Permit Application

Environmental Impact Assessment

White Pine North Project

Volume IIL

Appendix E-1

White Pine Copper LLC
White Pine, Michigan

September 2026

Project I.D.: 23W200

Solving our clients' toughest science and engineering challenges.

Appendix E

Wetlands

E-1 2024 Wetland Delineation and Characterization Report
E-2 EGLE Wetland Identification Report
E-3 2024 Stream Characterization Report
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E-1

2024 Wetland Delineation and Characterization Report

2024 Wetland Delineation and Characterization Report

White Pine North Project, Carp Lake Township, Ontonagon County, Michigan

Prepared for
White Pine Copper, LLC.

Prepared by
Barr Engineering Co.

Revision 1, March 2025

22661013.00

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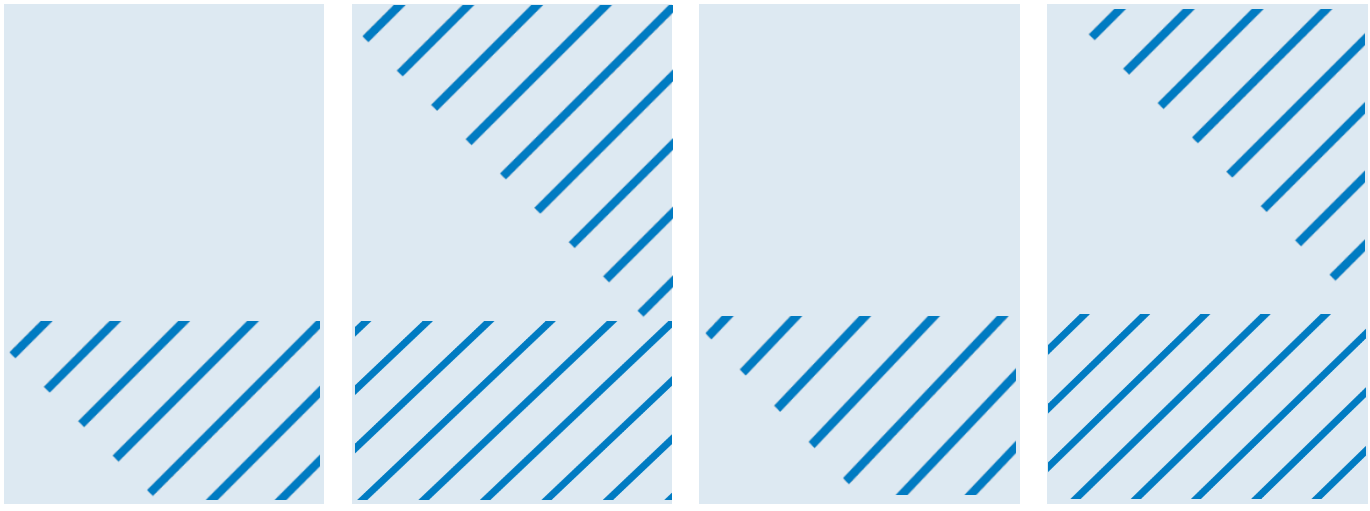

Certification

I hereby certify that this wetland delineation and characterization report was prepared by me or under my direct supervision. It reflects a comprehensive assessment of the location and character of on-site wetlands and complies with applicable environmental standards and regulations.



Randall Phillips
Professional Wetland Scientist #: 2334

March 14, 2025
Date

2024 Wetland Delineation and Characterization Report

White Pine North Project

Revision 1, March 2025

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1 Introduction

1.1 Study Purpose

Barr Engineering Co. (Barr) was retained by White Pine Copper, LLC (WPC) to delineate and characterize wetlands at the White Pine North Project (Project). The focus of the study completed by Barr was to characterize "wetland"[1] as is defined by the State of Michigan under Part 303 of the Natural Resources and Environmental Protection Act (NREPA; PA 451 of 1994, as amended) and in accordance with the Wetland Delineation Manual and Regional Supplement developed and published by the United States Army Corps of Engineers. This report presents wetland delineation and characterization activities and findings from field surveys conducted in summer 2024.

1.2 Study Team

This study was completed by a qualified team of experienced professionals with a background in wetland assessments. Key team members and their roles are listed below:

Field Assessments and Reporting

- Randall Phillips, PWS—Senior Ecologist; field lead, wetland delineation/data processing, and reporting.
- Fran Thompson—Ecologist; field lead, wetland delineation/data processing.
- Jessica Abraham—Environmental Scientist; wetland delineation, MiRAM assessments.
- Tommy Barfuss—Environmental Scientist; wetland delineation, GIS data processing.
- Christian Tibaudo—Environmental Scientist; wetland delineation/data processing.
- Alison McClear—Environmental Scientist; wetland delineation.
- Colleen Long—Senior GIS Specialist; GIS lead, mapping, and GIS analysis.
- Matt Comben—Senior GIS Specialist; photolog processing and GIS analysis.
- Matt MacGregor—Senior Environmental Consultant; technical advisor.

Project Leadership

- Randall Phillips, PWS—Senior Ecologist; project manager.
- Tim Greenleaf, PE—Senior Civil/Environmental Engineer; project principal.

1.3 Background and Project Description

WPC is a joint venture between Kinterra Copper USA, LLC (66% ownership) and Highland Copper Corporation (34% ownership). WPC is seeking to develop the brownfield site of White Pine Mine located approximately 3 miles south of Lake Superior, east of M-64, in Carp Lake Township, Ontonagon County, Michigan (Figure 1). White Pine Mine was part of the Upper Peninsula of Michigan's historical copper

[1] NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT, Act 451 of 1994
324.30301 Definitions; technical wetland delineation standards.
Sec. 30301.
(n) "Wetland" means a land or water feature, commonly referred to as a bog, swamp, or marsh, inundated or saturated by water at a frequency and duration sufficient to support, and that under normal circumstances does support, hydric soils and a predominance of wetland vegetation or aquatic life.

mining district. Underground mining on site began in the late 1800's. In 1952, the Copper Range Company began construction of a fully functioning underground mine and surface processing facilities including a concentrator, smelter, and refinery. Tailings were placed in three tailings areas: North Dam 1, North Dam 2, and the South Dam. Mining and processing ceased in 1997, and a State of Michigan Consent Decree was established. WPC is planning to mine underground, east of and separate from, the historic underground mine workings of White Pine Mine. Copper ore will be extracted using conventional drill, blast room, and pillar mining methods. A processing plant will be constructed on site to produce a copper concentrate, and processing will include crushing, grinding, flotation, concentrate thickening, and filtration. Tailings will be managed through re-use of one or more of the existing tailings dams.

Based on the Project concept, WPC will need to secure several environmental permits and approvals from Michigan Department of Environmental, Great Lakes, and Energy (EGLE). Those permits and approvals relevant to wetlands in the vicinity of the Project include:

- A Mining Permit and Environmental Impact Assessment issued and approved under Part 632 of NREPA, and rules specified in R 425.202 et seq.; and
- A Wetlands Permit for dredge and fill impacts to wetlands issued in accordance with Part 303 of NREPA and rules specified in R 282.921 et seq.

The baseline studies required for the Project are rooted in the requirements for the Part 632 Environmental Impact Assessment specified in R 425.202 et seq. and the Part 303 Wetlands Protection. Permits under both parts are needed to directly excavate and fill wetlands from construction of surface facilities. This survey addresses the area of the proposed surface facilities footprint located west of North Dam 1, and potential tailings dam expansion area on the north, and sides of, North Dam 2 (Figure 2).

1.4 Survey Area

The wetland delineation and characterization Survey Area includes an approximately 1,030-acre portion of the White Pine Mine facility, located in Carp Lake Township, Ontonagon County, Michigan (Figure 2). Surrounding land uses and cover types include residential, recreational, forest, and former mining facilities. The dominant land uses and cover types within the Survey Area consist of fallow, excavated borrow areas, wetlands, open water, upland forest and scrub-brush, and several utility and roadway corridors. Portions of the Mineral River, Bedell Creek, Perch Creek, Pine Creek, Caribou Creek, Portal Creek, and other unnamed streams are also located within the Survey Area (refer to Figure 3 in the 2024 Stream Characterization Report for stream locations (Barr 2025, (ref. (1)))).

2 Desktop Review

Barr conducted a desktop review to evaluate aerial imagery, topography, soil types, and mapped wetlands within the Survey Area prior to the wetland delineation. As part of this review, Barr staff accessed resources such as the Natural Resources Conservation Service (NRCS) Web Soil Survey (WSS) Soil Units (ref. (2)) shown on Figure 3, the National Wetlands Inventory (ref. (3)) shown on Figure 4, and aerial photography. This reference data was utilized by field teams to identify gaps and inconsistencies that needed to be addressed as part of the field surveys. The reference data also informed field teams where potential locations and types of wetland habitat that could be encountered within the Survey Area.

3 Methodology

The wetland delineation was conducted in a manner consistent with the Corps of Engineers Wetlands Delineation Manual (ref. (4)) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (ref. (5)).The wetland delineation procedures outlined in these manuals require the evaluation of on-site vegetation, soils, and hydrologic characteristics. Site observations are described in the Sections 4 and 5 below. The wetland boundaries were flagged in the field with alphanumerically labeled pink pin flags and/or pink flagging tape. Flagging was located using a Global Positioning System (GPS) unit capable of sub-meter accuracy.

Wetlands were grouped by similar wetland types possessing similar plant assemblages and occupying similar positions on the landscape. Paired wetland/upland data points for each of these groups were GPS-located. Wetland determination data was collected at each point and recorded in U.S. Army Corps of Engineers, Detroit District, automated Wetland Determination Data Forms (Appendix C, wetland data forms). Photo documentation is contained in Appendix E.

Additionally, the field surveys included Wetland Functional Value Assessments that were performed using Michigan Rapid Assessment Methodology (MiRAM) (ref. (6)) to provide additional, broader context to the typical wetland conditions encountered within the Study Area. In the professional judgement of the field reviewers, the most common and/or representative wetland conditions present within the Study Area were identified in ponded/beaver-managed, previously cleared/excavated, riverine, and forested wetland habitat types. A MiRAM rating form (ref. (7)) was utilized to determine functional value and assign a rating level to a representative wetland corresponding to each of these types.

Once wetland delineations and mapping were completed, Barr requested verification of the delineated wetland boundaries and jurisdictional determination through the EGLE Wetland Identification Program (WIP). Barr met with an EGLE representative on site during the wetland boundary review conducted on September 11 and 12, 2024. During the field WIP review, Barr GPS surveyed any adjusted boundary flagging and updated the wetland boundary mapping for use in this report. The findings of EGLE's resulting Wetland Identification Report dated January 21, 2025, are binding on EGLE for three years of that date.

Additional detail on field methodology for wetland delineation and characterization include:

- **Hydrologic Characteristics:** Hydrologic conditions were evaluated at each wetland data point. Presence or absence of primary and/or secondary hydrologic indicators were recorded in the wetland data forms.

- **Soils:** Representative soil samples from each boring were examined for the presence of hydric soil indicators. Hand-dug soil borings were located in and around the wetlands and potential wetlands, to a depth of at least 18 inches below the ground surface or until hydric soil criteria were or could not be met after 12 inches, or bedrock or large rocks were encountered. Soil textures were determined by feel. Soil colors were determined using a Munsell® soil color chart and recorded in the wetland data forms.

- **Vegetation:** The plant species at each sample location were identified and dominant species were determined by use of the 50/20 rule and the Prevalence Index (where applicable). Wetland indicator status of each species was taken from the current National Wetland Plant List (Lichvar, 2016, (ref. (8))) for the Northcentral and Northeast region.

- **MiRAM:** The MiRAM form was utilized to support wetland characterization by providing additional information to use when assessing the functional value of a wetland during the regulatory process. The MiRAM evaluation uses two rating systems, the Narrative Rating and the Quantitative Rating. The Narrative Rating is completed first, which requires identification of wetlands with significant ecological value. If a wetland does not have significant ecological value, the Quantitative Rating is completed, which provides a numeric score that reflects the functional value of the wetland.

    - ***Narrative Rating:*** The Narrative Rating evaluates wetlands on the basis of four metrics to quickly identify if a wetland has exceptional ecological value. The four metrics used in the Narrative Rating includes questions regarding the presence of U.S. Fish and Wildlife Critical Habitat, federal and state listed threatened or endangered species, rare wetland community types, and great lakes coastal wetlands. If the wetland contains any of the four metrics listed, it is designated as having high functional value and the Quantitative Rating is not necessary. Conversely, if the wetland being evaluated does not contain any of the four metrics listed, then the Quantitative Rating is performed.

    - ***Quantitative Rating:*** The Quantitative Rating utilizes an in-depth system that relies on the evaluation of seven metrics to determine functional value of a wetland. The seven metrics used in the Quantitative Rating includes questions regarding wetland size and distribution, upland buffers and intensity of surrounding land use, hydrology, habitat alteration and habitat structure development, special situations, vegetation, interspersion and habitat features, and scenic, recreational, and cultural value. The sum of these seven metrics and an optional seasonal adjusted score will determine the Quantitative Rating of a wetland, with the maximum score of 100.

4 Results

The Survey Area contains 279 wetlands, totaling approximately 272.22 acres (Figure 5). The majority of the acreage appears to be several complexes of ponded and non-ponded, excavated borrow pits, drainages, and water treatment facilities (e.g., ditches, settling/stilling ponds) within 500 feet of, or contiguous to, multiple streams. Beaver (*Castor canadensis*) flooding activity influences most of the complexes outside of the water treatment facilities. Wetland types include riverine (R) and palustrine, or freshwater, ponded (PUB), emergent (PEM), scrub-shrub (PSS), and forested (PFO) habitats. The western portion of the Study Area drains to the Mineral River and ultimately Lake Superior via streams such as Bedell Creek, Portal Creek, Perch Creek, Native Creek, and several unnamed tributaries. The eastern portion of the Study Area drains to Lake Superior via streams such as Caribou Creek, Pine Creek, Stony Creek, Miles Creek, and several unnamed tributaries (refer to Figure 3 in the 2024 Stream Characterization Report for stream locations (Barr 2025) (ref. (1))).

4.1 Vegetation, Soil, and Hydrology

The Survey Area appears to have been historically disturbed at the landscape scale due to clearing and excavation to supply the neighboring tailings dams with material for earthen dams. Nearly every wetland area encountered showed evidence of, or was created directly by, past disturbance from any combination of impacts relating to timber harvesting, clearing, grading, and/or borrow pit excavation in addition to past and current beaver activity. Areas appearing to be least impacted by these previous activities are located along the floodplain of Mineral River and a portion of the lower reach of Pine Creek.

Dominant wetland vegetation identified within the wetlands includes species such as green ash, black ash, red maple, yellow birch, balsam poplar, pussy willow, Bebb's willow, meadow willow, Missouri River willow, speckled alder, shining willow, red-osier dogwood, cattail spp., reed canary grass, blue joint grass, fowl bluegrass, fowl manna grass, hairy panic grass, nodding sedge, Bebb's sedge, bladder sedge, Tuckerman's sedge, jewelweed, dwarf raspberry, giant goldenrod, sensitive fern, interrupted fern, ostrich fern, common horsetail, jointed rush, soft rush, duckweed, woolgrass, dark-green bullrush, soft-stemmed bulrush, American bur-reed, watershield, and floating pondweed. Primary and secondary hydrology indicators were identified throughout the wetlands areas. Due to the magnitude of previous disturbance, soils within many wetlands were not consistent with their WSS descriptions and many did not display typical hydric characteristics.

In contrast, the adjacent upland areas included species such as eastern hemlock, sugar maple, bigtooth aspen, quaking aspen, ironwood, white pine, paper birch, white spruce, red elderberry, wild sarsaparilla, bracken fern, lady fern, thimble berry, red raspberry, blackberry, Canada mayflower, Queen Anne's lace, Kentucky bluegrass, tall fescue, smooth brome, Virginia strawberry, bird's-foot trefoil, common Timothy, red clover, white clover, sweet clover spp., Canada thistle, bull thistle, and tall goldenrod with no observed evidence of wetland hydrology or soils.

However, possibly due to the compacted clay nature of the disturbed, excavated, and/or cleared upland soils, willow species were observed colonizing large portions of upland habitat.

Figure 5 depicts an overview of the approximate location of the wetland areas encountered on site. Additional details are provided in the appendices including:

- Appendix A: Wetland Delineation Detail Mapbook
- Appendix B: Wetland Data Summary
- Appendix C: U.S. Army Corps of Engineers (USACE) Wetland Data Forms
- Appendix D: Michigan Rapid Assessment Method (MiRAM) Forms
- Appendix E: Wetland Delineation Photolog

4.2 Water Treatment/Stormwater Facilities

Several water treatment/stormwater facilities were constructed to manage outfall and stormwater from the historic mining facilities permitted under point-source discharge permitting regulations. These include all or portions of Wetland (WTL) 1, 116, 118, and 176 and include the Bedell Pond passive wetland treatment system, slag pile runoff collection system, as well as the toe drain of the adjacent tailings dam, North Dam 2, and associated stilling ponds related to the National Pollutant Discharge Elimination System (NPDES) permitted outfall located on Perch Creek. Portions of these basins were delineated aerially via desktop review because portions of these excavations were steep enough to pose significant safety risks to field-delineators. The toe drain located along the northern toe of North Dam 2 was also delineated via desktop in the interest of efficiency as field review determined it to be a consistent channel within the Survey Area. These facilities are referred to in Figure 5 as "Wetland Area (Water Treatment Facility)" and "Toe Drain (Desktop Delineated)."

4.3 Wetland Functional Value (MiRAM)

Barr performed a MiRAM assessment at four wetland areas representing both disturbed and relatively undisturbed wetlands within the Survey Area. These included ponded/beaver-managed, previously

cleared/excavated, riverine, and forested wetland habitat types. Although not required by standard procedure or rule, this added context may be useful in permitting discussions as to the general character, function, and value typical of potentially impacted wetlands. None of the assessed wetlands met high-quality wetland criteria through the narrative rating. Full details of the assessments, including field datasheets and rankings, are provided in Appendix D.

Table 1 through Table 4 summarizes the MiRAM quantitative rating results.

