Application for Certificate of Public Convenience and Necessity and Utility Permit

APPENDIX G

WDNR Permit Application Part 1



414 Nicollet Mall Minneapolis, MN 55401

1-800-895-4999 xcelenergy.com

September 13, 2011

Mr. Dave Siebert Director, Office of Energy WI Department of Natural Resources 101 S. Webster Street P.O. Box 7921 Madison, WI 53707-7921

Re: Confirmation of the pre-Application Process and Submittal of the WDNR Utility permit Application for the Stone Lake to Couderay 69 kV Rebuild/161 kV Upgrade Transmission Project.

Dear Mr. Siebert:

Northern States Power Company, a Wisconsin corporation (Xcel Energy) is writing to confirm the completion of the Utility Permit pre-application process, set forth in Wis. Stat. § 30.025 (1m) and to submit to the Wisconsin Department of Natural Resources (WDNR or Department) the utility Permit Application pursuant to Wis. Stat. §30.015(ls) for the proposed Stone Lake to Couderay 69 kV Rebuild/161 kV Upgrade Transmission Project.

The proposed Project includes the following:

Substation Components:

- Constructing a new 161/69 kV substation (Radisson Substation) in Section 20 of Radisson Township, across the road from the existing Couderay Substation (to replace the existing Couderay Substation). The substation will be designed to accommodate two 161-69kV, 70MVA autotransformers, two 161kV line terminations and three 69kV line terminations. The 161kV system will be configured in a standard ring bus scheme designed for future expansion to a breaker-and-one-half-breaker scheme. The 69kV system will be configured in a standard straight bus scheme.
- Removing the existing Couderay Substation from Section 20 of Radisson Township.
- Upgrading the Stone Lake Substation in Section 5 of Bass Lake Township. The upgrades would be installed within the existing fenced area. The upgrade includes installation of a 161 kV line termination, a 161 kV breaker, a motor operated disconnect switch, and a motor operator on the existing switch in position 6R2B6 to create a sixth position in the existing 161 kV ring bus. The existing substation configuration is not conducive to convert to a breaker and a half scheme due to the limited space available and existing layout.

- Making no changes to the components within the Sand Lake Substation and Edgewater Substation.
- Construct a new 69 kV connection between the new Radisson substation and the Northwestern Wisconsin Electric Company (NWEC) owned Stacik distribution substation.

Transmission Components:

- Rebuilding the existing 69 kV connection between the Stone Lake Substation and the new Radisson Substation, including maintaining the connections to the Sand Lake Substation and the Edgewater Substation.
- Constructing a 161 kV connection between the Stone Lake Substation and the new Radisson Substation.

Xcel Energy sent the project plan for the Project to the WDNR in August, 2010, and on August 11, 2010, met with WDNR staff to discuss the Project. By this letter, Xcel Energy confirms our understanding that through the pre-application process provided for in the Wis. Stat § 30.025(lm) the WDNR, the Public Service Commission (PSCW) and Xcel Energy have conferred and made a preliminary assessment of the Project's scope and alternatives and have also identified potentially interested persons. Xcel Energy has also been made aware, in accordance with W. Stat. §§ 30.025(1m)(b) and (c), of the information required to be provided and the required timing for the information submissions, which are discussed below.

Based on the pre-application conference between the WDNR, PSCW and Xcel Energy, and the type of permits being applied for, Xcel Energy understands that the interested and potentially interested parties include the following categories:

- a) The clerk of the county, town, village or city in which the permitting activity is located;
- b) The Lac Courte Oreilles Band of Lake Superior Chippewa Indians of Wisconsin
- c) The property owners within 300 feet of either side of the proposed centerline of the transmission line;
- d) Any person who submits to the WDNR a written request for notification regarding the Stone Lake to Couderay 69 kV Rebuild/161 kV Upgrade Transmission Project or any general type of application;
- e) Other categories developed through consultation with the PSCW based on PSCW, WDNR and Department of Agriculture, Trade, and Consumer Protection *Information Requirements for Applications to Construct electric Transmission Lines and Substation,* Version 17C(Part 2.00)(Guidelines)
- Any redundancy in the mailing list will be eliminated in the actual alphabetical combining and compiling of the names and addresses.

Utility Permit Application

Through the utility permit Application under Wis. Stat. § 30.025(1s), Xcel Energy hereby applies for the following permits and authorizations:

- Wetland and Water Quality Certification to discharge fill in wetlands, pursuant to Wis. Stat. § 281.36 and Wis. Admin. Code chs. NR 103 & 299;.
- WPDES Storm Water Discharge Permit pursuant to Wis. Stat. ch. 283 and Wis. Admin. Code ch. NR 216
- Incidental Take Authorization pursuant to Wis. Stat. § 29.604, if necessary;
- Any other required permit identified by the WDNR

To support this Utility Permit Application, Xcel Energy initially files the following enclosures:

- WDNR Construction Project Consolidation Permit Application Form 3500-053;
- WDNR Supplemental Table to Form 3500-53;
- Environmental Resource Tables: Wetlands and Waterways;
- Delineation report for Radisson Substation parcel; and
- Rare Species Report, submitted under separate cover.

Any necessary Permit Fee will be paid to the WDNR after the PSCW has selected the Project Route, so that the applicable permit fees can be accurately assessed for the actual impacts permitted.

Summary of Wetland Impacts

The following table summarizes the impacts to wetlands along each route that are submitted within the Certificate of Public Convenience and Necessity (CPCN) Application:

	Preferred Route	Alternate Route A	Alternate Route B									
Permanent Impact;	0.038	0.055	0.041									
acres												
Temporary Impact fr	Temporary Impact from Matting and/or Ice Roads in All Wetlands (acres; matting											
width x access length)												
In Right-of-Way ¹	5.44	8.54	6.44									
(ROW)												
Out of ROW ²	3.66	3.66	3.66									

Conversion/Change in Type from Forested Wetland to Non-Forested Wetland (acres)										
Permanent Change1.5219.621.7(acres)(acres)(acres)(acres)(acres)(acres)										
Supporting Calculation	ons									
Length of Access Rou	tes through all Wetlan	ds (ft/miles)								
In ROW	14,810	23,250	17,532							
Out of ROW	9,958	9,958	9,958							

¹Impacts within ROW calculated as 16' wide matting/ice road by length of wetland crossing ²Impacts outside of ROW calculated as 16' access roads by length of wetland crossing

All three route alternatives examined in the CPCN application would involve wetland impacts in the form of permanent fill (the relatively small area of pole foundations) and permanent change in wetland type required to maintain the corridor (from forested wetland to non-forested wetland). Xcel Energy's preferred location for the Radisson Substation would not involve impacts to wetlands due to the substation footprint (see Figure 1 of this application), although there would be approximately 100 square feet of permanent impacts (due to two poles) and 66,160 square feet of conversion/change of type of wetland due to the required transmission connection to the preferred substation location (included in impacts listed in table above under all three routes). The alternate location for the new Radisson Substation would involve approximately 0.05 acres (2,250 square feet) of permanent impacts to wetlands due to the substation footprint and associate grading (see Figure 2).

Xcel Energy developed the preferred and alternate Radisson Substation locations after consultation with surrounding landowners. Xcel Energy designed the expansion of the ROW near all lakes to minimize wetland impacts to the greatest extent feasible. Additionally, the temporary access routes proposed for use during construction are on existing gravel or dirt roads and field tracks, minimizing impacts to wetlands these existing routes may cross.

All three routes would involve removing existing transmission structures within wetlands to a greater or lesser extent, decreasing the net impacts to wetlands. The following table summarizes the number of poles removed and corresponding reduction of acres of transmission structures wetland impacts for each route considered in the CPCN.

	Preferred Route	Alternate Route A	Alternate Route B
Number of existing poles	74 poles/ 0.020 acres	74 poles/ 0.020	78 poles/0.021
removed/ reduction of permanent impacts (acres)		acres	acres

Summary of Waterway Impacts

Xcel Energy does not propose to place transmission structures within waterways, and no temporary bridges (either clear span bridges or those that require in-stream support) are anticipated to be needed for any of the alternatives considered in the CPCN. Transmission routes that cross waterways will be engineered and constructed to span the waterways, with no temporary grading, vehicle crossing or any other temporary impacts occurring within the waterways.

Xcel Energy's representative has signed the Certification & Permission section of the attached Form 3500-53; however, this is limited in that Xcel Energy is not currently the owner of all the property which is the subject of the application. Assuming this project is approved by the PSCW, Xcel Energy will obtain easements for the transmission line construction, operation, and maintenance, and will allow the WDNR permission to enter and inspect the area that is covered by the easements.

In accordance with Wis. Stat. § 30.025(1m)(c), detailed supporting information will be included in the Application to the PSCW for a CPCN requesting authorization to construct the Project. This detailed supporting information will follow the format and content of the Guidelines. The joint CPCN Application and WDNR Utility Permit Application – Part 2 will be provided to the WDNR on the same date that it is filed with the PSCW pursuant to Wis. Stat. § 196.491(3), on or about September 7, 2011. The Archaeological-Historical report will be submitted to the PSCW for review.

To resolve the conflicting statutory timelines in Wis. Stat. § 30.025(1s), and § 196.491(3)(a)3.b and follow the intent of 2003 Wisconsin Act 89 for concurrent review by the PSCW and WDNR, Xcel Energy agrees to have the 30-day completeness determination not commence until the WDNR receives both the joint CPCN Application and the WDNR Utility Permit Application – Part 2. The period for the WDNR and the PSCW to review the applications for completeness will then be synchronized.

The attached WDNR Utility Permit Application and the additional data included in the forthcoming joint CPCN Application contain all the detailed information that is necessary for the WDNR to:

1. Determine whether the WDNR Utility Permit Application is complete within 30 days; and

2. Carry out its obligations in granting or denying the requested permits within 30 days of the date that the PSCW issues its decision on the CPCN Application, pursuant to Wis. Stat. § 30.025(4), by reviewing the environmental affects of the Project concurrently with the PSCW's review of the CPCN Application.

In accordance with the Wis. Stat. § 30.025(1s), the Applicants will provide the WDNR with supplemental information the WDNR may require after the completeness determination is made. We appreciate your consideration and assistance in the Project. If you have any questions or would like to further discuss the Project or the WDNR Utility Permit Application, please do not hesitate to contact RaeLynn Asah at 612-330-6512, raelynn.asah@xcelenergy.com or Tim Rogers at 612-330-1955 or timothy.g.rogers@xcelenergy.com.

Sincerely,

Michael L. Swenson President and CEO

Use this form for (check all that apply): Use this form for (check all that apply): Work in public waters (DNR – ch. 30, Work in waters of the U.S (Corps of E) Permit for Wetland Fill (DNR or Corps Storm water NOI – New land disturbin Storm water NOI – New land disturbin Storm water NOI – Renewal F Dam projects (DNR or Corps of Engin Read all instructions provided before cor space is needed, attach additional pages	Wis. Stats.) Engineers) s of Engineers) ng construction activity IN # neers) mpleting. If additional s.	Notice: state con and to a waterwa applicati for Altera Wetland Discharg may be available laws and and any applicati form ma under th	This form nstruction pply for a s y and wetl on form is ations to P Fill and s. ges. Perso used for ot to reques d be poster required a on. Failure y result in e provision	is used to apply site storm water and projects or authorized by c ublic Waterways 283.33, Wis. Sionally identifiable ther program pustors under Wisc d on the Departut ttachments con to complete an a fine and/or im as of applicable	y for coverage under the runoff general permit, permit or certification for dam projects. This hs 30 and 31, Wis. Stats, s, ch. 281, Wis. Stats, for tats., for Storm Water e information on this form rposes and may be made consin's Public Records ment website. This form stitute the permit id submit this application prisonment or forfeiture laws.			
Section 1: Applicant Information	Authorized Democrate	4	Title					
Applicant Name (Indiv., Org. of Entity)	Authonzed Representa	ltive						
Mailing Address	City			State Postal Code				
E-mail address	Telephone Number (ind	clude area	code)	Fax Number (include area code)				
Section 2: Landowner Information (if o	different than Applicant)							
Name (Organization or Entity)	Contact Person			Title				
Mailing Address	City			State	Postal Code			
E-mail address	Telephone Number (ind	clude area	code)	Fax Number	(include area code)			
Section 3: Other Contact Information	(check one):							
Consultant or Plan Preparer	ntractor	Other	If Other	, specify:				
Name (Organization or Entity)	Contact Person			Title				

Mailing Address	City	State	Postal Code
Maining / Kall 000	ony	Olalo	1 00101 0000
E-mail address	Telephone Number (include area code)	Fax Number	(include area code)
		1 ax Hambol	
Section 4. Project or Site Leastion			
Section 4. Froject of Site Location			

Site Name (if any)	County	Municipality		
Location Address/Description		City	Village	Township

Section 5: Location Information

Create a map depicting the perimeter of the construction site (land disturbance) and relationship to nearby water resources using the Surface Water Data Viewer <u>http://dnr.wi.gov/org/water/data_viewer.htm</u> or a 7.5-minute series topographic map. You can print the map and then draw the location on the map.

Provide the section, range, township information and if available, the Latitude and Longitude information.

	PLSS (Public Land Survey System) Method													
Quarter-	Quarter	Qua	rter	Section	Township	Range	Direction	If this site is not wholly contained						
NW	🗌 NE	□ NW	🗌 NE		N		E	on the quarter-quarter section, more description:						
SW	🗌 SE	SW	🗌 SE											

Water Resources Application for Project Permits

	Form 3500-053 (R 08/09)	Page 2
Applicant/Project Name: Northern States Power Company/Stone Lake to Couderay	County: Sawyer	

			Latitude a	and Lon	gitude Met	nod (if available)			
		Degrees	Minutes	Se	econds		Method of Determining			
Latitude										
Longit	ngitude					Other (spec	ace vvater Data viewer			
Sectio	on 6: \	Naterways and Wet	tlands (see Ins	tructions	s about pote	ntial additional a	application requirements)			
Name Refe	(desc er to	ription if unnamed) o	of closest water	oodies	Type Lake	ke Stream Stream Special status				
Yes	No	Wetlands:								
\checkmark		Wetlands will be fill	ed, excavated,	or distur	bed during o	construction or a	as part of this project.			
	The	presence of wetland	s has been eval	uated us	sing: (check	all that apply)				
		Wisconsin Wetla	ands Inventory		Wetla	nd Delineation (attach report)			
		Wetland Locato	r Tool etlands/locating.	html	Soils	(NRCS maps)	Other (specify)			
Sectio	on 7: F	Project Information	(Attach additio	nal shee	ets as neces	sary)				
Duration: Anticipated Project Start Date (month/day/yea				th/day/yea	ar)	Projected Project End Date (month/year)				
		Fall 2013				Fall 2014				
Photo	s: Pro	vide photographs of	the "before" cor	ndition.	Date	of Photographs:				

Narrative of the Project:

Provide a one to two paragraph description of the proposed project, including land and water alterations and intended use(s) of the project.

See Attachment: Narrative of the Project

Section 8: Attachments and Permit Access (Include appropriate attachments for each proposed activity.)

The following attachments, together with this form, constitute this permit application: (include all that apply) Attachment Name(s)

See Attachment: Attachments and Permit Access

I have obtained a copy of the construction site storm water runoff general permit from the department's Internet site. http://dnr.wi.gov/runoff/pdf/stormwater/permits/construction/construction_permit_S067831-3.pdf

Section 9: Certification & Permission

Certification: I hereby certify that I am the owner or authorized representative of the owner of the property which is the subject of this Permit Application. I certify that the information contained in this form and attachments is true and accurate. I understand that failure to comply with any or all of the provisions of the permit may result in permit revocation and a fine and/or imprisonment or forfeiture under the provisions of applicable laws.

Permission: I hereby give the Department permission to enter and inspect the property at reasonable times, to evaluate this notice and application, and to determine compliance with any resulting permit coverage.

Name of Owner/Authorized Representative (Print or Type)	Title	Telephone Number
Michael L. Swenson	Chief Executive Officer	(715) 737-2578
Signature		Date Signed

LEAVE BLANK - AGENCY USE ONLY											
Date Received	Fee Received \$	Construction Site ID#	Docket #	Corps #							
Initial screening:	Historic checked	Rare species (NHI) ch	ecked	Wetlands checked							

Narrative of the Project:

Northern States Power Company, a Wisconsin corporation (hereinafter referred to as "Xcel Energy") proposes to upgrade the existing transmission line system between the Stone Lake and Couderay substations in Sawyer County, Wisconsin, to include a 161 kilovolts (kV) line while maintaining the existing 69 kV line, including the construction of a new substation. As specified in the CPCN, regulated activities in/near wetlands and waterways include:

- Wetland and Water Quality Certification to discharge fill in wetlands, pursuant to Wis. Stat. § 281.36 and Wis. Admin. Code chs. NR 103 & 299;.
- WPDES Storm Water Discharge Permit pursuant to Wis. Stat. ch. 283 and Wis. Admin. Code ch. NR 216
- Incidental take Authorization pursuant to Wis. Stat. § 29.604, if necessary;
- Any other applicable permit which is required, if the need for that permit is identified by the WDNR

Attachments and Permit Access:

The following attachments, together with this form, constitute this permit application: WDNR Construction Project Consolidation Permit Application Form 3500-053;

- WDNR Supplemental Table to Form 3500-53;
- Environmental Resource Tables: Wetlands and Waterways;
- Delineation report for Radisson Substation parcel; and
- Rare Species Report, submitted under separate cover.

APPENDIX G, TABLE 1 - Preferred Route

Supplement Document to form 3500-53- Check all that apply

		Code in			Bank	Dredg	jing	Misc.			Muni- Town,		T, R``		Wetland	ASNF	રા		FEE in \$		
Segment	Waterway/Wetland*	Text**	WQC***	Bridge	Stab	Plow	Trench	Struct	Grading	County	Village, City	QQ Q	Section (E/W)		Impact ac	O/E	Trout	Other	50 300	500	1000
11	Wetland	W007	1 (A)							Sawyer	Sand Lake	NE SE	16 39N,9	9W	0.00028	3				Х	
12	Wetland	W013	5 (A)							Sawyer	Sand Lake	NE NV	/ 27 39N,9	9W	0.00138	3				Х	
12	Wetland	W013	2 (A)							Sawyer	Sand Lake	NW NE	27 39N,9	9W	0.00055	5				Х	
14A	Wetland	W016	2 (C)							Sawyer	Sand Lake	SW SV	/ 26 39N,9	9W	0.00230)				Х	
14A	Wetland	W016	1 (C)							Sawyer	Sand Lake	NE NV	/ 35 39N,9	9W	0.00115	5				Х	
14A	Wetland	W016	1 (C)							Sawyer	Sand Lake	NW NE	35 39N,9	9W	0.00115	5				Х	
14A	Wetland	W016	1 (C)							Sawyer	Sand Lake	NE NE	35 39N,9	9W	0.00115	5				Х	
16C	Wetland	W021	1 (C)							Sawyer	Couderay	NW NV	/ 5 38N,	8W	0.00115	5				Х	
16C	Wetland	W021	2 (C)							Sawyer	Couderay	NE NV	/ 5 38N,	8W	0.00230)				Х	
16C	Wetland	W021	1 (C)							Sawyer	Couderay	NW NE	5 38N,	8W	0.00115	5				Х	
16C	Wetland	W021	1 (C)							Sawyer	Couderay	SW NE	5 38N,	8W	0.00115	5				Х	
16C	Wetland	W021	2 (C)							Sawyer	Couderay	SE NE	5 38N,	8W	0.00230)				Х	
16C	Wetland	W022	1 (C)							Sawyer	Couderay	NE SV	/ 4 38N,	8W	0.00115	5				Х	
16C	Wetland	W064	1 (C)							Sawyer	Couderay	SW SV	/ 3 38N,	8W	0.00115	5				Х	
17	Wetland	W026	1 (C)							Sawyer	Couderay	SE NV	/ 11 38N,	8W	0.00115	5				Х	
17	Wetland	W030	2 (C)							Sawyer	Couderay	SW SV	/ 12 38N,	8W	0.00230)				Х	
17	Wetland	W032	1 (C)							Sawyer	Couderay	NE NV	/ 12 38N,	7W	0.00115	5				Х	
17	Wetland	W032	2 (C)							Sawyer	Couderay	NW NE	13 38N,	7W	0.00230)				Х	
17	Wetland	W032	2 (C)							Sawyer	Couderay	SE NE	13 38N,	7W	0.00230)				Х	
17	Wetland	W032	1 (C)							Sawyer	Couderay	SW NV	/ 18 38N,	7W	0.00115	5				Х	
17	Wetland	W032	2 (C)							Sawyer	Couderay	NE SV	/ 18 38N,	7W	0.00230)				Х	
17	Wetland	W032	2 (C)							Sawyer	Couderay	SE SE	18 38N,	7W	0.00230)				Х	
17	Wetland	W032	2 (C)							Sawyer	Couderay	SW SV	/ 17 38N,	7W	0.00230)				Х	
18A	Wetland	W035	1 (C)							Sawyer	Radisson	SE NE	20 38N,	7W	0.00115	5				Х	
18B	Wetland	W036	1 (C)							Sawyer	Radisson	NE SE	20 38N,	7W	0.00115	5				Х	
Radisson Sub - Alternate Site	Wetland	W036							Х	Sawyer	Radisson	NE SE	20 38N,	7W	0.05170)				Х	
		Totals	39												0.0895	5	Fee T	otal****		\$1,000	

Notes:

* UNT can be used for unnamed tributary (include ditches that appear on the USGS Quad map) but indicate what water it flows to

ie. UNT to North Fork Black River

** Insert the code used in any other reference submitted for this project (if applicable)- e.g. WL2, SC14

*** Parenthetic value refers to preliminary worst-case estimate of the number of structures to be placed in wetlands and the wetland impact area, where A = 12 sq. ft per impact area, B= 39 square feet per impact area, and C = 50 square feet per impact area **** Fee is \$500 per wetland impact or \$1,000 per County, whichever is less. Since all impacts are in Sawyer County, fee is capped at \$1,000.

