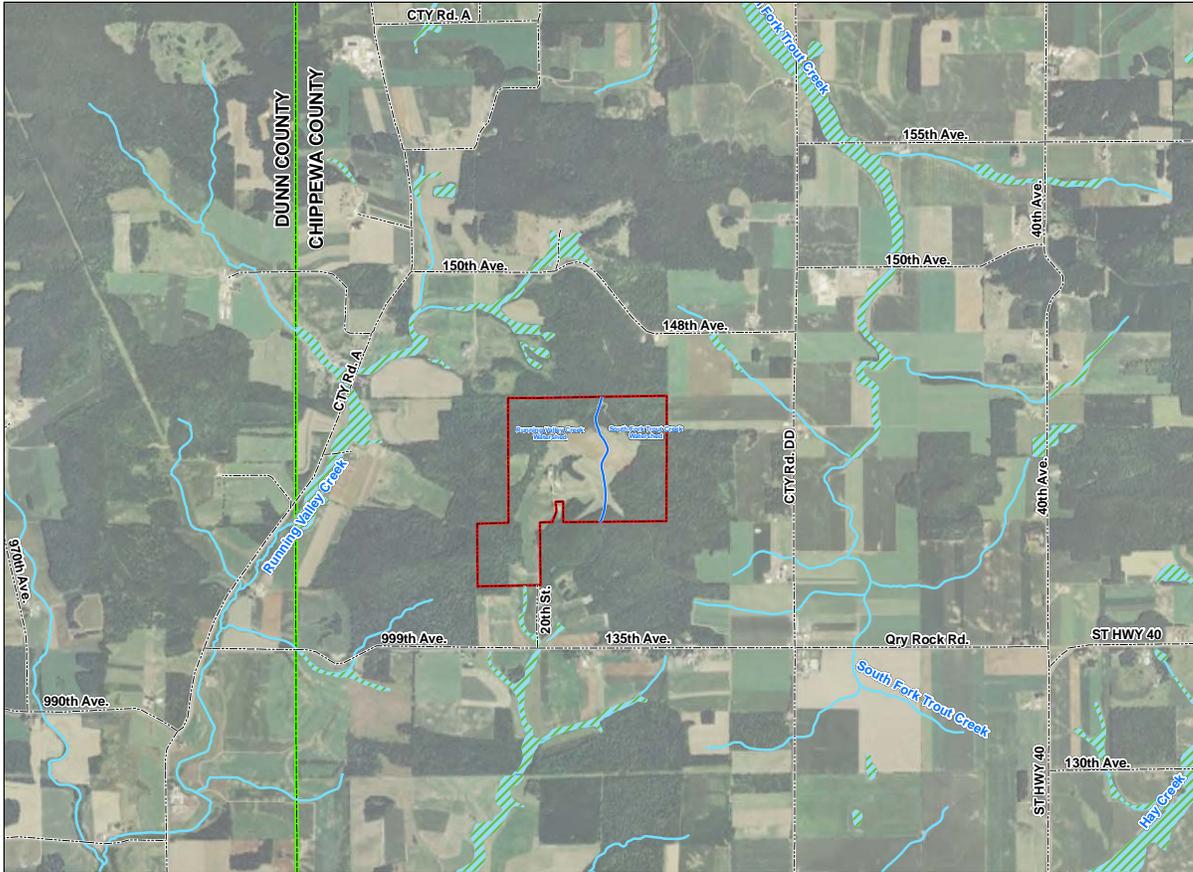

Appendix F

Local Surface Waters and Site Drainage Information

F – 1 – Site and Surrounding Features Map

F-1 – Site and Surrounding Features Map



Legend

- Streams
- Roads
- DS Mine Property
- County Boundary
- Wetlands

Note:
 Running Valley Creek is classified as a Class II Trout Stream.

2,000 1,000 0 2,000
Feet

Source:
 Wetlands = WIDNR WWI
 County Boundary = WIDNR
 Roads = WIDNR
 Streams = WIDNR *Adjusted for 5/18/11 Stream Determination
 Imagery = ESRI (2007)

Projection:
 Chippewa County Coordinates, Feet

Map by:
 R.J.H.

This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring a high degree of accuracy or precision in the depiction of geographic features. If errors or discrepancies are found please contact SEH GIS Services at (715) 723-8237. This user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.

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PROJECT:	113677
DATE:	06/23/11

DS MINE

TOWN OF COOKS VALLEY, WI

SITE & SURROUNDING FEATURES MAP	APPENDIX FIGURE F-1
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Appendix G

Biological Information

G – 1 – Observed Species at Proposed Site

G – 2 – Species Occurring in the Western Coulee and Ridges Ecological Landscape

G – 3 – SEH Technical Memorandum Wetland Delineation Report, October 27, 2010

G-1 – Observed Plant Species at Proposed Site

Observed Plant Species at Proposed Site

Common Name	Scientific Name	Regional Indicator Status
Sugar Maple	<i>Acer saccharum</i>	FACU
White Oak	<i>Quercus alba</i>	FACU
Red Oak	<i>Quercus rubra</i>	FACU
Bigtooth Aspen	<i>Populus grandidentata</i>	FACU
Quaking Aspen	<i>Populus tremuloides</i>	FAC
American Elm	<i>Ulmus Americana</i>	FACW
Black Cherry	<i>Prunus serotina</i>	FACU
Paper Birch	<i>Betula papyrifera</i>	FACU
Bur Oak	<i>Quercus macrocarpa</i>	FAC
Box Elder	<i>Acer negundo</i>	FACW
Basswood	<i>Tilia americana</i>	FACU
White Pine	<i>Pinus strobes</i>	FACU
American Elderberry	<i>Sambucus racemosa</i>	FACU
Pin Cherry	<i>Prunus pensylvanica</i>	FACU
Black Raspberry	<i>Rubus occidentalis</i>	UPL
Large-leaved Aster	<i>Aster macrophyllum</i>	FACU
Sweet Cicely	<i>Ozmorhiza claytonia</i>	FACU
Penn's Sedge	<i>Carex pensylvanica</i>	UPL
White Snakeroot	<i>Eupatorium rugosum</i>	UPL

TableNotes(10):

Source: SEH Technical Memorandum – Wetland Delineation; October 27, 2010 (Included as Appendix C-3)