Table 1 MiRAM 1 - Forested

Metric		Wetland Score	Potential Score (Max.)
Metric 1	Wetland Size and Distribution	8	9
Metric 2	Upland Buffers and Intensity of Surrounding Land Use	12	12
Metric 3	Hydrology	20	26
Metric 4	Habitat Alteration and Habitat Structure Development	16	20
Metric 5	Special Situations	10	10
Metric 6	Vegetation, Interspersion, and Habitat Features	20	20
Metric 7	Scenic, Recreational, and Cultural Value	0	3
	Seasonally Adjusted Score	0	10
	Grand Total	**86**	**100**

Table 2 MiRAM 2 - Riverine

Metric		Wetland Score	Potential Score (Max.)
Metric 1	Wetland Size and Distribution	8	9
Metric 2	Upland Buffers and Intensity of Surrounding Land Use	12	12
Metric 3	Hydrology	22	26
Metric 4	Habitat Alteration and Habitat Structure Development	14	20
Metric 5	Special Situations	0	10
Metric 6	Vegetation, Interspersion, and Habitat Features	20	20
Metric 7	Scenic, Recreational, and Cultural Value	0	3
	Seasonally Adjusted Score	0	10
	Grand Total	**76**	**100**

Table 3 MiRAM 3 - Beaver Impounded

Metric		Wetland Score	Potential Score (Max.)
Metric 1	Wetland Size and Distribution	8	9
Metric 2	Upland Buffers and Intensity of Surrounding Land Use	12	12
Metric 3	Hydrology	22	26
Metric 4	Habitat Alteration and Habitat Structure Development	14	20
Metric 5	Special Situations	0	10
Metric 6	Vegetation, Interspersion, and Habitat Features	17	20
Metric 7	Scenic, Recreational, and Cultural Value	0	3
	Seasonally Adjusted Score	0	10
	Grand Total	**73**	**100**

Table 4 MiRAM 4 - Previously Excavated

Metric		Wetland Score	Potential Score (Max.)
Metric 1	Wetland Size and Distribution	8	9
Metric 2	Upland Buffers and Intensity of Surrounding Land Use	12	12
Metric 3	Hydrology	14	26
Metric 4	Habitat Alteration and Habitat Structure Development	7	20
Metric 5	Special Situations	0	10
Metric 6	Vegetation, Interspersion, and Habitat Features	8	20
Metric 7	Scenic, Recreational, and Cultural Value	0	3
	Seasonally Adjusted Score	0	10
	Grand Total	**49**	**100**

5 Conclusions

5.1 Jurisdiction

Based on observations of topography, vegetation, soil, and indicators of hydrology, Barr has determined that wetland habitat is present within the Survey Area. No waters identified within the Study Area appear to be listed under Section 10 Rivers and Harbors Act authority. However, according to Part 303, Wetlands Protection, of the Michigan NREPA, 1994 PA 451, as amended (Part 303), and Michigan's assumption of Section 404 of the Clean Water Act, wetlands regulated by the State of Michigan include wetlands that are:

1. Located within 500 feet of, or having a direct surface water connection to, an inland lake, pond, river, or stream; or

2. Greater than 5 acres in size; or

3. Located within 1,000 feet of, or having a direct surface water connection to, the Great Lakes or Lake St. Clair; or

4. A water of the United States, as that term is used in section 502(7) of the Federal Water Pollution Control Act, 33 USC 1362; or

5. Known to have a documented presence of an endangered or threatened species under Part 365 of State of Michigan 1994 PA 451, as amended or the Federal Endangered Species Act of 1973, Public Law 93-205; or

6. Rare or imperiled.

Appendix B - Wetland Data Summary lists EGLE's jurisdictional determination of regulated or unregulated regulatory status of the identified wetlands as well as on-site acreage, wetland habitat type(s) present within each wetland, and associated data form(s).

5.2 Water Treatment Facilities

The water treatment/stormwater facilities are exempt from EGLE regulation as they have been constructed and operated as a water treatment/storm water facilities in compliance with the requirements of state or federal water pollution control laws, under Part 303, Wetlands Protection, of the NREPA (1994 PA451). Therefore, a permit may not be required to impact them.

5.3 Wetland Functional Value

5.3.1 Michigan Rapid Assessment Method Area 1 – Forested

Overall, the MiRAM assessment suggests that the subject wetland is of high quality with a score of 86. Contributing factors to this rating include its maturity as a forested wetland, the overall size of the wetland being a larger than 50 acres, the surrounding natural areas, and its high-quality habitat features. The proximity to the tailings dam, minor alterations nearby, and historic alterations to the landscape somewhat adversely affect the wetland rating. See Table 1.

5.3.2 Michigan Rapid Assessment Method Area 2 – Riverine

Overall, the MiRAM assessment suggests that the subject wetland is of high quality with a score of 76. Contributing factors to this rating include the overall size of the wetland being larger than 50 acres, the surrounding natural areas, and high-quality vegetation and habitat features. The historic alterations of hydrology and present minor alterations from the tailings dam somewhat adversely affect the wetland rating. See Table 2.

5.3.3 Michigan Rapid Assessment Method Area 3 – Beaver Impounded

Overall, the MiRAM assessment suggests that the subject wetland is of high quality, with a score of 73. Contributing factors to this rating include the surrounding natural areas, overall size of the wetland area being larger than 50 acres, relative permanence of hydrology, and habitat features. The area studied has had significant historical alterations as it appears to have once been an excavated borrow pit, which adversely affects the wetland rating as well as the prevalence of the invasive hybrid cattail. However, the quality of wetland area appears to have improved over time with the presence of beaver activity creating habitat and vegetative diversity. See Table 3.

5.3.4 Michigan Rapid Assessment Method Area 4 – Previously Excavated

Overall, the MiRAM assessment suggests that the subject wetland is of low quality with a score of 49. This wetland area also appears to have been created due to historic earth-moving activities. The benefitting factors contributing to this rating include the overall size of the wetland being larger than 50 acres, and the surrounding natural areas. However, without beaver-influenced hydrology, this created wetland is still recovering from historic alteration and excavation of the landscape, which adversely affects its rating. See Table 4.

5.4 Regulatory Authority

EGLE, and in some coastal cases USACE, have regulatory authority regarding the wetland boundary location(s) and jurisdictional status of wetlands in the State of Michigan. Barr's wetland determination was performed in general accordance with accepted procedures for conducting wetland determinations.

Barr's conclusions reflect our professional opinion based on the site conditions within the Survey Area observed during the site visits. Discrepancies may arise between current and future wetland determinations and delineations due to changes in vegetation and/or hydrology as the result of land use practices or other environmental factors, whether on-site or on adjacent or nearby properties. Barr provides no warranty, guarantee, or other agreement in respect to the period of time for which this wetland determination will remain valid.

6 References

1. **Barr Engineering Co.** *2024 Stream Characterization Report.* Carp Lake Township : Barr Engineering Co, 2025.

2. **United States Department of Agriculture, Natural Resources Conservation Service (NRCS).** Web Soil Survey. [Online] [Cited: June 21, 2024.] https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm.

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4. **U.S. Army Corps of Engineers.** Corps of Engineers Wetlands Delineation Manual. 1987. Wetlands Research Program Technical Report Y-87-1 (on-line edition).

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6. **Michigan Department of Natural Resources and Environment.** Michigan Rapid Assessment Method for Wetlands: User's Manual. July 23, 2010. MiRAM Version 2.1.

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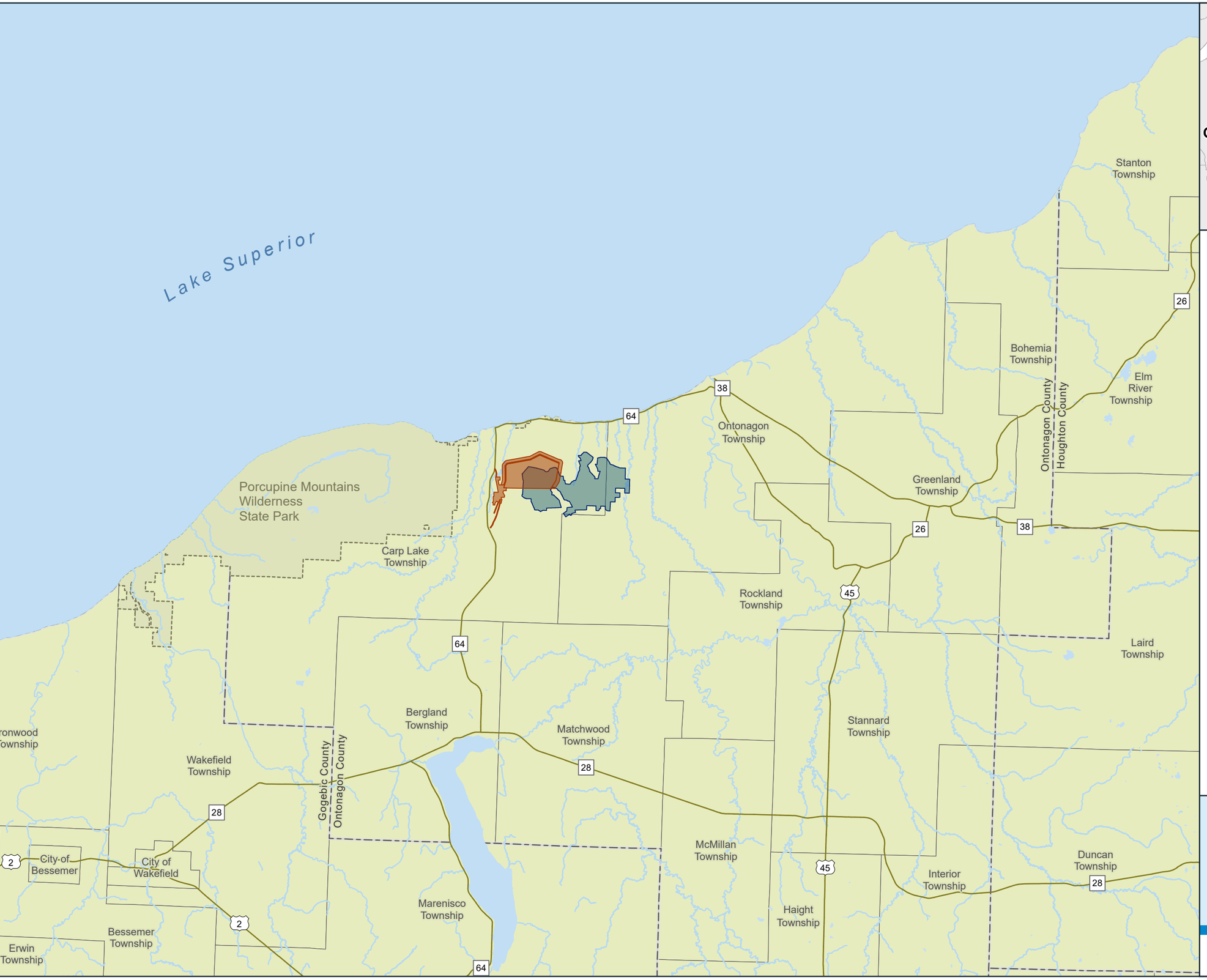
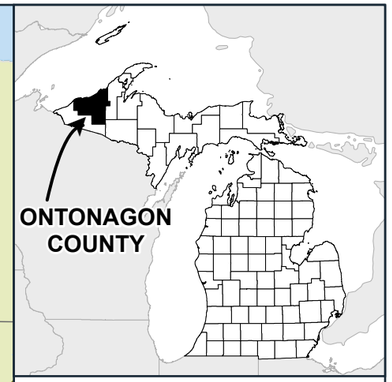
8. **Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016.** The National Wetland Plant List: 2016 Wetland Ratings (NWPL). *U.S. Army Corps of Engineers Digital Library.* [Online] April 28, 2016. [Cited: March 7, 2025.] https://usace.contentdm.oclc.org/digital/collection/p266001coll1/id/3540/.

Figures





- Proposed Surface Facilities
- Proposed Underground Mine Area
- Porcupine Mountains Wilderness State Park
- Municipal Boundary

0 5 10
Miles

Basemap: World Street Map (Esri)

Site Location
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, Michigan

FIGURE 1

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 09:53 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Report.aprx Layout: Fig01 Site Location User: CML3

Proposed Transmission Line Corridor

Potential Tailings Dam Expansion Area

Existing North Dam 2

Proposed Surface Footprint

Existing North Dam 1

Proposed Railroad Corridor

Proposed Underground Mine Area

TEN MILE TPKE

HALFWAY RIVER RD

TOWNLINE RD

QUARTZ RD

L P WALSH RD

POTATO FARM RD

M 64

Carp Lake Township

Ontonagon Township

Survey Area

Surface Rights Extent

Proposed Underground Mine Area

Proposed Surface Facilities

Surface Footprint

Potential Tailings Dam Expansion Area

Transmission Line Corridor

Railroad Corridor

N

0 3,000 6,000

Feet

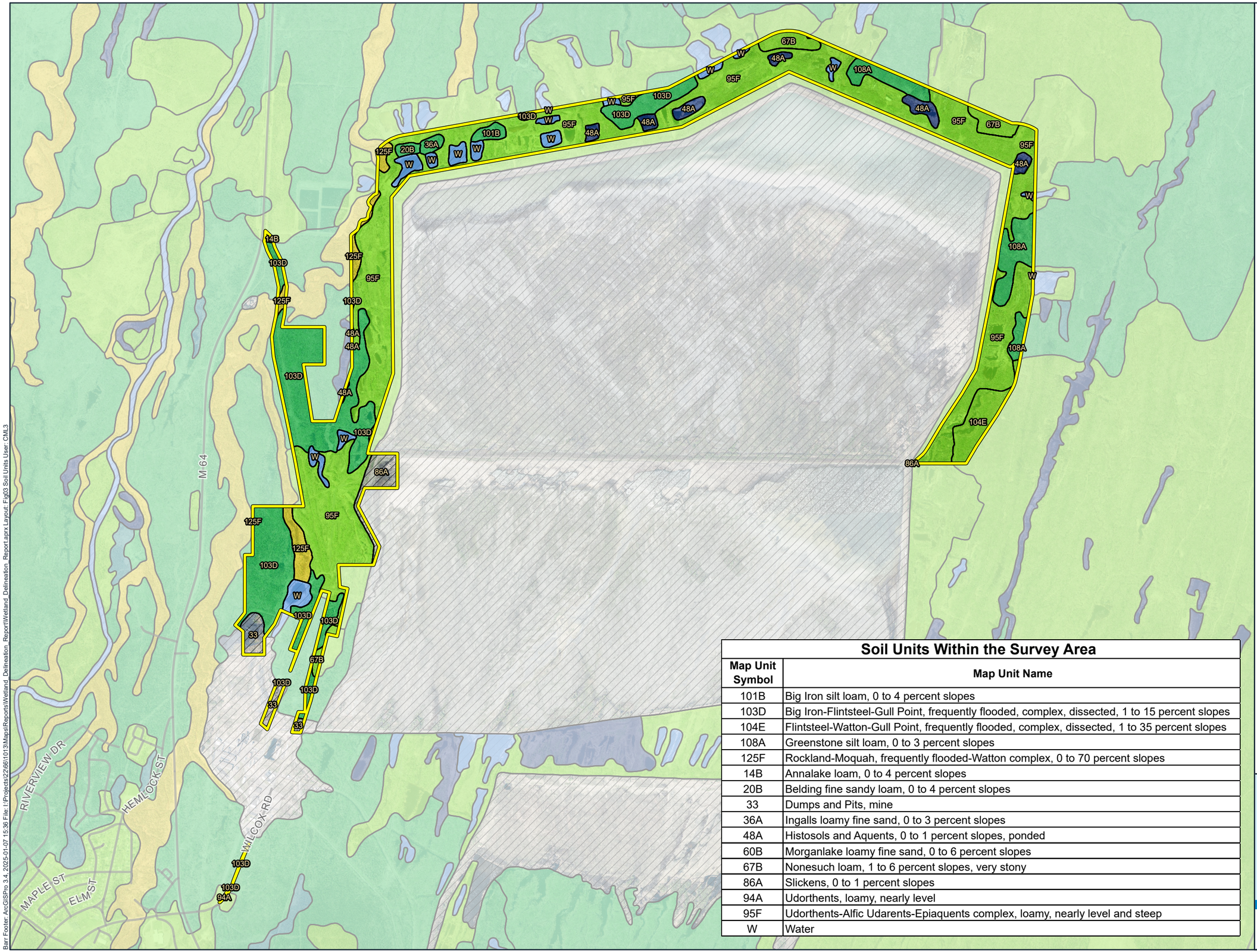
Imagery: USDA NAIP 2022

Site Layout
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, Michigan

FIGURE 2

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-07 15:36 File: I:\Projects\23\66\0103\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Report.aprx Layout: Fig02 Site Layout User: CML3



Survey Area
Soil Unit
Water

Soil Drainage Class
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- NA

Soil Units Within the Survey Area

Map Unit Symbol	Map Unit Name
101B	Big Iron silt loam, 0 to 4 percent slopes
103D	Big Iron-Flintsteel-Gull Point, frequently flooded, complex, dissected, 1 to 15 percent slopes
104E	Flintsteel-Watton-Gull Point, frequently flooded, complex, dissected, 1 to 35 percent slopes
108A	Greenstone silt loam, 0 to 3 percent slopes
125F	Rockland-Moquah, frequently flooded-Watton complex, 0 to 70 percent slopes
14B	Annalake loam, 0 to 4 percent slopes
20B	Belding fine sandy loam, 0 to 4 percent slopes
33	Dumps and Pits, mine
36A	Ingalls loamy fine sand, 0 to 3 percent slopes
48A	Histosols and Aquents, 0 to 1 percent slopes, ponded
60B	Morganlake loamy fine sand, 0 to 6 percent slopes
67B	Nonesuch loam, 1 to 6 percent slopes, very stony
86A	Slickens, 0 to 1 percent slopes
94A	Udorthents, loamy, nearly level
95F	Udorthents-Alfic Udarents-Epiaquents complex, loamy, nearly level and steep
W	Water

