturbed?	А	re "normal circun	nstances"
Are vegetation , soil , or hydrology	na	turally pro	blematic?			present? No
SUMMARY OF FINDINGS				(If neede	d, explain any ar	nswers in remarks.)
Hydrophytic vegetation present? N						
Hydric soil present?		Is the sa	ampled area	a within a w	vetland?	N
Indicators of wetland hydrology present? N		If yes, op	tional wetlar	nd site ID:		
Remarks: (Explain alternative procedures here or in a sep	arate repo	rt.)				
30-day precipitation rolling total is within norm Sample point is located	nal range	. Precip		-		hod is typical.
<b>VEGETATION</b> Use scientific names of plants.				3 - 1		
·	olute Do	minant	Indicator	Dominar	nce Test Worksl	heet
		pecies	Staus		Dominant Specie	
1					BL, FACW, or FAC	
		<del></del> -			umber of Dominales Across all Strate	
4					f Dominant Specie	``
5					BL, FACW, or FAC	
	0 = To	tal Cover				
Sapling/Shrub stratur (Plot size: 15 )					nce Index Works	sheet
				Total % (		4 0
2				OBL spe FACW sp		1 = 0 $2 = 0$
	<del></del>			FAC spe		3 = 225
5		<del></del> -		FACU sp		4 = 80
	0 = To	tal Cover		UPL spe		5 = 0
Herb stratum (Plot size: 5 )				Column t	totals 95 (A	A) 305 (B)
1 Poa Pratensis	75	Υ	FAC	Prevalen	ce Index = B/A =	3.21
2 Trifolium repens 2	20	Υ	FACU			
3				Hydroph	ytic Vegetation	Indicators:
4					d test for hydroph	
5					inance test is >50	
6				— Preva	alence index is ≤	3.0°
8					hogical adaptatio	
9					orting data in Re rate sheet)	marks or on a
10					lematic hydrophy	tic vegetation*
	95 = To	tal Cover		(expl		no regetanon
Woody vine stratum (Plot size: 15 )					of hydric soil and wesent, unless disturb	vetland hydrology must be bed or problematic
2				Hydr	ophytic	
	0 = To	tal Cover		vege pres	etation ent? N	
Remarks: (Include photo numbers here or on a separate s	sheet)			1		
, , , , , , , , , , , , , , , , , , , ,	,					

SOIL	Sampling Point:	SP5-1U
5011	Sambling Point:	SD5-111

Profile Desc	cription: (Descri	be to the	e depth needed t	o docun	nent the	indicato	r or confirm the	absence	of indicators.)
Depth	Matrix		_	dox Feat					·
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	)	Remarks
0 to 14	10YR 2/1	100					Loam		
14 to 20	10YR 3/1	95	10YR 4/6	5	С	М	Clay Loam		
20 to 26	10YR 4/1	90	10YR 4/6	10	С	М	Clay Loam		
							,		
	Concentration, D =	= Depletion	on, RM = Reduce	d Matrix,	MS = Ma	asked Sa			PL = Pore Lining, M = Matrix
_	il Indicators:		Sor	dy Claye	ad Matrix	(84)			matic Hydric Soils: ox (A16) (LRR K, L, R)
	isol (A1) ic Epipedon (A2)			ndy Gleye ndy Redo		(34)			(LRR K, L)
	ck Histic (A3)			pped Ma	. ,			, ,	Masses (F12) (LRR K, L, R)
	lrogen Sulfide (A4	<b>!</b> )		my Muck		al (F1)			Surface (TF12)
	tified Layers (A5)			my Gleye	-			explain in r	
2 cr	n Muck (A10)		— Dep	oleted Ma	atrix (F3)				,
Dep	leted Below Dark	Surface	(A11) Red	dox Dark	Surface	(F6)			
	ck Dark Surface (	,		oleted Da			*Indicato	rs of hydro	phytic vegetation and weltand
	dy Mucky Minera	. ,		dox Depre	essions (	(F8)	hydrolo		e present, unless disturbed or
5 cr	n Mucky Peat or I	Peat (S3)							problematic
	Layer (if observe	ed):							
Type:					-		Hydric so	il present	? <u>Y</u>
Depth (inche	es):				-				
Remarks:									
HYDROLO	)GY								
	drology Indicato	rs:							
	cators (minimum		required: check a	II that an	nlv)		Seco	ondary Ind	icators (minimum of two required)
	Water (A1)	01 0110 10	roquirou, orrook d		Fauna (B	13)	<u>0000</u>	•	oil Cracks (B6)
	ter Table (A2)			•	uatic Plan	,			Patterns (B10)
Saturation	on (A3)			Hydroge	n Sulfide	Odor (C1		Dry-Seaso	on Water Table (C2)
	arks (B1)				l Rhizospl	heres on	Living Roots	_ ′	Burrows (C8)
	t Deposits (B2)			(C3)				_	Visible on Aerial Imagery (C9)
	osits (B3)			-		iced Iron		_	r Stressed Plants (D1)
	t or Crust (B4) osits (B5)			(C6)	ion Redu	ction in T	ilea Solis	_	hic Position (D2) tral Test (D5)
	on Visible on Aeria	l Imagery	(B7)		ck Surfac	e (C7)		- 1710 11041	ital Test (Be)
Sparsely	Vegetated Conca	ve Surfac	e (B8)		r Well Da	` ,			
Water-S	tained Leaves (B9)	)		Other (E	xplain in l	Remarks)			
Field Obser			-						
Surface water	•	Yes	No	X	Depth (i	,			
Water table		Yes	No No	X	Depth (i				icators of wetland
Saturation policy (includes cap		Yes	No	X	Depth (i	ncnes):		l ny	drology present? N
	corded data (strea	m daline	monitoring well	aerial nh	notos pre	evious ins	nections) if avail	lable:	
20001100 100		gauge	,ormornig well,	acriai pii	.5.00, pre	, , 1000 II IS	podionoj, ii avai	abio.	
Remarks:									
I									

Project/Site Hollydale Golf Course	City/County:	Plymouth/He	nnepin Sampling	Date: 08/14/2019
Applicant/Owner: See Joint Application Form	State:	MN	Sampling	Point: SP5-1W
Investigator(s): Kyle Uhler & Will Effertz	Sec	ction, Townshi	p, Range:	S8 T118N R22W
Landform (hillslope, terrace, etc.): Depression	Loca	I relief (concav	/e, convex, none):	Concave
Slope (%): 0 to 3 Lat:	Long:		Datum:	
Soil Map Unit Name Minnetonka Consociation		١W١	Classification:	None
Are climatic/hydrologic conditions of the site typical for this t	ime of the year?	? Y (	If no, explain in rem	arks)
Are vegetation X , soil , or hydrology	significan	tly disturbed?	Are "norm	nal circumstances"
Are vegetation , soil , or hydrology	naturally	problematic?		present? No
SUMMARY OF FINDINGS			(If needed, explain	in any answers in remarks.)
Hydrophytic vegetation present? Y				
Hydric soil present? Y	Is the	sampled area	a within a wetland?	? Y
Indicators of wetland hydrology present? Y	If yes,	optional wetlar	nd site ID: We	etland 5
Remarks: (Explain alternative procedures here or in a separ	rate report.)			
30-day precipitation rolling total is within norma	al range. Pred	•	-	ase method is typical.
Sample point was with	iin a mancure	d lawn with	n gon course.	
<b>VEGETATION</b> Use scientific names of plants.			Dominance Test	( Manhala a (
Absol Tree Stratum (Plot size: 30 ) % Co		Indicator Staus		
1 (Flot Size: 30 ) % CO	— Species	Jiaus	Number of Domina that are OBL, FAC	•
2			Total Number of Species Across	
4			Percent of Domina	
5				W, or FAC: 100.00% (A/B)
0	= Total Cov	er		
Sapling/Shrub stratun (Plot size: 15 )			Prevalence Inde	
			Total % Cover of	
2			OBL species FACW species	$\begin{array}{cccc} 0 & x & 1 & = & 0 \\ \hline 0 & x & 2 & = & 0 \end{array}$
			FACW species	$\frac{0}{100} \times 3 = \frac{0}{300}$
5			FACU species	$0 \times 4 = 0$
	= Total Cov	er	UPL species	$\frac{0}{0}$ x 5 = $\frac{0}{0}$
Herb stratum (Plot size: 5 )			Column totals	100 (A) 300 (B)
1 Poa pratensis 100	) Y	FAC	Prevalence Index	<del></del> ``` <del></del> ``
2				
3	, ,		Hydrophytic Ve	getation Indicators:
4			Rapid test for	r hydrophytic vegetation
5			X Dominance to	
6			X Prevalence in	ndex is ≤3.0*
7				adaptations* (provide
				ata in Remarks or on a
9			separate she	
10	Total Cov	er er	(explain)	hydrophytic vegetation*
Woody vine stratum (Plot size: 15 )	= 10tai 00v	OI .		
1				soil and wetland hydrology must be ess disturbed or problematic
2			Hydrophytic	;
0	= Total Cov	er	vegetation present?	Υ
Remarks: (Include photo numbers here or on a separate sh	eet)		1 .	
Tromains. (molude prioto numbers fiere or on a separate str	<i>,</i>			

SOIL	Sampling Point:	SP5-1W
50II	Sambing Point:	SP5-177

Profile Desc	ription: (Descri	be to the	e depth needed t	o docun	nent the	indicato	r or confirm the a	absence o	of indicators.)
Depth	Matrix			dox Feat					,
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture		Remarks
0 to 4	10YR 2/1	95	10YR 6/2	5	D	М	Loam		
4 to 18	10YR 2/1	95	10YR 6/2	5	D	М	Clay Loam		
18 to 24	10YR 6/1	85	10YR 6/6	15	С	М	Clay Loam		
							,		
± <b>T</b> 0 0	5	<u> </u>					10 :		
		= Depletion	on, RM = Reduce	d Matrix,	MS = Ma	asked Sa			PL = Pore Lining, M = Matrix
_	il Indicators:		Sor	dy Claye	d Matrix	(84)			matic Hydric Soils: ox (A16) (LRR K, L, R)
	isol (A1) ic Epipedon (A2)			idy Gleye idy Redo		(34)			(LRR K, L)
	ck Histic (A3)			pped Mat	, ,				lasses (F12) (LRR K, L, R)
	rogen Sulfide (A4	1)		my Muck		l (F1)		_	Surface (TF12)
	itified Layers (A5)			my Gleye	-			xplain in re	* * * * * * * * * * * * * * * * * * * *
	n Muck (A10)			oleted Ma		,			,
Dep	leted Below Dark	Surface		lox Dark		(F6)			
X Thic	k Dark Surface (	A12)	— Dep	leted Da	rk Surfac	ce (F7)	*Indicators	s of hydro	phytic vegetation and weltand
	dy Mucky Minera	. ,		lox Depre	essions (	F8)			present, unless disturbed or
5 cr	n Mucky Peat or F	Peat (S3)						þ	problematic
Restrictive	Layer (if observe	ed):							
Type:							Hydric soil	I present	? Y
Depth (inche	es):								<del></del>
Remarks:						<u> </u>			
HYDROLO	OGY								
Wetland Hy	drology Indicato	rs:							
Primary India	cators (minimum d	of one is	required; check a	ll that ap	ply)		Seco	ndary Indi	cators (minimum of two required)
	Water (A1)				Fauna (B	,			oil Cracks (B6)
	ter Table (A2)				uatic Plan				Patterns (B10)
X Saturation	` '					Odor (C1			on Water Table (C2)
	arks (B1)			Oxidized (C3)	Rhizospl	heres on			urrows (C8)
	t Deposits (B2) osits (B3)				e of Redu	iced Iron			Visible on Aerial Imagery (C9) Stressed Plants (D1)
	t or Crust (B4)					ction in Ti			nic Position (D2)
	osits (B5)			(C6)		0			ral Test (D5)
Inundation	on Visible on Aeria	l Imagery	(B7)	Thin Mud	ck Surfac	e (C7)			, ,
Sparsely	Vegetated Concar	ve Surfac	e (B8)	Gauge o	r Well Da	ıta (D9)			
Water-S	tained Leaves (B9)	)	<u> </u>	Other (E	xplain in l	Remarks)			
Field Obser									
Surface water	•	Yes	No No	X	Depth (i	-			
Water table		Yes	X No		Depth (i	-	0		cators of wetland
Saturation policy (includes cap		Yes	X No		Depth (i	ncnes):	0	пус	drology present? Y
		m daliga	monitoring well	aprial nh	inthe pro	wioue inc	pections), if availa	ahle:	
Describe 160	orueu uala (silea	iii gauge	, morntoning well,	aeriai pii	iotos, pre	vious iils	podionsj, ii avalla	avi <del>c</del> .	
Remarks:									