APPENDIX G, TABLE 1 - Alternate Route A Supplement Document to form 3500-53- Check all that apply

		Code in		Bank	Dredging	Misc.			Muni- Town,			T, R``	Wetland	ASNR	RI	FEE in	n \$	
Segment	Waterway/Wetland*	Text**	WQC***	Bridge Stab	Plow Trench	Structu	Grading	County	Village, City	QQ Q	Section	(E/W)	Impact ac	O/E	Trout Other	50 3	300 500	1000
16C	Wetland	W021	1 (C)					Sawyer	Couderay	NW NW	5	38N, 8W	0.00115	5			Х	
16C	Wetland	W021	2 (C)					Sawyer	Couderay	NE NW	5	38N, 8W	0.00230)			Х	
16C	Wetland	W021	1 (C)					Sawyer	Couderay	NW NE	5	38N, 8W	0.00115	5			Х	
16C	Wetland	W021	1 (C)					Sawyer	Couderay	SW NE	5	38N, 8W	0.00115	5			Х	
16C	Wetland	W021	2 (C)					Sawyer	Couderay	SE NE	5	38N, 8W	0.00230)			Х	
16C	Wetland	W022	1 (C)					Sawyer	Couderay	NE SW	4	38N, 8W	0.00115	5			Х	
16C	Wetland	W064	1 (C)					Sawyer	Couderay	SW SW	3	38N, 8W	0.00115	5			Х	
17	Wetland	W026	1 (C)					Sawyer	Couderay	SE NW	11	38N, 8W	0.00115	5			Х	
17	Wetland	W030	2 (C)					Sawyer	Couderay	SW SW	12	38N, 8W	0.00230)			Х	
17	Wetland	W032	1 (C)					Sawyer	Couderay	NE NW	12	38N, 7W	0.00115	5			Х	
17	Wetland	W032	2 (C)					Sawyer	Couderay	NW NE	13	38N, 7W	0.00230)			Х	
17	Wetland	W032	2 (C)					Sawyer	Couderay	SE NE	13	38N, 7W	0.00230)			Х	
17	Wetland	W032	1 (C)					Sawyer	Couderay	SW NW	18	38N, 7W	0.00115	5			Х	
17	Wetland	W032	2 (C)					Sawyer	Couderay	NE SW	18	38N, 7W	0.00230)			Х	
17	Wetland	W032	2 (C)					Sawyer	Couderay	SE SE	18	38N, 7W	0.00230)			Х	
17	Wetland	W032	2 (C)					Sawyer	Couderay	SW SW	17	38N, 7W	0.00230)			Х	
18A	Wetland	W035	1 (C)					Sawyer	Radisson	SE NE	20	38N, 7W	0.00115	5			Х	
18B	Wetland	W036	1 (C)					Sawyer	Radisson	NE SE	20	38N, 7W	0.00115	5			Х	
30	Wetland	W016	2 (B)					Sawyer	Sand Lake	SW SW	26	39N,9W	0.00179)			Х	
30	Wetland	W016	1 (B)					Sawyer	Sand Lake	SE SW	26	39N,9W	0.00089)			Х	
30	Wetland	W016	1 (B)					Sawyer	Sand Lake	NE NW	35	39N,9W	0.00089)			Х	
30	Wetland	W016	1 (B)					Sawyer	Sand Lake	NW NE	35	39N,9W	0.00089)			Х	
30	Wetland	W016	1 (B)					Sawyer	Sand Lake	NE NE	35	39N,9W	0.00089)			Х	
35	Wetland	W038	1 (A)					Sawyer	Bass Lake	NW SW	5	39N,9W	0.00028	6			Х	
41	Wetland	W042	3 (A)					Sawyer	Sand Lake	NE NW	29	39N,9W	0.00083	6			Х	
41	Wetland	W043	2 (A)					Sawyer	Sand Lake	NW SE	29	39N,9W	0.00055	5			Х	
41	Wetland	W043	1 (A)					Sawyer	Sand Lake	SW SE	29	39N,9W	0.00028	6			Х	
41	Wetland	W044	1 (A)					Sawyer	Sand Lake	SW SE	29	39N,9W	0.00028	6			Х	
41	Wetland	W044	2 (A)					Sawyer	Sand Lake	SE SE	29	39N,9W	0.00055	5			Х	
41	Wetland	W044	5 (A)					Sawyer	Sand Lake	SW SW	28	39N,9W	0.00138	5			Х	
41	Wetland	W044	4 (A)					Sawyer	Sand Lake	SE SW	28	39N,9W	0.00110)			Х	
41	Wetland	W044	5 (A)					Sawyer	Sand Lake	SW SE	28	39N,9W	0.00138	5			Х	
41	Wetland	W044	1 (A)					Sawyer	Sand Lake	NE NE	33	39N,9W	0.00028	3			Х	
42	Wetland	W044	4 (A)					Sawyer	Sand Lake	NE NE	33	39N,9W	0.00110				X	
42	Wetland	W044	5 (A)					Sawyer	Sand Lake	SE NE	33	39N,9W	0.00138	5			X	
42	Wetland	W044	3 (A)					Sawyer	Sand Lake	NE SE	33	39N,9W	0.00083	6			X	
43	Wetland	W044	4 (A)					Sawyer	Sand Lake	NE SE	33	39N,9W	0.00110)			X	
43	Wetland	W044	1 (A)					Sawyer	Sand Lake	SE SE	33	39N,9W	0.00028	5			X	
43	Wetland	W044	5 (A)					Sawyer	Sand Lake	SW SW	34	39N,9W	0.00138	5			X	
43	Wetland	W044	5 (A)					Sawyer	Sand Lake	SE SW	34	39N,9W	0.00138	6			X	
43	Wetland	W044	2 (A)					Sawyer	Sand Lake	NE NW	3	38N,9W	0.00055				X	
43	Wetland	W044	8 (A)					Sawyer	Sand Lake	NW NE	3	38N,9W	0.00220)			X	
43	Wetland	W044	2 (A)					Sawyer	Sand Lake	NE NE	3	38N,9W	0.00055				X	
43	Wetland	W044	3 (A)					Sawyer	Sand Lake	SE NE	3	38N,9W	0.00083	5			X	
44	Wetland	W050	1 (A)					Sawyer	Sand Lake	SW NW	2	38N,9W	0.00028		<u></u>		X	
44	Wetland	W 050	2 (A)					Sawyer	Sand Lake	SE NW	2	38N,9W	0.00055	X	Х		X	+
	Wetland	VV 051	1 (A)				N N	Sawyer	Sand Lake	NE SW	2	38N,9W	0.00028	5			X	—
Radisson Sub - Alternate Site	vvetland	VV 036					X	Sawyer	Radisson	NE SE	20	38N, 7W	0.05170	2		Ļ	X	
		l otals	103										0.1065		⊢ee Total***	×	\$1,000	

Notes:

* UNT can be used for unnamed tributary (include ditches that appear on the USGS Quad map) but indicate what water it flows to

ie. UNT to North Fork Black River

** Insert the code used in any other reference submitted for this project (if applicable)- e.g. WL2, SC14

*** Parenthetic value refers to preliminary worst-case estimate of the number of structures to be placed in wetlands and the wetland impact area, where A = 12 sq. ft per impact area, B= 39 square feet per impact area, and C = 50 square feet per impact area

**** Fee is \$500 per wetland impact or \$1,000 per County, whichever is less. Since all impacts are in Sawyer County, fee is capped at \$1,000.

APPENDIX G, TABLE 1 - Alternate Route B

Supplement Document to form 3500-53- Check all that apply

		Code in			Bank	Dredgi	ng	Misc.			Muni- Town,				T, R``	Wetland	ASN	રા		FEE	in \$		
Segment	Waterway/Wetland*	Text**	WQC***	Bridge	Stab	Plow 1	French	Structi	Grading	County	Village, City	QQ	Q	Section	(E/W)	Impact ac	O/E	Trout	Other	50	300	500	1000
17	Wetland	W064	1 (C)							Sawyer	Couderay	SW	SW	3	38N, 8W	0.00115)		
17	Wetland	W026	1 (C)							Sawyer	Couderay	SE	NW	11	38N, 8W	0.001148					X		
17	Wetland	W030	2 (C)							Sawyer	Couderay	SW	SW	12	38N, 8W	0.002296					X	<u>,</u>	
17	Wetland	W032	1 (C)							Sawyer	Couderay	NE	NW	12	38N, 7W	0.001148)	<u> </u>	
17	Wetland	W032	2 (C)							Sawyer	Couderay	NW	NE	13	38N, 7W	0.002296					X	<u>,</u>	
17	Wetland	W032	2 (C)							Sawyer	Couderay	SE	NE	13	38N, 7W	0.002296)	<u> </u>	
17	Wetland	W032	1 (C)							Sawyer	Couderay	SW	NW	18	38N, 7W	0.00115)	<u></u>	
17	Wetland	W032	2 (C)							Sawyer	Couderay	NE	SW	18	38N, 7W	0.00230					X	<u>,</u>	
17	Wetland	W032	2 (C)							Sawyer	Couderay	SE	SE	18	38N, 7W	0.00230)	,	1
17	Wetland	W032	2 (C)							Sawyer	Couderay	SW	SW	17	38N, 7W	0.00230)	<u></u>	
18A	Wetland	W035	1 (C)							Sawyer	Radisson	SE	NE	20	38N, 7W	0.00115					\rangle		1
18B	Wetland	W036	1 (C)							Sawyer	Radisson	NE	SE	20	38N, 7W	0.00115)	<u> </u>	
46	Wetland	W051	1 (A)							Sawyer	Sand Lake	NE	SW	2	38N,9W	0.00028					\rangle		
52	Wetland	W004	1 (C)							Sawyer	Sand Lake	NW	SW	9	39N,9W	0.00090)		
61	Wetland	W013	1 (A)							Sawyer	Sand Lake	SE	NW	27	39N,9W	0.00028)		
61	Wetland	W013	1 (A)							Sawyer	Sand Lake	SW	NE	27	39N,9W	0.00028					\rangle		
62	Wetland	W013	1 (C)							Sawyer	Sand Lake	SE	NW	27	39N,9W	0.00115)		1
63	Wetland	W048	3 (C)							Sawyer	Sand Lake	NE	NE	3	38N, 9W	0.00344	Х	Х)		
63	Wetland	W049	1 (C)							Sawyer	Sand Lake	NW	NW	2	38N, 9W	0.00115					\rangle		
66	Wetland	W054	1 (C)							Sawyer	Sand Lake	SE	NE	11	38N, 9W	0.00115	Х	Х			X		
66	Wetland	W054	2 (C)							Sawyer	Sand Lake	NE	SE	11	38N, 9W	0.00230	Х	Х			\rangle		
66	Wetland	W054	1 (C)							Sawyer	Sand Lake	SE	SE	11	38N, 9W	0.00115					\rangle		
66	Wetland	W054	1 (C)							Sawyer	Sand Lake	SE	NE	14	38N, 9W	0.00115)		1
66	Wetland	W054	2 (C)							Sawyer	Sand Lake	NE	SE	14	38N, 9W	0.00230					\rangle		
68	Wetland	W055	1 (C)							Sawyer	Couderay	NE	NW	20	38N, 8W	0.00115	Х	Х)		1
68	Wetland	W055	1 (C)							Sawyer	Couderay	NW	NE	20	38N, 8W	0.00115	Х	Х)		
68	Wetland	W056	1 (C)							Sawyer	Couderay	NE	NW	21	38N, 8W	0.00115					\rangle		
69	Wetland	W058	1 (C)							Sawyer	Couderay	SW	SW	10	38N, 8W	0.00115)		
Radisson Sub - Alternate Site	Wetland	W036							Х	Sawyer	Radisson	NE	SE	20	38N, 7W	0.05170					X		
		Totals	38													0.0924		Fee T	otal***	*	\$	1,000	

Notes:

* UNT can be used for unnamed tributary (include ditches that appear on the USGS Quad map) but indicate what water it flows to ie. UNT to North Fork Black River

** Insert the code used in any other reference submitted for this project (if applicable)- e.g. WL2, SC14

*** Parenthetic value refers to preliminary worst-case estimate of the number of structures to be placed in wetlands and the wetland impact area, where A = 12 sq. ft per impact area, B= 39 square feet per impact area, and C = 50 square feet per impact area **** Fee is \$500 per wetland impact or \$1,000 per County, whichever is less. Since all impacts are in Sawyer County, fee is capped at \$1,000.

APPENDIX G, TABLE 2 - Environmental Inventory Table - Wetlands and Waterways

Preferred Rout	te												
		Feature Type, Name	-	Map Page	Survey	Proposed	Wetland Xing	Changes to	Impact	Stream	Working	Temporary Crossing	DNR Comment
Segment	Feature ID	and Designation	Resource Description	Index	Technique*	Perm. Structure**	Length (ft)	Corridor (ft)	Justification	Characteristics	Comments	Method	
11	W07	Wetland	Scrub/shrub wetland	Preferred-6	В	1 (A)	375	35	span length requirements, access route		scrub/shrub wetland crossed by existing transmission line	Frozen conditions or matting	
		Tonana			5	. (.)	010		apartiongen requiremente, accoco reato			The contraction of the array	
			Emorgont corub						Adjacent to existing POW: placement of new poles will		Waterway appears to be not present within existing ROW,		
12	W010	Wetland/Waterway	shrub/Sand Creek	Preferred-7	в		221	35	avoid wetland and waterway, no change to wetland	shown on WNDR 24k hydro layer	wetland is emergent/wet meadow, scrub shrub within ROW	No temporary crossing anticipated;wire pull only	
			Emergent, scrub								Waterway appears to be not present within existing ROW,		
			snrub, forested/Unnamed								of any banked portion: adjacent wetland is emergent/wet		
			Tributary to Sand								meadow, scrub shrub within ROW. Approximately 56 ft of the		
12	W010	Wetland/Waterway	Lake	Preferred-7	В		135	35	Access	shown on WNDR 24k hydro layer	crossing is forested; resulting in 0.045 acres of wetland type	Frozen conditions or matting	
12	W013	Wetland	Emergent, scrub shrub	Preferred-7	в	7 (A)	314	35	span length requirements access route		emergent/scrub shrub wetland associated with Lower Holly Lake	Frozen conditions or matting	
12		Tronana		i iolollod i	5				apartongen requiremente, access read			The contraction of making	
10	10/04 4	Wetles d		Destanted 0	P		100	25	Adjacent to existing ROW; placement of new poles will		Freedowstand encode by evicting tennesies in the		
13	VV014	wetland	Emergent/Scrub	Preierred-9	в		108	30	avoid wettand and waterway, no change to wettand		Emergent wetland crossed by existing transmission line Emergent, scrub/shrub wetland crossed by existing	No temporary crossing anticipated; wire pull only	
14A	W016	Wetland	Shrub	Preferred-10 &12	В	5 (C)	3,588	0	span length requirements and access routes		transmission line	Frozen conditions or matting	
	14/047	M/-111		De la complete	5		101		A		Court shart water damaged by evicting transmission line	F	
14A 16A	W017 W060	Wetland	Emergent wetland	Preferred-15 Preferred-15	B		124	0	Access		Emergent wetland crossed by existing transmission line	Frozen conditions or matting	
			Scrub/shrub		-								
100	14/04/0	M	wetland/Unnamed	De la complete	5				A		Waterway not present within existing ROW; scrub/shrub		
160	W019	vvetland/vvaterway	tributary	Preferred-15	В		238	0	Access	River is fast flowing, water width = 20			
										feet, bank width = 20 ft, water depth			
400	14/000		Couderay River and	Destanted 40	P		450			= 4 to 6 ft. Couderay River is	Couderay River and adjacent emergent and scrub/shrub		
160	VV020	wetland/waterway	Emergent/Scrub	Preierrea-18	в		159	0	No temporary impacts proposed		Emergent, scrub/shrub wetland crossed by existing	No temporary crossing anticipated; wire pull only	
16C	W021	Wetland	Shrub	Preferred-19	В	7 (C)	4,623	0	span length requirements and access routes prevent avoida		transmission line	Frozen conditions or matting	
160	W/022	Wotland	Scrub/Shrub wotland	Proformed 21	P	1 (C)	042		span longth requirements and access routes provent avoida		Scrub shrub watland crossed by existing transmission line	Frazan conditions or matting	
100	11022	Wetland	Scrub/Shrub wetland	T Teleffed-21		1 (0)	342	. 0	spannength requirements and access routes prevent avoida	Creek is fast flowing, water width =			
										10 feet, bank width = 10 ft, water			
160	W/023	Wetland/Waterway	Devil's Creek and adjacent wetlands	Proferred-21	в		165		No temporary impacts proposed	depth = 3 to 4 ft. Devil's Creek is	Devil's Creek and adjacent scrub/shrub wetland within	No temporary crossing anticipated wire pull only	
16C	W023	Wetland	Emergent wetland	Preferred-18	В		70	0	Access		Emergent wetland crossed by existing transmission line	Frozen conditions or matting	
16C	W062	Wetland	Emergent wetland	Preferred-18	В		138	0	Access		Emergent wetland crossed by existing transmission line	Frozen conditions or matting	
16C	W063	Wetland	Emergent wetland	Preferred-18	В		143	0	No temporary impacts proposed		Emergent wetland crossed by existing transmission line	No temporary crossing anticipated;wire pull only	
16C	W064	Wetland	Scrub/shrub wetland	Preferred-22	в	1 (C)	268	, o	span length, access		Scrub/shrub wetland crossed by existing transmission line	Frozen conditions or matting	
17	W069	Wetland	Scrub/shrub wetland	Preferred-22	В		164	0	No temporary impacts proposed	 Pivor is fast flowing, water width - 20	scrub/shrub wetland crossed by existing transmission line	No temporary crossing anticipated;wire pull only	
										feet, bank width = 20 ft, water depth			
			Couderay River and							= 4 to 6 ft. Couderay River is	Couderay River and adjacent emergent and scrub/shrub		
17	W024	Wetland/Waterway	adjacent wetlands	Preferred-22	B		395	0	No temporary impacts proposed	designated OERW	wetland within existing ROW.	No temporary crossing anticipated;wire pull only	
17	W025	Wetland	Scrub/shrub wetland	Preferred-22	в		367	· 0	No temporary impacts proposed within ROW		scrub/shrub wetland crossed by existing transmission line	No temporary crossing anticipated;wire pull only	
17	W026	Wetland	Emergent, Scrub/shrub wetland	Preferred-23	в	1 (C)	819	0	span length requirements access route		Emergent, scrub/shrub wetland crossed by existing transmission line	Frozen conditions or matting	
	11020	Trottand	eerab/errab fredaria		5	. (0)	010		apartiongen requiremente, accoccitence				
			Scrub/shrub wetland,								Waterway appears to be not present within existing ROW,		
17	W027	Wetland/Waterway	Couderav River	Preferred-23	в		367	, ₀	No temporary impacts proposed	shown on WNDR 24k hvdro laver	wetland is scrub shrub within ROW	No temporary crossing anticipated; wire pull only	
17	W030	Wetland	Scrub/shrub wetland	Preferred-24	В	2 (C)	1,005	0	span length requirements, access route		Scrub shrub wetland crossed by existing transmission line	Frozen conditions or matting	
17	W031	Wetland	Scrub/shrub wetland	Preferred-24	в		350	0	Access		Scrub shrub wetland crossed by existing transmission line	Frozen conditions or matting	
			Emergent, Scrub								Emergent, scrub/shrub wetland crossed by existing		
17	W032	Wetland	shrub wetland	Preferred-24-6	В	12 (C)	9,189	0	span length requirements, access route	 Creek is slow, water width = 2 _ 4 ft	transmission line	Frozen conditions or matting	
			Scrub/shrub							water depth = $1-2$ ft, bank width = $3 - 4$ ft,			
			wetland/Section 20							4 ft; adjacent wetlands are			
17	W034	Wetland/Waterway	Creek	Preferred-26	В		436	0	No temporary impacts proposed	scrub/shrub	Section 20 Creek and associated scrub/shrub wetland	No temporary crossing anticipated;wire pull only	
			Scrub/shrub, forested								ROW. Approximately 68 ft of the crossing is forested;		
18A	W035	Wetland	wetland	Preferred-27	В	1 (C)	345	100	span length, access		resulting in 0.16 acres of wetland type change	Frozen conditions or matting	
											Approximately 574 ft of the crossing is forested: resulting in		
											1.32 acres of wetland type change. If alternate site for		
100	W026	Watland	Emergent, forested	Preferred-27; Figures 1 and 2	C	1 (C)	700	400	anon length access		Radisson Substation is selected, a permanent grading of 2 250 square feet would occur	Frazan conditions or motting	
188	05000	Totals	woulding	i iguies i allu z	U C	i (C)	786	100	span rength, access			Flozen conditions or matting	

Notes: * A= aerial photo inspection (offsite delineation); B = Field checked aerial photo (offiste and field observations); C = 1987 Manual delineation (onsite delineation)

** Parenthetic value refers to preliminary worst-case estimate of the number of structures to be placed in wetlands and the wetland impact area, where A = 12 sq. ft per impact area, B= 39 square feet per impact area, and C = 50 square feet per impact area

