GTAC
GOGEBIC TACONITE

November 25, 2013

Wisconsin Department of Natural Resources
ATTN: Larry Lynch
101 South Webster Street
PO Box 7921
Madison, WI 53707-7921

Dear Mr. Lynch:

Re: Bulk Sample Plan
Response to Comments dated August 13, 2013
Wisconsin Statutes 295.45

This letter serves to reply to your comments dated August 13, 2013.

The Bulk Sample plan has been revised to include a variety of changes, many resulting in a smaller footprint for the project. The revisions include the following:

1) Bulk Sample Site 1 has been modified to show a truck turning area.

2) Bulk Sample Site 2 has been modified to reduce the footprint of the activity.

3) Bulk Sample Site 5 has been modified to propose the sample collection from the existing access road. This alleviates the need to relocate the road and provides a smaller disturbance.

4) Bulk Sample Site 3A and Bulk Sample Site 4 have been removed from the Bulk Sample Plan. The grunerite issue has been the subject of a media debate and the removal of these areas leaves the debate to be resolved by the systematic and scientific study of the issue that will be required within the permit application. Our position remains that asbestiform material is unlikely to be present in the reserve, but will defer to a proven and methodical approach to address the potential of asbestiform materials in the future mining permit application.

5) Archeological Review has been included within the Stormwater Application. A Phase I review has been performed on the site. The new disturbance area of Access Road 6 and the Bulk Sample Sites were reviewed for historic content. The field review of the new disturbance for Access Road 6 as well as the Bulk Sample sites indicate that no historic artifacts were discovered. In the area of the Tyler Forks Mine, it is proposed to place road fabric and commercial gravel over the existing road surface to provide a physical barrier between the existing ground conditions and road traffic.

6) Endangered Species review has been completed as part of the Stormwater Application review. The report is also included within this Bulk Sampling Plan.

7) Blasting is not included in the primary method for collecting a bulk sample. If a sufficient rock sample is not available, an alternative plan has been included to address the issues of blasting.

8) Landowner letters from RGGS Land and Minerals and LaPointe Iron Company acknowledging the Right of Entry for Gogebic Taconite, LLC have been provided.

9) A revised air emissions estimate was performed to estimate emissions if blasting activities were not used. The results generally illustrate that the removal of blasting provides less air emissions than the original estimate that included blasting.

10) From the DNR August 13, 2013 comment letter Item 1: The tonnage amount proposed to be removed is 2,400 tons or 800 tons from each of the three Bulk Sampling Sites.

11) From the DNR August 13, 2013 comment letter Item 2: Site 3A has been removed from the Bulk Sampling Plan.

12) From the DNR August 13, 2013 comment letter Item 3: Plans for incorporating the drainage of groundwater and/or precipitation will be addressed in the storm water application. No groundwater has been identified at the bulk sample sites.

13) From the DNR August 13, 2013 comment letter Item 4: Only one staging area is now proposed and it is located at Moores Park Road. The preferred operation would be to have the highway trucks receive their loads at the Bulk Sample Sites. If site conditions such as steep grades combined with cold weather conditions prevent the highway trucks from accessing the Bulk Sample sites, then off highway trucks would be used to transport the bulk sample material to the staging area near Moores Park Road. The highway trucks would then receive their loads out of the Staging Area.

14) From the DNR August 13, 2013 comment letter Item 5: A sulfide and grunerite screening process has been included within the Bulk Sample Plan.

15) From the DNR August 13, 2013 comment letter Item 6: The wetlands delineation report has been modified and revised drawings are provided. Additional offsite delineation was performed.

16) From the DNR August 13, 2013 comment letter Item 7: Documentation is provided that a diesel powered light plant is classified as a non-road engine, for purposes of air emissions.

17) From the DNR August 13, 2013 comment letter Item 8: The asbestiform issue has been addressed by removing Bulk Sample Site 4 from the Plan as well as providing a screening process in the Bulk Sample activity.

18) From the DNR August 13, 2013 comment letter Item 9: The extent of clearing, road base improvement and topsoil removal necessary for Access Road 6 has been further detailed in the stormwater application.

Included in this submittal, you will find:

- A Bulk Sampling Plan addressing comments dated November 22, 2013.
- A revised Map 1 – Corresponds with the Stormwater Application details
- A revised Map 2 – Corresponds with the Stormwater Application details
- Drawing B001 – Bulk Sample Site 1 Erosion and Sediment Control Plan
- Drawing B002 – Bulk Sample Site 2 Erosion and Sediment Control Plan
- Drawing B003 – Bulk Sample Site 5 Erosion and Sediment Control Plan
- Drawing B004 – Material Staging Area Erosion and Sediment Control Plan

We look forward to discussing the project in more detail with your staff. Any questions should be directed to our Hurley office at (715) 561-2601. Our mailing address is:

Gogebic Taconite, LLC
402 Silver Street
Hurley, WI 54534

Sincerely,

Timothy J Myers
Engineer

DNR COMMENT LETTER DATED

JULY 2, 2013

**State of Wisconsin**
**DEPARTMENT OF NATURAL RESOURCES**
**101 S. Webster Street**
**Box 7921**
**Madison WI 53707-7921**

**Scott Walker, Governor**
**Cathy Stepp, Secretary**
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

July 2, 2013

Timothy J. Myers, Engineer
Gogebic Taconite, LLC
402 Silver Street
Hurley, WI 54534

Subject: Bulk Sampling Plan – Necessary Approvals and Supplemental Information

Dear Mr. Myers:

The Department of Natural Resources has completed its initial review of the Bulk Sample Plan submitted by Gogebic Taconite, LLC on June 18, 2013. As required by s. 295.45(3), Stats., the Department is required to identify, in writing, all approvals that will be required before bulk sampling may be initiated.

Based on the information provided in the Bulk Sample Plan, the Department has determined that coverage under a storm water permit will be needed under s. 283.33, Stats. The storm water permit application should include all activities related the proposed bulk sampling activity, including use and maintenance of any access routes and should also include areas affected by the ongoing exploration drilling. Other approvals, such as those related to air emissions, wetland and waterway protection and wastewater discharge, may also be needed but there is insufficient information contained in the plan to thoroughly assess whether other permits are required. For the Department to complete its review of the approvals that may be required and any waivers, exemptions or exceptions that may be potentially available for bulk sampling activities, the Department requests the following additional information.

1. Provide a more detailed description of the actual sampling procedures. For each bulk sampling location identify which member of the Ironwood Formation is being sampled, the approximate volume of material to be removed and the anticipated depth of excavation. Also include a representation of the approximate final site contours upon reclamation of the sites. Are any of the sites deep enough to intercept groundwater and if so, how will water such water be handled? Similarly, describe how water that accumulates in the sampled areas prior to reclamation will be handled. A wastewater discharge permit may be needed if the company intends to pump water from the excavations and discharge it to a waterway or groundwater.

2. Provide additional detail regarding the blasting activity including the approximate number of holes per area, depth and diameter of the holes and what type of explosive materials are anticipated to be used. How will drilling water and cuttings be controlled during the drilling process? Describe any dust control measures that will be implemented during blasting. Describe safety procedures related to blasting including pre-blast notification and designation of restricted access areas.

3. The plan indicates salvageable soil will be stockpiled separately from the rock removed from the sites prior to sampling and stored on-site for use in reclamation. Describe measures which will be taken to minimize erosion of the topsoil during the temporary storage period.

4. Describe the loading and transportation process in more detail. What type of heavy machinery will be used to load the rock onto the trucks? What measures will be taken to control dust during the loading process? What size and approximately how many trucks will be needed to transport the rock? Will the transport trucks be covered? Provide additional detail about the alternative procedure for handling the rock described in the plan including a specific location for the staging area, any site preparation necessary for the working pad, drainage control measures, access routes and descriptions of the vehicles that would be used to move the rock from the sampling sites to the staging area.

5. Describe what precautions will be taken in regard to rock and water handling procedures if any of the sampling sites encounters rock with visible or known quantities of sulfide mineralization (e.g., the lower Yale Member).

6. The letters from the landowners referenced on p. 6 of the plan were not included as part of the submittal. Please include them with your response to this letter.

7. The bulk sampling plan indicates the sampling and revegetation will occur between July 2013 and November 2014. Roughly how long will it take to complete the sampling phase for a given site? Will all bulk sampling be completed before any reclamation activity begins or will reclamation of individual sites take place as soon as the sampling is completed for that site?

8. The sampling plan refers to a preliminary wetland inventory for the site. The wetland delineation information must be submitted to the Department. This information is needed in order for the Department to determine if any bulk sampling activities including access route maintenance or improvements will require a wetland general permit or individual permit, as required by s. 295.60(3)(b), Stats. Department approval will be required prior to any work that results in a discharge of dredged material or fill material into a wetland. We will also need specific information about of bulk sampling and access route activities that may be located in or adjacent to any streams or other water bodies in order to determine if any permits are needed for navigable water activities as required by s. 295.605(2), Stats. To evaluate the need for wetland and waterway permits, detailed information regarding anticipated road maintenance work in specific locations involving wetlands and drainageways, must be submitted.

9. Elements of the proposed bulk sampling activity including blasting, loading and hauling may generate air pollutants, notably fugitive emissions of particulate matter. Based on the information provided, the Department cannot determine if an air pollution control construction permit is required for this activity. These emissions, on a maximum theoretical basis, may exceed the permitting thresholds in ch. NR 406, Wis. Adm. Code. To facilitate our regulatory determination of the need for a permit, Gogebic Taconite must develop an estimate of total particulate matter emissions (including PM10 and PM2.5 emissions) for the activity based on the anticipated level of activity and the proposed methods. This estimate should be based on available emission factors in EPA document AP-42 or other reliable sources of emission data for blasting, loading, road traffic and the other activities as applicable.

10. Additionally, given the documented occurrence of asbestiform minerals in ore bodies of similar nature in Minnesota and reports of similar minerals (amphiboles of the cummingtonite-grunerite series) in the vicinity of the proposed bulk sampling activity, it will also be necessary to evaluate the bulk sampling activity to determine whether regulation pertaining to control of asbestos emissions under Chapters NR 445 or NR 447, Wis. Adm. Code, is required. If these minerals are present or potentially present in an asbestiform habit within the excavated material, a percentage of the total emissions would likely be asbestos emissions. To calculate an estimate of the potential asbestos emissions, provide an estimate of the percentage, by weight, of the asbestiform mineral content of the material to be sampled and then calculate an estimated asbestos emission rate based on the total emission rate calculated above. This weight percent data for asbestos could be derived from actual measured quantities of asbestos in samples

collected from the site or could be based on review of data from studies of similar deposits that may be present in other taconite mining areas of Minnesota or other parts of the upper Midwest.

Section 295.45(3s), Stats., specifies that all applications for approvals related to bulk sampling are to be submitted at the same time. Once the Department has received the information outlined in this letter, we will be able to identify all of the required approvals.

The permits addressed in this letter only apply to regulatory requirements under the purview of the Department of Natural Resources. This letter does not consider any approvals, permits or other authorization required by federal, local or other state agencies. Gogebic Taconite, LLC is responsible for ensuring the proposed bulk sampling activity is conducted in compliance with all such requirements.

Please contact me if you have any questions concerning the information requested.

Sincerely,

Lawrence J. Lynch

Lawrence J. Lynch, P.G., Hydrogeologist
Water Use Section
Bureau of Drinking Water & Groundwater

DNR COMMENT LETTER DATED

AUGUST 13, 2013

**State of Wisconsin**
DEPARTMENT OF NATURAL RESOURCES
101 S. Webster Street
Box 7921
Madison WI 53707-7921

Scott Walker, Governor
Cathy Stepp, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

August 13, 2013

Timothy J. Myers, Engineer
Gogebic Taconite, LLC
402 Silver Street
Hurley, WI 54534

Subject: Review of Bulk Sample Plan Response Submittal

Dear Mr. Myers:

The Department of Natural Resources has completed its review of the *Bulk Sample Plan Response to Comments* dated July 28, 2013, submitted by Gogebic Taconite, LLC, on July 30, 2013. In accordance with s. 295.45(3), Stats., the Department is required to identify, in writing, all approvals that will be required before bulk sampling may be initiated and any information the Department needs to issue a decision relating to bulk sampling approvals.

As indicated in previous correspondence, it will be necessary for you to obtain a storm water permit. Based on the information submitted, we have determined that coverage under the State's General Discharge Permit for Construction Site Storm Water Runoff (General Permit # WI-S067831-4) will be required prior to initiating bulk sampling activities. As part of the application, a detailed site-specific construction site erosion control plan and storm water management plan in accordance with Section 3 of the General Permit and ss. NR 216.46, 216.47, and NR 151.121 to 151.128 Wis. Adm. Code, must be submitted The application and supporting materials should cover the proposed bulk sampling sites, staging areas and all potential access routes which may be used as part of the bulk sampling process.

Based on information provided in the response, the proposed bulk sampling activity will not require wetland or waterway permits. However, should the scope of the activity change such that it would result in a discharge of dredged material or fill material into a wetland, separate Department approval would be required. For example, work to "improve" your roadways with aggregate, install culverts, use the blade of a bulldozer or install timber mats in wetland areas would require Department approval.

An estimate of air emissions was included as part of the response. The estimate is based on the original bulk sampling plan which relied on blasting as the means of recovering the samples. A supplemental air emission estimate reflecting the proposed sampling procedures must be developed and submitted in order for the Department to reach a final regulatory determination regarding the need for an air permit or exemption. The estimate should consider all reasonable sources of emissions from the bulk sampling plan as currently envisioned and should include sources related to blasting if you intend to collect samples using the non-blasting option augmented with limited blasting.

Following are specific additional issues identified in the review of the response document:

1. The cover letter and the response document do not provide consistent estimates of the amount of material to be sampled. The cover letter indicates about 2,400 tons will be removed from three sites,

while the response (response # 1) indicates 4,000 tons will be removed. Similarly, in one part of Response 1, it is stated that "a target of 400 tons from each member horizon is required..." while further in the response it states "each site will remove approximately 800 tons of material..." Please clarify the anticipated amount of material that will be removed in total and from each site.

2. It is not clear whether the bulk sampling activity will be conducted at Site 3a or not. The introductory description of the non-blasting option suggests that Site 3a would not be needed if the non-blasting option is used but Site 3a is mentioned in Response 1 and Response 2, regarding the intended blasting details for the various sites. Will Site 3a be used?
3. Response #1 indicates that the bulk sampling sites will be graded to allow for drainage of groundwater or accumulated precipitation or drainage. Plans for this drainage must be incorporated into the application coverage under the storm water permit.
4. Response #4 describes two staging areas to be used for material storage and loading. Will the areas be operated simultaneously? In preparing these sites, what measures will be taken to salvage topsoil? Since one of the sites is located east of Moore Park Road, describe safety measures that will be implemented in relation to crossing the road. The staging areas and drainage control features must be described as part of the storm water permit application.
5. The response to Comment #5 suggests that since material from the Yale Member is not intended to be sampled, concerns regarding the presence of sulfide-bearing rock are not an issue. The original request for information was addressing sulfide-bearing rock in a broader sense. The Yale Member was cited as an example, but sulfide minerals could occur in other units as well. Please outline measures that will be taken if the bulk sampling activities encounter materials with visible sulfide mineralization.
6. Response #8 refers to the wetlands delineation report. Figures 3 and 4 from that report are of poor resolution and are difficult to read. Please submit better quality versions of figures 3 and 4.
7. The air emissions estimate included with the response indicated that a diesel-powered generator would be used on the site. Your future submittal should include documentation that the generator is classified as a non-road engine, for purposes of air emissions.
8. Response #10 suggests that asbestiform minerals are unlikely to be present in the material removed as part of bulk sampling. While not widespread in the Mesabi Iron Range, asbestiform minerals are nevertheless present. Given the low estimated emission rates, release of asbestos should not be an issue with bulk sampling; therefore, we are not requiring additional identification or characterization at this point. However, if the project progresses to the point where a mining project is proposed or contemplated, a more systematic evaluation of the potential for asbestiform minerals may be needed. Since you will handle a significant volume of material if you bulk sample, we recommend you take the opportunity to evaluate the material you handle for the presence and characterization of grunerite and other similar amphibole minerals.
9. The response document provides a proposed route and basic description of Access Road 6. Describe the extent of clearing, road base improvement and topsoil removal necessary for construction of the road. Drainage features associated with the new road must be thoroughly described in the storm water application package.

Please contact me if you have any questions concerning the information requested.

Sincerely,

Lawrence J. Lynch

Lawrence J. Lynch, P.G., Hydrogeologist
Hazardous Waste and Mining Section
Bureau of Waste & Materials Management

# BULK SAMPLE PLAN

# Bulk Sampling Plan

**Applicant:** **Gogebic Taconite, LLC**
**402 Silver Street**
**Hurley, WI 54534**

**Project Name:** **GTAC Bulk Sampling Project**

**Date:** **November 25, 2013**

OVERVIEW

The Bulk Sampling Plan describes the excavation of less than 10,000 tons of material at a potential mining site for the purposes of obtaining site-specific data to assess the quality and quantity of the ferrous mineral deposits and of collecting data from and analyzing the excavated materials in order to prepare the application for a mining permit or other approval.

The excavated materials will be processed in an off-site laboratory. The results of the testing are used to determine the sizes and quantities of the machinery needed to beneficiate the raw ore to a saleable product.

Bulk sampling activities were performed on this property in 1960 by Oliver Iron Mining Division of US Steel Corporation. During this period, taconite processing was an emerging technology. The testing was performed with the best technology of the time. Now, over fifty years later, another set of rock samples are required for the specific design of a new beneficiation mill for this reserve.

Four locations were disturbed in 1960. Trenches were excavated that were approximately 200 feet long by 24 feet wide. The pit locations were stripped of vegetation. Soils were removed by heavy equipment. Drilling and blasting was performed to break the rock. Each location produced about 100 tons of material that was hauled offsite to a railroad siding for shipment.

Reclamation activities were not performed and the disturbed sites were allowed to grow vegetation with volunteer species.

The original proposed activity would have utilized three (3) of the previously disturbed sites to collect another sample set. Those sites are identified as Bulk Sample Sites 1, 2

and 4. Two additional sites would have been disturbed in new locations. Bulk Sample Site 3A is located on an existing logging road. Bulk Sample Site 5 is a previously disturbed site that was used for a blasting test in 1961.

The current proposal now reduces the activity to occurring at three sample sites which are identified as Bulk Sample Sites 1, 2 and 5. All of these sites will be accessed from Moores Park Road in Iron County.

This application describes the procedures to be used to collect these rock samples.

***295.45 (2)(a)***

***A description and map of the bulk sampling site, including the number of acres in the site, the number of acres of land that will be disturbed, if any, associated with each bulk sampling location, and the locations and types of sampling or studies to be conducted at each bulk sampling location.***

Three bulk sample sites are proposed to be disturbed. Using the names from the 1960 activity, the previously disturbed bulk sample sites are identified as Bulk Sample Site 1 and Bulk Sample Site 2. Bulk Sample Site 5 is located in the eastern part of the reserve. See the map entitled "Map 1 - Bulk Sample Sites" for the generalized location of the disturbances.

Bulk Sample Site 1 is located in the Northeast quarter of the Southwest Quarter of Section 33 Township 45 North, Range 1 West. The site will include and disturb 0.88 acres. Refer to "Drawing B001-Bulk Sample Site 1 Erosion and Sediment Control".

Rock Samples are proposed to be collected from a trench that is approximately 234 feet long and averages 21 feet wide. Remaining material left in the trench with an estimated depth of 5 feet indicates a volume of approximately 2,800 tons.

Bulk Sample Site 2 is located in the Northeast Quarter of the Southwest Quarter of Section 33 Township 45 North, Range 1 West. The site will include and disturb 0.63 acres. Refer to "Drawing B002-Bulk Sample Site 2 Erosion and Sediment Control".

Rock Samples are proposed to be collected from two trenches with dimensions of approximately 150 feet long and averaging 13 feet wide and dimensions of 70 feet long and averaging 20 feet wide. Remaining material left in the trench with an estimated depth of 5 feet indicates a volume of approximately 1,900 tons.

Bulk Sample Site 5 is located in the Southwest Quarter of the Northeast Quarter of Section 33 in Township 45 North, Range 1 West. The site will include and disturb 0.64 acres. Refer to "Drawing B005- Bulk Sample Site 5 Erosion and Sediment Control".

Rock Samples are proposed to be collected from the road bed. A hydraulic hammer will be used to break the bedrock into sizes that can be loaded with an excavator or endloader. The proposed pit will be 12 feet wide and approximately 200 feet long.

Samples will collected from representative strata to be processed through an offsite pilot plant or to equipment manufacturers to determine the types and number of machines necessary to design a new processing mill for the reserve.

***295.45 (2)(b)***

***A description of the methods to be used for bulk sampling.***

The bulk sampling plan describes the methods to collect rock samples to process through a laboratory pilot plant to determine the equipment requirements for the construction of an iron ore beneficiation mill. There are two distinct methods that have been proposed in this activity. The first method (Plan A) would involve the collection of samples from existing test pits that were disturbed in 1960 and to use a mechanical hammer to produce a sample in Bulk Sample Site 5. If sufficient material is not available from the existing disturbances, the second method (Plan B) would be employed to include blasting activities would be used to produce a sample. Details and descriptions of each Plan are found below.

Three distinct sample areas are targeted. They are the Plymouth Member, the Norrie Member and the Pence Member of the Ironwood Iron Formation. The target tonnage is 800 tons from each member, totaling a minimum of 2,400 tons. The following chart describes the target member in each Bulk Sample Site.

Member of the Ironwood Formation to be sampled by Bulk Sample Site Number:

| | |
|---|---|
| Bulk Sample Site 1 | Plymouth member |
| Bulk Sample Site 2 lower pit | Norrie member |
| Bulk Sample Site 2 upper pit | Norrie member |
| Bulk Sample Site 5 | Pence member |

All bulk sample sites are located on privately owned lands, owned by:

RGGS Lands and Minerals, LTD., L.P.
PO Box 1266
Virginia, MN 55792

Access Roads are located on privately owned lands, owned by:

RGGS Lands and Minerals, LTD., L.P.
PO Box 1266
Virginia, MN 55792

LaPointe Iron Company
3920 13th Avenue East, Suite 7
Hibbing, MN 55746

The property has been enrolled in the Managed Forestland Program with Wisconsin DNR. As found at Wisconsin Statutes 77.83 (2)(a), the land is open to the public for hunting, fishing, hiking, sight-seeing and cross-country skiing. All other activities on these lands, including camping, biking, and operation of unauthorized motorized vehicles, are prohibited.

77.883 Managed Forestland Disturbance – The total disturbance to Managed Forestland for this project totals less than 5 acres. The disturbances are as follows:

Bulk Sample Site 1 - 0.88 Acres (includes road from Access Road 3 Station 38+47 to Bulk Sample Site 1)
Bulk Sample Site 2 – 0.63 Acres
Bulk Sample Site 5 – 0.64 Acres
Access Road 6 – 1.25 Acres

TOTAL - 3.40 Acres

Approximate volume of material to be removed and the anticipated depth of excavation:

Each site will remove approximately 800 tons of material which is equivalent to approximately 300 bank cubic yards. Without blasting, the anticipated depth of excavation will be an average of 2.25 feet. Materials will be regraded to insure no newly exposed vertical ledges are left after the project is completed.

If blasting was to occur and assuming a 30% swell factor, most of the sites will not have a change in post reclamation contours from the existing surface contours. The rock removed as a bulk sample will be replaced by the expanded volume of the blasted material.

Access from the public roads will be posted to notify the public that a bulk sampling activity is occurring on the Managed Forest Lands. During the time of activity, a 600 ft buffer is created from each road and each point with a fixed sampling activity. The 600 ft buffer will be designated as a closed area of the Managed Forest Lands.

A safety perimeter will be established approximately 300 feet outside of the proposed activity area. The area will be marked with Danger Signs to alert the general public that an industrial activity is occurring nearby. A safety fence will be erected around the disturbance to further protect the public from ongoing activities on the site.

Vegetation will be removed from the proposed disturbance. Any marketable material will be recovered for commercial use such as a lumber mill raw product, pulp mill raw product or biofuel. Any remaining woody material will be disposed of in compliance with existing rules and regulations such as mulching.

Stormwater drainage control will be established by the utilization of berms, diversion ditches, hay bales, sand bag berms and/or sediment fence. When the conditions allow, up gradient surface runoff may be directed away from the site by diversion ditches or berms. A detailed stormwater drainage plan is provided in a separate submittal.

Soils material will be removed from the disturbed areas and stockpiled for later use in reclamation of the site. Any material deemed as topsoil will be segregated and reserved for application during the regrading activities. Due to the previous disturbances on these sites, topsoil, if any would have been intermixed with other materials. Any soils layer encountered will be maintained in stockpiles separate from bedrock materials.

Two options are proposed for the excavation of the bulk sample. Plan A will address the collection of a sample from the previously blasted materials left from the 1960 bulk sample campaign. Plan B will address the procedures if Plan A does not provide sufficient material for the necessary tonnage. Plan B will address drilling and blasting to produce material for a bulk sample.

Bulk Sampling Plan
Plan A – Rock Samples gathered without Blasting Activity
Site Descriptions

Bulk Sample Sites 1 and 2 were disturbed during the 1960 bulk sampling activities in the project area. These sites contain broken rock samples in the volume necessary to meet the requirements of the tonnage requested by the equipment manufacturers for testing.

Bulk Sample Site 5 is the location of a Blasting Test Pit that was previously disturbed in 1961. This proposal would use a mechanical breaking device such as a hydraulic hammer to break a sample from the bedrock.

Equipment to be utilized during Plan A will include an excavator or wheel loader capable of loading highway legal trucks, a bulldozer and various support equipment such as a portable light plant. Off highway trucks rated at 25 tons or higher may be used if field conditions prohibit the use of highway trucks to the sites.

*Comment #4 from DNR letter dated July 2, 2013:*
What type of heavy machinery will be used to load the rock onto the trucks?

The trucks will be loaded with either an excavator or a wheel loader.

The excavator has the advantage of being able to work the excavation from positioning the machine on top of the broken material. It can also place material in the bed of the truck with more precision than a wheel loader.

A wheel loader can be used to excavate a larger volume of material quicker. It has to work the broken rock from the same level as the bottom of the broken rock.

What measures will be taken to control dust during the loading process?

The rock pile can be watered down before the loading process takes place. This would saturate smaller particles to prevent liberation into the air as dust. If loading activities occur in freezing weather, the use of water will be minimized.

What size and approximately how many trucks will be needed to transport the rock?

Two types of trucks may be used on the project.

Off Highway construction trucks will be 25 ton to 40 ton capacity articulated trucks. The trucks have up to three axles. These trucks will be used to bring the bulk sample to a staging area where they will dump on a constructed pad. The material would then be loaded onto highway trucks for delivery to the laboratory.

Highway trucks would be tandem axle, tri-axle or tractor trailer arrangements. The highway trucks could haul directly from the pit to the final destination. Average payload for a highway truck will be 20 tons. It will take approximately 120 truck loads to deliver the material to the

laboratory. It is expected to that 10 truck loads per day will leave the project for a period of approximately 3 weeks.

Will the transport trucks be covered?

The highway trucks will be covered. The off highway construction trucks are not covered. The highway trucks' ground speed will be controlled by the road conditions and is expected to be less than 10 miles per hour.

## Plan A – Operational Descriptions
## Bulk Sample Sites 1 and 2

Bulk Sample Sites 1 and 2 are located in the Plymouth and Norrie members of the Ironwood Formation. The sites were created in 1960 where extensive excavation and blasting activities occurred. The simplified approach to collecting a sample is to load rock left from the 1960 activity into trucks. The following narrative describes the proposed activity in greater detail.

The previously disturbed Bulk Sample Sites 1 and 2 will be cleared of vegetative material and any soils material will be stockpiled for future use during site reclamation. Soil stockpile areas will be protected from erosion by seeding and mulching with a temporary seed mixture such as oats or annual rye. Soil stockpile areas may also be protected by covering with tarps. Site specific stormwater control measures will be installed prior to excavation beginning.

The activity records found indicated that the 1960 activity included an Air-Trac pneumatic drill and compressor. This type of drill would have been capable of drilling approximately 10 feet deep. The depth of material available in Bulk Sample Sites 1 and 2 is estimated to range from 4 to 10 feet deep. The records also indicated that only 100 tons were shipped from each Bulk Sample Site from the 1960 activity. This activity proposes that approximately 800 tons per site will be collected.

Excavated materials from the Bulk Sample Sites will be screened through a nominal 2-inch spacing grizzly screen and the oversized material will be collected as a bulk sample. The undersized material that passes the grizzly screen will be saved for use as a backfill material in the excavation in anticipation of regrading and revegetation activities. An excavator or wheel loader may be used to accomplish these tasks.

The oversize material from the grizzly screen will be stockpiled in preparation for shipment from the site. These stockpiles will vary in size and location and will be placed within the bulk sample site to accommodate the loading and transportation of the bulk sample into trucks for removal from the site.

If site conditions are not conducive for the grizzly to perform correctly, such as during freezing weather, another option is to collect the sample without screening. The shipment would include undersized material that would be removed at the final destination.

Loading activity will be accomplished by an excavator or wheel loader into a highway classified truck. The truck capacity is estimated at 20 tons payload. Each truck will have the load covered before leaving the site.

If road conditions dictate that highway trucks would not be feasible, a set of off-highway trucks may be used to transport the bulk sample material to a Transfer Location near the public roads system. (see Staging Area details discussed below.)

The undersized material will be used as backfill material in the excavation in anticipation of regrading and revegetation of the bulk sample site. These materials may be moved to regrade positions as the material is being sized through the grizzly screen. Regrading activities will be performed to backfill excavations.

Revegetation requirements will be discussed in the response to 295.45 (2)(d) found below.

Plan A – Operational Descriptions
Bulk Sample Site 5

Bulk Sample Site 5 is located in the Pence member of the Ironwood Formation. This site was used in 1961 for blasting tests. Several exposures have been found where explosives were used to break the rock, leaving small craters. Very limited excavation occurred on this site.

This rock is described as a layered shale or slate and is not considered as structurally sound as the Plymouth or Norrie members. Therefore, a mechanical method to reduce and break the bedrock is proposed.

The previously disturbed Bulk Sample Site 5 will be cleared of vegetative material and any soils material will be stockpiled for future use during site reclamation. Soil stockpile areas will be protected from erosion by seeding and mulching with a temporary seed mixture such as oats or annual rye. Soil stockpile areas may also be protected by covering with tarps. Site specific stormwater control measures will be installed prior to excavation beginning.

The soils material will be removed to bedrock. A mechanical rock breaker such as a hydraulic hammer mounted on an excavator will be used to break the bedrock to sizes suitable for an excavator or wheel loader to handle.

The material may be loaded directly into highway trucks, or may be collected into small stockpiles in anticipation of loading onto highway trucks. These stockpiles will be located throughout the bulk sample site as the activity progresses.

Loading activity will be accomplished by an excavator or wheel loader into a highway classified truck. The excavator has the advantage of being able to work the excavation from positioning the machine on top of the broken material. It can also place material in the bed of the truck with more precision than a wheel loader.

A wheel loader can be used to excavate a larger volume of material quicker. It has to work the broken rock from the same level as the bottom of the broken rock.

The truck capacity is estimated at 20 tons payload. Each truck will have the load covered before leaving the site.

If road conditions dictate that highway trucks would not be feasible, a set of off-highway trucks may be used to transport the bulk sample material to a Transfer Location near the public roads system. (see Staging Area details discussed below.)

Bulk Sample Site 5 will be excavated within the existing road. Once the bulk sample has been removed, the pit will be regraded to reform the roadway at about 2.25 feet below the existing road grade. Commercial stone will be used to smooth out the rough portions of the bedrock.

Revegetation requirements will be discussed in the response to 295.45 (2)(d) below.

Bulk Sampling Plan
Plan B – Rock Samples gathered with Blasting Activity
Operational Requirements

This method would be used in Bulk Sample Sites 1 and 2 if the Plan A operational procedures do not produce the necessary material required for machinery testing.

The bedrock will be cleared of extraneous materials. Drilling will be performed on a prescribed pattern and will be accomplished by using a construction drill. The material will be blasted to a size comparable to the projected run-of-mine size material (approximately 6 to 12 inches in size). Blasting will be performed by contracted blasting services. No explosives will be stored on site.

Blasting details will be discussed below.

Loading activity will be accomplished by an excavator or wheel loader into a highway classified truck.

An excavator has the advantage of being able to work the excavation from positioning the machine on top of the broken material. It can also place material in the bed of the truck with more precision than a wheel loader.

A wheel loader can be used to excavate a larger volume of material quicker. It has to work the broken rock from the same level as the bottom of the broken rock.

The highway truck capacity is estimated at 20 tons payload. Each truck will have the load covered before leaving the site.

If road conditions dictate that highway trucks would not be feasible, a set of off-highway trucks may be used to transport the bulk sample material to a Staging Area Location near the public roads system. (see Staging Area details discussed below.)

Plan B – Blasting Requirements

Number of holes per area:

| | |
|---|---|
| Bulk Sample Site 1 | 240 holes |
| Bulk Sample Site 2 lower pit | 156 holes |
| Bulk Sample Site 2 upper pit | 90 holes |
| Bulk Sample Site 5 | 205 holes |

Depth and diameter of the holes:

Holes will be 10 feet deep, 4-inch diameter

Type of explosive materials will be used:

ANFO prell will be used

Drilling water and cuttings controlled during drilling:

Drill rigs for this type of work use compressed air to flush the cuttings from the hole. The drill rig will be provided with a dust collection system. Cuttings will be reused to stem the hole.

Dust control measures implemented during blasting:

Dust control measures will not occur for the blasting activity. Dusts of fugitive emissions from the blasting activities are minimal as demonstrated in Attachment 1 (Air Emissions Estimates). The estimated maximum theoretical emissions from the blasting activity are less than 0.001 tons per year of particulate matter.

Safety procedures related to blasting including pre-blast notification and designation of restricted access areas:

Pre-Blast notifications will conform to the requirements of Wisconsin Statutes DPS 307 and the Town of Anderson blasting ordinance and any other local ordinance in place at the time of the blasting activity.

A restricted zone will be constructed at least 300 feet from each blast site. The zone will be marked by brightly colored construction fencing and/or posted signs to warn the general public of the restricted area.

Audible blasting alarms will be used. The alarms will consist of horns or sirens capable of broadcasting at least ¼ mile from the blasting site. Commercial truck or automobile horns will not be used. Warning signs describing the blasting signals will be posted to all entrances to the blast area.

## STAGING AREA DETAILS

A Staging Area has been proposed in the event that highway trucks cannot access the Bulk Sampling sites. The use of off-highway trucks is considered an alternative in this plan.

If the Staging Area is necessary, the site will be prepared by removing all topsoil materials and storing the materials within a berm. Soils materials will be used to create a berm and the downslope end of the berm will be provided with a flow through device such as filter fabric wrapped hay bales or other device normally considered under Best Management Practices for stormwater.

Geotextile road fabric will be placed and then covered by either commercial stone or undersized rock from the bulk sampling areas.

If the Staging Area is used, a traffic control flagman during off highway truck haulage activities will be positioned on Moores Park Road for public safety. The loaded off highway trucks would cross Moores Park Road to reach the Staging Area. Any damage to the public road will be reimbursed to the township.

At the end of the activity, the base rock and filter fabric will be removed. The Staging Area will be scarified to relieve soil compaction. Soils material will be replaced and topsoil material will be returned to the site. The site will be seeded and mulched.

*Comment #4 from DNR letter dated July 2, 2013:*
Provide additional detail about the alternative procedure for handling the rock described in the plan including a specific location for the staging area, any site preparation necessary for the working pad, drainage control measures, access routes and descriptions of the vehicles that would be used to move the rock from the sampling sites to the staging area.

> The specific location for the staging area is found on Map 1: Bulk Sampling Plan map provided in the original submittal. The site is a pre-existing disturbance adjacent to existing roads.
>
> Drawing B004-Material Staging Area Erosion and Sediment Control Plan provides a detailed view of the layout of the proposed staging area.
>
> A working pad will be created with the purpose of preventing rock sample contamination from materials such as soils or gravels located at the transfer site. The working pad will be constructed by placing a geotextile materials such as woven road base fabric on the ground. Smaller diameter rock from the bulk sampling activity will be used to create a minimum 6-inch covering over the fabric. Other materials that could be used for a working pad would include concrete, plate steel or commercial gravel.
>
> Drainage control would be accomplished by utilizing silt fence, hay bale dikes, earthen berms, sand bags and/or other temporary drainage control method.

Access routes are designated on Map 1: Bulk Sampling Plan Map.

If highway trucks cannot reach the sample pits due to site conditions, off highway trucks will be used to bring material to the staging areas. The material would be placed on a prepared pad and stockpiled until highway trucks could be scheduled. The material would be loaded by either a wheel loader or an excavator from the pad to the highway truck.

The sample material will be loaded by heavy machinery into highway trucks for transport to the pilot plant facility. The alternative procedure will be the loading off-highway trucks at the pit and transporting the material to a staging area where the sample material will be transferred to highway trucks for transport to the pilot plant. Material will be transferred directly to the highway truck or the material may be placed on a pad to prevent contamination of the sample. The highway truck would then be loaded from the material stored on the pad. Stormwater control will be provided around the pad.

## BULK SAMPLING COMPLETION DEPARTMENT NOTIFICATION

After the bulk sampling activity has been completed and no further sampling is required, the Department will be notified that final regrading will begin. Notification will be by email or Registered Mail. Regrading will begin within 5 days of the notification to the Department. The excavation slopes will be graded to remove excessive grades. Regrading will be performed with the available material with the goal to blend the disturbance into the existing ground contours. Stockpiled soils material will be applied to the regraded area before revegetation occurs.

Seeding will follow. See the Revegetation Plan as discussed at the discussion of the requirements of Statute 295.45 (2)(d) below for details.

## GROUNDWATER CONSIDERATIONS

*Comment #1 from DNR letter dated July 2, 2013:*
Are any of the sites deep enough to intercept groundwater and if so, how will such water be handled?

Each site is located at or near the higher ground in the area. Site inspections of the area have not identified the presence of springs during the high flow period in May 2013.

If groundwater were encountered during the project excavation, the pit will be graded to allow gravity discharge to the perimeter silt fence.

Similarly, describe how water that accumulates in the sampled areas prior to reclamation will be handled. A wastewater discharge permit may be needed if the company intends to pump water from the excavations and discharge it to a waterway or groundwater.

By designing the excavation to be freely draining, the requirement for pumping is eliminated.

The existing sites have been disturbed for more than 50 years. No evidence of groundwater discharge or precipitation retainment have been found at the Bulk Sample sites.

## ACCESS ROADS

Access to the Bulk Sample Sites will be made by utilizing existing roads to the extent possible.

Bulk Sample Sites 1, 2 and 5 would be accessed from Moores Park Road in Section 33, Township 45 North, Range 1 West. Access Road 3 from Moores Park Road to the abandoned railroad grade (approximately 465 feet) will be the access from the public road system. Access Road 6 begins at the abandoned railroad grade and is an existing road. This section has been used for forestry activities in the past. In addition, a new road section will be constructed (identified as Access Road 6) to connect Bulk Sample Sites 1 and 2 to the existing road near the former Tyler Forks Mine. Access Road 6 construction details are provided within this submittal.

New Road Construction – A new road is proposed to access Bulk Sample Sites 1 and 2. The location of a small wetland area on the access road to Bulk Sample Site 1 as well as the steep and damp conditions of the existing access roads to Bulk Sample Sites 1 and 2 have caused a concern in the original proposal. The proposed road will include 2,100 feet of existing roads and 1,906 feet of new construction.

The new road has been designed to follow existing contours and does not require drilling and blasting to construct.

Refer to the Typical Road Cross Section drawing for a general arrangement of the new road construction.

The new road will be regraded and vegetated after completing the bulk sample collection.

***295.45 (2)(c)***

***A site-specific plan for controlling surface erosion that conforms to requirements under ss. 281.33 (3) and 283.33 and that identifies how impacts to plant and wildlife habitats will be avoided or minimized to the extent practicable.***

Refer to Drawings B001, B002 and B003 attached to this application. Each of the three bulk sample sites are detailed in these sketches with the applicable Stormwater Management procedures proposed.

Stormwater Management may include the use of silt fence, earthen berms, hay bales, diversion ditches or similar barriers to divert water away from the disturbance. Silt fence, earthen berms, hay bales or similar barriers will be used to filter any runoff before it leaves the site. Vehicular access to the site will be managed to maintain the surface runoff through sediment control such as silt fence prior to leaving the work site.

At the end of the activity, each site will be regraded and any topsoil will be replaced. The area will be seeded and mulched with the appropriate mixtures.

The bulk sampling activities will occur in areas of previous disturbances. Plant and wildlife habitat in these areas have adapted to the previously disturbed sites. A redisturbance of an area already impacted by activities was the deciding factor for locating the bulk sampling sites. Each of the sites is relatively small and located in a forested area. Animals displaced by the activity have adequate habitat to relocate.

A Stormwater Application that will address this activity will be submitted separate from this application.

***295.45 (2)(d)***

***A revegetation plan for each area where bulk sampling will be performed that describes how adverse impacts to the environment will be avoided or minimized to the extent practicable and how the site will be revegetated and stabilized and that identifies how adverse impacts to plant and wildlife habitats will be avoided or minimized to the extent practicable.***

## REVEGETATION PLAN

In the event that any topsoil has been stockpiled, it will be returned to the site and spread once regrading is completed.

All sites shall be seeded to establish vegetation. Composite soil samples will be collected. The samples will be submitted to the local agronomy center for available nutrient analysis. The analysis will provide a recommended fertilizer application rate.

Soil preparation may include raking, discing or harrowing to loosen the soil.

Seed mix would contain:

68% Common Oats
14% Annual Rye
4% Timothy
7% Virginia Wild Rye
7% Canada Wild Rye
0.25% Black-eyed Susan

The seed will be planted no deeper than 1/8-inch at 73.25 pounds per acre. Seed bed shall be loosened to 4 inches of depth.