G-2 – Species Occurring in the Western Coulee and Ridges Ecological Landscape

Species Occurring in the Western Coulee and Ridges Ecological Landscape

Common Name	Scientific Name	Probability of Occurring*
<i>Birds</i>		
Acadian Flycatcher	<i>Empidonax virescens</i>	3
American Woodcock	<i>Scolopax minor</i>	3
Bald Eagle	<i>Haliaeetus leucocephalus</i>	3
Bell's Vireo	<i>Vireo bellii</i>	3
Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	3
Blue-winged Teal	<i>Anas discors</i>	3
Blue-winged Warbler	<i>Vermivora pinus</i>	3
Bobolink	<i>Dolichonyx oryzivorus</i>	3
Brown Thrasher	<i>Toxostoma rufum</i>	3
Canvasback	<i>Aythya valisineria</i>	3
Cerulean Warbler	<i>Dendroica cerulea</i>	3
Dickcissel	<i>Spiza americana</i>	3
Eastern Meadowlark	<i>Sturnella magna</i>	3
Field Sparrow	<i>Spizella pusilla</i>	3
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	3
Great Egret	<i>Ardea alba</i>	3
Henslow's Sparrow	<i>Ammodramus henslowii</i>	3
Hooded Warbler	<i>Wilsonia citrina</i>	3
Kentucky Warbler	<i>Oporornis formosus</i>	3
Lark Sparrow	<i>Chondestes grammacus</i>	3
Least Flycatcher	<i>Empidonax minimus</i>	3
Lesser Scaup	<i>Aythya affinis</i>	3
Louisiana Waterthrush	<i>Seiurus motacilla</i>	3
Northern Bobwhite	<i>Colinus virginianus</i>	3
Northern Harrier	<i>Circus cyaneus</i>	3
Peregrine Falcon	<i>Falco peregrinus</i>	3
Prothonotary Warbler	<i>Protonotaria citrea</i>	3
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	3
Red-shouldered Hawk	<i>Buteo lineatus</i>	3
Rusty Blackbird	<i>Euphagus carolinus</i>	3
Short-billed Dowitcher	<i>Limnodromus griseus</i>	3
Veery	<i>Catharus fuscescens</i>	3
Vesper Sparrow	<i>Pooecetes gramineus</i>	3
Western Meadowlark	<i>Sturnella neglecta</i>	3
Whip-poor-will	<i>Caprimulgus vociferus</i>	3
Willow Flycatcher	<i>Empidonax traillii</i>	3
Wood Thrush	<i>Hylocichla mustelina</i>	3
Worm-eating Warbler	<i>Helminthos vermivorus</i>	3
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	3
Yellow-crowned Night-Heron	<i>Nyctanassa violacea</i>	3
American Golden Plover	<i>Pluvialis dominica</i>	2
Black Tern	<i>Chlidonias niger</i>	2
Buff-breasted Sandpiper	<i>Tryngites subruficollis</i>	2
King Rail	<i>Rallus elegans</i>	2
Osprey	<i>Pandion haliaetus</i>	2
Short-eared Owl	<i>Asio flammeus</i>	2
Solitary Sandpiper	<i>Tringa solitaria</i>	2
Upland Sandpiper	<i>Bartramia longicauda</i>	2
Whooping Crane	<i>Grus americana</i>	2
Yellow-throated Warbler	<i>Dendroica dominica</i>	2
American Bittern	<i>Botaurus lentiginosus</i>	1
Barn Owl	<i>Tyto alba</i>	1
Black-throated Blue Warbler	<i>Dendroica caerulescens</i>	1
Canada Warbler	<i>Wilsonia canadensis</i>	1
Dunlin	<i>Calidris alpina</i>	1
Forster's Tern	<i>Sterna forsteri</i>	1

Species Occurring in the Western Coulee and Ridges Ecological Landscape (Continued)

Common Name	Scientific Name	Probability of Occurring*
Golden-winged Warbler	<i>Vermivora chrysoptera</i>	1
Horned Grebe	<i>Podiceps auritus</i>	1
Hudsonian Godwit	<i>Limosa haemastica</i>	1
Le Conte's Sparrow	<i>Ammodramus leconteii</i>	1
Loggerhead Shrike	<i>Lanius ludovicianus</i>	1
Marbled Godwit	<i>Limosa fedoa</i>	1
Red Crossbill	<i>Loxia curvirostra</i>	1
Redhead	<i>Aythya americana</i>	1
Trumpeter Swan	<i>Cygnus buccinator</i>	1
Whimbrel	<i>Numenius phaeopus</i>	1
<i>Fish</i>		
Black Buffalo	<i>Ictiobus niger</i>	3
Blue Sucker	<i>Cypleptus elongatus</i>	3
Bluntnose Darter	<i>Etheostoma chlorosoma</i>	3
Crystal Darter	<i>Ammocrypta (Crystallaria) asprella</i>	3
Goldeye	<i>Hiodon alosoides</i>	3
Lake Sturgeon	<i>Acipenser fulvescens</i>	3
Ozark Minnow	<i>Notropis nubilus</i>	3
Paddlefish	<i>Polyodon spathula</i>	3
Pallid Shiner	<i>Notropis amnis</i>	3
Redside Dace	<i>Clinostomus elongatus</i>	3
River Redhorse	<i>Moxostoma carinatum</i>	3
Shoal Chub (Speckled Chub)	<i>Macrhybopsis hyostoma</i>	3
Starhead Topminnow	<i>Fundulus dispar</i>	3
Western Sand Darter	<i>Ammocrypta clara</i>	3
Gilt Darter	<i>Percina evides</i>	2
American Eel	<i>Anguilla rostrata</i>	1
Lake Chubsucker	<i>Erimyzon sucetta</i>	1
Least Darter	<i>Etheostoma microperca</i>	1
Redfin Shiner	<i>Lythrurus umbratilis</i>	1
Skipjack Herring	<i>Alosa chrysochloris</i>	1
<i>Reptiles and Amphibians</i>		
Blanding's Turtle	<i>Emydoidea blandingii</i>	3
Bull Snake	<i>Pituophis catenifer</i>	3
Eastern Massasauga Rattlesnake	<i>Sistrurus catenatus catenatus</i>	3
Four-toed Salamander	<i>Hemidactylum scutatum</i>	3
Gray Ratsnake	<i>Pantherophis spiloides</i>	3
Midland Smooth Softshell Turtle	<i>Apalone mutica</i>	3
Northern Cricket Frog	<i>Acris crepitans</i>	3
Northern Prairie Skink	<i>Eumeces septentrionalis</i>	3
Ornate Box Turtle	<i>Terrapene ornata</i>	3
Pickereel Frog	<i>Rana palustris</i>	3
Prairie Ringneck Snake	<i>Diadophis punctatus arnyi</i>	3
Six-lined Racerunner	<i>Cnemidophorus sexlineatus</i>	3
Timber Rattlesnake	<i>Crotalus horridus</i>	3
Western Slender Glass Lizard	<i>Ophisaurus attenuatus</i>	3
Western Worm Snake	<i>Carphophis amoenus</i>	3
Wood Turtle	<i>Glyptemys insculpta</i>	3
Yellow-bellied Racer	<i>Coluber constrictor</i>	3
Mudpuppy	<i>Necturus maculosus</i>	1
Western Ribbon Snake	<i>Thamnophis proximus</i>	1
<i>Mammals</i>		
Northern Long-eared Bat	<i>Myotis septentrionalis</i>	3
Eastern Red Bat	<i>Lasiurus borealis</i>	2
Franklin's Ground Squirrel	<i>Spermophilus franklinii</i>	2

**Species Occurring in the Western Coulee and Ridges Ecological Landscape
(Continued)**

Common Name	Scientific Name	Probability of Occurring*
Hoary Bat	Lasiurus cinereus	2
Prairie Vole	Microtus ochrogaster	2
Silver-haired Bat	Lasionycteris noctivagans	2
Woodland Vole	Microtus pinetorum	2
Gray Wolf	Canis lupus	1
Water Shrew	Sorex palustris	1
White-tailed Jackrabbit	Lepus townsendii	1

*Note: 3 = "Significantly Associated," 2 = "Moderately Associated," and 1 = "Minimally Associated"

Source: Wisconsin Department of Natural Resources, Ecological Landscapes: Western Coulee and Ridges Landscape – Species of Greatest Conservation Need;

<<http://dnr.wi.gov/landscapes/index.asp?mode=detail&Landscape=11&Section=species>>

G-3 – SEH Technical Memorandum Wetland Delineation Report, October 27, 2010



TECHNICAL MEMORANDUM WETLAND DELINEATION REPORT

TO: Mr. Mike Swoboda, SEH – Chippewa Falls

FROM: Deric Deuschle
SEH Aquatic Ecologist

DATE: October 27, 2010

RE: Dennis Schindler Property Review
SEH No. EOGRE 113677 32.00

Introduction

The purpose of this memorandum is to describe the results of a field review of the Dennis (Denny) Schindler Property. This review was completed on October 12, 2010. The field review was completed primarily to determine if wetlands were present on the property, and if so, delineate the extent of wetland habitat. The secondary task of the review is to assess the property, and describe the existing conditions in relation to natural resources.