APPENDIX G, TABLE 2 - Environmental Inventory Table - Wetlands and Waterways

Alternate Rout	te A												
_		Feature Type, Name		Map Page	Survey	Proposed	Wetland Xing	Changes to	Impact	Stream	Working	Temporary Crossing	DNR Comment
Segment	Feature ID	and Designation	Resource Description	Index	Technique*	Perm. Structure**	Length (ft)	Corridor (ft)	Justification	Characteristics	Comments	Method	
27	W07	Wetland	Scrub/shrub wetland	Alt A-6	в		375	5 0	Access		line	Frozen conditions or matting	
											Waterway appears to be not present within existing		
											ROW, however, no construction crossing proposed.		
28	W010	Wetland/Waterway	Emergent, scrub shrub/Sand Creek	Alt A-7	в		221		No temporary impacts proposed	shown on WNDR 24k hydro laver	Adjacent wetland is emergent/wet meadow, scrub shrub within ROW	No temporary crossing anticipated: wire pulling only	
									······································		Waterway appears to be not present within existing	······································	
			Emorgont, corub chrub								ROW, construction access not anicipated to require		
			forested/Unnamed								wetland is emergent/wet meadow, scrub shrub within		
28	W010	Wetland/Waterway	Tributary to Sand Lake	Alt A-7	В		135	5 0	Access	shown on WNDR 24k hydro layer	ROW.	Frozen conditions or matting	
28	W013	Wetland	Emergent scrub shrub	Alt A-9	в		314	1 0	Access		emergent/scrub shrub wetland associated with Lower	Frozen conditions or matting	
20	W013	Welland	Emorgoni, solub shiub	AILA-3	5		517		1,00000				
29	W014	Wetland	Emergent wetland	Alt A-10	В		168	3 (Access		Emergent wetland crossed by existing transmission line	No temporary crossing anticipated;wire pull only	
30	W016	Wetland	Emergent/Scrub Shrub	Alt A-10811	в	6 (B)	3 589	2	span length requirements and		Emergent, scrub/shrub wetland crossed by existing transmission line	Frozen conditions or matting	
	WOID	Welland		AILA-10011	5	0(D)	0,000	, , , , , , , , , , , , , , , , , , , ,			Scrub shrub wetland crossed by existing transmission		
30	W017	Wetland	Scrub/shrub wetland	Alt A-12	В		124	4 C	Access		line	Frozen conditions or matting	
16B	W060	Wetland	Emergent wetland	Δlt Δ-12	в		97	7 0	Access	_	Emergent wetland crossed by existing transmission line	Frozen conditions or matting	
100	*****	Welland	Scrub/shrub		5		51		100033				
			wetland/Unnamed								Waterway not present within existing ROW; scrub/shrub		
16C	W019	Wetland/Waterway	tributary	Alt A-12	В		238	3 (Access	shown on WNDR 24k hydro layer Piver is fast flowing, water width = 20 feet, bank	wetland within ROW		
			Couderay River and							width = 20 ft, water depth = 4 to 6 ft. Couderay	Couderay River and adjacent emergent and		
16C	W020	Wetland/Waterway	adjacent wetlands	Alt A-13	В		159	9 (No temporary impacts proposed	River is designated OERW	scrub/shrub wetland within existing ROW	No temporary crossing anticipated;wire pull only	
									span length requirements and		Emergent, scrub/shrub wetland crossed by existing		
16C	W021	Wetland	Emergent/Scrub Shrub	Alt A-14	в	7 (C)	4,623	3 0) access routes prevent avoidance		transmission line	Frozen conditions or matting	
16C	W022	Wetland	Scrub/Shrub wetland	Alt A-15	в	1 (C)	942	, ,	span length requirements and access routes prevent avoidance		Scrub shrub wetland crossed by existing transmission line	Frozen conditions or matting	
		Trolland		/	-	. (0)	0.12			Creek is fast flowing, water width = 10 feet, bank			
400	14/000	10/ - 41 I 00/ - 4	Devil's Creek and	AH A 45	P		405	_		width = 10 ft, water depth = 3 to 4 ft. Devil's Creek	Devil's Creek and adjacent scrub/shrub wetland within		
160	VV023	wetland/waterway	adjacent wetlands	Alt A-15	в		165		No temporary impacts proposed	is designated trout stream		No temporary crossing anticipated; wire pull only	-
16C	W061	Wetland	Emergent wetland	Alt A-13	В		70) (Access		Emergent wetland crossed by existing transmission line	Frozen conditions or matting	
160	W060	Watland	Emorgont wotland	AH A 12	в		100		Access		Emorgant watland grosped by existing transmission line	Frozen conditions or motting	
100	W002	Welland		Alt A-15	В		130		Access				
16C	W063	Wetland	Emergent wetland	Alt A-13	В		143	3 (No temporary impacts proposed		Emergent wetland crossed by existing transmission line	No temporary crossing anticipated;wire pull only	
160	W/064	Watland	Scrub/shrub wotland	AH A 16	D	1 (C)	269		span length requirements, access		Scrub/shrub wetland crossed by existing transmission	Frozen conditions or matting	
160	VV 064	welland	Scrub/smub wettand	AIL A-16	В	T (C)	200		loute		scrub/shrub wetland crossed by existing transmission	Prozen conditions of mailing	+
17	W069	Wetland	Scrub/shrub wetland	Alt A-16	В		164	4 0	No temporary impacts proposed		line	No temporary crossing anticipated;wire pull only	
			Couderay River and							River is fast flowing, water width = 20 feet, bank width = 20 ft, water depth = 4 to 6 ft. Coulderay	Courderay Piver and adjacent emergent and		
17	W024	Wetland/Waterway	adjacent wetlands	Alt A-16	В		395	5 0	No temporary impacts proposed	River is designated OERW	scrub/shrub wetland within existing ROW	No temporary crossing anticipated;wire pull only	
									No temporary impacts proposed		scrub/shrub wetland crossed by existing transmission		1
17	W025	Wetland	Scrub/shrub wetland	Alt A-16	В		367	7 () within ROW		line	No temporary crossing anticipated;wire pull only	-
17	W026	Wetland	wetland	Alt A-17	в	1 (C)	819) route		transmission line	Frozen conditions or matting	
1			Scrub/shrub wetland, Unnamed Tributary to			1				1	waterway appears to be not present within existing ROW, however, no construction crossing proposed	1	
17	W027	Wetland/Waterway	Couderay River	Alt A-17	В		367	7 (No temporary impacts proposed	shown on WNDR 24k hydro layer	Adjacent wetland is scrub shrub within ROW	No temporary crossing anticipated;wire pull only	
									span length requirements, access		Scrub shrub wetland crossed by existing transmission		
17	W030	Wetland	Scrub/shrub wetland	Alt A-18	В	2 (C)	1,005		route		Ine Scrub shrub wetland crossed by existing transmission	Frozen conditions or matting	
17	W031	Wetland	Scrub/shrub wetland	Alt A-18	в		350	0 0	Access		line	Frozen conditions or matting	
47	14/000		Emergent, Scrub shrub	AK A 40.00	5	10 (0)	0.400		span length requirements, access		Emergent, scrub/shrub wetland crossed by existing		
17	W032	wetland	Scrub/shrub	Alt A-18-20	в	12(C)	9,189		Toute	 Creek is slow, water width = 3 - 4 ft, water depth =		Frozen conditions of matting	-
			wetland/Section 20							1-2 ft, bank width = 3 - 4 ft; adjacent wetlands are			
17	W034	Wetland/Waterway	Creek	Alt A-20	В		436	6 0	No temporary impacts proposed	scrub/shrub	Section 20 Creek and associated scrub/shrub wetland	No temporary crossing anticipated;wire pull only	-
1						1				1	Scrub/shrub, forested wetland; no existing transmission	1	
			Scrub/shrub, forested	I					span length requirements, access		ROW. Approximately 68 ft of the crossing is forested;		
18A	W035	Wetland	wetland	Alt A-21	в	1 (C)	345	5 100) route		resulting in 0.16 acres of wetland type change	Frozen conditions or matting	+
1											Emergent, forested wetland; no existing transmission		
1						1				1	ROW. Approximately 574 ft of the crossing is forested;	1	
1			Emergent forested	Alt A-21; Figures 1 and					span length requirements access		resulting in 1.32 acres of wetland type change. If alternate site for Radisson Substation is selected a		
18B	W036	Wetland	wetland	2	с	1 (C)	786	5 100) route		permanent grading of 2,250 square feet would occur	Frozen conditions or matting	
	14/000		Encounter de l		5				span length requirements, access		Emergent wetland- crossed by adjacent, existing		
35	VVU38	vvetiand	Emergent wetland	Alt A-2	в	1 (A)	267	50	route		transmission line	FIOZEIL CONDITIONS OF MATTING	

			scrub/shrub wetland/Sissabagamma						span length requirements, access	Creek is fast flowing, water width = 5 feet, bank	Sissabagamma Creek and associated scrub shrub	Frozen conditions or matting for wetland crossing; no mechanized crossing of Sissabagamma Creek, wire pull	
41	W042	Wetland/Waterway	Creek	Alt A-27	В	3 (A)	974	50) route	width = 5 ft, water depth = 2 to 3 ft	wetlands	only	
									span length requirements, access		Forested wetlands; new transmission ROW would		
41	W043	Wetland	Forested wetland	Alt A-28	В	3 (A)	775	50	route		result in 0.89 acres of change in type	Typical forested wetland methods	
									span length requirements, access		Forested wetlands; new transmission ROW would		
41	W044	Wetland	Forested wetland	Alt A-28&29	В	18 (A)	4,734	50	route		result in 5.43 acres of change in type	Typical forested wetland methods	
									span length requirements, access		Forested wetlands; new transmission ROW would		
42	W044	Wetland	Forested wetland	Alt A-29&30	В	12 (A)	3,585	50	route		result in 4.11 acres of change in type	Typical forested wetland methods	
									span length requirements, access		Forested wetlands; new transmission ROW would		
43	W044	Wetland	Forested wetland	Alt A-30-32	A	30 (A)	7,982	50	route		result in 9.16 acres of change in type	Typical forested wetland methods	
										Hauer creek is fast, water width - 4 - 6 ft, water	Hauer creek and associated Scrub shrub/forested		
			Forested, scrub/shrub						span length requirements, access	depth is 3 - 4 ft, bank width is 4 - 6 ft. Hauer Creek	wetlands; approximately 457 ft of crossing is forested,	Frozen conditions or matting for wetland crossing; no	
44	W050	Wetland/Waterway	wetland/Hauer Creek	Alt A - 32	В	3 (A)	717	50) route	is designated OERW and trout stream	resulting in 0.52 acres of change in type	mechanized crossing of Hauer Creek, wire pull only	
			Forested wetland/unnamed tributary to Summit						span length requirements, access	shown on WNDR 24k hydro layer; stream may not	Forested wetlands; new transmission ROW would	Typical forested wetland methods; if stream present, no	
46	W051	Wetland/Waterway	Creek	Alt A-33	A	1 (A)	284	50	route	be present	result in 0.32 acres of change in type	vehicular crossing is proposed	
F		Totals											

* A= aerial photo inspection (offsite delineation); B = Field checked aerial photo (offiste and field observations); C = 1987 Manual delineation (onsite delineation)

** Parenthetic value refers to preliminary worst-case estimate of the number of structures to be placed in wetlands and the wetland impact area, where A = 12 sq. ft per impact area, B= 39 square feet per impact area, and C = 50 square feet per impact area

APPENDIX G, TABLE 2 - Environmental Inventory Table - Wetlands and Waterways

Alternate Rou	ute B												
		Feature Type, Name		Map Page	Survey	Proposed	Wetland Xing	Changes to	Impact	Stream	Working	Temporary Crossing	DNR Comment
Segment	Feature ID	and Designation	Resource Description	Index	Technique*	Perm Structure**	Length (ft)	Corridor (ft)	lustification	Characteristics	Comments	Method	
Segment	i ealure ib	and Designation	2 000.1p	Index	rechnique		Lengar (it)		Justineauon		scrub/shrub wetland crossed by existing transmission	No temporary crossing anticipated; wire	_/_/ ;
55	W07	Wetland	Scrub/shrub wetland	Alt B-7	В		37	5 65	No temporary impacts proposed		line	pulling only	
											Waterway appears to be not present within existing	Typical forested wetland methods: if	
			Forested wetland/Sand	1							ROW, however, no construction crossing proposed.	stream present, no vehicular crossing is	3
62	W010	Wetland/Waterway	Creek	Alt B-8	В		423	3 100	Forest clearing necessary for transm	ni shown on WNDR 24k hydro layer	Adjacent wetland is forested in this crossing area	proposed	
											Waterway appears to be not present within existing		
			Scrub shrub								ROW, construction access not anticipated to require		
			wetland/Unnamed								vehicle crossing of any banked portion; adjacent	No temporary crossing anticipated;wire	
62	W010	Wetland/Waterway	Tributary to Sand Lake	Alt B-8	В		43	3 100	No temporary impacts proposed	shown on WNDR 24k hydro layer	wetland is scrub shrub in this area.	pull only	+
61	W013	Wetland	Emergent, scrub shrub	Alt B-10	в	2 (A)	30	50	span length requirements, access ro		Holly Lake	Frozen conditions or matting	
				1							emergent/scrub shrub wetland associated with Lower		1
62	W013	Wetland	Emergent, scrub shrub	Alt B-10	В	1 (C)	55	5 100	span length requirements, access ro	u	Holly Lake	Frozen conditions or matting	
144	W016	Wetland	Emergent/Scrub Shrub	Preferred-10	R B	Ex structures removed	3 58	3	229226		Emergent, scrub/shrub wetland crossed by existing transmission line	Frozen conditions or matting	
17/		Wettand	Emergent Cords Chirds	T Teleffed To t			3,30		400033	1	Scrub shrub wetland crossed by existing transmission		1
14A	W017	Wetland	Scrub/shrub wetland	Preferred-15	В	Ex. structures removed	12	4 0	Access		line	Frozen conditions or matting	
150	W/018	Watland	Scrub/chrub wotland	Droforrod 16	Р	Ex. atrustures removed			A 20200		Scrub shrub wetland crossed by existing transmission	Frazan conditions or matting	
15A	0010	wetiand	Scrub/sillub wetland	Pleielleu-16	Б	EX. Structures removed		0	Access		line		+
16B	W060	Wetland	Emergent wetland	Preferred-15	В	Ex. structures removed	9	7 0	Access		Emergent wetland crossed by existing transmission line	Frozen conditions or matting	
			Scrub/shrub										
160	W/019	Wetland/Waterway	wetland/Unnamed	Preferred-15	в	Ex structures removed	23	3	Access	shown on WNDR 24k hydro laver	Waterway not present within existing ROW;	Frozen conditions or matting	
100	W015	Wettand/Waterway	libulary	Ticleffed 15	5		20		100035	River is fast flowing, water width = 20			1
										feet, bank width = 20 ft, water depth =			
100	14/000		Couderay River and	D. (5	F	45			4 to 6 ft. Couderay River is	Couderay River and adjacent emergent and	No temporary crossing anticipated;wire	
160	VV 020	vv etland/vv aterway	adjacent wetlands	Preferred-18	В	Ex. structures removed	15	9 0	No temporary impacts proposed	designated OERW	Scrub/shrub wetland within existing ROW	puil from structure removal only	+
16C	W021	Wetland	Emergent/Scrub Shrub	Preferred-19	В	Ex. structures removed	4,623	3 0	Access		transmission line	Frozen conditions or matting	
100	14/202										Scrub shrub wetland crossed by existing transmission	-	
16C	W022	Wetland	Scrub/Shrub wetland	Preferred-21	В	Ex. structures removed	943	2 0	Access	 Creek is fast flowing, water width - 10	line	Frozen conditions or matting	
										feet, bank width = 10 ft, water depth =			
			Devil's Creek and							3 to 4 ft. Devil's Creek is designated	Devil's Creek and adjacent scrub/shrub wetland within	No temporary crossing anticipated;wire	
16C	W023	Wetland/Waterway	adjacent wetlands	Preferred-21	В	Ex. structures removed	16	5 0	No temporary impacts proposed	trout stream	existing ROW	pull from structure removal only	+
16C	W061	Wetland	Emergent wetland	Preferred-18	в	Ex. structures removed	7	0	Access		Emergent wetland crossed by existing transmission line	Frozen conditions or matting	
			Ŭ	1									1
16C	W062	Wetland	Emergent wetland	Preferred-18	В	Ex. structures removed	13	3 0	Access		Emergent wetland crossed by existing transmission line	Frozen conditions or matting	
												No temporary crossing anticipated wire	
16C	W063	Wetland	Emergent wetland	Preferred-18	в	Ex. structures removed	143	3 0	No temporary impacts proposed		Emergent wetland crossed by existing transmission line	pull from structure removal only	
											Scrub/shrub wetland crossed by existing transmission		1
16C	W064	Wetland	Scrub/shrub wetland	Preferred-22	В	Ex. structures removed	268	3 0	Access		line	Frozen conditions or matting	+
			wetland/unnamed									Typical forested wetland methods: if	
			tributary to Summit							shown on WNDR 24k hydro layer;	Forested wetlands; new transmission ROW would	stream present, no vehicular crossing is	3
46	W051	Wetland/Waterway	Creek	Alt B-15	A	1 (A)	284	4 50	span length requirements, access ro	stream may not be present	result in 0.32 acres of change in type	proposed	
52	W004	Wetland	Scrub shrub wetland	Alt B-4	в	1 (C)	86	1 100	span length requirements access ro		Scrub shrub wetland at tringe of emergent wetland complex bisected by Highway 27	Frozen conditions or matting	
02		Wolland		7.00 4				100	opaniongui ioqui omonio, acceso io		complex biocolog by mighting 21		1
										Hauer creek is fast, water width - 4 - 6	3		
			Ecrosted corub/chrub							ft, water depth is 3 - 4 ft, bank width is	Hauer creek and associated Scrub shrub/forested	Frozen conditions or matting for	
63	W048	Wetland/Waterway	wetland/Hauer Creek	Alt B-13	в	3 (C)	1,66	3 100	span length requirements, access ro	OERW and trout stream	resulting in 1.98 acres of change in type	crossing of Hauer Creek, wire pull only	
		, i											
												Frozen conditions or matting for	
63	W049	Wetland	Scrub/shrub wetland	Alt B-13	в	1 (C)	61	100	span length requirements access ro		Scrub shrub wetland adjacent to Highway F	crossing of Hauer Creek, wire pull only	
					ľ	\-/	31	100	,	1	in the second		1
										Hauer creek is fast, water width - 4 - 6	5 	1	
			Forested corub/shub					1		tt, water depth is 3 - 4 ft, bank width is	Hauer creek and associated Scrub shrub/forested	No temporary crossing anticipated with	
64	W050	Wetland/Waterway	wetland/Hauer Creek	Alt B-14	в		71	50	Forest clearing necessary for transm	i OERW and trout stream	resulting in 0.52 acres of change in type	pull only	
-			1		İ		1						1
										Hauer creek is fast, water width - 4 - 6		Frazen conditione er metting at	
			Forested							4 - 6 ft. Hauer Creek is designated	wetland crossing is forested resulting in 2.34 acres of	vehicular crossing of Hauer creek	
66	W054	Wetland/Waterway	wetland/Hauer Creek	Alt B-15&16	В	2 (C)	1,02	100	span length requirements, access ro	OERW and trout stream	change in type	proposed	