Once fertilizer and seed have been applied, the seeded area will be raked, disked, harrowed or utilize other methods in order to cover the seed.

Mulching material shall consist of straw or hay in an air-dry condition, wood excelsior fiber or wood chips. Mulch shall be spread at a thickness of ½ to 1-1/2 inches. Compacted bales are to be broken and loosened to create a loose blanket over the seeded area.

The pre-existing roads shall be graded and left in place for future use by the landowner. Refer to the landowner letter in the appendix. If the road is aggregate surfaced, grading will be performed to establish drainage towards the ditchline.

New road disturbances will be regraded after bulk sampling activities are completed. The road disturbance will have any aggregate materials removed and the disturbance will be regraded. Any disturbance will be seeded and mulched.

***295.45 (2)(e)***

***The estimated time for completing the bulk sampling and revegetation of the bulk sampling locations.***

The original submittal estimated the time frame of the bulk sampling and revegetation will occur during the period from July 2013 to November 2014. The anticipated time frame is now from January 2014 to April 2015.

***295.45 (2)(f)***

***A description of any known adverse environmental impacts that are likely to be caused by the bulk sampling and how those impacts will be avoided or minimized to the extent practicable.***

There are no known adverse environmental impacts that are likely to be caused by the bulk sampling activity.

Two sites (Sites 1 and 2) were previously disturbed in 1960 and were not reclaimed and have remained open to the elements. From this 50 year old activity, no adverse environmental impacts have been identified. The process of collecting a sample replicates the 1960 activity. Site No. 5 was disturbed in 1961 as a blasting test site. Site reclamation will include areas that the previous activities left behind.

A wetland inventory for the sites has been prepared and is attached to this letter. In summary, the wetland delineation identified one site on the access road to Bulk Sample Site 1 as having a wetland area. Steps have been taken to avoid the wetland by providing an alternative route (Access Road 6) into Bulk Sample Site No. 1.

Additional wetland areas were identified in locating the overland route for Access Road 6. These areas are addressed in the Wetlands and Waterways, LLC report included within this submittal. The additional wetland areas were avoided by proposing a new construction portion in upland areas. No navigable streams will be crossed with this activity.

The target areas of the Ironwood Formation to be collected will be in the Pence, Norrie and Plymouth members. These geologic members consist of sedimentary rocks that are iron oxide in nature. Long term exposure to the elements has not produced negative environmental impacts on the site.

Each proposed site has existing disturbances that allow surface runoff to exit the site and not pool water. No wetlands have been identified in these bulk sample sites.

***295.45 (2)(g)***

***A description of any adverse effects, as defined in s. 44.31 (1), that the bulk sampling might have on any historic property, as defined in s. 44.31 (3), that is a listed property, as defined in s. 44.31 (4), that is on the Wisconsin inventory of historic places, as defined in s. 44.31 (12), or that is on the list of locally designated historic places under s. 44.45; or any scenic or recreational areas; and plans to avoid or minimize those adverse effects to the extent practicable.***

First, a check to the Wisconsin Historical Society inventory reveals no known archeological sites in the Project Area. Access Road 6 includes an existing road through the site of the Tyler Forks Mine (c. 1887 to 1911). The road use through the area will be provided with a commercial graveled road surface underlain by geotextile road fabric to provide a physical barrier between the existing ground and the road surface.

Second, Sites 1, 2 and 5 are located on sites with previous extensive disturbances. Site access will be by using the existing roads used with the active forestry practices on the site or roads that were used in the previous bulk sampling activity.

The sites are remote and are forested. Activities will be screened from the general public by the forested areas.

A Phase 1 archeological study for new disturbance areas will be provided in conjunction with the stormwater application.

### *295.45 (5)(a) BONDING*

***A person who intends to engage in bulk sampling shall submit with the bulk sampling plan a bond in the amount of $5,000 that is conditioned on faithful performance of the requirements of this section, that is issued by a surety company licensed to do business in this state, and that provides that the bond may not be canceled by the surety, except after not less than 90 days' notice to the department in writing by registered or certified mail.***

A surety bond in the amount of $5,000 has been provided with the June 18, 2013 application. A specific bond estimate has been provided within "Table 1 – Reclamation Cost Estimate". After DNR review, the appropriate bond amount will be provided to the Department.

### *295.45 (5)(e)*

***The department may require that the amount of the bond submitted under this subsection be increased at any time, if the department determines that it is unlikely that the bond would be adequate to fund the cost to this state of completing the revegetation plan.***

A Reclamation Cost Estimate has been included. See "Table 2 – Reclamation Cost Estimate" that follows this page. The Reclamation Cost Estimate totals $27,192.00 for reclaiming 3 bulk sample sites and Access Road 6. A Surety Bond in the amount of $5,000.00 has been provided with this submittal as required by 295.45 (5)(a). After DNR review, the appropriate bond amount will be provided to the Department.

***295.45 (7)***

***Notwithstanding any provision in ch. 23, 29, 30, 31, 169, 281, 283, 285, 289, or 291 or a rule promulgated under those chapters applicable to an approval identified under sub. (3), the department shall require the bulk sampling activity for which the approval is issued to be conducted at locations that result in the fewest overall adverse environmental impacts.***

By reusing existing unreclaimed disturbed areas, this activity will minimize the impacts as compared to areas that have not been disturbed in the past. Regrading and revegetation of the existing disturbances will also be accomplished.

The construction of a temporary access road avoids the disturbance of wetland areas. Berming on the existing roads will be used to minimize the impacts to wetland areas.

## Air Emissions Discussions

The June 18, 2013 submittal proposed blasting to provide rock samples. The DNR comments requested air emissions discussions. Air modeling was performed and the results indicated that the activity did not trigger the requirement of air permitting.

Since that time, the number of sites proposed has been reduced and a further reduction in air emissions will be made.

The following comments were generated in the past correspondence and are provided to document the air emissions submittals.

*Comment #9 from DNR letter dated July 2, 2013:*
Elements of the proposed bulk sampling activity including blasting, loading and hauling may generate air pollutants, notably fugitive emissions of particulate matter. Based on the information provided, the Department cannot determine if an air pollution control construction permit is required for this activity. These emissions, on a maximum theoretical basis, may exceed the permitting thresholds in ch. NR 406, Wis. Adm. Code. To facilitate our regulatory determination of the need for a permit, Gogebic Taconite must develop an estimate of total particulate matter emissions (including PM10 and PM2.5 emissions) for the activity based on the anticipated level of activity and the proposed methods. This estimate should be based on available emission factors in EPA document AP-42 or other reliable sources of emission data for blasting, loading, road traffic and the other activities as applicable.

RESPONSE: (This following response was submitted in our July 10, 2013 letter to address the option of using blasting to create a bulk sample. A second air emissions estimate was completed to address the bulk sampling emissions without blasting activities. Since that activity, the proposed activity has been reduced in scope from 5 sample sites to 3. In as much, the provided air emission estimates fall below any threshold for the requirements of an air quality permit. By reducing the number of disturbed areas, the total air emissions would be even further reduced.)

> Provided as Attachment 1 are emission estimates for fugitive emissions as a result of blasting, loading, transfer of material and fugitive road dust; along with a minimal amount of combustion emissions as a result of operating temporary light towers powered by diesel engines. In all cases, the emission calculations are based on AP-42 emission factors. Key assumptions were already addressed in the responses to Questions 2 and 4 and are included in Attachment 1.
>
> Based on the emission estimates provided in Attachment 1 and summarized in Table 1 the Bulk Sampling Plan activity qualifies for an exemption from Construction and Operating Permits based on actual emissions per s. NR 406.04(1q) and 407.03 (1m) of the Wisconsin Administrative Code (WAC). The bulk sampling emissions are less than the thresholds for a construction permit (Chapter 405 WAC) and for an operating permit (Chapter 406 WAC). The construction permit exemptions are provided at s. NR 406.04(1q) as follows:

*"Sources Exempt Based on Controlled Actual Emissions. No construction permit is required for any emissions unit constructed, modified, replaced, relocated or reconstructed at a stationary source where all of the following criteria and requirements are met:*

*(a) The owner or operator of the stationary source has a facility-wide operation permit under ch. NR 407 or has submitted a timely and complete application for a facility-wide operation permit.*

*(b) Actual emissions from all of the constructed, modified, replaced, relocated, and reconstructed emissions units do not exceed any of the following levels:*

*1. 1,666 pounds in any month averaged over consecutive 12-month period for each of the following air contaminants: particulate matter, nitrogen oxide, sulfur dioxide, PM10, carbon monoxide and volatile organic compounds.*

*2. 10 pounds in any month averaged over any consecutive 12-month period for lead.*

*(c) None of the emissions units constructed, modified, replaced, relocated, or reconstructed requires a new BACT or LAER determination under ch. NR 445 as a result of the new project.*

*(d) None of the emissions units constructed, modified, replaced, relocated, or reconstructed are subject to new permitting requirements under ch. NR 405* (New Source Review) *or 408* (Non-Attainment New Source Review) *as a result of the project.*

*(e) The owner or operator of the stationary source submits to the department a complete application for an operation permit revision, or an updated application for an operation permit, which include each new, modified, replaced, relocated, or reconstructed emissions unit, prior to commencing construction, modification, replacement, relocation, or reconstruction and does all of the following:*

*1. In the operation permit revision application, or updated operation permit application, proposes monitoring of any control equipment used to limit actual emissions from any emissions unit being constructed, modified, replaced, relocated or reconstructed in accordance with the monitoring requirements in s. NR 439.055.*

*2. Commences monitoring of any control equipment as proposed in subd. 1., and maintains any records necessary to demonstrate compliance with any applicable emission limitation, upon startup of any newly constructed, modified, replaced, relocated or reconstructed emissions unit.*

*(f) The owner or operator of the source submits to the department a claim of exemption from construction permitting requirements. The exemption claim shall identify the emissions units which are being constructed, modified, replaced, relocated or reconstructed. The department shall respond to the claim of exemption submittal within 20 business days after receipt of the claim.*

*(g) Any newly constructed emissions unit is not subject to an emission limitation under section 111 or 112 of the Act (42 USC 7411 or 7412). Any modified, replaced, relocated or reconstructed emissions unit does not trigger any new emission limitation or other requirement for the emissions unit under section 111 or 112 of the Act (42 USC 7411 or 7412), excluding section 112(d)(5) or (r) (42 USC 7412(d)(5) or (r)).*"

The proposed bulk sampling activities will meet the criteria above. Item (a) for submittal of a timely and complete application for a facility-wide operation permit is met with the filing of an exemption since the proposed bulk sampling activities emissions will also be below the threshold for operating permit as specified at s. NR 407.03(1m)(a), thus an operating permit application is not required.

Operating Permit exemptions are provided in s. NR 407.03(1m) as follows:

*"FACILITIES EXEMPT BASED ON ACTUAL EMISSIONS.*

*(a) Any facility that is required to submit an annual emission inventory report under s. NR 438.03 is exempt from the requirement to obtain an operation permit following notification under par. (c), where all of the following criteria and requirements are met:*

*1. The actual emissions of each air contaminant from the facility do not exceed any of the following levels:*

*a. 10 tons in any calendar year for each of the following air contaminants: particulate matter, nitrogen oxide, sulfur dioxide, PM10, carbon monoxide and volatile organic compounds.*

*b. 0.5 tons in any calendar year for lead.*

*c. Any stack–appropriate thresholds for emissions points in columns (c), (d), (e) and (f) of Table A, B or C of ch. NR 445. If the facility is a source of incidental emissions under s. NR 445.11, this subdivision only applies to emissions of air contaminants which are listed as substances of concern in Table E of ch. NR 445.*

*2. The facility is not subject to a standard under section 111 or 112 or the Act (42 USC 7411 or 7412) except for a source subject solely to regulations or requirements under section 112(d)(5) or (r) of the Act (42 USC 7412 (d)(5) or (r)).*

*3. The owner or operator conducts monitoring and maintains records sufficient to demonstrate compliance with the requirements of this paragraph, including the calculation of annual facility–wide emissions. These records shall be maintained on site for at least 5 years, unless a longer period is required by statute or rule.*

*4. If a control device is used to limit actual emissions, the owner or operator uses a compliance monitoring method which is identified in s. NR 439.055.*

*(b) Any facility that is not required to submit an annual emission inventory report under s. NR 438.03 is exempt from the requirement to obtain an operation permit where all of the criteria and requirements in par. (a) 1. to 4. are met.*

*(c) 1. The owner or operator of a facility required to submit an air emission inventory report under s. NR 438.03 shall notify the department of their intent to operate the facility under the exemption criteria in par. (a). A claim of exemption made under s. NR 406.04 (1q) from construction permit requirements shall satisfy this notification requirement.*

*2. Any existing permit shall remain in effect until the permit is revoked or coverage under a general or registration permit is withdrawn. A notification under subd. 1. shall serve as a request for revocation of an individual permit or withdrawal from coverage under a general or registration permit.*

*3. A notification under subd. 1. shall serve as a request for withdrawal of any pending permit application.*

*Note: An owner or operator exempt under this subsection is responsible for complying with all other applicable requirements in chs. NR 400 to 499.*

As demonstrated in Table 1 the project does not trigger the New Source Review (NSR) Requirements at Chapter 405 WAC. The Bulk Sampling Plan activity will occur in a county deemed in attainment or unclassifiable for all criteria air pollutants, thus Chapter 408 WAC does not apply.

**Table 1 s. NR 406.04(1q) and 407.03(1m) WAC/NSR Threshold Comparison**

| Pollutant | Uncontrolled Potential to Emit (tons per year) | Actual Emissions [a] (tons per year) | s. NR 406.04(1q) s. NR 407.03(1m) Thresholds [b] (tons per year) | NSR Significance Thresholds (tons per year) |
|---|---|---|---|---|
| CO | 0.14 | 0.11 | 10 | 100 |
| $NO_X$ | 0.30 | 0.16 | 10 | 40 |
| PM | 2.37 | 0.54 | 10 | 25 |
| $PM_{10}$ | 0.67 | 0.19 | 10 | 15 |
| $PM_{2.5}$ | 0.13 | 0.08 | N/A | 10 |
| $SO_2$ | 0.02 | 0.01 | 10 | 40 |
| VOC | 0.02 | 0.01 | 10 | 40 |
| Pb | 0.00 | 0.00 | 0.06 / 0.5 | 0.6 |
| $CO_2e$ | 10.3 | 5.2 | N/A | 100,000 |

[a] Actual emissions are based on controlled emission levels. Specifically, the use of a watering truck on haul routes (80% emission reduction) and light tower operation of no more than 12 hours per day (50% emission reduction).
[b] The emission thresholds under NR 406.04(1q) are 1,666 pounds per month averaged over 12 consecutive months, which is 9.996 tons per year, essentially equivalent to the less than 10 tons per year threshold specified at NR 407.03(1m). The only exception is for the pollutant lead, the threshold under NR 406.04(1q) is 10 pounds per month, or 0.06 tons per year, compared to 0.5 tons per year under NR 407.03(1m).

As discussed above, the GTAC Bulk Sampling Plan meets exemption thresholds under s. NR 406.04(1q) and 407.03 (1m). Additionally, the proposed project emissions are less than those listed in s. NR 445.11 Table E. This approach is corroborated by use of the Department form, "Notice of Intent Under the Actual Emissions Exemption ss. NR 406.04(1q) or NR 407.03(1m), Wis. Adm. Code Optional form (revised 9/07)." Thus, GTAC will submit a written claim of exemption as required by s. NR 406.04(1q) and 407.03(1m) for air quality related emissions associated with the Bulk Sampling Plan.

Plan A – No Blasting Option

The No Blasting Option was analyzed and the results are indicated below. The scenario assumed a total volume of 2,400 tons of material removed and included activity at 4 bulk sample site locations. To demonstrate worst case conditions, screening was included as well as blasting – in case sufficient material for a bulk sample was not available.

Overall, the emissions did not change radically since the air quality emission impact associated with the bulk sampling plan activity is minimal. For comparison below is a summary table of the previously represented emissions and the revised emissions. Note that the CO and NOx reduced slightly for due to reduced blasting and PM emissions reduced with less sample sites.

| Pollutant | 7-2-2013 Emission Estimate – Actual Blasting Option (tons per year) | Revised Emission Estimate – Actual No Blasting Option (tons per year) | s. NR 406.04(1q) s. NR 407.03(1m) Thresholds (tons per year) | NSR Significance Thresholds (tons per year) |
|---|---|---|---|---|
| CO | 0.11 | 0.08 | 10 | 100 |
| NOx | 0.16 | 0.15 | 10 | 40 |
| PM | 0.54 | 0.32 | 10 | 25 |
| PM10 | 0.19 | 0.12 | 10 | 15 |
| PM2.5 | 0.08 | 0.06 | N/A | 10 |
| SO2 | 0.01 | 0.01 | 10 | 40 |
| VOC | 0.01 | 0.01 | 10 | 40 |
| Pb | 0.00 | 0.00 | 0.06/0.5 | 0.60 |
| CO2e | 5.2 | 5.2 | N/A | 100,000 |

**Portable Light Tower Emissions**

From August 13, 2013 DNR Comment Letter:
7. The air emissions estimate included with the response indicated that a diesel-powered generator would be used on the site. Your future submittal should include documentation that the generator is classified as a non-road engine, for purposes or air emissions.

RESPONSE: To describe in a non-regulatory context, the light tower engines are not subject to any of the New Source Performance Standards (NSPS) or National Emission Standards for Hazardous Air Pollutants (NESHAPS/MACT) which apply to engines since the light tower unit(s) are 1) transportable and 2) will not remain at the location for greater than 12 months.

We did previously look at the applicability of any Federal 40 CFR Part 60 NSPS or 40 CFR Part 63 NESHAPS/MACT in relation to the engines for the light tower operation to ensure we met the WI ss. NR 406.04(1q)(g) and s. NR 407.03(1m)(a)2 requirements (Section 111 or 112 of the Clean Air Act). We had planned that level of detail would be included in the actual exemption request to WDNR. However since they are requesting it now a regulatory explanation is provided below that represents the light tower engines are not subject to any potentially applicable NSPS or MACT standards and thus, meets the WI ss. NR 406.04(1q)(g) and s. NR 407.03(1m)(a)2 exemption provisions.

- 40 CFR Part 60 Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. This applies to owners and operators of stationary compression ignition (i.e., diesel-fueled) engines that commence construction after July 11, 2005. As specified in the definition of Stationary Internal Combustion Engine identified at 40 CFR Part 60.4219, "a stationary internal combustion engine is not a nonroad engine as defined at 40 CFR 1068.30..." As specified in the definition of Nonroad Engine at 40 CFR 1068.30 item (1)(iii) a nonroad engine is considered, "By itself or in or on a piece of equipment, it is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include, but are not limited to, wheels, skids, carrying handles, dolly trailer, or platform. The light towers by definition are considered transportable. Further, the light tower operation will coincide with the approximate 22 days of bulk sampling activity, thus the source will not be at the location for more than 12 consecutive months. The definition of Nonroad Engine at 40 CFR 1068.30 item(2)(iii) specifies an engine of (1)(iii) or transportable is no longer considered a nonroad engine when it "remains at a location for more than 12 consecutive months..." Since the light towers will

only remain at the location for approximately 22 days, much less than 12 consecutive months, the light towers meet the definition established at 40 CFR 1068.30 for nonroad engines. Thus, it meets the exemption provision identified at 40 CFR 60.4200(d) for NSPS Subpart IIII.

- 40 CFR Part 60 Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines. This applies to owners and operators of stationary spark ignition internal combustion engines that commence construction after June 12, 2006. As specified in the definition of Stationary Internal Combustion Engine identified at 40 CFR Part 60.4248, "a stationary internal combustion engine is not a nonroad engine as defined at 40 CFR 1068.30..." As specified in the definition of Nonroad Engine at 40 CFR 1068.30 item (1)(iii) a nonroad engine is considered, "By itself or in or on a piece of equipment, it is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include, but are not limited to, wheels, skids, carrying handles, dolly trailer, or platform. The light towers by definition are considered transportable. Further, the light tower operation will coincide with the approximate 22 days of bulk sampling activity, thus the source will not be at the location for more than 12 consecutive months. The definition of Nonroad Engine at 40 CFR 1068.30 item(2)(iii) specifies an engine of (1)(iii) or transportable is no longer considered a nonroad engine when it "remains at a location for more than 12 consecutive months..." Since the light towers will only remain at the location for approximately 22 days, much less than 12 consecutive months, the light towers meet the definition established at 40 CFR 1068.30 for nonroad engines. Thus, it meets the exemption provision identified at 40 CFR 60.4230(e) for NSPS Subpart JJJJ.

- 40 CFR Part 63 Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines. This applies to owners and operators of stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP emissions. As specified in the definition of Stationary RICE identified at 40 CFR Part 63.6675 "Stationary RICE differ from mobile RICE in that stationary RICE is not a nonroad engine as defined at 40 CFR 1068.30..." As specified in the definition of Nonroad Engine at 40 CFR 1068.30 item (1)(iii) a nonroad engine is considered, "By itself or in or on a piece of equipment, it is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include, but are not limited to, wheels, skids, carrying handles, dolly trailer, or platform. The light

towers by definition are considered transportable. Further, the light tower operation will coincide with the approximate 22 days of bulk sampling activity, thus the source will not be at the location for more than 12 consecutive months. The definition of Nonroad Engine at 40 CFR 1068.30 item(2)(iii) specifies an engine of (1)(iii) or transportable is no longer considered a nonroad engine when it "remains at a location for more than 12 consecutive months..." Since the light towers will only remain at the location for approximately 22 days, much less than 12 consecutive months, the light towers meet the definition established at 40 CFR 1068.30 for nonroad engines. Thus, it meets the exemption provision identified at 40 CFR 63.6585(a) for MACT Subpart ZZZZ.

Sulfide Mineralization Considerations

From the July 27, 2013 response to comments letter:

5. Describe what precautions will be taken in regard to rock and water handling procedures if any of the sampling sites encounters rock with visible or known quantities of sulfide mineralization (e.g., the lower Yale Member).

RESPONSE:

The Yale member is not proposed for disturbance with this activity. The target zones are the Pence, Norrie and Plymouth members.

From the August 13, 2013 comment letter from DNR:
5. The response to Comment #5 suggests that since material from the Yale Member is not intended to be sampled, concerns regarding the presence of sulfide-bearing rock are not an issue. The original request for information was addressing sulfide-bearing rock in a broader sense. The Yale Member was cited as an example, but sulfide minerals could occur in other units as well. Please outline measures that will be taken if the bulk sampling activities encounter materials with visible sulfide mineralization.

RESPONSE:

Since the strata being sampled is an iron oxide, the sulfur present in the rock is generally too minute to be a participant in the production of Acid Mine Drainage. In addition, the materials are not expected to be currently acid generating given the absence of evidence of sulfide oxidation associated with the disturbed material in place and given the time that the material has been disturbed and exposed for over 50 years.

Sulfide mineralization does not confirm acid forming conditions. There is an extensive history of Acid Mine Drainage research in the public domain that indicates that certain factors must be present to create an acidic condition. Some of the factors include the amount of sulfur and the forms of sulfur present, the pH of the host rock, the acidic nature of the host rock, the basic nature of the host rock, the potential for neutralization of the rock, the presence of a source of water, etc.

Also the extensive history of the Gogebic Iron Range over the past 130 years provides the best laboratory of the potential of acid drainage potential in that no obvious acid discharges are found on the range after years of unregulated mining activity.

In addition, the sites are previously disturbed, unreclaimed, unregulated areas that have had over 50 years to create any negative conditions. This proposal is to reenter the same disturbed areas to recover samples. Nature has had 50 years to expose adverse conditions and there are no documented problems after numerous visits by qualified professionals, including DNR staff.

Since this agency has already requested that asbestiform materials be inspected for, the following is proposed as a method to document the existence or lack of sulfide mineralization on the project:

While not a normal constituent of iron ore deposits, the existence of asbestiform and sulfide mineralization material will be investigated during the excavation of the bulk sample materials. A geologist, familiar with asbestiform and sulfide mineralization materials, will visually inspect ore piles and the excavated pit to identify any potential occurrence of asbestiform and sulfide mineralization materials. The inspections will occur on accumulated stockpiles prior to shipping from the site. Another inspection will be made of the bedrock in the excavated pit to document any occurrence of asbestiform or sulfide mineralization materials in the bedrock.

If any positive documentation of asbestiform or sulfide mineralization in bedrock is found, the locations will be located by survey techniques, photographed and documented so that the site could be located at a later date. Any loose material found to contain asbestiform material or sulfide mineralization will be isolated and stockpiled on an elevated pad and protected from surface drainage. Any loose material found to contain asbestiform or sulfide mineralization will be disposed of offsite in an approved landfill.

## Asbestiform Materials

From the July 27, 2013 response to comments letter:

10. Additionally, given the documented occurrence of asbestiform minerals in ore bodies of similar nature in Minnesota and reports of similar minerals (amphiboles of the cummingtonite-grunerite series) in the vicinity of the proposed bulk sampling activity, it will also be necessary to evaluate the bulk sampling activity to determine whether regulation pertaining to control of asbestos emissions under Chapters NR 445 or NR 447, Wis. Adm. Code, is required. If these minerals are present or potentially present in an asbestiform habit within the excavated material, a percentage of the total emissions would likely be asbestos emissions. To calculate an estimate of the potential asbestos emissions, provide an estimate of the percentage, by weight, of the asbestiform mineral content of the material to be sampled and then calculate an estimated asbestos emission rate based on the total emission rate calculated above. This weight percent data for asbestos could be derived from actual measured quantities of asbestos in samples collected from the site or could be based on review of data from studies of similar deposits that may be present in other taconite mining areas of Minnesota or other parts of the upper Midwest.

RESPONSE:

Putting aside whether NR 445 would apply to the mining activities, NR 445 does not apply to the proposed bulk sampling activities because asbestiform minerals are not likely to be present in the Gogebic Iron Range near Mellen, WI. There are documented occurrences of amphibole minerals in the geology of this area but not all amphibole minerals are asbestiform minerals or asbestos. Based on our due diligence, the geologic conditions in the Gogebic Iron Range do not support the formation of asbestos. Based on research on the Mesabi Iron Range in MN by Ross et al. (2007) where the geology is similar to the Gogebic Iron Range near Mellen, WI no asbestos has been found in the portion of the Mesabi Iron Range where amphibole minerals are found. Based on the lack of geologic conditions that would favor the formation of asbestos and the absence of the presence of asbestos in the similar geology of the Mesabi Iron Range asbestos is not likely to be present in the Gogebic Iron Range.

We are not aware of any documented occurrence of asbestiform minerals in ore bodies in Minnesota. The references provide by Ann Coakley on July 10th to Tim Myers of Gogebic Taconite, acknowledge the presence of amphibole minerals in the Gogebic Iron Range but do not discuss the presence of asbestiform minerals or asbestos. Although there are deposits that contain amphibole minerals in Minnesota Ross et al. (2007) conducted an extensive survey of the amphibole at Peter Mitchell Pit, the only location on the Mesabi Iron Range in Minnesota where amphibole-containing ore is currently being mined, looking for occurrences of fibrous minerals. This work concluded that fibrous amphibole make up a "tiny fraction of one percent of the total rock mass" and "no asbestos of any type was found in the mine pit".

Although the geology in parts of the Gogebic Iron Range are similar to the geology in parts of the Mesabi Iron Range and amphibole minerals may be present, based on the above discussion we

do not expect asbestos or asbestiform minerals to be present in the Gogebic Iron Range near Mellen, WI. In any case, the estimated particulate emissions are below 5 tpy (see response to question 9). The note in NR 445.07 states "Owners and operators of facilities emitting less than 3 tons of volatile organic compounds and 5 tons particulate matter on an annual basis, or who engage in limited or no manufacturing activities, should refer to s. NR 445.11 prior to determining applicable requirements under this section. NR 445.11 reduces the list of HAPS for sources with PM emissions less than 5 tpy to those in Table E. Asbestos is not listed in Table E. Therefore, NR 445 does not apply to the proposed bulk sampling activities.

NR 447 does not apply to the Bulk Sampling Plan for several reasons, including that no asbestos is expected to be present. In addition, the Bulk Sampling Plan does not fit into any of the categories regulated by NR 447. Asbestos is defined in NR 447.02 (4) as "Asbestos" means the asbestiform varieties of serpentinite (chrysotile), riebeckite (crocidolite), cummingtonite-grunerite (amosite), anthophyllite and actinolite-tremolite." As discussed above, asbestiform minerals are not likely to be present in the Gogebic Iron Range near Mellen, WI based on similar geology in Minnesota where studies have been conducted and asbestiform minerals have not been found. Therefore, NR 447 does not apply to the Bulk Sampling Plan.

NR 447 provides specific requirements for the following activities but the Gogebic Bulk Sampling does not meet the definition of any of these activities:

- NR 447.03 Asbestos mills
- NR 447.04 Roadways (constructed with asbestos)
- NR 447.05 Manufacturing (operations using commercial asbestos)
- NR 447.06, .07, .08 Demolition and renovation
- NR 447.09 Spraying
- NR 447.10 Fabricating (using commercial asbestos)
- NR 447.11 Insulating materials
- NR 447.12 Waste disposal for asbestos mills
- NR 447.13 Waste disposal for manufacturing, fabricating, demolition, renovation and spraying operations
- NR 447.14 Inactive waste disposal sites for asbestos mills and manufacturing and fabricating operations
- NR 447.15 Air cleaning
- NR 447.16 Reporting (for listed sources in 447)
- NR 447.17 Active waste disposal sites (applies to sites that receive wastes from sourced covered under 447.12, 447.13, or 447.18)
- NR 447.18 Operations that convert asbestos-containing waste material into non-asbestos (asbestos-free) material

From the August 13, 2013 comment letter from DNR:

1. Response #10 suggests that asbestiform minerals are unlikely to be present in the material removed as part of bulk sampling. While not widespread in the Mesabi Iron Range, asbestiform minerals are nevertheless present. Given the low estimated emission rates, release of asbestos should not be an issue with bulk sampling; therefore, we are not requiring additional identification or characterization at this point. However, if the project progresses to the point where a mining project is proposed or contemplated, a more systematic evaluation of the potential for asbestiform minerals may be needed. Since you will handle a significant volume of material if you bulk sample, we recommend you take the opportunity to evaluate the material you handle for the presence and characterization of grunerite and other similar amphibole minerals.

   RESPONSE:
   While not a normal constituent of iron ore deposits, the existence of asbestiform and sulfide mineralization material will be investigated during the excavation of the bulk sample materials. A geologist, familiar with asbestiform and sulfide mineralization materials, will visually inspect ore piles and the excavated pit to identify any potential occurrence of asbestiform and sulfide mineralization materials. The inspections will occur on accumulated stockpiles prior to shipping from the site. Another inspection will be made of the bedrock in the excavated pit to document any occurrence of asbestiform or sulfide mineralization materials in the bedrock.

Endangered Species

An Endangered Species Review was made for the Bulk Sampling Project. The review results are provided below:

Actions that need to be taken to comply with state and/or federal endangered species laws:

For American Marten:

- Tree cutting greater than 11" dbh will be avoided between March 15 and May 31st.
- In the existing rock piles, the site will be prepped without moving rocks. A waiting period of 24 hours will be observed before moving any rocks. The prepping activities should be enough disturbance to cause any martens to vacate the area.

Actions recommended to help conserve Wisconsin's rare species and high-quality natural communities:

For Bald Eagle:

- If bald eagles are observed nesting within or near the project area, a contact to the Endangered Resources Review Program will be made for immediate guidance.

For White Mandarin:

- If White Mandarin is present on site, survey information will be reported to the DNR for inclusion in the Natural Heritage Inventory database.

For Northern Goshawk:

- If Northern Goshawk are present on site, survey information will be reported to the DNR for inclusion in the Natural Heritage Inventory database.

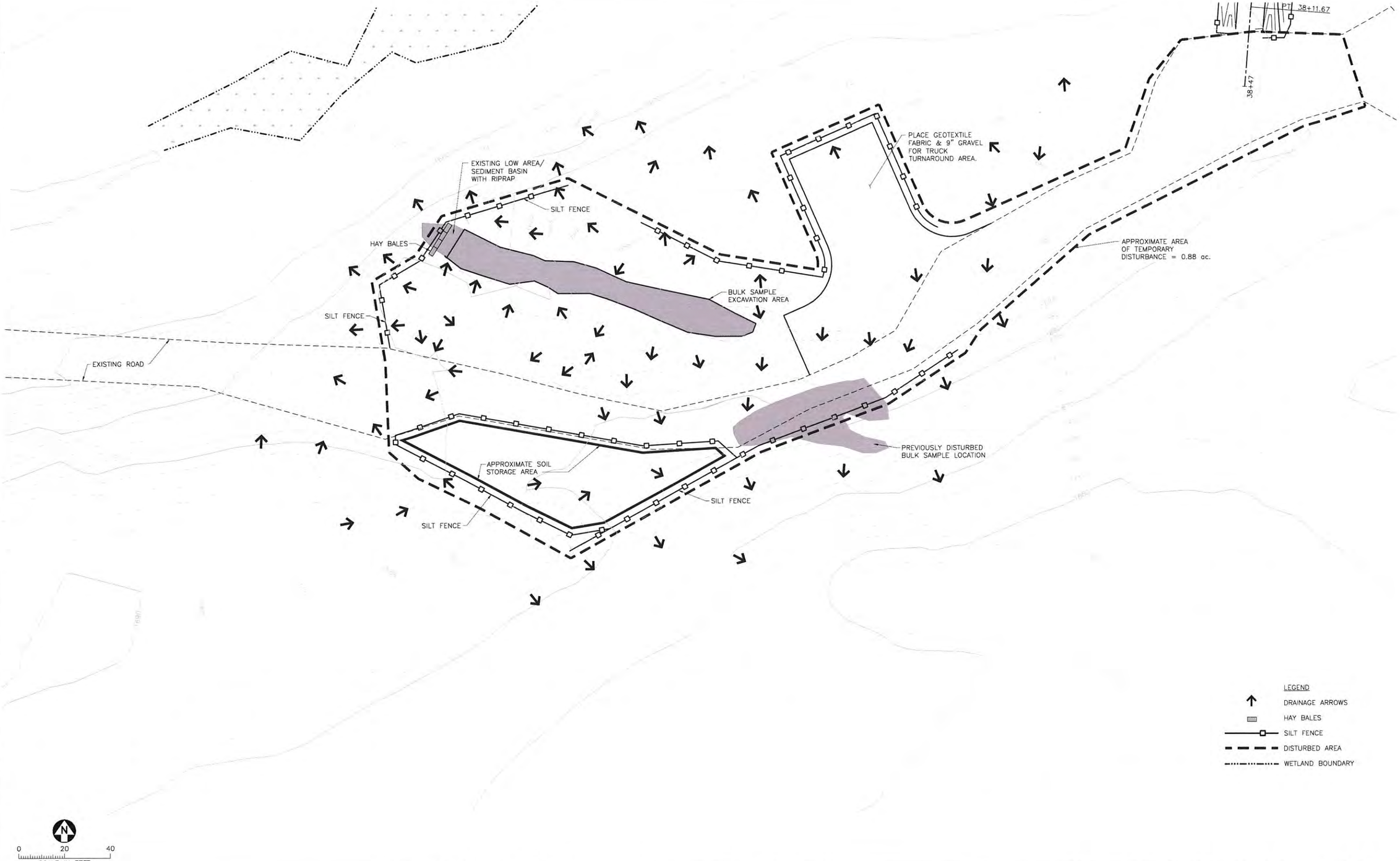
MAPS
Map 1 – Bulk Sampling Sites (revised November 22, 2013)
Map 2 – Access Road 6 (revised November 22, 2013)

FIGURES
Figure 1-1 Cross Sections Site 1
Figure 2-1 Cross Sections Site 2
Figure 2-2 Cross Sections Site 2
Figure 5-1 Cross Sections Site 5

DRAWINGS
Drawing B001 – Bulk Sample Site 1 Erosion and Sediment Control Plan
Drawing B001A – Cross Section Location
Drawing B002 – Bulk Sample Site 2 Erosion and Sediment Control Plan
Drawing B002A – Cross Section Location
Drawing B003 – Bulk Sample Site 5 Erosion and Sediment Control Plan
Drawing B003A – Cross Section Location
Drawing B004 – Material Staging Area Erosion and Sediment Control Plan

TABLES
Table 1 – Reclamation Cost Estimate

# FIGURES AND DRAWINGS

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BULK SAMPLING PROJECT

BULK SAMPLE SITE 1
EROSION AND SEDIMENT CONTROL PLAN

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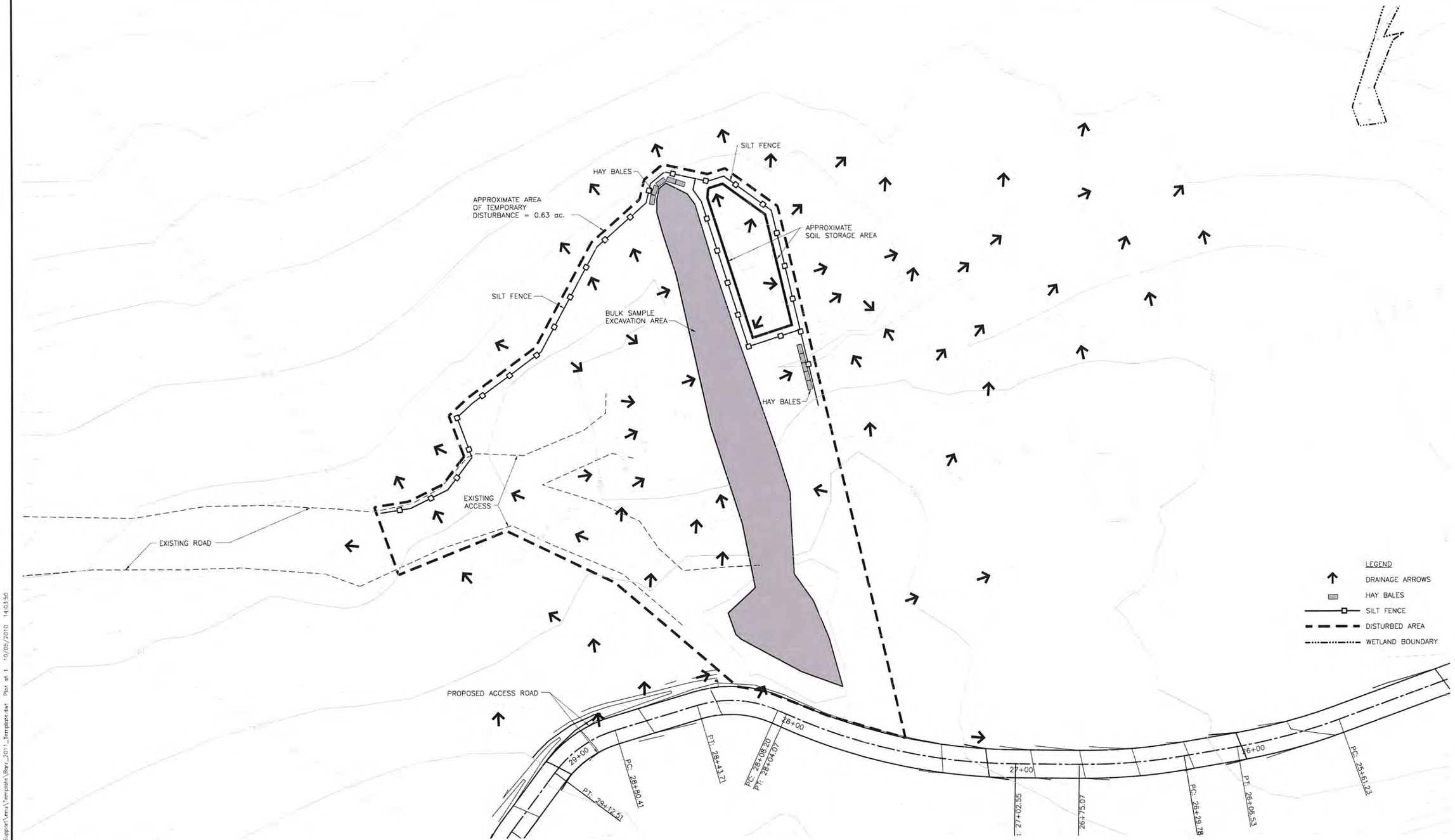