Project/Site Hollydale Golf Course	City/Cour	nty: P	lymouth/Her	nnepin S	Sampling Date:	08/14/2019
Applicant/Owner: See Joint Application Form		State:	MN	S	ampling Point:	SP6-1U
Investigator(s): Kyle Uhler & Will Effertz		Section	on, Townshi	p, Range:	S8 T1	18N R22W
Landform (hillslope, terrace, etc.): Hillslope		Local re	elief (concav	e, convex,	none):	Linear
Slope (%): 1 to 2 Lat:	Lo	ng:		[	Datum:	
Soil Map Unit Name Glencoe Consociation			NWI (	Classification	on:	None
Are climatic/hydrologic conditions of the site typical for this	s time of the	e year?	Y (I	If no, expla	in in remarks)	
Are vegetation $X$ , soil $X$ , or hydrology	sig	nificantly	disturbed?	Д	re "normal circur	nstances"
Are vegetation , soil , or hydrology	nat	urally pro	oblematic?			present? No
SUMMARY OF FINDINGS				(If neede	ed, explain any ar	nswers in remarks.)
Hydrophytic vegetation present? Y						
Hydric soil present? Y		Is the sa	ampled area	a within a v	wetland?	N
Indicators of wetland hydrology present? N		lf yes, op	tional wetlar	nd site ID:	_	
Remarks: (Explain alternative procedures here or in a sep	arate repor	t.)				
30-day precipitation rolling total is within norn Sample point is located	nal range	. Precip		-		thod is typical.
VEGETATION Use scientific names of plants.						
	olute Do	minant	Indicator	Domina	nce Test Works	heet
		ecies	Staus	Number o	f Dominant Specie	es
1					BL, FACW, or FA	
					lumber of Domina es Across all Strat	
4				Percent o	f Dominant Specie	es
5				that are O	BL, FACW, or FA	C: 100.00% (A/B)
	0 = Tot	al Cover				
Sapling/Shrub stratur (Plot size: 15 )					nce Index Works	sheet
					Cover of:	1 0
3				OBL spe		1 = 0 $2 = 0$
				FAC spe		3 = 225
5				FACU s		4 = 80
	0 = Tot	al Cover		UPL spe	cies 0 x	5 = 0
Herb stratum (Plot size: 5 )				Column	totals 95 (/	A) 305 (B)
1 Poa Pratensis	75	Υ	FAC	Prevaler	nce Index = B/A =	= 3.21
	15	N	FACU			
3 Taraxacum officinale	5	N	FACU		nytic Vegetation	
4					d test for hydrop	
5					ninance test is >5 ralence index is ≤	
6				l —		
8					phogical adaptation porting data in Re	
9					arate sheet)	marks of on a
10				Prob	lematic hydrophy	tic vegetation*
	95 = Tot	al Cover		(exp		3
Woody vine stratum (Plot size: 15 )					s of hydric soil and w esent, unless disturb	vetland hydrology must be bed or problematic
2					rophytic	
	0 = Tot	al Cover		_	etation sent? Y	
Remarks: (Include photo numbers here or on a separate s	sheet)			<u> </u>	-	_
	,					

SOIL	Sampling Point:	SP6-1U
30II	Sambling Point	SP6-111

Profile Desc	ription: (Descri	be to the	e depth needed t	o docun	nent the	indicato	r or confirm	the absence	of indicators.)
Depth	<u>Matrix</u>		Re	dox Feat	<u>ures</u>				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Tex	ture	Remarks
0 to 14	10YR 3/1	97	10YR 4/6	3	С	М	Loam		
14 to 20	N 2.5/	100					Loam		
20 to 26	N 2.5/	100					Sapric Org	anic	
							, ,	'	
		= Depletion	on, RM = Reduce	d Matrix,	MS = Ma	asked Sa			PL = Pore Lining, M = Matrix
_	il Indicators:		_						ematic Hydric Soils:
	isol (A1)			-	ed Matrix	(S4)			dox (A16) (LRR K, L, R)
	ic Epipedon (A2)			ndy Redo	. ,			k Surface (S7	) (LRR K, L) Masses (F12) (LRR K, L, R)
	ck Histic (A3)	1)		pped Mai	, ,	J (E4)		_	
	rogen Sulfide (A4 tified Layers (A5)			-	ky Minera ed Matrix			er (explain in	k Surface (TF12)
	n Muck (A10)			oleted Ma		(1 2)		ei (explaiii iii	iemans)
	leted Below Dark	Surface			Surface	(F6)			1
	ck Dark Surface (		· · · · · · · · · · · · · · · · · · ·		rk Surfac	. ,	*Indic	eators of hydr	ophytic vegetation and weltand
	dy Mucky Minera	,			essions (	, ,			e present, unless disturbed or
	n Mucky Peat or I	. ,		•	`	,	,	0,	problematic
Restrictive	Layer (if observe	7 <b>/</b> ).							
Type:	Layer (II observe	Juj.					Hydric	soil presen	t? Y
Depth (inche	es):				•		,	р. сс	· · ·
	<u> </u>								
Remarks:									
HYDROLO	GY								
	drology Indicato	rs:							
_			required; check a	ll that an	nlv)		c	Secondary Inc	dicators (minimum of two required)
-	Water (A1)	or one is	required, crieck a		Fauna (B <sup>.</sup>	13)	<u> </u>		Soil Cracks (B6)
	ter Table (A2)			•	uatic Plan	,	•		Patterns (B10)
Saturation					n Sulfide		)		son Water Table (C2)
Water M	arks (B1)						Living Roots	Crayfish	Burrows (C8)
Sedimen	t Deposits (B2)			(C3)			•	Saturatio	n Visible on Aerial Imagery (C9)
	osits (B3)			•	e of Redu				or Stressed Plants (D1)
	t or Crust (B4)				ron Redu	ction in T	illed Soils		phic Position (D2)
	osits (B5)	llmaaaan	(DZ)	(C6)	-I. Of	- (07)	-		ıtral Test (D5)
	on Visible on Aeria Vegetated Conca				ck Surfac or Well Da	` '			
	tained Leaves (B9				xplain in I				
Field Obser	•	, 			хрісіі і і і	- Comanto,			
Surface water		Yes	No	Х	Depth (i	nches).			
Water table	•	Yes	X No		Depth (i		13	Ind	licators of wetland
Saturation p		Yes	X No		Depth (i		13	hy	/drology present? N
(includes cap					• • •				
Describe rec	orded data (strea	ım gauge	, monitoring well,	aerial ph	otos, pre	vious ins	spections), if a	available:	
Remarks:									

Project/Site Hollydale Golf Course	City/	County:	Plymouth/Hei	nnepin Sa	ampling Date:	08/14/2019
Applicant/Owner: See Joint Application Form		State:	MN	I Sa	mpling Point:	SP6-1W
Investigator(s): Kyle Uhler & Will Effertz		Sec	tion, Townshi	p, Range:	S8 T11	8N R22W
Landform (hillslope, terrace, etc.): Depression	on	Local	relief (concav	/e, convex, n	one):	Concave
Slope (%): 0 to 3 Lat:		Long:		Da	atum:	
Soil Map Unit Name Minnetonka Consociation	,		\WI (	Classification	n:	None
Are climatic/hydrologic conditions of the site typical for the	nis time o	of the year?	Υ (	If no, explain	in remarks)	
Are vegetation X , soil , or hydrology	, X	significantl	y disturbed?	Are	e "normal circum	nstances"
Are vegetation , soil , or hydrology	, <u> </u>	naturally p	roblematic?			present? No
SUMMARY OF FINDINGS				(If needed	l, explain any an	swers in remarks.)
Hydrophytic vegetation present? N						
Hydric soil present? Y		Is the	sampled area	a within a w	etland?	N
Indicators of wetland hydrology present? Y		If yes, o	ptional wetlar	nd site ID:	Wetland 6	
Remarks: (Explain alternative procedures here or in a se	eparate r	eport.)				
30-day precipitation rolling total is within no	rmal ra	nge. Preci				
Sample point was within a mancured lav		in goil cou	rse. nyaron	ogy disturb	ea aue to nist	one alten.
VEGETATION Use scientific names of plants				I p	T ( Wll-	
	bsolute Cover	Dominant Species	Indicator Staus		ce Test Worksh	
1	50	Y			Dominant Specie L, FACW, or FAC	
			-		imber of Dominar Across all Strata	
4				· ·	Dominant Specie	``
5					L, FACW, or FAC	
_	50 :	= Total Cove	er			
Sapling/Shrub stratun (Plot size: 15 )					ce Index Works	heet
				Total % C		4
2				OBL spec		1 = 0 $2 = 0$
				FAC spec		3 = 270
5				FACU spe		4 = 40
	0 :	Total Cove	er	UPL spec		5 = 0
Herb stratum (Plot size: 5 )				Column to	otals 100 (A	310 (B)
1 Poa pratensis	90	Υ	FAC	Prevalenc	e Index = B/A =	3.10
2 Trifolium repens	10	N	FACU			
3				1	tic Vegetation	
4				l — '	test for hydroph	, ,
5					nance test is >50 lence index is ≤3	
6				l —		
8				-	nogical adaptatio orting data in Rer	
9					ate sheet)	nano or on a
10				Proble	ematic hydrophyt	tic vegetation*
	100 :	= Total Cove	er	(expla	in)	
Woody vine stratum (Plot size: 15 )					of hydric soil and we sent, unless disturbe	etland hydrology must be ed or problematic
2				Hydro	phytic	
	0 :	= Total Cove	er	veget prese		
Remarks: (Include photo numbers here or on a separate	sheet)			1		_
, , ,	,					