0 2,200 4,400
Feet

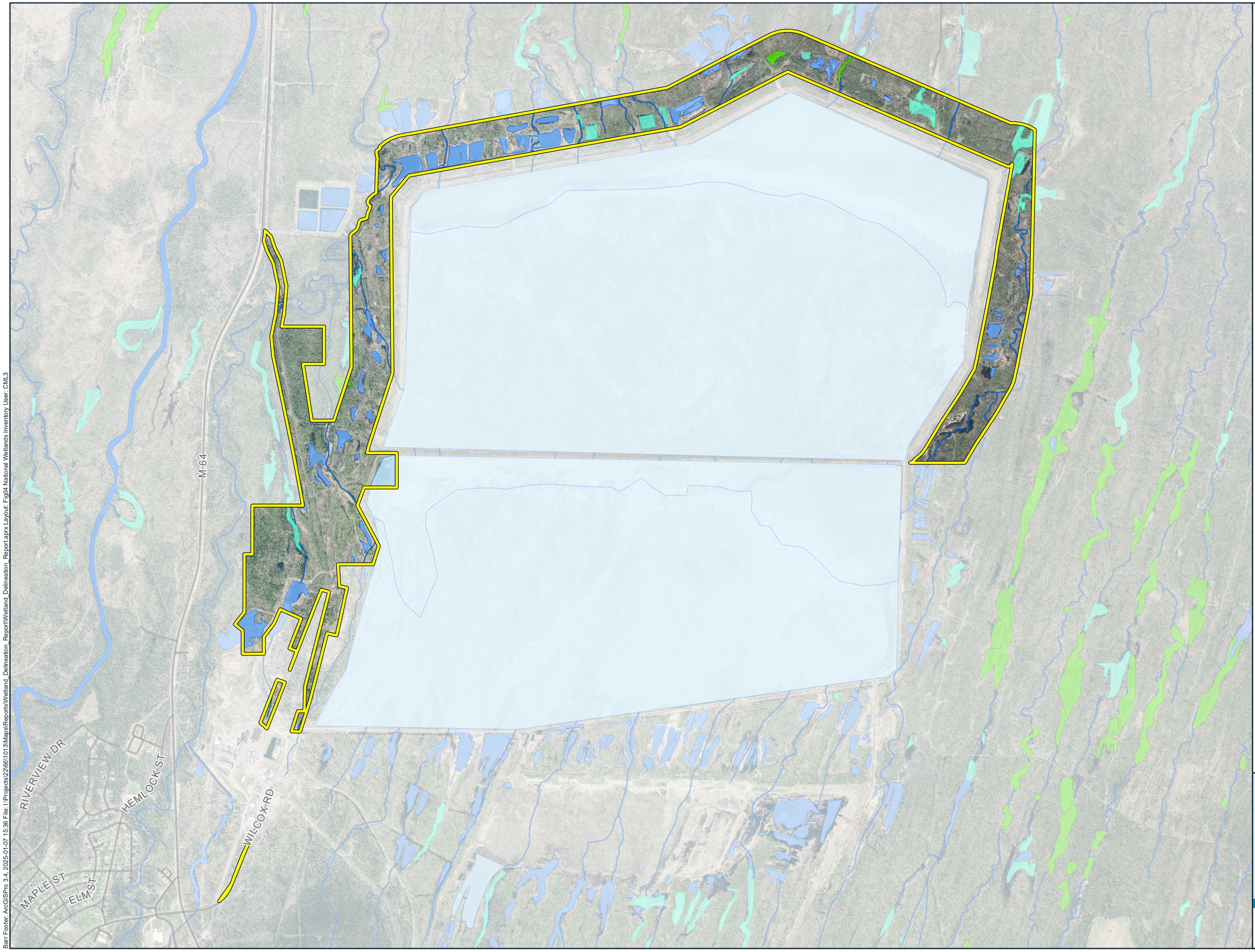
Imagery: MiSAIL 2023

Soil Units
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

FIGURE 3

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-07 15:36 File: I:\Projects\23\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Report.aprx Layout: Fig03 Soil Units User: CML3



Survey Area

Wetlands (NWI)

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine

N

0 2,200 4,400

Feet

Imagery: MiSAIL 2023

National Wetlands Inventory
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

FIGURE 4

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-07 15:36 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Report.aprx Layout: Fig04 National Wetlands Inventory User: CML3



Survey Area
Wetland Boundary Line
Wetland Area
Wetland Area (Water Treatment Facility)
Toe Drain (Desktop Delineated)

N

0 2,200 4,400
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Overview -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

FIGURE 5

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-13 13:12 File: I:\Projects\22\661\01013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Report.aprx Layout: Fig05 Wetland Delineation Overview User: CML3

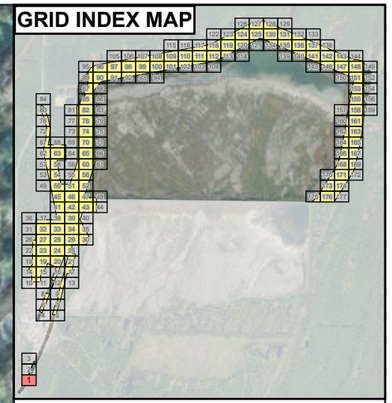
Appendices

Appendix A

Wetland Delineation Detail Mapbook



GRID INDEX MAP



Survey Area

N

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\23680\013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3



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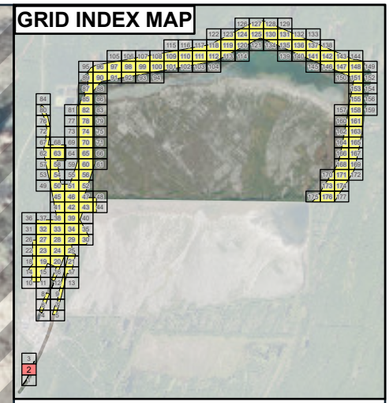


Survey Area

N

0 65 130

Feet

Imagery: MiSAIL 2023

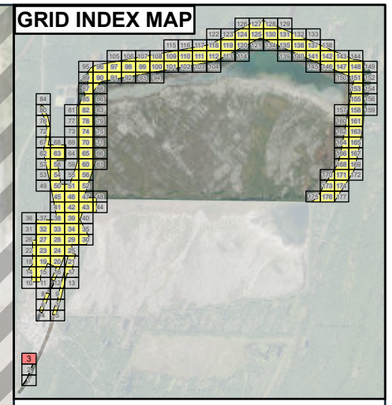
Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3

Outside of Survey Area

GRID INDEX MAP



Survey Area

N

0 65 130

Feet

Imagery: MiSAIL 2023

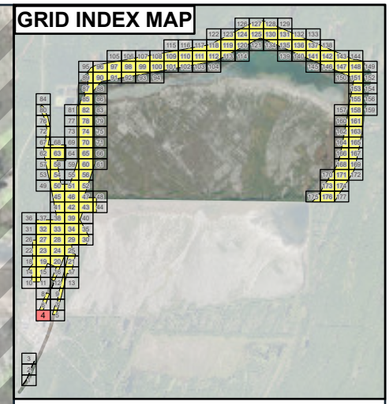
Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3



GRID INDEX MAP



Survey Area

Field Delineated Wetland Boundary

Wetland Area (Water Treatment Facility)

× Wetland Flag

0 65 130

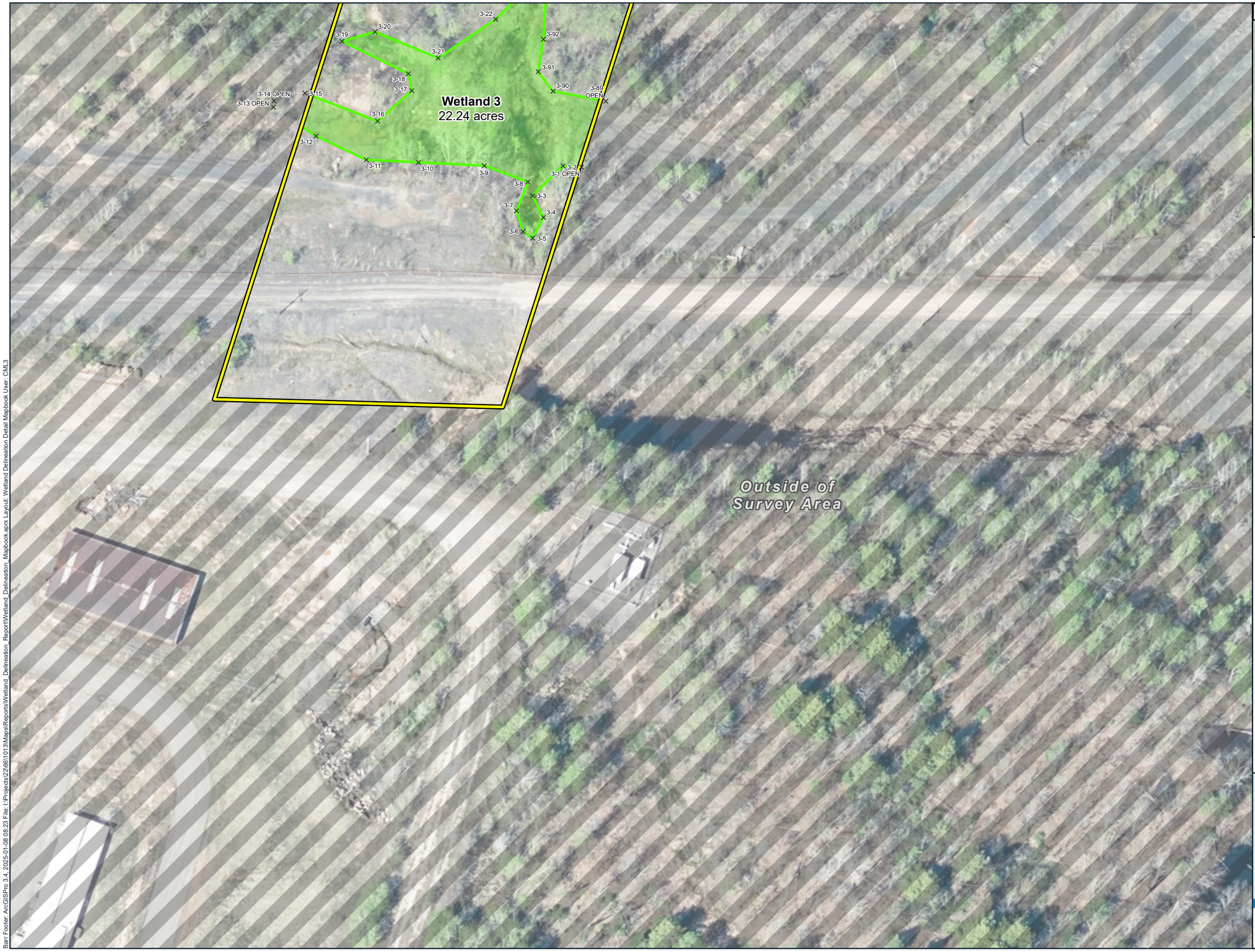
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3



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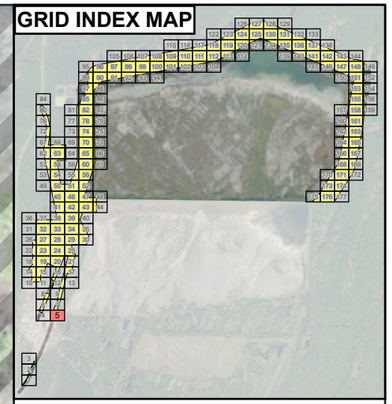


Survey Area

Field Delineated Wetland Boundary

Wetland Area

× Wetland Flag

N

0 65 130

Feet

Imagery: MiSAIL 2023

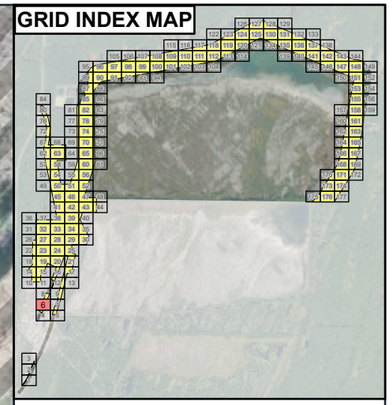
Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3



GRID INDEX MAP



- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area (Water Treatment Facility)
- × Wetland Flag
- ● Data Point

N

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3

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Outside of Survey Area

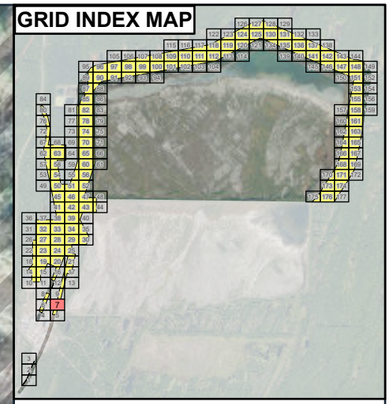
3-66 3-69 3-67 3-68 3-65 OPEN 3-64 3-63 3-73 3-73 3-61 3-74 3-60 3-62 3-75 3-59 3-58 3-76 3-57 3-78 3-56 3-79 3-55 OPEN 3-80 OPEN

3-45 3-46 3-41 OPEN 3-44 3-42 WTL 3 DP1W 3-44 3-47 WTL 3 DP 1 U 3-43 3-40 OPEN 3-48 3-39 3-49 3-38 3-37 3-54 OPEN 3-50 3-51 3-52 3-53 3-35 OPEN 3-36 OPEN 3-33 3-32 3-34 3-31 3-30 3-29 3-28 OPEN

3-101 OPEN 3-27 OPEN 3-99 3-100 3-26 3-98 3-25 3-97 3-24 3-95 3-96 3-94 3-23 3-93 3-22 3-20 3-19 3-21 3-92 3-18 3-91

Wetland 3
22.24 acres

GRID INDEX MAP



- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- Wetland Flag
- Data Point

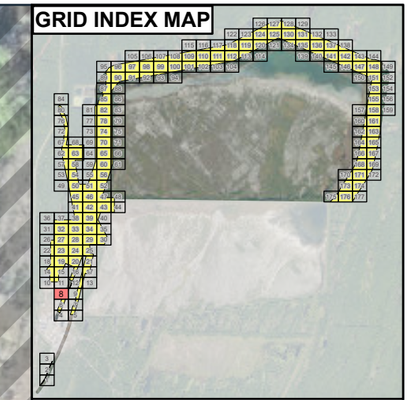
0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR





Survey Area

Field Delineated Wetland Boundary

Wetland Area (Water Treatment Facility)

Wetland Flag

Data Point

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3



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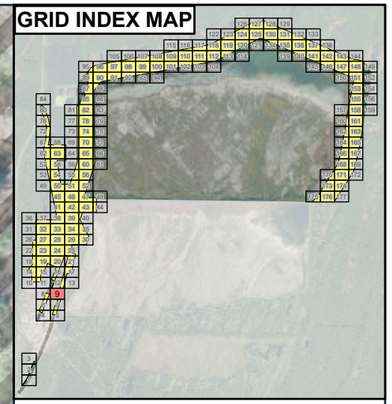


- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- × Wetland Flag

0 65 130
Feet

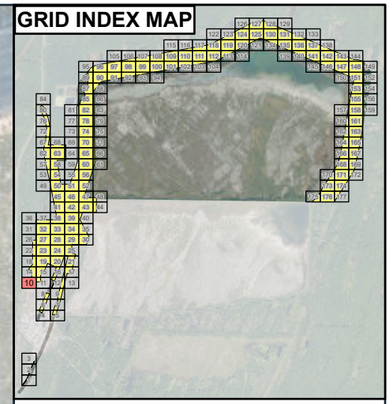
Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3





Survey Area

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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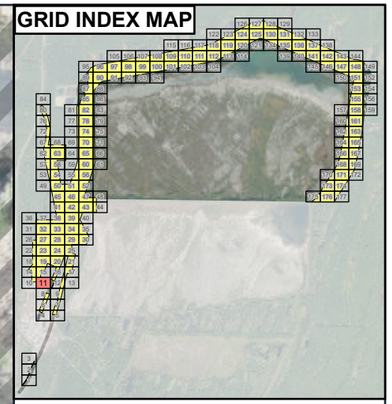

Survey Area

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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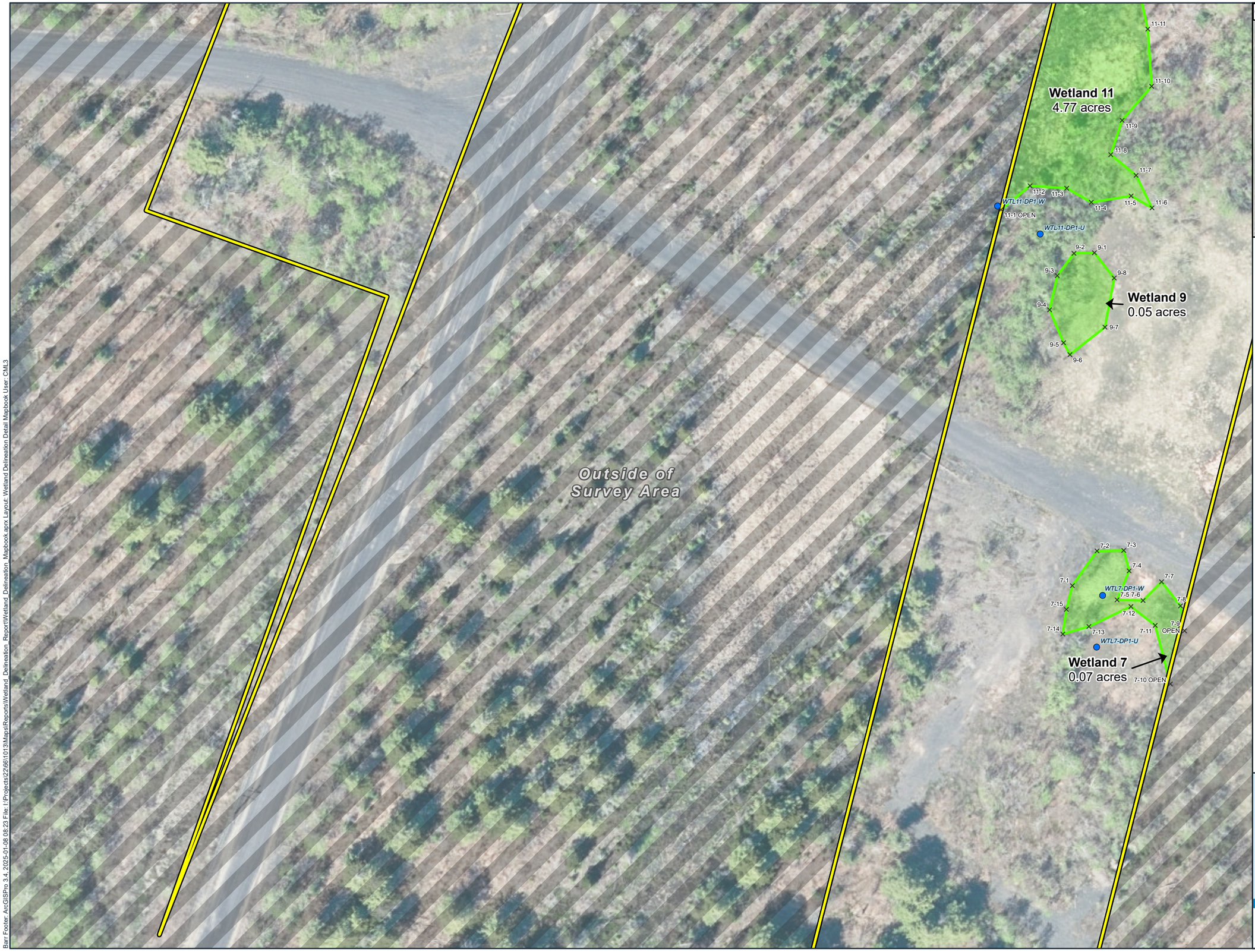

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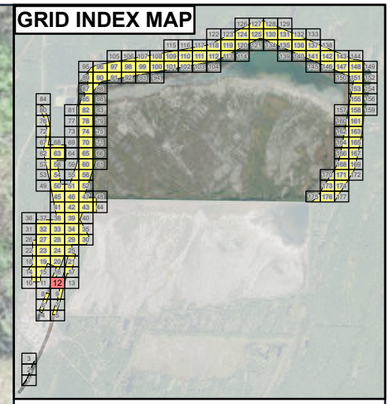

- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- Wetland Flag
- Data Point