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BULK SAMPLING PROJECT

BULK SAMPLE SITE 2
EROSION AND SEDIMENT CONTROL PLAN

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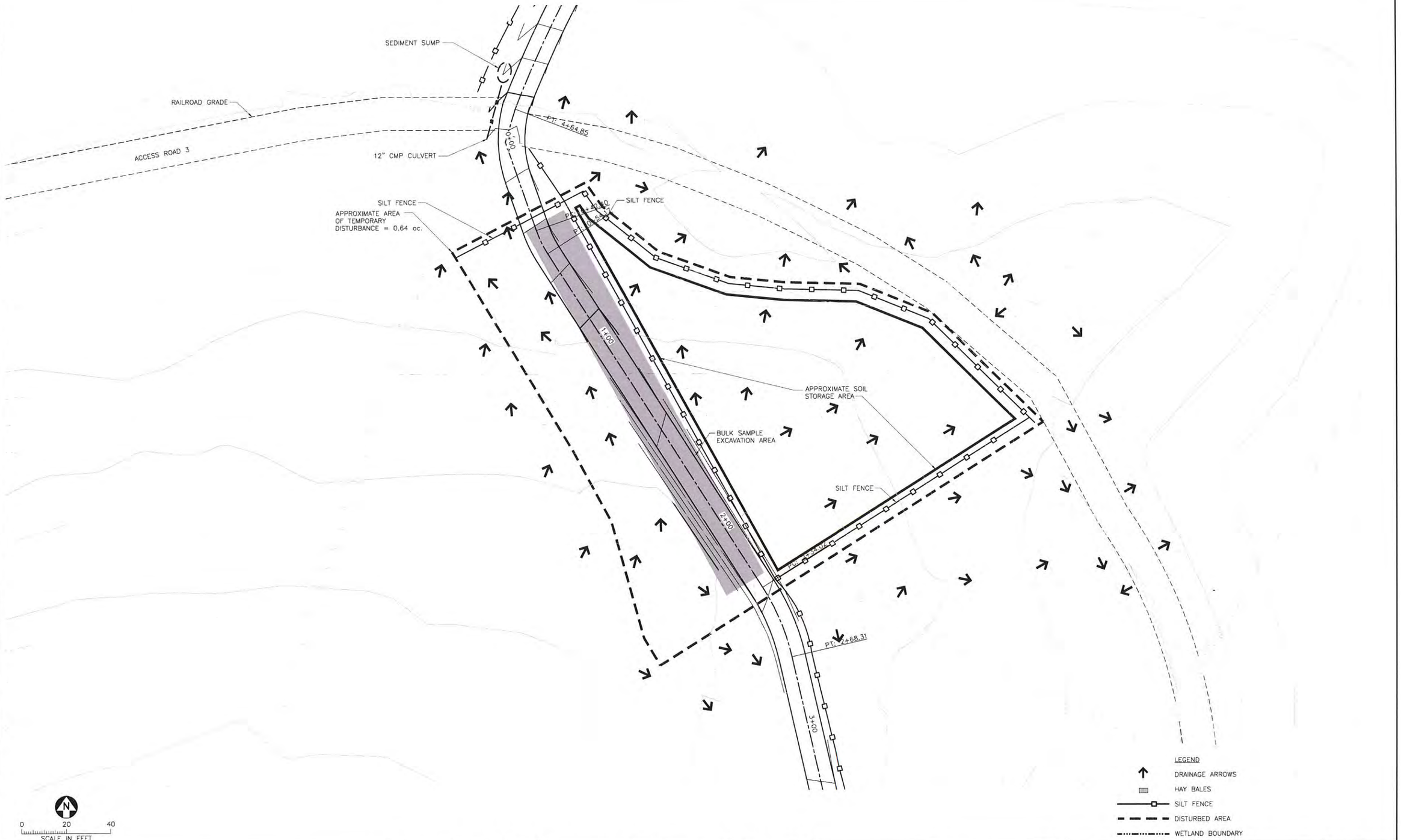
DWG. No. B002
REV. No. A

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# BULK SAMPLING PROJECT

## BULK SAMPLE SITE 5
## EROSION AND SEDIMENT CONTROL PLAN

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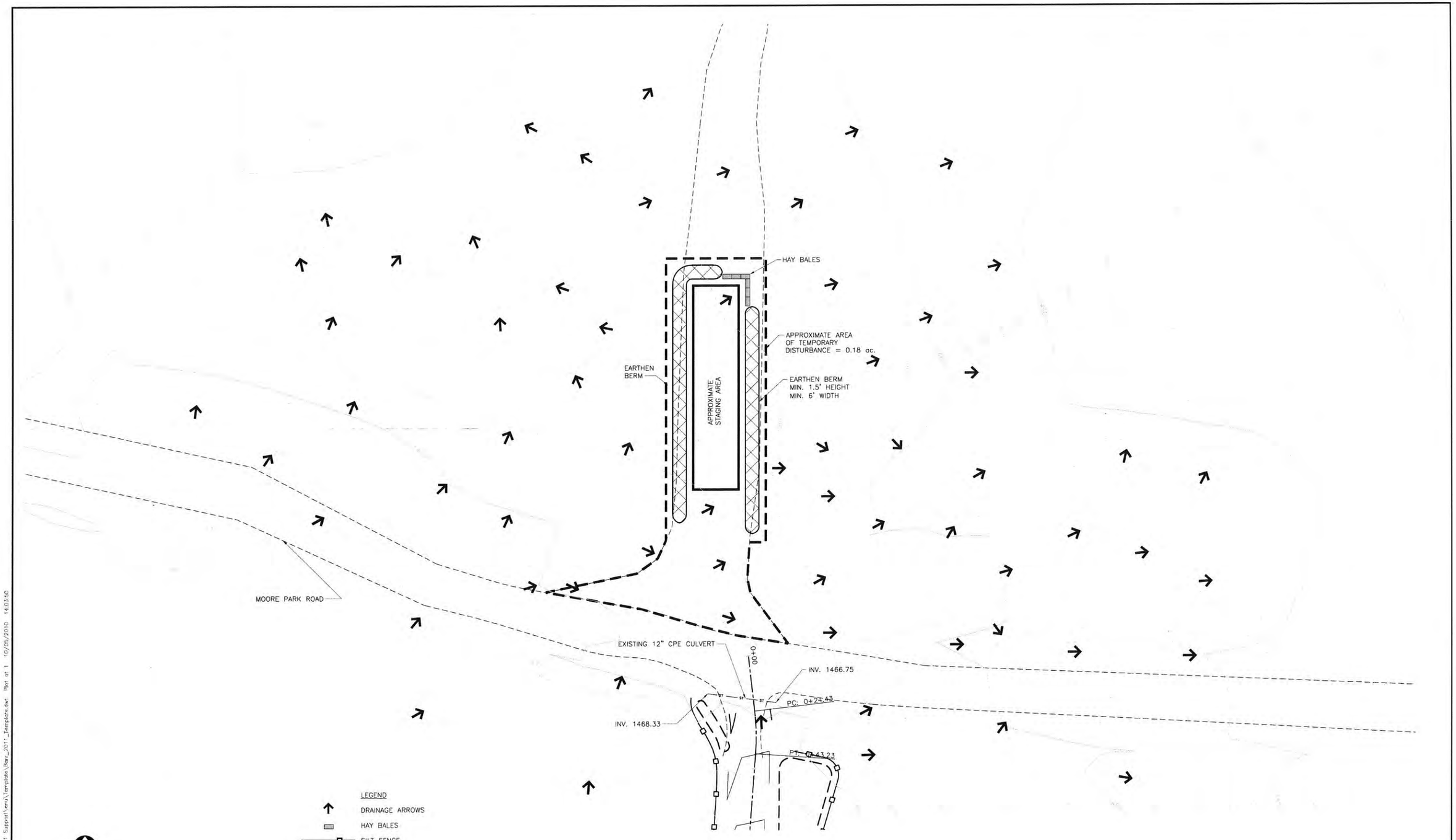


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BULK SAMPLING PROJECT

MATERIAL STAGING AREA
EROSION AND SEDIMENT CONTROL PLAN

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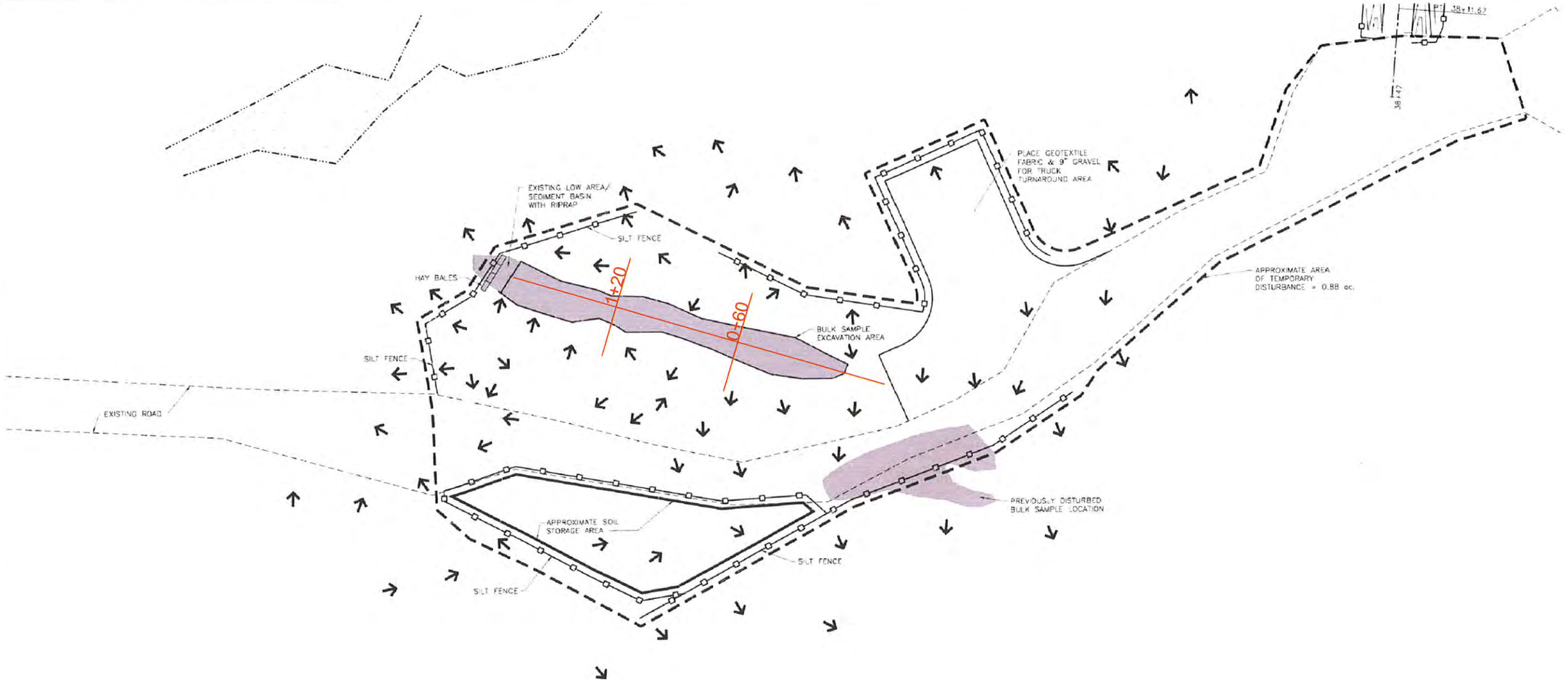


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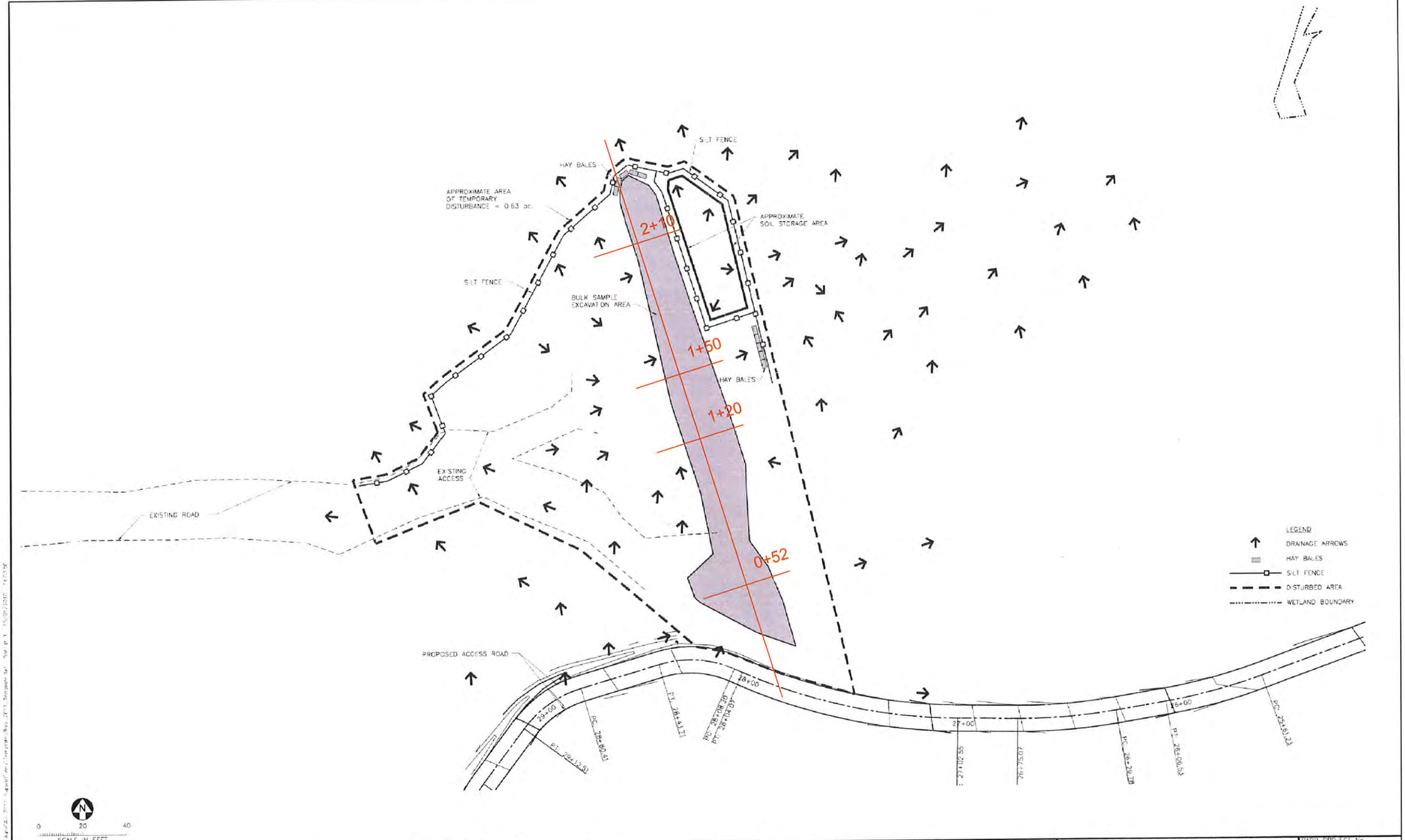
BULK SAMPLING PROJECT

BULK SAMPLE SITE 1
EROSION AND SEDIMENT CONTROL PLAN

BARR PROJECT No. 49261006.03
CLIENT PROJECT No.
DWG. No. B001-A
REV. No. A

Cross Section Location

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BULK SAMPLING PROJECT

BULK SAMPLE SITE 2
EROSION AND SEDIMENT CONTROL PLAN

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BULK SAMPLING PROJECT

BULK SAMPLE SITE 5
EROSION AND SEDIMENT CONTROL PLAN

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DWG No. B003-A
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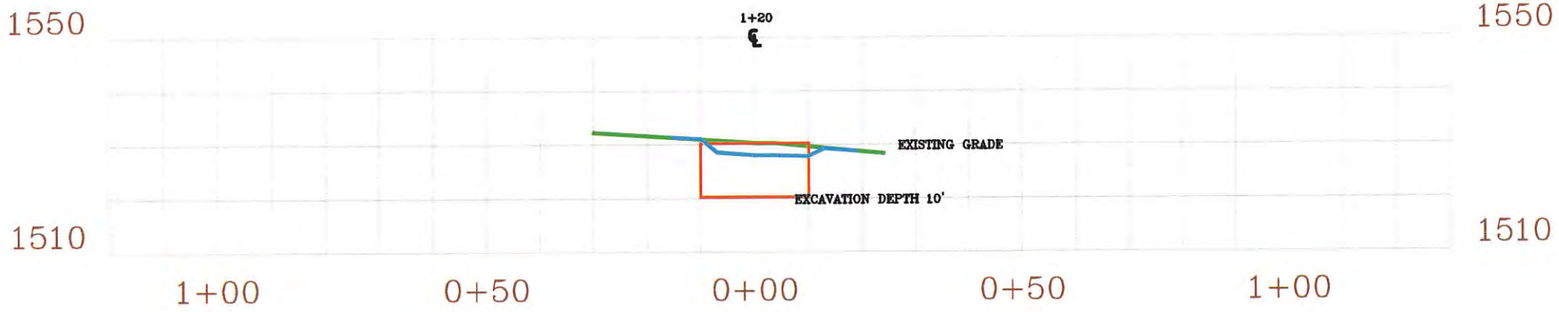
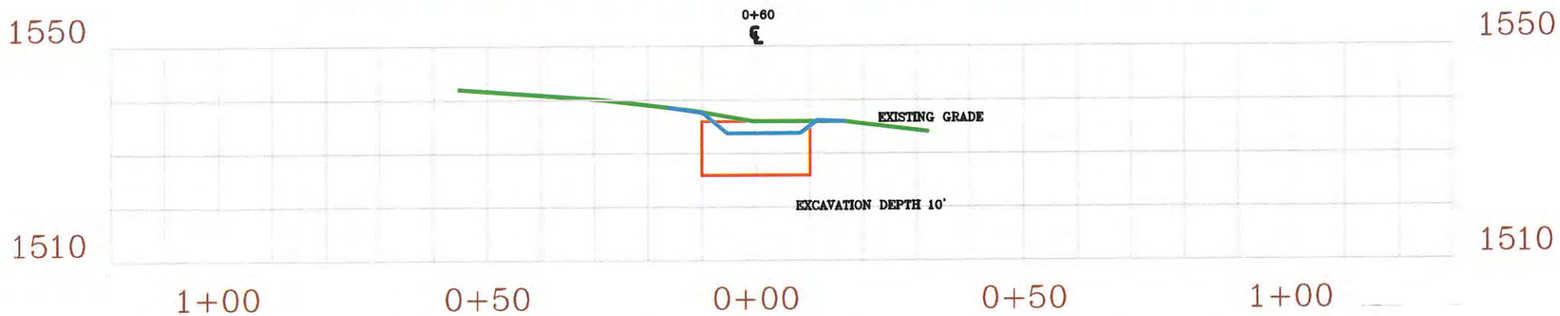
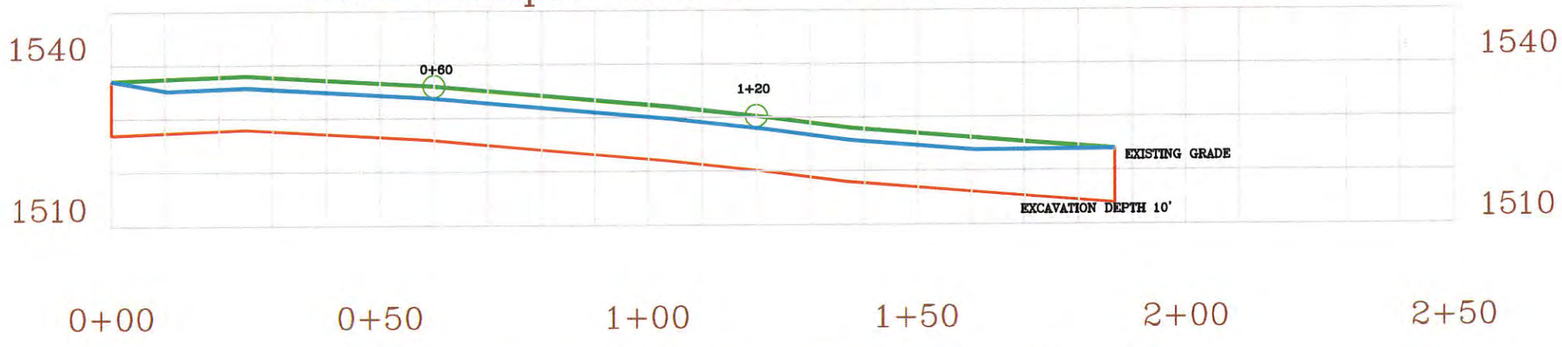



Bulk Sample Site 5 – 1+20 Cross Section




Bulk Sample Site 5 – 0+60 Cross Section




Bulk Sample Site 5 – Baseline

NOTE: Regrade Contours will follow original grade contours due to broken rock swell factor.

Drill depth if blasting occurs

Final Grade for collecting sample without blasting

GTAC GOGEBIC TACONITE

**Gogebic Taconite**
402 Silver Street
Hurley, WI 54534

BULK SAMPLING APPLICATION

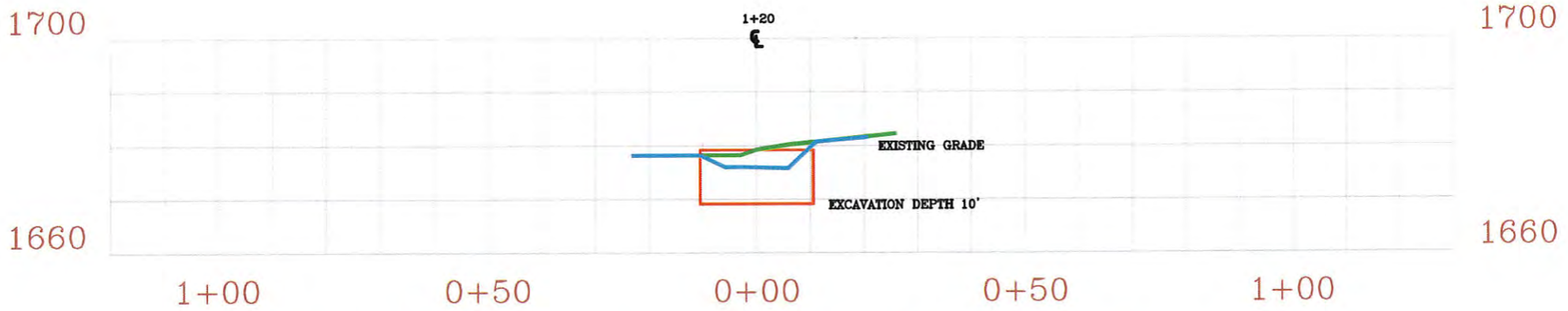
FIGURE 5-1

CROSS SECTIONS SITE 5

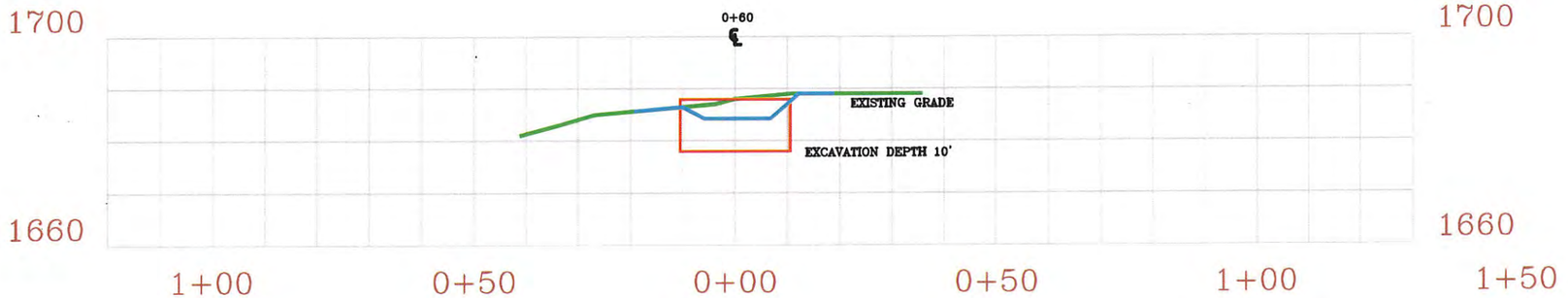
0 25′ 50′ 75′

SCALE: 1"= 25'

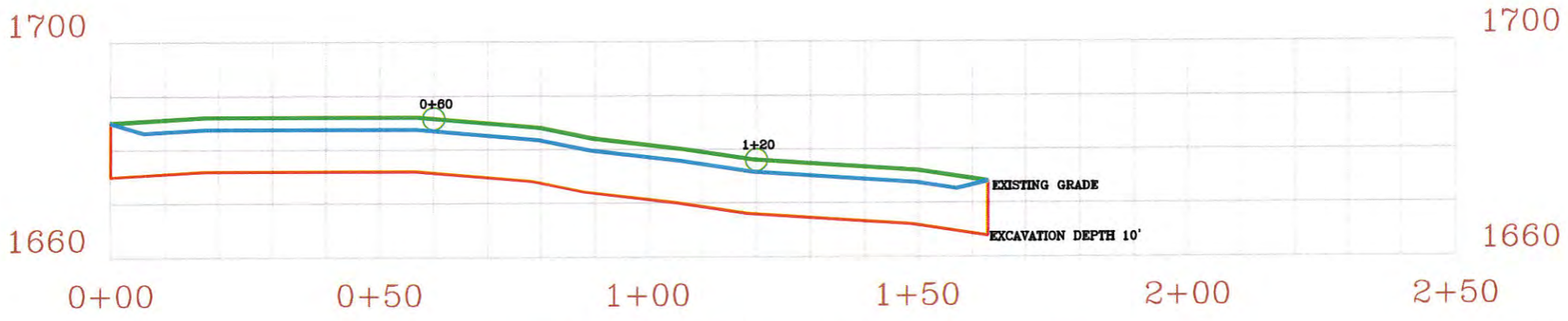
| | |
|---|---|
| By: JJS | Project: |
| Date: 11-22-2013 | |
| Drawing: Site 5 Cross Sections | |
| Path: T:\ENGR FILES\BULK | |




Bulk Sample Site 1 – 1+20 Cross Section




Bulk Sample Site 1 – 0+60 Cross Section




Bulk Sample Site 1 – Baseline

NOTE: Regrade Contours will follow original grade contours due to broken rock swell factor.

Drill depth if blasting occurs

Final Grade for collecting sample without blasting

GTAC GOGEBIC TACONITE

**Gogebic Taconite**
402 Silver Street
Hurley, WI 54534

BULK SAMPLING APPLICATION

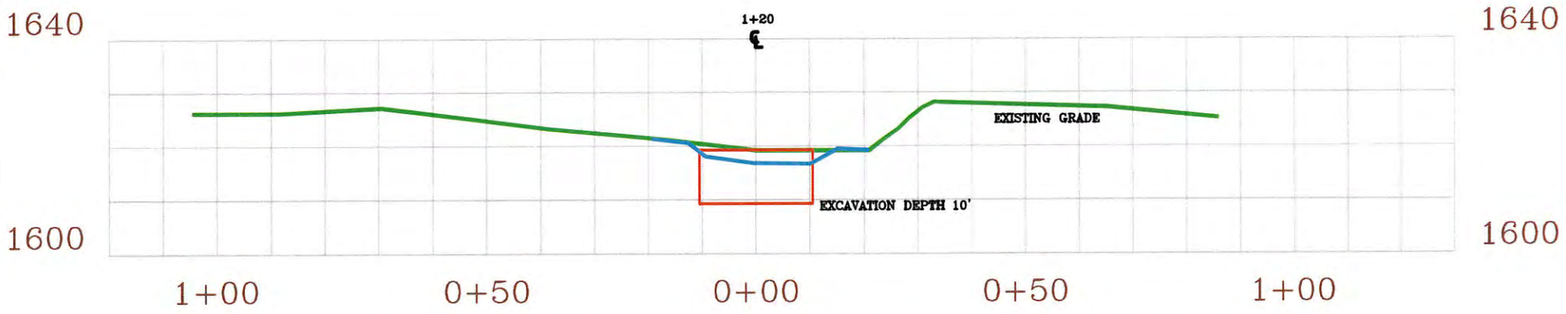
FIGURE 1-1

CROSS SECTIONS SITE 1

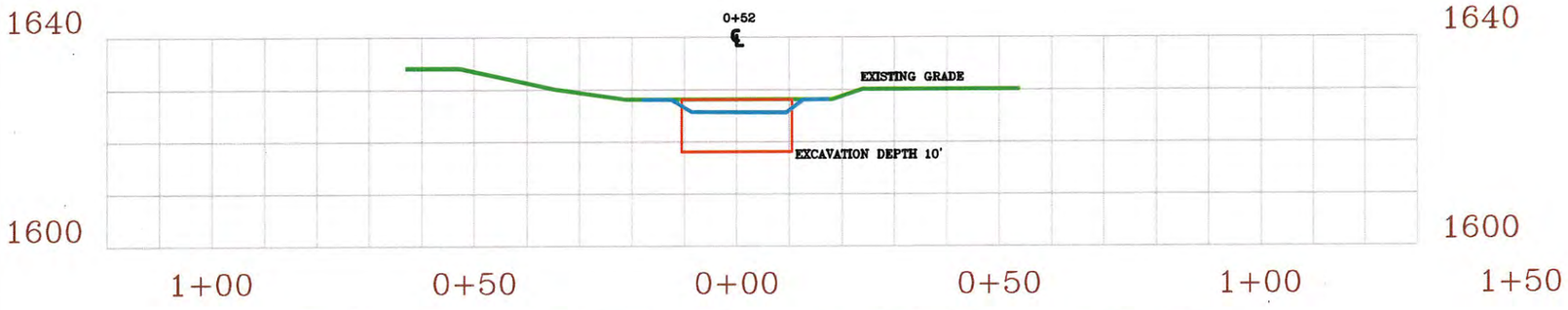
0 25' 50' 75'

SCALE: 1"= 25'

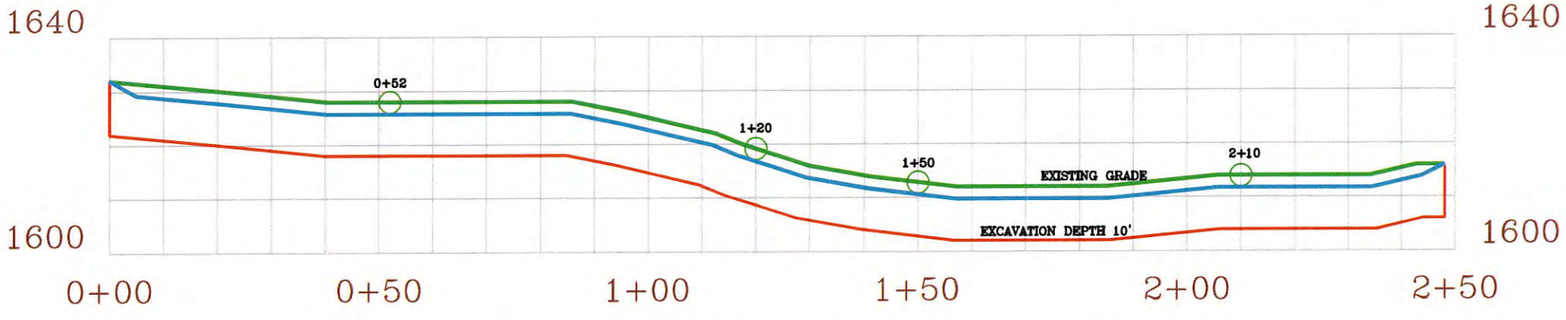
| | |
|---|---|
| By: TJM | Project: |
| Date: 11-22-2013 | |
| Drawing: Site 1 Cross Sections | |
| Path: T:\ENGR FILES\BULK | |




Bulk Sample Site 2 – 1+20 Cross Section




Bulk Sample Site 2 – 0+52 Cross Section




Bulk Sample Site 2 – Baseline

NOTE: Regrade Contours will follow original grade contours due to broken rock swell factor.

- Drill depth if blasting occurs
- Final Grade for collecting sample without blasting

GTAC GOGEBIC TACONITE

**Gogebic Taconite**
402 Silver Street
Hurley, WI 54534

BULK SAMPLING APPLICATION

FIGURE 2-1

CROSS SECTIONS SITE 2

0 25′ 50′ 75′

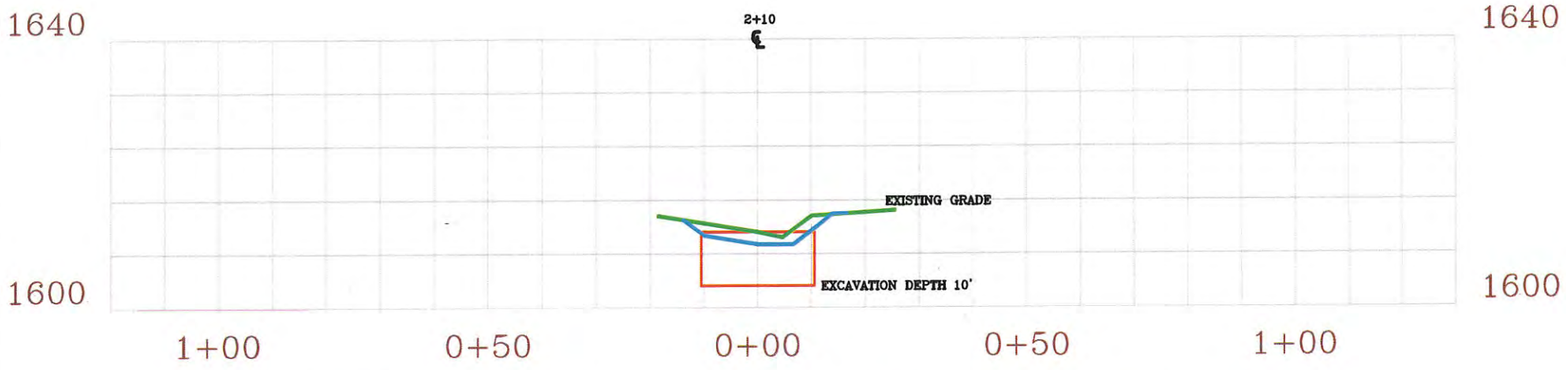
SCALE: 1"= 25'

| | |
|---|---|
| By: JJS | Project: |
| Date: 11-22-2013 | |
| Drawing: Site 2 Cross Sections | |
| Path: T:\ENGR FILES\BULK | |

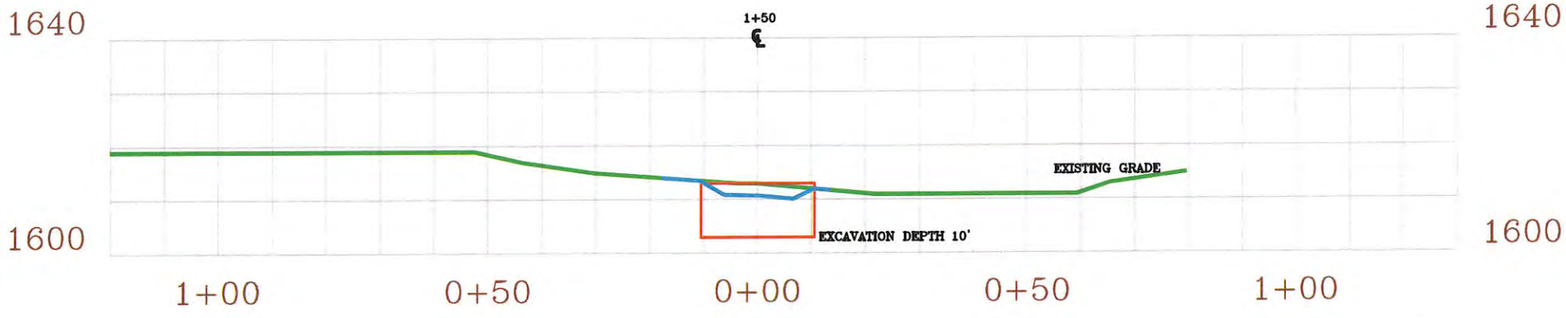
NOTE: Regrade Contours will follow original grade contours due to broken rock swell factor.

Drill depth if blasting occurs

Final Grade for collecting sample without blasting




Bulk Sample Site 2 – 2+10 Cross Section




Bulk Sample Site 2 – 1+50 Cross Section


GTAC GOGEBIC TACONITE

**Gogebic Taconite**
402 Silver Street
Hurley, WI 54534


BULK SAMPLING APPLICATION

FIGURE 2-2

CROSS SECTIONS SITE 2

0 25′ 50′ 75′

SCALE: 1"= 25'

| | |
|---|---|
| By: JJS | Project: |
| Date: 11-22-2013 | |
| Drawing: Site 2 Cross Sections | |
| Path: T:\ENGR FILES\BULK | |

LAND OWNER LETTERS

July 26, 2013

Wisconsin Department of Natural Resources
Mining Coordinator – WA/5
101 South Webster Street
PO Box 7921
Madison, WI 53707-7921

Dear Director:

Gogebic Taconite, LLC
Bulk Sampling, Exploration and Environmental Studies
Right of Entry

This letter serves to inform your agency that through the Option Agreement signed by RGGS Land and Minerals, Ltd., L.P. and Gogebic Taconite, LLC, the right to access the Optioned Lands and the right to perform Bulk Sampling, Exploration and Environmental Studies on the Optioned Lands has been granted to Gogebic Taconite, LLC.

The Optioned Lands include parcels in the following areas in Iron County, Wisconsin:
Sections 31, 32, and 33, Township 45 North, Range 1 West.
Sections 5 and 6, Township 44 North, Range 1 West.
The Optioned Lands include parcels in the following areas in Ashland County, Wisconsin
Sections 1, 2, 11, and 12, Township 44 North, Range 2 West.

The various roads that would be used in the Bulk Sampling and Exploration Activities are used for timber harvesting operations on the property. These roads are to be left in place for future activities. Therefore, the proposed reclamation of the bulk sampling sites and roads which will remain in the road system on the property meets the requirements of RGGS Land and Minerals, Ltd., L.P., the land owner.

The proposed reclamation of the bulk sampling sites by regrading and revegetation, conforming to the Wisconsin DNR reclamation standards, also meets the requirements of RRGS Land and Minerals, Ltd., L.P., the land owner.

Terry Villa

Terry Villa
RGGS Land & Minerals, LTD., L.P.
PO Box 1266
Virginia, MN 55792

# LaPointe Iron Company

a Wisconsin corporation

TELEPHONE
218/262-0799

3920 13th Avenue East, Suite #7
Hibbing, Minnesota 55746

FAX
206/203-0098


July 25, 2013

Wisconsin Department of Natural Resources
Mining Coordinator
ATTN: Mr. Larry Lynch
101 South Webster Street
PO Box 7921
Madison, WI 53707-7921

Re: Gogebic Taconite, LLC
Bulk Sampling, Exploration and Environmental Studies
Right of Entry

Dear Mr. Lynch:

This letter serves to inform your agency that through the Option Agreement signed by LaPointe Iron Company and Gogebic Taconite, LLC, the right to access the Optioned Lands and the right to perform Bulk Sampling, Exploration and Environmental Studies on the Optional Lands has been granted to Gogebic Taconite, LLC.

The Optioned Lands include parcels in the following areas in Iron County, Wisconsin:

Township 45 North, Range 1 West, Sections 28 and 33

The Optioned Lands include parcels in the following areas in Ashland County, Wisconsin:

Township 44 North, Range 2 West, Sections 1, 2, 11 and 12

The various roads that would be used in the Bulk Sampling and Exploration Activities are used in timbering operations on the property. These roads are to be left in place for future activities. Therefore, the proposed reclamation of the drill sites and roads as remaining in the road system on the property meets the requirements of LaPointe Iron Company, the land owner.

Sincerely,

David C. Adams, President
LaPointe Iron Company

# CHESTER COMPANY, LIMITED

TELEPHONE
218/262-0799

3920 13th Avenue East, Suite # 7
Hibbing, Minnesota 55746

Fax
206/203-0098

July 25, 2013

Wisconsin Department of Natural Resources
Mining Coordinator
ATTN: Mr. Larry Lynch
101 South Webster Street
PO Box 7921
Madison, WI 53707-7921

Re: Gogebic Taconite, LLC
Bulk Sampling, Exploration and Environmental Studies
Right of Entry

Dear Mr. Lynch:

This letter serves to inform your agency that through the Option Agreement signed by Chester Company, Limited and Gogebic Taconite, LLC, the right to access the Optioned Lands and the right to perform Bulk Sampling, Exploration and Environmental Studies on the Optional Lands has been granted to Gogebic Taconite, LLC.

The Optioned Lands include parcels in the following areas in Iron County, Wisconsin:

Township 44 North, Range 1 West, Sections 5 and 6

The various roads that would be used in the Bulk Sampling and Exploration Activities are used in timbering operations on the property. These roads are to be left in place for future activities. Therefore, the proposed reclamation of the drill sites and roads as remaining in the road system on the property meets the requirements of Chester Company, Limited, the land owner.

Sincerely,

David C. Adams, President
Chester Company, Limited

# RECLAMATION BOND CALCULATION

Table 1 - Reclamation Cost Estimate
Gogebic Taconite, LLC
Bulk Sampling Project
November 22, 2013

| Location | Activity | Number | Units | Unit Cost | Tot Cost | Location Cost |
|---|---|---|---|---|---|---|
| Bulk Sample Site 1 | | | | | | |
| | Regrading | 8 | Hours D6 dozer | $110 | $880 | |
| | Seed | 0.65 | Acres | $235 | $153 | |
| | Mulch | 10 | Straw Bales | $10 | $100 | |
| | Seed Labor | 4 | Hours Labor | $50 | $200 | |
| | TOTAL | | | | | $1,333 |
| Bulk Sample Site 2 | | | | | | |
| | Regrading | 8 | Hours D6 dozer | $110 | $880 | |
| | Seed | 0.6 | Acres | $235 | $141 | |
| | Mulch | 10 | Straw Bales | $10 | $100 | |
| | Seed Labor | 4 | Hours Labor | $50 | $200 | |
| | TOTAL | | | | | $1,321 |
| Bulk Sample Site 5 | | | | | | |
| | Regrading | 8 | Hours D6 dozer | $110 | $880 | |
| | Seed | 0.65 | Acres | $235 | $153 | |
| | Mulch | 10 | Straw Bales | $10 | $100 | |
| | Seed Labor | 4 | Hours Labor | $50 | $200 | |
| | TOTAL | | | | | $1,333 |
| Access Road 6 | | | | | | |
| | Regrading | 40 | Hours D6 dozer | $110 | $4,400 | |
| | Aggregate Removal | 40 | Hours Excavator | $180 | $7,200 | |
| | Aggregate Removal | 80 | Hours Truck | $120 | $9,600 | |
| | Seed | 3 | Acres | $235 | $705 | |
| | Mulch | 50 | Straw Bales | $10 | $500 | |
| | Seed Labor | 16 | Hours Labor | $50 | $800 | |
| | TOTAL | | | | | $23,205 |

**TOTAL PROJECT ESTIMATED RECLAMATION COST** **$27,192**

# WETLAND DELINEATION REPORT

Wetlands & Waterways LLC

# Wetland Delineation Report Amendment

## Gogebic Taconite, LLC

### Bulk Sample Sites and Access Road 6

### Town of Anderson, Iron County, Wisconsin

### and

### Town of Morse, Ashland County, Wisconsin

**November 11, 2013**

# WETLAND DELINEATION REPORT AMENDMENT

**GOGEBIC TACONITE, LLC**
**BULK SAMPLE SITES and ACCESS ROAD 6**
**TOWN OF ANDERSON, IRON COUNTY, WISCONSIN**
**AND**
**TOWN OF MORSE, ASHLAND COUNTY, WISCONSIN**

November 11, 2013

Prepared for:

Mr. Tim Myers, P.E.
Chief Engineer
Gogebic Taconite, LLC
402 Silver Street
Hurley, Wisconsin 54534

Prepared By:

Wetlands and Waterways, LLC
5742 Warbonnet Lane
Hazelhurst, Wisconsin 54531
(715) 892-4211

Project Number: 007

Ann M. Michalski, PSS, PWS, CST
WDNR Professionally Assured Wetland Delineator

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# Table of Contents

# Introduction

Gogebic Taconite, LLC contracted Wetlands and Waterways, LLC to delineate wetlands within five proposed bulk sample site areas and along associated access routes at property located in Part of Township 44 North, Range 2 West, Town of Morse, Ashland County, Wisconsin and Part of Township 45 North, Range 1 West, Town of Anderson, Iron County, Wisconsin. See Figure 1 for the property location and local topography.