												Frozen conditions or matting; vehicle	
										Summit creek water width - 4 - 6 ft.	Summit creek and associated Scrub shrub/forested	crossing of waterway along existing	
			Forested scrub/shrub							water depth is 3 - 4 ft bank width is 4	wetlands: approximately 1 227 ft of crossing is forested	pipeline ROW (where no bed/banks	
66	WOE 4	Matland/Matanyay	wetland/Summit Creek		Р	F (C)	E 059	100	anon longth requirements, access re		resulting in 2.81 series of change in type	appear to be present)	
60	VV 054	wetland/waterway	wetland/Summit Creek	AIT B-16-18	В	5 (C)	5,058	100	span length requirements, access rol	ισπ	resulting in 2.81 acres of change in type	appear to be present)	
										Alder creek water width - 4 - 6 ft,	Alder Creek and associated forested, emergent and		
										water depth is 3 - 4 ft bank width is 4	scrub shrub wetlands: approximately 1 976 ft of the	Frozen conditions or matting: no	
			Forested scrub/shrub							6 ft Alder Creek is designated	wetland crossing is forested, resulting in 4.54 acres of	vehicular crossing of Alder Creek	
			Folested, scrub/sillub			2 (2)				o II. Alder Creek is designated		venicular crossing of Alder Creek	
68	W 055	Wetland/Waterway	wetland/Alder Creek	Alt B-21&22	В	2 (C)	2,339	100	span length requirements, access rol	UDERW and trout stream	change in type	proposed	
												Typical forested wetland methods; if	
											Forested wetlands: new transmission ROW would	stream present, no vehicular crossing is	5
69	W/056	Wotland	Forested wetland	AH D 22822	P	1 (C)	1.066	100	span length requirements, access re		result in 2.45 acres of change in type	proposed	<i>,</i>
00	VV 030	Wetland	I blested wetland	All D-22023	Б	1(0)	1,000	100	spart length requirements, access to		result in 2.45 acres of change in type	proposed	
										Swift creek water width - 4 - 6 ft,			
										water depth is 3 - 4 ft, bank width is 4	Swift creek and associated Scrub shrub/forested		
			Scrub/shrub							6 ft. Hauer Creek is designated trout	wetlands; approximately 179 ft of crossing is forested,	No temporary crossing anticipated; wire	
68	W/057	Wetland/Waterway	wetland/Swift Creek	Alt B-23	в		654	100	Forest clearing necessary for transm	istream	resulting in 0.41 acres of change in type	pull only	
00	11007	Wetland/Waterway	Noticina, Chine Crock	AILD 23	D		004	100	r breat cleaning necessary for transm	oriouni	reduking in et ridered er ondinge in type	Turical farested wattend matheday if	
												Typical forested wetland methods; in	
											Forested wetlands; new transmission ROW would	stream present, no vehicular crossing is	6
69	W058	Wetland	Forested Wetland	Alt B-25	A	1 (C)	587	100	span length requirements, access ro	u	result in 0.32 acres of change in type	proposed	
										Pivor is fast flowing water width		1	
										River is last llowing, water width = 20			
										feet, bank width = 20 ft, water depth =	Couderay River and adjacent forested wetlands;	Typical forested wetland methods; no	
			Couderay River and							4 to 6 ft. Couderay River is	clearing of new ROW would result in approximately 0.40	crossing of Couderay River is proposed	
70	W/024	Wetland/Waterway	adjacent wetlands	Alt B-25	в		286	100	Forest clearing necessary for transm	i designated OFRW and trout stream	acres of change in type of wetland	(wire pull only)	
	11024	Wetland/Waterway			D		200	100	r breat cleaning necessary for transm		abled of change in type of wettand	Turical forested water d methoday if	
												Typical forested wetland methods; in	
										Forested wetland adjacent to County	Forested wetlands; new transmission ROW would	stream present, no vehicular crossing is	6
70	W059	Wetland	Forested wetland	Alt B-26	В		257	100	Forest clearing necessary for transm	i Road C	result in 0.59 acres of change in type	proposed	
											scrub/shrub wetland crossed by existing transmission	No temporary crossing anticipated wire	
47	14/000	Matter d	Corub/obrub wotlond		D		101	0				null only	
17	VV 069	wetland	Scrub/snrub wettand	AIT B-27	В		164	0	No temporary impacts proposed		line	puli only	
										River is fast flowing, water width = 20			
			Couderay River and							feet, bank width = 20 ft, water depth =	Couderay River and adjacent emergent and	No temporary crossing anticipated; wire	
17	W/024	Wetland/Waterway	adjacent wetlands	Alt B-27	в		395	0	No temporary impacts proposed	4 to 6 ft. Couderay River	scrub/shrub wetland within existing ROW	pull only	
		The training in allocation	adjacont notianao	/ D 2/	-		000	, , , , , , , , , , , , , , , , , , ,			acrub/abrub watland aroaced by evicting transmission	No temporary proping opticipated wire	
											scrub/shrub weliand crossed by existing transmission	No temporary crossing anticipated, wire	
17	W025	Wetland	Scrub/shrub wetland	Alt B-27	В		367	0	No temporary impacts proposed with	i	line	pull only	
			Emergent, Scrub/shrub)							Emergent, scrub/shrub wetland crossed by existing		
17	W026	Wetland	wetland	Alt B-28	в	1 (C)	819	0	span length requirements, access ro		transmission line	Frozen conditions or matting	
		TT Ottaina	notidina	/ D 20	-	. (0)	0.0		opan longer requiremente, accece re-			i lozofi ochaliono of malling	
			Scrub/shrub wetland,								Waterway appears to be not present within existing		
			Unnamed Tributary to								ROW, however, no construction crossing proposed.	No temporary crossing anticipated; wire	
17	W027	Wetland/Waterway	Couderay River	Alt B-28	В		367	0	No temporary impacts proposed	shown on WNDR 24k hydro laver	Adjacent wetland is scrub shrub within ROW	pull only	
		· · · · · · · · · · · · · · · · · · ·		+ · · · · · · · · · · · · · · · · · · ·	1	1			······································		Scrub shrub wetland crossed by existing transmission		1
	14/000				5	a (a)		-	and a larger the second second second	1	Serue sinue welland crossed by existing itansmission	En	
17	VV 030	vvetiana	Scrub/snrub wetland	AIT B-29	в	2 (0)	1,005	0	span length requirements, access rol	ų	line	Frozen conditions or matting	ļ
											Scrub shrub wetland crossed by existing transmission	1	
17	W031	Wetland	Scrub/shrub wetland	Alt B-29-31	В		350	0	Access		line	Frozen conditions or matting	
<u> </u>			Emergent Scrub shrub	1	1		500	, j		1	Emergent scrub/shrub wetland crossed by existing	g	1
	14/000		unities d		5	10 (0)	a /	-	and a larger the second second second	1	transmission line		
17	W032	vvetland	wetland	AIT B-31	в	12 (C)	9,189	0	span length requirements, access rol	ų	transmission line	Frozen conditions or matting	
										Creek is slow, water width = 3 - 4 ft,		1	
			Scrub/shrub							water depth = 1-2 ft. bank width = 3 -		1	
			wetland/Section 20							4 ft: adjacent wetlands are		No temporary crossing anticipated wire	
47	W/024		Oreals		D		100	_		e an h /a handh	Contine 20 Oracle and encodered could be to state	and temporary crossing anticipated, wile	
17	VV 034	wettand/waterway	Стеек	AIL B-32	D		436	0	ino temporary impacts proposed	scrud/snrud	Section 20 Greek and associated scrub/snrub wetland	puironiy	
1										1		1	
											Scrub/shrub, forested wetland; no existing transmission		
			Scrub/shrub forested							1	ROW Approximately 68 ft of the crossing is forested	1	
404	W/005	Matley d	wetles d		D	1 (0)	245	100	an an Ion ath an air in an ath an an an		resulting in 0.40 games of wetland turns shares		
18A	VV 035	wetiand	wetiand	AIL B-32	P	т (C)	345	100	span length requirements, access rol	u	resulting in 0.16 acres or wetland type change	Frozen conditions of matting	I
1										1	Emergent, forested wetland; no existing transmission	1	
										1	ROW, Approximately 574 ft of the crossing is forested	1	
				Alt B-22						1	resulting in 1.32 acres of wotland type shange. If	1	
1											resulting in 1.52 acres of wetland type challer. If		
1			Emergent, forested	Figures 1 and							alternate site for Radisson Substation is selected, a		
18B	W036	Wetland	wetland	2	С	1 (C)	786	100	span length requirements, access ro	d	permanent grading of 2,250 square feet would occur	Frozen conditions or matting	
			-	-	-					-	-	-	-

Notes: * A= aerial photo inspection (offsite delineation); B = Field checked aerial photo (offiste and field observations); C = 1987 Manual delineation (onsite delineation)

** Parenthetic value refers to preliminary worst-case estimate of the number of structures to be placed in wetlands and the wetland impact area, where A = 12 sq. ft per impact area, B= 39 square feet per impact area, and C = 50 square feet per impact area

APPENDIX G, TABLE 3 - Additional Off-ROW Access Routes Preferred Route

	General Segme	nt Data				Land	Cover Cate	gories		Acres of	Off ROW	Comments
Access to Segment	Total Access Path Length (Ft)	Path Length (miles)	ROW Width Required (ft)	ROW requirement (acres)	Crop Land	Grassland	Forest (Upland)	Forested wetland	Non-forest Wetland	Forested	Non- forested	
9 (acces to ex. ATC structure)	322	0.06	16	0.12		40	282			0.00	0.00	Driveway of
14A (str. 129 - 132)	8,597	1.63	16	3.16		1295	4663	2669		0.98	0.00	Existing grav
14A, 14B, 16A, 16C (str. 133- 153)	12,100	2.29	16	4.44			7652	4448		1.63	0.00	Existing grav
16C (str. 154 - 155)	1,296	0.25	16	0.48			1223	73		0.03	0.00	Existing grav
16C (str. 164 - 178)	3,420	0.65	16	1.26			2783	637		0.23	0.00	Existing grav
16C (str. 179 - 183)	1,638	0.31	16	0.60		54	1585			0.00	0.00	Existing grav
17 (str. 191 - 193)	3,369	0.64	16	1.24		728	2272	369		0.14	0.00	Two existing
17 (str. 194)	799	0.15	16	0.29		343			457	0.00	0.17	Existing driv
17 (str. 195 - 196)	304	0.06	16	0.11		304				0.00	0.00	Existing field
17 (str. 197 - 200)	710	0.13	16	0.26		710				0.00	0.00	Existing driv
17 (201 - 203)	977	0.19	16	0.36			525	103	349	0.04	0.13	Existing trac
17 (str. 213 - 215)	853	0.16	16	0.31				853		0.31	0.00	Ex. track off

of Old Highway 27
el road (forestry) off of Co. Rd F
el road (forestry) off of Hwy 27/70
el road off of Right of Way Rd
el road off of Hwy 27/70
el path off of Smith Road
paths (driveway and field road) off of Chafer Rd
e, past rental cabins, off Chafer Rd.
rod off Chafer Rd.
e assoc. with race track, off Chafer Rd.
ks off Delap Lane and Hofer Rd.
Old Couderay Rd

APPENDIX G, TABLE 3 - Additional Off-ROW Access Routes

Alternate Route A

	General Segment Data							gories		Acres of Access ir	Off ROW Wetland	Comments
Access to Segment	Total Access Path Length (Ft)	Path Length (miles)	ROW Width Required (ft)	ROW requirement (acres)	Crop Land	Grassland	Forest (Upland)	Forested wetland	Non-forest Wetland	Forested	Non- forested	
9 (acces to ex. ATC structure)	322	0.06	16	0.12		40	282			0.00	0.00	Driveway off of Old Highway 27
14A (str. 267 - 271)	8,597	1.63	16	3.16		1295	4663	2669		0.98	0.00	Existing gravel road (forestry) off of Co. Rd F
30 16B, 16C (str. 272- 292)	12,100	2.29	16	4.44			7652	4448		1.63	0.00	Existing gravel road (forestry) off of Hwy 27/70
16C (str. 293 - 294)	1,296	0.25	16	0.48			1223	73		0.03	0.00	Existing gravel road off of Right of Way Rd
16C (str. 303-317)	3,420	0.65	16	1.26			2783	637		0.23	0.00	Existing gravel road off of Hwy 27/70
16C (str. 318 - 322)	1,638	0.31	16	0.60		54	1585			0.00	0.00	Existing gravel path off of Smith Road
17 (str. 327 - 332)	3,369	0.64	16	1.24		728	2272	369		0.14	0.00	Two existing paths (driveway and field road) off of Chafer Rd
17 (str. 333)	799	0.15	16	0.29		343			457	0.00	0.17	Existing drive, past rental cabins, off Chafer Rd.
17 (str. 334 - 335)	304	0.06	16	0.11		304				0.00	0.00	Existing field rod off Chafer Rd.
17 (str. 336 - 339)	710	0.13	16	0.26		710				0.00	0.00	Existing drive assoc. with race track, off Chafer Rd.
17 (340 - 342)	977	0.19	16	0.36			525	103	349	0.04	0.13	Existing tracks off Delap Lane and Hofer Rd.
17 (str. 352 - 354)	853	0.16	16	0.31				853		0.31	0.00	Ex. track off Old Couderay Rd

APPENDIX G, TABLE 3 - Additional Off-ROW Access Routes

Alternate Route B

Ge	eneral Segment D	Pata			Land (Cover Cateo	jories (leng	th of crossir	ng, in ft)	Acres of Access ir	Off ROW Wetland	Comments
Access to Segment	Total Access Path Length (Ft)	Path Length (miles)	ROW Width Required (ft)	ROW requirement (acres)	Crop Land	Grassland	Forest (Upland)	Forested wetland	Non-forest Wetland	Forested	Non- forested	
14A (remove existing structures)	8,597	1.63	16	3.16		1,295	4,663	2,669		0.98	-	Existing gravel road (forestry) off of Co. Rd F
30 16B, 16C (remove existing structures)	12,100	2.29	16	4.44			7,652	4,448		1.63	-	Existing gravel road (forestry) off of Hwy 27/70
16C (remove existing structures)	1,296	0.25	16	0.48			1,223	73		0.03	-	Existing gravel road off of Right of Way Rd
16C (remove existing structures)	3,420	0.65	16	1.26			2,783	637		0.23	-	Existing gravel road off of Hwy 27/70
16C (remove existing structures)	1,638	0.31	16	0.60		54	1,585			-	-	Existing gravel path off of Smith Road
17 (str. 327 - 332)	3,369	0.64	16	1.24		728	2,272	369		0.14	-	Two existing paths (driveway and field road) off of Chafer Rd
17 (str. 333)	799	0.15	16	0.29		343			457	-	0.17	Existing drive, past rental cabins, off Chafer Rd.
17 (str. 334 - 335)	304	0.06	16	0.11		304				-	-	Existing field rod off Chafer Rd.
17 (str. 336 - 339)	710	0.13	16	0.26		710				-	-	Existing drive assoc. with race track, off Chafer Rd.
17 (340 - 342)	977	0.19	16	0.36			525	103	349	0.04	0.13	Existing tracks off Delap Lane and Hofer Rd.
17 (str. 352 - 354)	853	0.16	16	0.31				853		0.31	-	Ex. track off Old Couderay Rd
52 (str. 22 - 25)	1,188	0.23	16	0.44	1,188					-	-	Ex. field road off of Highway 27, to avoid wetland
67 (str. 114 - 129)	507	0.10	16	0.19			334			-	-	Ex. gravel road off Summit Lake Rd. (173' Commercial/Industrial)
68 (str. 134 - 136)	1,279	0.24	16	0.47		1,130	149			-	-	Ex. gravel forestry road
69 (str. 156 - 160)	940	0.18	16	0.35		455	485			-	-	Two ex. field roads off of Co. Rd. C



Figure 1 Radisson Substation Preferred Site WDNR Application Part 1 Stone Lake to Couderay 69 kV Rebuild / 161kV Upgrade Transmission Project XX Route Segment Number **Route Alternatives** Preferred Route 161 kV Preferred Route 69 kV Preferred Route 161/69 kV Route Segment Endpoint • Proposed Transmission Structure Approximate Fence Location Access Road to Polish Rd Staging Area **Existing Transmission** 69kV AC - 161kV AC —____ 345kV AC Existing 345/69 kV Structure Substation (Xcel) Substation (Not Xcel) 0 Residence O Other Structure Lac Courte Oreilles Reservation - Road ----- Railroad - Pipeline Outstanding and Exceptional Resource Waters Trout Class Streams 5 Surface Water Streams or Rivers ~~ \square Hydric Soil WWI Wetland Delineated Wetland Boundary DNR Managed Lands County Forest FEMA Floodplains Xcel Energy* Sources: Wisconsin DNR, US Census, NAIP 2010 Date: 9/6/2011







Couderay River and W024 at existing crossing point, looking southeast



Devil's Creek and W023 at existing crossing point, looking northwest



Wetland W016, looking northwest



W021, looking northwest



Couderay River and W020 at existing crossing point, looking southeast



W017, looking northwest



Summit Lake, looking west



Swift Creek and W057, looking south



Wetland 032, looking northwest



Wetland W044, looking south

Radisson Substation Site Delineation Report

August 2011



WETLAND DELINEATION REPORT



XCEL ENERGY SUBSTATION SITE

TOWN OF COUDERAY SAWYER COUNTY, WISCONSIN

AUGUST 22, 2011





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WETLAND DATA SHEETS

Wetland Determination Data Form – Northcentral and Northeast Region



August 22, 2011

Subject: Wetland Delineation Report, Xcel Energy Substation Site Town of Couderay, Sawyer County, Wisconsin Cedarburg Science Project #: HDR-0315-2011-03

To whom it may concern:

On behalf of Xcel Energy, Cedarburg Science, LLC, is pleased to provide this Wetland Delineation Report for the proposed Xcel Energy substation in the Town of Couderay, WI.

A partial site wetland delineation was conducted within the approximately 80-acre project area located in the southeast ¼ of Section 20, Township 38 North, Range 7 West, in Sawyer County, Wisconsin (Figure 1). The site is bordered by Polish Road to the north, Cemetery Lane to the south, woodland to the west, and agricultural land and a utility corridor to the east.

The purpose of this assessment was to delineate the current location and extent of wetlands within the study area. Our study is presented here in terms of methodology, results, and conclusions.




STATEMENT OF QUALIFICATIONS

CEDARBURG SCIENCE provides comprehensive wetland and ecological services including ecological assessment; wetland assessment, permitting and mitigation, and restoration. Together, Cedarburg Science ecologists offer greater than sixty years of technical experience in the natural resource field.

Ms. Ginny Plumeau, President of Cedarburg Science and a Project Manager for many Wisconsin projects, has a Master's degree in Ecology and over twenty years of technical and leadership experience in the environmental and natural resources field. She has supervised and participated on many projects involving environmental impact assessments, natural resource studies, habitat evaluations and monitoring, and wetland delineations.

Mr. Ron Londré, Senior Restoration Ecologist and Wetland Specialist, has a M.S. degree from the University of Wisconsin-Milwaukee specializing in plant community ecology. Ron has ten years of experience conducting vegetation surveys throughout Wisconsin wetlands, prairies, and forests. He also has multiple publications in the journal Ecology, has presented at various ecological conferences, and was previously a college instructor of Environmental and Biological Sciences. Ron has completed the basic wetland delineation training workshop. Ron specializes in wetland assessments, botanical inventories and surveys; implementing invasive species control strategies; and project management of native habitat restoration projects, natural area stewardship projects, and stormwater control projects.

METHODOLOGY

The wetland assessment consisted of a review of available maps and information, followed by a site visit to document field conditions. The field work documented the presence and absence of hydrophytic vegetation, wetland hydrology, and hydric soil indicators according to the guidelines of the 1987 Corps of Engineers Wetland Delineation Manual and in the new Regional Supplement, and in general accordance with Wisconsin Department of Natural Resources (WDNR) guidelines. The new Northcentral and Northeast regional USACE supplement was recently drafted for the purpose of bringing the existing 1987 Manual up to the state-of-the-science for wetland delineations. This supplement is intended to be used as an additional



guidance to the 1987 Manual and is not its replacement. Observations were made at representative sample points along transects extending through upland and wetland areas.

Areas having wetland field indicators were evaluated in the field by Cedarburg Science wetland scientist Mr. Ron Londre during site visits on July 11th and 12th, 2011. Cedarburg Science collected field data using a transect approach in accordance with routine wetland determination forms (see attachments). A sharpshooter shovel was used to dig the soil pits and a soil probe was frequently used to refine the wetland boundary. The delineated wetland areas were flagged and GPS locations of the wetland boundaries and data point locations were collected by Ron Londré using a Trimble GeoXT GPS unit with sub-meter accuracy. The wetland boundary and transect locations are depicted on Figure 2.

RESULTS

Map and Information Review

Prior to conducting fieldwork, Cedarburg Science reviewed several maps for the site, including the United States Geological Survey (USGS) 7.5-minute Couderay, WI quadrangle topographic map (Figure 1), the NRCS Soil Survey Report of Sawyer County (Figure 3), the Sawyer County GIS Mapping Portal aerial photographs dated 1998, 2006, 2008, and 2010 (Figures 4A-D), and the Wisconsin Wetland Inventory map (Figure 5).

The USGS topographic map (Figure 1) depicts the site as having moderate topography, with an elevation of approximately 1270 to 1300 feet above mean sea level. Surface water generally flows from the west to the east and southeast portions of the site.

According to the NRCS Soil Survey Report of Sawyer County, Wisconsin (Figure 3), predominant soils consist of Loxley and Beseman soils (414A), Freeon (457C), Santiago silt loam (737D), Magnor-Freeon complex (757B), and Capitola-Cebana complex (923A). The NRCS hydric soil list classifies Loxley and Beseman soils as hydric soils and Magnor-Freeon complex and Capitola-Cebana complex as containing inclusions of hydric soils.



A review of aerial photographs revealed that the property has generally remained in a natural state with woodland and wetland present throughout the property. Areas of agricultural land are also present on the site. Overall, little land use change has occurred on the site and surrounding properties since 1998 (Figures 4A -D).

The Wisconsin Wetland Inventory map (Figure 5) depicts five wetland areas within the study area. One wetland is located in the central portion of the site and corresponds with Wetland 1 (WL-1). The depicted wetland is classified as open water (W0Hx) and is labeled with a hydrologic modifier (H) that is indicative of wetlands that have surface water present for much of the growing season. This wetland is also labeled with a special modifier (x) that is used to indicate wetlands that have been artificially excavated, usually for the purpose of creating ponds. One wetland is located in the western portion of the study area and corresponds with Wetland 1 (WL-1). This wetland is classified as a broad-leaved deciduous forest and shrub land (T3/S3K). This wetland is labeled with a hydrologic modifier (K) that is indicative of areas which are wetlands, but do not appear to have surface water for prolonged periods of time. Three of the depicted wetlands are located within the southeast corner of the study area. These wetlands correspond with Wetland 2 (WL-2). One of these wetlands is classified as a broad-leaved deciduous forest (T3K) and is labeled with a hydrologic modifier (K) that is indicative of areas which are wetlands, but do not appear to have surface water for prolonged periods of time. One of these wetlands is classified as broad-leaved deciduous scrub/shrub land (S3H) and is labeled with a hydrologic modifier (H) that is indicative of wetlands which have surface water present for much of the growing season. The last wetland area is classified as broad-leaved deciduous scrub/shrub land and narrow-leaved persistent emergent wet meadow. This wetland is labeled with a hydrologic modifier (H) that is indicative of wetlands which have surface water present for much of the growing season.

When investigating the hydrology of a site, recent rainfall data can be useful in determining if current hydrology at a given site is normal. This information can be important when making a determination as to whether the wetland hydrology criterion has been met at recorded data points. Rainfall data recorded by the closest USGS stream gauge facility were used to evaluate the fall hydrology (Table 1).

The closest USGS facility to the investigation area is located on the Chippewa River at Bishops Bridge near Winter, WI, in the SE ¼ of the NE ¼ Section 23, Township 39 North, Range 6 West, Sawyer County. This facility is located approximately 10.6 miles northeast of the property. A



total of 1.52 inches of precipitation were recorded during the thirty days prior to the site visits on July 11th and 12th, 2011. During the two weeks before the visits, 0.91 inches of precipitation were recorded with the most recent rainfall event yielding 0.01 inches of precipitation on July 7th, 2011. Total rainfall for the 90 days prior to the site visits was 6.37 inches. According to the local WETS table, average precipitation in the Couderay area for this time of year is approximately 10.27 inches. This suggests that the surface or near-surface hydrology at the time of the site visit was below average for this time of year.