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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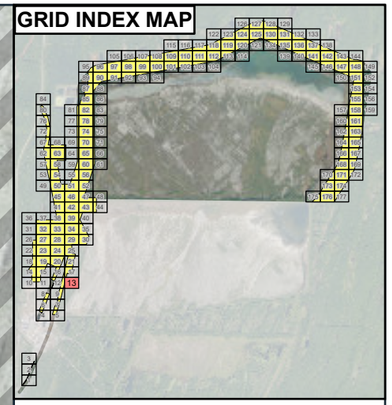

- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- × Wetland Flag

N

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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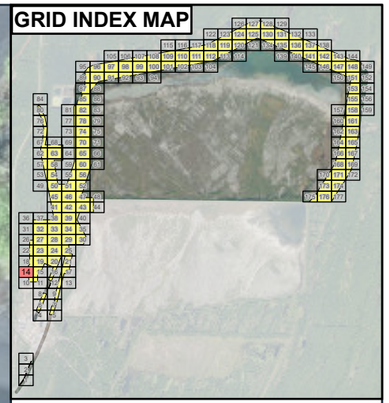


Survey Area

Desktop Delineated Wetland Boundary

Wetland Area (Water Treatment Facility)

0 65 130

Feet

Imagery: MiSAIL 2023

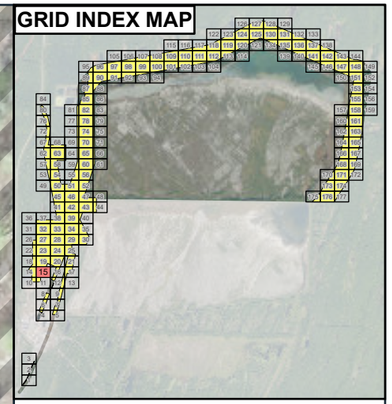
Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3



GRID INDEX MAP



Survey Area

Field Delineated Wetland Boundary

Wetland Area

× Wetland Flag

N

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3

Wetland 30
0.16 acres
30-30 OPEN
Wetland 32
0.02 acres
32-1
32-2
32-3
32-4
32-7
WTL32-DP1-W
WTL32-DP2-U
Wetland 34
< 0.01 acres
34-1
34-2
34-3
34-4
34-5
34-6
Outside of Survey Area
11-127
11-128
11-129
11-130
11-142
11-143
11-144
11-145
11-146
11-147
11-148
11-149
11-150
11-151
11-152
11-153
11-154
11-155
11-161
11-162
11-163
11-164
11-165
11-166 OPEN
11-167 OPEN
11-168
11-170
11-171
11-172 OPEN
11-14
11-13
11-12
11-11
Wetland 11
4.77 acres

GRID INDEX MAP

Survey Area
Field Delineated Wetland Boundary
Wetland Area
Wetland Flag
Data Point

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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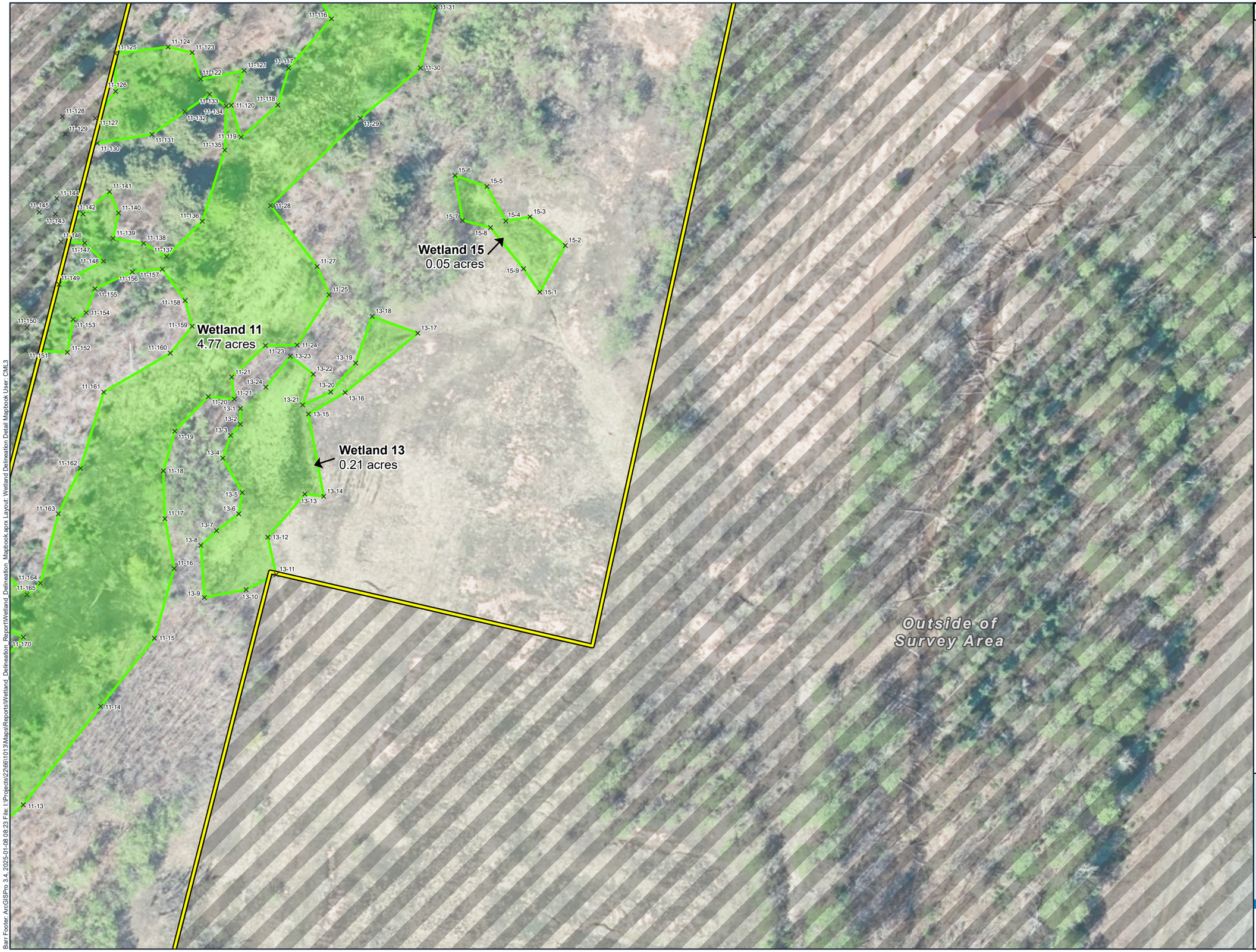
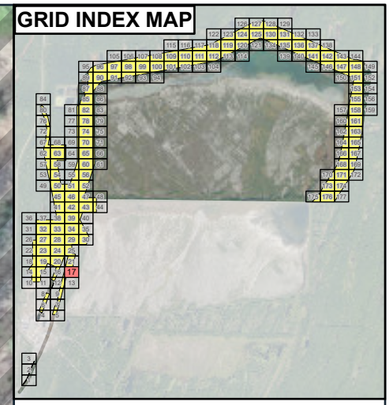


GRID INDEX MAP



- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- × Wetland Flag

N

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\23\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3



GRID INDEX MAP

- Survey Area
- Field Delineated Wetland Boundary
- Desktop Delineated Wetland Boundary
- Wetland Area
- Wetland Area (Water Treatment Facility)
- × Wetland Flag

N

0 65 130
Feet

Imagery: MiSAIL 2023

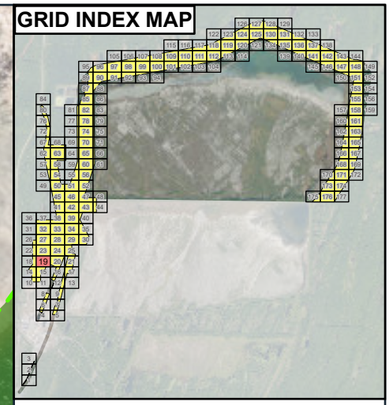
Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\26\61013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3



GRID INDEX MAP



- Survey Area
- Field Delineated Wetland Boundary
- Desktop Delineated Wetland Boundary
- Wetland Area
- Wetland Area (Water Treatment Facility)
- × Wetland Flag

N

0 65 130
Feet

Imagery: MiSAIL 2023

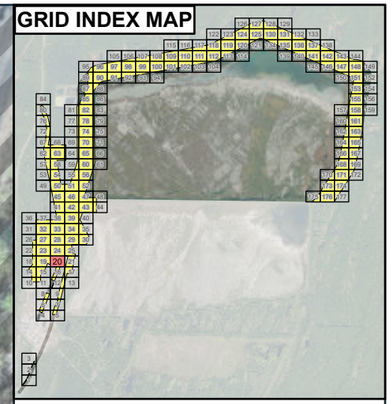
Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3



GRID INDEX MAP



- Survey Area
- Field Delineated Wetland Boundary
- Desktop Delineated Wetland Boundary
- Wetland Area
- Wetland Area (Water Treatment Facility)
- × Wetland Flag
- Data Point

N

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\6611013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3

Wetland 26
0.08 acres

Wetland 19
0.05 acres

Wetland 17
0.03 acres

Wetland 11
4.77 acres

Outside of Survey Area

GRID INDEX MAP

Survey Area
Field Delineated Wetland Boundary
Wetland Area
Wetland Flag

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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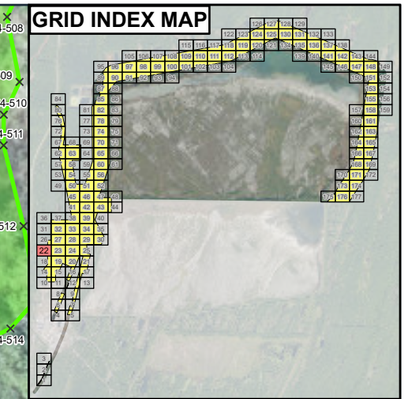


Survey Area
Field Delineated Wetland Boundary
Wetland Area
Wetland Flag
Data Point

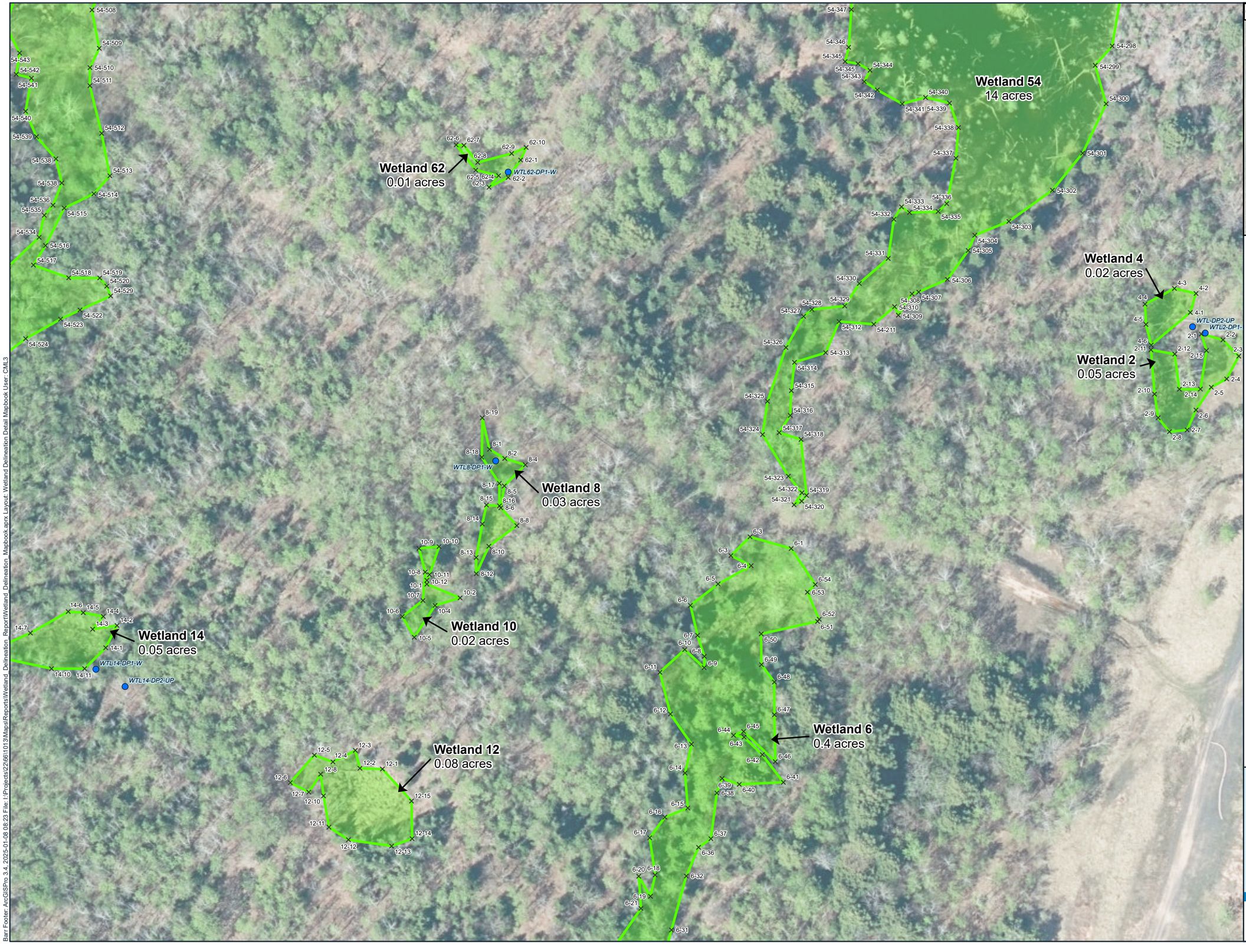
0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3



GRID INDEX MAP

- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- Wetland Flag
- Data Point

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3



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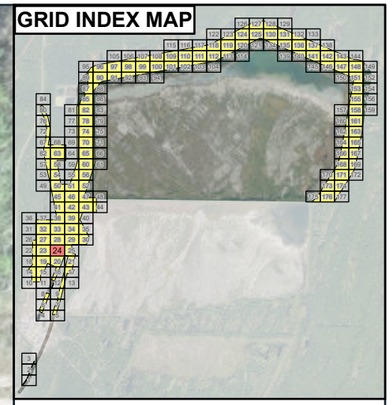

- Survey Area
- Field Delineated Wetland Boundary
- Desktop Delineated Wetland Boundary
- Wetland Area
- Wetland Area (Water Treatment Facility)
- × Wetland Flag
- ● Data Point

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22660\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3

Wetland 25
0.32 acres
25-20
11-208 OPEN
Wetland 44
0.05 acres
44-4
44-5
44-3
44-6
44-2
44-7
44-1
44-8
44-10
44-9
Wetland 46
0.04 acres
46-5
46-4
46-6
46-7
46-3
46-8
46-2
46-9
46-1
42-10
42-1
42-9
42-8
42-2
42-7
42-3
42-5
42-6
42-4
Wetland 42
0.04 acres
Outside of
Survey Area
11-173 OPEN
11-174
11-175
Wetland 11
4.77 acres
11-183
11-184
OPEN
11-182
11-176
11-181
11-177
11-179
11-178
11-180
11-59
11-58
11-60
11-57
11-62
11-63
11-56
11-64
11-61
11-55
11-54
11-53
11-52
11-46
11-47
Wetland 26
0.08 acres
Wetland 19
0.05 acres
19-1

GRID INDEX MAP

Survey Area
Field Delineated Wetland Boundary
Wetland Area
× Wetland Flag

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\661\013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland_Delineation_Detail Mapbook User: CML3

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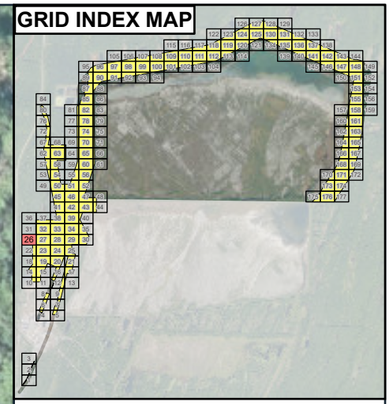
Outside of Survey Area

GRID INDEX MAP



- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- × Wetland Flag

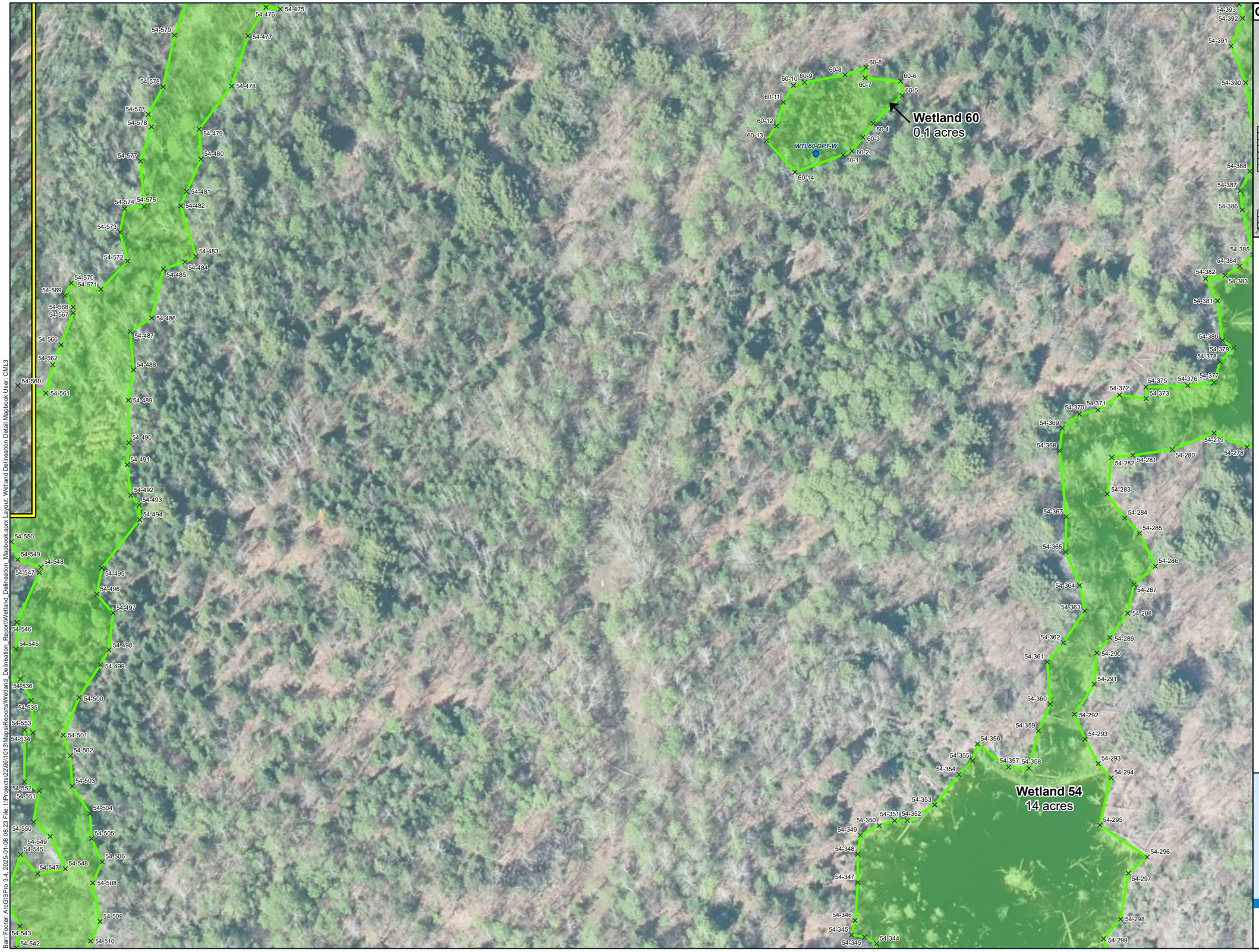
Wetland 54
14 acres

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR



GRID INDEX MAP

Survey Area

Field Delineated Wetland Boundary

Wetland Area

Wetland Flag

Data Point

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\2726\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3