Site Description

This project area is located on the 240-acre Dennis Schindler property, which encompasses 160 acres in the southwest $\frac{1}{4}$ of Section 29, 40 acres in the southeast $\frac{1}{4}$ of Section 30, and 40 acres in the northeast $\frac{1}{4}$ of Section 31. All of these are within Township 30 North, Range 10 West. The property is located in Cooks Valley, Chippewa County, Wisconsin. This site is located 5.5 miles northeast of Colfax, Wisconsin. The site is accessible from 20th Street, which is a dead-end north of 135th Avenue. Figure 1 is a USGS topographic map of the project location, and demonstrates the property being located on a large hill. Site photographs of the property have been included in Appendix B.

The property contains two residences, a small building used as a business (butcher shop), a barn, and several out-buildings, which can be seen on the 2008 aerial photograph (Figure 2). The center of the site is used as a cattle pasture, but also includes open areas that are used as grassland (either cut or rotated for pasture) and row crops (currently corn). The remainder of the site is wooded. Cover classifications have been mapped in Figure 4.

The woods are primarily a mixture of deciduous species, most of which are mature and have a full canopy. There is no evidence of recent logging, or recent use of the wooded areas for grazing cattle, except for a small portion in the north-central portion of the site where cattle have access. Observed trees include sugar maple (*Acer saccharum* – FACU), white oak (*Quercus alba* – FACU), red oak (*Quercus rubra* – FACU), bigtooth aspen (*Populus grandidentata* – FACU), quaking aspen (*Populus tremula* – FAC), American elm (*Ulmus americana* – FACW), black cherry (*Prunus serotina* – FACU), paper birch (*Betula papyrifera* – FACU), bur oak (*Quercus macrocarpa* – FAC), box elder (*Acer negundo* – FACW), and basswood (*Tilia americana* – FACU). Several large white pine (*Pinus strobes* – FACU) are also present in the southwest portion of the site. Overall, the species are well-mixed, with no true dominant species present overall. The shrub layer is present, but generally sparse due to the closed canopy. Shrubs are dominated by American elderberry (*Sambucus racemosa* – FACU), and occasional pin cherry (*Prunus pensylvanica* – FACU). Herbaceous vegetation is also somewhat sparse due to the canopy, but includes black raspberry (*Rubus occidentalis* – UPL), large-leaved aster (*Aster macrophyllum* – FACU), sweet cicely (*Ozmorhiza claytonia* – FACU), Penn's sedge (*Carex pennsylvanica* – UPL), and white snakeroot (*Eupatorium rugosum* – UPL). The

property likely contains an abundance of spring ephemerals, which cannot be seen this late in the year.

The site is located on top of a topography highpoint, and is characterized by both rolling hills and steep slopes. Apart from the road and buildings there are no flat areas on the property. Elevations vary from a high of 1329, to a low point less than 1100. There were no rock outcrops observed, but the area is located on shallow sandstone bedrock.

The priority of the site survey was to look for wetlands, which generally do not occur on sloped surfaces unless there is a hydrology source. Given the sandstone bedrock, there is the potential for springs and seepages to be present, particularly at confining layers, or the base of the hillslopes where the grade flattens out.

Wetland Definition

Wetlands are defined jointly by the U.S. Army Corps of Engineers (USACE) and the U.S. Environmental Protection Agency (EPA) as follows:

“Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.”

According to the USACE, one positive indicator (except in certain situations) from each of three elements must be present in order to make a positive wetland determination, which are as follows:

- Greater than 50 percent dominance of hydrophytic plant species.
- Presence of hydric soil.
- The area is either permanently or periodically inundated, or soil is saturated to the surface during the growing season of the dominant vegetation.

The property was investigated to see if areas meeting these criteria are present. As previously stated, the focus was to look for springs and seepage wetlands, as the typical wet meadows and marshes are not anticipated.

Methodology

The project area was examined on October 12, 2010 for areas meeting wetland criteria in accordance with the *1987 Corps of Engineers Wetlands Delineation Manual* and the *Midwest Regional Manual*.

The wetland edge is considered the highest extent of the wetland basin; areas above the boundary fail to meet the three required wetland parameters while areas below the edge meet the wetland parameters required by the field delineation methodology. As part of the field delineation, USGS Topographic maps, Wisconsin Wetlands Inventory (WWI), and aerial photographs were reviewed to identify potential wetlands. The soil survey for Chippewa County was also reviewed to identify hydric soils. These sources indicated an intermittent stream flowing south from the property, but otherwise failed to indicate either wetlands or soils associated with wetlands.

The project area was examined through a meander survey that went around the property perimeter and up and down the slopes through the wooded area. The mature woods do not have a dense

shrub layer, which enables easy viewing of the property. The focus was to look for areas that could be wetland or seepage. This includes looking for direct evidence by findings saturated soils, drainage patterns, or for changes in vegetation. Vegetation variation, such as changes in the tree community from oak and maple to aspen and willow or alder could be indicative of wetland, and would be apparent from a distance. Given the season of the survey, many springs and seepages are also readily apparent by having a denser herbaceous community that often persists longer than the upland community. Looking for greener areas dominated by dense shrubs, spotted jewelweed (*Impatiens capensis* FACW), or skunk cabbage (*symplocarpus foetidus* OBL), for example. The open areas of the site were similarly reviewed through a meander survey, but less time was dedicated to those areas, as they are highly visible.

A brief interview was also completed with the property owner to determine if he was aware of areas that had springs, seepages, wet soils, or areas that could potentially be considered to be wetland. Questions were also asked regarding surface water runoff, drainage patterns, flooding, and precipitation. These questions lead to a small seepage area near the barn, which was investigated in greater detail.

Wetland Delineation Results

The review of the property failed to identify any springs, seeps, or wetlands within the wooded portions of the property. The meander survey confirmed that the perimeter of the property does not contain any areas of groundwater discharge. No channelization or drainage patterns were discovered within the wooded portion with the exception of some old erosional channels on the northeast side of the property. These appears to be from past erosion that originated with channelized runoff from the pasture, which accelerated downslope through the woods. This appears to have been stopped by removing channels in the pasture and placing a large rock check at the edge of the woods. This rock check is from rocks picked from the fields, and not imported material. This rock check has dispersed the runoff in the woods, and appears to have stopped the channel cutting. This older erosion is a result of short-term surface water runoff, and not persistent discharge however, and does not qualify as wetland.