SOIL	Sampling Point:	SP6-1W
50II	Sampling Point:	SP6-17/

Profile Desc	cription: (Descri	be to the	e depth needed t	o docun	nent the	indicato	r or confirm t	he absence	of indicators.)
Depth	Matrix			dox Feat					,
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Text	ure	Remarks
0 to 4	10YR 3/1	95	10YR 4/6	5	D	М	Loam		
4 to 11	10YR 4/1	95	10YR 4/6	5	D	М	Clay Loam		
11 to 26	10YR 3/2	100					Fibric Peat		
					_	_			
	Concentration, D =	= Depletion	on, RM = Reduce	d Matrix,	MS = Ma	asked Sa			PL = Pore Lining, M = Matrix
_	il Indicators:		Sor	dy Claye	ad Matrix	(84)			ematic Hydric Soils: dox (A16) (LRR K, L, R)
	tisol (A1) tic Epipedon (A2)			idy Gleye idy Redo	ed Matrix	(34)			') (LRR K, L)
	ck Histic (A3)			pped Ma	. ,				Masses (F12) (LRR K, L, R)
	Irogen Sulfide (A4	1)			ky Minera	ıl (F1)		-	k Surface (TF12)
	atified Layers (A5)			-	ed Matrix	. ,		r (explain in	
2 cr	m Muck (A10)		— Dep	oleted Ma	atrix (F3)				,
Dep	leted Below Dark	Surface	` '		Surface	. ,			
	ck Dark Surface (	,			rk Surfac		*Indic	ators of hydr	ophytic vegetation and weltand
	idy Mucky Minera	. ,		dox Depre	essions (	F8)	hydro	ology must b	e present, unless disturbed or
	n Mucky Peat or I		)						problematic
	Layer (if observe	ed):							
Type:							Hydric	soil presen	t? <u>Y</u>
Depth (inche	es):								
Remarks:									
HYDROLO	ngy								
	drology Indicato	rs.							
	cators (minimum o		required: check a	ll that an	nlv)		9	econdary Ind	dicators (minimum of two required)
-	Water (A1)	<u> </u>	required, ericen a		Fauna (B <sup>.</sup>	13)	<u>5</u>		Soil Cracks (B6)
	iter Table (A2)			•	uatic Plan	,	-		Patterns (B10)
X Saturation				_		Odor (C1	<del>-</del>		son Water Table (C2)
	arks (B1)				l Rhizospl	heres on	Living Roots	Crayfish	Burrows (C8)
	t Deposits (B2)			(C3)			<del>-</del>		n Visible on Aerial Imagery (C9)
	oosits (B3)			-		iced Iron			or Stressed Plants (D1)
	t or Crust (B4) osits (B5)			(C6)	ron Kedu	ction in 1			ohic Position (D2) utral Test (D5)
	on Visible on Aeria	l Imagery	(B7)	_ ` ′	ck Surfac	e (C7)	-	A I AC-NEC	ariar rest (D3)
	Vegetated Conca	0,	· ,	_	r Well Da	` '			
Water-S	tained Leaves (B9)	)		Other (E	xplain in I	Remarks)			
Field Obser									
Surface water		Yes	No No	X	Depth (i	,			
Water table		Yes	X No		Depth (i	-	18		dicators of wetland
Saturation policy (includes cap		Yes	X No		Depth (i	nches):	11	hy	/drology present? Y
	corded data (strea	m dallas	monitoring well	aprial nh	notos pro	wious iss	nections) if o	vailablo:	
Pescupe 160	orueu uala (SIIea	ııı yauge	, monitoring well,	a <del>c</del> nai ph	iotos, pre	vious IIIS	ppecuons), n a	valiaDIC.	
I									
Remarks:									
Remarks:									

Project/Site Hollydale Golf Course	City/County	: Plym	outh/Hen	nepin S	Sampling Date:	08/14/2019
Applicant/Owner: See Joint Application Form	S	tate:	MN	S	Sampling Point:	SP6-2U
Investigator(s): Kyle Uhler & Will Effertz		Section, Township, Range: S8 T118N R22				
Landform (hillslope, terrace, etc.): Hillslope	L	ocal relief	(concave	e, convex,	none):	Linear
Slope (%): 1 to 3 Lat:	Long	ı:			Datum:	
Soil Map Unit Name Muskego Consociation			√WI C	Classification	on:	None
Are climatic/hydrologic conditions of the site typical for this	time of the y	ear? Y	r (If	f no, expla	in in remarks)	
Are vegetation X, soil X, or hydrology	signif	icantly dist	turbed?	Δ	re "normal circu	mstances"
Are vegetation , soil , or hydrology	natura	ally proble	matic?			present? No
SUMMARY OF FINDINGS				(If neede	ed, explain any a	nswers in remarks.)
Hydrophytic vegetation present? Y						
Hydric soil present? Y	Is	the samp	oled area	within a	wetland?	N
Indicators of wetland hydrology present? N	If y	es, option	al wetlan	d site ID:		
Remarks: (Explain alternative procedures here or in a sepa	arate report.)					
30-day precipitation rolling total is within norm	-	•		-		thod is typical.
Sample point is located	within a ma	ancured	lawn wit	thin golf (	course.	
<b>VEGETATION</b> Use scientific names of plants.						
	olute Domi		dicator		nce Test Works	
Tree Stratum (Plot size: 30 ) % C	over Spec	cies S	Staus		of Dominant Speci BL, FACW, or FA	
2 3					lumber of Domina es Across all Stra	
				·	of Dominant Speci	``
5						AC: 100.00% (A/B)
	= Total	Cover				
Sapling/Shrub stratun (Plot size: 15 )					nce Index Work	sheet
1					Cover of:	
2				OBL spe FACW s		x 1 = 0 x 2 = 0
				FAC spe		x 3 = 0 240
5				FACU s		x = 4 = 60
	Total	Cover		UPL spe		x 5 = 0
Herb stratum (Plot size: 5 )				Column	totals 95 (	(A) 300 (B)
1 Poa Pratensis 8	0 Y	′ F	FAC	Prevaler	nce Index = B/A :	= 3.16
2 Trifolium repens 1	0 N	l F	ACU			
3 Taraxacum officinale	5 N	<u> </u>	ACU		hytic Vegetation	
4						ohytic vegetation
5					ninance test is >5	
					alence index is :	
8				-	phogical adaptat porting data in Re	
9					arate sheet)	smarks of on a
10					lematic hydroph	vtic vegetation*
9	5 = Total	Cover		(exp		, 0
Woody vine stratum (Plot size: 15 )					s of hydric soil and v esent, unless distur	wetland hydrology must be
			<del></del>		rophytic	
	Total	Cover		vege	etation sent? Y	
Remarks: (Include photo numbers here or on a separate si	heet)					
Tromaino. (moidde photo numbers nere or on a separate s	11061)					

SOIL	Sampling Point:	SP6-2U
5011	Sampling Point:	SD6-711

Profile Desc	ription: (Descri	be to the	e depth needed	to docun	nent the	indicato	r or confirm	the absence	of indicators.)
Depth	<u>Matrix</u>		<u>Re</u>	dox Feat	<u>ures</u>				
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Text	ture	Remarks
0 to 12	10YR 2/1	100					Loam		
12 to16	N 2.5/	100					Loam		
16 to 28	N 2.5/	100					Sapric Org	anic	
*T 0 0		<u> </u>		154			10 :	**1 (*	Di D iii M M ii
	Concentration, D =	= Depletio	on, RIVI = Reduce	a iviatrix,	IVIS = IVIS	asked Sa			PL = Pore Lining, M = Matrix
_	il Indicators: isol (A1)		Sar	ndy Gleye	d Matrix	(\$4)			ematic Hydric Soils: dox (A16) (LRR K, L, R)
	ic Epipedon (A2)			ndy Redo		(34)		Surface (S7	
	ck Histic (A3)			pped Ma					Masses (F12) ( <b>LRR K, L, R</b> )
	rogen Sulfide (A4	<b>!</b> )		ımy Muck	. ,	ıl (F1)		=	k Surface (TF12)
	tified Layers (A5)			my Gleye	-	, ,		er (explain in	
2 cr	n Muck (A10)			oleted Ma					,
Dep	leted Below Dark	Surface	(A11) Red	dox Dark	Surface	(F6)			
X Thic	k Dark Surface (	A12)	Dep	oleted Da	rk Surfac	ce (F7)	*Indic	ators of hydr	ophytic vegetation and weltand
	dy Mucky Minera	` ,		dox Depre	essions (	F8)	hydr	ology must b	e present, unless disturbed or
5 cr	n Mucky Peat or I	Peat (S3)	)						problematic
Restrictive	Layer (if observe	ed):							
Type:					<u>-</u> ,		Hydric	soil presen	1? <u>Y</u>
Depth (inche	es):				<b>-</b> 1				
Remarks:									
Likely De	pleted Below [	Dark Su	ırface.						
	•								
11)/2224									
HYDROLO									
_	drology Indicato								
-	cators (minimum o	of one is	required; check a				<u>S</u>		dicators (minimum of two required)
	Water (A1)			•	Fauna (B	,	-		Soil Cracks (B6)
Saturation	ter Table (A2)			True Aqu		odor (C1	, <u>-</u>		Patterns (B10) on Water Table (C2)
	arks (B1)			-			) Living Roots		Burrows (C8)
	t Deposits (B2)			(C3)	TTTTLZOSPI	nores on	Living 10003		n Visible on Aerial Imagery (C9)
	osits (B3)			Presence	e of Redu	iced Iron	(C4)		or Stressed Plants (D1)
Algal Ma	t or Crust (B4)			Recent I	ron Redu	ction in T	illed Soils	Geomorp	hic Position (D2)
	osits (B5)			(C6)			_	FAC-Neu	tral Test (D5)
	on Visible on Aeria			_	ck Surfac	` '			
	Vegetated Conca tained Leaves (B9)		e (B8)	_	r Well Da	ita (D9) Remarks)			
		)		Other (E	хріантін	Remarks)			
Field Obser Surface water		Yes	No	Х	Depth (i	nchee).			
Water table	•	Yes	X No		Depth (i	-	16	Inc	licators of wetland
Saturation p		Yes	X No		Depth (i	-	16	-	drology present?
(includes cap						,			
Describe rec	orded data (strea	m gauge	, monitoring well,	aerial ph	otos, pre	vious ins	pections), if a	vailable:	
		-		-	•		•		
Dame !									
Remarks:									