Date	Precipitation Total (inches)	Date	Precipitation Total (inches)	Date	Precipitation Total (inches)
4/12/2011	0	5/12/2011	0.07	6/11/2011	0
4/13/2011	0.03	5/13/2011	0.01	6/12/2011	0
4/14/2011	0	5/14/2011	0	6/13/2011	0
4/15/2011	0	5/15/2011	0	6/14/2011	0
4/16/2011	0.11	5/16/2011	0	6/15/2011	0.45
4/17/2011	0	5/17/2011	0	6/16/2011	0
4/18/2011	0	5/18/2011	0	6/17/2011	0
4/19/2011	0	5/19/2011	0	6/18/2011	0.87
4/20/2011	0.03	5/20/2011	0	6/19/2011	0.19
4/21/2011	0.01	5/21/2011	0.15	6/20/2011	0
4/22/2011	0.36	5/22/2011	1.59	6/21/2011	0.45
4/23/2011	0.08	5/23/2011	0.18	6/22/2011	0.15
4/24/2011	0	5/24/2011	0	6/23/2011	0
4/25/2011	0	5/25/2011	0	6/24/2011	0.01
4/26/2011	0.4	5/26/2011	0	6/25/2011	0
4/27/2011	0	5/27/2011	0.02	6/26/2011	0
4/28/2011	0.1	5/28/2011	0.32	6/27/2011	0.34
4/29/2011	0	5/29/2011	0	6/28/2011	0
4/30/2011	0.35	5/30/2011	0.03	6/29/2011	0
5/1/2011	0	5/31/2011	0.13	6/30/2011	0
5/2/2011	0	6/1/2011	0	7/1/2011	0.14
5/3/2011	0	6/2/2011	0	7/2/2011	0.02
5/4/2011	0	6/3/2011	0.04	7/3/2011	0
5/5/2011	0.29	6/4/2011	0	7/4/2011	0
5/6/2011	0	6/5/2011	0	7/5/2011	0.4

Table 1: Total Precipitation at the Chippewa River Bishops Bridge Substation
(Sawyer County, WI)
April 12th – July 10th, 2011



5/7/2011	0	6/6/2011	0	7/6/2011	0
5/8/2011	0.00	6/7/2011	0.13	7/7/2011	0.01
5/9/2011	0.31	6/8/2011	0	7/8/2011	0
5/10/2011	0	6/9/2011	0	7/9/2011	0
5/11/2011	0.09	6/10/2011	0.09	7/10/2011	0

Field Investigation of Wetlands

All areas identified on the above-mentioned maps as being wetland or having wetland characteristics were evaluated in the field. This partial site delineation includes only the investigation of areas identified by the client as areas potentially impacted by the proposed project. Additional wetlands were observed to be present onsite, south and west of the proposed potential project impacts, and were not fully delineated in the field. Using a transect approach, eight (8) data points were examined and two (2) wetlands totaling approximately 18.95 acres (825,541 square feet) within the study area were delineated (Figure 2). Cursory soil probes and representative data points, in both upland areas and those appearing to have wetland characteristics, were sampled in the field to determine the wetland boundaries. The data sheets were compiled and are included in the attachments. The following are descriptions of the delineated wetlands.

Wetland 1 – Alder Thicket, Hardwood Swamp, Fresh (Wet) Meadow, and Open Water

Wetland 1 (WL-1) consists of approximately 11.88 acres (517,604 square feet) of alder thicket, hardwood swamp, wet meadow, and open water habitat within the study area. Hydrology in this wetland is sustained by surface water from the surrounding landscape and a seasonally high water table. Physical on-site evidence of hydrology included water marks, water-stained leaves, oxidized rhizospheres on living roots, and positive FAC-Neutral tests.

According to the NRCS Soil Survey of Sawyer County, Magnor-Freeon complex (757B) and Capitola-Cebana complex (923A) are mapped within WL-1. The soil within the identified wetland area displayed hydric physical indicators such as redoximorphic concentrations. Hydric soil indicators observed include F3, Depleted Matrix F6, Redox Dark Surface, and F8, Redox Depressions, according to the NRCS field indicators of hydric soils, Version 7.0.

The dominant herbaceous vegetation within the alder thicket (DP-2, DP-4) consists of *Carex* arctata (bear sedge), *Matteuccia struthiopteris* (ostrich fern), *Geum canadense* (white avens),



and *Rubus strigosus* (red raspberry). *Alnus incana spp. rugosa* (mountain alder), *Fraxinus nigra* (black ash), and *Cornus racemosa* (gray dogwood) were dominant within the shrub layer and *Betula papyrifera* (paper birch) was dominant within the tree layer.

The quality of the wetlands identified in WL-1 varied but in general were of fair to high quality with the exception of the wet meadow areas. The hardwood swamp forests were of high quality containing a high level of native plant diversity and quality wildlife habitat and little if any exotic or invasive plants. The wet meadows were of low quality containing some native shrubs and herbaceous perennials but mostly the invasive plant reed canary grass. The pond was surrounded by some black willow trees but otherwise it was surrounded by mostly low quality wetland consisting of narrow leaf cattails in the emergent zones and then reed canary grass. The alder thickets were of fairly high quality; however, the edges of the thickets did have some invasive reed canary grass encroaching on them. The interior of the thicket was dominated by mostly mountain alder with the understory consisting of various native asters and ferns.

The dominant herbaceous vegetation within the hardwood swamp (DP-6) consists of *Carex arctata*, *Onoclea sensibilis* (sensitive fern), *Osmunda cinnamomea* (cinnamon fern), and *Fragaria virginiana* (wild strawberry). *Fraxinus nigra* was dominant within the shrub layer and *Populus tremuloides* (quaking aspen), *Acer rubrum* (red maple), and *Fraxinus nigra* were dominant within the tree layer.

Subtle to moderate changes in topography, soil probes, and the presence of hydrophytes were used as aids in determining the wetland boundary.

Wetland 2 – Hardwood Swamp, Alder Thicket, and Shrub-Carr

Wetland 2 (WL-2) is approximately 7.07 acres (307,937 square feet) in size within the study area, and consists of hardwood swamp, alder thicket, and shrub-carr habitat. Physical on-site evidence of wetland hydrology included water-stained leaves and a positive FAC-Neutral test.

According to the NRCS Soil Survey of Sawyer County, Magnor-Freeon complex (757B), Capitola-Cebana complex (923A), and Loxley and Beseman soils (414A) are mapped within WL-2. Hydric soil indicators observed in WL-2 include F3, Depleted Matrix, F8, Redox Depressions according to the NRCS field indicators of hydric soils, Version 7.0.



One wetland data point was taken within Wetland 2 (DP-8). The dominant herbaceous vegetation consisted of *Carex intumescens* (greater bladder sedge) and *Osmunda cinnamomea. Fraxinus nigra, Alnus rugosa,* and *Ostrya virginiana* (ironwood) were dominant within the shrub layer and *Fraxinus nigra* and *Populus tremuloides* were dominant within the tree layer.

The plant community types associated with WL-2 included, from north to south, hardwood swamp, alder thicket, and shrub-carr. The hardwood swamp is fairly high quality containing native trees and mostly native shrubs but does contain some invasive reed canary grass and common buckthorn. The alder thicket is also of fairly high quality dominated by mountain alder and a native plant understory. The shrub-carr is high quality containing native meadowsweet, red-osier dogwood, and a few other shrubs and a diverse variety of native grasses, sedges, asters and other wildflowers.

Subtle to moderate changes in topography and soil probes were used in determining the wetland boundary.

Additional Wetlands

Additional wetlands do exist on the site in areas not immediately associated with the requested partial site wetland delineation. Areas in the south along Cemetery Road and areas in the central portion of the site contain wetlands. The wetlands in the south along the road include fresh (wet) meadows dominated by reed canary grass and shrub-carr habitat. The wetlands in the south not immediately adjacent to Cemetery Road include hardwood swamp and shrub-carr habitats. Wetlands in the central portion of the site include alder thickets and hardwood swamps. These areas were observed during a rapid reconnaissance to familiarize the investigator with the site and were not thoroughly investigated nor delineated.

CONCLUSION

Based on the wetland assessment completed by Cedarburg Science, two (2) wetland areas were identified within the study area; however, additional wetlands do exist within the site. Approximately 18.95 acres (825,541 square feet) of wetland were delineated on the site. Cedarburg Science recommends that this report be submitted to Mr. Dave Kafura of the



Wisconsin Department of Natural Resources Service Center 10220 State Highway 27 Hayward, WI 54843 and Mr. Bill Sande U.S. Army Corps of Engineers St. Paul District 15954 Rivers Edge Ste. 240 Hayward, WI 54843 for wetland concurrence and jurisdictional determination.

CLOSING

We look forward to continue working with you on this project. If you have any questions or comments concerning this report, please call us at (262) 376-0735.

Sincerely,

CEDARBURG SCIENCE, LLC

Jumean

Ginny Plumeau, REM President Principal Ecologist

Kon A. Jondré

Ron Londré Senior Restoration Ecologist Wetland Specialist

Attachments:

Photographs

FiguresFigure 1:USGS Topographic MapFigure 2:Wetland Location MapFigure 3:NRCS Soil Survey of Sawyer CountyFigures 4A-D:Aerial Photographs (1998, 2006, 2008, and 2010)Figure 5:Wisconsin Wetland Inventory Map

Wetland Data Sheets





XCEL ENERGY SUBSTATION SITE TOWN OF COUDERAY, SAWYER COUNTY, WISCONSIN

Photos 1 - 2 Page 1 of 4



Photograph 1 (7/11/2011): View of Wetland 1. Facing south-west.



Photograph 2 (7/11/2011): View of Transect 1 in Wetland 1. Facing south.





Photograph 3 (7/11/2011): View of Transect 2 in Wetland 1. Facing south.



Photograph 4 (7/11/2011): View of Transect 3 in Wetland 1. Facing south.



Photos 5 - 6 Page 3 of 4



Photograph 5 (7/12/2011): View of Wetland 1. Water stained leaves and water mark on rock.



Photograph 6 (7/12/2011): View of Wetland 1 at DP-6. Depression where ponding occurs.





Photograph 7 (7/12/2011): View of Wetland 2. Facing south.



Photograph 8 (7/12/2011): View of Transect 4 in Wetland 2. Facing south.



- FIGURE 1: USGS Topographic Map Site Location Map
- FIGURE 2: Wetland Location Map
- FIGURE 3: NRCS Soil Survey of Sawyer County
- FIGURES 4A-E: Aerial Photographs (1998, 2006, 2008, & 2010)
- FIGURE 5: Wisconsin Wetland Inventory Map



MAP SOURCE: WWW.MAPCARD.COM

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XCEL ENERGY SUBSTATION SITE SAWYER COUNTY, WI

CEDARBURG SCIENCE, LLC PROJECT # HDR-0315-2011-03

FIGURE 1: **USGS TOPOGRAPHIC MAP -**SITE LOCATION MAP







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XCEL ENERGY SUBSTATION SITE SAWYER COUNTY, WI

> CEDARBURG SCIENCE, LLC PROJECT # HDR-0315-2011-03

FIGURE 3: NRCS WAUKESHA COUNTY SOIL SURVEY MAP



MAP SOURCE: SAWYER COUNTY GIS MAPPING PORTAL TOWNSHIP 38 NORTH, RANGE 7 WEST, SECTION 20

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Scale: 1 inch = Approximately 590 feet

XCEL ENERGY SUBSTATION SITE SAWYER COUNTY, WI

CEDARBURG SCIENCE, LLC PROJECT # HDR-0315-2011-03



FIGURE 4A: 1998 AERIAL PHOTOGRAPH

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MAP SOURCE: SAWYER COUNTY GIS MAPPING PORTAL TOWNSHIP 38 NORTH, RANGE 7 WEST, SECTION 20

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PROPOSED XCEL ENERGY XCEL ENERGY SUBSTATION SITE SAWYER COUNTY, WI

CEDARBURG SCIENCE, LLC PROJECT # HDR-0315-2011-03 FIGURE 4B: 2006 AERIAL PHOTOGRAPH

tudy Are Scale: 1 inch = Approximately 590 feet

MAP SOURCE: SAWYER COUNTY GIS MAPPING PORTAL TOWNSHIP 38 NORTH, RANGE 7 WEST, SECTION 20

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XCEL ENERGY SUBSTATION SITE SAWYER COUNTY, WI

CEDARBURG SCIENCE, LLC PROJECT # HDR-0315-2011-03



FIGURE 4C: 2008 AERIAL PHOTOGRAPH



MAP SOURCE: SAWYER COUNTY GIS MAPPING PORTAL TOWNSHIP 38 NORTH, RANGE 7 WEST, SECTION 20

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XCEL ENERGY SUBSTATION SITE SAWYER COUNTY, WI

CEDARBURG SCIENCE, LLC PROJECT # HDR-0315-2011-03



FIGURE 4D: 2010 AERIAL PHOTOGRAPH MAP SOURCE: WWW.DNRMAPS.WISCONSIN.GOV.COM TOWNSHIP 38 NORTH, RANGE 7 WEST, SECTION 20

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XCEL ENERGY SUBSTATION SITE SAWYER COUNTY, WI

CEDARBURG SCIENCE, LLC PROJECT # HDR-0315-2011-03



FIGURE 5: WISCONSIN WETLAND INVENTORY MAP

WETLAND DATA SHEETS

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site:	Xcel Energy P	roposed Subst	tation	City/County:	Town of Cour	deray, S	Sawyer	Sampling Da	te:	7/	11/2011	
Applicant/Owner:		HDR E	Engineering, Ind	с.		State:	WI	Sampling Po	int: T	-1, D	P-1 (Upland)	
Investigator(s):	R	on Londré		Section, Tow	nship, Range:		Section	on 20, Townsl	hip 38 North	n, Rar	nge 7 West	
Landform (hillslope, ter	race, etc.):	ç	gradual slope	l	_ocal relief (cond	cave, co	onvex, no	one):		non	e	
Slope (%): 3%	Lat:			Long:				Datum:				
Soil Map Unit Name:	Magnor-Freeo	n complex (75	7B)			I	NWI or V	VWI classifica	tion:		T3/S3K	
Are climatic/hydrologic	conditions on th	ne site typical fo	or this time of y	/ear? Yes	No	Х	(If neede	d, explain any	answers in	n Rem	arks.)	
Are Vegetation Y	Soil N c	or Hydrology	N_significantl	y disturbed?	N Are "Norma	al Circu	Imstance	s" present? Y	es	Х	No	
Are Vegetation N	Soil N c	r Hydrology	N naturally p	roblematic?	N (If needed,	explair	n any ans	wers in Rema	arks.)			
SUMMARY OF FINE	DINGS - Attac	h site map sl	howing samp	pling point le	ocations, tran	sects	, import	ant features	s, etc.			
Hydrophytic Vegetatio	on Present?	Yes X	No		s the Sampled	Area						
Hydric Soil Present?		Yes	No X	· ·	within a Wetlan	d?	Yes	No	Х			
Wetland Hydrology P	resent?	Yes	No X		If yes, optional V	Vetland	Site ID:					
Remarks: Photograp therefore significantly not located within a w	h 2 The surface disturbed at the vetland	e or near-surfa s data point. D	ce hydrology at Jue to the lack o	t the time of th of two of the th	e site visit was b nree wetland crit	oelow a eria an	verage fo d based	or this time of upon professi	year. Veget onal judgmo	tation ent, th	is mowed and is nis data point is	S

HYDROLOGY

Wetland Hydrology Indicators:					Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is	required: check a	ll that apply)			Surface Soil Cracks (B6)
Surface Water (A1)	Drainage Patterns (B10)				
High Water Table (A2) Aquatic Fauna (B13)				Moss Trim Lines (B16)	
Saturation (A3)		Marl Deposits (B15)			Dry-Season Water Table (C2)
Water Marks (B1)		Hydrogen Sulfide O	dor (C1)		Crayfish Burrows (C8)
Sediment Deposits (B2)		Oxidized Rhizosphe	res on Living R	Roots (C3)	Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3)		Presence of Reduce	ed Iron (C4)		Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4)		Recent Iron Reducti	on in Tilled Soi	ils (C6)	Geomorphic Position (D2)
Iron Deposits (B5)		Thin Muck Surface ((C7)		Shallow Aquitard (D3)
Inundation Visible on Aerial Imag	gery (B7)	Other (Explain in Re	emarks)		Microtopographic Relief (D4)
Sparsely Vegetated Concave Su	Irface (B8)				FAC-Neutral Test (D5)
Field Observations:					
Surface Water Present? Yes	No X	Depth (inches):	N/A		
Water Table Present? Yes	No X	Depth (inches):	N/A		
Saturation Present? Yes	No X	Depth (inches):	N/A	Wetland Hy	drology Present? YesNoX
(includes capillary fringe)					
Describe Recorded Data (stream gaug	ge, monitoring well	l, aerial photos, previo	ous inspections	s), if available: /	Aerials, Topo Map, WWI, NRCS Soils Maps
Remarks: The criterion for wetland hyd	drology is not met	at this data point.			

VEGETATION - Use scientific names of plants.

Sampling	Point:	T-1,	DP-1

	Absolute		Indicator	Dominance Test worksheet:	
Tree Stratum (Plot size: 30 ft radius)	% Cover		Status	Number of Dominant Species	Гhat
1 none				Are OBL, FACW, or FAC:	2 (A)
2	·		·		(())
3	·		·	Total Number of Dominant Spe	acies
4				Across All Strata:	2 (B)
۲	·		·		<u> </u>
	·		·	Porcent of Dominant Species 7	That
0		·	·	Are OBL_EACW_or_EAC	1000((A/D)
/		Tatal Oa		,	<u>100%</u> (A/B)
	0		ver		
Sapling/Shrub Stratum (Plot size: <u>30 ft radius</u>)				Prevalence Index worksheet:	
1. <u>none</u>	·			Total % Cover of:	Multiply by:
2			·	OBL species	x 1 =
3				FACW species	x 2 =
4				FAC species	x 3 =
5				FACU species	x 4 =
6				UPL species	x 5 =
7			<u> </u>	Column Totals:	(A)(B)
	0	= Total Co	ver	Prevalence Index = B/A	=
Herb Stratum (Plot size: <u>5 ft radius</u>)				Hydrophytic Vegetation Indicate	ors:
1. Agrostis gigantea	40	Yes	FACW	Rapid Test for Hydrophytic	/egetation
2. Plantago major	40	Yes	FAC	X Dominance Test is >50%	
3. Lotus corniculatus	20	No	FAC	Prevalence Index is ≤3.0 ¹	
4. Taraxacum officinale	20	No	FACU	Morphological Adaptations ¹	(Provide supporting
5.				data in Remarks or on a sep	parate sheet)
6.				Problematic Hydrophytic Ve	getation ¹ (Explain)
7.					
8.				¹ Indicators of hydric soil and we	etland hydrology must be present,
9.				unless disturbed or problemation	.
10.				Definitions of Vegetation Strata	
11				Tree - Woody plants 3 in. (7.6c	m) or more in diameter at breast
12	·		·	height (DBH), regardless of hei	ight.
12	120	- Total Co	ver	Sapling/shrub - Woody plants I	ess than 3 in. DBH and greater
Woody Vine Stratum (Plot size: 30 ft radius)	120	- 1010100	VCI	than 3.28 (1m) tall.	5
1 none				Herb - All herbaceous (non-wo	odv) plants, regardless of size, and
1. <u>Hone</u>	·		·	woody plants less than 3.28 ft t	all.
2	·		·	Woody vines - All woody vines	greater than 3.28 ft in height.
	·		·		5 · · · · · · · · · · · · · · · · · · ·
4	0	- Total Ca		Present?	
			vei		
Remarks: The criterion for hydrophytic vegetation is me	et at this da	ta point. Thi	s data poin	t is located within a mowed field.	

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SOIL

Profile Descr	iption: (Describe to th	ne depth ne	eded to documen	t the indicato	or or con	firm the abs	sence of indicators	.)		
Depth	Matrix			Rede	ox Featur	es				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture		Remarks	
0-11	10YR 3/3	100	-		-		Silt loam	Stony		
11-20	10YR 2/2	40	10YR 5/6	2-20%	С	Μ	Silt loam	Stony		
11-20	10YR 3/2	60	-		-		Silt loam			
	·									
¹ Tvpe: C=Cor	ncentration. D=Depletio	n. RM=Re	duced Matrix. CS=C	Covered or Co	ated San	d Grains.	² Location	: PL=Pore Lini	ng. M=Matrix	
Hydric Soil In	dicators:	,					Indicators for Probl	ematic Hydric	Soils ³ :	-
Histosol	(A1)		Polyvalue B	Below Surface	(S8 (LRF	R R, MLRA	2 cm Muck (A	10) (LRR K, L,	MLRA 149B)
Histic Ep	pipedon (A2)		149B)				Coast Prairie	Redox (A16) (I	LRR K, L, R)	
Black Hi	istic (A3)		Thin Dark S	Surface (S9) (I	LRR R, N	ILRA 149B)	5 cm Mucky P	eat or Peat (S	3) (LRR K, L,	R)
Hydroge	en Sulfide (A4)		Loamy Muc	ky Mineral (F	1) (LRR k	ζ, L)	Dark Surface	(S7) (LRR K, L	_)	
Stratified	d Layers (A5)		Loamy Gley	/ed Matrix (F2)		Polyvalue Belo	ow Surface (Sa	8) (LRR K, L)	
Depleted	d Below Dark Surface	(A11)	Depleted M	atrix (F3)			Thin Dark Sur	face (S9) (LRF	R K, L)	
Thick Da	ark Surface (A12)		Redox Dark	Surface (F6)			Iron-Mangane	se Masses (F1	12) (LRR K, L	, R)
Sandy M	Nucky Mineral (S1)		Depleted D	ark Surface (F	-7)		Piedmont Floo	dplain Soils (F	-19) (MLRA 1	49B)
Sandy G	Bleyed Matrix (S4)		Redox Dep	ressions (F8)			Mesic Spodic	(TA6) (MLRA	144A, 145, 14	19B)
Sandy R	(edox (S5)							aleliai (TFZ) Dark Surface (TE12)	
Supped	I Maliix (30)	DA 140B)					Other (Explain	in Remarks)	11 12)	
3Indicators of	hydronbytic vegetation	and wetlar	nd hydrology must h	e present un	less disti	irbed or prof		i in Remains)		
Restrictive L	wer (if observed)		ia nyarology mast a	o present, un	1000 01010					
	ayer (il observed).									
Depth (in	iches).						Hydric Soil Prese	nt? Yes	No	x
Bomorko: Tho	oritorion for hydria adi	io not mot	at this data point. T	The soil of this	data nai	nt waa varv	atopy			Λ
Remarks: The	chierion for hydric soil	is not met	at this data point.	me son at this	ala poi	nt was very	Storiy.			
L										

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WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site:		Xcel Ener	gy Proposed Su	Ibstation	City/County	: Town of Cou	deray,	Sawyer	Sampling Date:	7/	11/2011
Applicant/Owner:			HD	R Engineering, Ind	с.		State:	WI	Sampling Point:	T-1, DP	-2 (Wetland 1)
Investigator(s):			Ron Londré		Section, To	wnship, Range:		Secti	on 20, Township 38	3 North, Rai	nge 7 West
Landform (hillslope	e, terr	ace, etc.):		gradual hillslope		Local relief (con	cave, o	convex, no	one):	non	ie
Slope (%):	3%	Lat:			Long:				Datum:		
Soil Map Unit Nam	ne:	Capitola-C	Cebana complex	: (923A)				NWI or V	VWI classification:		T3/S3K
Are climatic/hydrol	logic d	conditions	on the site typic	al for this time of y	ear? Yes	No	Х	(If neede	d, explain any answ	wers in Rem	narks.)
Are Vegetation	Ν	Soil N	or Hydrology	N significantl	y disturbed?	Are "Norm	al Circ	umstance	es" present? Yes	Х	No
Are Vegetation	Ν	Soil N	or Hydrology	N naturally p	roblematic?	(If needed,	, explai	in any ans	swers in Remarks.)		
SUMMARY OF I	FIND	INGS - A	tach site map	showing sam	pling point	locations, trar	nsects	s, impor	tant features, etc	c.	