Wetland 74
0.06 acres

Wetland 53
0.02 acres

Wetland 47
0.68 acres

Wetland 52
0.17 acres

Wetland 58
0.02 acres

Wetland 50
0.1 acres

Wetland 54
14 acres

Wetland 48
0.18 acres

Wetland 66
0.03 acres

Wetland 64
0.06 acres

WTL74-DP1-W
WTL74-DP2-U
WTL52-DP2-U
WTL52-DP1-W
WTO58-DP2-U
WTL58-DP1-W

GRID INDEX MAP

Survey Area
Field Delineated Wetland Boundary
Wetland Area
Wetland Flag
Data Point

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\01013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3

Wetland 53
0.02 acres

Wetland 33
0.06 acres

Wetland 31
0.02 acres

Wetland 35
0.03 acres

Wetland 29
0.04 acres

Wetland 21
0.02 acres

Wetland 47
0.68 acres

Wetland 3
22.24 acres

Wetland 55
0.07 acres

Wetland 27
0.01 acres

Wetland 25
0.32 acres

Wetland 23
0.02 acres

Wetland 11
4.77 acres

WTL47-DP1-W
WTL47-DP1-U
WTL29-DP1-U
WTL29-DP1-W
WTL11-DP2-W
WTL11-DP2-U
WTL23-DP1-W
WTL23-DP1-U

11-208 OPEN

Outside of Survey Area

GRID INDEX MAP

Survey Area
Field Delineated Wetland Boundary
Wetland Area
Wetland Flag
Data Point

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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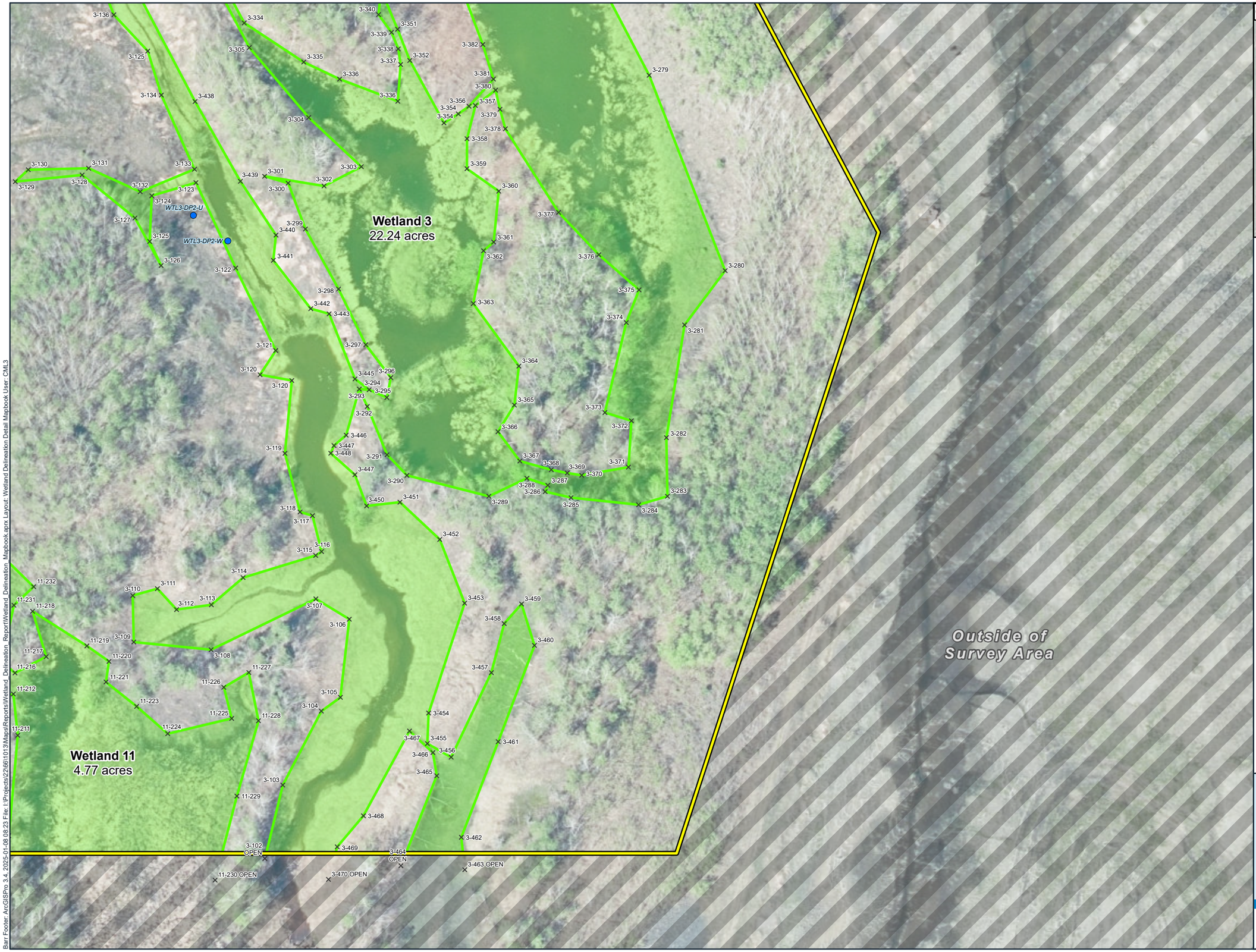
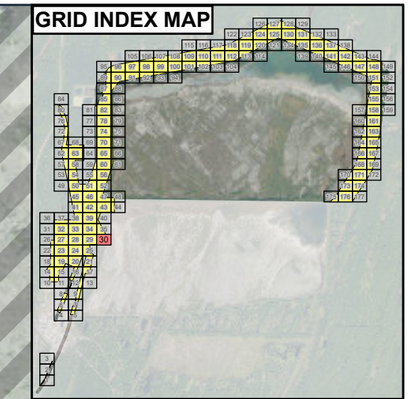




Survey Area
Field Delineated Wetland Boundary
Wetland Area
Wetland Flag
Data Point

0 65 130
Feet

Imagery: MiSAIL 2023

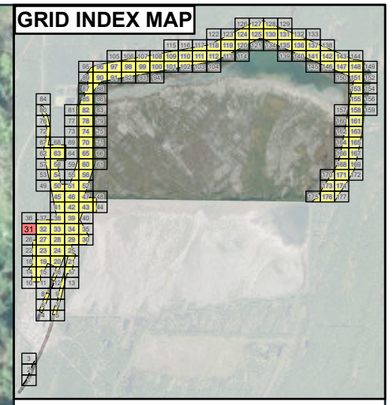
Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3

Outside of Survey Area

GRID INDEX MAP



Survey Area

N

0 65 130

Feet

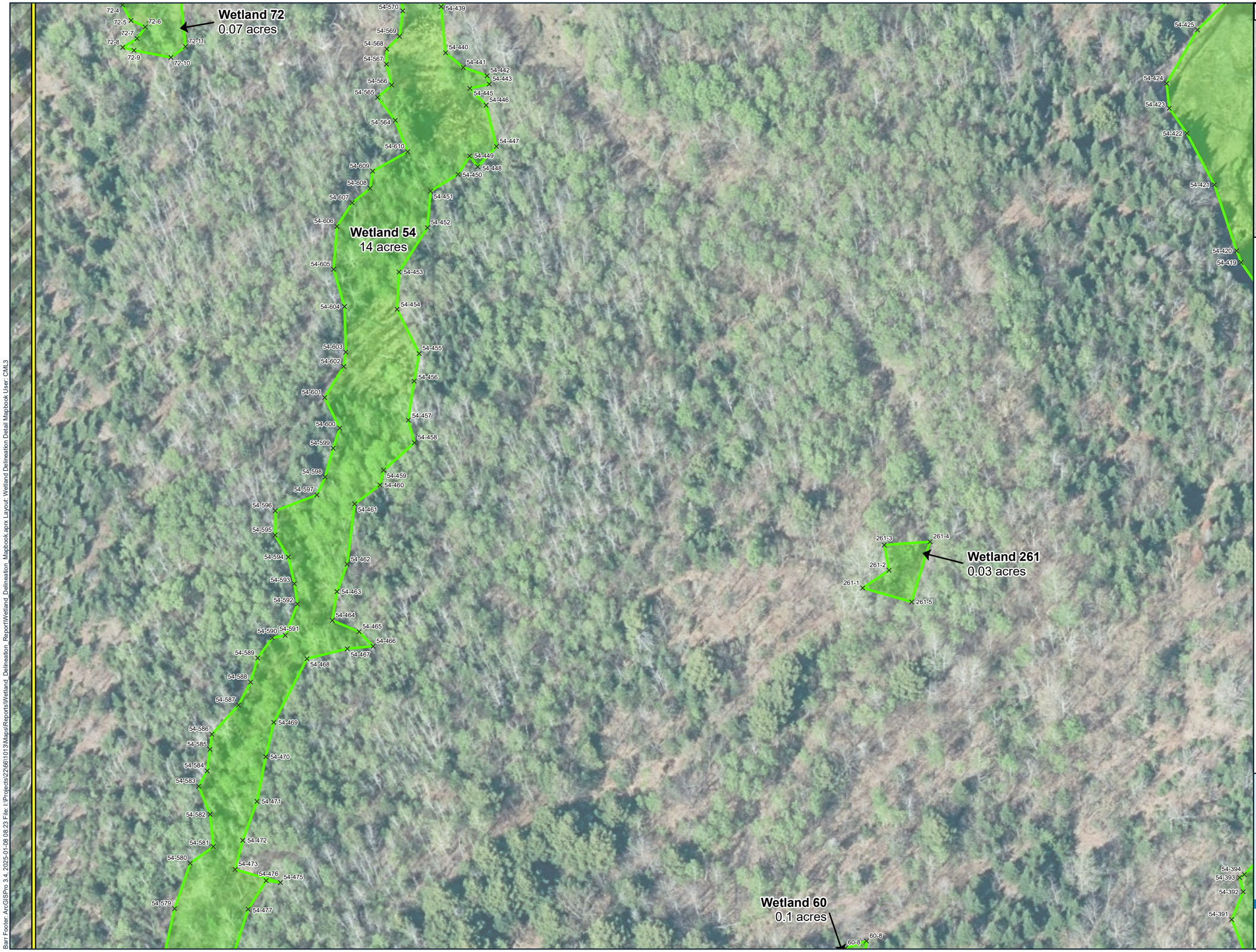
Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

PAGE 31 OF 177

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3



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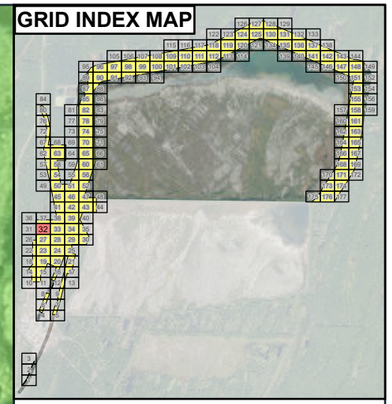

Survey Area

Field Delineated Wetland Boundary

Wetland Area

× Wetland Flag

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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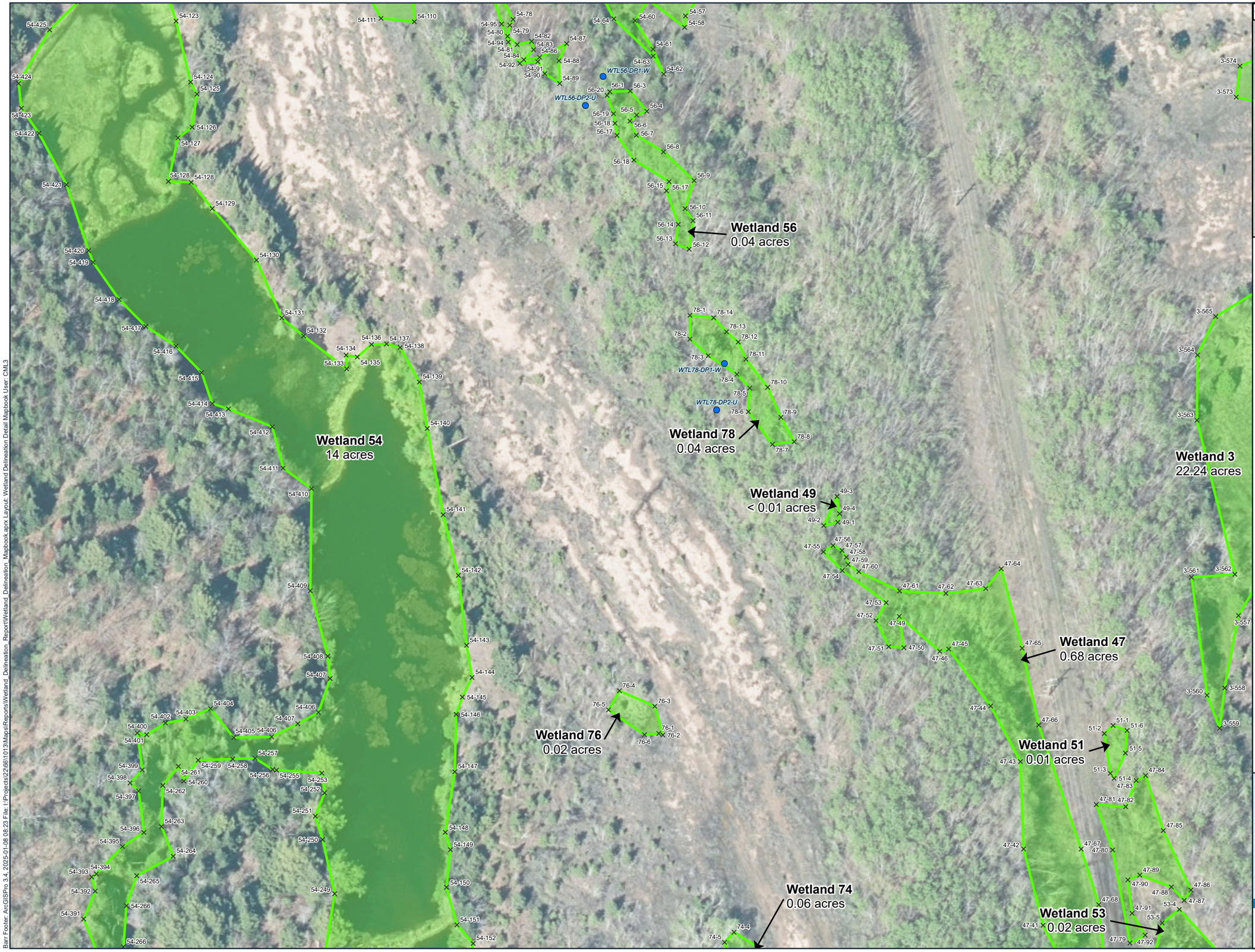


GRID INDEX MAP

Survey Area
Field Delineated Wetland Boundary
Wetland Area
Wetland Flag
Data Point

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3

Wetland 57
0.05 acres

Wetland 59
0.01 acres

Wetland 61
0.01 acres

Wetland 3
22.24 acres

Wetland 63
0.02 acres

Wetland 39
0.05 acres

Wetland 37
0.13 acres

Wetland 47
0.68 acres

Wetland 53
0.02 acres

Wetland 33
0.06 acres

WTL57-DP1-W
WTL57-DP1-U
WTL3-DP3-W
WTL3-DP2-U

GRID INDEX MAP

Survey Area
Field Delineated Wetland Boundary
Wetland Area
Wetland Flag
Data Point

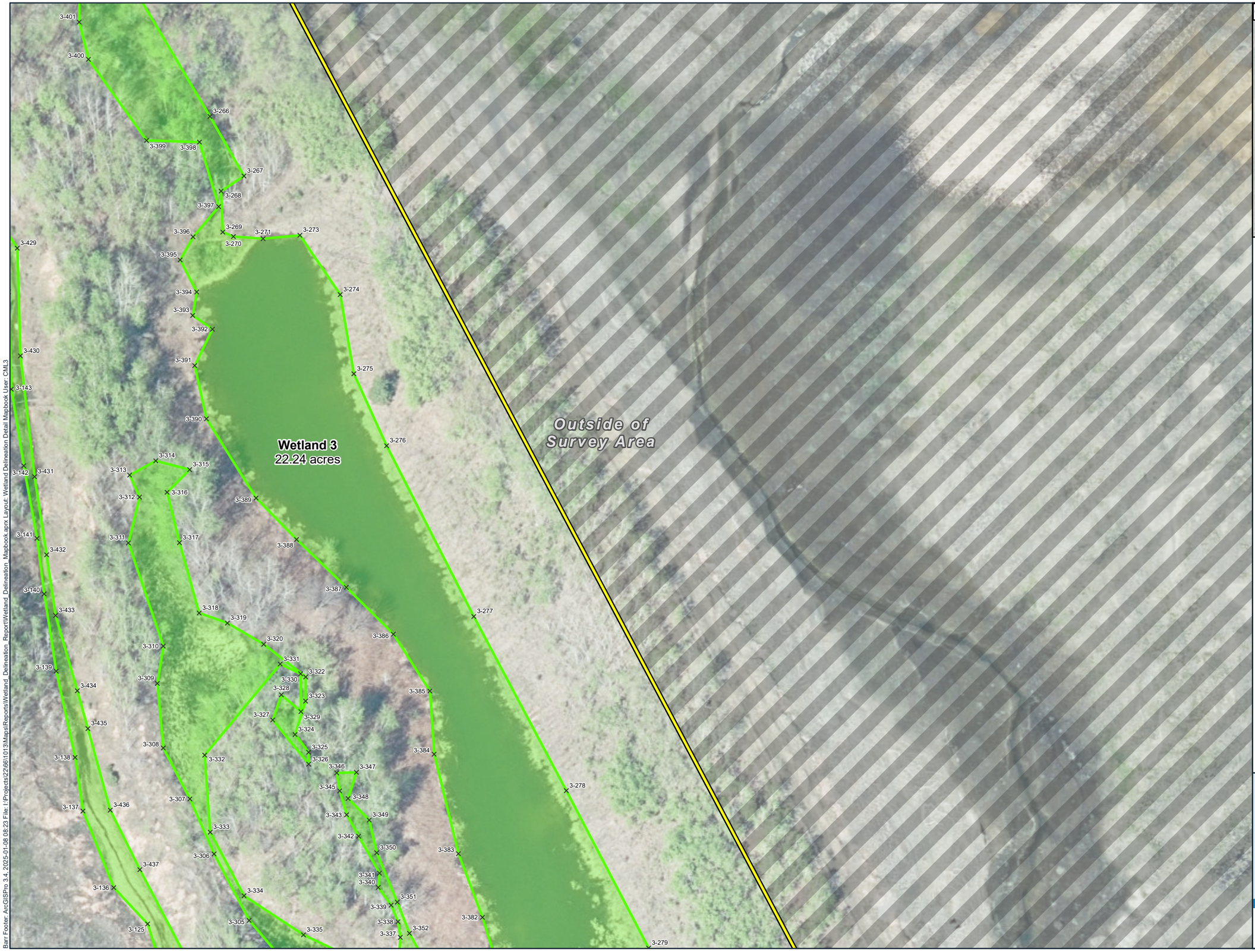
0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3