Project/Site Hollydale Golf Course	City/County:	Plymouth/He	nnepin Sampling Dat	te: 08/14/2019			
Applicant/Owner: See Joint Application Form	State	: MN	Sampling Poir	nt: SP6-2W			
Investigator(s): Kyle Uhler & Will Effertz	Se	Section, Township, Range: S8 T118N R22W					
Landform (hillslope, terrace, etc.): Depression	Loca	I relief (concav	ve, convex, none):	Concave			
Slope (%): 0 to 3 Lat:	Long:		Datum:				
Soil Map Unit Name Minnetonka Consociation		١W١	Classification:	PSS1Ad			
Are climatic/hydrologic conditions of the site typical for this t	ime of the year?	? Y (	If no, explain in remarks	s)			
Are vegetation , soil , or hydrology	X significan	tly disturbed?	Are "normal c	circumstances"			
Are vegetation , soil , or hydrology	naturally	problematic?	7.11.0 1.10.1.11.01.1	present? Yes			
SUMMARY OF FINDINGS			(If needed, explain ar	ny answers in remarks.)			
Hydrophytic vegetation present? Y							
Hydric soil present? Y	Is the	sampled are	a within a wetland?	Υ			
Indicators of wetland hydrology present? Y	If yes,	optional wetla	nd site ID: Wetlar	nd 6			
Remarks: (Explain alternative procedures here or in a separ	rate report.)		-				
30-day precipitation rolling total is within norma		cinitation fro	m gridded database	method is typical			
Hydrology disturbed due to historic	•	•	•				
<b>VEGETATION</b> Use scientific names of plants.	,						
Absol	lute Dominant	t Indicator	Dominance Test Wo	orksheet			
Tree Stratum (Plot size: 30 ) % Co		Staus	Number of Dominant S				
1 Salix nigra 30	Y	OBL	that are OBL, FACW, o	•			
2			Total Number of Do	minant			
3			Species Across all	Strata: 4 (B)			
4			Percent of Dominant S				
5		_	that are OBL, FACW, o	or FAC: 100.00% (A/B)			
30	= Total Cov	er er	Donald and a land w	Indial and			
Sapling/Shrub stratur (Plot size: 15 )  1 Frangula alnus 20	) Y	FACW	Prevalence Index W Total % Cover of:	orksneet			
2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	<u> </u>	TACW		5 x 1 = 45			
3			FACW species 45				
4			FAC species 0	x 3 = 0			
5			FACU species 0	x 4 = 0			
	= Total Cov	ver	UPL species 0	x 5 = 0			
Herb stratum (Plot size: 5			Column totals 90	(A) <u>135</u> (B)			
1 Impatiens capensis 25	<u> </u>	FACW	Prevalence Index = E	B/A = 1.50			
2 Persicaria sagittata 15	<u> Y</u>	OBL					
3			Hydrophytic Vegeta				
5			X Dominance test i	drophytic vegetation			
			X Prevalence index				
7			l —				
8				ptations* (provide n Remarks or on a			
9	<u> </u>		separate sheet)				
10			Problematic hydr	ophytic vegetation*			
40	= Total Cov	ver	(explain)				
Woody vine stratum (Plot size: 15 )			*Indicators of hydric soil a	and wetland hydrology must be			
1		_		listurbed or problematic			
	T-1-10		Hydrophytic vegetation				
0	= Total Cov	rei	present?	Υ			
Remarks: (Include photo numbers here or on a separate sh	eet)						
The state of the s	/						

SOIL	Sampling Point:	SP6-2W
SUIL	Samping Point.	5Pb-2VV

Profile Desc	ription: (Descri	be to the	e depth needed t	o docun	nent the	indicato	r or confirm	the absence	of indicators.)
Depth	Matrix			dox Feat					,
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Tex	ture	Remarks
0 to 18	10YR 2/1						Loam		
18 to 23	10YR 3/1	97	10YR 4/6	3	С	М	Loam		
11 to 26	10YR 4/1	95	10YR 4/6	5	С	М	Loam		
11 10 20	10111111		10111 1/0				Loan		
*Type: C = C	oncentration, D =	Depletion	on, RM = Reduce	d Matrix,	MS = Ma	asked Sa	nd Grains.	**Location:	PL = Pore Lining, M = Matrix
Hydric So	il Indicators:						Indicato	ors for Proble	ematic Hydric Soils:
	isol (A1)			dy Gleye		(S4)			dox (A16) ( <b>LRR K, L, R</b> )
	ic Epipedon (A2)			dy Redo				k Surface (S7	
	ck Histic (A3)			oped Mat	. ,			_	Masses (F12) (LRR K, L, R)
	rogen Sulfide (A4			my Muck	-				k Surface (TF12)
	tified Layers (A5)			my Gleye		(F2)	Otn	er (explain in	remarks)
	n Muck (A10) lleted Below Dark	Surface		oleted Ma lox Dark		(E6)			ı
	ck Dark Surface (			oleted Da		` '	*1		
	dy Mucky Minera	,		lox Depre					ophytic vegetation and weltand e present, unless disturbed or
	n Mucky Peat or F	. ,		iox Bopi	0010110 (	. 0)	nyu	rology must b	problematic
			'						,
Type:	_ayer (if observe	a):					Hydrid	c soil presen	t? Y
Depth (inche	e).						riyun	son presen	· · · · · · · · · · · · · · · · · · ·
Remarks:									
HYDROLO	GY								
	drology Indicato	rs:							
			required; check a	II that an	olv)		9	Secondary Inc	dicators (minimum of two required)
-	Water (A1)	<u> </u>	roquirou, orroon u		= <del>iyy</del> =auna (B	13)	2		Soil Cracks (B6)
	ter Table (A2)			•	uatic Plan	,			Patterns (B10)
X Saturatio				Hydroge	n Sulfide	Odor (C1	)		son Water Table (C2)
Water Ma	arks (B1)			Oxidized	Rhizospl	heres on l	Living Roots	Crayfish	Burrows (C8)
	t Deposits (B2)			(C3)					n Visible on Aerial Imagery (C9)
	osits (B3)			•		ced Iron			or Stressed Plants (D1)
	t or Crust (B4)			Recent I	ron Redu	ction in Ti	illed Soils		phic Position (D2)
	osits (B5) on Visible on Aerial	Imagery	(B7)		ck Surface	o (C7)		X FAC-Net	itral Test (D5)
	Vegetated Conca	0 ,	` '		r Well Da	` '			
	ained Leaves (B9)					Remarks)			
Field Obser	vations:				•	•			
Surface water		Yes	No	Х	Depth (i	nches):			
Water table		Yes	X No		Depth (i		20	Inc	licators of wetland
Saturation pr	resent?	Yes	X No		Depth (i	nches):	11	hy	/drology present? Y
(includes cap	oillary fringe)				-	•			
Describe rec	orded data (strea	m gauge	, monitoring well,	aerial ph	otos, pre	vious ins	pections), if a	available:	
Domortica									
Remarks:									

Project/Site Hollydale Golf Course	City/0	ity/County: Plymou		nnepin	Sampling Date:	08/14/2019	
Applicant/Owner: See Joint Application Form		State: MN		1	Sampling Point:	SP7-1U	
Investigator(s): Kyle Uhler & Will Effertz		Sect	tion, Townsh	ip, Range:	S8 T1	18N R22W	
Landform (hillslope, terrace, etc.): Hillslope		Local relief (concave, convex, none): Linear					
Slope (%): 1 to 3 Lat:		Long:			Datum:		
Soil Map Unit Name Klossner Consociation			١W١	Classifica	tion:	None	
Are climatic/hydrologic conditions of the site typical for this	s time c	of the year?	Υ (	(If no, expl	ain in remarks)		
Are vegetation $ X $ , soil $ X $ , or hydrology		significantl	y disturbed?		Are "normal circun	nstances"	
Are vegetation , soil , or hydrology		naturally p	roblematic?			present? No	
SUMMARY OF FINDINGS				(If need	ded, explain any ar	nswers in remarks.)	
Hydrophytic vegetation present? Y							
Hydric soil present?		Is the s	sampled are	a within a	wetland?	N	
Indicators of wetland hydrology present?		If yes, o	ptional wetla	nd site ID:		<del></del>	
Remarks: (Explain alternative procedures here or in a sep	parate r	eport.)					
30-day precipitation rolling total is within norr		-	nitation fro	m aridde	d datahase met	hod is typical	
Sample point is located						arou io typrodii	
<b>VEGETATION</b> Use scientific names of plants.							
· ·	solute	Dominant	Indicator	Domin	ance Test Works	heet	
	Cover	Species	Staus	Number	of Dominant Specie	es	
1 Picea pungens			NI		OBL, FACW, or FAC		
2				Total	Number of Domina	nt	
3				Spec	cies Across all Strat	a: 1 (B)	
4					of Dominant Specie		
5		Total Caus		that are	OBL, FACW, or FAC	C: 100.00% (A/B)	
Sapling/Shrub stratur (Plot size: 15 )	0 =	= Total Cove	er .	Proval	ence Index Works	choot	
1					6 Cover of:	Silect	
2				OBL sp		1 = 0	
3						2 = 0	
4				FAC sp	pecies 100 x	3 = 300	
5					·	4 = 80	
	0 =	= Total Cove	er	UPL sp		5 = 0	
Herb stratum (Plot size: 5 )				Colum		′ <del></del> ` ′	
	80	<u>Y</u>	FAC	Prevale	ence Index = B/A =	3.17	
<u> </u>	20	N	FACU FAC	Llydro	abutia Vagatatian	Indicators	
3 Plantago major	20		FAC	-	phytic Vegetation pid test for hydropl		
5					minance test is >5	, ,	
6					evalence index is ≤		
7				Mo	rphogical adaptation	ons* (provide	
8					pporting data in Re	**	
9				sep	parate sheet)		
10					blematic hydrophy	tic vegetation*	
<u> </u>	120 =	= Total Cove	er	(ex	plain)		
Woody vine stratum (Plot size: 15 ) 1					ors of hydric soil and woresent, unless disturb	retland hydrology must be red or problematic	
2				_	drophytic		
	0 =	= Total Cove	er		getation esent? Y	_	
Remarks: (Include photo numbers here or on a separate s	sheet)						