Four of the bulk sample sites and the access roads located immediately adjacent to the sites were examined on May 24, 2013 by Ms. Ann Michalski, PSS, PWS, Wisconsin Department of Natural Resources (WDNR) Professionally Assured Wetland Delineator for areas meeting jurisdictional wetland criteria as specified in the 1987 Corps of Engineers Wetlands Delineation Manual and the Northcentral and Northeast Regional Supplement. A fifth bulk sample site was examined on June 19, 2013 by Ms. Michalski along with U.S. Army Corps of Engineers (USACOE) and WDNR personnel. Due to the presence of a wetland across the secondary access road leading into Bulk Sample Site 1, a third site visit was conducted on July 8, 2013 to examine an alternate access route for Bulk Sample Sites 1 and 2. This delineation also revealed the presence of wetlands within the proposed route so a new route was identified and wetlands adjacent to that new route, referred to as Access Road 6, were delineated on October 11, 2013. A follow up site visit was conducted on October 24, 2013 with representatives from Gogebic Taconite, WDNR, USACOE, the Bad River Tribe and Thompson and Associates Wetland Services to review and discuss Access Road 6.

The portions of the property examined consist primarily of mature hardwood forest with existing forest roads throughout much of the area from historic logging and mining activities. Five proposed bulk sample sites were reviewed for this study as well as proposed access routes to several of those sites. Most of the bulk sample sites are located in areas that were historically explored for taconite. One primary access road runs across the property from west to east with the bulk sample site locations ranging from the west end of the property to the east end of the property. The primary access road is improved more so than the secondary access roads and will not require any alterations or permitting for purposes of accessing the bulk sample sites. Therefore, the primary access road was not included as part of the delineation. The logging roads and/or old mining roads that branch off of the primary road and lead to each of the bulk sample sites were reviewed as part of the delineation and are referred to as secondary access roads. Lastly, due to the presence of a wetland on one of the secondary access roads, a new temporary access road is being proposed and wetlands along that route were delineated as well. That route is referred to as Access Road 6. Much of Access Road 6 consists of existing forest roads but some earthwork will be necessary to make the road usable and bring it up to safety standards for heavy equipment. The road improvements are proposed to serve as a temporary access road to Bulk Sample sites 1 and 2 and the road area will be restored once bulk sampling activities have been completed.

The five bulk sample sites reviewed were all located in uplands. Bulk Sample Site 2 had a small area of standing water at the time of the visit following some significant rain events. Vegetation was sparse in this area but soils were evaluated and indicated upland conditions. The standing

water appeared to be temporary and soils did not indicate hydric conditions. This same area was reviewed again during the follow-up site visit with regulatory agencies in July and a third time during October, confirming that this area is upland. The secondary access routes to each bulk sample site were also evaluated and suitable upland access routes were identified.

The purpose of delineating the bulk sample sites and access routes was to identify wetlands to be avoided or permitted for temporary impacts associated with equipment transport to the bulk sample sites and proposed bulk sampling activities. Figure 2 shows the overall site layout, bulk sample site locations and existing access roads leading to the sites. Figures 2A through 2C show the locations of the bulk sample sites and associated secondary access roads, Access Road 6 and all delineated wetlands in greater detail. Representative data points were recorded at each sample site location and a Field Data Sheet was recorded for each location. The sample points are shown on Figures 2A through 2C and Field Data Sheets are included in Appendix A.

One wetland area (Wetland 1) was delineated along the existing secondary access road leading to Bulk Sample Site 1 during the first site visit. Figure 2B shows the location of the wetland in relation to the access road and bulk sample site. In order to avoid impacts to this wetland, an alternative access route was evaluated on July 8, 2013 to find a more suitable upland route. Four wetlands (Wetlands 2 through 5) were delineated along that route during the site visit. Based on evaluations of that proposed route and nearby wetlands, Gogebic Taconite identified a third route (Access Road 6) which was evaluated for wetlands within an area ranging from 50 to 300 feet from the proposed roadway on October 11, 2013. Nine wetlands (Wetlands 6 through 14) were delineated during that site visit but none of the wetlands identified are located within the proposed roadway. A small area, approximately 4 feet in diameter was discussed during the October 24, 2013 site visit as a possible connection to Wetland 14. Regulatory agents agreed with the original wetland boundary and this area was added to Figure 2C as a potential stormwater connection. This area, as well as all identified wetlands, will be avoided during construction activities associated with Access Road 6. Wetland boundaries will be staked prior to construction to ensure that contractors are aware of the wetland locations.

Per the Wisconsin Wetland Inventory (WWI) classification system, the wetlands identified for this study are classified primarily as T3K (Forested, broad-leaved deciduous, palustrine, wet soil) and E2K (Emergent/wet meadow, narrow-leaved persistent, palustrine, wet soil) wetlands with the exception of Wetland 5, which had virtually no vegetation and could only be classified as a F3K (Flat/unvegetated wet soil, mud, wet soil, palustrine) wetland although this classification is more appropriate for larger floodplain areas. This wetland is a very small, narrow seep with minimal vegetation that appears to potentially have been created from historic mining activities nearby. The Field Data Sheets classify Wetlands 1 through 14 according to the Cowardin ET AL 1979 classification system as a PFO1 (Palustrine, Forested, Broad-Leaved Deciduous) and PEM1 (Palustrine, Emergent, Persistent) wetlands. A drainageway flows northward through both Wetland 1 and Wetland 4 but by the second site visit on June 19th, the drainageway in Wetland 1 no longer had flowing or standing water present and the drainageway in Wetland 4 was not flowing at the time of the visit. Wetlands 2, 3, 5, 6, 7, 9, 10, 11, 12 and 13 appear to be isolated although that determination should be made by regulatory staff. Several other locations (SB1 through SB9) were evaluated for the presence or absence of wetlands due to either topographical position or prior mapping conventions indicating those areas may contain wetlands. These areas were evaluated based on soils, vegetation and hydrology and were determined to not meet wetland criteria.

Wetland boundaries were identified using procedures outlined in the 1987 Corps of Engineers Wetland Delineation Manual and Northcentral and Northeast Regional Supplement. Boundaries for areas identified as wetland were determined based on topographical changes, transitions from hydric soils and hydric vegetation to upland soils and upland vegetation and presence or lack of hydrology indicators. Regulatory personnel present at the site during both the June 19th and October 24th site visits reviewed the delineated areas and agreed with the findings of the wetland delineation.

Overall, most of the access routes and all historic bulk sample site locations are considered Significantly Disturbed due to the clearing of vegetation at one time and soil disturbances from historic road construction and bulk sampling activities. Most areas outside of the forest roads and historic bulk sample sites were not considered Significantly Disturbed. Most areas observed were not considered Problematic with the exception of shallow rock at some sample sites preventing full soil profile viewing.

Precipitation totals for this area were in general higher than normal throughout the 2013 growing season. The National Weather Service historical precipitation data reviewed for Duluth, Minnesota, Rhinelander, Wisconsin and Marquette, Michigan indicated that the month-to-date precipitation levels were near normal but the year-to-date precipitation levels were much higher than normal (+3 to +4" above normal) at the time of the first site visit on May 24, 2013. Precipitation data for the July 8th site visit indicated that the month-to-date precipitation levels were slightly higher than normal and the year-to-date precipitation levels were again much higher than normal (+4 to +5" above normal). Precipitation data for the October site visits also indicated that the month-to-date precipitation levels were slightly higher than normal and the year-to-date precipitation levels were much higher than normal (+4 to +5" above normal). The Palmer Drought Index also indicated that as of May 25th, the area was "extremely moist" with a +4 value indicating very wet conditions and as of July 6th and through October 26th the area was "moderately moist" with hydrology conditions above normal with a +2.00 to +2.99 value. It is important to note that the site meeting conducted on October 24, 2013 was conducted under snow cover and after the growing season and therefore, data collected during that site visit is not valid. However, regulatory agencies indicated that based on their review of data collected within the growing season and observations of those areas during that site visit and previous site visits, they agree with the wetland delineation.

Standing and flowing water was observed in many wetland areas at the time of first site visit but by the June 19th and July 8th site visit, most wetland areas observed only had saturated soils. Primary hydrology indicators present at the time of the site visits varied between site visits and between wetlands but most wetland areas had primary hydrology indicators including high water table (A2), saturation (A3) and water-stained leaves (B9) and secondary hydrology indicators including geomorphic position (D2) and FAC-neutral test (D5). Other hydrology indicators observed but less frequently included standing water (A1), sparsely vegetated concave surface (B8), drainage patterns (B10) and oxidized rhizospheres (C3).

Hydric soil indicators applied at the site include Histosol (A1), Depleted Below Dark Surface (A11), Depleted Matrix (F3), Redox Dark Surface (F6) and Iron Manganese Masses (F12). A few areas identified as wetlands did not meet hydric soil indicators, primarily due to shallow rock

preventing full soil profile viewing but hydric soils were assumed based on hydrology indicators and vegetation in those locations.

# Study Methods

Available topographic maps, survey maps, aerial photos, WWI maps, and the Ashland and Iron County Soil Survey maps were reviewed prior to visiting the property to identify potential wetland areas. The WWI is included as Figure 3. The combined Ashland and Iron County Soil Survey Map is included as Figure 4.

Examination of vegetation, soils and hydrology, as outlined in the 1987 U.S. Army Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory, 1987) and the Northcentral Regional Supplement, were used to characterize and determine wetland boundaries. The NRCS Field Indicators of Hydric Soils in the United States guide was also utilized to identify hydric soils at the site. Wetland edges were marked with pink flagging labeled "Wetland Delineation" for the purposes of photos and wetland boundary documentation during several of the site visits but flagging was then removed. The wetland edge was considered the highest extent of the jurisdictional wetland. Areas below the delineated wetland edge met required wetland criteria, while areas above did not. Wetland boundaries and sample site locations were located with a Trimble GeoXT 6000 Series GPS with sub-meter accuracy. The wetland boundaries and sample site locations are shown on Figures 2A, 2B and 2C with all wetlands identified being located in the eastern portions of the study area. In the event that no wetlands were present within a bulk sample site, a representative sample site was chosen and a Field Data Sheet was completed. Other sample sites (SB1 through SB10) were evaluated to confirm that despite topographic position, these areas did not meet all required wetland criteria.

In the location of the delineated wetlands, a sample transect was established in a representative wetland to upland transition zone. The transect was comprised of two sample points located along a line running perpendicular to the wetland edge, with one point in obvious wetland and one point in obvious upland. A field data form was completed for each of the upland and wetland sample points. Sample point locations for the wetland transects, bulk sample site sample locations and other sample locations were also located with a GPS and are shown on Figures 2A through 2C. A field data form was not completed for Bulk Sample Site 5 but the area was reviewed by USACOE and WDNR personnel on June 19th and confirmed to be upland. Field data forms are included in Appendix A.

Wetland classification was performed according to Cowardin and Wisconsin Wetland Inventory classification systems. Vegetation was identified using suitable keys (Eggers and Reed, 1987; Knopt, 1980; Courtenay/Zimmerman, 1972; Fassett, 1951; Chadde, 1998) and a plant's hydrophytic status was determined using the most recent Northcentral-Northeast Region – National Wetlands Plant List (U.S. Army Corps of Engineers, 2012 and 2013.

# Results

**OFF-SITE SURVEY**

The WWI/Hydric Soils map indicates some small wetland symbols (< 2 acres) in the vicinity of Bulk Sample Sites 1 and 2 and associated access roads but no wetlands are mapped within the vicinity of Bulk Sample Sites 3 and 4. Based on observations during the site visits, the wetland symbols appear to be indicating the approximate location of nearby wetlands but not necessarily within the immediate study areas. The WWI also indicates a stream near Bulk Sample Site 2, but based on the map it appears this stream is located slightly further south than Bulk Sample Site 2. The Iron and Ashland County Soil Surveys indicate that the bulk sample sites consist primarily of moderately well to well drained upland soils. One area is mapped as having hydric soils or soils with hydric inclusions along the eastern portion of Access Road 6 but no wetlands were identified within the proposed roadway.

The Ashland and Iron County Soil Surveys indicate that the following soil series are present within the study areas:

5351C – Gogebic Silt Loam, 6 to 18% slopes, Very Stony, Rocky - These soils consist primarily of moderately well drained silt loam soils overlying fine sandy loam and gravelly fine sandy loam soils. These soils are typically formed on convex or linear crests, side slopes, base slopes, nose slopes or head slopes of till plains with gently rolling to moderately steep terrain. These soils are classified as Frigid Alfic Oxyaquic Fragiorthods. These soils are not listed on the Wisconsin or National Hydric Soils lists.

5353B - Tula-Gogebic Complex, 0 to 6% slopes, Stony - These soils consist primarily of somewhat poorly drained cobbly very fine sandy loam overlying gravelly sandy loam and moderately well drained silt loam soils oelrying fine sandy loam and gravelly fine sandy loam. These soils are typically formed on concave to linear footslopes and linear summits of till plains with level to gently rolling terrain. These soils are classified as Frigid Argic Fragiaquods and Frigid Alfic Oxyquaic Fragiothods. These soils are listed on the Wisconsin or National Hydric Soils lists due to the following inclusions:

- Gay – 10% within Depressions, Till Plains
- Pleine – 5% within Drainageways

5369D – Dishno-Gogebic-Peshekee-Rock Outcrop Complex, 18 to 35% slopes – These soils consist primarily of moderately well to well drained cobbly silt loam overlying cobbly loam or very stony loamy sand or sandy loam over bedrock. These soils are typically formed on convex or linear summits, backslopes, shoulders and footslopes of moraines with moderately steep to very steep terrain. These soils are classified as Frigid Oxyaquic Haplorthods, Alfic Oxyaquic Fragiorthods and Frigid Lithic Haplorthods. These soils are not listed on the Wisconsin or National Hydric Soils lists.

5369E – Michigamme-Schweitzer-Peshekee-Rock Outcrop Complex, 35 to 55% slopes - These soils consist primarily of well drained cobbly fine sandy loam and cobbly silt loam or very fine sandy loam overlying cobbly and/or gravelly soils over bedrock. These soils are typically formed on convex shoulders, backslopes, sideslopes and summits on hills and till plains with very steep to extremely steep terrain. These soils are classified as Frigid Fragic Haplorthods, Frigid Alfic Fragiothods and Frigid Lithic Haplorthods. These soils are not listed on the Wisconsin or National Hydric Soils lists.

The combined Ashland and Iron County Soil Survey map is included as Figure 4.

## FIELD DELINEATION

Fourteen wetland areas were delineated during the site visit. Fourteen other sample sites were also evaluated and identified as uplands. The following text describes the wetlands identified at the site and the basis for determining the wetland boundaries. See Appendix A for Wetland Data Forms. Refer to Figures 2A through 2C for the location of the delineated wetlands, the wetland sample points and transects and sample points within the bulk sample sites.

## DELINEATED WETLAND BASINS

### Areas Evaluated on May 24, 2013

**Wetland 1** is primarily a PFO1 (Palustrine, Forested, Broad-Leaved Deciduous (T3K - Forested, broad-leaved deciduous, palustrine, wet soil)) wetland. A drainageway flows northward through this wetland. The drainageway was flowing with approximately 1 to 2 inches of water at the time of the delineation but when observed during a later visit on June 19th no flowing or standing water was observed. Hydrology indicators observed at the time of the visit included standing water (A1) high water table (A2), saturation to the soil surface (A3), Drainage Patterns (B10) and Geomorphic Position (D2). This wetland area did not have a dominance of hydric vegetation but was tied for upland/wetland dominants and if non-dominants were considered wetland vegetation criteria would be met.

The wetland soils consist primarily of sandy loam and loam soils with redoximporphic features overlying shallow rock. Upland soils consist primarily of loam soils overlying shallow rock. Due to the shallow rock, a full soil profile could not be viewed within the wetland or upland sample points but obvious transitions in hydrology and vegetation, as well as defined topographic breaks in most areas, were considered and most heavily evaluated in determining wetland boundaries. Hydric Soil Indicators applied at this location included Redox Dark Surface (F6) and Iron-Manganese Masses (F12).

**Site 1-1, Site 2-1, Site 2-2, Site 3-1 and Site 4-1** are located within Bulk Sample Sites 1 through 4, respectively and were all determined to be upland. Most of the sample locations were considered to be Significantly Disturbed due to historic bulk sampling activities that occurred in these locations. Some areas were also considered Problematic due to shallow rock that prevented full soil profile viewing. However, all locations other than Site 2-1 had a dominance of upland vegetation and all locations had upland soils consisting primarily of high chroma brown sandy loam or loam soils lacking redoximorphic features. Sample Site 2-1 had a

dominance of hydric vegetation due to Facultative species but was determined to be upland based on observations of soils and with concurrence from regulatory agents.

**Areas Evaluated on July 8, 2013**

**Wetland 2** is primarily a PFO1 (Palustrine, Forested, Broad-Leaved Deciduous (T3K - Forested, broad-leaved deciduous, palustrine, wet soil)) wetland. This wetland appears to be part of a wetland/non-wetland mosaic that extends north of the study area although the specific area delineated for purposes of this study was not identified as a mosaic type system. An old logging road runs through the southern edge of this wetland and likely resulted in an expansion of the wetland. Standing water was present in the rutted areas but the sample site, which was placed in a less disturbed area, did not have standing water but rather soil saturation and a high water table at the time of the visit. Hydrology indicators observed at the time of the visit included high water table (A2), saturation to the soil surface (A3), Water Stained Leaves (B9), Geomorphic Position (D2) and FAC-neutral Test (D5).

The wetland soils consist primarily of silt soils with redoximporphic features overlying shallow rock. Upland soils consist primarily of silt soils overlying sandy soil. The wetland/upland boundary had relatively obvious transitions in hydrology, vegetation and soil, as well as a defined topographic break. The Hydric Soil Indicator applied at this location was Depleted Matrix (F3).

**Wetland 3** is primarily a PFO1/PSS1 (Palustrine, Forested, Broad-Leaved Deciduous/ Palustrine, Scrub-Shrub, Broad-Leaved Deciduous (T3/S3K - Forested, broad-leaved deciduous/Scrub-shrub, broad-leaved decidous, palustrine, wet soil)) wetland. This wetland appears to be isolated and not directly connected to any other wetland or waterway although this should be determined by regulatory staff. This wetland had saturation to the soil surface and a high water table at the time of the visit. Hydrology indicators observed at the time of the visit included high water table (A2), saturation to the soil surface (A3), Water Stained Leaves (B9), Geomorphic Position (D2) and FAC-neutral Test (D5).

The wetland soils consist primarily of silt and silt loam soils with redoximorphic features. Upland soils consist primarily of silt soils overlying sandy soil. The wetland/upland boundary had relatively obvious transitions in hydrology, vegetation and soil, as well as defined topographic breaks. The Hydric Soil Indicator applied at this location was Depleted Matrix (F3).

**Wetland 4** is primarily a PFO1 (Palustrine, Forested, Broad-Leaved Deciduous) (T3K - Forested, broad-leaved deciduous, palustrine, wet soil)) wetland. A drainageway flows northward through this wetland. However, the drainageway was not flowing at the time of the visit. Based on observations of soils and vegetation, portions of the drainageway appear to be narrow "upland" drainages that only have water present for short periods following spring melt or larger precipitation events. Hydrology indicators observed at the time of the visit included high water table (A2), saturation to the soil surface (A3), Oxidized Rhizospheres along living roots (C3), Drainage Patterns (B10), Geomorphic Position (D2) and FAC-neutral Test (D5).

The wetland soils consist primarily of silt loam soils with redoximporphic features overlying rock. Upland soils consist primarily of loam soils lacking redoximorphic features. This wetland also had relatively obvious transitions in hydrology, soils and vegetation, as well as defined topographic breaks in most areas. An old logging road runs through the northern edge of the

delineated wetland area and that location was considered Significantly Disturbed although the rest of the wetland area examined appeared to be in a relatively natural state. The Hydric Soil Indicator applied at this location was Redox Dark Surface (F6).

**Wetland 5** is primarily a narrow seep and wetland classification was not quite applicable due to very minimal vegetation present. The wetland area appears to be isolated and originates at a rocky interface along a hillside to the south. It is possible that this wetland may be created by water flowing out of a historic mining cavity in the hillside but the specific history of the specific area is unknown. An old logging road runs through the northern edge of the delineated wetland area and that location was considered Significantly Disturbed although the rest of the wetland area examined appeared to be in a relatively natural state. Hydrology indicators observed at the time of the visit included high water table (A2), saturation to the soil surface (A3), Water-Stained Leaves (B9), Oxidized Rhizospheres along living roots (C3) and Geomorphic Position (D2). This location did not meet hydric vegetation criteria due to the lack of vegetation.

The wetland soils consist primarily of black silt overlying reduced silt with redoximporphic features. Upland soils consist primarily of silt loam soils overlying silt loam mixed with rock. Transitions in hydrology and soils were very evident although vegetation was sparse and topographic breaks were not as evident as in other areas evaluated during the site visit. The Hydric Soil Indicator applied at this location was Depleted Matrix (F3).

**SB1** is a sample point that was evaluated between two wetlands and determined to be a seasonal drainageway with upland soils and vegetation present. Flowing water was present at the time of the site visit but later visits revealed that this area was dry and appears to only have water present following larger precipitation and runoff events. Although minimal vegetation was present, the vegetation observed was primarily upland species and soils consist of higher chroma site loam soils lacking redoximorphic features.

**Areas Evaluated on October 11, 2013**

**Wetland 6** is primarily a PEM1 (Palustrine, Emergent, Persistent) (E2K - Emergent/wet meadow, narrow-leaved persistent, palustrine, wet soil)) wetland with the eastern portion of the wetland expanding across a historic logging or mining road. This wetland is considered to be Significantly Disturbed due the historic logging road likely causing soil compaction in this location. This is considered the new normal circumstance due to the amount of time that has passed since the disturbance. This wetland appears to be isolated and not directly connected to any other wetland or waterway although this should be determined by regulatory staff. This wetland had a high water table (A2) and saturation to the soil surface (A3) at the time of the visit as well as other hydrology indicators including Water Stained Leaves (B9), Geomorphic Position (D2) and FAC-neutral Test (D5).

The wetland soils consist primarily of silt and silt loam soils with redoximorphic features within the upper portion of the soil profile. Upland soils consist primarily of silt loam soils overlying very fine sandy loam soils lacking redoximorphic features. The wetland/upland boundary had relatively obvious transitions in hydrology, vegetation and soil, as well as defined topographic breaks. The wetland soils met Hydric Soil Indicators Depleted Below Dark Surface (A11) and Redox Dark Surface (F6).

**Wetland 7** is primarily a PEM1 (Palustrine, Emergent, Persistent) (E2K - Emergent/wet meadow, narrow-leaved persistent, palustrine, wet soil)) wetland. This wetland is considered Significantly Disturbed by historic earthmoving activities that are evident based upon observations of a soil stockpile to one side of the wetland, however, this is the new normal circumstance. This wetland appears to be isolated and not directly connected to any other wetland or waterway although this should be determined by regulatory staff. This wetland had a high water table (A2) and saturation to the soil surface (A3) at the time of the visit as well as other hydrology indicators including Sparsely Vegetated Concave Surface (B8), Water Stained Leaves (B9), Geomorphic Position (D2) and FAC-neutral Test (D5).

The wetland soils consist primarily of a thin layer of muck overlying rock. Upland soils consist primarily of silt loam soils overlying very fine sandy loam soils lacking redoximorphic features. The wetland/upland boundary had relatively obvious transitions in hydrology, vegetation and soil, as well as defined topographic breaks. The wetland soils met Hydric Soil Indicator Histosol (A1).

**Wetland 8** is primarily a PFO1/PEM1 (Palustrine, Forested, Broad-Leaved Deciduous/Palustrine, Emergent, Persistent)(T3/E2K – Forested, broad-leaved deciduous/Emergent-wet meadow, narrow-leaved persistent, palustrine, wet soil)) wetland. This wetland does not appear to have been disturbed in the past and appears to be connected to Wetland 1 to the west. This wetland had standing water (A1), high water table (A2) and saturation to the soil surface (A3) at the time of the visit as well as other hydrology indicators including Sparsely Vegetated Concave Surface (B8), Water Stained Leaves (B9), Geomorphic Position (D2) and FAC-neutral Test (D5).

The wetland soils consist primarily of a thick muck/peaty muck soil profile. Upland soils consist primarily of fine sandy loam soils overlying sandy loam lacking redoximorphic features. The wetland/upland boundary had relatively obvious transitions in hydrology, vegetation and soil, as well as defined topographic breaks. The wetland soils met Hydric Soil Indicator Histosol (A1).

**Wetland 9** is primarily a PEM1 (Palustrine, Emergent, Persistent) (E2K - Emergent/wet meadow, narrow-leaved persistent, palustrine, wet soil)) wetland. This wetland is considered Significantly Disturbed by historic earthmoving activities from a historic mine road that was located in this location and likely created a slight depression where this wetland formed over time. However, this is the new normal circumstance since these activities occurred many years ago. This wetland appears to be isolated and not directly connected to any other wetland or waterway although this should be determined by regulatory staff. This wetland had a high water table (A2) and saturation to the soil surface (A3) at the time of the visit as well as other hydrology indicators including Water Stained Leaves (B9), Geomorphic Position (D2) and FAC-neutral Test (D5).

The wetland soils consist primarily of a silt loam overlying rock. Although redoximorphic features were not observed, a full soil profile could not be evaluated and the area was determined to be wetland based upon observations of vegetation, hydrology, topographic position and best professional judgment. Upland soils consist primarily of higher chroma silt loam soils lacking redoximorphic features. The wetland/upland boundary had relatively obvious transitions in hydrology, vegetation and soil, as well as defined topographic breaks. The wetland soils did not

meet Hydric Soil Indicators but hydric soils were assumed based on vegetation, hydrology, topographic position and best professional judgment.

**Wetland 10** is primarily a PEM1 (Palustrine, Emergent, Persistent) (E2K - Emergent/wet meadow, narrow-leaved persistent, palustrine, wet soil)) wetland. This wetland does not appear to have been disturbed in the past and appears to be isolated and not directly connected to any other wetland or waterway although this should be determined by regulatory staff. This wetland did not have saturation or high water table at the time of the visit, making it somewhat problematic due to seasonal hydrology conditions but it did have several other hydrology indicators including Sparsely Vegetated Concave Surface (B8), Water Stained Leaves (B9), Dry Season Water Table (C2), Geomorphic Position (D2) and FAC-neutral Test (D5).

The wetland soils consist primarily of a silt loam overlying reduced loam soils. Although redoximorphic features were not observed, the area was determined to be wetland based upon observations of vegetation, hydrology, topographic position and best professional judgment. Upland soils consist primarily of higher chroma silt loam soils lacking redoximorphic features. The wetland/upland boundary had relatively obvious transitions in hydrology, vegetation and soil, as well as defined topographic breaks. The wetland soils did not meet Hydric Soil Indicators but hydric soils were assumed based on vegetation, hydrology, topographic position and best professional judgment.

**Wetland 11** is primarily a PEM1 (Palustrine, Emergent, Persistent) (E2K - Emergent/wet meadow, narrow-leaved persistent, palustrine, wet soil)) wetland. This wetland does not appear to have been disturbed in the past and appears to be isolated and not directly connected to any other wetland or waterway although this should be determined by regulatory staff. This wetland had a high water table (A2) and saturation within the upper 12 inches of the soil profile (A3) at the time of the visit, plus several other hydrology indicators including Sparsely Vegetated Concave Surface (B8), Water Stained Leaves (B9), Geomorphic Position (D2) and FAC-neutral Test (D5).

The wetland soils consist primarily of a silt loam overlying reduced sandy loam soils. Although redoximorphic features were not observed, a full soil profile could not be evaluated due to shallow rock and the area was determined to be wetland based upon observations of vegetation, hydrology, topographic position and best professional judgment. Upland soils consist primarily of higher chroma silt loam soils lacking redoximorphic features. The wetland/upland boundary had relatively obvious transitions in hydrology, vegetation and soil, as well as defined topographic breaks. The wetland soils did not meet Hydric Soil Indicators but hydric soils were assumed based on vegetation, hydrology, topographic position and best professional judgment.

**Wetland 12** is primarily a PEM1 (Palustrine, Emergent, Persistent) (E2K - Emergent/wet meadow, narrow-leaved persistent, palustrine, wet soil)) wetland. This wetland is considered Significantly Disturbed by historic earthmoving activities from a historic mine road that was located in this location and likely created a slight depression where this wetland formed over time. However, this is the new normal circumstance since these activities occurred many years ago. This wetland appears to be isolated and not directly connected to any other wetland or waterway although this should be determined by regulatory staff. This wetland had a high water table (A2) and saturation to the soil surface (A3) at the time of the visit as well as other

hydrology indicators including Sparsely Vegetated Concave Surface (B8), Water Stained Leaves (B9), Geomorphic Position (D2) and FAC-neutral Test (D5).

The wetland soils consist primarily of a silt loam overlying reduced clay loam soils with redoximorphic features present. Upland soils consist primarily of higher chroma very fine sandy loam and sandy loam soils lacking redoximorphic features. The wetland/upland boundary had relatively obvious transitions in hydrology, vegetation and soil, as well as defined topographic breaks. The wetland soils met Hydric Soil Indicators Depleted Below Dark Surface (A11) and Depleted Matrix (F3).

**Wetland 13** is primarily a PEM1 (Palustrine, Emergent, Persistent) (E2K - Emergent/wet meadow, narrow-leaved persistent, palustrine, wet soil)) wetland. This wetland is considered Significantly Disturbed by historic earthmoving activities from a historic earthmoving activities that were apparent along some of the wetland edges. However, this is the new normal circumstance since these activities occurred many years ago. This wetland appears to be isolated and not directly connected to other wetlands or waterways but this should be determined by regulatory staff. This wetland had a high water table (A2) and saturation to the soil surface (A3) at the time of the visit as well as other hydrology indicators including Water Stained Leaves (B9), Geomorphic Position (D2) and FAC-neutral Test (D5).

The wetland soils consist primarily of reduced silt loam soils overlying rock. Although redoximorphic features were not observed, a full soil profile could not be evaluated and the area was determined to be wetland based upon observations of vegetation, hydrology, topographic position and best professional judgment. Upland soils consist primarily of higher chroma very fine sandy loam and fine sandy loam soils lacking redoximorphic features. The wetland/upland boundary had relatively obvious transitions in hydrology, vegetation and soil, as well as defined topographic breaks. The wetland soils did not meet Hydric Soil Indicators but hydric soils were assumed based on vegetation, hydrology, topographic position and best professional judgment.

**Wetland 14** is primarily a PEM1 (Palustrine, Emergent, Persistent) (E2K - Emergent/wet meadow, narrow-leaved persistent, palustrine, wet soil)) wetland. This wetland is considered Significantly Disturbed due to historic earthmoving activities from a historic mine road that was located in this location and likely created a slight depression where this wetland formed over time. However, this is the new normal circumstance since these activities occurred many years ago. This wetland appears to be isolated and not directly connected to other wetlands or waterways but this should be determined by regulatory staff. This wetland had a high water table (A2) and saturation to the soil surface (A3) at the time of the visit as well as other hydrology indicators including Geomorphic Position (D2) and FAC-neutral Test (D5).

The wetland soils consist primarily of dark silt loam soils with higher organic content overlying rock. Although redoximorphic features were not observed, a full soil profile could not be evaluated and the area was determined to be wetland based upon observations of vegetation, hydrology, topographic position and best professional judgment. Upland soils consist primarily of higher chroma very fine sandy loam and fine sandy loam soils lacking redoximorphic features. The wetland/upland boundary had gradual transition in hydrology, vegetation and soil and topographic breaks. The wetland soils did not meet Hydric Soil Indicators but hydric soils were assumed based on vegetation, hydrology, topographic position and best professional judgment.

**SB2 through SB9** are sample points that were evaluated primarily due their topographic positions being slightly lower in the landscape. All of these sites were considered Significantly Disturbed because they had all been created by historic earthmoving activities related to former mining and logging activities at the site. However, this was considered the new normal circumstance in all cases. Sample sites SB2 and SB3 were both located in areas that are very small historic backhoe borrow pits. Minimal vegetation was present in each pit but vegetation that was present consisted primarily of upland species. Both pits met wetland hydrology criteria due to high water table and soil saturation as well as geomorphic position but soils did not meet hydric soil criteria and consisted primarily of high chroma sandy loam and sandy clay loam lacking redoximorphic features. Sample site SB4 had been previously evaluated as Site 2-1 within Bulk Sample Site 2 and was determined to be upland despite a dominance of Facultative species. Soils consisted of very high chroma sand soils and lacked any indication of redoximorphic features. Sample sites SB5 and SB6 were both located in lower lying areas near Bulk Sample Site 2 and it is apparent that historic earthmoving activities occurred in this area. Sample site SB5 has a dark silt loam surface horizon overlying high chroma very fine sandy loam soils and SB6 was similar with a slightly brighter surface horizon. Hydrology was observed within the lowest lying area of SB5 but the higher chroma soils within the lower portions of the soil profile indicate hydrology is not present for long enough periods of time throughout the growing season to create wetland conditions. Sample sites SB7, SB8 and SB9 were all located within a depression that was historically a railroad and mining area. All sample sites had a dominance of hydric vegetation, most of the species consisting of Facultative species. Although the geomorphic position and vegetation indicated possible wetland conditions, soils consisted of high chroma sandy loam soils and did not meet hydric soil indicators.

The dominant vegetation found in the wetland sample site location includes the following:

| Scientific Name | Common Name | Indicator |
|---|---|---|
| *Abies balsamea* | Balsam Fir | FAC |
| *Acer saccharum* | Sugar Maple | FACU |
| *Betula alleghaniensis* | Yellow Birch | FAC |
| *Carex comosa* | Bristly Sedge | OBL |
| *Carex crinita* | Fringed Sedge | OBL |
| *Carex gracillima* | Graceful Sedge | FACU |
| *Carex intumescens* | Bladder Sedge | FACW |
| *Carex oligosperma* | Few Seed Sedge | OBL |
| *Carex scoparia* | Broom Sedge | FACW |
| *Carpinus caroliniana* | American Hornbeam | FAC |
| *Corylus americana* | American Hazelnut | FACU |
| *Dryopteris carthusiana* | Spinulose Wood Fern | FACW |
| *Dryopteris intermedia* | Evergreen Wood Fern | FAC |
| *Equisetum arvense* | Common Horsetail | FAC |
| *Equisetum sylvaticum* | Woodland Horsetail | FACW |
| *Fraxinus nigra* | Black Ash | FACW |
| *Geum aleppicum* | Yellow Avens | FAC |
| *Glyceria striata* | Fowl Mannagrass | OBL |
| *Impatiens capensis* | Orange Jewelweed | FACW |
| *Onoclea sensibilis* | Sensitive Fern | FACW |

| | | |
|---|---|---|
| *Ostrya virginiana* | Ironwood | FACU |
| *Ranunculus acris* | Tall Buttercup | FAC |
| *Ribes americanum* | Wild Black Currant | FACW |
| *Rubus idaeus* | Red Raspberry | FACU |
| *Scirpus cyperinus* | Wool-Grass | OBL |
| *Scutellaria lateriflora* | Blue Skullcap | OBL |
| *Solidago gigantea* | Giant Goldenrod | FACW |
| *Symphyotrichum lateriflorum* | Calico Aster | FACW |
| *Ulmus americana* | American Elm | FACW |

The dominant vegetation found in the upland sample site locations at this site includes the following:

| **Scientific Name** | **Common Name** | **Indicator** |
|---|---|---|
| *Abies balsamea* | Balsam Fir | FAC |
| *Acer rubrum* | Red Maple | FAC |
| *Acer saccharum* | Sugar Maple | FACU |
| *Adiantum pedatum* | Northern Maidenhair Fern | FACU |
| *Allium tricoccum* | Wild Leek | FACU |
| *Aralia nudicaulis* | Wild Sarsaparilla | FACU |
| *Betula alleghaniensis* | Yellow Birch | FAC |
| *Betula papyrifera* | White Birch | FACU |
| *Cardamine concatenata* | Cutleaf Toothwort | FACU |
| *Carex gracillima* | Graceful Sedge | FACU |
| *Carex pensylvanica* | Pennsylvania Sedge | UPL |
| *Caulophyllum thalictroides* | Blue Cohosh | UPL |
| *Corylus americana* | American Hazelnut | FACU |
| *Dryopteris intermedia* | Evergreen Wood Fern | FAC |
| *Erythronium americanum* | Yellow Trout-Lily | UPL |
| *Fraxinus nigra* | Black Ash | FACW |
| *Fraxinus pennsylvanica* | Green Ash | FACW |
| *Gymnocarpoum dryopteris* | Northern Oak Fern | FACU |
| *Hieracium aurantiacum* | Orange Hawkweed | UPL |
| *Maianthemum canadense* | Canada Mayflower | FACU |
| *Osmunda claytoniana* | Interrupted Fern | FAC |
| *Ostrya virginiana* | Ironwood | FACU |
| *Phegopteris connectilis* | Northern Beech Fern | FACU |
| *Populus tremula* | Quaking Aspen | FAC |
| *Prunus serotina* | Black Cherry | FACU |
| *Pteridium aqualinum* | Bracken Fern | FACU |
| *Quercus rubra* | Northern Red Oak | FACU |
| *Ribes cynosbati* | Prickly Wild Gooseberry | FACU |
| *Rubus idaeus ssp. strigosus* | Red Raspberry | FACU |
| *Sphagnum magellanicum* | Sphagnum Moss | OBL |
| *Thuja occidentalis* | Northern White Cedar | FACW |
| *Tilia americana* | American Basswood | FACU |
| *Tsuga Canadensis* | Eastern Hemlock | FACU |

| | | |
|---|---|---|
| *Ulmus americana* | American Elm | FACW |

The wetland edges were identified based on the transition from upland vegetation to wetland vegetation and differences in soil and hydrology observed at upland and wetland sample points.

# Conclusions

Five bulk sample sites and associated secondary access roads were examined on various dates between May 24 and October 11, 2013 for areas meeting jurisdictional wetland criteria as specified in the 1987 Corps of Engineers Wetlands Delineation Manual and the Northcentral and Northeast Regional Supplement. The purpose of delineating the bulk sample sites and associated access routes was to identify wetlands to be avoided or permitted for temporary impacts associated with equipment transport to the sites and proposed bulk sampling activities. The attached Figure 2 shows the overall site layout, bulk sample site locations and existing and proposed access roads leading to those sites. Figures 2A through 2C show the bulk sample sites, associated access routes, delineated wetlands and sample locations in greater detail.

Four of the bulk sample sites and the access roads located immediately adjacent to the sites were examined on May 24, 2013 by Ms. Ann Michalski, PSS, PWS, Wisconsin Department of Natural Resources (WDNR) Professionally Assured Wetland Delineator for areas meeting jurisdictional wetland criteria as specified in the 1987 Corps of Engineers Wetlands Delineation Manual and the Northcentral and Northeast Regional Supplement. A fifth bulk sample site was examined on June 19, 2013 by Ms. Michalski along with U.S. Army Corps of Engineers (USACOE) and WDNR personnel. Due to the presence of a wetland across the secondary access road leading into Bulk Sample Site 1, a third site visit was conducted on July 8, 2013 to examine an alternate access route for Bulk Sample Sites 1 and 2. This delineation also revealed the presence of wetlands within the proposed route so a new route was identified and wetlands adjacent to that new route, referred to as Access Road 6, were delineated on October 11, 2013. A follow up site visit was conducted on October 24, 2013 with representatives from Gogebic Taconite, WDNR, USACOE, the Bad River Tribe and Thompson and Associates Wetland Services to review and discuss Access Road 6.

Wetland boundaries were identified using procedures outlined in the 1987 Corps of Engineers Wetland Delineation Manual and Northcentral and Northeast Regional Supplement. The areas identified as wetland were primarily identified based on topographical changes, transitions from hydric soils and hydric vegetation to upland soils and upland vegetation and presence or lack of hydrology indicators. Best professional judgment was also applied based on many years of conducting wetland delineations in northern Wisconsin. Regulatory personnel present at the site on June 19th and October 24th reviewed the delineated areas and agreed with the wetland boundaries.

Overall, the access routes and historic bulk sample site locations are considered Significantly Disturbed due to the clearing of trees and shrubs at one time and soil disturbances from historic road construction and bulk sample site disturbance. Areas immediately adjacent to the roads and historic bulk sample sites were not considered disturbed. Most areas observed were not considered Problematic with regards to identifying wetland boundaries with the exception of shallow rock in some areas preventing full soil profile viewing.

One wetland area (Wetland 1) was delineated along the existing secondary access road leading to Bulk Sample Site 1 during the first site visit. Figure 2B shows the location of the wetland in

relation to the access road and bulk sample site. In order to avoid impacts to this wetland, an alternative access route was evaluated on July 8, 2013 to find a more suitable upland route. Four wetlands (Wetlands 2 through 5) were delineated along that route during the site visit. Based on evaluations of that proposed route and nearby wetlands, Gogebic Taconite identified a third route (Access Road 6) which was evaluated for wetlands within an area ranging from 50 to 300 feet from the proposed roadway on October 11, 2013. Nine wetlands (Wetlands 6 through 14) were delineated during that site visit but none of the wetlands identified are located within the proposed roadway. A small area, approximately 4 feet in diameter was discussed during the October 24, 2013 site visit as a possible connection to Wetland 14. Regulatory agents agreed with the original wetland boundary and this area was added to Figure 2C as a potential stormwater connection. This area, as well as all identified wetlands, will be avoided during construction activities associated with Access Road 6. Wetland boundaries will be staked prior to construction to ensure that contractors are aware of the wetland locations.