Survey Area

Field Delineated Wetland Boundary

Wetland Area

× Wetland Flag

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3



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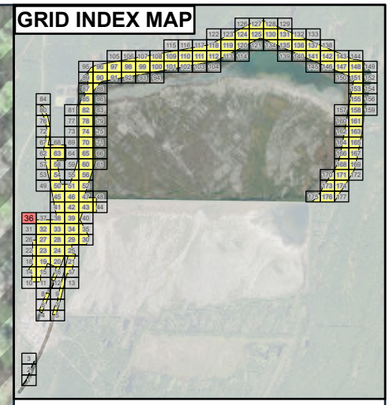


Survey Area

N

0 65 130

Feet

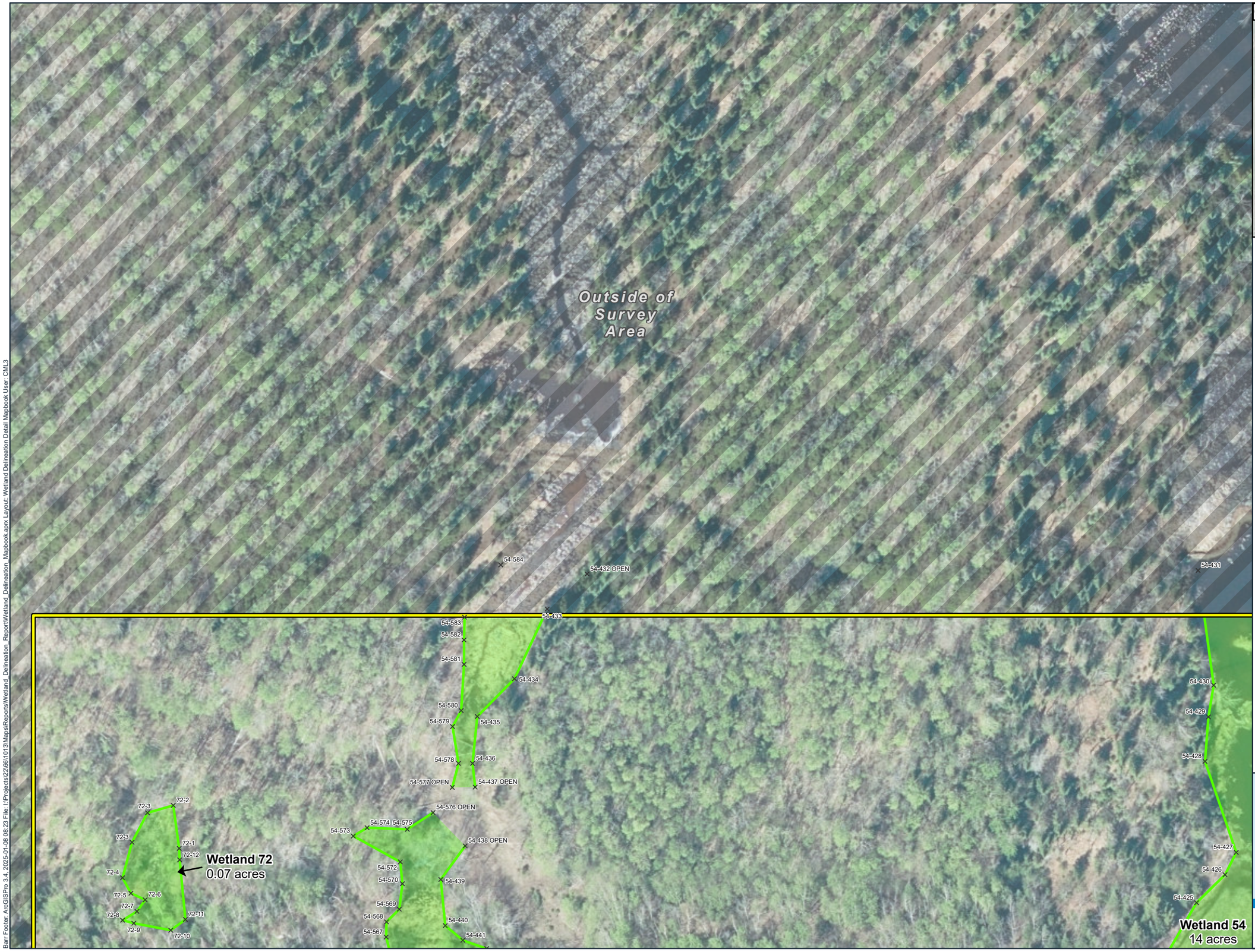
Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

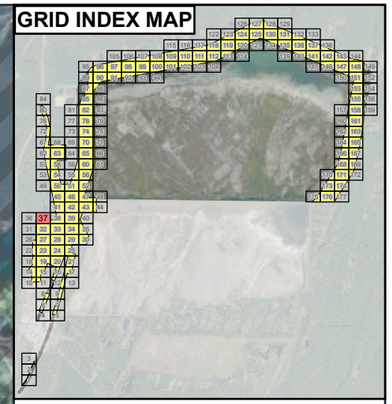
PAGE 36 OF 177

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\661\013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3



GRID INDEX MAP



- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- × Wetland Flag

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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GRID INDEX MAP

- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- Wetland Flag
- Data Point

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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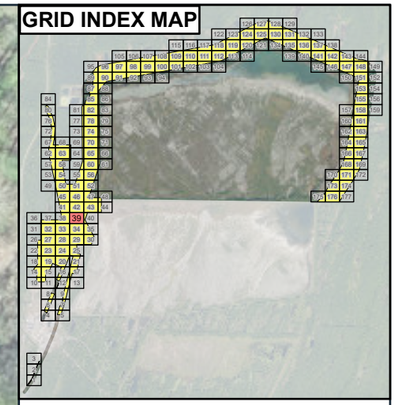


Survey Area

Field Delineated Wetland Boundary

Wetland Area

Wetland Flag

Data Point

0 65 130

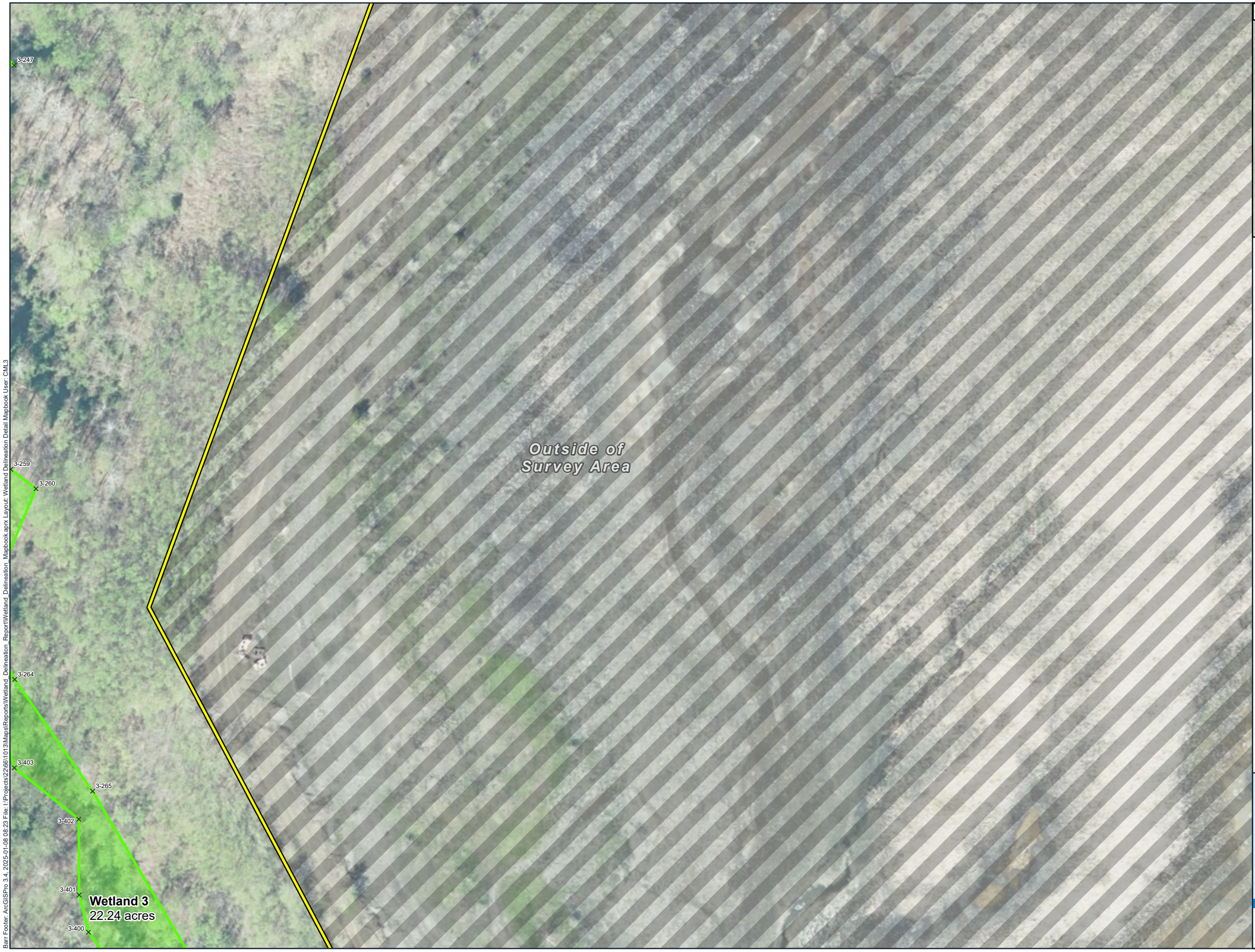
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3



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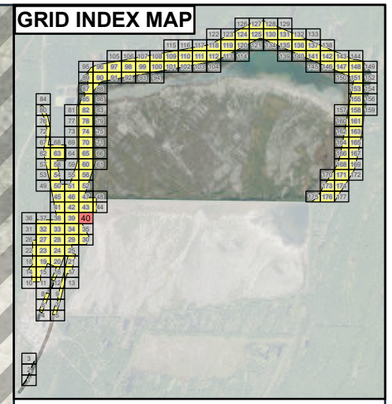


Survey Area

Field Delineated Wetland Boundary

Wetland Area

× Wetland Flag

N

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland_Delineation_Mapbook User: CML3

Wetland 3
22.24 acres

Wetland 54
14 acres

Outside of
Survey Area

GRID INDEX MAP

Survey Area

Field Delineated Wetland Boundary

Wetland Area

Wetland Flag

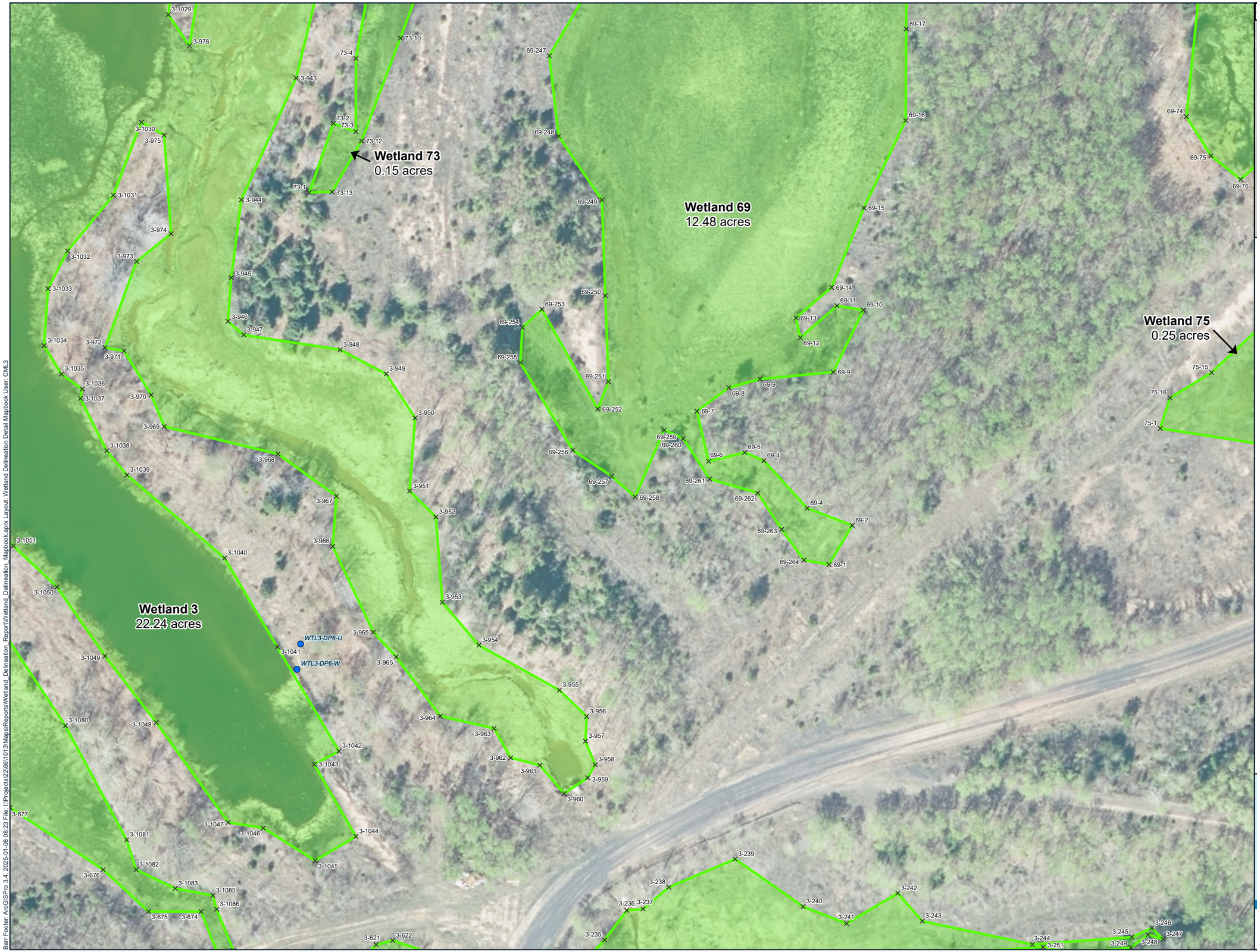
0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3



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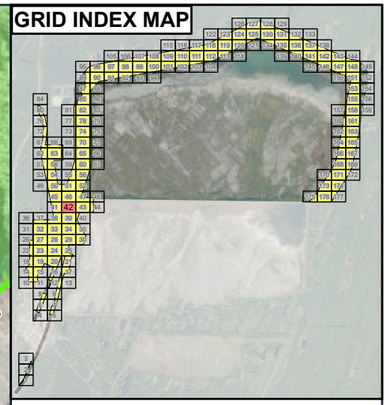


- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- Wetland Flag
- Data Point

N

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\23\661\013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3

Wetland 69
12.48 acres

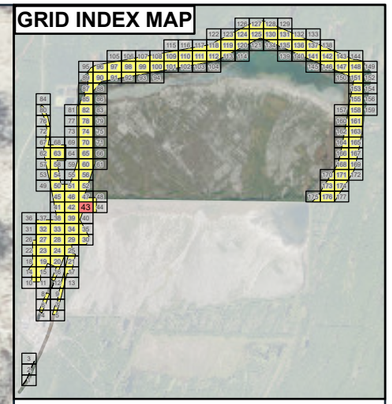
Wetland 75
0.25 acres

69-74
69-75
69-76
75-10
75-9
75-11
75-9
75-12
75-7
75-8
75-13
75-6
75-5
75-14
75-15
75-16
75-4
75-3
75-1
75-2

Outside of Survey Area

nd 3
5247
acres

GRID INDEX MAP



- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- × Wetland Flag

N

0 65 130
Feet

Imagery: MiSAIL 2023

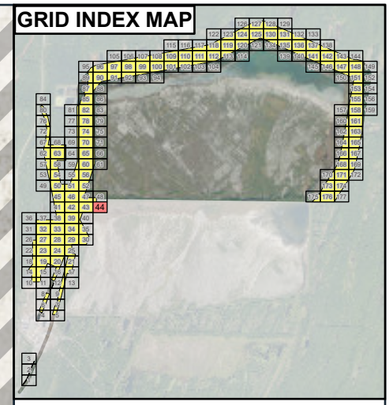
Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3

Outside of Survey Area

GRID INDEX MAP



Survey Area

N

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\6611013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3

Wetland 80
0.01 acres

Wetland 3
22.24 acres

Outside of Survey Area

WTL3-DP4-W
WTL3-DP4-U

GRID INDEX MAP

Survey Area
Field Delineated Wetland Boundary
Wetland Area
Wetland Flag
Data Point