SOIL	Sampling Point:	SP7-1U
50II	Sambling Point:	SP7-111

Profile Desc	cription: (Descri	be to the	e depth needed t	o docun	nent the	indicato	r or confirm	the absence	of indicators.)	
Depth	<u>Matrix</u>		Re	dox Feat	<u>ures</u>					
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Tex	ture	Remarks	
0 to 20	10YR 2/1	100					Loam			
12 to16	10YR 3/1	97	10YR 4/6	5	С	М	Clay Loam	1		
16 to 28	10YR 4/1	97	10YR 4/6	5	С	М	Clay Loam	)		
							-			
*Typo: C = C	`oncontration D =	- Doplotic	n, RM = Reduce	d Matrix	MS - M	oskod Sa	nd Grains	**Location:	PL = Pore Lining, M = Matrix	
	il Indicators:	Depletit	on, Rivi = Reduce	u Mairix,	IVIO = IVIO	askeu sa			ematic Hydric Soils:	
_	isol (A1)		Sar	ndy Gleye	ed Matrix	(S4)			dox (A16) (LRR K, L, R)	
	ic Epipedon (A2)			idy Cleyc idy Redo		(04)		k Surface (S7		
	ck Histic (A3)			pped Ma					Masses (F12) ( <b>LRR K, L, R</b> )	
	rogen Sulfide (A4	<b>!</b> )		my Muck	, ,	al (F1)	Ver	y Shallow Dai	k Surface (TF12)	
Stra	tified Layers (A5)		Loa	my Gleye	ed Matrix	(F2)	Oth	er (explain in	remarks)	
2 cr	n Muck (A10)		Dep	oleted Ma	atrix (F3)				•	
	leted Below Dark			dox Dark		, ,				
	ck Dark Surface (	,		oleted Da		` '			ophytic vegetation and weltand	
	dy Mucky Minera	. ,		dox Depre	essions (	(F8)	hyd	rology must b	e present, unless disturbed or	
5 cr	n Mucky Peat or I	Peat (S3)							problematic	
	Layer (if observe	ed):								
Type:					-		Hydrid	c soil presen	t? <u>Y</u>	
Depth (inche	es): 				-					
HYDROLO	OGY									
Wetland Hy	drology Indicato	rs:								
Primary India	cators (minimum	of one is	required; check a	ll that ap	ply)		9	Secondary Inc	dicators (minimum of two required)	
Surface	Water (A1)		•	Aquatic I	Fauna (B	13)	·-	Surface	Soil Cracks (B6)	
High Wa	ter Table (A2)			True Aqu			` ,			
Saturation	` '		<u> </u>			Odor (C1			son Water Table (C2)	
	arks (B1)				Rhizosp	heres on	Living Roots		Burrows (C8)	
	t Deposits (B2)			(C3)	o of Body	and Iron	(C4)		n Visible on Aerial Imagery (C9)	
	osits (B3) t or Crust (B4)			•		ction in T			or Stressed Plants (D1) Ohic Position (D2)	
	osits (B5)			(C6)	ion iteau		ilica dolla		utral Test (D5)	
	on Visible on Aeria	l Imagery	(B7)	Thin Mu	ck Surfac	e (C7)			` ,	
Sparsely	Vegetated Conca	ve Surfac	e (B8)	Gauge o	r Well Da	ata (D9)				
Water-S	tained Leaves (B9)	)		Other (E	xplain in	Remarks)				
Field Obser				_	_					
Surface water	•	Yes	No No	X	Depth (i			.   .		
Water table		Yes	No No	X	Depth (i			_	dicators of wetland	
Saturation policy (includes cap		Yes	No	X	Depth (i	ncnes):		·   '''	/drology present? N	
		m dalide	e, monitoring well,	aerial nh	notos nre	evious ins	nections) if	available:		
20001100 100	aca dala (siica	gauge	,ororg well,	acriai pii	.5.56, pic		, , , , , , , , , , , , , , , , , , ,	a. anabio.		
Remarks:										

Project/Site Hollydale Golf Course C	city/County:	Plymouth/He	nnepin Sampling Date: 08/14/2019			
Applicant/Owner: See Joint Application Form	State	: MN	Sampling	Point:	SP7-1W	
Investigator(s): Kyle Uhler & Will Effertz	Se	Section, Township, Range: S8 T118N R22V				
Landform (hillslope, terrace, etc.): Depression	Loca	I relief (concav	ve, convex, none):	Co	oncave	
Slope (%): 0 to 3 Lat:	Long:		Datum:			
Soil Map Unit Name Klossner Consociation		١W١	Classification:	PUF	BGx	
Are climatic/hydrologic conditions of the site typical for this tin	ne of the year'	? Y (	If no, explain in rema	arks)		
Are vegetation X , soil , or hydrology	significan	tly disturbed?	Are "norm	nal circumsta	inces"	
Are vegetation , soil , or hydrology	naturally	problematic?			esent? No	
SUMMARY OF FINDINGS			(If needed, explai	in any answe	ers in remarks.)	
Hydrophytic vegetation present? Y						
Hydric soil present? Y	Is the	sampled are	a within a wetland?	? \	Y	
Indicators of wetland hydrology present?	If yes,	optional wetla	nd site ID: We	etland 7		
Remarks: (Explain alternative procedures here or in a separa	te report.)					
30-day precipitation rolling total is within normal		rinitation fro	m gridded databa	ase methor	l is typical	
Sample point was on the ed					i is typical.	
<b>VEGETATION</b> Use scientific names of plants.	9					
Absolu	te Dominan	t Indicator	Dominance Test	t Worksheef	 ł	
Tree Stratum (Plot size: 30 ) % Cov		Staus	Number of Domina			
1	·		that are OBL, FAC	•	1 (A)	
2			Total Number of	f Dominant		
3			Species Across	all Strata:	1 (B)	
4			Percent of Domina			
5			that are OBL, FACV	N, or FAC:	100.00% (A/B)	
0	= Total Cov	er		14/ 1 1		
Sapling/Shrub stratun (Plot size: 15 )			Prevalence Inde Total % Cover of:		)t	
2	_	_	OBL species	5 x1=	5	
3			FACW species	0 x 1 =		
4			FAC species	80 x 3 =	240	
5			FACU species	0 x 4 =	0	
0	= Total Cov	ver	UPL species	0 x 5 =	0	
Herb stratum (Plot size: 5 )			Column totals	85 (A)	245 (B)	
1 Poa pratensis 80	Y	FAC	Prevalence Index	< = B/A =	2.88	
2 Persicaria amphibia 5	N	OBL				
3		_	Hydrophytic Veg	_		
		_	Rapid test for	, , ,	vegetation	
5	_	_	X Dominance to X Prevalence in			
7			<del>-</del>			
8			Morphogical a supporting da			
9			separate she			
10			Problematic h	nydrophytic v	/egetation*	
85	= Total Cov	ver	(explain)			
Woody vine stratum (Plot size: 15 )			·	soil and wetlan	nd hydrology must be r problematic	
2			Hydrophytic	;		
0	= Total Cov	ver	vegetation present?	Υ		
	4)		present:			
Remarks: (Include photo numbers here or on a separate sheet	et)					

SOIL Sampling Point: SP7-1W

Profile Desc	ription: (Descri	be to the	e depth needed	to docun	nent the	indicato	r or confirm	the absence	of indicators.)	
Depth Matrix Redox Features										
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Tex	xture	Remarks	
0 to 10	10YR 2/1	100					Loam		Mucky Surface	
10 to 24	10YR 2/1	100					Clay Loan	n		
*Type: C = C	concentration, D =	= Depletion	on, RM = Reduce	d Matrix,	MS = Ma	asked Sa			PL = Pore Lining, M = Matrix	
Hydric So	il Indicators:								ematic Hydric Soils:	
	isol (A1)			ndy Gleye		(S4)			dox (A16) ( <b>LRR K, L, R</b> )	
	ic Epipedon (A2)			ndy Redo				rk Surface (S7		
	ck Histic (A3)			pped Ma	. ,			-	Masses (F12) (LRR K, L, R)	
	rogen Sulfide (A4			my Muck				•	rk Surface (TF12)	
	itified Layers (A5)			ımy Gley		(F2)	Otr	ner (explain in	remarks)	
	n Muck (A10)	Curtoso		oleted Ma		(Fe)				
	leted Below Dark ck Dark Surface (			dox Dark oleted Da		. ,	41 11			
	dy Mucky Minera	,		dox Depr					ophytic vegetation and weltand e present, unless disturbed or	
	n Mucky Peat or I	. ,		иох Берг	63310113 (	10)	Пус	irology must b	problematic	
						1			problematio	
	Layer (if observe	ed):					l locales	!!	12 V	
Type:							Hyarı	c soil presen	t? <u>Y</u>	
Depth (inche	·s).				-					
Remarks:										
Likely De	epleted below of	lark sur	face							
11)/2224										
HYDROLO										
_	drology Indicato									
-	cators (minimum o	of one is	required; check a						dicators (minimum of two required)	
	Water (A1)			•	Fauna (B	,			Soil Cracks (B6)	
	ter Table (A2)			-	uatic Plan		`		Patterns (B10)	
X Saturation	` '			-		Odor (C1			son Water Table (C2)	
	arks (B1) t Deposits (B2)			(C3)	Rnizospi	neres on	Living Roots		Burrows (C8) In Visible on Aerial Imagery (C9)	
	osits (B3)			- ` '	e of Redu	iced Iron	(C4)		or Stressed Plants (D1)	
	t or Crust (B4)			-			illed Soils		phic Position (D2)	
	osits (B5)			(C6)					utral Test (D5)	
Inundation	on Visible on Aeria	l Imagery	(B7)	Thin Mu	ck Surfac	e (C7)				
Sparsely	Vegetated Conca	ve Surfac	e (B8)	Gauge o	r Well Da	ıta (D9)				
Water-S	tained Leaves (B9)	)		Other (E	xplain in I	Remarks)				
Field Obser										
Surface water	•	Yes	No	X	Depth (i			_		
Water table		Yes	X No		Depth (i		8	_	dicators of wetland	
Saturation p		Yes	X No		Depth (i	nches):	1	-   <sup>n</sup>	ydrology present? Y	
(includes cap			monitorio · · · · !	00=101=1	otos ==	vdo::= !=	nootions\ '	ovojlekte:		
Describe rec	orded data (strea	ın gauge	, monitoring well,	aeriai pr	iotos, pre	evious ins	spections), if	avaliable:		
Remarks:										

Project/Site Hollydale Golf Course	City/	County:	Plymouth/He	nnepin	Sampling Date:	08/14/2019
Applicant/Owner: See Joint Application Form		State:	MN	I	Sampling Point:	SP8-1U
Investigator(s): Kyle Uhler & Will Effertz		Sec	tion, Townshi	ip, Range:	S8 T1	118N R22W
Landform (hillslope, terrace, etc.): Hillslope		Local	relief (concav	e, convex	x, none):	Linear
Slope (%): 1 to 3 Lat:		Long:			Datum:	
Soil Map Unit Name Nessel Consociation			١W١	Classificat	ion:	None
Are climatic/hydrologic conditions of the site typical for this	is time o	of the year?	Υ (	If no, expla	ain in remarks)	
Are vegetation X , soil X , or hydrology		significantl	y disturbed?	•	Are "normal circu	ımetances"
Are vegetation , soil , or hydrology		-	roblematic?		Ale Hollia circa	present? No
SUMMARY OF FINDINGS				(If need	ded, explain any a	nswers in remarks.)
Hydrophytic vegetation present? N						
Hydric soil present? Y		Is the	sampled area	a within a	wetland?	N
Indicators of wetland hydrology present? N		If yes, o	ptional wetlar	nd site ID:	_	
Remarks: (Explain alternative procedures here or in a sep	parate r	eport.)				
30-day precipitation rolling total is within norr			pitation fror	m gridde	d database me	ethod is typical.
Sample point is located						,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
<b>VEGETATION</b> Use scientific names of plants.						
· ·	solute	Dominant	Indicator	Domina	ance Test Works	sheet
Tree Stratum (Plot size: 30 ) % (	Cover	Species	Staus	Number	of Dominant Spec	ies
1 Picea pungens			NI	that are (	OBL, FACW, or FA	AC: 1 (A)
					Number of Domina	
3					cies Across all Stra	``
5					of Dominant Spec OBL, FACW, or FA	
	0	= Total Cove	er			( , ,
Sapling/Shrub stratur (Plot size: 15 )				Prevale	ence Index Work	sheet
1				Total %	Cover of:	
2				OBL sp		x 1 = 0
3					·	x 2 = 0
				FAC sp		x 3 = 240
5	0	= Total Cove		FACU s		x 4 = 80 x 5 = 0
Herb stratum (Plot size: 5 )		- 10101 0010	,ı	Column		(A) 320 (B)
(	80	Υ	FAC		ence Index = $B/A$	
· · · · · · · · · · · · · · · · · · ·	20	<u> </u>	FACU	- Tovale	nico index = Bir t	
3				Hydrop	ohytic Vegetation	n Indicators:
4				Raj	pid test for hydrop	ohytic vegetation
5				Doi	minance test is >	50%
6				Pre	evalence index is	≤3.0*
					rphogical adaptat	
8				-	pporting data in Reparate sheet)	emarks or on a
10				I — '		vitio vogototion*
	100	= Total Cove	er		bblematic hydroph plain)	lytic vegetation
Woody vine stratum (Plot size: 15 )					•	wetland hydrology must be
]					oresent, unless distur	rbed or problematic
	0	= Total Cove		-	drophytic getation	
	J	- 10tal 00V6	,,	_	esent? N	<u> </u>
Remarks: (Include photo numbers here or on a separate s	sheet)			1		
	,					