Hydrophytic Vegetation Present?	Yes X No	Is the Sampled Area						
Hydric Soil Present?	Yes X No	within a Wetland? Yes X No						
Wetland Hydrology Present?	Yes X No	If yes, optional Wetland Site ID: Wetland 1						
Remarks: Photograph 2 The surface	Remarks: Photograph 2 The surface or near-surface hydrology at the time of the site visit was below average for this time of year. Due to the presence of all							
three wetland criteria this data point	is located within a wetland.							

HYDROLOGY

	Secondary Indicators (minimum of two required)				
neck all that apply)	Surface Soil Cracks (B6)				
Surface Water (A1) X Water-Stained Leaves (B9)					
Aquatic Fauna (B13)	Moss Trim Lines (B16)				
Marl Deposits (B15)	Dry-Season Water Table (C2)				
Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)				
Oxidized Rhizospheres on Living R	oots (C3) Saturation Visible on Aerial Imagery (C9)				
Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)				
Recent Iron Reduction in Tilled Soil	s (C6) Geomorphic Position (D2)				
Thin Muck Surface (C7)	Shallow Aquitard (D3)				
Other (Explain in Remarks)	Microtopographic Relief (D4)				
	X FAC-Neutral Test (D5)				
X Depth (inches): N/A					
X Depth (inches): N/A					
X Depth (inches): N/A	Wetland Hydrology Present? Yes X No				
ng well, aerial photos, previous inspections), if available: Aerials, Topo Map, WWI, NRCS Soils Maps				
net at this data point.					
	<u>X</u> Water-Stained Leaves (B9) Aquatic Fauna (B13) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soil Thin Muck Surface (C7) Other (Explain in Remarks) X Depth (inches): X Depth (inches): X Depth (inches): N/A x Depth (inches): ng well, aerial photos, previous inspections met at this data point.				

VEGETATION - Use scientific names of plants.

Sampling Point:	T-1, DP-2

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
Tree Stratum (Plot size: <u>30 ft radius</u>)	% Cover	Species?	Status	Number of Dominant Species	That
1. Betula papyrifera	40	Yes	FACU	Are OBL, FACW, or FAC:	<u> </u>
2					
3				Total Number of Dominant Spe	ecies
4				Across All Strata:	(B)
5					
6.				Percent of Dominant Species 1	Гhat
7.				Are OBL, FACW, or FAC:	75% (A/B)
	40	= Total Cov	/er		
Sapling/Shrub Stratum (Plot size: 30 ft radius)				Prevalence Index worksheet:	
1. Alnus incana spp. rugosa	70	Yes	OBL	Total % Cover of:	Multiply by:
2. Cornus racemosa	20	No	FACW	OBL species	x 1 =
3. Spiraea alba	10	No	FACW	FACW species	x 2 =
4 Spiraea tomentosa	10	No	FACW	FAC species	x 3 =
5				FACIL species	x 4 =
6					x 5 -
7		-		Column Totals:	(A) (B)
· ·	110	- Total Cov	/or	Prevalence Index = B/A	(A)(B)
Horb Stratum (Plot aize: Efficative)	110	- 1010100		Hydrophytic Vegetation Indiast	
1 Corex eratete	60	Vee		Banid Test for Hydrophytic	UIS.
1. Calex alciala	40	Vee			vegetation
2. Matteuccia strutnoptens	40	tes		<u>A</u> Dominance Test is >50%	
			FACW	Morphological Adaptations1	(Provide supporting
4. Munienbergia giomerata	5	NO	FACW	data in Remarks or on a set	parate sheet)
5			·	—	
6			·	Problematic Hydrophytic Ve	getation' (Explain)
7			·	1 main atoms of building and such	
8				Indicators of hydric soil and we	etiand hydrology must be present,
9					
10				Definitions of Vegetation Strata	a:
11				height (DBH), regardless of he	cm) or more in diameter at breast ight.
Woody Vino Stratum (Distaire) 20 ft radius	135	= Total Cov	/er	Sapling/shrub - Woody plants I than 3.28 (1m) tall.	ess than 3 in. DBH and greater
1 None				Herb - All herbaceous (non-wo	ody) plants regardless of size and
				woody plants less than 3.28 ft t	tall.
2			·	Woody vines - All woody vines	greater than 3.28 ft in height
3			·		greater than 5.20 it in height.
4				Hydrophytic Vegetation	
	0	= Total Cov	ver	Fresent?	Yes <u>X</u> No
Remarks: The criterion for hydrophytic vegetation is me	et at this dat	a point. This	aata point	is located in an alder thicket.	

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SOIL

Depth	Matrix			Rec	lox Featur	es					
inches)	color (moist) %		Color (moist)	%	Type ¹	Loc ²	Texture	Remarks			
0-6	10YR 2/2	100	7.5YR 4/6	2-20%	С	М	Silt loam	Stony			
6-20	10YR 5/2	100	7.5YR 4/6	>20%	С	М	Silt loam	Stony			
Vpe: C=Con	centration. D=Depleti	on. RM=Re	educed Matrix. CS=C	overed or Co	pated San	d Grains.	² Locatio	Dn: PL=Pore Lining, M=Matrix.			
vdric Soil Ind	dicators:	- /	, ,				Indicators for Pro	blematic Hydric Soils ³ :			
Histosol Histic Ep	(A1) ipedon (A2)		Polyvalue B 149B)	elow Surface	e (S8 (LRF	R R, MLRA	2 cm Muck (Coast Prairie	(A10) (LRR K, L, MLRA 149B) e Redox (A16) (LRR K, L, R)			
Black His	stic (A3)		Thin Dark S	urface (S9)	(LRR R, N	ILRA 149B)	5 cm Mucky	Peat or Peat (S3) (LRR K, L, R)			
Hydroger	n Sulfide (A4)		Loamy Muck	ky Mineral (F	1) (LRR 🖌	K, L)	Dark Surface	e (S7) (LRR K, L)			
Stratified Layers (A5) Loamy Gleyed Matrix (F2)							Polyvalue Below Surface (S8) (LRR K, L)				
Depleted Below Dark Surface (A11) X Depleted Matrix (F3)							I hin Dark Surface (S9) (LRR K, L)				
Thick Da	rk Surface (A12)		X Redox Dark	Surface (F6	5) 		Iron-Mangar	nese Masses (F12) (LRR K, L, R)			
Sandy M	ucky Mineral (S1)		Depleted Da	ark Surface (F7)		Piedmont Fl	oodplain Solls (F19) (MLRA 149B)			
Sandy G	leyed Matrix (S4)		Redox Depr	essions (F8)			Mesic Spodi	IC (1A6) (MLRA 144A, 145, 149B)			
Sandy R	edox (S5)						Ked Parent	IVIATERIAI (TF2)			
Stripped	Matrix (S6)	DA 4 1953						w Dark Sufface (TF12)			
Dark Sur	tace (S7) (LRR R, MI	_RA 149B)	and header to the state		-l P -:	ula a di si di si	Uther (Expla	ain in Remarks)			
indicators of I	nyarophytic vegetatio	n and wetla	ana hydrology must b	e present, u	niess distu	irbed or prot	piematic.				
estrictive La	yer (if observed):										
i ype:											
Depth (ind	cnes):						Hydric Soil Pres	ient (Yes <u>X</u> No			
emarks: The	criterion for hydric so	il is met at f	this data point.								

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WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site:	Xcel Energy	Proposed Substa	ation	City/Count	y: Town of Co	uderay,	Sawyer	Sampling Da	ate:	7/11/2011	
Applicant/Owner:		HDR E	ngineering,	, Inc.		State:	WI	Sampling Po	oint:	T-2, DP-3 (Upland)	
Investigator(s):		Ron Londré		Section, To	ownship, Range:		Sect	ion 20, Towns	hip 38 N	lorth, Range 7 West	
Landform (hillslope, ter	rrace, etc.):	gra	adual hillslo	ре	Local relief (co	ncave,	convex, n	one):		none	
Slope (%): 3%	Lat:			Long:				Datum:			
Soil Map Unit Name:	Magnor-Free	on complex (757	B)				NWI or \	NWI classifica	ation:	none	
Are climatic/hydrologic	conditions on	the site typical fo	r this time o	of year? Yes	No	Х	(If neede	ed, explain any	y answer	rs in Remarks.)	
Are Vegetation N	Soil N	or Hydrology 1	significa	antly disturbed	? Are "Nori	mal Circ	cumstance	es" present? Y	′es	X No	
Are Vegetation N	Soil N	or Hydrology 1	naturall	y problematic?	(If neede	d, expla	ain any an	swers in Rem	arks.)		
SUMMARY OF FINE	DINGS - Atta	ch site map sh	owing sa	mpling poin	t locations, tra	ansect	s, impor	tant feature	s, etc.		
Hydrophytic Vegetation	on Present?	Yes	No X		Is the Sample	d Area					
Hydric Soil Present?		Yes	No X		within a Wetla	and?	Yes	No	Х		
Wetland Hydrology P	resent?	Yes	No X		If yes, optional	l Wetlan	d Site ID:				
Remarks: Photograp a boundary between	h 3 The surfa a corn field an	ce or near-surfac d an alder thicket	e hydrolog: . Due to th	y at the time of le lack of all thi	the site visit was ee wetland criter	s below ria, this	average f data poin	or this time of t is not located	year. Th 1 within a	nis data point is located at a wetland.	

HYDROLOGY

Wetland Hydrology Indicators:							Secondary Indicators (minimum of two required)				
Primary Indicators (minimum of c	one is require	d: chec	ck all th	nat apply)			Surface Soil Cracks (B6)				
Surface Water (A1)			N	/ater-Stained Lea	ves (B9)		Drainage Patterns (B10)				
High Water Table (A2)			A	quatic Fauna (B1	3)		Moss Trim Lines (B16)				
Saturation (A3) Marl Deposits (B15)							Dry-Season Water Table (C2)				
Water Marks (B1)			н	ydrogen Sulfide C	Ddor (C1)		Crayfish Burrows (C8)				
Sediment Deposits (B2)			0	xidized Rhizosph	eres on Living F	Roots (C3)	Saturation Visible on Aerial Imagery (C9)				
Drift Deposits (B3) Presence of Reduced Iron (C4)						Stunted or Stressed Plants (D1)					
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6)						ils (C6)	Geomorphic Position (D2)				
Iron Deposits (B5) Thin Muck Surface (C7)							Shallow Aquitard (D3)				
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)							Microtopographic Relief (D4)				
Sparsely Vegetated Conca	ve Surface (E	88)					FAC-Neutral Test (D5)				
Field Observations:											
Surface Water Present?	Yes	No 2	X C	Depth (inches):	N/A						
Water Table Present?	Yes	No 🗌	X C	Depth (inches):	N/A						
Saturation Present?	Yes	No 🛛	X C	Depth (inches):	N/A	Wetland Hy	vdrology Present? YesNoX				
(includes capillary fringe)											
Describe Recorded Data (stream	ı gauge, moni	toring	well, a	erial photos, prev	ious inspection	s), if available:	Aerials, Topo Map, WWI, NRCS Soils Maps				
Remarks: The criterion for wetlar	nd hydrology i	s not m	net at t	this data point.							

VEGETATION - Use scientific names of plants.

Sampling Point:	T-2, DP-3
oumpling i ont.	12, D1 0

	Absolute	Dominant	Indicator	Dominance Test worksheet:					
Tree Stratum (Plot size: 30 ft radius)	% Cover	Species?	Status	Number of Dominant Species That					
1. none				Are OBL, FACW, or FAC:		1	(A)		
2.									
3.				Total Number of Dominant Sp					
4.				Across All Strata:		2	(B)		
5		-					_(-)		
·			·	Percent of Dominant Species	That				
7			·	Are OBL, FACW, or FAC:		50%	(A/R)		
	0	- Total Cov	/er			5070	_(//////		
Sanling/Shrub Stratum (Plot size: 30 ft radius)		- 10101 000		Prevalence Index worksheet:					
1 pone				Total % Cover of	Mu	ltiply by:			
2			·		<u>v 1 –</u>	0	_		
3			·	EACW species 60	×2-	120	_		
аа			·	FAC species 00	×2=_	00	_		
4. E				FACL appaires 35	× 4 –	190			
5				FACU species 45	x 4 =	100	_		
0			·	OPL species 35	x 5 =	175			
/		Tatal Oa		Column Lotals: 173	(A)	574	_(B)		
	0		ver	Frevalence index = B/A	.= 3.0	31791907	5		
Herb Stratum (Plot size: <u>5 ft radius</u>)		Ň	54014	Hydrophytic Vegetation Indicat	ors:				
1. Agrostis gigantea	60	Yes	FACW	Rapid Test for Hydrophytic	vegetati	on			
2. Solidago canadensis	40	Yes	FACU	Dominance Test is >50%					
3. Cirsium arvense	30	No	UPL	Prevalence index is ≤3.0° Morphological Adaptations1 (Provide supporting					
4. <u>Plantago major</u>	20	No	FAC	data in Remarks or on a separate sheet)					
5. <u>Rumex crispus</u>	10	No	FAC	-					
6. Chrysanthemum leucanthemum	5	No	UPL	Problematic Hydrophytic Vegetation ¹ (Explain)					
7. Trifolium pratense	5	No	FACU						
8. Populus tremuloides	3	No	FAC	'Indicators of hydric soil and w	etland hy	/drology m	nust be p	oresent,	
9					0.				
10				Definitions of Vegetation Strat	a:				
11				Tree - Woody plants 3 in. (7.6	cm) or m	ore in diar	neter at	breast	
12				neight (DBH), regardless of he	agni.				
	173	= Total Cov	/er	Sapling/shrub - Woody plants	less thar	3 in. DBI	H and gre	eater	
Woody Vine Stratum (Plot size: <u>30 ft radius</u>)				than 3.28 (1m) tail.					
1. <u>none</u>				Herb - All herbaceous (non-wo	ody) plai	nts, regard	dless of s	size, and	
2				woody plants less than 3.28 ft	tall.				
3				Woody vines - All woody vines	greater	than 3.28	ft in heig	ght.	
4				Hydrophytic Vegetation					
	0	= Total Cov	/er	Present?	Yes	5	No	Х	

US Army Corps of Engineers

SOIL

Depth	Matrix	-		Rec	lox Featur	es						
(inches)	Color (moist) %		Color (moist)	%	Type ¹	Loc ²	Texture	Remarks				
0-4	10YR 3/3	100	-		-	-	Silt loam					
4-5	10YR 3/3	100	7.5YR 4/6	2-20%	С	М	Silt loam					
5-20+	10YR 5/3	100	7.5YR 4/6	2-20%	С	М	Silt loam	few stones				
		· ·										
		· ·										
				-								
		· ·										
		· ·										
		· ·										
¹ Type: C=Cond	centration, D=Depleti	on, RM=Re	duced Matrix, CS=C	overed or Co	oated San	d Grains.	² Location	n: PL=Pore Linir	ng, M=Matrix			
Hydric Soil Ind	licators:						Indicators for Prob	lematic Hydric S	Soils ³ :			
Histosol (A1)		Polyvalue B	elow Surface	e (S8 (LRF	R R, MLRA	2 cm Muck (A	10) (LRR K, L,	MLRA 149B)	1		
Histic Epi	pedon (A2)		149B)				Coast Prairie	Redox (A16) (L	RR K, L, R)			
Black His	tic (A3)		Thin Dark S	urface (S9)	(LRR R, N	ILRA 149B)	5 cm Mucky F	Peat or Peat (S3) (LRR K, L,	R)		
Hydrogen	n Sulfide (A4)		Loamy Muck	ky Mineral (F	⁻ 1) (LRR k	K, L)	Dark Surface	(S7) (LRR K, L)				
Stratified	Layers (A5)		Loamy Gley	ed Matrix (F	2)		Polyvalue Bel	low Surface (S8) (LRR K, L)			
Depleted	Below Dark Surface	(A11)	Depleted Ma	atrix (F3)			Thin Dark Surface (S9) (LRR K, L)					
Thick Dar	rk Surface (A12)		Redox Dark	Surface (F6	5)		Iron-Mangane	ese Masses (F1	2) (LRR K, L	, R)		
Sandy Mu	ucky Mineral (S1)		Depleted Da	irk Surface ((F7)		Piedmont Flo	odplain Soils (F	19) (MLRA 1	49B)		
Sandy Gl	eyed Matrix (S4)		Redox Depr	essions (F8))		Mesic Spodic	(TA6) (MLRA 1	44A, 145, 14	l9B)		
Sandy Re	edox (S5)						Red Parent N	laterial (TF2)				
Stripped I	Matrix (S6)						Very Shallow	Dark Surface (1	F12)			
Dark Surf	ace (S7) (LRR R, MI	LRA 149B)					Other (Explain	n in Remarks)				
³ Indicators of h	nydrophytic vegetatio	n and wetla	nd hydrology must be	e present, u	nless distu	irbed or pro	blematic.					
Restrictive Lay	/er (if observed):											
Type:												
Depth (inc	hes):						Hydric Soil Prese	ent? Yes	No	Х		
Remarks: The o	criterion for hydric so	il is not met	at this data point.			·						
l												

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WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site:	Xcel Energy Proposed Substation City/Cou				City/County:	Town of Couderay, Sawyer			Sampling Date:	7/	/11/2011			
Applicant/Owner:				HDR	Engin	eering, Inc) .		State: WI Sampling P			: T-2, DP-4 (Wetland 1)		
Investigator(s):		Ron Londré S						ion, Township, Range: Section 20, Township 38				8 North, Ra	nge 7 West	
Landform (hillslope, terrace, etc.): hillslope						Local relief (concave, convex, none):					none			
Slope (%):	3%	6 Lat: Long:									Datum:			
Soil Map Unit Nan	ne:	Capitola	a-Ce	bana complex ((923A)					NWI or V	VWI classification:		T3/S3K	
Are climatic/hydro	logic d	condition	ns on	the site typical	for this	time of ye	ear? Yes	No	Х	(If neede	d, explain any ans	wers in Ren	narks.)	
Are Vegetation	Ν	Soil	Ν	or Hydrology	N s	ignificantly	y disturbed?	Are "Norr	mal Circ	umstance	es" present? Yes	Х	No	
Are Vegetation	Ν	Soil	Ν	or Hydrology	<u>N</u> n	aturally pr	oblematic?	(If neede	d, expla	in any ans	swers in Remarks.)			
SUMMARY OF	FIND	INGS -	Atta	ch site map	showi	ng samp	oling point	locations, tra	ansects	s, impor	tant features, et	c.		