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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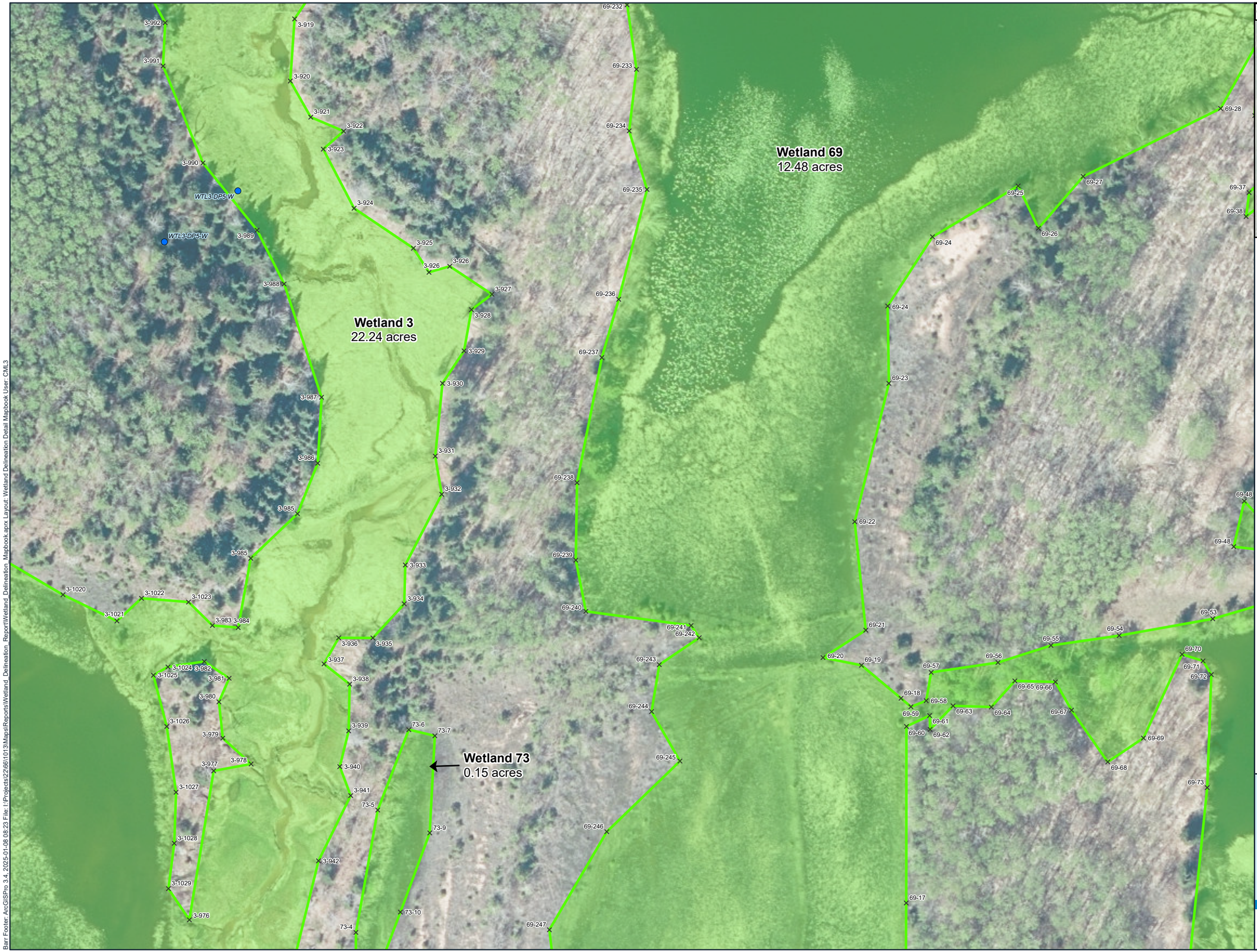

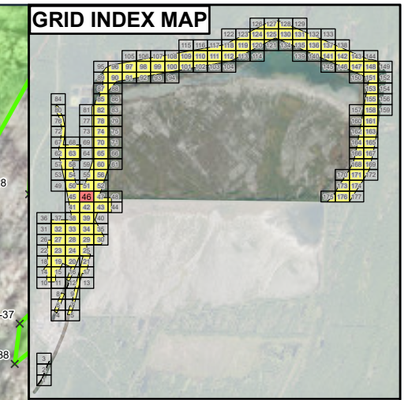

Survey Area
Field Delineated Wetland Boundary
Wetland Area
Wetland Flag
Data Point

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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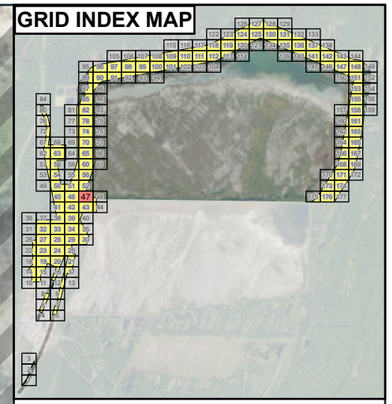
GRID INDEX MAP



Survey Area

Field Delineated Wetland Boundary

Wetland Area

× Wetland Flag

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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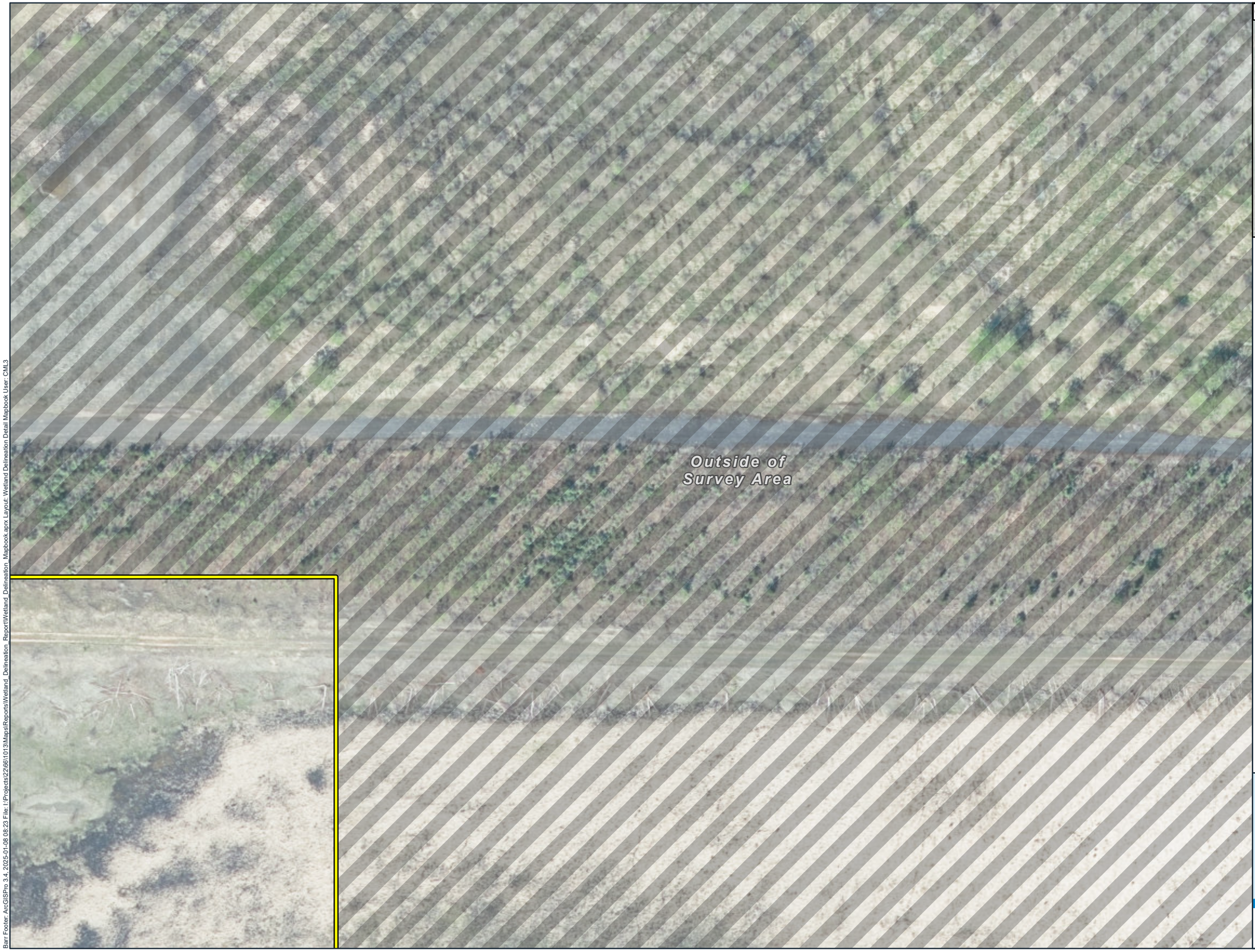

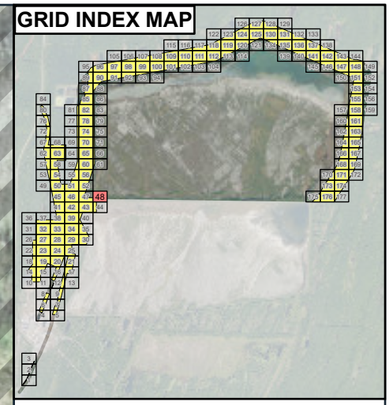

Survey Area

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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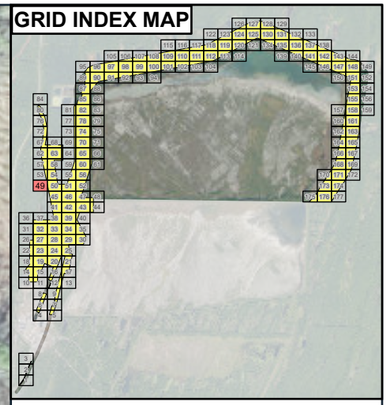
GRID INDEX MAP



Survey Area

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

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- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- Wetland Flag
- Data Point

N

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

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Outside of Survey Area

Wetland 3
22.24 acres

Wetland 69
12.48 acres

Wetland 71
0.03 acres

3-867 3-868 3-869 3-870 3-871 3-872 3-873 3-874 3-875 3-876 3-877 3-878 3-879 3-880 3-881 3-882 3-883 3-884 3-885 OPEN 3-886 OPEN 3-887 3-888 3-889 3-890 3-891 3-892 3-893 3-894 3-895 3-896 3-897 3-898 3-899 3-900 3-901 3-902 3-903 3-904 3-905 3-906 3-907 3-908 3-909 3-910 3-911 3-912 3-913 3-914 3-915 3-916 3-917 3-918 3-919 3-991 3-992 3-993 3-994 3-995 3-996 3-997

69-120 69-121 69-122 69-123 69-124 69-125 69-126 69-127 69-128 69-129 69-130 69-131 69-132 69-133 69-134 69-135 69-136 69-137 69-138 69-139 69-140 69-154 69-155 69-156 69-157 69-158 69-159 69-160 69-161 69-162 69-163 69-164 69-165 69-166 69-167 69-168 69-169 69-170 69-171 69-172 69-173 69-174 69-175 69-176 69-177 69-178 69-179 69-180 69-181 69-182 69-183 69-184 69-185 69-186 69-187 69-188 69-189 69-190 69-191 69-192 69-193 69-194 69-195 69-196 69-197 69-198 69-199 69-200 69-201 69-202 69-203 69-204 69-205 69-206 69-207 69-208 69-209 69-210 69-211 69-212 69-213 69-214 69-215 69-216 69-217 69-218 69-219 69-220 69-221 69-222 69-224 69-225 69-226 69-227 69-228 69-229 69-230 69-231 69-232 69-233 69-265 69-266 69-267 69-268 69-269 69-270 69-271 69-272 69-273 69-287 69-288 69-289 69-290 69-291 69-292 69-293 69-107 69-108 69-109 69-110 69-111 69-112 69-113 69-114 69-115 69-116 69-117 69-118 69-119

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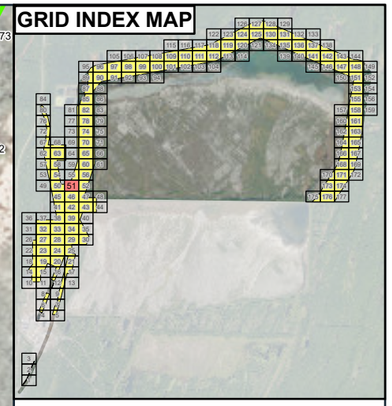

Survey Area
Field Delineated Wetland Boundary
Wetland Area
× Wetland Flag

N

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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Wetland 79
30.97 acres

Wetland 134-A
0.1 acres

Wetland 69
12.48 acres

Outside of Survey Area

GRID INDEX MAP

Survey Area
Field Delineated Wetland Boundary
Wetland Area
× Wetland Flag

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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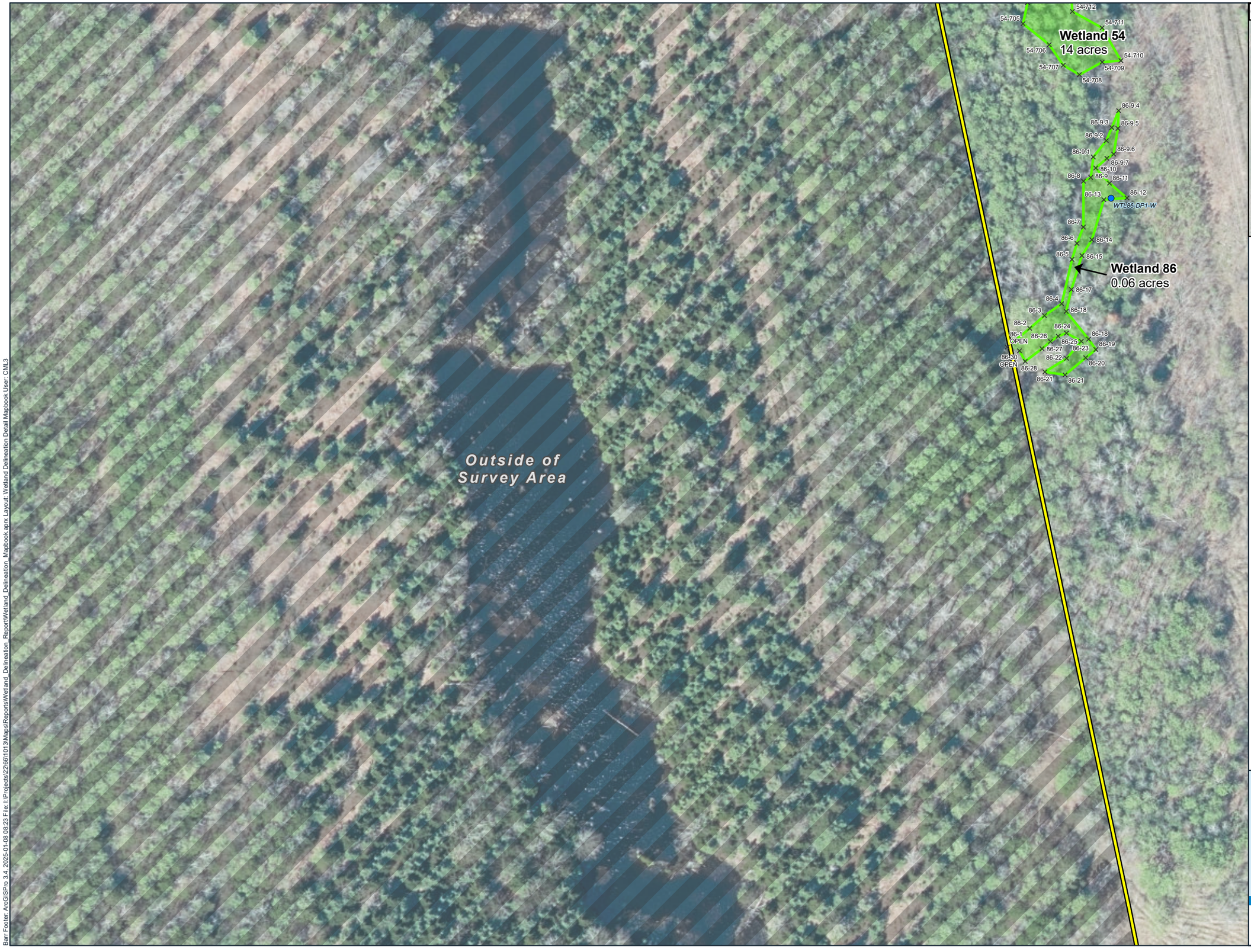

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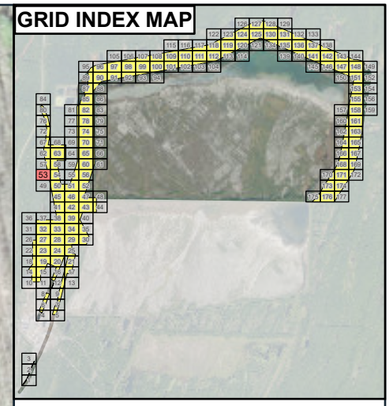

- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- Wetland Flag
- Data Point

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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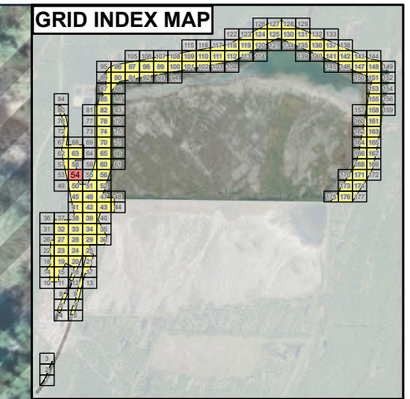

Survey Area

Field Delineated Wetland Boundary

Wetland Area

Wetland Flag

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

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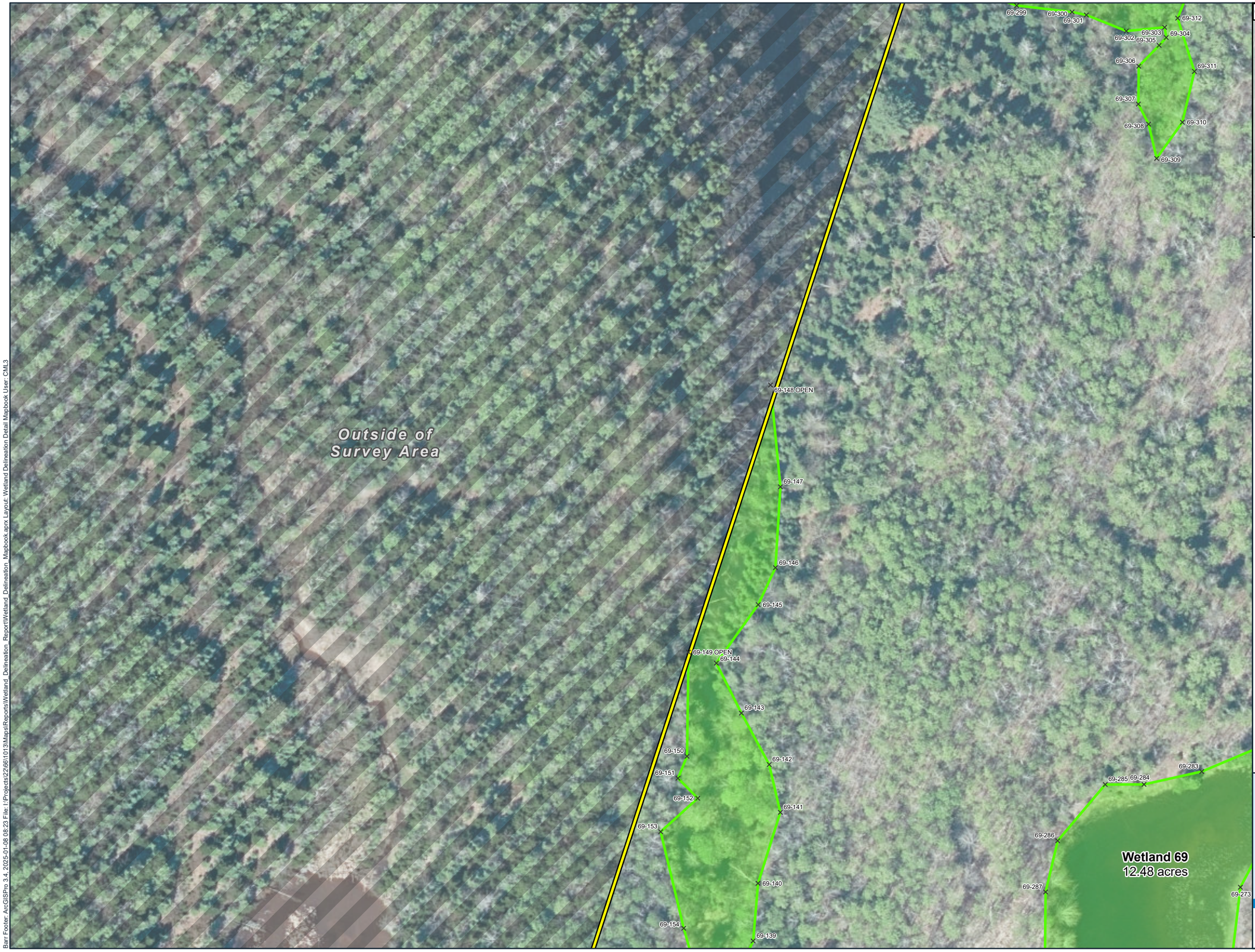