The open areas of the property also failed to display any indication of wetlands being present. This includes the central valley, which slopes to the south, and includes an indication of an intermittent stream being present on the Wisconsin Wetland Inventory. This area is the low point for a majority of the property, so it has a drainage area of more than 150 acres. This area slopes to the south, and continues to the south off the property. Within most of the property, there is no defined channel, but topographically you can identify where flow would occur across a 20 to 30 foot wide area, which functions more as a grassed swale than a channel. As the drainage proceeds to the south, it becomes more constricted and concentrated, and must pass through a large corrugated metal pipe located under the driveway access to the primary residence. This culvert is large enough to convey flood events and keep water from washing out the driveway, but otherwise has no flow. From the culvert south the drainage is a grassed swale, and joins another grassed swale the originates on the west side of the residence at the property line. From there south the swales continue through the corn to the county road. From the driveway south, the swales are maintained as erosion control devices, and are no longer cropped.

The vegetation in the bottom of the valley is the same as the sidelopes, and is dominated by orchard grass (*Dactylis glomerata* -FACU). This is a facultative upland plant, as are the associate species including common dandelion (*Taraxicum officinale* FACU), common plantain (*Plantago major* FAC), cocklebur (*Artium minus* UPL), white clover (*Trifolium repens* FACU), and red clover (*Trifolium pratense* FACU). This area is also dominated by dark olive brown (2.5Y 3/3)

silty loam soils, which have been mapped as Arenzville soils on the Chippewa County Soil Survey. The Arenzville series is composed of moderately well drained soils on floodplains. It is not a recognized hydric soil series, and the site observations also failed to indicate hydric soil indicators.

No hydrology indicators were observed through the center of the property, with the exception of the secondary indicator of drainage pattern. Drainage pattern is an acceptable indicator, as it is clear that water flows through this portion of the property. When asked how the area responds during precipitation, Mr. Schindler indicated that during a good rain they would get flow through the site within hours. Once the rain stopped, the flow would also be gone within a few hours, even during multi-inch rainfalls. Based on these observations, I concluded that valley bottom does convey flow during rain events, and warrants designation as a waterway. It lacks wetland hydrology, hydric soils, and hydrophytic vegetation, however, and therefore cannot be considered to be wetland.

The WWI considers a portion of the central drainage from 135th Avenue north to the property line to be wetland. This portion was not sampled as it is on private property, but it appears similar to what was observed further north. There is no debate that this intermittent stream does convey runoff out of the valley. The northern portion is very wide and has no channels. As the valley narrows, the location of the intermittent stream becomes more defined, and evolves into a grassed swale, most noticeably from the driveway south to the property line. This swale continues to lack hydrophytic vegetation, hydric soils, and hydrology, however, and cannot be considered to be wetland. The continued designation as an intermittent waterway from the property line south may be appropriate, as this is clearly the outlet for surface water runoff from the valley.

One area of spring seepage was identified by Mr. Schindler. This area is located by the barn, and is visible from the entrance road. Mr. Schindler indicated that this area is usually dry, but it started to be wet about a month prior to the field investigation following back to back 4 to 5 inch rainfalls. This rainfall turned most of the valley into drainage, which quickly went away within a day or two of the rain stopping. The exception was this area, which has continued to weep since then.

This area was investigated to determine if it met wetland criteria. A datasheet was also completed, and is attached (Appendix A). The seepage is located within the cow pasture, and has been trampled and rutted making a muddy depression. There is an apparent origin to the flow, where there is a small cut in the landscape. There is a small discharge, which flows down slope and under the roadway. It emerges on the west side of the roadway in a small flat area, before it continues down slope for a short distance. The seepage area follows the same path as surface runoff, and erosion from the runoff apparent.

Vegetation within the seepage was composed of Kentucky bluegrass (*Poa pratensis* – FAC), white clover, red clover, foxtail, and common plantain. These have been grazed on the east side of the roadway, and could be considered disturbed. The cattle have managed to trample the area into mud, but this remnant vegetation is indicative of conditions prior to when discharge was initiated. The west side of the roadway has not had cattle in it, and has vegetation composed of giant ragweed (*Ambrosia trifida* - FAC), orchard grass, and cocklebur. Neither portion of the seepage meets wetland vegetation criteria, as it lacks an abundance of hydrophytic species. The entire hillslope is dominated by orchard grass.

The soils in the seepage are composed of a surface layer of six inches of dark olive brown (2.5Y 3/3) clay loam, that is so saturated at the surface that it is a soupy ooze. The soils are firm enough

to walk on, however, because the soils change at six inches below the surface into a sandy loam with gravel. The color of the sandy/gravel layer is the same as the surface layer. This soil profile fails to meet hydric criteria. Hydrology is present as saturation at the surface. There is discharge of water from the head of the seepage. Puddles are present in the cow tracks and where the slopes level out. The intriguing part is that within the soil profile only the surface layer of clay loam has hydrology. The soil profile from 6 to at least 22 inches was dry. It appears that the hydrology is held in the clay at the surface but rapidly infiltrates when it reaches the sand and gravel substrates. There is apparently enough discharge to meet infiltration and evaporation rates. This still meets hydrology criteria as there is saturation at the surface, but not necessarily to the surface. Regardless, the area fails to meet criteria for vegetation and soils. Based on Mr. Schindler's comments, this area likely does not have hydrology under normal conditions, either. It has been determined that these areas do not meet wetland criteria, which would lead to the conclusion that there are no areas that meet wetland criteria within the property.

In order to allow for field review, I flagged the extent that hydrology was present in the two seepage areas. This includes an area of 729 square feet on the east side from the source near the corner of the barn to the road, and an area of 305 square feet on the west side of the road. On the west side of the roadway the seepage is present immediately adjacent to the road, but quickly infiltrates so that no hydrology is present within 50 feet of the roadway. A small eroded channel from the spring to the valley bottom is a result of erosion from surface water, as is the collapsed rock and soil along the roadway.

Conclusion

After reviewing the property, I have concluded that there are two areas of potential wetland that warranted further investigation.

The first of these is the valley bottom, which conveys runoff from the property to the south. There is little doubt that this area has flow, but only following rain events. The vegetation, soils, and lack of persistent hydrology all support this area being classified as non-wetland. The label of intermittent stream may be appropriate for the southern-most portion to designate concentration of surface water runoff. This is more a descriptive than regulatory designation.

The second area is a small seepage near the barn. This area has discharge currently, which based on comments from Mr. Schindler only started following above average rainfall events a month prior. The vegetation and soils are not hydric indicators, and the soil profile suggests that the observed hydrology is only within the top six inches of the soil profile, not throughout. This area fails to meet wetland criteria. The remainder of the site is dominated by either open pasture, cropland, or wooded. No areas indicative of wetland were observed.

In summary, it is my professional opinion that there are no areas meeting the technical criteria for wetland within the 240-acre Schindler property.