The findings of this wetland delineation report are only valid for the site conditions which existed at the time of this investigation. All wetland boundaries and jurisdictional determinations have been subject to verification by USACOE, St. Paul District.

The final authority for wetland boundaries and permit requirements rests with the government agencies which have jurisdiction over this project. Findings of this wetland delineation are subject to revision based upon natural or induced changes in weather, vegetation management, land use, topography, surface water flow, subsurface drainage, stormwater management, within or near the project site which may affect the soils, hydrology, or vegetative community on the project site.

This report provides a description of existing wetland conditions within the project area and does not include quantification of any temporary or permanent impacts to wetlands or waterbodies. Such impacts would require review and approval from all appropriate agencies. Activities which impact or potentially impact jurisdictional wetlands are currently regulated at several levels of government. Federal (USACE), State (WDNR) and local government agencies may all be involved in reviewing a single project. To avoid potential penalties and project delays it is necessary to acquire necessary permits and approvals from all jurisdictional agencies before initiating activities in wetlands. It is important to obtain a USACOE jurisdictional determination (JD) on the wetland boundaries prior to proceeding with activities on the property.

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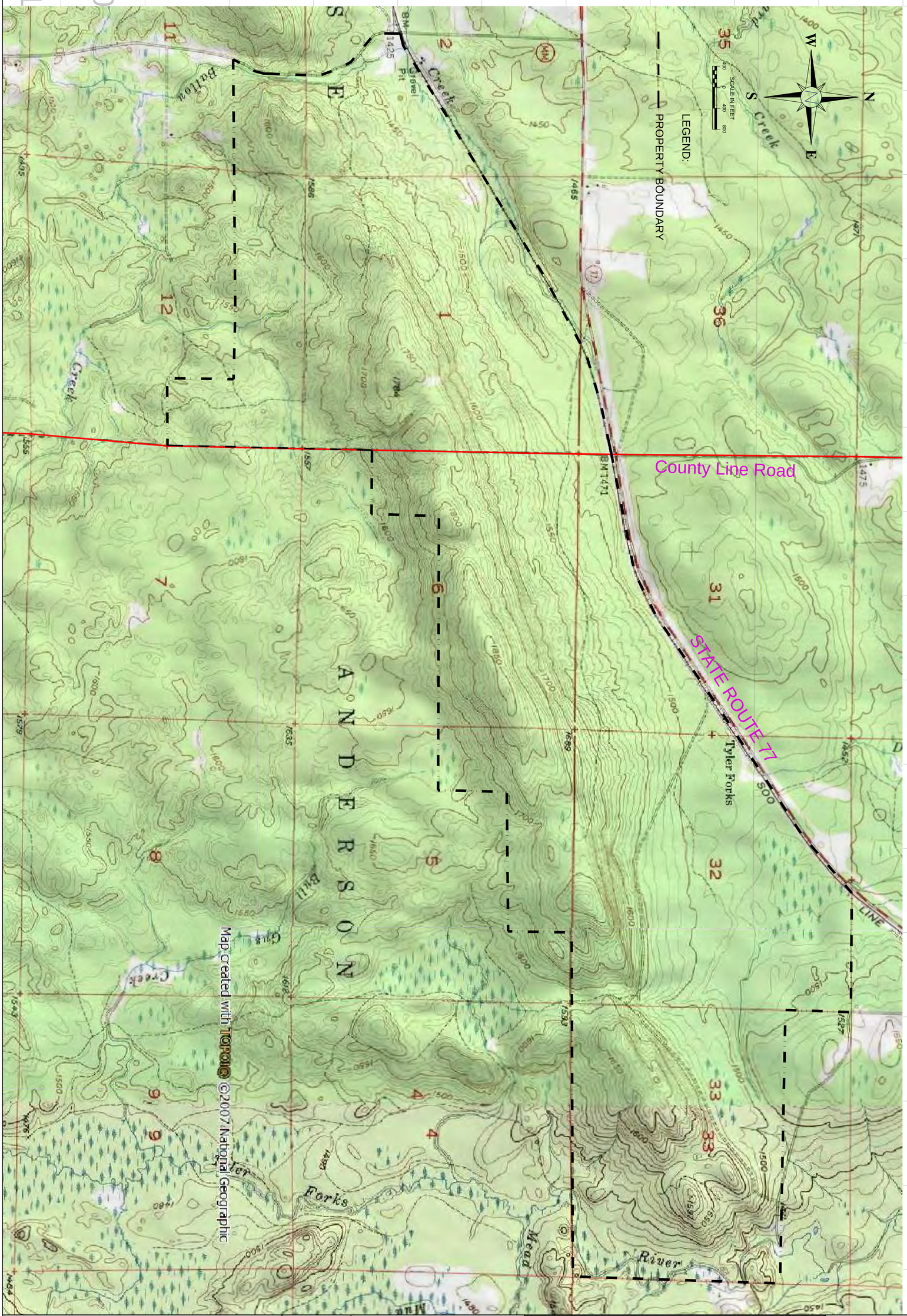
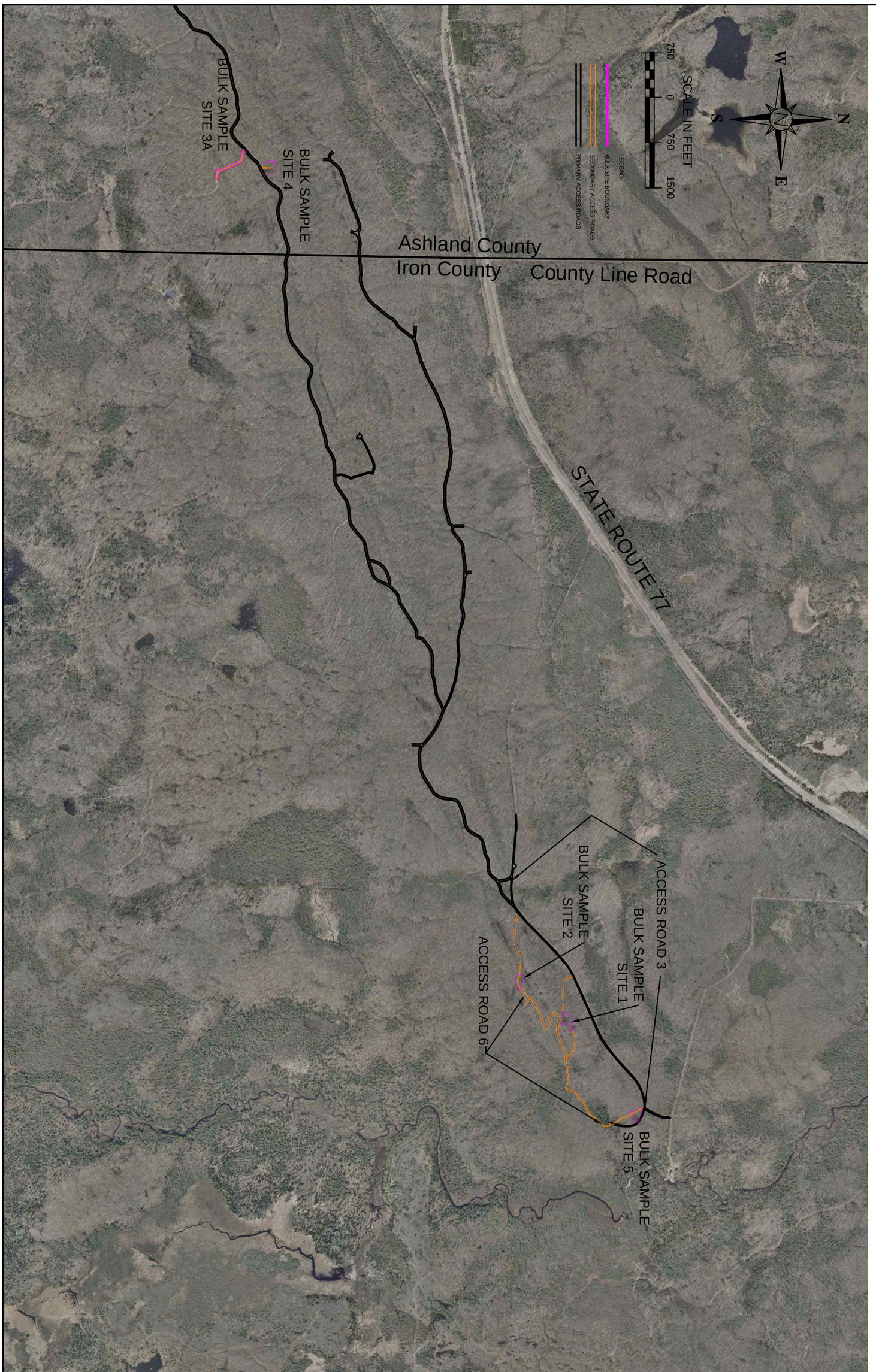



| | | | |
|---|---|---|---|
| SITE LOCATION & LOCAL TOPOGRAPHY<br>GOGEBIC TACONITE, LLC<br>ASHLAND AND IRON COUNTY<br>WISCONSIN | APPROVED BY: AMM<br>DRAWN BY: NLB<br>DATE: 11/10/13<br>SCALE: 1"=800' | THIS DRAWING AND ALL INFORMATION CONTAINED THEREON IS THE PROPERTY OF WETLANDS & WATERWAYS LLC, AND SHALL NOT BE COPIED OR USED EXCEPT FOR THE PURPOSE FOR WHICH IT IS FURNISHED. | Wetlands & Waterways LLC | PROJECT NUMBER: 129<br>FIGURE NO.<br>1 |




| | | | | |
|---|---|---|---|---|
| SITE LOCATION MAP<br>BULK SAMPLE SITES | APPROVED BY: AMM<br>DRAWN BY: NLB | THIS DRAWING AND ALL INFORMATION CONTAINED THEREON IS THE PROPERTY OF WETLANDS & WATERWAYS LLC, AND SHALL NOT BE COPIED OR USED EXCEPT FOR THE PURPOSE FOR WHICH IT IS FURNISHED. | Wetlands & Waterways LLC | PROJECT NUMBER: 129<br>FIGURE NO. 2 |
| GOGEBIC TACONITE, LLC<br>TOWN OF MORSE & ANDERSON, ASHLAND & IRON COUNTY, WISCONSIN | DATE: 11-10-13<br>SCALE: 1"=1500' | | | |

N

W E

S

SCALE IN FEET

150 0 150 300

LEGEND:

BULK SITE BOUNDARY

SECONDARY ACCESS ROADS

PRIMARY ACCESS ROADS

1 SAMPLE LOCATION

DELINEATION LIMITS

BULK SAMPLE SITE 4

1

BULK SAMPLE SITE 3A

1

PROJECT NUMBER: 129

FIGURE NO. 2A

Wetlands & Waterways LLC



APPROVED BY: AMM

DRAWN BY: NLB

DATE: 11-6-13

SCALE: 1"=300'

# WETLAND LOCATION MAP
# BULK SAMPLE SITE 3 & 4

GOGEBIC TACONITE, LLC

SEC.1, T44N, R2W, TOWN OF MORSE, ASHLAND COUNTY, WISCONSIN

N

W E

S

LEGEND:

BULK SITE BOUNDARY

SECONDARY ACCESS ROADS

PRIMARY ACCESS ROADS

1 SAMPLE LOCATION

DELINEATION LIMITS

SCALE IN FEET

150 0 150 300

MATCH LINE FIGURE 2C

BULK SAMPLE SITE 2

BULK SAMPLE SITE 1

ORIGINAL PROPOSED ROUTE

ACCESS ROAD 6

POSSIBLE STORMWATER CONNECTION TO WETLAND 14

SB1 SB2 SB3 SB4 SB5 SB6

WETLAND 1 WETLAND 2 WETLAND 3 WETLAND 4 WETLAND 5 WETLAND 6 WETLAND 7 WETLAND 8 WETLAND 9 WETLAND 10 WETLAND 11 WETLAND 12 WETLAND 13 WETLAND 14

UP 1-1 WET 1-1 UP 2-1 WET 2-1 UP 3-1 WET 3-1 UP 4-1 WET 4-1 UP 5-1 WET 5-1 UP 6-1 WET 6-1 UP 7-1 WET 7-1 UP 8-1 WET 8-1 UP 9-1 WET 9-1 UP 10-1 WET 10-1 UP 11-1 WET 11-1 UP 12-1 WET 12-1 UP 13-1 WET 13-1 UP 14-1 WET 14-1

SCALE 1"=180'

SCALE 1"=180'

SCALE 1"=180'

SCALE 1"=180'

MATCH LINE FIGURE 2C

PROJECT NUMBER: 129

FIGURE NO. 2B

Wetlands & Waterways LLC

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APPROVED BY: AMM

DRAWN BY: NLB

DATE: 11-6-13

SCALE: NOTED

WETLAND LOCATION MAP
BULK SAMPLE SITE 1 & 2

GOGEBIC TACONITE, LLC
SEC.33, T45N, R1W, TOWN OF ANDERSON, IRON COUNTY, WISCONSIN

MATCH LINE FIGURE 2B


MATCH LINE FIGURE 2B

| | | | | |
|---|---|---|---|---|
| WETLAND LOCATION MAP<br>BULK SAMPLE SITE 5<br>GOGEBIC TACONITE, LLC<br>SEC.33, T45N, R1W, TOWN OF ANDERSON, IRON COUNTY, WISCONSIN | APPROVED BY: AMM<br>DRAWN BY: NLB<br>DATE: 11-6-13<br>SCALE: 1"=300' |  | Wetlands & Waterways LLC | PROJECT NUMBER: 129<br>FIGURE NO.<br>**2C** |

PROJECT NUMBER: 129

FIGURE NO. 3

Wetlands & Waterways LLC



APPROVED BY: AMM

DRAWN BY: NLB

DATE: 11/10/13

SCALE: 1"=700'

# WISCONSIN WETLAND INVENTORY MAP

GOGEBIC TACONITE, LLC
ASHLAND AND IRON COUNTY
WISCONSIN

SCALE IN FEET
350 0 350 700

N
W E
S

Ashland County
Iron County

STATE ROUTE 77

ACCESS ROAD 3

BULK SAMPLE SITE 1

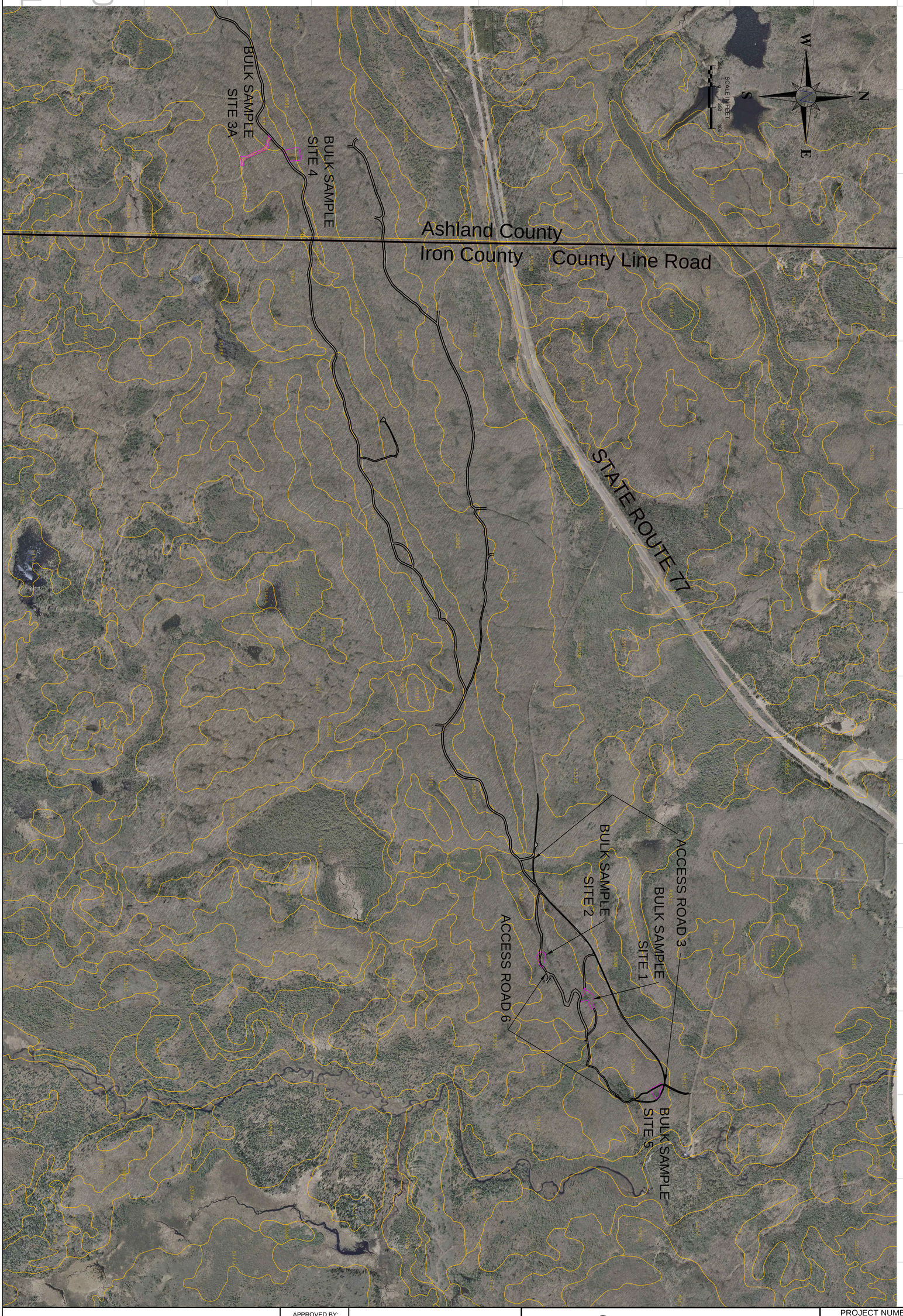
BULK SAMPLE SITE 5

BULK SAMPLE SITE 2

ACCESS ROAD 6

BULK SAMPLE SITE 4

BULK SAMPLE SITE 3A




| | | | |
|---|---|---|---|
| SOIL SURVEY MAP | APPROVED BY: AMM | THIS DRAWING AND ALL INFORMATION CONTAINED THEREON IS THE PROPERTY OF WETLANDS & WATERWAYS LLC, AND SHALL NOT BE COPIED OR USED EXCEPT FOR THE PURPOSE FOR WHICH IT IS FURNISHED. | PROJECT NUMBER: 129 |
| | DRAWN BY: NLB | | FIGURE NO. 4 |
| GOGEBIC TACONITE, LLC<br>ASHLAND AND IRON COUNTY<br>WISCONSIN | DATE: 11/10/13 | | |
| | SCALE: 1"=700' | | |

Wetlands & Waterways LLC

# APPENDIX A – FIELD DATA SHEETS

# WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites **City/County:** Town of Anderson, Iron Co. **Sampling Date:** 24-May-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** **Wet 1-1**

**Investigator(s):** Ann Michalski, WDNR Prof. Assured **Section, Township, Range: S.** 33 **T.** T45N **R.** R1W

**Landform (hillslope, terrace, etc.):** Toeslope/swale **Local relief (concave, convex, none):** concave **Slope:** 3.0 **%** / 1.7 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.331237 **Long.:** 90.503552 **Datum:** WGS84

**Soil Map Unit Name:** Michigamme-Schweitzer-Peshekee-Rock Outcrop Complex, 35-55%, very stony **NWI classification:** PFO1

**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 ○ | **Is the Sampled Area within a Wetland?** | Yes ◉ No ○ |
| **Hydric Soil Present?** | Yes ◉ No ○ | | |
| **Wetland Hydrology Present?** | Yes ◉ No ○ | | |

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

This specific location was not disturbed but an old logging road nearby would be considered significantly disturbed by historic activities. Soils overall could be considered problematic due to shallow rock that prevents full soil profile viewing. Soils in areas of flowing water can often be problematic due to oxygenation preventing redox features from forming but this are did have redox features present.

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ◉ No ○ | Depth (inches): | 1 |
| Water Table Present? | Yes ◉ No ○ | Depth (inches): | 0 |
| Saturation Present? (includes capillary fringe) | Yes ◉ No ○ | Depth (inches): | 0 |

**Wetland Hydrology Present?** Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## VEGETATION - Use scientific names of plants

**Sampling Point:** Wet 1-1

| Tree Stratum (Plot size: 15' x 240' ) | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| 1. Acer saccharum | 25 | ☑ | 50.0% | FACU |
| 2. Betula alleghaniensis | 25 | ☑ | 50.0% | FAC |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 50 | = Total Cover | | |
| **Sapling/Shrub Stratum** (Plot size: 10'x90' ) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 0 | = Total Cover | | |
| **Herb Stratum** (Plot size: 5' x 20' ) | | | | |
| 1. Ribes americanum | 10 | ☑ | 43.5% | FACW |
| 2. Acer saccharum | 10 | ☑ | 43.5% | FACU |
| 3. Dryopteris intermedia | 3 | ☐ | 13.0% | FAC |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| 8. | 0 | ☐ | 0.0% | |
| 9. | 0 | ☐ | 0.0% | |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 23 | = Total Cover | | |
| **Woody Vine Stratum** (Plot size: 15' x 240' ) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | = Total Cover | | |

**Dominance Test worksheet:**

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | | |
|---|---|---|---|---|
| OBL species | 0 | x 1 = | 0 | |
| FACW species | 10 | x 2 = | 20 | |
| FAC species | 28 | x 3 = | 84 | |
| FACU species | 35 | x 4 = | 140 | |
| UPL species | 0 | x 5 = | 0 | |
| Column Totals: | 73 | (A) | 244 | (B) |

Prevalence Index = B/A = 3.342

**Hydrophytic Vegetation Indicators:**

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☑ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ◉ No ○

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

vegetation is problematic due to limited vegetation and upland tree species present

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** Wet 1-1

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc² | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-6 | 7.5YR | 2.5/1 | 95% | 7.5YR | 4/3 | 5% | C | M | Sandy Loam | |
| 6-9 | 7.5YR | 4/3 | 75% | 7.5YR | 2/1 | 25% | C | M | Loam | manganese masses |
| 9-12 | 7.5YR | 3/3 | 100% | - | - | - | - | - | Sandy Loam | |
| 12+ | - | - | - | - | - | - | - | - | Rock | |

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: Rock

Depth (inches): 12

**Hydric Soil Present?** Yes ◉ No ○

Remarks:

Shallow rock prevented full soil profile viewing but observations of topography, vegetation transitions and presence or lack of hydrology indicators were used to help determine wetland boundaries.

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites **City/County:** Town of Anderson, Iron Co. **Sampling Date:** 24-May-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** **Up 1-1**

**Investigator(s):** Ann Michalski, WDNR Prof. Assured **Section, Township, Range: S.** 33 **T.** T45N **R.** R1W

**Landform (hillslope, terrace, etc.):** backslope **Local relief (concave, convex, none):** convex **Slope:** 5.0 **%** / 2.9 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.331210 **Long.:** 90.503528 **Datum:** WGS84

**Soil Map Unit Name:** Michigamme-Schweitzer-Peshekee-Rock Outcrop Complex, 35-55%, very stony **NWI classification:** Upland

**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 ◉ | **Is the Sampled Area within a Wetland?** | Yes ○ No ◉ |
| **Hydric Soil Present?** | Yes ○ No ◉ | | |
| **Wetland Hydrology Present?** | Yes ○ No ◉ | | |

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

This specific location was not disturbed but an old logging road nearby would be considered significantly disturbed by historic activities. Soils overall could be considered problematic due to shallow rock that prevents full soil profile viewing. However, distinct topographic breaks, vegetation transitions and hydrology indicators were more heavily evaluated to determine wetland/upland boundaries. Best professional judgment based on extensive experience working in Ashland and Iron Counties was applied.

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ○ No ◉ | Depth (inches): | |
| Water Table Present? | Yes ○ No ◉ | Depth (inches): | |
| Saturation Present? (includes capillary fringe) | Yes ○ No ◉ | Depth (inches): | **Wetland Hydrology Present?** Yes ○ No ◉ |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## VEGETATION - Use scientific names of plants

**Sampling Point:** Up 1-1

| | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| **Tree Stratum** (Plot size: 30' radius) | | | | |
| 1. Acer saccharum | 50 | ☑ | 76.9% | FACU |
| 2. Betula alleghaniensis | 15 | ☑ | 23.1% | FAC |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 65 | | **= Total Cover** | |
| **Sapling/Shrub Stratum** (Plot size: 15' radius) | | | | |
| 1. Acer saccharum | 15 | ☑ | 60.0% | FACU |
| 2. Betula alleghaniensis | 10 | ☑ | 40.0% | FAC |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 25 | | **= Total Cover** | |
| **Herb Stratum** (Plot size: 5' radius) | | | | |
| 1. Allium tricoccum | 70 | ☑ | 66.7% | FACU |
| 2. Acer saccharum | 15 | ☐ | 14.3% | FACU |
| 3. Cardamine concatenata | 15 | ☐ | 14.3% | FACU |
| 4. Betula alleghaniensis | 5 | ☐ | 4.8% | FAC |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| 8. | 0 | ☐ | 0.0% | |
| 9. | 0 | ☐ | 0.0% | |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 105 | | **= Total Cover** | |
| **Woody Vine Stratum** (Plot size: 30 ' radius) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |

**Dominance Test worksheet:**

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 40.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | | |
|---|---|---|---|---|
| OBL species | 0 | x 1 = | 0 | |
| FACW species | 0 | x 2 = | 0 | |
| FAC species | 30 | x 3 = | 90 | |
| FACU species | 165 | x 4 = | 660 | |
| UPL species | 0 | x 5 = | 0 | |
| Column Totals: | 195 | (A) | 750 | (B) |

Prevalence Index = B/A = 3.846

**Hydrophytic Vegetation Indicators:**

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ○ No ◉

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** Up 1-1

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-5 | 7.5YR | 3/2 | 100% | - | - | - | - | - | Loam | |
| 5-6 | 7.5YR | 3/3 | 100% | - | - | - | - | - | Loam | |
| 6+ | - | - | - | - | - | - | - | - | Rock | |
| | | | | | | | | | | |
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| | | | | | | | | | | |

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: Rock

Depth (inches): 6

**Hydric Soil Present?** Yes ○ No ◉

Remarks:

Shallow rock prevented full soil profile viewing but observations of topography, vegetation transitions and presence or lack of hydrology indicators was used to help determine wetland boundaries.

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites **City/County:** Town of Anderson, Iron Co. **Sampling Date:** 08-Jul-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** **Wet 2-1**

**Investigator(s):** Ann Michalski, WDNR Prof. Assured **Section, Township, Range: S.** 33 **T.** T45N **R.** R1W

**Landform (hillslope, terrace, etc.):** Toeslope **Local relief (concave, convex, none):** concave **Slope:** 1.0 **%** / 0.6 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.333406 **Long.:** 90.494938 **Datum:** WGS84

**Soil Map Unit Name:** Gogebic Silt Loam, 18 to 35% slopes, very stony, rocky **NWI classification:** PFO1

**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 ○ | |
| **Hydric Soil Present?** | Yes ◉ | No ○ | **Is the Sampled Area within a Wetland?** Yes ◉ No ○ |
| **Wetland Hydrology Present?** | Yes ◉ | No ○ | |

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

This specific sample location was not disturbed but an old logging road nearby would be considered significantly disturbed by historic activities. Rock was present at 12 inches below the soil surface, preventing full soil profile viewing but this was not considered a difficult situation because hydric soils were evident in the upper 12 inches of the soil profile.

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

| | | | | |
|---|---|---|---|---|
| Surface Water Present? | Yes ○ | No ◉ | Depth (inches): | |
| Water Table Present? | Yes ◉ | No ○ | Depth (inches): 0 | |
| Saturation Present? (includes capillary fringe) | Yes ◉ | No ○ | Depth (inches): 0 | **Wetland Hydrology Present?** Yes ◉ No ○ |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## VEGETATION - Use scientific names of plants

**Sampling Point:** Wet 2-1

| Tree Stratum (Plot size: 50' x 50') | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| 1. Acer saccharum | 30 | ☑ | 60.0% | FACU |
| 2. Fraxinus nigra | 20 | ☑ | 40.0% | FACW |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 50 | | = Total Cover | |
| **Sapling/Shrub Stratum** (Plot size: 15' radius) | | | | |
| 1. Acer saccharum | 15 | ☑ | 60.0% | FACU |
| 2. Fraxinus nigra | 10 | ☑ | 40.0% | FACW |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 25 | | = Total Cover | |
| **Herb Stratum** (Plot size: 5' radius) | | | | |
| 1. Fraxinus nigra | 15 | ☑ | 28.3% | FACW |
| 2. Solidago gigantea | 10 | ☑ | 18.9% | FACW |
| 3. Carex crinita | 10 | ☑ | 18.9% | OBL |
| 4. Dryopteris intermedia | 5 | ☐ | 9.4% | FAC |
| 5. Ranunculus acris | 5 | ☐ | 9.4% | FAC |
| 6. Onoclea sensibilis | 5 | ☐ | 9.4% | FACW |
| 7. Acer saccharum | 3 | ☐ | 5.7% | FACU |
| 8. | 0 | ☐ | 0.0% | |
| 9. | 0 | ☐ | 0.0% | |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 53 | | = Total Cover | |
| **Woody Vine Stratum** (Plot size: 50'x50') | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | | = Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 71.4% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | | |
|---|---|---|---|---|
| OBL species | 10 | x 1 = | 10 | |
| FACW species | 60 | x 2 = | 120 | |
| FAC species | 10 | x 3 = | 30 | |
| FACU species | 48 | x 4 = | 192 | |
| UPL species | 0 | x 5 = | 0 | |
| Column Totals: | 128 | (A) | 352 | (B) |

Prevalence Index = B/A = 2.750

**Hydrophytic Vegetation Indicators:**

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ◉ No ○

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

Some upland vegetation was present in this wetland but hydric vegetation was dominant.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** Wet 2-1

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc² | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR | 4/2 | 70% | 7.5YR | 4/4 | 30% | C | M | silt | |
| 12+ | - | - | - | - | - | - | - | - | Rock | |

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: Rock

Depth (inches): 12

**Hydric Soil Present?** Yes ◉ No ○

Remarks:

Shallow rock prevented full soil profile viewing but the upper 12 inches met hydric soil indicators and observations of topography, vegetation transitions and presence of hydrology indicators were used to help determine wetland boundaries.

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites **City/County:** Town of Anderson, Iron Co. **Sampling Date:** 08-Jul-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** Up 2-1

**Investigator(s):** Ann Michalski, WDNR Prof. Assured **Section, Township, Range: S.** 33 **T.** T45N **R.** R1W

**Landform (hillslope, terrace, etc.):** sadde **Local relief (concave, convex, none):** convex **Slope:** 3.0 % / 1.7 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.333324 **Long.:** 90.495004 **Datum:** WGS84

**Soil Map Unit Name:** Gogebic Silt Loam, 18 to 35% slopes, very stony, rocky **NWI classification:** Upland

**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 ◉ | **Is the Sampled Area within a Wetland?** | Yes ○ No ◉ |
| **Hydric Soil Present?** | Yes ○ No ◉ | | |
| **Wetland Hydrology Present?** | Yes ○ No ◉ | | |

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

This specific sample location was not disturbed but an old logging road nearby would be considered significantly disturbed by historic activities.

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

| | | | | |
|---|---|---|---|---|
| Surface Water Present? | Yes ○ No ◉ | Depth (inches): | | |
| Water Table Present? | Yes ○ No ◉ | Depth (inches): | | |
| Saturation Present? (includes capillary fringe) | Yes ○ No ◉ | Depth (inches): | **Wetland Hydrology Present?** | Yes ○ No ◉ |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## VEGETATION - Use scientific names of plants

**Sampling Point:** Up 2-1

| | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| **Tree Stratum** (Plot size: 30' radius) | | | | |
| 1. Acer saccharum | 25 | ☑ | 35.7% | FACU |
| 2. Acer rubrum | 15 | ☑ | 21.4% | FAC |
| 3. Quercus rubra | 15 | ☑ | 21.4% | FACU |
| 4. Ostrya virginiana | 15 | ☑ | 21.4% | FACU |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 70 | | **= Total Cover** | |
| **Sapling/Shrub Stratum** (Plot size: 15' radius) | | | | |
| 1. Ostrya virginiana | 15 | ☑ | 33.3% | FACU |
| 2. Corylus americana | 15 | ☑ | 33.3% | FACU |
| 3. Acer saccharum | 10 | ☑ | 22.2% | FACU |
| 4. Abies balsamea | 5 | ☐ | 11.1% | FAC |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 45 | | **= Total Cover** | |
| **Herb Stratum** (Plot size: 5' radius) | | | | |
| 1. Pteridium aquilinum | 40 | ☑ | 32.0% | FACU |
| 2. Quercus rubra | 20 | ☑ | 16.0% | FACU |
| 3. Acer saccharum | 15 | ☑ | 12.0% | FACU |
| 4. Maianthemum canadense | 15 | ☑ | 12.0% | FACU |
| 5. Onoclea sensibilis | 10 | ☐ | 8.0% | FACW |
| 6. Prunus serotina | 10 | ☐ | 8.0% | FACU |
| 7. Fraxinus nigra | 5 | ☐ | 4.0% | FACW |
| 8. Osmunda claytoniana | 5 | ☐ | 4.0% | FAC |
| 9. Phegopteris connectilis | 5 | ☐ | 4.0% | FACU |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 125 | | **= Total Cover** | |
| **Woody Vine Stratum** (Plot size: 30 ' radius) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | | **= 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: 11 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 9.1% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | | |
|---|---|---|---|---|
| OBL species | 0 | x 1 = | 0 | |
| FACW species | 15 | x 2 = | 30 | |
| FAC species | 25 | x 3 = | 75 | |
| FACU species | 200 | x 4 = | 800 | |
| UPL species | 0 | x 5 = | 0 | |
| Column Totals: | 240 | (A) | 905 | (B) |

Prevalence Index = B/A = 3.771

**Hydrophytic Vegetation Indicators:**

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ○ No ◉

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** Up 2-1

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc² | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-3 | 10YR | 3/2 | 100% | - | - | - | - | - | silt | |
| 3-4 | 10YR | 4/2 | 100% | - | - | - | - | - | Sandy Loam | |
| 4-20+ | 10YR | 3/4 | 100% | - | - | - | - | - | sand | |
| | | | | | | | | | | |
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[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ○ No ◉

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites **City/County:** Town of Anderson, Iron Co. **Sampling Date:** 08-Jul-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** **Wet 3-1**

**Investigator(s):** Ann Michalski, WDNR Prof. Assured **Section, Township, Range: S.** 33 **T.** T45N **R.** R1W

**Landform (hillslope, terrace, etc.):** Toeslope **Local relief (concave, convex, none):** concave **Slope:** 1.0 **%** / 0.6 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.333265 **Long.:** 90.495120 **Datum:** WGS84

**Soil Map Unit Name:** Gogebic Silt Loam, 18 to 35% slopes, very stony, rocky **NWI classification:** PFO1/PSS1

**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 ○ | **Is the Sampled Area within a Wetland?** | Yes ◉ No ○ |
| **Hydric Soil Present?** | Yes ◉ No ○ | | |
| **Wetland Hydrology Present?** | Yes ◉ No ○ | | |

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

This specific sample location was not disturbed but an old logging road nearby would be considered significantly disturbed by historic activities.

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

| | | | | |
|---|---|---|---|---|
| Surface Water Present? | Yes ○ | No ◉ | Depth (inches): | |
| Water Table Present? | Yes ◉ | No ○ | Depth (inches): 0 | **Wetland Hydrology Present?** Yes ◉ No ○ |
| Saturation Present? (includes capillary fringe) | Yes ◉ | No ○ | Depth (inches): 0 | |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## VEGETATION - Use scientific names of plants

**Sampling Point:** Wet 3-1

| | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| **Tree Stratum** (Plot size: 30' x 30' ) | | | | |
| 1. Fraxinus nigra | 25 | ☑ | 100.0% | FACW |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 25 | | **= Total Cover** | |
| **Sapling/Shrub Stratum** (Plot size: 15' radius ) | | | | |
| 1. Fraxinus nigra | 50 | ☑ | 100.0% | FACW |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 50 | | **= Total Cover** | |
| **Herb Stratum** (Plot size: 5' radius ) | | | | |
| 1. Fraxinus nigra | 40 | ☑ | 53.3% | FACW |
| 2. Onoclea sensibilis | 10 | ☐ | 13.3% | FACW |
| 3. Dryopteris intermedia | 10 | ☐ | 13.3% | FAC |
| 4. Corylus americana | 5 | ☐ | 6.7% | FACU |
| 5. Acer saccharum | 5 | ☐ | 6.7% | FACU |
| 6. Abies balsamea | 5 | ☐ | 6.7% | FAC |
| 7. | 0 | ☐ | 0.0% | |
| 8. | 0 | ☐ | 0.0% | |
| 9. | 0 | ☐ | 0.0% | |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 75 | | **= Total Cover** | |
| **Woody Vine Stratum** (Plot size: 30' x 30' ) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |

**Dominance Test worksheet:**

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | | |
|---|---|---|---|---|
| OBL species | 0 | x 1 = | 0 | |
| FACW species | 125 | x 2 = | 250 | |
| FAC species | 15 | x 3 = | 45 | |
| FACU species | 10 | x 4 = | 40 | |
| UPL species | 0 | x 5 = | 0 | |
| Column Totals: | 150 | (A) | 335 | (B) |

Prevalence Index = B/A = 2.233

**Hydrophytic Vegetation Indicators:**

- ☑ **Rapid Test for Hydrophytic Vegetation**
- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ◉ No ○

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** Wet 3-1

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc² | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-4 | 10YR | 3/2 | 100% | - | - | - | - | - | silt | |
| 4-11 | 10YR | 4/2 | 70% | 7.5YR | 4/6 | 30% | C | M | Silt Loam | |
| 11-20+ | 7.5YR | 3/4 | 100% | - | - | - | - | - | Sandy Loam | |
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[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ◉ No ○

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites **City/County:** Town of Anderson, Iron Co. **Sampling Date:** 08-Jul-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** **Up 3-1**

**Investigator(s):** Ann Michalski, WDNR Prof. Assured **Section, Township, Range: S.** 33 **T.** T45N **R.** R1W

**Landform (hillslope, terrace, etc.):** Saddle **Local relief (concave, convex, none):** convex **Slope:** 3.0 **%** / 1.7 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.333299 **Long.:** 90.495057 **Datum:** WGS84

**Soil Map Unit Name:** Gogebic Silt Loam, 18 to 35% slopes, very stony, rocky **NWI classification:** Upland

**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 ◉ | **Is the Sampled Area within a Wetland?** | Yes ○ No ◉ |
| **Hydric Soil Present?** | Yes ○ No ◉ | | |
| **Wetland Hydrology Present?** | Yes ○ No ◉ | | |

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

This specific sample location was not disturbed but an old logging road nearby would be considered significantly disturbed by historic activities.

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

| | | | | |
|---|---|---|---|---|
| Surface Water Present? | Yes ○ No ◉ | Depth (inches): | | |
| Water Table Present? | Yes ○ No ◉ | Depth (inches): | | |
| Saturation Present? (includes capillary fringe) | Yes ○ No ◉ | Depth (inches): | **Wetland Hydrology Present?** | Yes ○ No ◉ |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## VEGETATION - Use scientific names of plants

**Sampling Point:** Up 3-1

| | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| **Tree Stratum** (Plot size: 30' radius) | | | | |
| 1. Acer saccharum | 25 | ☑ | 35.7% | FACU |
| 2. Acer rubrum | 15 | ☑ | 21.4% | FAC |
| 3. Quercus rubra | 15 | ☑ | 21.4% | FACU |
| 4. Ostrya virginiana | 15 | ☑ | 21.4% | FACU |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 70 | | **= Total Cover** | |
| **Sapling/Shrub Stratum** (Plot size: 15' radius) | | | | |
| 1. Ostrya virginiana | 15 | ☑ | 33.3% | FACU |
| 2. Corylus americana | 15 | ☑ | 33.3% | FACU |
| 3. Acer saccharum | 10 | ☑ | 22.2% | FACU |
| 4. Abies balsamea | 5 | ☐ | 11.1% | FAC |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 45 | | **= Total Cover** | |
| **Herb Stratum** (Plot size: 5' radius) | | | | |
| 1. Pteridium aquilinum | 40 | ☑ | 32.0% | FACU |
| 2. Quercus rubra | 20 | ☑ | 16.0% | FACU |
| 3. Acer saccharum | 15 | ☑ | 12.0% | FACU |
| 4. Maianthemum canadense | 15 | ☑ | 12.0% | FACU |
| 5. Onoclea sensibilis | 10 | ☐ | 8.0% | FACW |
| 6. Prunus serotina | 10 | ☐ | 8.0% | FACU |
| 7. Fraxinus nigra | 5 | ☐ | 4.0% | FACW |
| 8. Osmunda claytoniana | 5 | ☐ | 4.0% | FAC |
| 9. Phegopteris connectilis | 5 | ☐ | 4.0% | FACU |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 125 | | **= Total Cover** | |
| **Woody Vine Stratum** (Plot size: 30 ' radius) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | | **= 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: 11 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 9.1% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | | |
|---|---|---|---|---|
| OBL species | 0 | x 1 = | 0 | |
| FACW species | 15 | x 2 = | 30 | |
| FAC species | 25 | x 3 = | 75 | |
| FACU species | 200 | x 4 = | 800 | |
| UPL species | 0 | x 5 = | 0 | |
| Column Totals: | 240 | (A) | 905 | (B) |

Prevalence Index = B/A = 3.771

**Hydrophytic Vegetation Indicators:**

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ○ No ◉

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** Up 3-1

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc² | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-3 | 10YR | 3/2 | 100% | - | - | - | - | - | silt | |
| 3-4 | 10YR | 4/2 | 100% | - | - | - | - | - | Sandy Loam | |
| 4-20+ | 10YR | 3/4 | 100% | - | - | - | - | - | sand | |
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[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ○ No ◉

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites **City/County:** Town of Anderson, Iron Co. **Sampling Date:** 08-Jul-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** **Wet 4-1**

**Investigator(s):** Ann Michalski, WDNR Prof. Assured **Section, Township, Range: S.** 33 **T.** T45N **R.** R1W

**Landform (hillslope, terrace, etc.):** Swale **Local relief (concave, convex, none):** concave **Slope:** 6.0 **%** / 3.4 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.333433 **Long.:** 90.497063 **Datum:** WGS84

**Soil Map Unit Name:** Gogebic Silt Loam, 18 to 35% slopes, very stony, rocky **NWI classification:** PFO1

**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 ○ | **Is the Sampled Area within a Wetland?** | Yes ◉ No ○ |
| **Hydric Soil Present?** | Yes ◉ No ○ | | |
| **Wetland Hydrology Present?** | Yes ◉ No ○ | | |

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

This specific sample location was not disturbed but an old logging road nearby would be considered significantly disturbed by historic activities. Rock was present at 14 inches below the soil surface, preventing full soil profile viewing but this was not considered problematic.