Hydrophytic Vegetation Present?	Yes_	Х	No	Is the Sampled Area					
Hydric Soil Present?	Yes	Х	No	within a Wetland?	Yes	Х	No		
Wetland Hydrology Present?	Yes	Х	No	If yes, optional Wetland	Site ID:			Wetland 1	
Remarks: Photograph 3 The surface	or near-s	urface	e hydrology at the tim	he of the site visit was below av	erage for	this tir	ne of yea	ar. This data point is located	Ł
within an alder thicket. Due to the pre-	esence of	all thr	ee wetland criteria th	nis data point is located within a	a wetland.		-	-	

HYDROLOGY

Wetland Hydrology Indicators:					Secondary Indicators (minimum of two required)
Primary Indicators (minimum of	one is required: o	check a	ll that apply)		Surface Soil Cracks (B6)
Surface Water (A1)		Х	Water-Stained Leaves (B9)		Drainage Patterns (B10)
High Water Table (A2)			Aquatic Fauna (B13)		Moss Trim Lines (B16)
Saturation (A3)			Dry-Season Water Table (C2)		
X Water Marks (B1)			Hydrogen Sulfide Odor (C1)		Crayfish Burrows (C8)
Sediment Deposits (B2)		Х	Oxidized Rhizospheres on Living F	Roots (C3)	Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3)			Presence of Reduced Iron (C4)		Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4)			Recent Iron Reduction in Tilled So	oils (C6)	Geomorphic Position (D2)
Iron Deposits (B5)			Shallow Aquitard (D3)		
Inundation Visible on Aeria	al Imagery (B7)		Microtopographic Relief (D4)		
Sparsely Vegetated Conca	ave Surface (B8)				X FAC-Neutral Test (D5)
Field Observations:					
Surface Water Present?	Yes No	х	Depth (inches):		
Water Table Present?	Yes No	Х	Depth (inches):		
Saturation Present?	Yes No	Х	Depth (inches):	Wetland Hyd	drology Present? Yes X No
(includes capillary fringe)					
Describe Recorded Data (stream	n gauge, monitor	ing wel	l, aerial photos, previous inspection	s), if available: A	Aerials, Topo Map, WWI, NRCS Soils Maps
Remarks: The criterion for wetla	nd hydrology is r	net at th	nis data point.		
Sampling Po	oint:	T-2,	DP-4		
-------------	-------	------	------		

				Dominanco Tost workshoot:	
	Absolute	Dominant	Indicator	Number of Densinent Onesion	
i ree Stratum (Piot size: <u>30 ft radius</u>)	% Cover	Species?	Status	Are OBL EACW or EAC	inat d
1. <u>none</u>				Ale OBE, I AOW, OI I AO.	(A)
2			·		
3				Total Number of Dominant Spe	cies
4				ACTOSS All Strata.	5(B)
5					
6				Percent of Dominant Species 1	That
7				Are OBL, FACW, or FAC:	<u> 80% (</u> A/B)
	0	= Total Cov	/er		
Sapling/Shrub Stratum (Plot size: <u>30 ft radius</u>)				Prevalence Index worksheet:	
1. Alnus incana spp. rugosa	30	Yes	OBL	Total % Cover of:	Multiply by:
2. Fraxinus nigra	30	Yes	FACW	OBL species	x 1 =
3. Lonicera tatarica	10	No	FACU	FACW species	x 2 =
4. Rhamnus cathartica	5	No	FACU	FAC species	x 3 =
5.				FACU species	x 4 =
6.				UPL species	x 5 =
7.			·	Column Totals:	(A) (B)
	75	= Total Cov	/er	Prevalence Index = B/A	=
Herb Stratum (Plot size: 5 ft radius)				Hydrophytic Vegetation Indicate	ors:
1. Carex arctata	30	Yes	UPL	Rapid Test for Hydrophytic	Vegetation
2. Geum canadense	30	Yes	FAC	X Dominance Test is >50%	5
3. Rubus strigosus	30	Yes	FACW	Prevalence Index is ≤3.0 ¹	
4. Ribes americanum	20	No	FACW	Morphological Adaptations ¹	(Provide supporting
5. Fragaria virginiana	10	No	FAC	data in Remarks or on a sep	parate sheet)
6.			·	Problematic Hydrophytic Ve	eqetation ¹ (Explain)
7.					
8				¹ Indicators of hydric soil and we	etland hydrology must be present,
9			·	unless disturbed or problemation	o.
10			·	Definitions of Vegetation Strata	 a:
11			·	Tree - Woody plants 3 in. (7.6c	m) or more in diameter at breast
12			·	height (DBH), regardless of he	ight.
·	120	= Total Cov	/er	Sapling/shrub - Woody plants I	ess than 3 in. DBH and greater
Woody Vine Stratum (Plot size: 30 ft radius)	120	- 10101 00		than 3.28 (1m) tall.	Ū.
1 none				Herb - All herbaceous (non-wo	ody) plants, regardless of size, and
2				woody plants less than 3.28 ft t	all.
3				Woody vines - All woody vines	greater than 3.28 ft in height.
4				Hydronhytic Vegetation	
·	0	- Total Cov	/er	Present?	Yes X No
		- 10(a) 00			

Remarks: The criterion for hydrophytic vegetation is met at this data point. This data point is located in an alder thicket. Alders were observed in low abundances in other upland areas as well.

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SOIL

(inches)	epth Matrix Re					es					
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks			
0-6	10YR 3/3	100	7.5YR 4/6	2-20%	С	М	Silt loam	Stony			
6-20+	10YR 3/2	40	7.5YR 4/6	>20%	С	М	Silt loam	Stony			
6-20+	10YR 5/2	60	-	-	-	-	Silt loam				
		· ·									
		· ·									
								-			
		. <u></u> .									
Type: C=Conc	centration, D=Depleti	on, RM=Re	educed Matrix, CS=C	overed or Co	oated San	d Grains.	² Locatio	n: PL=Pore Lining, M=Matrix.			
lydric Soil Ind	licators:						Indicators for Pro	blematic Hydric Soils ³ :			
Histosol (/	A1)		Polyvalue B	elow Surface	e (S8 (LRF	R R, MLRA	2 cm Muck (A10) (LRR K, L, MLRA 149B)			
Histic Epip	pedon (A2)		1496)				Coast Prairie	e Redox (A16) (LRR K, L, R)			
Black Hist	tic (A3)		Thin Dark S	urface (S9)	(LRR R, M	ILRA 149B)	5 cm Mucky	Peat or Peat (S3) (LRR K, L, R)			
Hydrogen	Sulfide (A4)		Loamy Much	ky Mineral (F	⁻ 1) (LRR K	K, L)	Dark Surface	e (S7) (LRR K, L)			
Stratified I	Layers (A5)		Loamy Gley	ed Matrix (F	2)		Polyvalue Below Surface (S8) (LRR K, L)				
Depleted I	Below Dark Surface	(A11)	Depleted Ma	atrix (F3)			Thin Dark Surface (S9) (LRR K, L)				
Thick Darl	k Surface (A12)		Redox Dark	Surface (F6	5)		Iron-Manganese Masses (F12) (LRR K, L, R)				
Sandy Mu	ucky Mineral (S1)		Depleted Da	ark Surface ((F7)		Piedmont Fl	odplain Soils (F19) (MLRA 1498)			
Sandy Gle	eyed Matrix (S4)		X Redox Depr	essions (F8))		Mesic Spodi	C (TA6) (MLRA 144A, 145, 149B)			
Sandy Re	edox (S5)							valenai (TF2)			
Stripped K	Viatrix (56)						Other (Evola	in in Romarks)			
Jandiasters of h	ace (S7) (LKK K, IVI	LKA 149D) n and wate			alaaa diatu	wheel or prol		in in Remarks)			
sindicators of h		n and wella	ind hydrology must b	e present, ui	niess distu		biematic.				
Restrictive Lay	/er (if observed):										
Type:											
Depth (Incl	nes):						Hydric Soil Pres	ent? Yes X No			

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Project/Site:	Xcel Energy	Proposed Substa	ation	City/County:	Town of Cou	uderay,	Sawyer	Sampling Da	te:	7/	/11/2011
Applicant/Owner:		HDR E	ngineering, In	с.		State:	WI	Sampling Po	int:	T-3, D	P-5 (Upland)
Investigator(s):		Ron Londré		Section, Tow	nship, Range:		Sectio	on 20, Townsł	hip 38 No	orth, Ra	nge 7 West
Landform (hillslope, terr	race, etc.):	gi	adual slope	L	ocal relief (co	ncave, c	convex, no	one):		nor	ne
Slope (%): 2	Lat:			Long:				Datum:			
Soil Map Unit Name:	Magnor-Free	on complex (757	B)				NWI or W	WI classifica	ition:		none
Are climatic/hydrologic	conditions on	the site typical fo	r this time of y	/ear? Yes	No	Х	(If neede	d, explain any	answer	s in Rem	narks.)
Are Vegetation N	Soil N	or Hydrology 1	significant	y disturbed?	Are "Norn	nal Circ	umstance	s" present? Y	es	х	No
Are Vegetation N	Soil N	or Hydrology	naturally p	roblematic?	(If needed	d, explai	in any ans	wers in Rema	arks.)		
SUMMARY OF FIND	INGS - Atta	ch site map sh	owing sam	pling point l	ocations, tra	nsects	s, import	ant features	s, etc.		
Hydrophytic Vegetatio	on Present?	Yes X	No	I	s the Sampleo	d Area					
Hydric Soil Present?		Yes	No X	v	vithin a Wetla	nd?	Yes	No	Х		
Wetland Hydrology Pr	resent?	Yes	No X	·	If yes, optional	Wetland	Site ID:				
Remarks: Photograph three wetland criteria	4 The surfa and based up	ce or near-surfac on professional ju	e hydrology at Idgment, this o	the time of the data point is no	e site visit was ot located withi	below a in a wet	average fo land.	or this time of	year. Du	e to the	lack of two of the

						Secondary Indicators (minimum of two required)
ne is requi		Surface Soil Cracks (B6)				
		Drainage Patterns (B10)				
			Aquatic Fauna (B13	3)		Moss Trim Lines (B16)
			Marl Deposits (B15))		Dry-Season Water Table (C2)
			Hydrogen Sulfide O	dor (C1)		Crayfish Burrows (C8)
			Oxidized Rhizosphe	eres on Living F	Roots (C3)	Saturation Visible on Aerial Imagery (C9)
			Presence of Reduce	ed Iron (C4)		Stunted or Stressed Plants (D1)
			Recent Iron Reduct	ion in Tilled So	ils (C6)	Geomorphic Position (D2)
			Thin Muck Surface	(C7)		Shallow Aquitard (D3)
I Imagery (B7)	-	Other (Explain in Re	emarks)		Microtopographic Relief (D4)
ve Surface	(B8)		· · · ·	-		X FAC-Neutral Test (D5)
Yes	No	х	Depth (inches):	N/A		
Yes	No	Х	Depth (inches):	N/A		
Yes	No	Х	Depth (inches):	N/A	Wetland Hy	ydrology Present? Yes No X
					-	
gauge, mo	onitorin	g wel	l, aerial photos, previ	ous inspections	s), if available:	Aerials, Topo Map, WWI, NRCS Soils Maps
nd hydrolog	jy is not	t met	at this data point.			
	ne is requi	ne is required: ch	ne is required: check a	ne is required: check all that apply)	ne is required: check all that apply)	ne is required: check all that apply)

Compling Daint	
Sampling Form.	1-3, DF-3

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: <u>30 ft radius</u>)	% Cover	Species?	Status	Are OBL EACW or EAC:
1. Populus tremuloides	30	Yes	FAC	Ale obe, HAON, OFFAC(A)
2. Fraxinus higra		Yes	FACW	Total Number of Deminent Species
	20	res	FAC	Across All Strata:
4			·	/ (B)
5			·	Percent of Dominant Species That
o			·	Are OBL_FACW_or_FAC:
/	80	- Total Ca		<u>/1%</u> (A/B)
Sopling/Shruh Stratum (Distaire) 20 ft radius	00		/ei	Provolonce Index worksheet:
1 Frovinuo pigro	15	Vaa	EA CIM	Total % Cover of:
		Vee		
2. Anus incana spp. rugosa	5	res	UBL	OBL species x 1 = EACW/ exercise x 2 =
3				FACW species $x_2 = $
4			·	FAC species $x_3 = $
5			·	
o			·	$\begin{array}{c} \text{OPL species} \\ \text{Oplume Tables} \\ \end{array} $
/·		Total Cau		Column Totals: (A) (B)
Hark Otherture (Distained 5.6 and inc.)	20		ver	
Herb Stratum (Plot size: <u>5 ft radius</u>)		Vaa		Hydrophytic Vegetation Indicators:
1. Carex perinsylvanica		Yee		Rapid Test for Hydrophylic Vegetation
2. Aster macrophylius		<u>res</u>		A Dominance Test is >50%
				Morphological Adaptations ¹ (Provide supporting
4. Carex arctata	5	INO	UPL"	data in Remarks or on a separate sheet)
5			·	— Dechlamatic Ubularatic Vanatatica 1 (Fundaio)
0				
/				Indicators of hydric soil and wetland hydrology must be present
8				unless disturbed or problematic.
9				Definitions of Vegetation Strata
10			·	Tree - Woody plants 3 in (7 6cm) or more in diameter at breast
10				height (DBH), regardless of height.
12	4.45	Total Cau		Sapling/shrub - Woody plants less than 3 in DBH and greater
Woody Vine Stratum (Plot size: 30 ft radius)	145		ver	than 3.28 (1m) tall.
1. none				Herb - All herbaceous (non-woody) plants, regardless of size, and
2.				woody plants less than 3.28 ft tall.
3.				Woody vines - All woody vines greater than 3.28 ft in height.
4.				Hydrophytic Vegetation
	0	= Total Cov	/er	Present? Yes <u>X</u> No
Remarks: The criterion for hydrophytic vegetation is met	t at this data	a point. The	overstory i	s dominated by wetland plants, while the herbaceous layer is

dominated by plants typically found in upland locations. Herbaceous plants are often better indicators of recent hydrology versus trees and shrubs, which are longer lived. *Indicator from Swink, F. and Wilhelm, G. 1994. Plants of the Chicago Region. This data point is located in a hardwood forest.

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SOIL

Profile Descrip	otion: (Describe to t	he depth ne	eded to document	the indicat	or or con	firm the ab	sence of indicators.)					
Depth	Matrix			Red	ox Featur	es						
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks				
0-8	10YR 3/3	100	-		-	-	Silt Loam					
8-11	10YR 4/6	100	-		-	-	Silt Loam					
11-20+	10YR 4/6	100	7.5YR 5/6	2-20%	-	-	Silt Loam					
						· <u> </u>	·					
¹ Type: C=Cond	centration, D=Depletion	on, RM=Red	duced Matrix, CS=C	overed or Co	bated San	d Grains.	² Location: PL=Po	re Lining, M=Matrix.				
Hydric Soil Ind	licators:						Indicators for Problematic H	lydric Soils ³ :				
Histosol (A1)		Polyvalue B	elow Surface	e (S8 (LRF	R R, MLRA	2 cm Muck (A10) (LRF	₹ K, L, MLRA 149B)				
Histic Epi	pedon (A2)		1496)				Coast Prairie Redox (A	\16) (LRR K, L, R)				
Black Hist	tic (A3)		Thin Dark S	urface (S9) (LRR R, M	ILRA 149B)	5 cm Mucky Peat or P	eat (S3) (LRR K, L, R)				
Hydrogen	Sulfide (A4)		Loamy Mucl	ky Mineral (F	1) (LRR k	K, L)	Dark Surface (S7) (LR	.R K, L)				
Stratified	Layers (A5)		Loamy Gley	ed Matrix (F2	2)		Polyvalue Below Surface (S8) (LRR K, L)					
Depleted	Below Dark Surface	(A11)	Depleted Ma	atrix (F3)			Thin Dark Surface (S9) (LRR K, L)					
Thick Dar	rk Surface (A12)		Redox Dark	Surface (F6)		Iron-Manganese Masses (F12) (LRR K, L, R)					
Sandy Mu	ucky Mineral (S1)		Depleted Da	ark Surface (F7)		Piedmont Floodplain Soils (F19) (MLRA 149B)					
Sandy Gle	eyed Matrix (S4)		Redox Depr	essions (F8)			Mesic Spodic (TA6) (MLRA 144A, 145, 149B)					
Sandy Re	edox (S5)						Red Parent Material (1	F2)				
Stripped M	Matrix (S6)						Very Shallow Dark Su	rface (TF12)				
Dark Surf	ace (S7) (LRR R, ML	.RA 149B)					Other (Explain in Rem	arks)				
³ Indicators of h	ydrophytic vegetation	n and wetlar	nd hydrology must b	e present, ur	nless distu	urbed or prol	blematic.					
Restrictive Lay	/er (if observed):											
Туре:												
Depth (inc	hes):						Hydric Soil Present? Yes	NoX				
Remarks: The c	criterion for hydric soi	l is not met	at this data point.									

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Project/Site:		Xcel E	nergy	Proposed Sub	station	City/County:	Town of Co	uderay,	Sawyer	Sampling Date:	7.	/12/2011	
Applicant/Owner:				HDF	R Engineering, In	NC.	State: WI Sampling Point:			Sampling Point:	T-3, DP-6 (Wetland 1)		
Investigator(s):	Ron Londré S				Section, Tow	nship, Range:		Secti	on 20, Township 38	3 North, Ra	nge 7 West		
Landform (hillslop	e, terra	ace, etc	c.):		gradual slope		Local relief (co	ncave,	convex, n	one):	nor	ne	
Slope (%):	3	Lat:				Long:				Datum:			
Soil Map Unit Nan	ne:	Magno	r-Fre	eon complex (7	57B)				NWI or W	WWI classification:		none	
Are climatic/hydro	logic c	onditio	ns on	the site typical	for this time of y	year? Yes	No	Х	(If neede	d, explain any ansv	vers in Ren	narks.)	
Are Vegetation	Ν	Soil	Ν	or Hydrology	N significant	ly disturbed?	Are "Norr	mal Circ	umstance	es" present? Yes	Х	No	
Are Vegetation	Ν	Soil	Ν	or Hydrology	N naturally p	oroblematic?	(If needeo	d, expla	in any ans	swers in Remarks.)		_	

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

Hydrophytic Vegetation Present?	Yes X No	Is the Sampled Area							
Hydric Soil Present?	Yes X No	within a Wetland? Yes X No							
Wetland Hydrology Present?	Yes X No	If yes, optional Wetland Site ID: Wetland 1							
Remarks: Photographs 4 - 6. The sur	Remarks: Photographs 4 - 6. The surface or near-surface hydrology at the time of the site visit was below average for this time of year. Due to the presence of								
all three wetland criteria this data poin	t is located within a wetland. This d	lata point is located in a hardwood swamp.							

;9)

Sampling Point:	T-3. DP-6
oumphing romu.	10, 01 0

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: <u>30 ft radius</u>)	% Cover	Species?	Status	Number of Dominant Species That
1. Populus tremuloides	40	Yes	FAC	Are OBL, FACW, or FAC: 9 (A)
2. Acer rubrum	30	Yes	FAC	
3. <u>Fraxinus nigra</u>	30	Yes	FACW	Total Number of Dominant Species
4				Across All Strata: 10 (B)
5				
6				Percent of Dominant Species That
7				Are OBL, FACW, or FAC: 90% (A/B)
	100	= Total Cov	/er	
Sapling/Shrub Stratum (Plot size: <u>30 ft radius</u>)				Prevalence Index worksheet:
1. Fraxinus nigra	30	Yes	FACW	Total % Cover of: Multiply by:
2. Viburnum lentago	20	No	FAC	OBL species x 1 =
3.				FACW species x 2 =
4.				FAC species x 3 =
5.				FACU species x 4 =
6.				UPL species x 5 =
7.			·	Column Totals: (A) (B)
	50	= Total Cov	/er	Prevalence Index = B/A =
Herb Stratum (Plot size: 5 ft radius)				Hydrophytic Vegetation Indicators:
1. Carex arctata	20	Yes	UPL	Rapid Test for Hydrophytic Vegetation
2. Onoclea sensibilis	20	Yes	FACW	X Dominance Test is >50%
3. Osmunda cinnamomea	10	Yes	FACW	Prevalence Index is ≤3.0 ¹
4. Fragaria virginiana	10	Yes	FAC	Morphological Adaptations ¹ (Provide supporting
5. Rubus idaeus	10	Yes	FACW	data in Remarks or on a separate sheet)
6. Carex tenera	10	Yes	FAC	Problematic Hydrophytic Vegetation ¹ (Explain)
7. Agrostis gigantea	5	No	FACW	
8. Aster macrophyllus	5	No	UPL	¹ Indicators of hydric soil and wetland hydrology must be present,
9.				unless disturbed or problematic.
10.				Definitions of Vegetation Strata:
11.				Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast
12.				height (DBH), regardless of height.
	90	= Total Cov	/er	Sapling/shrub - Woody plants less than 3 in. DBH and greater
Woody Vine Stratum (Plot size: 30 ft radius)				than 3.28 (1m) tall.
1. none				Herb - All herbaceous (non-woody) plants, regardless of size, and
2.			·	woody plants less than 3.28 ft tall.
3.			·	Woody vines - All woody vines greater than 3.28 ft in height.
4.				Hydrophytic Vegetation
	0	= Total Cov	/er	Present? Yes X No
Remarks: The criterion for hydrophytic vegetation is me	t at this dat	a point.		

US Army Corps of Engineers

SOIL

Profile Descri	ption: (Describe to t	he depth n	eeded to document	the indicat	or or conf	irm the abs	sence of indicators.)			
(inches)	Matrix	0/	Color (moint)	Rec	IOX Featur	es	Tautura	Demorika		
, , , ,				2 200/	Туре	LOC ²	Silt loom	Remarks		
0-6	10YR 3/3	100	7.5YR 4/6	2-20%		-	Silt loam			
6-20+	10 YR 5/2	100	7.5YR 4/6	>20%	<u> </u>	-	Silt loam			
							·			
		<u> </u>		· <u> </u>			·			
							·			
							·			
¹ Type: C=Con	centration, D=Depleti	on, RM=Re	duced Matrix, CS=Co	overed or Co	pated San	d Grains.	² Location: F	PL=Pore Lining, M=Matrix.		
Hydric Soil Ind	dicators:				(00 (I D D		Indicators for Problen	natic Hydric Soils ³ :		
Histosol	(A1)			elow Surface	e (S8 (LRF	K R, MLRA	2 cm Muck (A10) (LRR K, L, MLRA 149B)		
Histic Ep	ipedon (A2)			Coast Prairie Re	edox (A16) (LRR K, L, R)					
Black His	stic (A3)		LRA 149B)	5 cm Mucky Pea	at or Peat (S3) (LRR K, L, R)					
Hydroger	n Sulfide (A4)		., L)	Dark Surface (S7) (LRR K, L)						
Stratified	Layers (A5)			Polyvalue Below Surface (S8) (LRR K, L)						
Depleted	Below Dark Surface	(A11)	X Depleted Ma	trix (F3)			Thin Dark Surface (S9) (LRR K, L)			
Thick Da	rk Surface (A12)		Redox Dark	Surface (F6)		Iron-Manganese Masses (F12) (LRR K, L, R)			
Sandy M	ucky Mineral (S1)		Depleted Da	rk Surface (F7)		Piedmont Flood	plain Soils (F19) (MLRA 149B)		
Sandy G	leyed Matrix (S4)		X Redox Depre	essions (F8)			Mesic Spodic (TA6) (MLRA 144A, 145, 149B)			
Sandy R	edox (S5)						Red Parent Material (TF2)			
Stripped	Matrix (S6)						Very Shallow Da	ark Surface (TF12)		
Dark Sur	face (S7) (LRR R, MI	RA 149B)					Other (Explain ir	n Remarks)		
³ Indicators of	hydrophytic vegetatio	n and wetla	nd hydrology must be	present, ur	nless distu	rbed or prot	olematic.			
Restrictive La	yer (if observed):									
Туре:										
Depth (inc	ches):						Hydric Soil Present	?Yes X No		
Remarks: The	criterion for hydric so	oil is met at	this data point.							