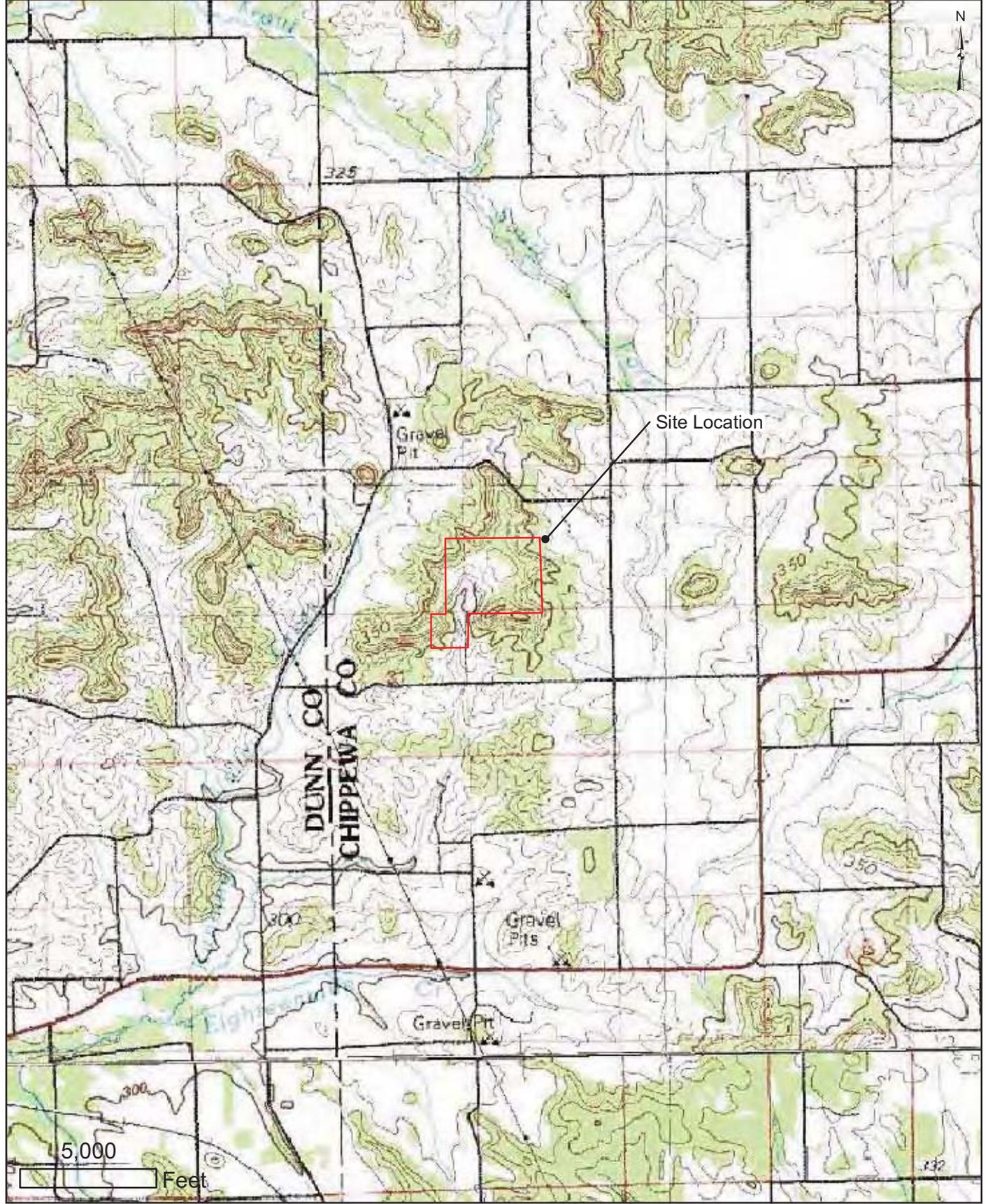
Contacts

Please contact Deric Deuschle at ddeuschle@sehinc.com or at 651.490.2114 with any questions you may have.

Attachments

- Figure 1 – USGS Topographic Map**
- Figure 2 – 2008 Aerial Photograph**
- Figure 3 – Extent of Seepage Areas**
- Figure 4 – Land Cover Classifications**

- Appendix A – RODM Data Sheets for Seepage Area**
- Appendix B – Representative Site Photographs**
- Appendix C – Wisconsin Wetland Inventory**
- Appendix D – Chippewa County Soil Survey – Hydric Soils**



Map Document: (L:\Resources\Cartographic\Templates\Empty\Layouts\ANSI_Bx11P\8x11P_Std_Neatline.mxd) 2/13/2009 - 12:47:01 PM



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Print Date: 10/19/2010

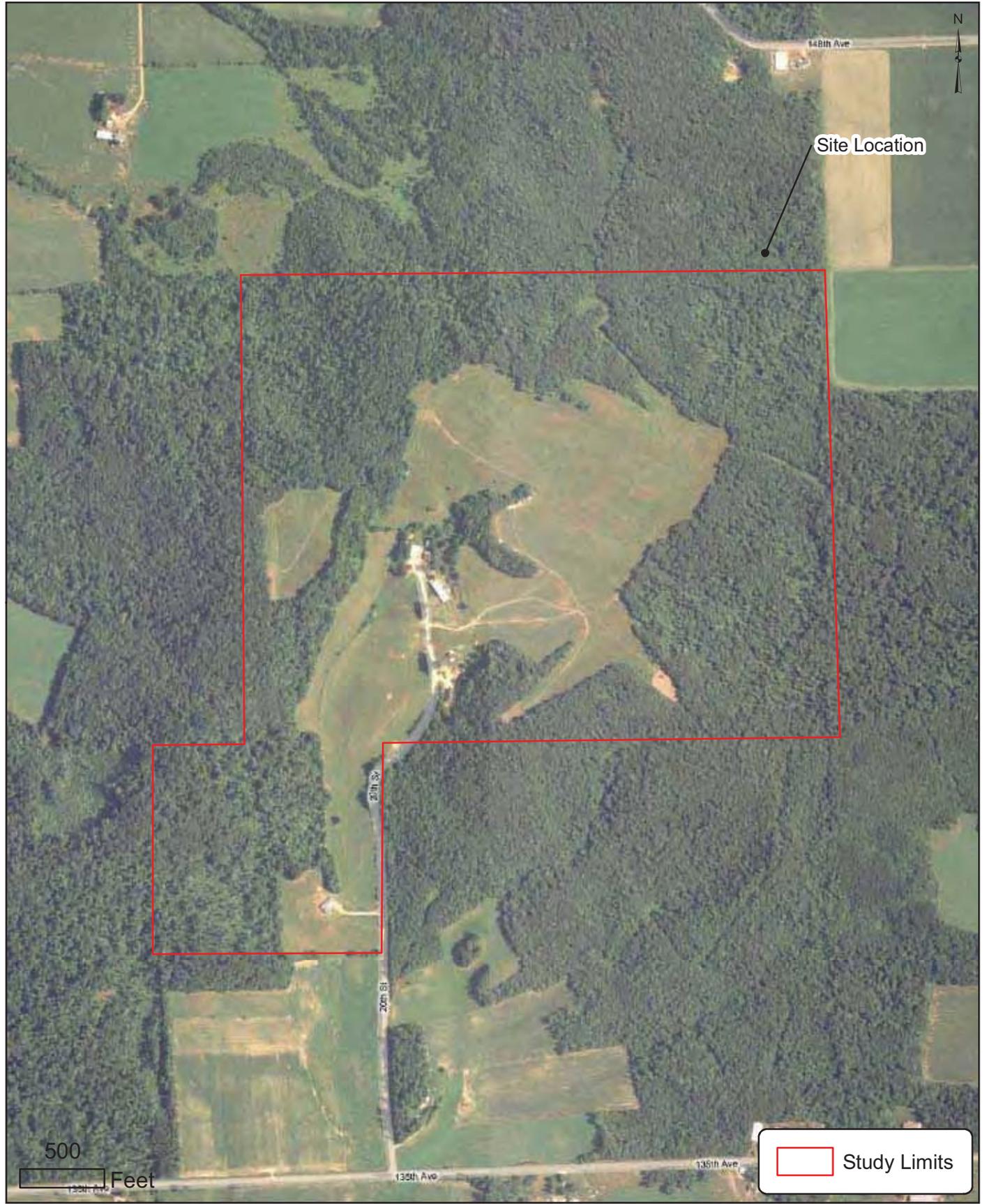
Map by: drd
Projection: UTM NAD83
Source: USGS

USGS Topographic Map

Schindler Property
Cooks Valley, Wisconsin

Figure
1

This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.