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

| | | | | |
|---|---|---|---|---|
| Surface Water Present? | Yes ○ No ◉ | Depth (inches): | | |
| Water Table Present? | Yes ◉ No ○ | Depth (inches): | 0 | **Wetland Hydrology Present?** Yes ◉ No ○ |
| Saturation Present? (includes capillary fringe) | Yes ◉ No ○ | Depth (inches): | 0 | |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## VEGETATION - Use scientific names of plants

**Sampling Point:** Wet 4-1

| | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| **Tree Stratum** (Plot size: 100' x 35' ) | | | | |
| 1. Fraxinus nigra | 30 | ☑ | 60.0% | FACW |
| 2. Ostrya virginiana | 20 | ☑ | 40.0% | FACU |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 50 | | **= Total Cover** | |
| **Sapling/Shrub Stratum** (Plot size: 15' radius ) | | | | |
| 1. Fraxinus nigra | 10 | ☑ | 50.0% | FACW |
| 2. Acer saccharum | 10 | ☑ | 50.0% | FACU |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 20 | | **= Total Cover** | |
| **Herb Stratum** (Plot size: 5' radius ) | | | | |
| 1. Carex gracillima | 40 | ☑ | 32.0% | FACU |
| 2. Impatiens capensis | 15 | ☑ | 12.0% | FACW |
| 3. Carex crinita | 15 | ☑ | 12.0% | OBL |
| 4. Solidago gigantea | 15 | ☑ | 12.0% | FACW |
| 5. Equisetum arvense | 15 | ☑ | 12.0% | FAC |
| 6. Fraxinus nigra | 15 | ☑ | 12.0% | FACW |
| 7. Ranunculus acris | 10 | ☐ | 8.0% | FAC |
| 8. | 0 | ☐ | 0.0% | |
| 9. | 0 | ☐ | 0.0% | |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 125 | | **= Total Cover** | |
| **Woody Vine Stratum** (Plot size: 100' x 35' ) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 10 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 70.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | | |
|---|---|---|---|---|
| OBL species | 15 | x 1 = | 15 | |
| FACW species | 85 | x 2 = | 170 | |
| FAC species | 25 | x 3 = | 75 | |
| FACU species | 70 | x 4 = | 280 | |
| UPL species | 0 | x 5 = | 0 | |
| Column Totals: | 195 | (A) | 540 | (B) |

Prevalence Index = B/A = 2.769

**Hydrophytic Vegetation Indicators:**

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ◉ No ○

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

Some upland vegetation was present in this wetland but hydric vegetation was dominant.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** Wet 4-1

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc² | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-3 | 10YR | 3/2 | 100% | - | - | - | - | - | Silt Loam | |
| 3-9 | 10YR | 3/2 | 80% | 7.5YR | 4/6 | 20% | C | M | Silt Loam | |
| 9-14 | 10YR | 4/3 | 80% | 7.5YR | 4/6 | 20% | C | M | Silt Loam | |
| 14+ | - | - | - | - | - | - | - | - | Rock | |
| | | | | | | | | | | |
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[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: Rock

Depth (inches): 14

**Hydric Soil Present?** Yes ◉ No ○

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites **City/County:** Town of Anderson, Iron Co. **Sampling Date:** 08-Jul-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** **Up 4-1**

**Investigator(s):** Ann Michalski, WDNR Prof. Assured **Section, Township, Range: S.** 33 **T.** T45N **R.** R1W

**Landform (hillslope, terrace, etc.):** sideslope **Local relief (concave, convex, none):** convex **Slope:** 3.0 **%** / 1.7 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.333500 **Long.:** 90.497054 **Datum:** WGS84

**Soil Map Unit Name:** Gogebic Silt Loam, 18 to 35% slopes, very stony, rocky **NWI classification:** Upland

**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 ◉ | **Is the Sampled Area within a Wetland?** | Yes ○ No ◉ |
| **Hydric Soil Present?** | Yes ○ No ◉ | | |
| **Wetland Hydrology Present?** | Yes ○ No ◉ | | |

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

This specific sample location was not disturbed but an old logging road nearby would be considered significantly disturbed by historic activities. Rock was present at 13 inches below the soil surface, preventing full soil profile viewing but this was not considered a difficult situation since the upper 12 inches of the soil profile was observed and determined to be upland soils

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ○ No ◉ | Depth (inches): | |
| Water Table Present? | Yes ○ No ◉ | Depth (inches): | |
| Saturation Present? (includes capillary fringe) | Yes ○ No ◉ | Depth (inches): | **Wetland Hydrology Present?** Yes ○ No ◉ |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## VEGETATION - Use scientific names of plants

**Sampling Point:** Up 4-1

| | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| **Tree Stratum** (Plot size: 30' radius) | | | | |
| 1. Acer saccharum | 70 | ☑ | 87.5% | FACU |
| 2. Ostrya virginiana | 10 | ☐ | 12.5% | FACU |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 80 | **= Total Cover** | | |
| **Sapling/Shrub Stratum** (Plot size: 15' radius) | | | | |
| 1. Acer saccharum | 50 | ☑ | 100.0% | FACU |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 50 | **= Total Cover** | | |
| **Herb Stratum** (Plot size: 5' radius) | | | | |
| 1. Acer saccharum | 25 | ☑ | 38.5% | FACU |
| 2. Tilia americana | 15 | ☑ | 23.1% | FACU |
| 3. Ostrya virginiana | 5 | ☐ | 7.7% | FACU |
| 4. Fraxinus nigra | 5 | ☐ | 7.7% | FACW |
| 5. Corylus americana | 5 | ☐ | 7.7% | FACU |
| 6. Aralia nudicaulis | 5 | ☐ | 7.7% | FACU |
| 7. Caulophyllum thalictroides | 5 | ☐ | 7.7% | UPL |
| 8. | 0 | ☐ | 0.0% | |
| 9. | 0 | ☐ | 0.0% | |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 65 | **= Total Cover** | | |
| **Woody Vine Stratum** (Plot size: 30 ' radius) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | **= Total Cover** | | |

**Dominance Test worksheet:**

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | | |
|---|---|---|---|---|
| OBL species | 0 | x 1 = | 0 | |
| FACW species | 5 | x 2 = | 10 | |
| FAC species | 0 | x 3 = | 0 | |
| FACU species | 185 | x 4 = | 740 | |
| UPL species | 5 | x 5 = | 25 | |
| Column Totals: | 195 | (A) | 775 | (B) |

Prevalence Index = B/A = 3.974

**Hydrophytic Vegetation Indicators:**

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ○ No ◉

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** Up 4-1

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc² | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-7 | 7.5YR | 3/2 | 100% | - | - | - | - | - | Silt Loam | |
| 7-13 | 7.5YR | 3/4 | 100% | - | - | - | - | - | Silt Loam | |
| 13+ | - | - | - | - | - | - | - | - | Rock | |
| | | | | | | | | | | |
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[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: Rock

Depth (inches): 13

**Hydric Soil Present?** Yes ○ No ◉

Remarks:

# WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites **City/County:** Town of Anderson, Iron Co. **Sampling Date:** 08-Jul-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** **Wet 5-1**

**Investigator(s):** Ann Michalski, WDNR Prof. Assured **Section, Township, Range: S.** 33 **T.** T45N **R.** R1W

**Landform (hillslope, terrace, etc.):** seep **Local relief (concave, convex, none):** concave **Slope:** 1.0 **%** / 0.6 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.333736 **Long.:** 90.498149 **Datum:** WGS84

**Soil Map Unit Name:** Michigamme-Schweitzer-Peshekee-Rock Outcrop Complex, 35-55%, very stony **NWI classification:** NA

**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 ○ | **Is the Sampled Area within a Wetland?** | Yes ◉ No ○ |
| **Hydric Soil Present?** | Yes ◉ No ○ | | |
| **Wetland Hydrology Present?** | Yes ◉ No ○ | | |

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

This specific sample location was not disturbed but an old logging road nearby would be considered significantly disturbed by historic activities. Vegetation could be considered problematic in this location due to very sparse vegetation although obvious hydric soils and wetland hydrology were present.

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ○ No ◉ | Depth (inches): | |
| Water Table Present? | Yes ◉ No ○ | Depth (inches): | 0 |
| Saturation Present? (includes capillary fringe) | Yes ◉ No ○ | Depth (inches): | 0 |

**Wetland Hydrology Present?** Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## VEGETATION - Use scientific names of plants

**Sampling Point:** Wet 5-1

| | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| **Tree Stratum** (Plot size: 60' x 10' ) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |
| **Sapling/Shrub Stratum** (Plot size: 60' x 10' ) | | | | |
| 1. Acer saccharum | 3 | ☐ | 75.0% | FACU |
| 2. Fraxinus nigra | 1 | ☐ | 25.0% | FACW |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 4 | | **= Total Cover** | |
| **Herb Stratum** (Plot size: 5' radius ) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| 8. | 0 | ☐ | 0.0% | |
| 9. | 0 | ☐ | 0.0% | |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |
| **Woody Vine Stratum** (Plot size: 60' x 10' ) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |

**Dominance Test worksheet:**

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | | |
|---|---|---|---|---|
| OBL species | 0 | x 1 = | 0 | |
| FACW species | 1 | x 2 = | 2 | |
| FAC species | 0 | x 3 = | 0 | |
| FACU species | 3 | x 4 = | 12 | |
| UPL species | 0 | x 5 = | 0 | |
| Column Totals: | 4 | (A) | 14 | (B) |

Prevalence Index = B/A = 3.500

**Hydrophytic Vegetation Indicators:**

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☑ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ◉ No ○

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

Vegetation is assumed here due to evident wetland soils and hydrology

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** Wet 5-1

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc² | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-6 | 7.5YR | 2.5/1 | 100% | - | - | - | - | - | Silt Loam | |
| 6-12 | 7.5YR | 4/2 | 70% | 7.5YR | 3/4 | 30% | C | M | Silt Loam | |
| 12-20+ | 7.5YR | 3/2 | 70% | 7.5YR | 3/4 | 30% | C | M | Silt Loam | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
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| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ◉ No ○

Remarks:

# WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites **City/County:** Town of Anderson, Iron Co. **Sampling Date:** 08-Jul-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** Up 5-1

**Investigator(s):** Ann Michalski, WDNR Prof. Assured **Section, Township, Range: S.** 33 **T.** T45N **R.** R1W

**Landform (hillslope, terrace, etc.):** sideslope **Local relief (concave, convex, none):** convex **Slope:** 2.0 % / 1.1 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.333782 **Long.:** 90.498108 **Datum:** WGS84

**Soil Map Unit Name:** Michigamme-Schweitzer-Peshekee-Rock Outcrop Complex, 35-55%, very stony **NWI classification:** Upland

**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 ◉ | **Is the Sampled Area within a Wetland?** | Yes ○ No ◉ |
| **Hydric Soil Present?** | Yes ○ No ◉ | | |
| **Wetland Hydrology Present?** | Yes ○ No ◉ | | |

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

This specific sample location was not disturbed but an old logging road nearby would be considered significantly disturbed by historic activities.

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ○ No ◉ | Depth (inches): | |
| Water Table Present? | Yes ○ No ◉ | Depth (inches): | |
| Saturation Present? (includes capillary fringe) | Yes ○ No ◉ | Depth (inches): | **Wetland Hydrology Present?** Yes ○ No ◉ |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## VEGETATION - Use scientific names of plants

**Sampling Point:** Up 5-1

| | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| **Tree Stratum** (Plot size: 30' radius) | | | | |
| 1. Acer saccharum | 60 | ☑ | 80.0% | FACU |
| 2. Betula alleghaniensis | 15 | ☑ | 20.0% | FAC |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 75 | | **= Total Cover** | |
| **Sapling/Shrub Stratum** (Plot size: 15' radius) | | | | |
| 1. Acer saccharum | 40 | ☑ | 100.0% | FACU |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 40 | | **= Total Cover** | |
| **Herb Stratum** (Plot size: 5' radius) | | | | |
| 1. Acer saccharum | 25 | ☑ | 71.4% | FACU |
| 2. Tilia americana | 5 | ☐ | 14.3% | FACU |
| 3. Dryopteris intermedia | 5 | ☐ | 14.3% | FAC |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| 8. | 0 | ☐ | 0.0% | |
| 9. | 0 | ☐ | 0.0% | |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 35 | | **= Total Cover** | |
| **Woody Vine Stratum** (Plot size: 30 ' radius) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | | **= 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: 4 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | | |
|---|---|---|---|---|
| OBL species | 0 | x 1 = | 0 | |
| FACW species | 0 | x 2 = | 0 | |
| FAC species | 20 | x 3 = | 60 | |
| FACU species | 130 | x 4 = | 520 | |
| UPL species | 0 | x 5 = | 0 | |
| Column Totals: | 150 | (A) | 580 | (B) |

Prevalence Index = B/A = 3.867

**Hydrophytic Vegetation Indicators:**

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ○ No ◉

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** Up 5-1

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc² | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-10 | 7.5YR | 3/2 | 100% | - | - | - | - | - | Silt Loam | |
| 10-20+ | 7.5YR | 3/4 | 100% | - | - | - | - | - | Silt Loam | Rocky |

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ○ No ◉

Remarks:

# WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites and Access Roads **City/County:** Town of Anderson, Iron Co. **Sampling Date:** 11-Oct-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** **Wet 6-1**

**Investigator(s):** Ann Michalski, PSS, PWS, WDNR PAWD **Section, Township, Range: S.** 33 **T.** T45N **R.** R1W

**Landform (hillslope, terrace, etc.):** Toeslope **Local relief (concave, convex, none):** concave **Slope:** 0.0 **%** / 0.0 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.331313 **Long.:** 90.500266 **Datum:** WGS84

**Soil Map Unit Name:** Michigamme-Schweitzer-Peshekee-Rock Outcrop Complex, 18 to 35% slopes **NWI classification:** PEM1

**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 ○ | |
| **Hydric Soil Present?** | Yes ◉ | No ○ | **Is the Sampled Area within a Wetland?** Yes ◉ No ○ |
| **Wetland Hydrology Present?** | Yes ◉ | No ○ | |

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

This area extends from a depressional area across a low spot in an old logging road. The road construction may have resulted in the wetland becoming larger. Although there was historic disturbance and soils and vegetation could be considered significantly disturbed within the roadway, this is considered the new normal circumstance. Soils could be considered problematic due to shallow rock that prevents full soil profile viewing although vegetation and hydrology indicators along with topographic position were very evident and considered heavily.

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

| | | | | | |
|---|---|---|---|---|---|
| Surface Water Present? | Yes ○ | No ◉ | Depth (inches): | | |
| Water Table Present? | Yes ◉ | No ○ | Depth (inches): | -4 | |
| Saturation Present? (includes capillary fringe) | Yes ◉ | No ○ | Depth (inches): | 0 | **Wetland Hydrology Present?** Yes ◉ No ○ |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Sparsely vegetated in natural wetland depression although forest road is grown over in vegetation.

## VEGETATION - Use scientific names of plants

**Sampling Point:** Wet 6-1

| | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| **Tree Stratum** (Plot size: 30' x 95' ) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |
| **Sapling/Shrub Stratum** (Plot size: 15' radius ) | | | | |
| 1. Fraxinus nigra | 10 | ☑ | 100.0% | FACW |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 10 | | **= Total Cover** | |
| **Herb Stratum** (Plot size: 5' radius ) | | | | |
| 1. Carex comosa | 20 | ☑ | 23.5% | OBL |
| 2. Equisetum sylvaticum | 20 | ☑ | 23.5% | FACW |
| 3. Scirpus cyperinus | 15 | ☑ | 17.6% | OBL |
| 4. Scutellaria lateriflora | 15 | ☑ | 17.6% | OBL |
| 5. Geum aleppicum | 10 | ☐ | 11.8% | FAC |
| 6. Carex scoparia | 5 | ☐ | 5.9% | FACW |
| 7. Rubus idaeus ssp. strigosus | 0 | ☐ | 0.0% | FACU |
| 8. | 0 | ☐ | 0.0% | |
| 9. | 0 | ☐ | 0.0% | |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 85 | | **= Total Cover** | |
| **Woody Vine Stratum** (Plot size: 30' x 95' ) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | | |
|---|---|---|---|---|
| OBL species | 50 | x 1 = | 50 | |
| FACW species | 35 | x 2 = | 70 | |
| FAC species | 10 | x 3 = | 30 | |
| FACU species | 0 | x 4 = | 0 | |
| UPL species | 0 | x 5 = | 0 | |
| Column Totals: | 95 | (A) | 150 | (B) |

Prevalence Index = B/A = 1.579

**Hydrophytic Vegetation Indicators:**

- ☑ **Rapid Test for Hydrophytic Vegetation**
- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ◉ No ○

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** Wet 6-1

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc² | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-5 | 7.5YR | 3/1 | 80% | 7.5YR | 3/3 | 20% | C | M | Silt Loam | |
| 5-10 | 7.5YR | 5/2 | 100% | - | - | - | - | - | Silt Loam | |
| 10+ | | | | | | | | | Rock | |

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: 10

Depth (inches): Rock

**Hydric Soil Present?** Yes ◉ No ○

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites and Access Roads **City/County:** Town of Anderson, Iron Co. **Sampling Date:** 11-Oct-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** Up 6-1

**Investigator(s):** Ann Michalski, PSS, PWS, WDNR PAWD **Section, Township, Range:** **S.** 33 **T.** T45N **R.** R1W

**Landform (hillslope, terrace, etc.):** sideslope **Local relief (concave, convex, none):** convex **Slope:** 6.0 % / 3.4 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.331245 **Long.:** 90.500246 **Datum:** WGS84

**Soil Map Unit Name:** Michigamme-Schweitzer-Peshekee-Rock Outcrop Complex, 18 to 35% slopes **NWI classification:** Upland

**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 ◉ | **Is the Sampled Area within a Wetland?** | Yes ○ No ◉ |
| **Hydric Soil Present?** | Yes ○ No ◉ | | |
| **Wetland Hydrology Present?** | Yes ○ No ◉ | | |

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

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

| | | | | |
|---|---|---|---|---|
| Surface Water Present? | Yes ○ No ◉ | Depth (inches): | | |
| Water Table Present? | Yes ○ No ◉ | Depth (inches): | | |
| Saturation Present? (includes capillary fringe) | Yes ○ No ◉ | Depth (inches): | **Wetland Hydrology Present?** | Yes ○ No ◉ |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## VEGETATION - Use scientific names of plants

**Sampling Point:** Up 6-1

| | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| **Tree Stratum** (Plot size: 30' radius) | | | | |
| 1. Acer saccharum | 50 | ☑ | 100.0% | FACU |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 50 | | **= Total Cover** | |
| **Sapling/Shrub Stratum** (Plot size: 15' radius) | | | | |
| 1. Acer saccharum | 40 | ☑ | 100.0% | FACU |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 40 | | **= Total Cover** | |
| **Herb Stratum** (Plot size: 5' radius) | | | | |
| 1. Acer saccharum | 50 | ☑ | 62.5% | FACU |
| 2. Gymnocarpium dryopteris | 15 | ☐ | 18.8% | FACU |
| 3. Dryopteris intermedia | 10 | ☐ | 12.5% | FAC |
| 4. Allium tricoccum | 5 | ☐ | 6.3% | FACU |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| 8. | 0 | ☐ | 0.0% | |
| 9. | 0 | ☐ | 0.0% | |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 80 | | **= Total Cover** | |
| **Woody Vine Stratum** (Plot size: 30' radius) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |

**Dominance Test worksheet:**

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | | |
|---|---|---|---|---|
| OBL species | 0 | x 1 = | 0 | |
| FACW species | 0 | x 2 = | 0 | |
| FAC species | 10 | x 3 = | 30 | |
| FACU species | 160 | x 4 = | 640 | |
| UPL species | 0 | x 5 = | 0 | |
| Column Totals: | 170 | (A) | 670 | (B) |

Prevalence Index = B/A = 3.941

**Hydrophytic Vegetation Indicators:**

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ○ No ◉

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** Up 6-1

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc² | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-7 | 7.5YR | 3/1 | 100% | - | - | - | - | - | Silt Loam | |
| 7-14 | 7.5YR | 2.5/3 | 100% | - | - | - | - | - | Silt Loam | |
| 14-20+ | 7.5YR | 4/4 | 100% | - | - | - | - | - | very fine sandy lm | |
| | | | | | | | | | | |
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| | | | | | | | | | | |

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ○ No ◉

Remarks:

# WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites and Access Roads **City/County:** Town of Anderson, Iron Co. **Sampling Date:** 11-Oct-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** **Wet 7-1**

**Investigator(s):** Ann Michalski, PSS, PWS, WDNR PAWD **Section, Township, Range: S.** 33 **T.** T45N **R.** R1W

**Landform (hillslope, terrace, etc.):** Toeslope **Local relief (concave, convex, none):** concave **Slope:** 0.0 **%** / 0.0 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.3316464 **Long.:** 90.500425 **Datum:** WGS84

**Soil Map Unit Name:** Michigamme-Schweitzer-Peshekee-Rock Outcrop Complex, 18 to 35% slopes **NWI classification:** PEM1

**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 ○ | **Is the Sampled Area within a Wetland?** | Yes ◉ No ○ |
| **Hydric Soil Present?** | Yes ◉ No ○ | | |
| **Wetland Hydrology Present?** | Yes ◉ No ○ | | |

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

Soils and vegetation could be considered significantly disturbed due to historic earthmoving activities that appear to have occurred here. However, this is considered the new normal circumstance. Soils could be considered problematic due to shallow rock that prevents full soil profile viewing although vegetation and hydrology indicators along with topographic position were very evident and considered heavily.

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ○ No ◉ | Depth (inches): | |
| Water Table Present? | Yes ◉ No ○ | Depth (inches): | -2 |
| Saturation Present? (includes capillary fringe) | Yes ◉ No ○ | Depth (inches): | 0 |

**Wetland Hydrology Present?** Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## VEGETATION - Use scientific names of plants

**Sampling Point:** Wet 7-1

| | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| **Tree Stratum** (Plot size: 45' x 35' ) | | | | |
| 1. Fraxinus nigra | 5 | ☑ | 50.0% | FACW |
| 2. Ulmus americana | 5 | ☑ | 50.0% | FACW |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 10 | | **= Total Cover** | |
| **Sapling/Shrub Stratum** (Plot size: 15' radius ) | | | | |
| 1. Ulmus americana | 15 | ☑ | 75.0% | FACW |
| 2. Fraxinus nigra | 5 | ☑ | 25.0% | FACW |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 20 | | **= Total Cover** | |
| **Herb Stratum** (Plot size: 5' radius ) | | | | |
| 1. Carex intumescens | 5 | ☑ | 100.0% | FACW |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| 8. | 0 | ☐ | 0.0% | |
| 9. | 0 | ☐ | 0.0% | |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 5 | | **= Total Cover** | |
| **Woody Vine Stratum** (Plot size: 45' x 35' ) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | | |
|---|---|---|---|---|
| OBL species | 0 | x 1 = | 0 | |
| FACW species | 35 | x 2 = | 70 | |
| FAC species | 0 | x 3 = | 0 | |
| FACU species | 0 | x 4 = | 0 | |
| UPL species | 0 | x 5 = | 0 | |
| Column Totals: | 35 | (A) | 70 | (B) |

Prevalence Index = B/A = 2.000

**Hydrophytic Vegetation Indicators:**

- ☑ **Rapid Test for Hydrophytic Vegetation**
- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ◉ No ○

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** Wet 7-1

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc² | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-2 | N | 2/0 | 100% | - | - | - | - | - | Muck | |
| 2+ | | | | | | | | | Rock | |
| | | | | | | | | | | |
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| | | | | | | | | | | |

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: 2

Depth (inches): Rock

**Hydric Soil Present?** Yes ◉ No ○

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites and Access Roads **City/County:** Town of Anderson, Iron Co. **Sampling Date:** 11-Oct-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** **Up 7-1**

**Investigator(s):** Ann Michalski, PSS, PWS, WDNR PAWD **Section, Township, Range: S.** 33 **T.** T45N **R.** R1W

**Landform (hillslope, terrace, etc.):** Shoulder slope **Local relief (concave, convex, none):** convex **Slope:** 5.0 **%** / 2.9 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.331692 **Long.:** 90.500504 **Datum:** WGS84

**Soil Map Unit Name:** Michigamme-Schweitzer-Peshekee-Rock Outcrop Complex, 18 to 35% slopes **NWI classification:** Upland

**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 ◉ | **Is the Sampled Area within a Wetland?** Yes ○ No ◉ |
| **Hydric Soil Present?** Yes ○ No ◉ | |
| **Wetland Hydrology Present?** Yes ○ No ◉ | |

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

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

**Wetland Hydrology Present?** Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## VEGETATION - Use scientific names of plants

**Sampling Point:** Up 7-1

| | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| **Tree Stratum** (Plot size: 30' radius) | | | | |
| 1. Acer saccharum | 50 | ☑ | 90.9% | FACU |
| 2. Ulmus americana | 5 | ☐ | 9.1% | FACW |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 55 | | **= Total Cover** | |
| **Sapling/Shrub Stratum** (Plot size: 15' radius) | | | | |
| 1. Acer saccharum | 25 | ☑ | 83.3% | FACU |
| 2. Prunus serotina | 5 | ☐ | 16.7% | FACU |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 30 | | **= Total Cover** | |
| **Herb Stratum** (Plot size: 5' radius) | | | | |
| 1. Acer saccharum | 50 | ☑ | 83.3% | FACU |
| 2. Rubus idaeus | 5 | ☐ | 8.3% | FACU |
| 3. Dryopteris intermedia | 5 | ☐ | 8.3% | FAC |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| 8. | 0 | ☐ | 0.0% | |
| 9. | 0 | ☐ | 0.0% | |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 60 | | **= Total Cover** | |
| **Woody Vine Stratum** (Plot size: 30' radius) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |

**Dominance Test worksheet:**

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | | |
|---|---|---|---|---|
| OBL species | 0 | x 1 = | 0 | |
| FACW species | 5 | x 2 = | 10 | |
| FAC species | 5 | x 3 = | 15 | |
| FACU species | 135 | x 4 = | 540 | |
| UPL species | 0 | x 5 = | 0 | |
| Column Totals: | 145 | (A) | 565 | (B) |

Prevalence Index = B/A = 3.897

**Hydrophytic Vegetation Indicators:**

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ○ No ◉

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** Up 7-1

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc² | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-6 | 7.5YR | 3/1 | 100% | - | - | - | - | - | Silt Loam | |
| 6-12 | 7.5YR | 3/3 | 100% | - | - | - | - | - | Silt Loam | |
| 12-20+ | 7.5YR | 4/4 | 100% | - | - | - | - | - | very fine sandy lm | |
| | | | | | | | | | | |
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| | | | | | | | | | | |

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ○ No ◉

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites and Access Roads **City/County:** Town of Anderson, Iron Co. **Sampling Date:** 11-Oct-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** **Wet 8-1**

**Investigator(s):** Ann Michalski, PSS, PWS, WDNR PAWD **Section, Township, Range: S.** 33 **T.** T45N **R.** R1W

**Landform (hillslope, terrace, etc.):** Toeslope **Local relief (concave, convex, none):** concave **Slope:** 0.0 **%** / 0.0 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.331638 **Long.:** 90.502109 **Datum:** WGS84

**Soil Map Unit Name:** Michigamme-Schweitzer-Peshekee-Rock Outcrop Complex, 18 to 35% slopes **NWI classification:** PFO1/PEM1

**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 ○ | **Is the Sampled Area within a Wetland?** | Yes ◉ No ○ |
| **Hydric Soil Present?** | Yes ◉ No ○ | | |
| **Wetland Hydrology Present?** | Yes ◉ No ○ | | |

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

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

| | | | | |
|---|---|---|---|---|
| Surface Water Present? | Yes ◉ No ○ | Depth (inches): | 2 | |
| Water Table Present? | Yes ◉ No ○ | Depth (inches): | 0 | |
| Saturation Present? (includes capillary fringe) | Yes ◉ No ○ | Depth (inches): | 0 | **Wetland Hydrology Present?** Yes ◉ No ○ |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## VEGETATION - Use scientific names of plants

**Sampling Point:** Wet 8-1

| | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| **Tree Stratum** (Plot size: 30' radius) | | | | |
| 1. Fraxinus nigra | 40 | ☑ | 72.7% | FACW |
| 2. Betula alleghaniensis | 15 | ☑ | 27.3% | FAC |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 55 | | **= Total Cover** | |
| **Sapling/Shrub Stratum** (Plot size: 15' radius) | | | | |
| 1. Acer saccharum | 10 | ☑ | 66.7% | FACU |
| 2. Ulmus americana | 5 | ☑ | 33.3% | FACW |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 15 | | **= Total Cover** | |
| **Herb Stratum** (Plot size: 5' radius) | | | | |
| 1. Impatiens capensis | 5 | ☑ | 33.3% | FACW |
| 2. Glyceria striata | 5 | ☑ | 33.3% | OBL |
| 3. Dryopteris carthusiana | 5 | ☑ | 33.3% | FACW |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| 8. | 0 | ☐ | 0.0% | |
| 9. | 0 | ☐ | 0.0% | |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 15 | | **= Total Cover** | |
| **Woody Vine Stratum** (Plot size: 30' radius) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |

**Dominance Test worksheet:**

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 85.7% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | | |
|---|---|---|---|---|
| OBL species | 5 | x 1 = | 5 | |
| FACW species | 55 | x 2 = | 110 | |
| FAC species | 15 | x 3 = | 45 | |
| FACU species | 10 | x 4 = | 40 | |
| UPL species | 0 | x 5 = | 0 | |
| Column Totals: | 85 | (A) | 200 | (B) |

Prevalence Index = B/A = 2.353

**Hydrophytic Vegetation Indicators:**

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ◉ No ○

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** Wet 8-1

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc² | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-6 | N | 2/0 | 100% | - | - | - | - | - | Peaty Muck | |
| 6-20+ | N | 2/0 | 100% | - | - | - | - | - | Muck | |

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ◉ No ○

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites and Access Roads **City/County:** Town of Anderson, Iron Co. **Sampling Date:** 11-Oct-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** **Up 8-1**

**Investigator(s):** Ann Michalski, PSS, PWS, WDNR PAWD **Section, Township, Range: S.** 33 **T.** T45N **R.** R1W

**Landform (hillslope, terrace, etc.):** sideslope **Local relief (concave, convex, none):** convex **Slope:** 3.0 **%** / 1.7 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.331734 **Long.:** 90.502164 **Datum:** WGS84

**Soil Map Unit Name:** Michigamme-Schweitzer-Peshekee-Rock Outcrop Complex, 18 to 35% slopes **NWI classification:** Upland

**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 ◉ | **Is the Sampled Area within a Wetland?** Yes ○ No ◉ |
| **Hydric Soil Present?** Yes ○ No ◉ | |
| **Wetland Hydrology Present?** Yes ○ No ◉ | |

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

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ○ No ◉ | Depth (inches): | |
| Water Table Present? | Yes ○ No ◉ | Depth (inches): | |
| Saturation Present? (includes capillary fringe) | Yes ○ No ◉ | Depth (inches): | **Wetland Hydrology Present?** Yes ○ No ◉ |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## VEGETATION - Use scientific names of plants

**Sampling Point:** Up 8-1

| | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| **Tree Stratum** (Plot size: 30' radius) | | | | |
| 1. Acer saccharum | 50 | ☑ | 83.3% | FACU |
| 2. Betula alleghaniensis | 10 | ☐ | 16.7% | FAC |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 60 | **= Total Cover** | | |
| **Sapling/Shrub Stratum** (Plot size: 15' radius) | | | | |
| 1. Acer saccharum | 15 | ☑ | 75.0% | FACU |
| 2. Ostrya virginiana | 5 | ☑ | 25.0% | FACU |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 20 | **= Total Cover** | | |
| **Herb Stratum** (Plot size: 5' radius) | | | | |
| 1. Acer saccharum | 50 | ☑ | 90.9% | FACU |
| 2. Allium tricoccum | 5 | ☐ | 9.1% | FACU |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| 8. | 0 | ☐ | 0.0% | |
| 9. | 0 | ☐ | 0.0% | |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 55 | **= Total Cover** | | |
| **Woody Vine Stratum** (Plot size: 30' radius) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | **= Total Cover** | | |

**Dominance Test worksheet:**

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | | |
|---|---|---|---|---|
| OBL species | 0 | x 1 = | 0 | |
| FACW species | 0 | x 2 = | 0 | |
| FAC species | 10 | x 3 = | 30 | |
| FACU species | 125 | x 4 = | 500 | |
| UPL species | 0 | x 5 = | 0 | |
| Column Totals: | 135 | (A) | 530 | (B) |

Prevalence Index = B/A = 3.926

**Hydrophytic Vegetation Indicators:**

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ○ No ◉

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** Up 8-1

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc² | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-3 | 7.5YR | 3/1 | 100% | - | - | - | - | - | Fine Sandy Loam | |
| 3-20+ | 7.5YR | 3/4 | 100% | - | - | - | - | - | Sandy Loam | |
| | | | | | | | | | | |
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| | | | | | | | | | | |

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ○ No ◉

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites and Access Roads **City/County:** Town of Anderson, Iron Co. **Sampling Date:** 11-Oct-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** **Wet 9-1**

**Investigator(s):** Ann Michalski, PSS, PWS, WDNR PAWD **Section, Township, Range: S.** 33 **T.** T45N **R.** R1W

**Landform (hillslope, terrace, etc.):** Toeslope **Local relief (concave, convex, none):** concave **Slope:** 1.0 **%** / 0.6 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.331691 **Long.:** 90.501531 **Datum:** WGS84

**Soil Map Unit Name:** Michigamme-Schweitzer-Peshekee-Rock Outcrop Complex, 18 to 35% slopes **NWI classification:** PEM1

**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 ○ | **Is the Sampled Area within a Wetland?** | Yes ◉ No ○ |
| **Hydric Soil Present?** | Yes ◉ No ○ | | |
| **Wetland Hydrology Present?** | Yes ◉ No ○ | | |

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

Vegetation and soils can be considered significantly disturbed because this wetland is located in an area of former mine road and is likely created from the construction of that road. However, these are the new normal circumstances. Soils are considered problematic due to shallow rock that prevents full soil profile viewing but obvious hydrology and vegetation along with topographic position were considered and used to make the wetland determination.

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ○ No ◉ | Depth (inches): | |
| Water Table Present? | Yes ◉ No ○ | Depth (inches): | -3 |
| Saturation Present? (includes capillary fringe) | Yes ◉ No ○ | Depth (inches): | 0 |

**Wetland Hydrology Present?** Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## VEGETATION - Use scientific names of plants

**Sampling Point:** Wet 9-1

| | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| **Tree Stratum** (Plot size: 10' x 20' ) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |
| **Sapling/Shrub Stratum** (Plot size: 10' x 20' ) | | | | |
| 1. Fraxinus nigra | 10 | ☑ | 66.7% | FACW |
| 2. Acer saccharum | 5 | ☑ | 33.3% | FACU |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 15 | | **= Total Cover** | |
| **Herb Stratum** (Plot size: 5' radius ) | | | | |
| 1. Carex crinita | 50 | ☑ | 58.8% | OBL |
| 2. Rubus idaeus | 10 | ☐ | 11.8% | FACU |
| 3. Acer saccharum | 15 | ☐ | 17.6% | FACU |
| 4. Dryopteris intermedia | 10 | ☐ | 11.8% | FAC |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| 8. | 0 | ☐ | 0.0% | |
| 9. | 0 | ☐ | 0.0% | |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 85 | | **= Total Cover** | |
| **Woody Vine Stratum** (Plot size: 10' x 20' ) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |

**Dominance Test worksheet:**

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | | |
|---|---|---|---|---|
| OBL species | 50 | x 1 = | 50 | |
| FACW species | 10 | x 2 = | 20 | |
| FAC species | 10 | x 3 = | 30 | |
| FACU species | 30 | x 4 = | 120 | |
| UPL species | 0 | x 5 = | 0 | |
| Column Totals: | 100 | (A) | 220 | (B) |

Prevalence Index = B/A = 2.200

**Hydrophytic Vegetation Indicators:**

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ◉ No ○

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** Wet 9-1

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc² | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-7 | 7.5YR | 2/1 | 100% | - | - | - | - | - | Silt Loam | |
| 7+ | | | | | | | | | Rock | |

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: Rock

Depth (inches): 7

**Hydric Soil Present?** Yes ◉ No ○

Remarks:

Soils did not meet hydric soil indicators and no redox features were observed. However, hydric soils were assumed based on wetland hydrology and hydric vegetation being present and geomorphic position. Also, observations of upland soils indicate that this dark surface layer is not typical of uplands in this area.

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites and Access Roads **City/County:** Town of Anderson, Iron Co. **Sampling Date:** 11-Oct-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** **Up 9-1**

**Investigator(s):** Ann Michalski, PSS, PWS, WDNR PAWD **Section, Township, Range: S.** 33 **T.** T45N **R.** R1W

**Landform (hillslope, terrace, etc.):** Shoulder slope **Local relief (concave, convex, none):** convex **Slope:** 8.0 **%** / 4.6 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.331716 **Long.:** 90.501606 **Datum:** WGS84

**Soil Map Unit Name:** Michigamme-Schweitzer-Peshekee-Rock Outcrop Complex, 18 to 35% slopes **NWI classification:** Upland

**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 ◉ | **Is the Sampled Area within a Wetland?** | Yes ○ No ◉ |
| **Hydric Soil Present?** | Yes ○ No ◉ | | |
| **Wetland Hydrology Present?** | Yes ○ No ◉ | | |

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

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

| | | | | |
|---|---|---|---|---|
| Surface Water Present? | Yes ○ No ◉ | Depth (inches): | | |
| Water Table Present? | Yes ○ No ◉ | Depth (inches): | | |
| Saturation Present? (includes capillary fringe) | Yes ○ No ◉ | Depth (inches): | **Wetland Hydrology Present?** | Yes ○ No ◉ |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## VEGETATION - Use scientific names of plants

**Sampling Point:** Up 9-1

| | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| **Tree Stratum** (Plot size: 30' radius) | | | | |
| 1. Acer saccharum | 60 | ☑ | 100.0% | FACU |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 60 | | **= Total Cover** | |
| **Sapling/Shrub Stratum** (Plot size: 15' radius) | | | | |
| 1. Acer saccharum | 40 | ☑ | 100.0% | FACU |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 40 | | **= Total Cover** | |
| **Herb Stratum** (Plot size: 5' radius) | | | | |
| 1. Acer saccharum | 40 | ☑ | 66.7% | FACU |
| 2. Adiantum pedatum | 20 | ☑ | 33.3% | FACU |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| 8. | 0 | ☐ | 0.0% | |
| 9. | 0 | ☐ | 0.0% | |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 60 | | **= Total Cover** | |
| **Woody Vine Stratum** (Plot size: 30' radius) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |

**Dominance Test worksheet:**

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | | |
|---|---|---|---|---|
| OBL species | 0 | x 1 = | 0 | |
| FACW species | 0 | x 2 = | 0 | |
| FAC species | 0 | x 3 = | 0 | |
| FACU species | 160 | x 4 = | 640 | |
| UPL species | 0 | x 5 = | 0 | |
| Column Totals: | 160 | (A) | 640 | (B) |

Prevalence Index = B/A = 4.000

**Hydrophytic Vegetation Indicators:**

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ○ No ◉

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** Up 9-1

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc² | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-6 | 7.5YR | 3/2 | 100% | - | - | - | - | - | Silt Loam | |
| 6-20+ | 7.5YR | 3/4 | 100% | - | - | - | - | - | Silt Loam | |

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ○ No ◉

Remarks:

# WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites and Access Roads **City/County:** Town of Anderson, Iron Co. **Sampling Date:** 11-Oct-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** **Wet 10-1**

**Investigator(s):** Ann Michalski, PSS, PWS, WDNR PAWD **Section, Township, Range: S.** 33 **T.** T45N **R.** R1W

**Landform (hillslope, terrace, etc.):** Toeslope **Local relief (concave, convex, none):** concave **Slope:** 0.0 **%** / 0.0 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.331897 **Long.:** 90.501678 **Datum:** WGS84

**Soil Map Unit Name:** Michigamme-Schweitzer-Peshekee-Rock Outcrop Complex, 18 to 35% slopes **NWI classification:** PEM1

**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 ○ | **Is the Sampled Area within a Wetland?** | Yes ◉ No ○ |
| **Hydric Soil Present?** | Yes ◉ No ○ | | |
| **Wetland Hydrology Present?** | Yes ◉ No ○ | | |

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

Hydrology was considered slightly problematic because of seasonal conditions and lack of saturation or water table within the upper 12 inches of the soil profile. However, several other hydrology indicators were present and this area was considered to meet hydrology.