SOIL	Sampling Point:	SP8-1U
50II	Sampling Point:	SP8-111

Depth (Inches)         Matrix (Inches)         Redox Features         Type*         Loc**         Texture         Remarks           0 to 14         10YR 2/1         100         Loam	
0 to 14	
0 to 14   10YR 2/1   100   Loam	
14 to 22	
22 to 28	
*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Ma	trisy
Hydric Soil Indicators:  Indicators for Problematic Hydric Soils:	.IIX
Histisol (A1) Sandy Gleyed Matrix (S4) Coast Prairie Redox (A16) (LRR K, L, R)	
Histic Epipedon (A2)  Sandy Redox (S5)  Dark Surface (S7) (LRR K, L)	
Black Histic (A3)  Stripped Matrix (S6)  Iron-Manganese Masses (F12) (LRR K, L,	₹)
Hydrogen Sulfide (A4)  Loamy Mucky Mineral (F1)  Very Shallow Dark Surface (TF12)	
Stratified Layers (A5) Loamy Gleyed Matrix (F2) Other (explain in remarks)	
2 cm Muck (A10) Depleted Matrix (F3)	-
Depleted Below Dark Surface (A11) Redox Dark Surface (F6)	
X Thick Dark Surface (A12) Depleted Dark Surface (F7) *Indicators of hydrophytic vegetation and we	
Sandy Mucky Mineral (S1) Redox Depressions (F8) hydrology must be present, unless disturbed problematic	l or
Restrictive Layer (if observed):	
Type: Hydric soil present? Y Depth (inches):	
Remarks:	
HYDROLOGY	
Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)  Secondary Indicators (minimum of two records)	equired)
Surface Water (A1)  Aquatic Fauna (B13)  Surface Soil Cracks (B6)	<u>rquirou,</u>
High Water Table (A2)  True Aquatic Plants (B14)  Drainage Patterns (B10)	
Saturation (A3) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2)	
Water Marks (B1) Oxidized Rhizospheres on Living Roots Crayfish Burrows (C8)	
Sediment Deposits (B2)  ———————————————————————————————————	C9)
Drift Deposits (B3)  Presence of Reduced Iron (C4)  Stunted or Stressed Plants (D1)  Presence of Reduced Iron (C4)  Stunted or Stressed Plants (D1)	
Algal Mat or Crust (B4)  Recent Iron Reduction in Tilled Soils  Geomorphic Position (D2)  FAC-Neutral Test (D5)	
Inundation Visible on Aerial Imagery (B7)  Thin Muck Surface (C7)	
I HIGHWANDE VIDIO OF ACIAL IHAGEN IDTA THILLINGEN SUITAGE IGA	
<u> </u>	
Sparsely Vegetated Concave Surface (B8)  Gauge or Well Data (D9)	
Sparsely Vegetated Concave Surface (B8)  Water-Stained Leaves (B9)  Field Observations:  Surface water present?  Yes  No  X  Depth (inches):	
Sparsely Vegetated Concave Surface (B8)  Water-Stained Leaves (B9)  Gauge or Well Data (D9) Other (Explain in Remarks)  Field Observations: Surface water present?  Yes No X Depth (inches): Indicators of wetland	
Sparsely Vegetated Concave Surface (B8)  Water-Stained Leaves (B9)  Field Observations:  Surface water present?  Water table present?  Yes  No  X  Depth (inches):  Saturation present?  Yes  No  X  Depth (inches):  Depth (inches):  Depth (inches):  No  Depth (inches):  No  Depth (inches):  No  Depth (inches):  No  No  No  No  No  No  No  No  No  N	
Sparsely Vegetated Concave Surface (B8)  Water-Stained Leaves (B9)  Other (Explain in Remarks)  Field Observations:  Surface water present? Yes No X Depth (inches):  Water table present? Yes No X Depth (inches):  Saturation present? Yes No X Depth (inches):  (includes capillary fringe)	
Sparsely Vegetated Concave Surface (B8)  Water-Stained Leaves (B9)  Field Observations:  Surface water present?  Water table present?  Yes  No  X  Depth (inches):  Saturation present?  Yes  No  X  Depth (inches):  Depth (inches):  Depth (inches):  No  Depth (inches):  No  Depth (inches):  No  Depth (inches):  No  No  No  No  No  No  No  No  No  N	_
Sparsely Vegetated Concave Surface (B8)  Water-Stained Leaves (B9)  Other (Explain in Remarks)  Field Observations:  Surface water present? Yes No X Depth (inches):  Water table present? Yes No X Depth (inches):  Saturation present? Yes No X Depth (inches):  (includes capillary fringe)	
Sparsely Vegetated Concave Surface (B8)  Water-Stained Leaves (B9)  Other (Explain in Remarks)  Field Observations:  Surface water present? Yes No X Depth (inches):  Water table present? Yes No X Depth (inches):  Saturation present? Yes No X Depth (inches):  (includes capillary fringe)	
Sparsely Vegetated Concave Surface (B8)  Water-Stained Leaves (B9)  Other (Explain in Remarks)  Field Observations:  Surface water present?  Yes  No  X  Depth (inches):  Water table present?  Yes  No  X  Depth (inches):  Indicators of wetland hydrology present?  (includes capillary fringe)  Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	

Project/Site Hollydale Golf Course	City/County:	Plymouth/He	nnepin Sampling	Date: 08/14/2019
Applicant/Owner: See Joint Application Form	Stat	e: MN	Sampling	Point: SP8-1W
Investigator(s): Kyle Uhler & Will Effertz	S	ection, Townsh	ip, Range:	S8 T118N R22W
Landform (hillslope, terrace, etc.): Depression	Loc	cal relief (conca	ve, convex, none):	Concave
Slope (%): 0 to 3 Lat:	Long:		Datum:	
Soil Map Unit Name Nessel Consociation		١W١	Classification:	PUBGx
Are climatic/hydrologic conditions of the site typical for this	time of the yea	ır? Y (	If no, explain in rema	arks)
Are vegetation X, soil , or hydrology	significa	antly disturbed?	Are "norm	al circumstances"
Are vegetation, soil, or hydrology	naturally	y problematic?		present? No
SUMMARY OF FINDINGS			(If needed, explai	in any answers in remarks.)
Hydrophytic vegetation present? Y				
Hydric soil present? Y	Is th	e sampled are	a within a wetland?	? <u>Y</u>
Indicators of wetland hydrology present? Y	If yes	s, optional wetla	nd site ID: We	etland 8
Remarks: (Explain alternative procedures here or in a sepa	arate report.)			
30-day precipitation rolling total is within norm Sample point was on the	-	•	-	• •
<b>VEGETATION</b> Use scientific names of plants.				
Abso	olute Domina	nt Indicator	Dominance Test	Worksheet
	over Specie		Number of Dominar	•
2			Total Number of Species Across	f Dominant
			Percent of Dominar	``,
5				W, or FAC: 100.00% (A/B)
Sapling/Shrub stratur (Plot size: 15 )	= Total Co	over	Prevalence Inde	v Workshoot
1			Total % Cover of:	
			OBL species	25 x 1 = 25
3			FACW species	0 x 2 = 0
4		_	FAC species	80 x 3 = 240
5			FACU species	0 x 4 = 0
<u> </u>	= Total Co	over	UPL species	0 x 5 = 0
Herb stratum (Plot size: 5 )			Column totals	105 (A) <u>265</u> (B)
	0 Y	FAC	Prevalence Index	c = B/A = 2.52
2 <u>lemna minor</u> 2	5 Y	OBL	Hydrophytic Voc	getation Indicators:
				hydrophytic vegetation
5			X Dominance te	
6			X Prevalence in	
7			Morphogical a	adaptations* (provide
8				ata in Remarks or on a
9			separate shee	
10	T-1-10			nydrophytic vegetation*
Woody vine stratum (Plot size: 15 )	D5 = Total Co	over	(explain)	
1			present, unle	soil and wetland hydrology must be ess disturbed or problematic
2			Hydrophytic vegetation	
	) = Total Co	over	present?	Υ
Remarks: (Include photo numbers here or on a separate sl	heet)		1	
, and a separate of the separate of	- 7			

10 Sampling Point: SP8-1W

Profile Desc	ription: (Descri	be to the	e depth needed t	o docun	nent the	indicato	r or confirm the absen	ce of indicators.)
Depth	Matrix			dox Feat				Í
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
0 to 4	10YR 2/1	100					Mucky Loam	
4 to 10	10YR 4/1	55	5GY 5/1	30	D	М	Clay Loam	
			10YR 4/6	15	С	М	Clay Loam	
10 to 16	10YR 5/1	70	5GY 5/1	15	D	М	Clay Loam	
			10YR 4/6	15	С	М	Clay Loam	
								+
*Typo: C = C	`anaantration D -	- Doplotic	I on, RM = Reduce	d Motrix	NAS - NA	acked Se	nd Crains **Location	un: DL — Doro Lining, M — Matriy
	il Indicators:	Depletit	on, Kivi = Keduce	ı Mallıx,	IVIS = IVIS	askeu sa		on: PL = Pore Lining, M = Matrix  blematic Hydric Soils:
-	isol (A1)		San	dv Gleve	ed Matrix	(S4)		ledox (A16) (LRR K, L, R)
	ic Epipedon (A2)			dy Redo		(04)		S7) (LRR K, L)
	ck Histic (A3)			oped Mat	. ,			e Masses (F12) (LRR K, L, R)
	rogen Sulfide (A4	<b>!</b> )		•	xy Minera	ıl (F1)		Park Surface (TF12)
	tified Layers (A5)			-	ed Matrix		Other (explain	· · · · · ·
2 cr	n Muck (A10)		— Dep	leted Ma	trix (F3)			•
X Dep	leted Below Dark	Surface	(A11) X Red	lox Dark	Surface	(F6)		
	ck Dark Surface (	,			rk Surfac		*Indicators of hy	drophytic vegetation and weltand
	dy Mucky Minera	. ,		lox Depre	essions (	F8)	hydrology mus	be present, unless disturbed or
5 cr	n Mucky Peat or F	Peat (S3)	)					problematic
Restrictive	Layer (if observe	ed):						
Type:					_		Hydric soil pres	ent? Y
Depth (inche	es):							
Remarks:								
HYDROLO								
Wetland Hy	drology Indicato	rs:						
Primary India	cators (minimum d	of one is	required; check a	ll that ap	ply)			Indicators (minimum of two required)
	Water (A1)			•	Fauna (B	,		e Soil Cracks (B6)
	ter Table (A2)				uatic Plan			ge Patterns (B10)
X Saturation	` '					Odor (C1	·	eason Water Table (C2)
	arks (B1) t Deposits (B2)			(C3)	Rnizospi	neres on		th Burrows (C8) tion Visible on Aerial Imagery (C9)
	osits (B3)				e of Redu	iced Iron		d or Stressed Plants (D1)
	t or Crust (B4)		-					orphic Position (D2)
	osits (B5)			(C6)				eutral Test (D5)
Inundation	on Visible on Aeria	l Imagery	(B7)	Thin Mud	ck Surfac	e (C7)		
Sparsely	Vegetated Concar	ve Surfac	ce (B8)	Gauge o	r Well Da	ıta (D9)		
Water-S	tained Leaves (B9)	)		Other (E	xplain in l	Remarks)		
Field Obser								
Surface water	•	Yes	No No	X	Depth (i			ndiaton of well-red
Water table   Saturation pr		Yes Yes	X No		Depth (i			ndicators of wetland hydrology present?
(includes cap		162			Deptii (i	ncnes).		ilyurology present:
		m dalide	monitoring well	aerial nh	otos pre	wioue inc	pections), if available:	
Describe rec	oraca data (sirea	gauge	, morntoning well,	acriai pri	otos, pre	VIOUS IIIS	pooliolis, ii avallable.	
Remarks:								
I								