Map Document: (L:\Resources\Cartographic\Templates\Empty\Layouts_V_ANSI_8x11P\8x11P_Std_Neatline.mxd) 2/13/2009 - 12:47:01 PM



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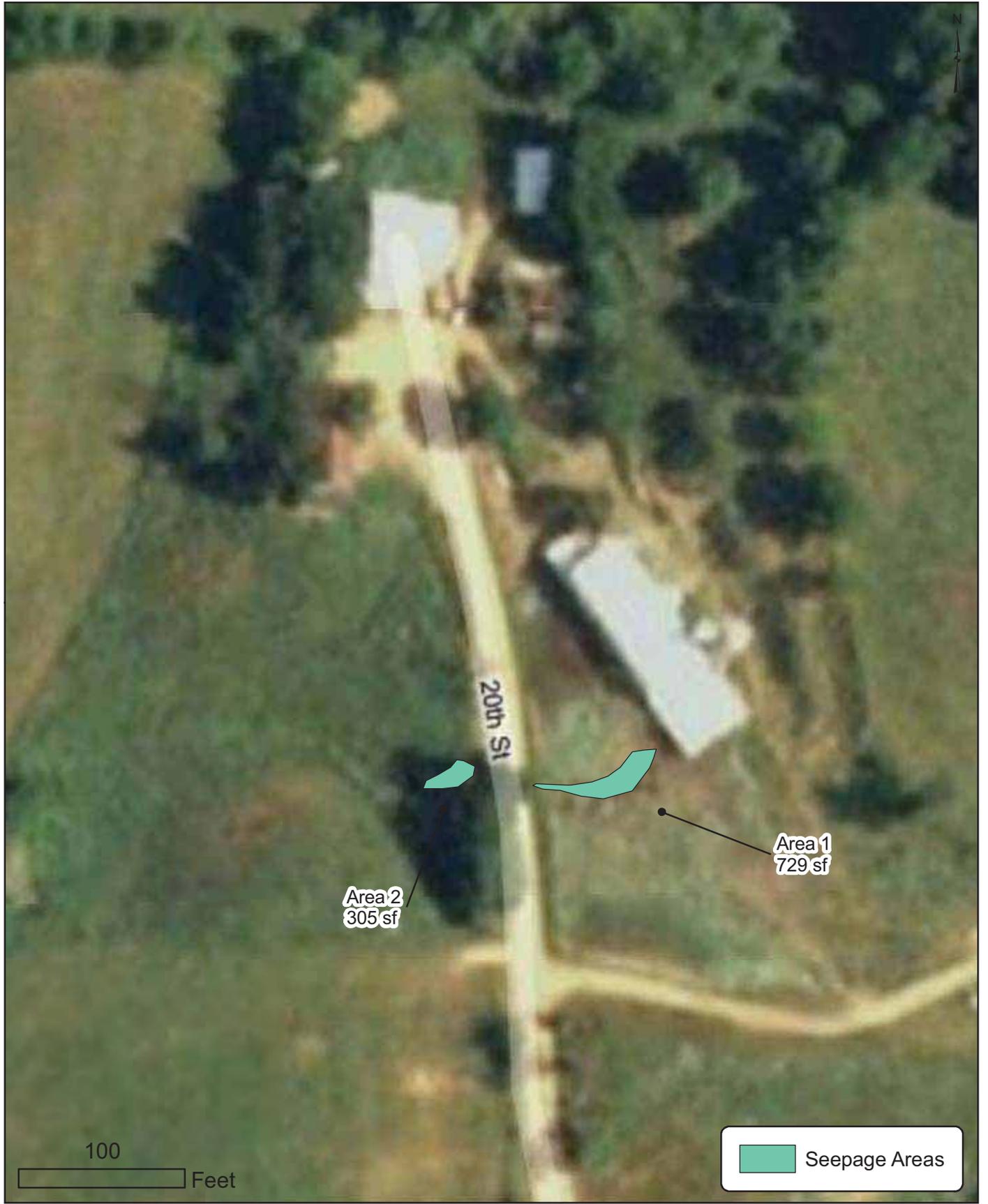
Map by: drd
Projection: UTM NAD83
Source: USGS

2008 Aerial Photograph

Schindler Property
Cooks Valley, Wisconsin

Figure
2

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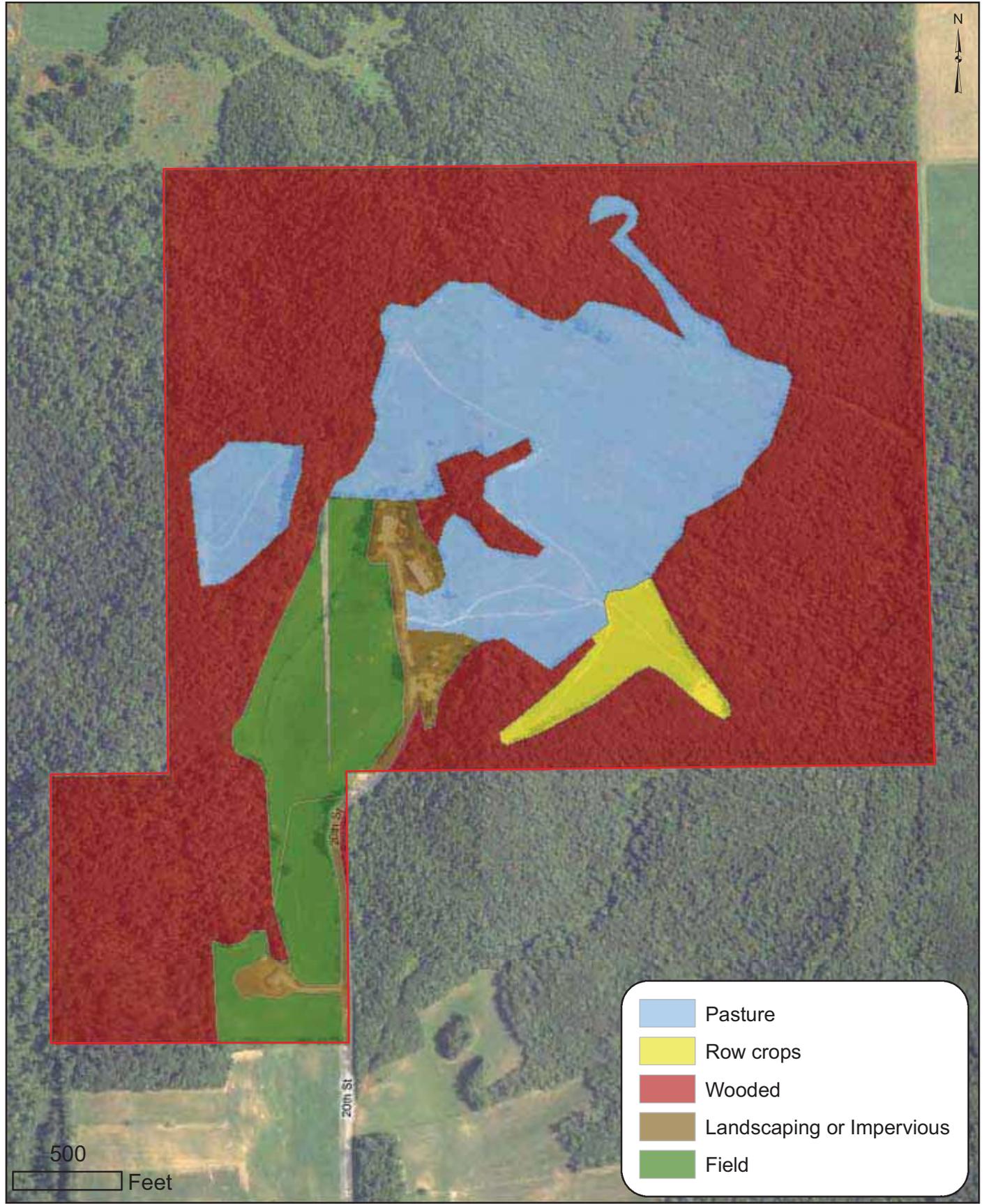
Project: EOGRE 113677
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Map by: drd
Projection: UTM NAD83
Source: USGS