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

| | | | | |
|---|---|---|---|---|
| Surface Water Present? | Yes ○ No ◉ | Depth (inches): | | |
| Water Table Present? | Yes ○ No ◉ | Depth (inches): | | |
| Saturation Present? (includes capillary fringe) | Yes ○ No ◉ | Depth (inches): | -16 | **Wetland Hydrology Present?** Yes ◉ No ○ |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## VEGETATION - Use scientific names of plants

**Sampling Point:** Wet 10-1

| | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| **Tree Stratum** (Plot size: 35' x 10' ) | | | | |
| 1. Ulmus americana | 5 | ☑ | 100.0% | FACW |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 5 | | **= Total Cover** | |
| **Sapling/Shrub Stratum** (Plot size: 35' x 10' ) | | | | |
| 1. Ulmus americana | 15 | ☑ | 100.0% | FACW |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 15 | | **= Total Cover** | |
| **Herb Stratum** (Plot size: 5' radius ) | | | | |
| 1. Dryopteris intermedia | 5 | ☑ | 100.0% | FAC |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| 8. | 0 | ☐ | 0.0% | |
| 9. | 0 | ☐ | 0.0% | |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 5 | | **= Total Cover** | |
| **Woody Vine Stratum** (Plot size: 35' x 10' ) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |

**Dominance Test worksheet:**

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | | |
|---|---|---|---|---|
| OBL species | 0 | x 1 = | 0 | |
| FACW species | 20 | x 2 = | 40 | |
| FAC species | 5 | x 3 = | 15 | |
| FACU species | 0 | x 4 = | 0 | |
| UPL species | 0 | x 5 = | 0 | |
| Column Totals: | 25 | (A) | 55 | (B) |

Prevalence Index = B/A = 2.200

**Hydrophytic Vegetation Indicators:**

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ◉ No ○

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** Wet 10-1

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc² | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-2 | 7.5YR | 2.5/2 | 100% | - | - | - | - | - | Silt Loam | |
| 2-20+ | 7.5YR | 5/2 | 100% | - | - | - | - | - | Loam | |

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ◉ No ○

Remarks:

Soils did not meet hydric soil indicators and no redox features were observed. However, hydric soils were assumed based on wetland hydrology and hydric vegetation being present and geomorphic position. Also, observations of upland soils indicate that this dark surface layer and reduced soils below it is not typical of uplands in this area.

# WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites and Access Roads **City/County:** Town of Anderson, Iron Co. **Sampling Date:** 11-Oct-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** **Up 10-1**

**Investigator(s):** Ann Michalski, PSS, PWS, WDNR PAWD **Section, Township, Range: S.** 33 **T.** T45N **R.** R1W

**Landform (hillslope, terrace, etc.):** Shoulder slope **Local relief (concave, convex, none):** convex **Slope:** 3.0 **%** / 1.7 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.331840 **Long.:** 90.501661 **Datum:** WGS84

**Soil Map Unit Name:** Michigamme-Schweitzer-Peshekee-Rock Outcrop Complex, 18 to 35% slopes **NWI classification:** Upland

**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 ◉ | **Is the Sampled Area within a Wetland?** Yes ○ No ◉ |
| **Hydric Soil Present?** Yes ○ No ◉ | |
| **Wetland Hydrology Present?** Yes ○ No ◉ | |

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

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

**Wetland Hydrology Present?** Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## VEGETATION - Use scientific names of plants

**Sampling Point:** Up 10-1

| | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| **Tree Stratum** (Plot size: 30' radius) | | | | |
| 1. Acer saccharum | 60 | ☑ | 100.0% | FACU |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 60 | = Total Cover | | |
| **Sapling/Shrub Stratum** (Plot size: 15' radius) | | | | |
| 1. Acer saccharum | 25 | ☑ | 100.0% | FACU |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 25 | = Total Cover | | |
| **Herb Stratum** (Plot size: 5' radius) | | | | |
| 1. Acer saccharum | 60 | ☑ | 100.0% | FACU |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| 8. | 0 | ☐ | 0.0% | |
| 9. | 0 | ☐ | 0.0% | |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 60 | = Total Cover | | |
| **Woody Vine Stratum** (Plot size: 30' radius) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | = Total Cover | | |

**Dominance Test worksheet:**

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 145 | x 4 = | 580 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 145 (A) | | 580 (B) |

Prevalence Index = B/A = 4.000

**Hydrophytic Vegetation Indicators:**

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ○ No ◉

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** Up 10-1

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc² | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-6 | 7.5YR | 3/2 | 100% | - | - | - | - | - | Silt Loam | |
| 6-20+ | 7.5YR | 3/4 | 100% | - | - | - | - | - | Silt Loam | |

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ○ No ◉

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites and Access Roads **City/County:** Town of Anderson, Iron Co. **Sampling Date:** 11-Oct-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** **Wet 11-1**

**Investigator(s):** Ann Michalski, PSS, PWS, WDNR PAWD **Section, Township, Range: S.** 33 **T.** T45N **R.** R1W

**Landform (hillslope, terrace, etc.):** Toeslope **Local relief (concave, convex, none):** concave **Slope:** 0.0 **%** / 0.0 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.332130 **Long.:** 90.0501099 **Datum:** WGS84

**Soil Map Unit Name:** Michigamme-Schweitzer-Peshekee-Rock Outcrop Complex, 18 to 35% slopes **NWI classification:** PEM1

**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 ○ | |
| **Hydric Soil Present?** | Yes ◉ | No ○ | **Is the Sampled Area within a Wetland?** Yes ◉ No ○ |
| **Wetland Hydrology Present?** | Yes ◉ | No ○ | |

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

Soils could be considered problematic due to shallow rock that prevents full soil profile viewing but hydrology and vegetation along with topographic position were most heavily considered and hydric soils were assumed based on the other wetland indicators.

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

| | | | | |
|---|---|---|---|---|
| Surface Water Present? | Yes ○ | No ◉ | Depth (inches): | |
| Water Table Present? | Yes ◉ | No ○ | Depth (inches): -6 | |
| Saturation Present? (includes capillary fringe) | Yes ◉ | No ○ | Depth (inches): 0 | **Wetland Hydrology Present?** Yes ◉ No ○ |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## VEGETATION - Use scientific names of plants

**Sampling Point:** Wet 11-1

| | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| **Tree Stratum** (Plot size: 25' x 25' ) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |
| **Sapling/Shrub Stratum** (Plot size: 25' x 25' ) | | | | |
| 1. Fraxinus nigra | 5 | ☑ | 100.0% | FACW |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 5 | | **= Total Cover** | |
| **Herb Stratum** (Plot size: 5' radius ) | | | | |
| 1. Scutellaria lateriflora | 5 | ☑ | 100.0% | OBL |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| 8. | 0 | ☐ | 0.0% | |
| 9. | 0 | ☐ | 0.0% | |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 5 | | **= Total Cover** | |
| **Woody Vine Stratum** (Plot size: 25' x 25' ) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |

**Dominance Test worksheet:**

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | | |
|---|---|---|---|---|
| OBL species | 5 | x 1 = | 5 | |
| FACW species | 5 | x 2 = | 10 | |
| FAC species | 0 | x 3 = | 0 | |
| FACU species | 0 | x 4 = | 0 | |
| UPL species | 0 | x 5 = | 0 | |
| Column Totals: | 10 | (A) | 15 | (B) |

Prevalence Index = B/A = 1.500

**Hydrophytic Vegetation Indicators:**

- ☑ **Rapid Test for Hydrophytic Vegetation**
- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ◉ No ○

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** Wet 11-1

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc² | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-2 | 7.5YR | 2.5/2 | 100% | - | - | - | - | - | Silt Loam | |
| 2-4 | 7.5YR | 4/2 | 100% | - | - | - | - | - | Sandy Loam | |
| 4+ | | | | | | | | | Rock | |

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: Rock

Depth (inches): 4

**Hydric Soil Present?** Yes ◉ No ○

Remarks:

Soils did not meet hydric soil indicators and no redox features were observed. However, hydric soils were assumed based on wetland hydrology and hydric vegetation being present and geomorphic position. Also, observations of upland soils indicate that this dark surface layer and reduced soils below it is not typical of uplands in this area.

# WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites and Access Roads **City/County:** Town of Anderson, Iron Co. **Sampling Date:** 11-Oct-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** **Up 11-1**

**Investigator(s):** Ann Michalski, PSS, PWS, WDNR PAWD **Section, Township, Range:** **S.** 33 **T.** T45N **R.** R1W

**Landform (hillslope, terrace, etc.):** sideslope **Local relief (concave, convex, none):** convex **Slope:** 7.0 **%** / 4.0 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.332172 **Long.:** 90.501166 **Datum:** WGS84

**Soil Map Unit Name:** Michigamme-Schweitzer-Peshekee-Rock Outcrop Complex, 18 to 35% slopes **NWI classification:** Upland

**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 ◉ | **Is the Sampled Area within a Wetland?** | Yes ○ No ◉ |
| **Hydric Soil Present?** | Yes ○ No ◉ | | |
| **Wetland Hydrology Present?** | Yes ○ No ◉ | | |

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

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

| | | | | |
|---|---|---|---|---|
| Surface Water Present? | Yes ○ No ◉ | Depth (inches): | | |
| Water Table Present? | Yes ○ No ◉ | Depth (inches): | | |
| Saturation Present? (includes capillary fringe) | Yes ○ No ◉ | Depth (inches): | **Wetland Hydrology Present?** | Yes ○ No ◉ |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## VEGETATION - Use scientific names of plants

**Sampling Point:** Up 11-1

| | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| **Tree Stratum** (Plot size: 30' radius) | | | | |
| 1. Acer saccharum | 50 | ☑ | 83.3% | FACU |
| 2. Acer rubrum | 10 | ☐ | 16.7% | FAC |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 60 | **= Total Cover** | | |
| **Sapling/Shrub Stratum** (Plot size: 15' radius) | | | | |
| 1. Acer saccharum | 10 | ☑ | 100.0% | FACU |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 10 | **= Total Cover** | | |
| **Herb Stratum** (Plot size: 5' radius) | | | | |
| 1. Acer saccharum | 35 | ☑ | 87.5% | FACU |
| 2. Dryopteris intermedia | 5 | ☐ | 12.5% | FAC |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| 8. | 0 | ☐ | 0.0% | |
| 9. | 0 | ☐ | 0.0% | |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 40 | **= Total Cover** | | |
| **Woody Vine Stratum** (Plot size: 30' radius) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | **= Total Cover** | | |

**Dominance Test worksheet:**

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | | |
|---|---|---|---|---|
| OBL species | 0 | x 1 = | 0 | |
| FACW species | 0 | x 2 = | 0 | |
| FAC species | 15 | x 3 = | 45 | |
| FACU species | 95 | x 4 = | 380 | |
| UPL species | 0 | x 5 = | 0 | |
| Column Totals: | 110 | (A) | 425 | (B) |

Prevalence Index = B/A = 3.864

**Hydrophytic Vegetation Indicators:**

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ○ No ◉

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** Up 11-1

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc² | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-5 | 7.5YR | 3/2 | 100% | - | - | - | - | - | Silt Loam | |
| 5-20+ | 7.5YR | 3/4 | 100% | - | - | - | - | - | Silt Loam | |

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ○ No ◉

Remarks:

# WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites and Access Roads **City/County:** Town of Anderson, Iron Co. **Sampling Date:** 11-Oct-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** **Wet 12-1**

**Investigator(s):** Ann Michalski, PSS, PWS, WDNR PAWD **Section, Township, Range: S.** 33 **T.** T45N **R.** R1W

**Landform (hillslope, terrace, etc.):** Toeslope **Local relief (concave, convex, none):** concave **Slope:** 0.0 **%** / 0.0 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.331783 **Long.:** 90.501060 **Datum:** WGS84

**Soil Map Unit Name:** Michigamme-Schweitzer-Peshekee-Rock Outcrop Complex, 18 to 35% slopes **NWI classification:** PEM1

**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 ○ | **Is the Sampled Area within a Wetland?** | Yes ◉ No ○ |
| **Hydric Soil Present?** | Yes ◉ No ○ | | |
| **Wetland Hydrology Present?** | Yes ◉ No ○ | | |

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

Soils and vegetation could be considered significantly disturbed due to this wetland being located in an area that was historically a mine road. This wetland was likely created from those activities but this is the new normal circumstance.

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

| | | | | |
|---|---|---|---|---|
| Surface Water Present? | Yes ○ | No ◉ | Depth (inches): | |
| Water Table Present? | Yes ◉ | No ○ | Depth (inches): | -6 |
| Saturation Present? (includes capillary fringe) | Yes ◉ | No ○ | Depth (inches): | 0 |

**Wetland Hydrology Present?** Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## VEGETATION - Use scientific names of plants

**Sampling Point:** Wet 12-1

| | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| **Tree Stratum** (Plot size: 30' x 10' ) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |
| **Sapling/Shrub Stratum** (Plot size: 30' x 10' ) | | | | |
| 1. Fraxinus nigra | 5 | ☑ | 100.0% | FACW |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 5 | | **= Total Cover** | |
| **Herb Stratum** (Plot size: 5' radius ) | | | | |
| 1. Onoclea sensibilis | 10 | ☑ | 100.0% | FACW |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| 8. | 0 | ☐ | 0.0% | |
| 9. | 0 | ☐ | 0.0% | |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 10 | | **= Total Cover** | |
| **Woody Vine Stratum** (Plot size: 30' x 10' ) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |

**Dominance Test worksheet:**

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | | |
|---|---|---|---|---|
| OBL species | 0 | x 1 = | 0 | |
| FACW species | 15 | x 2 = | 30 | |
| FAC species | 0 | x 3 = | 0 | |
| FACU species | 0 | x 4 = | 0 | |
| UPL species | 0 | x 5 = | 0 | |
| Column Totals: | 15 | (A) | 30 | (B) |

Prevalence Index = B/A = 2.000

**Hydrophytic Vegetation Indicators:**

- ☑ **Rapid Test for Hydrophytic Vegetation**
- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ◉ No ○

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** Wet 12-1

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc² | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-7 | 7.5YR | 3/2 | 100% | - | - | - | - | - | Silt Loam | |
| 7-20+ | 7.5YR | 5/2 | 75% | 5YR | 5/3 | 25% | C | M | Silty Clay Loam | |

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ◉ No ○

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites and Access Roads **City/County:** Town of Anderson, Iron Co. **Sampling Date:** 11-Oct-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** **Up 12-1**

**Investigator(s):** Ann Michalski, PSS, PWS, WDNR PAWD **Section, Township, Range: S.** 33 **T.** T45N **R.** R1W

**Landform (hillslope, terrace, etc.):** sideslope **Local relief (concave, convex, none):** convex **Slope:** 7.0 **%** / 4.0 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.331837 **Long.:** 90.501102 **Datum:** WGS84

**Soil Map Unit Name:** Michigamme-Schweitzer-Peshekee-Rock Outcrop Complex, 18 to 35% slopes **NWI classification:** Upland

**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 ◉ | **Is the Sampled Area within a Wetland?** Yes ○ No ◉ |
| **Hydric Soil Present?** Yes ○ No ◉ | |
| **Wetland Hydrology Present?** Yes ○ No ◉ | |

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

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

**Wetland Hydrology Present?** Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## VEGETATION - Use scientific names of plants

**Sampling Point:** Up 12-1

| | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| **Tree Stratum** (Plot size: 30' radius) | | | | |
| 1. Acer saccharum | 50 | ☑ | 100.0% | FACU |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 50 | | **= Total Cover** | |
| **Sapling/Shrub Stratum** (Plot size: 15' radius) | | | | |
| 1. Acer saccharum | 15 | ☑ | 50.0% | FACU |
| 2. Ostrya virginiana | 15 | ☑ | 50.0% | FACU |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 30 | | **= Total Cover** | |
| **Herb Stratum** (Plot size: 5' radius) | | | | |
| 1. Acer saccharum | 60 | ☑ | 85.7% | FACU |
| 2. Allium tricoccum | 5 | ☐ | 7.1% | FACU |
| 3. Caulophyllum thalictroides | 5 | ☐ | 7.1% | UPL |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| 8. | 0 | ☐ | 0.0% | |
| 9. | 0 | ☐ | 0.0% | |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 70 | | **= Total Cover** | |
| **Woody Vine Stratum** (Plot size: 30' radius) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |

**Dominance Test worksheet:**

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | | |
|---|---|---|---|---|
| OBL species | 0 | x 1 = | 0 | |
| FACW species | 0 | x 2 = | 0 | |
| FAC species | 0 | x 3 = | 0 | |
| FACU species | 145 | x 4 = | 580 | |
| UPL species | 5 | x 5 = | 25 | |
| Column Totals: | 150 | (A) | 605 | (B) |

Prevalence Index = B/A = 4.033

**Hydrophytic Vegetation Indicators:**

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ○ No ◉

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** Up 12-1

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc² | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-5 | 7.5YR | 3/3 | 100% | - | - | - | - | - | very fine sandy lm | |
| 5-20+ | 7.5YR | 4/4 | 100% | - | - | - | - | - | Sandy Loam | |

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ○ No ◉

Remarks:

# WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites and Access Roads **City/County:** Town of Anderson, Iron Co. **Sampling Date:** 11-Oct-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** **Wet 13-1**

**Investigator(s):** Ann Michalski, PSS, PWS, WDNR PAWD **Section, Township, Range: S.** 33 **T.** T45N **R.** R1W

**Landform (hillslope, terrace, etc.):** Toeslope **Local relief (concave, convex, none):** concave **Slope:** 0.0 **%** / 0.0 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.332304 **Long.:** 90.500532 **Datum:** WGS84

**Soil Map Unit Name:** Michigamme-Schweitzer-Peshekee-Rock Outcrop Complex, 18 to 35% slopes **NWI classification:** PEM1

**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 ○ | |
| **Hydric Soil Present?** | Yes ◉ | No ○ | **Is the Sampled Area within a Wetland?** Yes ◉ No ○ |
| **Wetland Hydrology Present?** | Yes ◉ | No ○ | |

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

Soils could be considered problematic due to shallow rock that prevents full soil profile viewing but hydrology and vegetation along with topographic position were most heavily considered and hydric soils were assumed based on the other wetland indicators. Also, vegetation and soils appear to have been altered by historic mining activities and this area is considered significantly disturbed but this is the new normal circumstance.

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

| | | | | |
|---|---|---|---|---|
| Surface Water Present? | Yes ○ | No ◉ | Depth (inches): | |
| Water Table Present? | Yes ◉ | No ○ | Depth (inches): -2 | |
| Saturation Present? (includes capillary fringe) | Yes ◉ | No ○ | Depth (inches): 0 | **Wetland Hydrology Present?** Yes ◉ No ○ |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## VEGETATION - Use scientific names of plants

**Sampling Point:** Wet 13-1

| | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| **Tree Stratum** (Plot size: 30' radius) | | | | |
| 1. Ulmus americana | 5 | ☑ | 100.0% | FACW |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 5 | | **= Total Cover** | |
| **Sapling/Shrub Stratum** (Plot size: 15' radius) | | | | |
| 1. Acer saccharum | 10 | ☑ | 71.4% | FACU |
| 2. Ulmus americana | 2 | ☐ | 14.3% | FACW |
| 3. Fraxinus nigra | 2 | ☐ | 14.3% | FACW |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 14 | | **= Total Cover** | |
| **Herb Stratum** (Plot size: 5' radius) | | | | |
| 1. Carex oligosperma | 20 | ☑ | 30.8% | OBL |
| 2. Glyceria striata | 35 | ☑ | 53.8% | OBL |
| 3. Carex crinita | 5 | ☐ | 7.7% | OBL |
| 4. Dryopteris intermedia | 5 | ☐ | 7.7% | FAC |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| 8. | 0 | ☐ | 0.0% | |
| 9. | 0 | ☐ | 0.0% | |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 65 | | **= Total Cover** | |
| **Woody Vine Stratum** (Plot size: 30' radius) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |

**Dominance Test worksheet:**

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | | |
|---|---|---|---|---|
| OBL species | 60 | x 1 = | 60 | |
| FACW species | 9 | x 2 = | 18 | |
| FAC species | 5 | x 3 = | 15 | |
| FACU species | 10 | x 4 = | 40 | |
| UPL species | 0 | x 5 = | 0 | |
| Column Totals: | 84 | (A) | 133 | (B) |

Prevalence Index = B/A = 1.583

**Hydrophytic Vegetation Indicators:**

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ◉ No ○

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** Wet 13-1

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc² | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-4 | 7.5YR | 2.5/1 | 100% | - | - | - | - | - | Silt Loam | |
| 4-7 | 7.5YR | 5/2 | 100% | - | - | - | - | - | Silt Loam | |
| 7+ | - | - | - | - | - | - | - | - | Rock | |

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: Rock

Depth (inches): 7

**Hydric Soil Present?** Yes ◉ No ○

Remarks:

Soils did not meet hydric soil indicators and no redox features were observed due to shallow rock. However, hydric soils were assumed based on wetland hydrology and hydric vegetation being present and geomorphic position.

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites and Access Roads **City/County:** Town of Anderson, Iron Co. **Sampling Date:** 11-Oct-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** **Up 13-1**

**Investigator(s):** Ann Michalski, PSS, PWS, WDNR PAWD **Section, Township, Range: S.** 33 **T.** T45N **R.** R1W

**Landform (hillslope, terrace, etc.):** sideslope **Local relief (concave, convex, none):** convex **Slope:** 6.0 **%** / 3.4 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.332258 **Long.:** 90.500687 **Datum:** WGS84

**Soil Map Unit Name:** Michigamme-Schweitzer-Peshekee-Rock Outcrop Complex, 18 to 35% slopes **NWI classification:** Upland

**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 ◉ | **Is the Sampled Area within a Wetland?** Yes ○ No ◉ |
| **Hydric Soil Present?** Yes ○ No ◉ | |
| **Wetland Hydrology Present?** Yes ○ No ◉ | |

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

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ○ No ◉ | Depth (inches): | |
| Water Table Present? | Yes ○ No ◉ | Depth (inches): | |
| Saturation Present? (includes capillary fringe) | Yes ○ No ◉ | Depth (inches): | **Wetland Hydrology Present?** Yes ○ No ◉ |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## VEGETATION - Use scientific names of plants

**Sampling Point:** Up 13-1

| | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| **Tree Stratum** (Plot size: 30' radius) | | | | |
| 1. Acer saccharum | 50 | ☑ | 76.9% | FACU |
| 2. Tilia americana | 15 | ☑ | 23.1% | FACU |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 65 | **= Total Cover** | | |
| **Sapling/Shrub Stratum** (Plot size: 15' radius) | | | | |
| 1. Acer saccharum | 30 | ☑ | 100.0% | FACU |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 30 | **= Total Cover** | | |
| **Herb Stratum** (Plot size: 5' radius) | | | | |
| 1. Acer saccharum | 35 | ☑ | 77.8% | FACU |
| 2. Dryopteris intermedia | 10 | ☑ | 22.2% | FAC |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| 8. | 0 | ☐ | 0.0% | |
| 9. | 0 | ☐ | 0.0% | |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 45 | **= Total Cover** | | |
| **Woody Vine Stratum** (Plot size: 30' radius) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | **= 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: 5 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 20.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | | |
|---|---|---|---|---|
| OBL species | 0 | x 1 = | 0 | |
| FACW species | 0 | x 2 = | 0 | |
| FAC species | 10 | x 3 = | 30 | |
| FACU species | 130 | x 4 = | 520 | |
| UPL species | 0 | x 5 = | 0 | |
| Column Totals: | 140 | (A) | 550 | (B) |

Prevalence Index = B/A = 3.929

**Hydrophytic Vegetation Indicators:**

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ○ No ◉

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** Up 13-1

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc² | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-3 | 7.5YR | 3/2 | 100% | - | - | - | - | - | very fine sandy lm | |
| 3-20+ | 7.5YR | 3/3 | 100% | - | - | - | - | - | fine sandy lm | |
| | | | | | | | | | | |
| | | | | | | | | | | |
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| | | | | | | | | | | |
| | | | | | | | | | | |

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ○ No ◉

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites and Access Roads **City/County:** Town of Anderson, Iron Co. **Sampling Date:** 11-Oct-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** **Wet 14-1**

**Investigator(s):** Ann Michalski, PSS, PWS, WDNR PAWD **Section, Township, Range: S.** 33 **T.** T45N **R.** R1W

**Landform (hillslope, terrace, etc.):** Toeslope **Local relief (concave, convex, none):** concave **Slope:** 0.0 **%** / 0.0 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.332976 **Long.:** 90.496605 **Datum:** WGS84

**Soil Map Unit Name:** Tula-Gogebic Complex, 0 to 6% slopes, Stony **NWI classification:** PEM1

**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 ○ | |
| **Hydric Soil Present?** | Yes ◉ | No ○ | **Is the Sampled Area within a Wetland?** Yes ◉ No ○ |
| **Wetland Hydrology Present?** | Yes ◉ | No ○ | |

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

Soils could be considered problematic due to shallow rock that prevents full soil profile viewing but hydrology and vegetation along with topographic position were most heavily considered. This location consists of an old mining/logging road that is evident on aerial photos and extends further south in a straight line. It is apparent that construction of the road and later abandonment of that road led to creation of a wetland within the grading limits. However, this is considered the new normal circumstance.

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

| | | | | | |
|---|---|---|---|---|---|
| Surface Water Present? | Yes ○ | No ◉ | Depth (inches): | | |
| Water Table Present? | Yes ◉ | No ○ | Depth (inches): | -2 | |
| Saturation Present? (includes capillary fringe) | Yes ◉ | No ○ | Depth (inches): | 0 | **Wetland Hydrology Present?** Yes ◉ No ○ |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## VEGETATION - Use scientific names of plants

**Sampling Point:** Wet 14-1

| | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| **Tree Stratum** (Plot size: 30' radius) | | | | |
| 1. Betula alleghaniensis | 5 | ☑ | 100.0% | FAC |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 5 | | **= Total Cover** | |
| **Sapling/Shrub Stratum** (Plot size: 15' radius) | | | | |
| 1. Acer saccharum | 5 | ☑ | 33.3% | FACU |
| 2. Betula alleghaniensis | 5 | ☑ | 33.3% | FAC |
| 3. Carpinus caroliniana | 5 | ☑ | 33.3% | FAC |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 15 | | **= Total Cover** | |
| **Herb Stratum** (Plot size: 5' radius) | | | | |
| 1. Glyceria striata | 60 | ☑ | 37.5% | OBL |
| 2. Carex scoparia | 20 | ☑ | 12.5% | FACW |
| 3. Carex crinita | 15 | ☑ | 9.4% | OBL |
| 4. Rubus idaeus ssp. strigosus | 15 | ☑ | 9.4% | FACU |
| 5. Scirpus cyperinus | 15 | ☑ | 9.4% | OBL |
| 6. Symphyotrichum lateriflorum var. lateriflorum | 15 | ☑ | 9.4% | FACW |
| 7. Solidago gigantea | 10 | ☐ | 6.3% | FACW |
| 8. Equisetum sylvaticum | 10 | ☐ | 6.3% | FACW |
| 9. | 0 | ☐ | 0.0% | |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 160 | | **= Total Cover** | |
| **Woody Vine Stratum** (Plot size: 30' radius) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 10 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | | |
|---|---|---|---|---|
| OBL species | 90 | x 1 = | 90 | |
| FACW species | 55 | x 2 = | 110 | |
| FAC species | 15 | x 3 = | 45 | |
| FACU species | 20 | x 4 = | 80 | |
| UPL species | 0 | x 5 = | 0 | |
| Column Totals: | 180 | (A) | 325 | (B) |

Prevalence Index = B/A = 1.806

**Hydrophytic Vegetation Indicators:**

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ◉ No ○

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** Wet 14-1

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc² | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-10 | 7.5YR | 3/1 | 100% | - | - | - | - | - | Silt Loam | |
| 10+ | - | - | - | - | - | - | - | - | Rock | |

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: Rock

Depth (inches): 10

**Hydric Soil Present?** Yes ◉ No ○

Remarks:

Soils did not meet hydric soil indicators and no redox features were observed due to shallow rock. However, hydric soils were assumed based on wetland hydrology and hydric vegetation being present and geomorphic position. Also, the thick surface soils in this location are not typical of upland soils in this area.

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites and Access Roads **City/County:** Town of Anderson, Iron Co. **Sampling Date:** 11-Oct-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** **Up 14-1**

**Investigator(s):** Ann Michalski, PSS, PWS, WDNR PAWD **Section, Township, Range: S.** 33 **T.** T45N **R.** R1W

**Landform (hillslope, terrace, etc.):** sideslope **Local relief (concave, convex, none):** convex **Slope:** 3.0 **%** / 1.7 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.333067 **Long.:** 90.496739 **Datum:** WGS84

**Soil Map Unit Name:** Gogebic Silt Loam, 6 to 18% slopes, very stony, rocky **NWI classification:** Upland

**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 ○ | |
| **Hydric Soil Present?** | Yes ○ | No ◉ | **Is the Sampled Area within a Wetland?** Yes ○ No ◉ |
| **Wetland Hydrology Present?** | Yes ○ | No ◉ | |

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

Soils are somewhat problematic due to shallow rock preventing full soil profile viewing but the upper 12 inches were observed and did not indicate the presence of hydric soils. Hydric vegetation is present primarily due to FAC species that are common in rocky soils.

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

| | | | | |
|---|---|---|---|---|
| Surface Water Present? | Yes ○ | No ◉ | Depth (inches): | |
| Water Table Present? | Yes ○ | No ◉ | Depth (inches): | |
| Saturation Present? (includes capillary fringe) | Yes ○ | No ◉ | Depth (inches): | **Wetland Hydrology Present?** Yes ○ No ◉ |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## VEGETATION - Use scientific names of plants

**Sampling Point:** Up 14-1

| | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| **Tree Stratum** (Plot size: 30' radius) | | | | |
| 1. Acer saccharum | 25 | ☑ | 38.5% | FACU |
| 2. Betula alleghaniensis | 25 | ☑ | 38.5% | FAC |
| 3. Fraxinus pennsylvanica | 15 | ☑ | 23.1% | FACW |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 65 | | **= Total Cover** | |
| **Sapling/Shrub Stratum** (Plot size: 15' radius) | | | | |
| 1. Betula alleghaniensis | 40 | ☑ | 100.0% | FAC |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 40 | | **= Total Cover** | |
| **Herb Stratum** (Plot size: 5' radius) | | | | |
| 1. Acer saccharum | 10 | ☑ | 66.7% | FACU |
| 2. Dryopteris intermedia | 5 | ☑ | 33.3% | FAC |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| 8. | 0 | ☐ | 0.0% | |
| 9. | 0 | ☐ | 0.0% | |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 15 | | **= Total Cover** | |
| **Woody Vine Stratum** (Plot size: 30' radius) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |

**Dominance Test worksheet:**

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | | |
|---|---|---|---|---|
| OBL species | 0 | x 1 = | 0 | |
| FACW species | 15 | x 2 = | 30 | |
| FAC species | 70 | x 3 = | 210 | |
| FACU species | 35 | x 4 = | 140 | |
| UPL species | 0 | x 5 = | 0 | |
| Column Totals: | 120 | (A) | 380 | (B) |

Prevalence Index = B/A = 3.167

**Hydrophytic Vegetation Indicators:**

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☑ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ◉ No ○

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

Hydric vegetation is present in this area but primarily due to FAC species which are common in the rocky areas of this site.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** Up 14-1

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc² | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-12 | 7.5YR | 3/2 | 100% | - | - | - | - | - | Silt Loam | |
| 12+ | - | - | - | - | - | - | - | - | Rock | |

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: Rock

Depth (inches): 12

**Hydric Soil Present?** Yes ○ No ◉

Remarks:

# WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites **City/County:** Town of Anderson, Iron Co. **Sampling Date:** 24-May-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** **Site 1-1**

**Investigator(s):** Ann Michalski, WDNR Prof. Assured **Section, Township, Range: S.** 33 **T.** T45N **R.** R1W

**Landform (hillslope, terrace, etc.):** summit **Local relief (concave, convex, none):** convex **Slope:** 6.0 **%** / 3.4 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.331281 **Long.:** 90.501730 **Datum:** WGS84

**Soil Map Unit Name:** Michigamme-Schweitzer-Peshekee-Rock Outcrop Complex, 35-55%, very stony **NWI classification:** Upland

**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 ◉ | **Is the Sampled Area within a Wetland?** | Yes ○ No ◉ |
| **Hydric Soil Present?** | Yes ○ No ◉ | | |
| **Wetland Hydrology Present?** | Yes ○ No ◉ | | |

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

The original bulk sample site could be considered significantly disturbed but this sample site is a reference site located immediately adjacent to the bulk sample site and this specific location does not appear to have been disturbed.

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

| | | | | |
|---|---|---|---|---|
| Surface Water Present? | Yes ○ No ◉ | Depth (inches): | | |
| Water Table Present? | Yes ○ No ◉ | Depth (inches): | | |
| Saturation Present? (includes capillary fringe) | Yes ○ No ◉ | Depth (inches): | **Wetland Hydrology Present?** | Yes ○ No ◉ |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## VEGETATION - Use scientific names of plants

**Sampling Point:** Site 1-1

| | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| **Tree Stratum** (Plot size: 30' radius) | | | | |
| 1. Acer saccharum | 60 | ☑ | 80.0% | FACU |
| 2. Betula alleghaniensis | 15 | ☑ | 20.0% | FAC |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 75 | | **= Total Cover** | |
| **Sapling/Shrub Stratum** (Plot size: 15' radius) | | | | |
| 1. Acer saccharum | 25 | ☑ | 71.4% | FACU |
| 2. Betula alleghaniensis | 10 | ☑ | 28.6% | FAC |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 35 | | **= Total Cover** | |
| **Herb Stratum** (Plot size: 5' radius) | | | | |
| 1. Cardamine concatenata | 15 | ☑ | 37.5% | FACU |
| 2. Carex pensylvanica | 15 | ☑ | 37.5% | UPL |
| 3. Maianthemum canadense | 5 | ☐ | 12.5% | FACU |
| 4. Allium tricoccum | 5 | ☐ | 12.5% | FACU |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| 8. | 0 | ☐ | 0.0% | |
| 9. | 0 | ☐ | 0.0% | |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 40 | | **= Total Cover** | |
| **Woody Vine Stratum** (Plot size: 30 ' radius) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |

**Dominance Test worksheet:**

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | | |
|---|---|---|---|---|
| OBL species | 0 | x 1 = | 0 | |
| FACW species | 0 | x 2 = | 0 | |
| FAC species | 25 | x 3 = | 75 | |
| FACU species | 110 | x 4 = | 440 | |
| UPL species | 15 | x 5 = | 75 | |
| Column Totals: | 150 | (A) | 590 | (B) |

Prevalence Index = B/A = 3.933

**Hydrophytic Vegetation Indicators:**

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ○ No ◉

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** Site 1-1

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc² | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-5 | 7.5YR | 3/2 | 100% | - | - | - | - | - | Sandy Loam | |
| 5-20+ | 7.5YR | 3/4 | 100% | - | - | - | - | - | Sandy Loam | |

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ○ No ◉

Remarks:

No redoximorphic features observed

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites **City/County:** Town of Anderson, Iron Co. **Sampling Date:** 24-May-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** **Site 2-1**

**Investigator(s):** Ann Michalski, WDNR Prof. Assured **Section, Township, Range: S.** 33 **T.** T45N **R.** R1W

**Landform (hillslope, terrace, etc.):** Toeslope **Local relief (concave, convex, none):** concave **Slope:** 3.0 **%** / 1.7 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.333057 **Long.:** 499220 **Datum:** WGS84

**Soil Map Unit Name:** Michigamme-Schweitzer-Peshekee-Rock Outcrop Complex, 35-55%, very stony **NWI classification:** Upland

**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 ○ | |
| **Hydric Soil Present?** | Yes ○ | No ◉ | **Is the Sampled Area within a Wetland?** Yes ○ No ◉ |
| **Wetland Hydrology Present?** | Yes ◉ | No ○ | |

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

Vegetation, soil and hydrology are significantly disturbed from the historic bulk sample site in this location. All vegetation was cleared from this area at one time. Soils are also disturbed from mining activities. Hydrology could also be considered altered due to a change in topography that makes this location the lowest point in the landscape where water pools after heavy precipitation. Although this location has standing water and FAC species present, it was determined that this location is not a wetland based on high chroma soils and observations of reference sites. This site was observed during a follow up site visit and all indications of hydrology were absent and some upland herbaceous vegetation was starting to emerge. Soils could be considered problematic due to shallow rock preventing full soil profile viewing but topographic position, vegetation and lack of hydrology indicators were observed to make a determination here. The site conditions are considered the normal circumstance due to the time since the activities occurred.

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

| | | | | |
|---|---|---|---|---|
| Surface Water Present? | Yes ◉ | No ○ | Depth (inches): 3 | |
| Water Table Present? | Yes ◉ | No ○ | Depth (inches): 0 | |
| Saturation Present? (includes capillary fringe) | Yes ◉ | No ○ | Depth (inches): 0 | **Wetland Hydrology Present?** Yes ◉ No ○ |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Standing water was present at the time of the visit but precipitation had been much higher than normal in the days and weeks prior and standing water is common over rock after a heavy rainfall event but typically infiltrates quickly. This site was dry during a follow up site visit and no signs of hydrology were observed.

## VEGETATION - Use scientific names of plants

**Sampling Point:** Site 2-1

| | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| **Tree Stratum** (Plot size: 30' radius) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 0 | **= Total Cover** | | |
| **Sapling/Shrub Stratum** (Plot size: 15' radius) | | | | |
| 1. Abies balsamea | 15 | ☑ | 100.0% | FAC |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 15 | **= Total Cover** | | |
| **Herb Stratum** (Plot size: 5' radius) | | | | |
| 1. Betula alleghaniensis | 20 | ☑ | 66.7% | FAC |
| 2. Abies balsamea | 10 | ☑ | 33.3% | FAC |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| 8. | 0 | ☐ | 0.0% | |
| 9. | 0 | ☐ | 0.0% | |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 30 | **= Total Cover** | | |
| **Woody Vine Stratum** (Plot size: 30 ' radius) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | **= Total Cover** | | |

**Dominance Test worksheet:**

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | | |
|---|---|---|---|---|
| OBL species | 0 | x 1 = | 0 | |
| FACW species | 0 | x 2 = | 0 | |
| FAC species | 45 | x 3 = | 135 | |
| FACU species | 0 | x 4 = | 0 | |
| UPL species | 0 | x 5 = | 0 | |
| Column Totals: | 45 | (A) | 135 | (B) |

Prevalence Index = B/A = 3.000

**Hydrophytic Vegetation Indicators:**

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ◉ No ○

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

This location meets the dominance test only due to FAC species which can also occur in uplands.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** Site 2-1

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc² | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-11 | 7.5YR | 3/4 | 100% | - | - | - | - | - | Sandy Loam | |
| 11+ | - | - | - | - | - | - | - | - | Rock | |

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: Rock

Depth (inches): 11

**Hydric Soil Present?** Yes ○ No ◉

Remarks:

Shallow rock prevented full soil profile viewing but observations of soils with high chroma and a follow up site visit determined this area is upland, along with best professional judgment and concurrence from regulatory agencies. No redox features were observed.

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites **City/County:** Town of Anderson, Iron Co. **Sampling Date:** 24-May-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** Site 2-2

**Investigator(s):** Ann Michalski, WDNR Prof. Assured **Section, Township, Range:** **S.** 33 **T.** T45N **R.** R1W

**Landform (hillslope, terrace, etc.):** summit **Local relief (concave, convex, none):** convex **Slope:** 6.0 % / 3.4 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.333310 **Long.:** 90.499084 **Datum:** WGS84

**Soil Map Unit Name:** Michigamme-Schweitzer-Peshekee-Rock Outcrop Complex, 35-55%, very stony **NWI classification:** Upland

**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 ◉ | **Is the Sampled Area within a Wetland?** | Yes ○ No ◉ |
| **Hydric Soil Present?** | Yes ○ No ◉ | | |
| **Wetland Hydrology Present?** | Yes ○ No ◉ | | |

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

Although a historic bulk sample site is located in this area, this sample site is representative of the areas surrounding that site and is not disturbed.

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ○ No ◉ | Depth (inches): | |
| Water Table Present? | Yes ○ No ◉ | Depth (inches): | |
| Saturation Present? (includes capillary fringe) | Yes ○ No ◉ | Depth (inches): | **Wetland Hydrology Present?** Yes ○ No ◉ |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## VEGETATION - Use scientific names of plants

**Sampling Point:** Site 2-2

| | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| **Tree Stratum** (Plot size: 30' radius) | | | | |
| 1. Acer saccharum | 60 | ☑ | 100.0% | FACU |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 60 | | **= Total Cover** | |
| **Sapling/Shrub Stratum** (Plot size: 15' radius) | | | | |
| 1. Acer saccharum | 25 | ☑ | 71.4% | FACU |
| 2. Ostrya virginiana | 10 | ☑ | 28.6% | FACU |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 35 | | **= Total Cover** | |
| **Herb Stratum** (Plot size: 5' radius) | | | | |
| 1. Acer saccharum | 30 | ☑ | 60.0% | FACU |
| 2. Corylus americana | 10 | ☑ | 20.0% | FACU |
| 3. Maianthemum canadense | 10 | ☑ | 20.0% | FACU |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| 8. | 0 | ☐ | 0.0% | |
| 9. | 0 | ☐ | 0.0% | |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 50 | | **= Total Cover** | |
| **Woody Vine Stratum** (Plot size: 30 ' radius) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |

**Dominance Test worksheet:**

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | | |
|---|---|---|---|---|
| OBL species | 0 | x 1 = | 0 | |
| FACW species | 0 | x 2 = | 0 | |
| FAC species | 0 | x 3 = | 0 | |
| FACU species | 145 | x 4 = | 580 | |
| UPL species | 0 | x 5 = | 0 | |
| Column Totals: | 145 | (A) | 580 | (B) |

Prevalence Index = B/A = 4.000

**Hydrophytic Vegetation Indicators:**

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ○ No ◉

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** Site 2-2

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc² | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-6 | 7.5YR | 3/2 | 100% | - | - | - | - | - | Loam | |
| 6-20+ | 7.5YR | 3/3 | 100% | - | - | - | - | - | Loam | |

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ○ No ◉

Remarks:

No redoximorphic features observed

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites **City/County:** Town of Morse, Ashland Co. **Sampling Date:** 24-May-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** Site 3 -1

**Investigator(s):** Ann Michalski, WDNR Prof. Assured **Section, Township, Range: S.** 1 **T.** T44N **R.** R2W

**Landform (hillslope, terrace, etc.):** summit **Local relief (concave, convex, none):** convex **Slope:** 6.0 % / 3.4 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.317317 **Long.:** 90.554784 **Datum:** WGS84

**Soil Map Unit Name:** Dishno-Gogebic-Peshekee-Rock Outcrop Complex, 18-35%, very stony **NWI classification:** Upland

**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 ◉ | **Is the Sampled Area within a Wetland?** | Yes ○ No ◉ |
| **Hydric Soil Present?** | Yes ○ No ◉ | | |
| **Wetland Hydrology Present?** | Yes ○ No ◉ | | |

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

Vegetation, soil and hydrology are significantly disturbed from historic silvicultural roads in this location. All woody vegetation was cleared from this area at one time. Soils are also disturbed and are likely different soil profiles than prior to grading activities. Hydrology is likely unaltered from its original condition given the topographic position of this site which is high and sheds stormwater readily. Soils are naturally problematic due to shallow rock preventing full soil profile viewing. Topographic position, upland vegetation and lack of hydrology indicators were most heavily considered in making a determination in this location. The current conditions are considered the normal circumstance due to the time since activities occurred.