Project/Site Hollydale Golf Course	City/C	County: P	Plymouth/He	nnepin	Sampling Date:	08/14/2019
Applicant/Owner: See Joint Application Form		State:	MN		Sampling Point:	SP9-1U
Investigator(s): Kyle Uhler & Will Effertz		Section	on, Townshi	p, Range	: S8 T11	18N R22W
Landform (hillslope, terrace, etc.): Hillslope		Local re	elief (concav	e, conve	x, none):	Linear
Slope (%): 1 to 3 Lat:		Long:			Datum:	
Soil Map Unit Name Minnetonka Consociation		<u>-</u>	- NWI	Classifica	tion:	None
Are climatic/hydrologic conditions of the site typical for thi	is time of	f the year?	Υ (	If no, exp	lain in remarks)	
Are vegetation $\begin{tabular}{cccccccccccccccccccccccccccccccccccc$		significantly	disturbed?		Are "normal circun	nstances"
Are vegetation , soil , or hydrology		naturally pro	oblematic?			present? No
SUMMARY OF FINDINGS				(If nee	ded, explain any ar	swers in remarks.)
Hydrophytic vegetation present? N						
Hydric soil present? N		Is the sa	ampled area	a within a	a wetland?	N
Indicators of wetland hydrology present? N		If yes, op	tional wetlar	nd site ID	:	
Remarks: (Explain alternative procedures here or in a sep	parate re	eport.)				
30-day precipitation rolling total is within nor Sample point is located	mal ran	nge. Precip		-		hod is typical.
<b>VEGETATION</b> Use scientific names of plants.				-		
· · · · · · · · · · · · · · · · · · ·	solute	Dominant	Indicator	Domir	nance Test Worksl	neet
	Cover	Species	Staus NI		of Dominant Specie OBL, FACW, or FAC	
2				Total	Number of Domina	nt ,
3					cies Across all Strat	`
5		=			of Dominant Specie OBL, FACW, or FAC	
O Straight stratus (Diet size) 45	0 =	Total Cover		Dravel	Inday Morks	= 4
Sapling/Shrub stratur (Plot size: 15 )					ence Index Works 6 Cover of:	sheet
				OBL s		1 = 0
3						2 = 0
4						3 = 180
5				FACU	species 40 x	4 = 160
	0 =	Total Cover		UPL s	pecies 0 x	5 = 0
Herb stratum (Plot size: 5				Colum	n totals 100 (A	A) <u>340</u> (B)
	60	Υ	FAC	Preval	ence Index = B/A =	3.40
2 Trifolium repens	40	<u>Y</u>	FACU	L		
3					phytic Vegetation	
5					ipid test for hydroph ominance test is >50	
					evalence index is ≤	
7				_		
8					orphogical adaptation pporting data in Re	
9					parate sheet)	
10				Pro	oblematic hydrophy	tic vegetation*
<u></u>	100 =	Total Cover		(ex	φlain)	
Woody vine stratum (Plot size:15) 1					ors of hydric soil and w present, unless disturb	etland hydrology must be ed or problematic
2				_	drophytic	
	0 =	Total Cover			getation esent? N	_
Remarks: (Include photo numbers here or on a separate	sheet)			- I		

SOIL	Sampling Point:	SP9-1U
50II	Sambling Point:	529-111

Profile Desc	ription: (Descri	be to the	e depth needed t	o docun	nent the	indicato	r or confirm the a	absence c	of indicators.)
Depth	Matrix		Re	dox Feat	<u>ures</u>				-
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture		Remarks
0 to 12	10YR 2/2	100					Loam		
12 to 19	10YR 2/1	100					Clay Loam		
19 to 26	10YR 3/1	95	10YR 4/6	5	С	М	Clay Loam		
							,		
						_			
	concentration, D =	= Depletion	on, RM = Reduce	d Matrix,	MS = Ma	asked Sa			PL = Pore Lining, M = Matrix
_	il Indicators:		Com	du Olava	al Matrice	(C4)			natic Hydric Soils:
	isol (A1)			idy Gleye idy Redo		(54)			ox (A16) ( <b>LRR K, L, R</b> ) ( <b>LRR K, L)</b>
	ic Epipedon (A2) ck Histic (A3)			oped Mat	, ,				asses (F12) (LRR K, L, R)
	rogen Sulfide (A4	1)		my Muck		ıl (F1)		_	Surface (TF12)
	itified Layers (A5)			my Gleye	-			xplain in re	
	n Muck (A10)			oleted Ma		,			,
Dep	leted Below Dark	Surface		lox Dark		(F6)			
Thic	k Dark Surface (	A12)	Dep	leted Da	rk Surfac	ce (F7)	*Indicators	s of hydro	phytic vegetation and weltand
San	dy Mucky Minera	l (S1)	Red	lox Depre	essions (	F8)			present, unless disturbed or
5 cr	n Mucky Peat or F	Peat (S3)	)					p	roblematic
Restrictive	Layer (if observe	ed):							
Type:							Hydric soil	l present?	P N
Depth (inche	es):				=' = <sub>1</sub>				
Remarks:									
HYDROLO									
	drology Indicato						_		
-	cators (minimum o	of one is	required; check a			. = \		•	cators (minimum of two required)
	Water (A1)				Fauna (B	,			oil Cracks (B6)
Saturation	ter Table (A2)				uatic Plan	Odor (C1		-	Patterns (B10) n Water Table (C2)
	arks (B1)								urrows (C8)
	t Deposits (B2)			(C3)	тип200р	110100 011		•	Visible on Aerial Imagery (C9)
	osits (B3)			Presence	e of Redu	iced Iron			Stressed Plants (D1)
	t or Crust (B4)				ron Redu	ction in T			ic Position (D2)
	osits (B5)		()	(C6)				FAC-Neutr	al Test (D5)
	on Visible on Aeria	0 ,	` '		ck Surfac	` '			
	Vegetated Concar tained Leaves (B9)		:e (во)	_	r Well Da	ita (D9) Remarks)			
Field Obser	` '	, 	<del></del>	Other (E	Apiaiii iii i	(Ciliano)			
Surface water		Yes	No	Χ	Depth (i	nches).			
Water table	•	Yes	No	$\frac{\lambda}{X}$	Depth (i	,		Indi	cators of wetland
Saturation p		Yes	No	X	Depth (i	-			Irology present?
(includes ca	oillary fringe)				·				
Describe rec	orded data (strea	m gauge	e, monitoring well,	aerial ph	otos, pre	evious ins	pections), if availa	able:	
Dame - ::l									
Remarks:									

Project/Site Hollydale Golf Course C	ity/County:	Plymouth/He	nnepin Sampling	Date:	08/14/2019
Applicant/Owner: See Joint Application Form	State:	MN	Sampling	Point:	SP9-1W
Investigator(s): Kyle Uhler & Will Effertz	Sec	tion, Townshi	p, Range:	S8 T118N	R22W
Landform (hillslope, terrace, etc.): Depression	Local	relief (concav	/e, convex, none):	Co	ncave
Slope (%): 0 to 3 Lat:	Long:		Datum:		
Soil Map Unit Name Minnetonka Consociation	_	١W١	Classification:	PUE	3Gx
Are climatic/hydrologic conditions of the site typical for this tim	ne of the year?	Y (	If no, explain in rem	arks)	
Are vegetation X , soil , or hydrology	significant	tly disturbed?	Are "norm	nal circumsta	nces"
Are vegetation , soil , or hydrology	naturally p	oroblematic?			sent? No
SUMMARY OF FINDINGS			(If needed, explain	in any answe	rs in remarks.)
Hydrophytic vegetation present? Y					
Hydric soil present?	Is the	sampled are	a within a wetland?	? Y	′
Indicators of wetland hydrology present? Y	If yes,	optional wetla	nd site ID: We	etland 9	
Remarks: (Explain alternative procedures here or in a separate	te report.)				
30-day precipitation rolling total is within normal	range. Prec	•	-		is typical.
Sample point was on the ed	ge or a man	cured lawn	within goir course	<del>}</del> .	
VEGETATION Use scientific names of plants.			г		
Absolut			Dominance Test		
Tree Stratum (Plot size: 30 ) % Cover 1 Salix nigra 50	•	Staus	Number of Domina that are OBL, FAC		2 (4)
1 <u>Salix nigra</u> 50	Y	OBL		_	(A)
3		· ——	Total Number of Species Across		2 (B)
4			Percent of Domina	_	(-/
5			that are OBL, FAC		100.00% (A/B)
50	= Total Cov	er			
Sapling/Shrub stratun (Plot size: 15 )			Prevalence Inde	x Workshee	t
1			Total % Cover of	•	
2			OBL species	65 x 1 =	65
3		<del></del>	FACW species	0 x 2 =	0
			FACIL species	80 x 3 = 0 x 4 =	<u>240</u> 0
5	= Total Cov	or .	FACU species UPL species	0 x 4 = 0 x 5 =	0
Herb stratum (Plot size: 5 )		OI .	Column totals	145 (A)	305 (B)
1 Poa pratensis 80	Υ	FAC	Prevalence Index	`	2.10
2 Persicaria amphibia 15	_ <u> </u>	OBL	1 Tovalorios irias		2.10
3			Hydrophytic Ve	getation Indi	icators:
4			Rapid test for	r hydrophytic	vegetation
5			X Dominance to	est is >50%	
6			X Prevalence in	ndex is ≤3.0*	
7			Morphogical	adaptations*	(provide
8				ata in Remarl	s or on a
9			separate she		
10	Total Cau			hydrophytic v	egetation*
Woody vine stratum (Plot size: 15 )	= Total Cov	er	(explain)		
1				ess disturbed or	
2			Hydrophytic	•	
0	= Total Cov	er	vegetation present?	Υ	
Remarks: (Include photo numbers here or on a separate shee	24)		1		
Tromains, (moldde pholo numbers hele of on a separate shee	,,,				