Seepage Areas
Schindler Property
Cooks Valley, Wisconsin

Figure
3

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 Projection: UTM NAD83
 Source: USGS

Land Cover
 Schindler Property
 Cooks Valley, Wisconsin

Figure
 4

Appendix A – RODM Data Sheets for Seepage Areas

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Dennis Schindler Property City/County: Cooks Valley, Chippewa County Sampling Date: October 12, 2010
 Applicant/Owner: Dennis Schindler State: WI Sampling Point: 1
 Investigator(s): Deric Deuschle Section, Township, Range: Sec 29, T30, R10
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex
 Slope (%): 10 Lat: UTN N 4989039 Long: UTM E 607848 Datum: NAD83 Z15N
 Soil Map Unit Name: _____ NWI or WWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: _____	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>100 sf</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Poa pratensis - Kentucky bluegrass</u>	30	Y	FAC	
2. <u>Trifolium repens - White clover</u>	30	Y	FACU	
3. <u>Trifolium pratense - Red clover</u>	15	N	FACU	
4. <u>Seteria glauca - Yellow foxtail</u>	10	N	FAC	
5. <u>Plantago major - Common plantain</u>	10	N	FACU	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
95 = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
 Total Number of Dominant Species Across All Strata: 2 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species _____ x 1 = 0
 FACW species _____ x 2 = 0
 FAC species 40 x 3 = 120
 FACU species 55 x 4 = 220
 UPL species _____ x 5 = 0
 Column Totals: 95 (A) 340 (B)
 Prevalence Index = B/A = 3.58

Hydrophytic Vegetation Indicators:
 ___ Dominance Test is >50%
 ___ Prevalence Index is ≤3.0¹
 ___ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
--

Remarks: (Include photo numbers here or on a separate sheet.)
 Vegetation is within the cattle pasture, and is grazed and trampled. Most of area (>50%) is mud flat.

Appendix B – Representative Site Photographs

Appendix B

Representative Site Photographs



View of valley from northeast to southwest from business office



View of valley from east to west from roadway between house and business



View of valley from northeast to southwest



View of valley bottom from north to south



Typical wooded slope on west side of property



Woods on top of ridge, SW side of property



Woods on top of ridge, SW side of property



White pine seedlings, SW side of property



Small pasture in woods on northwest side of property



Pasture at north side of property looking south



Pasture on northeast side of property, recently tilled



Rock check at head of drainage on east side of property. Prevents concentrated flow from pasture



Transition from corn to woods on east side of property.



Pasture in center of property. View is south to north



Woods on southeast portion of property



Seepage area near barn. View is west from barn.



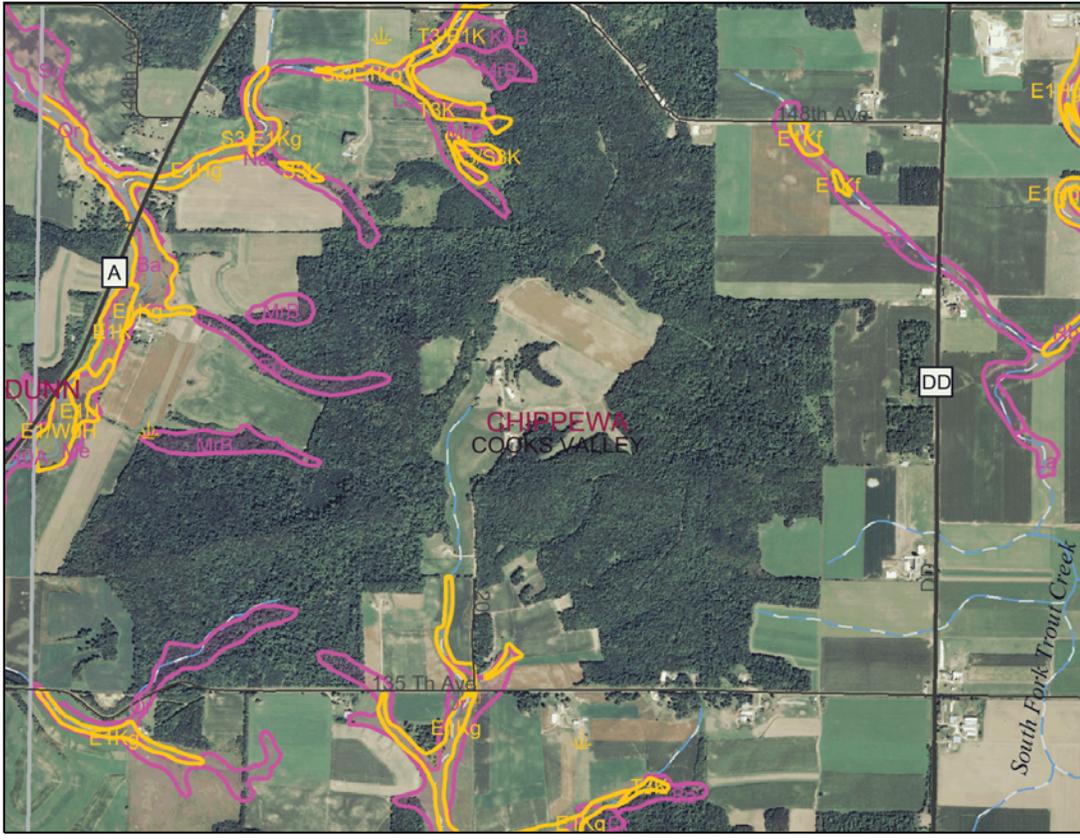
View of eastern seepage from the road to the barn



Seepage area on west side of the roadway, looking west.