US Army Corps of Engineers

Project/Site:		Xcel Er	nergy F	Proposed Sub	station	City	/County:	Town of Cou	uderay,	Sawyer	Sampling Date:	7	/12/2011	
Applicant/Owner:				HDR	Engineer	ring, Inc.			State:	WI	Sampling Point:	T-4, C	0P-7 (Upland)	
Investigator(s):			R	lon Londré		Sec	tion, Tov	wnship, Range:	-	Secti	on 20, Township 38	3 North, Ra	inge 7 West	_
Landform (hillslop	e, terra	ace, etc.	.):		hillslop	be		Local relief (cor	ncave, d	convex, n	one):	noi	ne	_
Slope (%):	8	Lat:	-			Lor	ng:	-			Datum:			-
Soil Map Unit Nan	ne:	Magnor	-Freed	on complex (7	57B)					NWI or V	WWI classification:		S3H	-
Are climatic/hydro	ologic c	condition	ns on tl	he site typical	for this tir	me of year?	Yes	No	Х	(If neede	d, explain any ansv	vers in Rer	narks.)	
Are Vegetation	N,	Soil	Ν, α	or Hydrology	N sign	ificantly dis	turbed?	Are "Norn	nal Circ	umstance	es" present? Yes	Х	No	
Are Vegetation	N,	Soil	Ν, α	or Hydrology	N natu	urally proble	matic?	(If needed	d, explai	in any ans	swers in Remarks.)			

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

Hydrophytic Vegetation Present?	Yes	<u>No X</u>	Is the Sampled Area
Hydric Soil Present?	Yes	No X	within a Wetland? Yes No X
Wetland Hydrology Present?	Yes	No X	If yes, optional Wetland Site ID:
Remarks: Photograph 8 This data	point is located	within a hardwood for	prest that is upslope from hardwood swamp. The surface or near-surface hydrology at the
time of the site visit was below avera	age for this time	e of year. Due to the	lack of all three wetland criteria this data point is not located within a wetland.

Wetland Hydrology Indicators:						Secondary Indicators (minimum of two required)			
Primary Indicators (minimum of c	ne is required: cl	neck al	l that apply)			Surface Soil Cracks (B6)			
Surface Water (A1)			Water-Stained Leav	ves (B9)		Drainage Patterns (B10)			
High Water Table (A2)			Aquatic Fauna (B13	3)		Moss Trim Lines (B16)			
Saturation (A3)			Marl Deposits (B15)		Dry-Season Water Table (C2)			
Water Marks (B1)			Cravfish Burrows (C8)						
Sediment Deposits (B2)		Saturation Visible on Aerial Imagery (C9)							
Drift Deposits (B3)		Stunted or Stressed Plants (D1)							
Algal Mat or Crust (B4)		ils (C6)	Geomorphic Position (D2)						
Iron Deposits (B5)			Thin Muck Surface	(C7)	- ()	Shallow Aguitard (D3)			
Inundation Visible on Aeria	l Imagery (B7)		Other (Explain in Re	emarks)		Microtopographic Relief (D4)			
Sparsely Vegetated Conca	ve Surface (B8)			,		FAC-Neutral Test (D5)			
Field Observations:									
Surface Water Present?	Yes No	Х	Depth (inches):	N/A					
Water Table Present?		Х	Depth (inches)	N/A					
	163 110	<i>``</i>							
Saturation Present?	Yes No	X	Depth (inches):	N/A	Wetland Hy	/drology Present? Yes No X			
Saturation Present? (includes capillary fringe)	Yes No	X	Depth (inches):	N/A	Wetland Hy	/drology Present? YesNoX			
Saturation Present? (includes capillary fringe) Describe Recorded Data (stream	Yes No	X ng well	Depth (inches):	N/A	Wetland Hy	drology Present? YesNo Aerials, Topo Map, WWI, NRCS Soils Maps			
Saturation Present? (includes capillary fringe) Describe Recorded Data (stream	Yes No	X ng well	Depth (inches):	N/A	Wetland Hy s), if available:	Aerials, Topo Map, WWI, NRCS Soils Maps			
Saturation Present? (includes capillary fringe) Describe Recorded Data (stream Remarks: The criterion for hydric	Yes No	X ng well this da	, aerial photos, previ	N/A	Wetland Hy	Aerials, Topo Map, WWI, NRCS Soils Maps			
Saturation Present? (includes capillary fringe) Describe Recorded Data (stream Remarks: The criterion for hydric	Yes No	X ng well this da	aerial photos, previ ata point.	N/A	Wetland Hy	Aerials, Topo Map, WWI, NRCS Soils Maps			
Saturation Present? (includes capillary fringe) Describe Recorded Data (stream Remarks: The criterion for hydric	Yes <u>No</u> gauge, monitorii soil is not met at	X ng well this da	Depth (inches): , aerial photos, previ ata point.	N/A	Wetland Hy s), if available:	rdrology Present? YesNoXAerials, Topo Map, WWI, NRCS Soils Maps			
Remarks: The criterion for hydric	Yes <u>No</u> gauge, monitorii soil is not met at	X ng well this da	Depth (inches):, aerial photos, previ	N/A	Wetland Hy	rdrology Present? YesNoXAerials, Topo Map, WWI, NRCS Soils Maps			
Saturation Present? (includes capillary fringe) Describe Recorded Data (stream Remarks: The criterion for hydric	Yes <u>No</u> gauge, monitorii soil is not met at	X ng well this da	Depth (inches):, aerial photos, previ	N/A	Wetland Hy	rdrology Present? YesNoXAerials, Topo Map, WWI, NRCS Soils Maps			
Saturation Present? (includes capillary fringe) Describe Recorded Data (stream Remarks: The criterion for hydric	Yes <u>No</u> gauge, monitorii soil is not met at	X ng well this da	Depth (inches):, aerial photos, previ ata point.	N/A	Wetland Hy	rdrology Present? YesNoXAerials, Topo Map, WWI, NRCS Soils Maps			
Saturation Present? (includes capillary fringe) Describe Recorded Data (stream Remarks: The criterion for hydric	Yes <u>No</u> gauge, monitorii soil is not met at	X ng well this da	Depth (inches):, aerial photos, previ ata point.	N/A	Wetland Hy	rdrology Present? YesNoXAerials, Topo Map, WWI, NRCS Soils Maps			
Saturation Present? (includes capillary fringe) Describe Recorded Data (stream Remarks: The criterion for hydric	Yes <u>No</u> gauge, monitorii soil is not met at	X ng well this da	Depth (inches):, aerial photos, previ ata point.	N/A ious inspections	Wetland Hy	rdrology Present? Yes <u>No X</u> Aerials, Topo Map, WWI, NRCS Soils Maps			
Remarks: The criterion for hydric	Yes <u>No</u> gauge, monitorii	X ng well this da	Depth (inches):	N/A ious inspections	Wetland Hy	rdrology Present? YesNoX Aerials, Topo Map, WWI, NRCS Soils Maps			
Remarks: The criterion for hydric	Yes <u>No</u> gauge, monitorii	X ng well this da	Depth (inches):	N/A ious inspections	Wetland Hy	rdrology Present? YesNoXAerials, Topo Map, WWI, NRCS Soils Maps			

Sampling Point: T-4, DP-7

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That
1. Populus tremuloides	80	Yes	FAC	Are OBL, FACW, or FAC: <u>3</u> (A)
2 3 4	·			Total Number of Dominant Species Across All Strata:7(B)
6	80	= Total Cov		Percent of Dominant Species That Are OBL, FACW, or FAC:(A/B)
Sapling/Shrub Stratum (Plot size: 30 ft radius)				Prevalence Index worksheet:
1. Lonicera tatarica	20	Yes	FACU	Total % Cover of: Multiply by:
2. Ostrya virginiana	10	Yes	FACU	OBL species x 1 =
3. Populus tremuloides	10	Yes	FAC	FACW species x 2 =
4. Prunus serotina	10	Yes	FACU	FAC species x 3 =
5				FACU species x 4 =
6				UPL species x 5 =
7				Column Totals: (A) (B)
	50	= Total Cov	/er	Prevalence Index = B/A =
Herb Stratum (Plot size: <u>5 ft radius</u>)				Hydrophytic Vegetation Indicators:
1. <u>Pteridium aquilinum</u>	50	Yes	FACU	Rapid Test for Hydrophytic Vegetation
2. Agrostis gigantea	30	Yes	FACW	Dominance Test is >50%
3. Fragaria virginiana	20	No	FAC	Prevalence Index is ≤3.0 ¹
4. Lysimachia ciliata	20	No	FACW	Morphological Adaptations ¹ (Provide supporting
5. Aster macrophyllus	10	No	FACU	data in Remarks or on a separate sheet)
6				Problematic Hydrophytic Vegetation ¹ (Explain)
7				
8.				¹ Indicators of hydric soil and wetland hydrology must be present,
9.				unless disturbed or problematic.
10.				Definitions of Vegetation Strata:
11.				Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast
12.				height (DBH), regardless of height.
Woody Vine Stratum (Plot size: <u>30 ft radius</u>)	130	= Total Cov	/er	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 (1m) tall.
2.				Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
3				woody vines - All woody vines greater than 3.28 ft in height.
4		Total Car		
	0		/er	Present? Yes <u>NO X</u>
Remarks: The criterion for hydrophytic vegetation is not	met at this	adata point.	This data p	l point is located in a hardwood forest.
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Sampling Point: T-4, DP-7

	Matrix			Red	ox Featur	es					
nches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks			
0-8	10YR 3/3	100	-	-	-		Silt loam				
8-20+	10YR 6/4	100	7.5YR 5/6	2-20%	С	М	Silt loam				
							·				
							·				
/pe: C=Con	centration, D=Depleti	on, RM=Re	duced Matrix, CS=C	Covered or Co	pated San	d Grains.	² Location: PL=I	Pore Lining, M=Matrix.			
dric Soil In	dicators:						Indicators for Problemati	c Hydric Soils ³ :			
Histosol	(A1)		Polyvalue E	selow Surface	e (S8 (LRF	K R, MLRA	2 cm Muck (A10) (L	RR K, L, MLRA 149B)			
Histic Ep	pipedon (A2)						Coast Prairie Redox	(A16) (LRR K, L, R)			
Black Histic (A3) Thin Dark Surface (S9) (LRR R, MLRA 14							5 cm Mucky Peat or	Peat (S3) (LRR K, L, R)			
Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) (LRR K, L)							Dark Surface (S7) (LRR K, L)				
Stratified Layers (A5) Loamy Gleyed Matrix (F2)							Thin Dark Surface (S9) /I RR K I)				
Depleted Below Dark Surface (A11) Depleted Matrix (F3)							I nin Dark Surface (S9) (LRR K, L)			
I NICK Da	ick Dark Surface (A12) Redox Dark Surface (F6)						Piedmont Floodplain Soils (F12) (EKKK, E, K)				
Sandy G	loved Matrix (S4)		Depleted D	roccione (ER)	F7)		Mesic Spodic (TA6) (MLRA 144A. 145. 149B)				
Sandy B	edox (S5)		Redux Dep	185510115 (FO)			Red Parent Material (TF2)				
Oundy IX	Matrix (S6)						Very Shallow Dark S	Surface (TE12)			
Dark Sur	face (S7) (I RR R MI	RA 149B)					Other (Explain in Re	emarks)			
Indicators of	hydrophytic vegetation	n and wetla	nd hydrology must b	be present, ur	nless distu	irbed or prot	blematic.	,			
estrictive I a	ver (if observed):										
Type [.]	iyer (ir observeu).										
Denth (in	ches).						Hydric Soil Present? Y	es No X			
LIGhth (In)	crico).										

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SOIL

Project/Site:		Xcel Energy	/ Proposed Subs	tation	City/County	y: Town of Cou	deray,	Sawyer	Sampling Date:	7/	12/2011
Applicant/Owner:			HDR	Engineering, Inc).		State:	WI	Sampling Point:	T-4, DP	-8 (Wetland 2)
Investigator(s):			Ron Londré		Section, To	ownship, Range:		Sectio	n 20, Township 3	3 North, Rai	nge 7 West
Landform (hillslope	e, terra	ace, etc.):	9	gradual slope		Local relief (con	cave, c	convex, no	ne):	non	e
Slope (%):	2	Lat:			Long:	_			Datum:		
Soil Map Unit Nam	ne: I	Magnor-Fre	eon complex (75	7B)	· · ·			NWI or W	WI classification:		S3H
Are climatic/hydrol	logic c	onditions or	the site typical f	or this time of y	ear? Yes	No	Х	(If needed	l, explain any ans	wers in Rem	narks.)
Are Vegetation	N,	Soil N,	or Hydrology	N significantly	/ disturbed?	? Are "Norm	al Circ	umstances	s" present? Yes	Х	No
Are Vegetation	N,	Soil N,	or Hydrology	N naturally pr	oblematic?	(If needed	, explai	n any ans	wers in Remarks.)		

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

Hydrophytic Vegetation Present?	Yes X No	Is the Sampled Area
Hydric Soil Present?	Yes X No	within a Wetland? Yes X No
Wetland Hydrology Present?	Yes X No	If yes, optional Wetland Site ID:
Remarks: Photograph 8 This data p hydrology at the time of the site visit wetland.	oint is located within a hardw was below average for this ti	ood swamp that is approximately 100LF from an alder thicket. The surface or near-surface me of year. Due to the presence of all three wetland criteria this data point is located within a

Wetland Hydrology Indicators:					Secondary Indicators (minimum of two required)
Primary Indicators (minimum of	one is required: c	neck a	III that apply)		Surface Soil Cracks (B6)
Surface Water (A1)		Х	Water-Stained Leaves (B9)		Drainage Patterns (B10)
High Water Table (A2)			Aquatic Fauna (B13)		Moss Trim Lines (B16)
Saturation (A3)			Marl Deposits (B15)		Dry-Season Water Table (C2)
Water Marks (B1)			Crayfish Burrows (C8)		
Sediment Deposits (B2)		Roots (C3)	Saturation Visible on Aerial Imagery (C9)		
Drift Deposits (B3)			Stunted or Stressed Plants (D1)		
Algal Mat or Crust (B4)			Recent Iron Reduction in Tilled So	oils (C6)	Geomorphic Position (D2)
Iron Deposits (B5)			Thin Muck Surface (C7)		Shallow Aquitard (D3)
Inundation Visible on Aeri	al Imagery (B7)		Other (Explain in Remarks)		Microtopographic Relief (D4)
Sparsely Vegetated Conc	ave Surface (B8)				X FAC-Neutral Test (D5)
				-	
Field Observations:					
Surface Water Present?	Yes No	Х	Depth (inches): N/A		
Water Table Present?	Yes No	Х	Depth (inches): N/A		
Saturation Present?	Yes No	Х	Depth (inches): N/A	Wetland Hy	ydrology Present? Yes X No
(includes capillary fringe)					
Describe Recorded Data (strear	n gauge, monitori	ng wel	II, aerial photos, previous inspection	s), if available:	Aerials, Topo Map, WWI, NRCS Soils Maps
Remarks: The criterion for wetla	nd hydrology is m	et at t	his data point.		

Sampling Point: T-4, DP-8

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30 ft radius)	% Cover	Species?	Status	Number of Dominant Species That
1. Fraxinus nigra	30	Yes	FACW	Are OBL, FACW, or FAC: 6 (A)
2 Populus tremuloides	20	Yes	FAC	
3				Total Number of Dominant Species
5			·	
4			·	Across All Strata: <u>8</u> (B)
5				
6				Percent of Dominant Species That
7.				Are OBL, FACW, or FAC: 86% (A/B)
	50	= Total Co	ver	· · · · · · · · · · · · · · · · · · ·
Sapling/Shrub Stratum (Plot size: 30 ft radius)				Prevalence Index worksheet:
	20	Vaa		Total % Cover of
		res	FACW	
2. <u>Alnus rugosa</u>	10	Yes	OBL	OBL species x 1 =
3. Ostrya virginiana	10	Yes	FACU	FACW species x 2 =
4. Populus tremuloides	5	No	FAC	FAC species x 3 =
5.				FACU species x 4 =
6				LIPL species x 5 =
7			·	
/·	45	Tatal Oa		
	45		ver	Prevalence Index = B/A =
Herb Stratum (Plot size: <u>5 ft radius</u>)				Hydrophytic Vegetation Indicators:
1. Carex intumescens	40	Yes	FACW	Rapid Test for Hydrophytic Vegetation
2. Carex arctata	30	Yes	UPL	X Dominance Test is >50%
3. Osmunda cinnamomea	30	Yes	FACW	Prevalence Index is ≤3.0 ¹
4 Carex tenera	10	No	FAC	Morphological Adaptations1 (Provide supporting
5 Mattouccia struthiontoris	10	No	EACW/	deta in Remarka er en a concrete shoet)
		N		Uala III Remarks of on a separate sheet)
6. Fragaria virginiana	5	NO	FAC	
7. <u>Rubus strigosus</u>	5	No	FACW	
8				¹ Indicators of hydric soil and wetland hydrology must be present,
9.				unless disturbed or problematic.
10.				Definitions of Vegetation Strata:
11				Tree - Woody plants 3 in (7 6cm) or more in diameter at breast
12				height (DBH), regardless of height
12	120	- Total Ca		Conting (abruh Weady plants less than 2 in DDU and greater
	130		vei	Saping/shrub - woody plants less than 3 in. DBH and greater
woody vine Stratum (Piot size: <u>30 ft radius</u>)				than 3.28 (1m) tall.
1. <u>none</u>				Herb - All herbaceous (non-woody) plants, regardless of size, and
2.				woody plants less than 3.28 ft tall.
3.				Woody vines - All woody vines greater than 3.28 ft in height.
4				Hydronhytic Vegetation
		- Total Co		Brocent2 Ves X No
		= 101a100	VEI	
Remarks: The criterion for hydrophytic vegetation is me	t at this dat	ta point. This	data point	is located in a hardwood swamp.
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Sampling Point: T-4, DP-8

Profile Desci	ription: (Describe to t	he depth n	eeded to document	the indicat	or or con	firm the abs	sence of indicators.)				
Depth	Matrix			Rec	lox Featur	es					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks			
0-2	10YR 3/3	100	-	-	-	-	Silt Loam				
2-6	10YR 3/3	100	7.5YR 5/8	2-20%	С	М	Silt Loam				
6-20+	10YR 7/2	100	7.5YR 5/8	>20%	С	М	Silt Loam				
¹ Type: C=Co	ncentration, D=Depletion	on, RM=Re	duced Matrix, CS=C	overed or Co	oated San	d Grains.	² Location:	PL=Pore Lining, M=Matrix.			
Hydric Soil I	ndicators:		,				Indicators for Proble	matic Hydric Soils ³ :			
Histoso	I (A1)		Polyvalue B	elow Surface	e (S8 (LRF	R, MLRA	2 cm Muck (A1)	0) (LRR K. L. MLRA 149B)			
Histic E	pipedon (A2)		149B)				Coast Prairie R	edox (A16) (LRR K. L. R)			
Black H	listic (A3)		LRA 149B)	5 cm Mucky Pe	at or Peat (S3) (LRR K. L. R)						
Hydroge	en Sulfide (A4)		Loamy Much	kv Mineral (F	1) (LRR K	(. L)	Dark Surface (S	S7) (LRR K. L)			
Stratifie	d Lavers (A5)		, ,	Polyvalue Belov	w Surface (S8) (LRR K, L)						
Deplete	d Below Dark Surface	(A11)	X Depleted Ma	atrix (F3)	,		Thin Dark Surface (S9) (LRR K L)				
Thick D	ark Surface (A12)	()	Redox Dark	Surface (F6	;)		Iron-Manganese Masses (F12) (LRR K, L, R)				
Sandy	Mucky Mineral (S1)		Depleted Da	ark Surface (, F7)		Piedmont Floodplain Soils (F19) (MLRA 149B)				
Sandy (Gleved Matrix (S4)		X Redox Depr	essions (F8)			Mesic Spodic (TA6) (MLRA 144A, 145, 149B)				
Sandy F	Redox (S5)		<u></u>	()			Red Parent Material (TF2)				
Strippe	d Matrix (S6)						Very Shallow D	ark Surface (TF12)			
Dark Su	urface (S7) (LRR R. ML	.RA 149B)					Other (Explain i	n Remarks)			
³ Indicators of	f hydrophytic vegetation	n and wetla	nd hydrology must b	e present, u	nless distu	rbed or prol	blematic.				
Destrictive I											
Restrictive L	ayer (ir observed):										
Type:	a a h a a \.						Undria Cail Dresant				
Depth (II	ncnes):						Hydric Soli Present	r fes <u>x</u> No			
Remarks: Th	ne criterion for hydric so	nil is met at	this data point								
rtemarks. H	ic enterior for flyane se	Ji io mot at									

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SOIL