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ○ No ◉ | Depth (inches): | |
| Water Table Present? | Yes ○ No ◉ | Depth (inches): | |
| Saturation Present? (includes capillary fringe) | Yes ○ No ◉ | Depth (inches): | **Wetland Hydrology Present?** Yes ○ No ◉ |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## VEGETATION - Use scientific names of plants

**Sampling Point:** Site 3 -1

| | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| **Tree Stratum** (Plot size: 30' radius) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |
| **Sapling/Shrub Stratum** (Plot size: 15' radius) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |
| **Herb Stratum** (Plot size: 5' radius) | | | | |
| 1. Hieracium aurantiacum | 50 | ☑ | 71.4% | UPL |
| 2. Fragaria virginiana | 15 | ☑ | 21.4% | FACU |
| 3. Populus tremula | 5 | ☐ | 7.1% | FAC |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| 8. | 0 | ☐ | 0.0% | |
| 9. | 0 | ☐ | 0.0% | |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 70 | | **= Total Cover** | |
| **Woody Vine Stratum** (Plot size: 30 ' radius) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |

**Dominance Test worksheet:**

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | | |
|---|---|---|---|---|
| OBL species | 0 | x 1 = | 0 | |
| FACW species | 0 | x 2 = | 0 | |
| FAC species | 5 | x 3 = | 15 | |
| FACU species | 15 | x 4 = | 60 | |
| UPL species | 50 | x 5 = | 250 | |
| Column Totals: | 70 | (A) | 325 | (B) |

Prevalence Index = B/A = 4.643

**Hydrophytic Vegetation Indicators:**

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ○ No ◉

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** Site 3 -1

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc² | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-4 | 7.5YR | 3/3 | 100% | - | - | - | - | - | Loam | |
| 4+ | - | - | - | - | - | - | - | - | Rock | |

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: Rock

Depth (inches): 4

**Hydric Soil Present?** Yes ○ No ◉

Remarks:

Shallow rock prevented full soil profile viewing but observations of topography, a dominance of upland vegetation and lack of hydrology indicators was used to help make a determination in this location.

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites **City/County:** Town of Morse, Ashland Co. **Sampling Date:** 24-May-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** **Site 4-1**

**Investigator(s):** Ann Michalski, WDNR Prof. Assured **Section, Township, Range: S.** 1 **T.** T44N **R.** R2W

**Landform (hillslope, terrace, etc.):** Shoulder slope **Local relief (concave, convex, none):** convex **Slope:** 3.0 **%** / 1.7 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.319511 **Long.:** 90.554909 **Datum:** WGS84

**Soil Map Unit Name:** Dishno-Gogebic-Peshekee-Rock Outcrop Complex, 18-35%, very stony **NWI classification:** Upland

**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 ◉ | **Is the Sampled Area within a Wetland?** | Yes ○ No ◉ |
| **Hydric Soil Present?** | Yes ○ No ◉ | | |
| **Wetland Hydrology Present?** | Yes ○ No ◉ | | |

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

Vegetation, soil and hydrology are significantly disturbed from historic bulk sampling in this location at one time. However this specific location is a reference site adjacent to the original bulk sample site and was relatively natural. The bulk sample site had a few inches of soil and some vegetation that was observed and all indicated upland. Soils could be considered problematic to due shallow rock preventing full soil profile viewing but topographic location, upland vegetation and lack of hydrology along with best professional judgement was used to make a determination here.

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ○ No ◉ | Depth (inches): | |
| Water Table Present? | Yes ○ No ◉ | Depth (inches): | |
| Saturation Present? (includes capillary fringe) | Yes ○ No ◉ | Depth (inches): | **Wetland Hydrology Present?** Yes ○ No ◉ |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## VEGETATION - Use scientific names of plants

**Sampling Point:** Site 4-1

| | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| **Tree Stratum** (Plot size: 30' radius) | | | | |
| 1. Acer saccharum | 30 | ☑ | 37.5% | FACU |
| 2. Betula alleghaniensis | 25 | ☑ | 31.3% | FAC |
| 3. Populus tremula | 15 | ☐ | 18.8% | FAC |
| 4. Betula papyrifera | 10 | ☐ | 12.5% | FACU |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 80 | | **= Total Cover** | |
| **Sapling/Shrub Stratum** (Plot size: 15' radius) | | | | |
| 1. Acer saccharum | 30 | ☑ | 75.0% | FACU |
| 2. Betula alleghaniensis | 10 | ☑ | 25.0% | FAC |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 40 | | **= Total Cover** | |
| **Herb Stratum** (Plot size: 5' radius) | | | | |
| 1. Erythronium americanum | 40 | ☑ | 57.1% | UPL |
| 2. Maianthemum canadense | 15 | ☑ | 21.4% | FACU |
| 3. Allium tricoccum | 10 | ☐ | 14.3% | FACU |
| 4. Ribes cynosbati | 5 | ☐ | 7.1% | FACU |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| 8. | 0 | ☐ | 0.0% | |
| 9. | 0 | ☐ | 0.0% | |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 70 | | **= Total Cover** | |
| **Woody Vine Stratum** (Plot size: 30 ' radius) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |

**Dominance Test worksheet:**

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | | |
|---|---|---|---|---|
| OBL species | 0 | x 1 = | 0 | |
| FACW species | 0 | x 2 = | 0 | |
| FAC species | 50 | x 3 = | 150 | |
| FACU species | 100 | x 4 = | 400 | |
| UPL species | 40 | x 5 = | 200 | |
| Column Totals: | 190 | (A) | 750 | (B) |

Prevalence Index = B/A = 3.947

**Hydrophytic Vegetation Indicators:**

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ○ No ◉

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** Site 4-1

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc² | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-5 | 7.5YR | 2.5/2 | 100% | - | - | - | - | - | Sandy Loam | |
| 5+ | - | - | - | - | - | - | - | - | Rock | |

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: Rock

Depth (inches): 5

**Hydric Soil Present?** Yes ○ No ◉

Remarks:

Shallow rock prevented full soil profile viewing but observations of topography, a dominance of upland vegetation and lack of hydrology indicators was used to make a determination here.

# WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites **City/County:** Town of Anderson, Iron Co. **Sampling Date:** 08-Jul-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** SB-1

**Investigator(s):** Ann Michalski, WDNR Prof. Assured **Section, Township, Range:** **S.** 33 **T.** T45N **R.** R1W

**Landform (hillslope, terrace, etc.):** sideslope/drainageway **Local relief (concave, convex, none):** concave **Slope:** 6.0 % / 3.4 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.333407 **Long.:** 90.497387 **Datum:** WGS84

**Soil Map Unit Name:** Gogebic Silt Loam, 18 to 35% slopes, very stony, rocky **NWI classification:** Upland

**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 ◉ | **Is the Sampled Area within a Wetland?** | Yes ○ No ◉ |
| **Hydric Soil Present?** | Yes ○ No ◉ | | |
| **Wetland Hydrology Present?** | Yes ○ No ◉ | | |

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

This specific sample location was evaluated because it appears to be an upland drainageway that only flows or has water present immediately after precipication events and is otherwise dry. Upland soils and vegetation were present but this area may be considered a wetland connection by regulatory staff. Rock was present at 12 inches but this area was not considered problematic since the upper 12 inches of the soil profile was observable.

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ○ No ◉ | Depth (inches): | |
| Water Table Present? | Yes ○ No ◉ | Depth (inches): | |
| Saturation Present? (includes capillary fringe) | Yes ○ No ◉ | Depth (inches): | **Wetland Hydrology Present?** Yes ○ No ◉ |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## VEGETATION - Use scientific names of plants

**Sampling Point:** SB-1

| | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| **Tree Stratum** (Plot size: 21' x 5' ) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 0 | **= Total Cover** | | |
| **Sapling/Shrub Stratum** (Plot size: 21' x 5' ) | | | | |
| 1. Acer saccharum | 25 | ☑ | 100.0% | FACU |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 25 | **= Total Cover** | | |
| **Herb Stratum** (Plot size: 21' x 5' ) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| 8. | 0 | ☐ | 0.0% | |
| 9. | 0 | ☐ | 0.0% | |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 0 | **= Total Cover** | | |
| **Woody Vine Stratum** (Plot size: 21' x 5' ) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | **= Total Cover** | | |

**Dominance Test worksheet:**

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | | |
|---|---|---|---|---|
| OBL species | 0 | x 1 = | 0 | |
| FACW species | 0 | x 2 = | 0 | |
| FAC species | 0 | x 3 = | 0 | |
| FACU species | 25 | x 4 = | 100 | |
| UPL species | 0 | x 5 = | 0 | |
| Column Totals: | 25 | (A) | 100 | (B) |

Prevalence Index = B/A = 4.000

**Hydrophytic Vegetation Indicators:**

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ○ No ◉

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** SB-1

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc² | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-6 | 7.5YR | 3/2 | 100% | - | - | - | - | - | Silt Loam | |
| 6-12 | 7.5YR | 3/4 | 100% | - | - | - | - | - | Silt Loam | |
| 12+ | - | - | - | - | - | - | - | - | Rock | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
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| | | | | | | | | | | |
| | | | | | | | | | | |

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: Rock

Depth (inches): 12

**Hydric Soil Present?** Yes ○ No ◉

Remarks:

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites and Access Roads **City/County:** Town of Anderson, Iron Co. **Sampling Date:** 11-Oct-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** SB2

**Investigator(s):** Ann Michalski, PSS, PWS, WDNR PAWD **Section, Township, Range: S.** 33 **T.** T45N **R.** R1W

**Landform (hillslope, terrace, etc.):** Toeslope **Local relief (concave, convex, none):** concave **Slope:** 1.0 % / 0.6 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.332171 **Long.:** 90.798816 **Datum:** WGS84

**Soil Map Unit Name:** Michigamme-Schweitzer-Peshekee-Rock Outcrop Complex, 18 to 35% slopes **NWI classification:** Upland

**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 ◉ | |
| **Hydric Soil Present?** | Yes ○ | No ◉ | **Is the Sampled Area within a Wetland?** Yes ○ No ◉ |
| **Wetland Hydrology Present?** | Yes ◉ | No ○ | |

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

Soils, vegetation and hydrology could be considered disturbed here because this location is a historic borrow pit that was obviously excavated out of uplands. However, this is the new normal circumstance.

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

| | | | | |
|---|---|---|---|---|
| Surface Water Present? | Yes ◉ | No ○ | Depth (inches): 2 | |
| Water Table Present? | Yes ◉ | No ○ | Depth (inches): 0 | |
| Saturation Present? (includes capillary fringe) | Yes ◉ | No ○ | Depth (inches): 0 | **Wetland Hydrology Present?** Yes ◉ No ○ |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Hydrology was present in this location but apparently only for short periods of time after precipitation events. Soils did not meet hydric soil criteria and this location is not wetland.

## VEGETATION - Use scientific names of plants

**Sampling Point:** SB2

| | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| **Tree Stratum** (Plot size: 5' x 7' ) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |
| **Sapling/Shrub Stratum** (Plot size: 5' x 7' ) | | | | |
| 1. Acer saccharum | 10 | ☑ | 100.0% | FACU |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 10 | | **= Total Cover** | |
| **Herb Stratum** (Plot size: 5' x 7' ) | | | | |
| 1. Acer saccharum | 5 | ☑ | 100.0% | FACU |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| 8. | 0 | ☐ | 0.0% | |
| 9. | 0 | ☐ | 0.0% | |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 5 | | **= Total Cover** | |
| **Woody Vine Stratum** (Plot size: 5' x 7' ) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |

**Dominance Test worksheet:**

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | | |
|---|---|---|---|---|
| OBL species | 0 | x 1 = | 0 | |
| FACW species | 0 | x 2 = | 0 | |
| FAC species | 0 | x 3 = | 0 | |
| FACU species | 15 | x 4 = | 60 | |
| UPL species | 0 | x 5 = | 0 | |
| Column Totals: | 15 | (A) | 60 | (B) |

Prevalence Index = B/A = 4.000

**Hydrophytic Vegetation Indicators:**

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ○ No ◉

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** SB2

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc² | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-4 | 5YR | 3/2 | 100% | - | - | - | - | - | Sandy Clay Loam | |
| 4-20+ | 5YR | 3/3 | 100% | - | - | - | - | - | Sandy Clay Loam | |

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ○ No ◉

Remarks:

No redox features observed

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites and Access Roads **City/County:** Town of Anderson, Iron Co. **Sampling Date:** 11-Oct-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** SB3

**Investigator(s):** Ann Michalski, PSS, PWS, WDNR PAWD **Section, Township, Range: S.** 33 **T.** T45N **R.** R1W

**Landform (hillslope, terrace, etc.):** Toeslope **Local relief (concave, convex, none):** concave **Slope:** 1.0 % / 0.6 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.332659 **Long.:** 90.499136 **Datum:** WGS84

**Soil Map Unit Name:** Michigamme-Schweitzer-Peshekee-Rock Outcrop Complex, 18 to 35% slopes **NWI classification:** Upland

**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 ◉ | |
| **Hydric Soil Present?** | Yes ○ | No ◉ | **Is the Sampled Area within a Wetland?** Yes ○ No ◉ |
| **Wetland Hydrology Present?** | Yes ◉ | No ○ | |

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

Soils, vegetation and hydrology could be considered disturbed here because this location is a historic borrow pit that was obviously excavated out of uplands. However, this is the new normal circumstance.

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

| | | | | |
|---|---|---|---|---|
| Surface Water Present? | Yes ○ | No ◉ | Depth (inches): | |
| Water Table Present? | Yes ◉ | No ○ | Depth (inches): -3 | |
| Saturation Present? (includes capillary fringe) | Yes ◉ | No ○ | Depth (inches): 0 | **Wetland Hydrology Present?** Yes ◉ No ○ |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Hydrology was present in this location but apparently only for short periods of time after precipitation events. Soils did not meet hydric soil criteria and this location is not wetland.

## VEGETATION - Use scientific names of plants

**Sampling Point:** SB3

| | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| **Tree Stratum** (Plot size: 5' x 10' ) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |
| **Sapling/Shrub Stratum** (Plot size: 5' x 10' ) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |
| **Herb Stratum** (Plot size: 5' x 10' ) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| 8. | 0 | ☐ | 0.0% | |
| 9. | 0 | ☐ | 0.0% | |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |
| **Woody Vine Stratum** (Plot size: 5' x 7' ) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |

**Dominance Test worksheet:**

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | | |
|---|---|---|---|---|
| OBL species | 0 | x 1 = | 0 | |
| FACW species | 0 | x 2 = | 0 | |
| FAC species | 0 | x 3 = | 0 | |
| FACU species | 0 | x 4 = | 0 | |
| UPL species | 0 | x 5 = | 0 | |
| Column Totals: | 0 | (A) | 0 | (B) |

Prevalence Index = B/A = 4.000

**Hydrophytic Vegetation Indicators:**

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ○ No ◉

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** SB3

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc² | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-5 | 5YR | 3/3 | 100% | - | - | - | - | - | Sandy Loam | |
| 5-20+ | 5YR | 4/3 | 100% | - | - | - | - | - | Sandy Loam | |

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ○ No ◉

Remarks:

No redox features observed

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites and Access Roads **City/County:** Town of Anderson, Iron Co. **Sampling Date:** 11-Oct-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** SB4

**Investigator(s):** Ann Michalski, PSS, PWS, WDNR PAWD **Section, Township, Range: S.** 33 **T.** T45N **R.** R1W

**Landform (hillslope, terrace, etc.):** Toeslope **Local relief (concave, convex, none):** concave **Slope:** 1.0 % / 0.6 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.333029 **Long.:** 90.499153 **Datum:** WGS84

**Soil Map Unit Name:** Michigamme-Schweitzer-Peshekee-Rock Outcrop Complex, 18 to 35% slopes **NWI classification:** Upland

**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 ○ | |
| **Hydric Soil Present?** | Yes ○ | No ◉ | **Is the Sampled Area within a Wetland?** Yes ○ No ◉ |
| **Wetland Hydrology Present?** | Yes ◉ | No ○ | |

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

Soils, vegetation and hydrology could be considered disturbed here because this location is part of a historic blast rock area that was mined over 50 years ago. This location was examined previously for other portions of the wetland delineation and USACOE and WDNR have concurred that this is not a wetland. This location meets vegetation criteria but only due to FAC species. No FACW or OBL species were observed. Soils are also considered problematic due to shallow rock preventing full soil profile viewing but matrix colors were typical of upland soils.

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

| | | | | |
|---|---|---|---|---|
| Surface Water Present? | Yes ○ | No ◉ | Depth (inches): | |
| Water Table Present? | Yes ○ | No ◉ | Depth (inches): | |
| Saturation Present? (includes capillary fringe) | Yes ○ | No ◉ | Depth (inches): | **Wetland Hydrology Present?** Yes ◉ No ○ |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

The sparsely vegetated concave surface and geomorphic position are due to historic mining activities here which left a depressional area that does not grow a lot of vegetation because the substrate consists primarily of blast rock.

## VEGETATION - Use scientific names of plants

**Sampling Point:** SB4

| | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| **Tree Stratum** (Plot size: 30' radius) | | | | |
| 1. Betula alleghaniensis | 20 | ☑ | 50.0% | FAC |
| 2. Abies balsamea | 20 | ☑ | 50.0% | FAC |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 40 | **= Total Cover** | | |
| **Sapling/Shrub Stratum** (Plot size: 15' radius) | | | | |
| 1. Abies balsamea | 15 | ☑ | 50.0% | FAC |
| 2. Betula alleghaniensis | 15 | ☑ | 50.0% | FAC |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 30 | **= Total Cover** | | |
| **Herb Stratum** (Plot size: 5' radius) | | | | |
| 1. Acer saccharum | 30 | ☑ | 100.0% | FACU |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| 8. | 0 | ☐ | 0.0% | |
| 9. | 0 | ☐ | 0.0% | |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 30 | **= Total Cover** | | |
| **Woody Vine Stratum** (Plot size: 30' radius) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | **= Total Cover** | | |

**Dominance Test worksheet:**

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 70 | x 3 = | 210 |
| FACU species | 30 | x 4 = | 120 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 100 (A) | | 330 (B) |

Prevalence Index = B/A = 3.300

**Hydrophytic Vegetation Indicators:**

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☑ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ◉ No ○

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

This location meets vegetation criteria only due to FAC species. Soils are upland soils and hydrology was not present other than geomorphic position and sparsely vegetated concave surface. This is due to blast rock making up the substrate.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** SB4

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc² | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-3 | 5YR | 3/3 | 100% | - | - | - | - | - | sand | |
| 3-9 | 5YR | 4/3 | 100% | - | - | - | - | - | sand | |
| 9+ | - | - | - | - | - | - | - | - | Rock | |

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: Rock

Depth (inches): 9

**Hydric Soil Present?** Yes ○ No ◉

Remarks:

No redox features observed

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites and Access Roads **City/County:** Town of Anderson, Iron Co. **Sampling Date:** 11-Oct-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** SB5

**Investigator(s):** Ann Michalski, PSS, PWS, WDNR PAWD **Section, Township, Range: S.** 33 **T.** T45N **R.** R1W

**Landform (hillslope, terrace, etc.):** Toeslope **Local relief (concave, convex, none):** concave **Slope:** 1.0 % / 0.6 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.332938 **Long.:** 90.498618 **Datum:** WGS84

**Soil Map Unit Name:** Michigamme-Schweitzer-Peshekee-Rock Outcrop Complex, 18 to 35% slopes **NWI classification:** Upland

**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 ◉ | |
| **Hydric Soil Present?** | Yes ○ | No ◉ | **Is the Sampled Area within a Wetland?** Yes ○ No ◉ |
| **Wetland Hydrology Present?** | Yes ◉ | No ○ | |

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

Soils, vegetation and hydrology could be considered disturbed here because this location was apparently historically cleared and manipulated by machines that moved soils in this area. Soils could be considered problematic due to shallow rock preventing full soil profile viewing but the upper 13 inches of the soil profile was observed and matrix colors were typical of upland soils.

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

| | | | | |
|---|---|---|---|---|
| Surface Water Present? | Yes ○ | No ◉ | Depth (inches): | |
| Water Table Present? | Yes ○ | No ◉ | Depth (inches): | |
| Saturation Present? (includes capillary fringe) | Yes ○ | No ◉ | Depth (inches): | **Wetland Hydrology Present?** Yes ◉ No ○ |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

The sparsely vegetated concave surface and geomorphic position are due to historic mining activities here which left a depressional area that does not grow a lot of vegetation.

## VEGETATION - Use scientific names of plants

**Sampling Point:** SB5

| | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| **Tree Stratum** (Plot size: 5' x 5' ) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |
| **Sapling/Shrub Stratum** (Plot size: 5' x 5' ) | | | | |
| 1. Acer saccharum | 5 | ☑ | 100.0% | FACU |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 5 | | **= Total Cover** | |
| **Herb Stratum** (Plot size: 5' x 5' ) | | | | |
| 1. Dryopteris intermedia | 5 | ☑ | 100.0% | FAC |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| 8. | 0 | ☐ | 0.0% | |
| 9. | 0 | ☐ | 0.0% | |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 5 | | **= Total Cover** | |
| **Woody Vine Stratum** (Plot size: 5' x 5' ) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | | **= 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: 50.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | | |
|---|---|---|---|---|
| OBL species | 0 | x 1 = | 0 | |
| FACW species | 0 | x 2 = | 0 | |
| FAC species | 5 | x 3 = | 15 | |
| FACU species | 5 | x 4 = | 20 | |
| UPL species | 0 | x 5 = | 0 | |
| Column Totals: | 10 | (A) | 35 | (B) |

Prevalence Index = B/A = 3.500

**Hydrophytic Vegetation Indicators:**

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ○ No ◉

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** SB5

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc² | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-7 | 7.5YR | 3/1 | 100% | - | - | - | - | - | Silt Loam | |
| 7-14 | 7.5YR | 4/4 | 100% | - | - | - | - | - | Very Fine Sandy Loam | |
| 14+ | - | - | - | - | - | - | - | - | Rock | |

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: Rock

Depth (inches): 7

**Hydric Soil Present?** Yes ○ No ◉

Remarks:

No redox features observed

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites and Access Roads **City/County:** Town of Anderson, Iron Co. **Sampling Date:** 11-Oct-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** SB6

**Investigator(s):** Ann Michalski, PSS, PWS, WDNR PAWD **Section, Township, Range: S.** 33 **T.** T45N **R.** R1W

**Landform (hillslope, terrace, etc.):** Toeslope **Local relief (concave, convex, none):** concave **Slope:** 1.0 % / 0.6 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.332896 **Long.:** 90.498299 **Datum:** WGS84

**Soil Map Unit Name:** Michigamme-Schweitzer-Peshekee-Rock Outcrop Complex, 18 to 35% slopes **NWI classification:** Upland

**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 ◉ | |
| **Hydric Soil Present?** | Yes ○ | No ◉ | **Is the Sampled Area within a Wetland?** Yes ○ No ◉ |
| **Wetland Hydrology Present?** | Yes ◉ | No ○ | |

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

Soils, vegetation and hydrology could be considered disturbed here because this location was apparently historically cleared and manipulated by machines that moved soils in this area. Soils could be also considered problematic due to shallow rock preventing full soil profile viewing but the upper 13 inches of the soil profile was observed and matrix colors were typical of upland soils.

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

| | | | | |
|---|---|---|---|---|
| Surface Water Present? | Yes ○ | No ◉ | Depth (inches): | |
| Water Table Present? | Yes ○ | No ◉ | Depth (inches): | |
| Saturation Present? (includes capillary fringe) | Yes ○ | No ◉ | Depth (inches): | **Wetland Hydrology Present?** Yes ◉ No ○ |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

The sparsely vegetated concave surface and geomorphic position are due to historic mining activities here which left a depressional area that does not grow a lot of vegetation.

## VEGETATION - Use scientific names of plants

**Sampling Point:** SB6

| | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| **Tree Stratum** (Plot size: 20' x 15' ) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |
| **Sapling/Shrub Stratum** (Plot size: 20' x 15' ) | | | | |
| 1. Acer saccharum | 15 | ☑ | 75.0% | FACU |
| 2. Fraxinus nigra | 5 | ☑ | 25.0% | FACW |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 20 | | **= Total Cover** | |
| **Herb Stratum** (Plot size: 5' radius ) | | | | |
| 1. Dryopteris intermedia | 10 | ☑ | 40.0% | FAC |
| 2. Acer saccharum | 10 | ☑ | 40.0% | FACU |
| 3. Tilia americana | 5 | ☑ | 20.0% | FACU |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| 8. | 0 | ☐ | 0.0% | |
| 9. | 0 | ☐ | 0.0% | |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 25 | | **= Total Cover** | |
| **Woody Vine Stratum** (Plot size: 20' x 15' ) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |

**Dominance Test worksheet:**

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 40.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | | |
|---|---|---|---|---|
| OBL species | 0 | x 1 = | 0 | |
| FACW species | 5 | x 2 = | 10 | |
| FAC species | 10 | x 3 = | 30 | |
| FACU species | 30 | x 4 = | 120 | |
| UPL species | 0 | x 5 = | 0 | |
| Column Totals: | 45 | (A) | 160 | (B) |

Prevalence Index = B/A = 3.556

**Hydrophytic Vegetation Indicators:**

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ○ No ◉

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** SB6

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc² | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-2 | 7.5YR | 3/2 | 100% | - | - | - | - | - | Silt Loam | |
| 2-13 | 7.5YR | 4/6 | 100% | - | - | - | - | - | Very Fine Sandy Loam | |
| 13+ | - | - | - | - | - | - | - | - | Rock | |

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: Rock

Depth (inches): 7

**Hydric Soil Present?** Yes ○ No ◉

Remarks:

No redox features observed

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites and Access Roads **City/County:** Town of Anderson, Iron Co. **Sampling Date:** 11-Oct-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** **SB7**

**Investigator(s):** Ann Michalski, PSS, PWS, WDNR PAWD **Section, Township, Range: S.** 33 **T.** T45N **R.** R1W

**Landform (hillslope, terrace, etc.):** Toeslope **Local relief (concave, convex, none):** concave **Slope:** 1.0 **%** / 0.6 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.334441 **Long.:** 90.493608 **Datum:** WGS84

**Soil Map Unit Name:** Dishno-Gogebic-Peshekee-Rock Outcrop, 18 to 35% slopes **NWI classification:** Upland

**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 ○ | |
| **Hydric Soil Present?** | Yes ○ | No ◉ | **Is the Sampled Area within a Wetland?** Yes ○ No ◉ |
| **Wetland Hydrology Present?** | Yes ◉ | No ○ | |

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

Soils, vegetation and hydrology are considered significantly disturbed due to historic mining activities in this location. This specific area is a low spot that was former a railbed. However, this is the new normal circumstance. Hydrology and vegetation are present but soils were evidently non-hydric and it appears that the historic disturbance led to FACW species being present, which is common in this area. Hydrology indicators were present but an actual water table or soil saturation was not observed despite significant rainfall prior to the site visit.

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

| | | | | |
|---|---|---|---|---|
| Surface Water Present? | Yes ○ | No ◉ | Depth (inches): | |
| Water Table Present? | Yes ○ | No ◉ | Depth (inches): | |
| Saturation Present? (includes capillary fringe) | Yes ○ | No ◉ | Depth (inches): | **Wetland Hydrology Present?** Yes ◉ No ○ |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

The sparsely vegetated concave surface and geomorphic position are due to historic mining activities here which left a depressional area that does not grow a lot of vegetation. Watermarks were present on the west end of this site but are not normal and are from a very large rain event that occurred in September. This area holds water very temporarily due to rock substrate but it does not remain present long enough to create hydric conditions.

## VEGETATION - Use scientific names of plants

**Sampling Point:** SB7

| | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| **Tree Stratum** (Plot size: 30' x 60' ) | | | | |
| 1. Fraxinus pennsylvanica | 20 | ☑ | 50.0% | FACW |
| 2. Tsuga canadensis | 10 | ☑ | 25.0% | FACU |
| 3. Betula alleghaniensis | 10 | ☑ | 25.0% | FAC |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 40 | | **= Total Cover** | |
| **Sapling/Shrub Stratum** (Plot size: 30' x 60' ) | | | | |
| 1. Fraxinus pennsylvanica | 10 | ☑ | 50.0% | FACW |
| 2. Ulmus americana | 10 | ☑ | 50.0% | FACW |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 20 | | **= Total Cover** | |
| **Herb Stratum** (Plot size: 5' radius ) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| 8. | 0 | ☐ | 0.0% | |
| 9. | 0 | ☐ | 0.0% | |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |
| **Woody Vine Stratum** (Plot size: 30' x 60' ) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |

**Dominance Test worksheet:**

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | | |
|---|---|---|---|---|
| OBL species | 0 | x 1 = | 0 | |
| FACW species | 40 | x 2 = | 80 | |
| FAC species | 10 | x 3 = | 30 | |
| FACU species | 10 | x 4 = | 40 | |
| UPL species | 0 | x 5 = | 0 | |
| Column Totals: | 60 | (A) | 150 | (B) |

Prevalence Index = B/A = 2.500

**Hydrophytic Vegetation Indicators:**

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ◉ No ○

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

Hydric vegetation is present in this area but common in disturbed areas on this property. Soils were not hydric and no hydrology was observed other than geomorphic position and sparsely vegetated concave surface which are both from historic activities.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** SB7

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc² | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-5 | 7.5YR | 3/3 | 100% | - | - | - | - | - | Sandy Loam | |
| 5-20+ | 5YR | 4/4 | 100% | - | - | - | - | - | Loamy Sand | |
| | | | | | | | | | | |
| | | | | | | | | | | |
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| | | | | | | | | | | |
| | | | | | | | | | | |

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ○ No ◉

Remarks:

No redox features observed

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites and Access Roads **City/County:** Town of Anderson, Iron Co. **Sampling Date:** 11-Oct-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** **SB8**

**Investigator(s):** Ann Michalski, PSS, PWS, WDNR PAWD **Section, Township, Range: S.** 33 **T.** T45N **R.** R1W

**Landform (hillslope, terrace, etc.):** Toeslope **Local relief (concave, convex, none):** concave **Slope:** 1.0 **%** / 0.6 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.334797 **Long.:** 90.493138 **Datum:** WGS84

**Soil Map Unit Name:** Dishno-Gogebic-Peshekee-Rock Outcrop, 18 to 35% slopes **NWI classification:** Upland

**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 ○ | |
| **Hydric Soil Present?** | Yes ○ | No ◉ | **Is the Sampled Area within a Wetland?** Yes ○ No ◉ |
| **Wetland Hydrology Present?** | Yes ○ | No ◉ | |

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

Soils, vegetation and hydrology are considered significantly disturbed due to historic mining activities in this location. This specific area is a low spot that was former a railbed. However, this is the new normal circumstance. Hydrology and vegetation are present but soils were evidently non-hydric and it appears that the historic disturbance led to FACW species being present, which is common in this area. Soils are also considered problematic due to shallow rock that prevents full soil profile viewing. However, the soils observed are typical of upland soils in this area and did not show any indications of wetland conditions.

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

| | | | | |
|---|---|---|---|---|
| Surface Water Present? | Yes ○ | No ◉ | Depth (inches): | |
| Water Table Present? | Yes ○ | No ◉ | Depth (inches): | |
| Saturation Present? (includes capillary fringe) | Yes ○ | No ◉ | Depth (inches): | **Wetland Hydrology Present?** Yes ○ No ◉ |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## VEGETATION - Use scientific names of plants

**Sampling Point:** SB8

| | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| **Tree Stratum** (Plot size: 30' x 60' ) | | | | |
| 1. Thuja occidentalis | 25 | ☑ | 38.5% | FACW |
| 2. Betula alleghaniensis | 25 | ☑ | 38.5% | FAC |
| 3. Abies balsamea | 15 | ☑ | 23.1% | FAC |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 65 | | **= Total Cover** | |
| **Sapling/Shrub Stratum** (Plot size: 30' x 60' ) | | | | |
| 1. Acer saccharum | 10 | ☑ | 50.0% | FACU |
| 2. Abies balsamea | 10 | ☑ | 50.0% | FAC |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 20 | | **= Total Cover** | |
| **Herb Stratum** (Plot size: 5' radius ) | | | | |
| 1. Acer saccharum | 15 | ☑ | 68.2% | FACU |
| 2. Dryopteris intermedia | 5 | ☑ | 22.7% | FAC |
| 3. Abies balsamea | 2 | ☐ | 9.1% | FAC |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| 8. | 0 | ☐ | 0.0% | |
| 9. | 0 | ☐ | 0.0% | |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 22 | | **= Total Cover** | |
| **Woody Vine Stratum** (Plot size: 30' x 60' ) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | | **= Total Cover** | |

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 71.4% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | | |
|---|---|---|---|---|
| OBL species | 0 | x 1 = | 0 | |
| FACW species | 25 | x 2 = | 50 | |
| FAC species | 57 | x 3 = | 171 | |
| FACU species | 25 | x 4 = | 100 | |
| UPL species | 0 | x 5 = | 0 | |
| Column Totals: | 107 | (A) | 321 | (B) |

Prevalence Index = B/A = 3.000

**Hydrophytic Vegetation Indicators:**

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ◉ No ○

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

Hydric vegetation is present in this area but common in disturbed areas on this property. Soils were not hydric and no hydrology was observed other than geomorphic position from historic activities.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** SB8

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc² | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-7 | 7.5YR | 3/3 | 100% | - | - | - | - | - | Sandy Loam | |
| 7+ | - | - | - | - | - | - | - | - | Rock | |

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: Rock

Depth (inches): 7

**Hydric Soil Present?** Yes ○ No ◉

Remarks:

No redox features observed

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Gogebic Taconite Bulk Sample Sites and Access Roads **City/County:** Town of Anderson, Iron Co. **Sampling Date:** 11-Oct-13

**Applicant/Owner:** Gogebic Taconite **State:** WI **Sampling Point:** SB9

**Investigator(s):** Ann Michalski, PSS, PWS, WDNR PAWD **Section, Township, Range: S.** 33 **T.** T45N **R.** R1W

**Landform (hillslope, terrace, etc.):** Toeslope **Local relief (concave, convex, none):** concave **Slope:** 1.0 % / 0.6 °

**Subregion (LRR or MLRA):** LRR K **Lat.:** 46.335160 **Long.:** 90.492696 **Datum:** WGS84

**Soil Map Unit Name:** Dishno-Gogebic-Peshekee-Rock Outcrop, 18 to 35% slopes **NWI classification:** Upland

**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 ○ | |
| **Hydric Soil Present?** | Yes ○ | No ◉ | **Is the Sampled Area within a Wetland?** Yes ○ No ◉ |
| **Wetland Hydrology Present?** | Yes ○ | No ◉ | |

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

Soils, vegetation and hydrology are considered significantly disturbed due to historic mining activities in this location. This specific area is a low spot that was former a railbed. However, this is the new normal circumstance. Hydrology and vegetation are present but soils were evidently non-hydric and it appears that the historic disturbance led to FACW species being present, which is common in this area.

## Hydrology

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of 2 required)

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

**Field Observations:**

| | | | | |
|---|---|---|---|---|
| Surface Water Present? | Yes ○ | No ◉ | Depth (inches): | |
| Water Table Present? | Yes ○ | No ◉ | Depth (inches): | |
| Saturation Present? (includes capillary fringe) | Yes ○ | No ◉ | Depth (inches): | **Wetland Hydrology Present?** Yes ○ No ◉ |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## VEGETATION - Use scientific names of plants

**Sampling Point:** SB9

| | Absolute % Cover | Dominant Species? | Rel.Strat. Cover | Indicator Status |
|---|---|---|---|---|
| **Tree Stratum** (Plot size: 30' x 60' ) | | | | |
| 1. Abies balsamea | 60 | ☑ | 85.7% | FAC |
| 2. Acer saccharum | 10 | ☐ | 14.3% | FACU |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 70 | **= Total Cover** | | |
| **Sapling/Shrub Stratum** (Plot size: 30' x 60' ) | | | | |
| 1. Acer saccharum | 10 | ☑ | 50.0% | FACU |
| 2. Abies balsamea | 10 | ☑ | 50.0% | FAC |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| | 20 | **= Total Cover** | | |
| **Herb Stratum** (Plot size: 5' radius ) | | | | |
| 1. Sphagnum magellanicum | 20 | ☑ | 80.0% | OBL |
| 2. Carex gracillima | 5 | ☑ | 20.0% | FACU |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| 5. | 0 | ☐ | 0.0% | |
| 6. | 0 | ☐ | 0.0% | |
| 7. | 0 | ☐ | 0.0% | |
| 8. | 0 | ☐ | 0.0% | |
| 9. | 0 | ☐ | 0.0% | |
| 10. | 0 | ☐ | 0.0% | |
| 11. | 0 | ☐ | 0.0% | |
| 12. | 0 | ☐ | 0.0% | |
| | 25 | **= Total Cover** | | |
| **Woody Vine Stratum** (Plot size: 30' x 60' ) | | | | |
| 1. | 0 | ☐ | 0.0% | |
| 2. | 0 | ☐ | 0.0% | |
| 3. | 0 | ☐ | 0.0% | |
| 4. | 0 | ☐ | 0.0% | |
| | 0 | **= Total Cover** | | |

**Dominance Test worksheet:**

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 60.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | | |
|---|---|---|---|---|
| OBL species | 20 | x 1 = | 20 | |
| FACW species | 0 | x 2 = | 0 | |
| FAC species | 70 | x 3 = | 210 | |
| FACU species | 25 | x 4 = | 100 | |
| UPL species | 0 | x 5 = | 0 | |
| Column Totals: | 115 | (A) | 330 | (B) |

Prevalence Index = B/A = 2.870

**Hydrophytic Vegetation Indicators:**

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

### Definitions of Vegetation Strata:

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

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

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

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

**Hydrophytic Vegetation Present?** Yes ◉ No ○

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

Hydric vegetation is present in this area but common in disturbed areas on this property. Soils were not hydric and no hydrology was observed other than geomorphic position from historic activities. A small patch of sphagnum is also present. Although most often seen in bogs, there are 120+ species of sphagnum and it will grow in shady, acidic upland areas.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

## Soil

**Sampling Point:** SB9

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

| Depth (inches) | Matrix Color (moist) | | % | Redox Features Color (moist) | | % | Type [1] | Loc² | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 0-9 | 5YR | 3/2 | 100% | - | - | - | - | - | Sandy Loam | |
| 9-20+ | 5YR | 3/3 | 100% | - | - | - | - | - | Sandy Loam | |

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils :** [3]

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

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ○ No ◉

Remarks:

No redox features observed

# APPENDIX B – SITE PHOTOGRAPHS

Gogebic Taconite, LLC
Site Photos

Bulk Sample Site 1

Bulk Sample Site 1

Bulk Sample Site 1 - Wetland 1-1

Bulk Sample Site 1 - Upland 1-1

Gogebic Taconite, LLC
Site Photos

Bulk Sample Site 1 - Wetland 1 Crossing Road

Bulk Sample Site 1 - Wetland 1 Drainageway

Wetland 2 - Looking South

Wetland 2 - Looking West

Gogebic Taconite, LLC
Site Photos

Wetland 2 - Looking West

Wetland 3 - Looking South

Wetland 4 - Drainageway

Wetland 4 - Looking East

Gogebic Taconite, LLC
Site Photos

Wetland 4 - Looking South

Wetland 4 - Looking West

Drainage at Wetland 4

Wetland 5 - Looking North

Gogebic Taconite, LLC
Site Photos

Wetland 5 - Looking South

Wetland 5 - Looking South

Bulk Sample Site 2

Bulk Sample Site 2

Gogebic Taconite, LLC
Site Photos

Bulk Sample Site 2

Bulk Sample Site 3

Bulk Sample Site 3

Bulk Sample Site 3

Gogebic Taconite, LLC
Site Photos

Bulk Sample Site 4

Bulk Sample Site 4

Bulk Sample Site 5

Bulk Sample Site 5

Gogebic Taconite, LLC
Site Photos

Wetland 6

Wetland 6

Upland 6

Wetland 7

Gogebic Taconite, LLC
Site Photos

Upland 7

Wetland 8

Upland 8

Wetland 9

Gogebic Taconite, LLC
Site Photos

Upland 9

Wetland 10

Upland 10

Wetland 11

Gogebic Taconite, LLC
Site Photos

Upland 11

Wetland 12

Upland 12

Wetland 13

Gogebic Taconite, LLC
Site Photos

Upland 13

Wetland 14

Upland 14

SB2

Gogebic Taconite, LLC
Site Photos

SB3

SB4

SB5

SB6

Gogebic Taconite, LLC
Site Photos

SB7

SB8

SB9