Appendix C – Wisconsin Wetland Inventory

D. Schindler Property



- ### Legend
- Major Highways**
 - Interstate
 - State Highway
 - U.S. Highways
 - County Roads
 - Local Roads
 - 24K County Boundaries**
 - Civil Towns**
 - Civil Town
 - USDA Wetspots**
 - DNR Wetland Points**
 - Excavated Pond
 - Dammed Pond
 - Wetland Too Small to Delineate
 - Filled Excavated Pond
 - Filled Dammed Pond
 - Filled Wetland Too Small to Delineate
 - Filled or Drained Wetland
 - DNR Wetland Areas**
 - Upland
 - Wetland
 - Filled or Drained Wetland
 - Wetland Indicator Soils**
 - 24K Open Water**
 - 24K Rivers and Shorelines**
 - Intermittent
 - Fluctuating
 - Perennial



Map created on Oct 4, 2010



Wisconsin Wetland Inventory (WWI) maps show graphic representations of the type, size and location of wetlands in Wisconsin. These maps have been prepared from the analysis of high altitude imagery in conjunction with soil surveys, topographic maps, previous wetland inventories and field work. State statutes define a wetland as "an area where water is at, near or above the land surface long enough to be capable of supporting aquatic or hydrophytic vegetation and which has soils indicative of wet conditions." The principal focus of the WWI is to produce reconnaissance level information on the location, type, size of these habitats such that they are accurate at the nominal scale of the 1:24,000 (1 inch = 2000 feet) base map. The DNR recognizes the limitations of using remotely sensed information as the primary data source. They are to be used as a guide for planning purposes. There is no attempt, in either the design or products of this inventory, to define the limits of jurisdiction of any Federal, State, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, State, or local agencies concerning specified agency regulatory programs and jurisdictions that may affect such activities. The most accurate method of determining the legal extent of a wetland for federal or state regulations is a field delineation of the wetland boundary by a professional trained in wetland delineation techniques.

Appendix D – Chippewa County Soil Survey, Hydric Soils

Hydric Rating by Map Unit—Chippewa County, Wisconsin

MAP LEGEND

- Area of Interest (AOI)**
 Area of Interest (AOI)
- Soils**
 Soil Map Units
- Soil Ratings**
 All Hydric
 Partially Hydric
 Not Hydric
 Unknown Hydric
 Not rated or not available
- Political Features**
 Cities
- Water Features**
 Oceans
 Streams and Canals
- Transportation**
 Rails
 Interstate Highways
 US Routes
 Major Roads
 Local Roads

MAP INFORMATION

Map Scale: 1:13,800 if printed on A size (8.5" × 11") sheet.
The soil surveys that comprise your AOI were mapped at 1:15,840.
Please rely on the bar scale on each map sheet for accurate map measurements.
Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: UTM Zone 15N NAD83
This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.
Soil Survey Area: Chippewa County, Wisconsin
Survey Area Data: Version 7, Aug 11, 2010
Date(s) aerial images were photographed: 7/14/2005

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydric Rating by Map Unit

Hydric Rating by Map Unit— Summary by Map Unit — Chippewa County, Wisconsin				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
AoA	Arenzville silt loam, 0 to 3 percent slopes	Not Hydric	14.0	2.1%
ApB	Arland sandy loam, 2 to 6 percent slopes	Not Hydric	7.2	1.1%
ApC2	Arland sandy loam, 6 to 12 percent slopes, eroded	Not Hydric	11.1	1.7%
ApD2	Arland sandy loam, 12 to 20 percent slopes, eroded	Not Hydric	0.2	0.0%
BoE	Boone fine sand, 20 to 45 percent slopes	Not Hydric	138.0	21.1%
CkD2	Chetek-Mahtomedi complex, 12 to 25 percent slopes, eroded	Not Hydric	0.6	0.1%
EIB	Eleva sandy loam, 2 to 6 percent slopes	Not Hydric	11.7	1.8%
EIC2	Eleva sandy loam, 6 to 12 percent slopes, eroded	Not Hydric	31.9	4.9%
EID2	Eleva sandy loam, 12 to 20 percent slopes, eroded	Not Hydric	38.3	5.9%
EmB	Elk mound loam, 2 to 6 percent slopes	Not Hydric	15.1	2.3%
EmC2	Elk mound loam, 6 to 12 percent slopes, eroded	Not Hydric	27.7	4.2%
EmD2	Elk mound loam, 12 to 20 percent slopes, eroded	Not Hydric	90.1	13.8%
Eo	Elm Lake loamy sand, 0 to 2 percent slopes	All Hydric	4.4	0.7%
GaB	Gale silt loam, 2 to 6 percent slopes	Not Hydric	1.7	0.3%
GaC2	Gale silt loam, 6 to 12 percent slopes, eroded	Not Hydric	25.5	3.9%
GaD2	Gale silt loam, 12 to 20 percent slopes, eroded	Not Hydric	54.6	8.4%
HnB	Hixton loam, 2 to 6 percent slopes	Not Hydric	7.3	1.1%
La	Lows loam, 0 to 2 percent slopes	All Hydric	0.1	0.0%
MrB	Merrillan sandy loam, 1 to 6 percent slopes	Partially Hydric	2.6	0.4%
Na	Newson loamy sand, 0 to 2 percent slopes	All Hydric	1.9	0.3%
NtC2	Northfield silt loam, 6 to 12 percent slopes, eroded	Not Hydric	4.3	0.7%
Or	Orion silt loam, 0 to 2 percent slopes	Partially Hydric	1.2	0.2%
PdC	Plainbo loamy sand, 6 to 12 percent slopes	Not Hydric	16.8	2.6%

Hydric Rating by Map Unit— Summary by Map Unit — Chippewa County, Wisconsin				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
PdD	Plainbo loamy sand, 12 to 20 percent slopes	Not Hydric	53.1	8.1%
SeB	Seaton silt loam, 2 to 6 percent slopes	Not Hydric	15.3	2.3%
SeC2	Seaton silt loam, 6 to 12 percent slopes, eroded	Not Hydric	49.2	7.5%
SeD2	Seaton silt loam, 12 to 25 percent slopes, eroded	Not Hydric	25.9	4.0%
SfA	Seaton silt loam, moderately well drained, 0 to 3 percent slopes	Not Hydric	2.7	0.4%
SgA	Seaton silt loam, sandy substratum, 0 to 2 percent slopes	Not Hydric	1.2	0.2%
Totals for Area of Interest			653.9	100.0%

Appendix H

Sand Resource Quantity Estimation

Sand Resource Quantity Estimation

	Sand Deposit Quantity (Tons)	Area (Acres)	Topsoil (C.Y.) (Avg 7" Thickness)	B-Horizon Subsoil (C.Y.) (Avg 19" Thickness)	Overburden (C.Y.) (Bottom B-Horiz to Top of Sand)	Reject Fines (Tons) (Ave 28% of Deposit)
A-1	898,000	14.4	13,500	36,700	99,000	251,000
A-2	849,000	10.2	9,600	26,100	431,000	238,000
A-3	1,499,000	23.9	22,500	60,900	1,340,000	420,000
A-4	2,187,000	17.0	16,000	43,300	1,806,000	612,000
A-5	4,885,000	34.1	32,100	87,200	6,121,000	1,368,000
A-6	2,611,000	26.7	25,200	68,300	2,225,000	731,000
A-7	2,824,000	30.2	28,500	77,200	3,670,000	791,000
A-8	1,882,000	27.3	25,700	69,900	2,811,000	527,000
<i>Total</i>	<i>17,635,000</i>	<i>183.8</i>	<i>173,100</i>	<i>469,600</i>	<i>18,503,000</i>	<i>4,938,000</i>