10 Sampling Point: SP9-1W

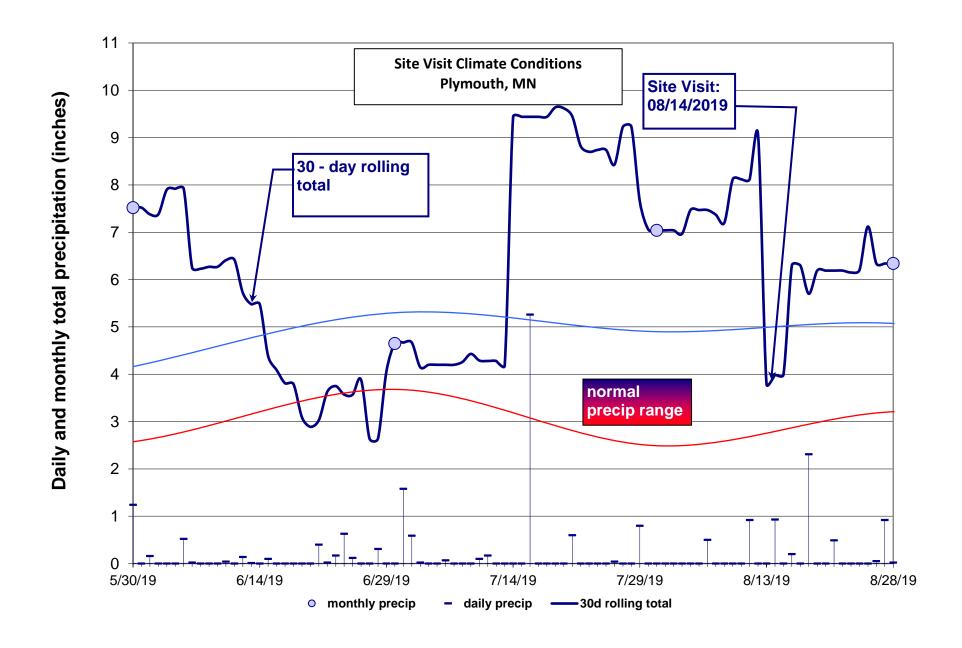
Profile Desc	cription: (Descri	be to the	e depth needed t	o docun	nent the	indicato	r or confirm the abse	nce of indicators.)
Depth	Matrix		Re	dox Feat	ures_			
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
0 to 10	10YR 2/1	100					Mucky Loam	
10 o 18	10YR 2/1	100					Clay Loam	
18 to 24	10 YR 3/1	90	10YR 4/6	10	С	М	Clay Loam	
	Concentration, D =	= Depletion	on, RM = Reduce	d Matrix,	MS = Ma	asked Sa		tion: PL = Pore Lining, M = Matrix
_	il Indicators:		Sor	dy Claye	d Matrix	(84)		oblematic Hydric Soils: Redox (A16) (LRR K, L, R)
	isol (A1) ic Epipedon (A2)			ndy Gleye ndy Redo		(34)		(S7) (LRR K, L)
	ck Histic (A3)			pped Ma	, ,			ese Masses (F12) (LRR K, L, R)
	lrogen Sulfide (A4	1)		my Muck		l (F1)		Dark Surface (TF12)
	tified Layers (A5)			my Gleye			Other (explai	• • •
	n Muck (A10)			oleted Ma		` ,		,
Dep	leted Below Dark	Surface	(A11) Red	dox Dark	Surface	(F6)		
Thic	ck Dark Surface (	A12)	Dep	oleted Da	rk Surfac	ce (F7)	*Indicators of	hydrophytic vegetation and weltand
	dy Mucky Minera	. ,		dox Depre	essions (	F8)	hydrology mu	ist be present, unless disturbed or
5 cr	n Mucky Peat or F	Peat (S3)	)					problematic
Restrictive	Layer (if observe	ed):						
Type:					-		Hydric soil pre	sent? Y
Depth (inche	es):				<b>-</b> 11			
Remarks:								
Likely De	epleted below o	lark sur	face					
LIVEROLO	NOV							
HYDROLO								
	drology Indicato							
	cators (minimum o	of one is	required; check a			40)		y Indicators (minimum of two required)
	Water (A1) ter Table (A2)				Fauna (B <sup>.</sup> uatic Plan	,		ace Soil Cracks (B6) nage Patterns (B10)
X Saturation				_		Odor (C1		Season Water Table (C2)
	arks (B1)						·	fish Burrows (C8)
Sedimen	t Deposits (B2)			(C3)				ration Visible on Aerial Imagery (C9)
Drift Dep	osits (B3)			Presenc	e of Redu	iced Iron	(C4) Stun	ted or Stressed Plants (D1)
	t or Crust (B4)				ron Redu	ction in T		morphic Position (D2)
	osits (B5)		(DZ)	(C6)		(07)	X FAC	-Neutral Test (D5)
	on Visible on Aerial Vegetated Conca	0,	` '	_	ck Surfac r Well Da	` '		
	tained Leaves (B9)					na (D9) Remarks)		
Field Obser	. ,			-	-			
Surface water		Yes	No	X	Depth (i	nches):		
Water table	•	Yes	X No		Depth (i	,	4	Indicators of wetland
Saturation pi		Yes	X No		Depth (i	nches):	0	hydrology present? Y
(includes cap	oillary fringe)							
Describe rec	orded data (strea	m gauge	e, monitoring well,	aerial ph	otos, pre	evious ins	pections), if available:	
Remarks:								

## **Hollydale Golf Course**

**Wetland Delineation Report** 

APPENDIX C

**Precipitation Data** 



### Plymouth, MN: Precipitation Summary Source: Minnesota Climatology Working Group

May 1, 2019 .43 May 2, 2019 .04 May 3, 2019 .0 May 4, 2019 .14 May 5, 2019 T May 6, 2019 0 May 7, 2019 0 May 8, 2019 .02 May 10, 2019 .02 May 11, 2019 0 May 12, 2019 T May 13, 2019 0 May 14, 2019 0 May 15, 2019 .70 May 16, 2019 .34 May 17, 2019 0 May 18, 2019 1.10 May 19, 2019 .29 May 20, 2019 .28 May 21, 2019 .29 May 22, 2019 1.10 May 23, 2019 .28 May 21, 2019 .02 May 22, 2019 .10 May 23, 2019 .28 May 21, 2019 .02 May 22, 2019 .10 May 23, 2019 .28 May 21, 2019 .03 May 25, 2019 .03 May 26, 2019 .03 May 27, 2019 .18 May 28, 2019 .18 May 29, 2019 .18 May 30, 2019 1.24 May 31, 2019 0	Jun 1, 2019 .16 Jun 2, 2019 0 Jun 3, 2019 0 Jun 4, 2019 0 Jun 5, 2019 .52 Jun 6, 2019 .02 Jun 7, 2019 0 Jun 8, 2019 0 Jun 9, 2019 0 Jun 10, 2019 .04 Jun 11, 2019 0 Jun 12, 2019 .14 Jun 13, 2019 .01 Jun 15, 2019 .10 Jun 16, 2019 T Jun 17, 2019 T Jun 18, 2019 0 Jun 19, 2019 0 Jun 20, 2019 0 Jun 20, 2019 0 Jun 21, 2019 .40 Jun 22, 2019 .02 Jun 23, 2019 .17 Jun 24, 2019 .63 Jun 25, 2019 .12 Jun 26, 2019 0 Jun 27, 2019 0 Jun 27, 2019 0 Jun 28, 2019 .12 Jun 28, 2019 .31 Jun 29, 2019 -	Jul 1, 2019 1.58  Jul 2, 2019 .59  Jul 3, 2019 .02  Jul 4, 2019 0  Jul 5, 2019 -  Jul 6, 2019 .07  Jul 7, 2019 T  Jul 8, 2019 0  Jul 10, 2019 .10  Jul 11, 2019 .17  Jul 12, 2019 0  Jul 13, 2019 0  Jul 14, 2019 0  Jul 15, 2019 0  Jul 15, 2019 0  Jul 16, 2019 5.26  Jul 17, 2019 0  Jul 18, 2019 0  Jul 18, 2019 0  Jul 18, 2019 0  Jul 19, 2019 0  Jul 19, 2019 0  Jul 20, 2019 0  Jul 21, 2019 0  Jul 22, 2019 0  Jul 23, 2019 0  Jul 24, 2019 0  Jul 25, 2019 0  Jul 26, 2019 .04  Jul 27, 2019 0  Jul 27, 2019 0  Jul 28, 2019 0  Jul 29, 2019 0  Jul 30, 2019 0  Jul 31, 2019 0  Jul 31, 2019 0	Aug 1, 2019 0 Aug 2, 2019 0 Aug 3, 2019 0 Aug 4, 2019 0 Aug 5, 2019 0 Aug 6, 2019 .50 Aug 7, 2019 0 Aug 8, 2019 0 Aug 9, 2019 0 Aug 10, 2019 0 Aug 11, 2019 .92 Aug 12, 2019 0 Aug 13, 2019 0 Aug 14, 2019 .93 Aug 15, 2019 0 Aug 16, 2019 .20 Aug 17, 2019 0 Aug 18, 2019 2.31 Aug 19, 2019 0 Aug 20, 2019 0 Aug 21, 2019 0 Aug 21, 2019 0 Aug 22, 2019 0 Aug 23, 2019 0 Aug 24, 2019 0 Aug 25, 2019 0 Aug 26, 2019 .92 Aug 27, 2019 .92 Aug 27, 2019 .92 Aug 29, 2019 0
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	1981-2010 Summary Statistics														
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	WARM	ANN	WAT
30%	0.47	0.41	1.24	1.94	2.60	3.68	2.49	3.21	1.99	1.29	1.06	0.64	16.25	26.93	27.02
70%	0.92	0.89	1.91	2.89	4.20	5.30	4.90	5.03	3.70	3.23	2.00	1.44	21.22	33.19	33.74
mean	0.78	0.75	1.73	2.66	3.51	4.42	4.08	4.12	3.34	2.44	1.65	1.12	19.47	30.60	30.41

# Minnesota State Climatology Office

State Climatology Office - DNR Division of Ecological and Water Resources University of Minnesota

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## **Precipitation Worksheet Using Gridded Database**

Precipitation data for target wetland location:

county: Hennepin township number: 118N township name: Plymouth range number: 22W nearest community: Hamel section number: 8

Aerial photograph or site visit date:

Wednesday, August 14, 2019

Score using 1981-2010 normal period

values are in inches A 'R' following a monthly total indicates a provisional value derived from radar-based estimates.	first prior month:  July 2019	second prior month:  June 2019	third prior month: May 2019
estimated precipitation total for this location:	8.57R	2.59R	7.74R
there is a 30% chance this location will have less than:	2.49	3.68	2.60
there is a 30% chance this location will have more than:	4.90	5.30	4.20
type of month: dry normal wet	wet	dry	wet
monthly score	3 * 3 = 9	2 * 1 = 2	1 * 3 = 3
multi-month score: 6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)	14 (Normal)		

#### Other Resources:

- retrieve daily precipitation data
- view radar-based precipitation estimates
- view weekly precipitation maps
- Evaluating Antecedent Precipitation Conditions (BWSR)