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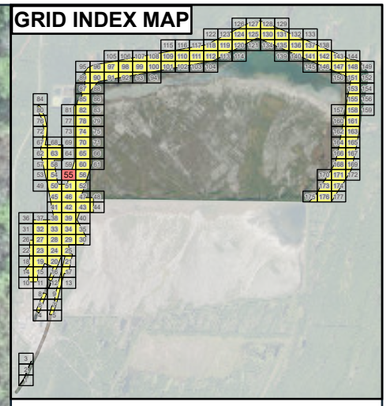

- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- × Wetland Flag

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

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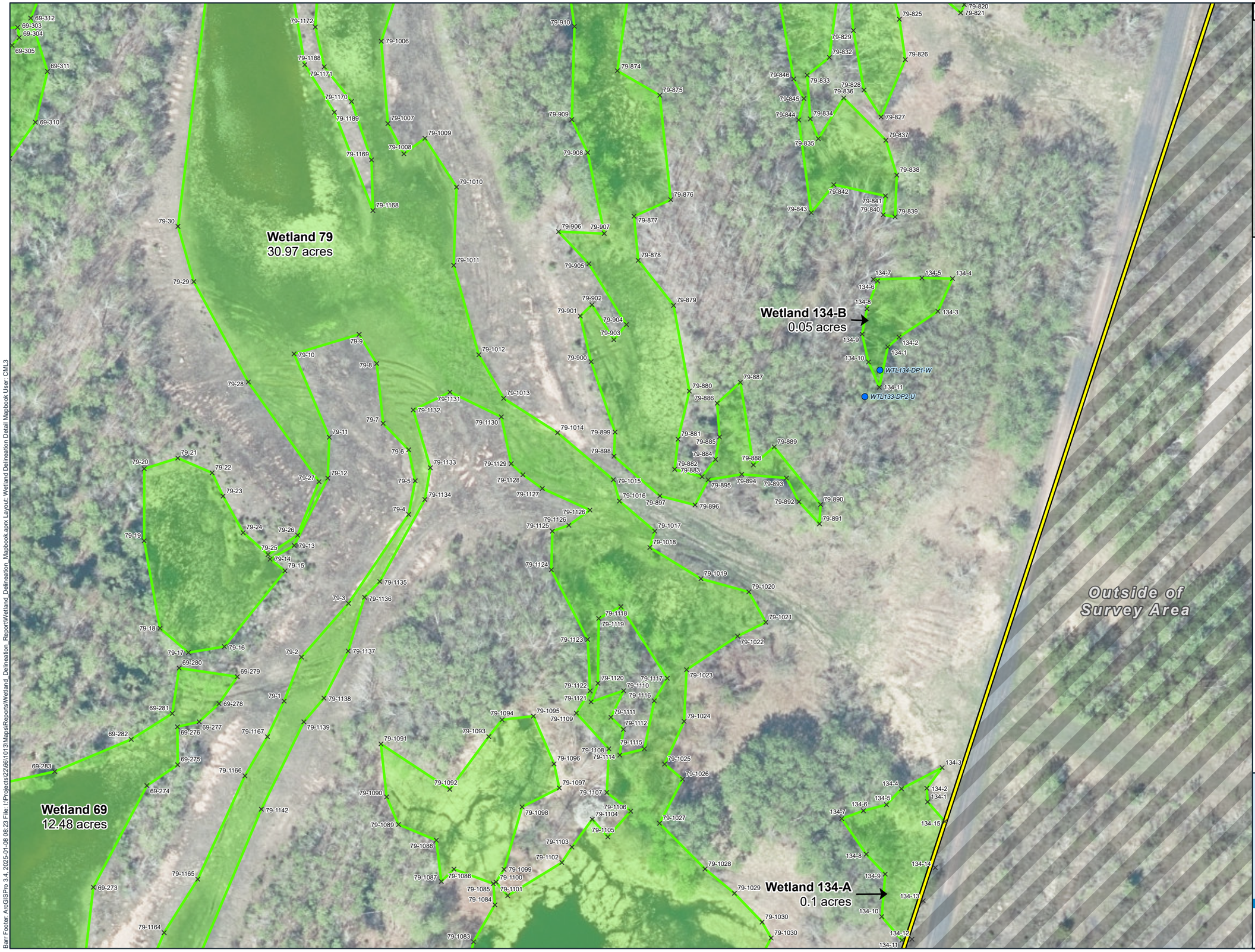

GRID INDEX MAP

- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- Wetland Flag
- Data Point

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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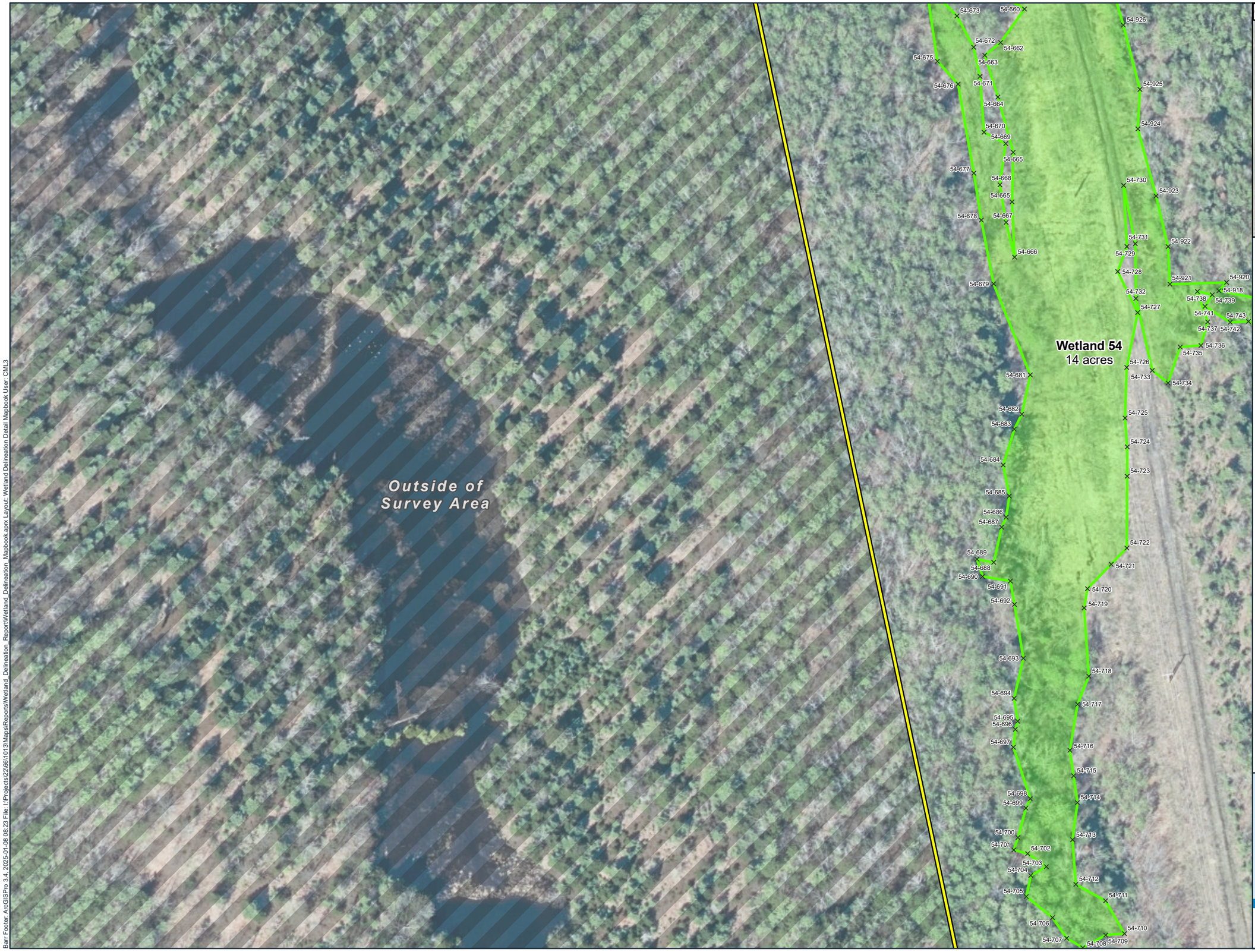

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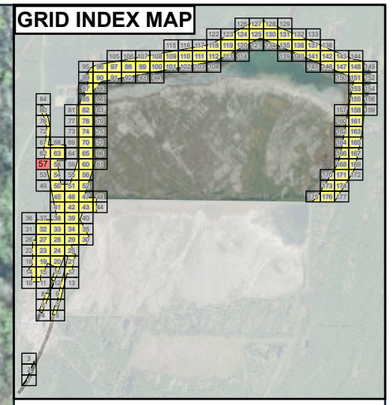

Survey Area

Field Delineated Wetland Boundary

Wetland Area

× Wetland Flag

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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GRID INDEX MAP

Survey Area

Field Delineated Wetland Boundary

Wetland Area

× Wetland Flag

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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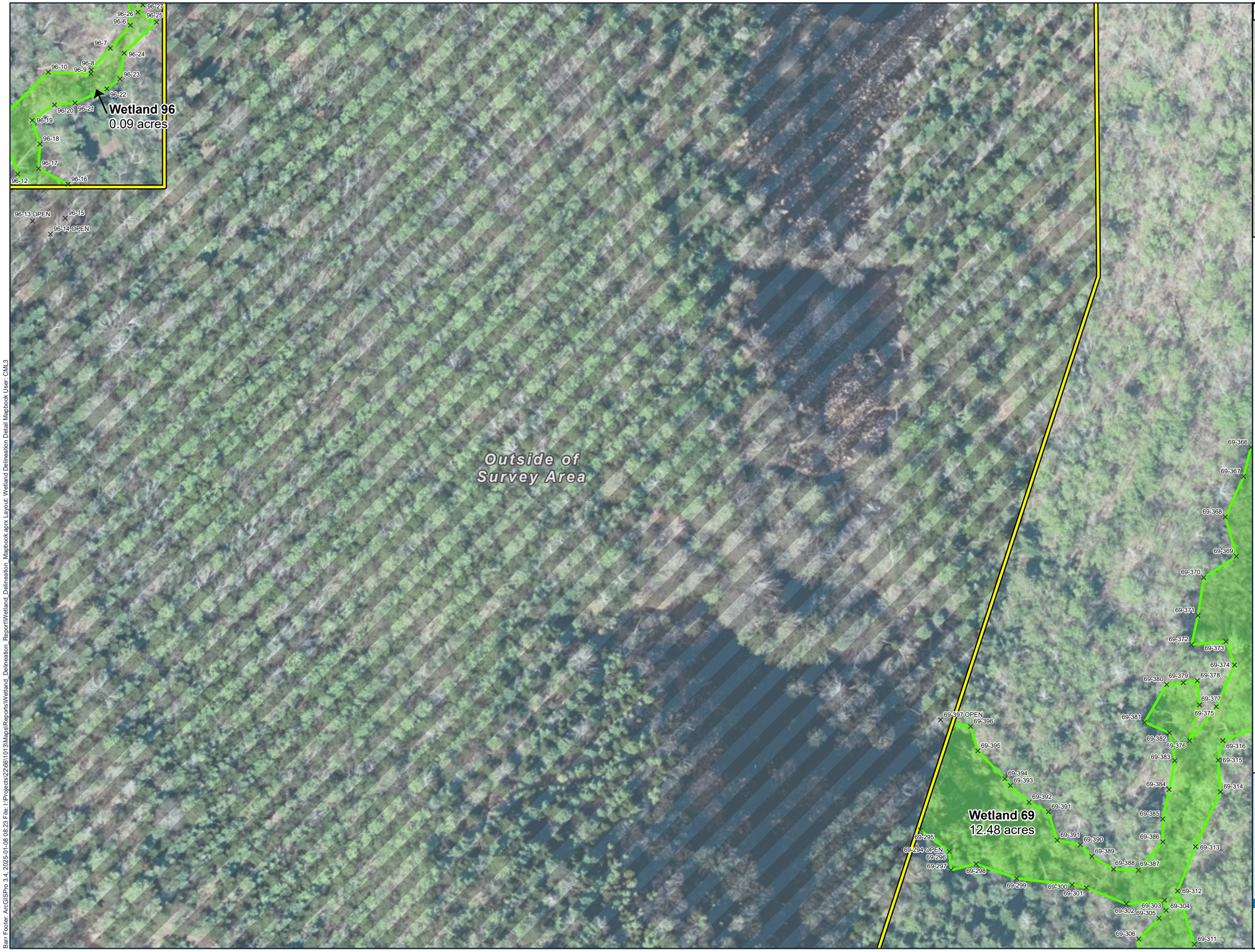

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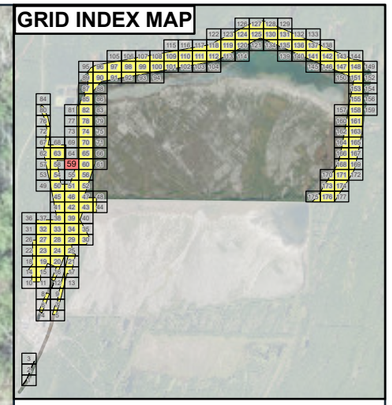

- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- × Wetland Flag

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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Wetland 79
30.97 acres

Wetland 69
12.48 acres

Wetland 130-A
0.02 acres

Wetland 132-A
0.03 acres

Wetland 128-A
< 0.01 acres

GRID INDEX MAP

Survey Area
Field Delineated Wetland Boundary
Wetland Area
Wetland Flag

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

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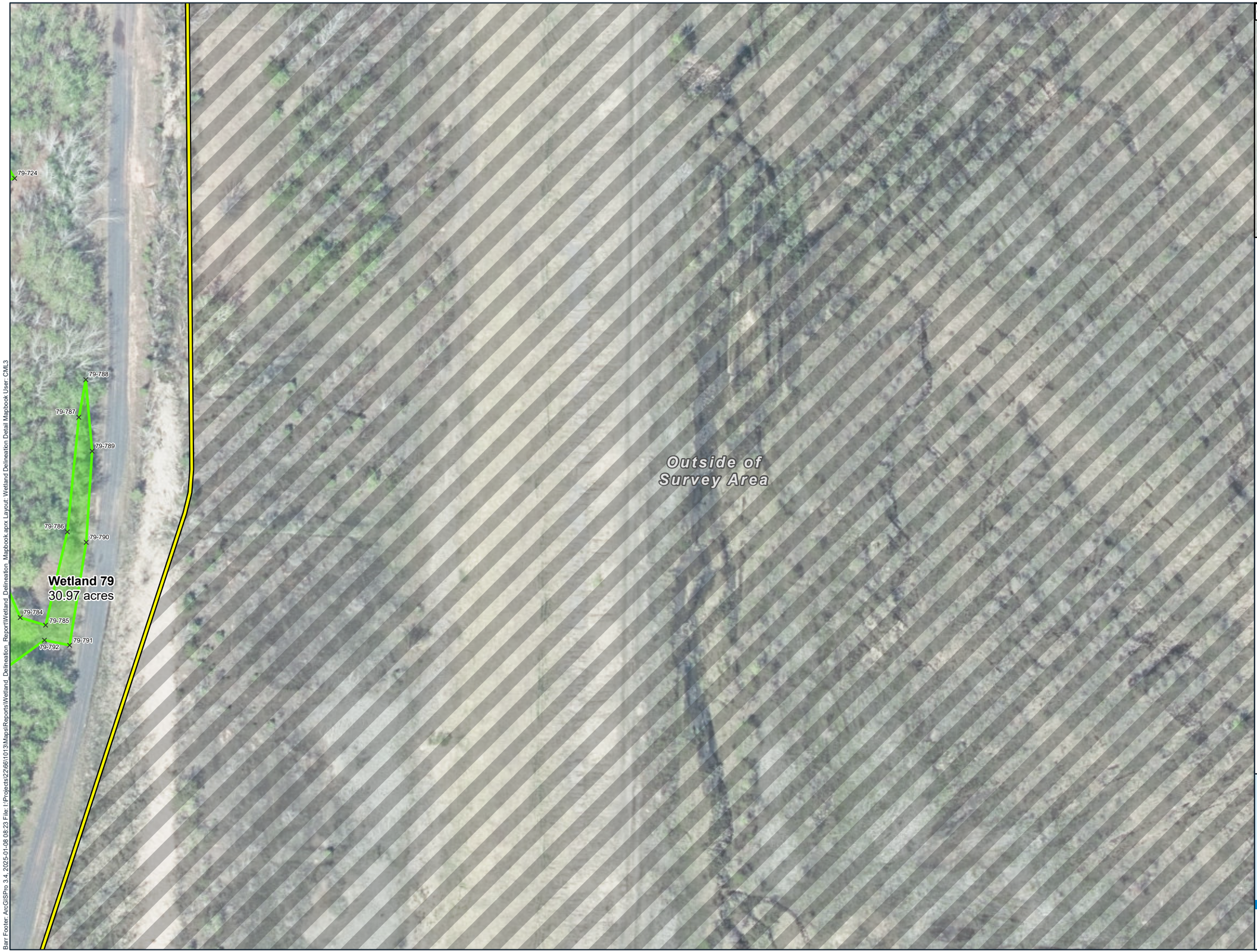

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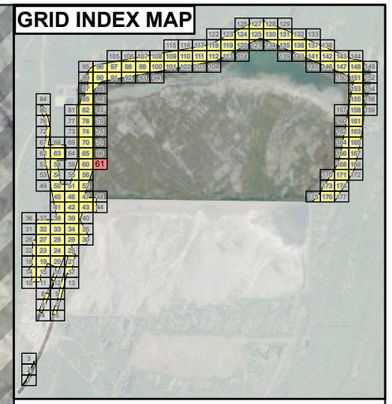

Survey Area

Field Delineated Wetland Boundary

Wetland Area

× Wetland Flag

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

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Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

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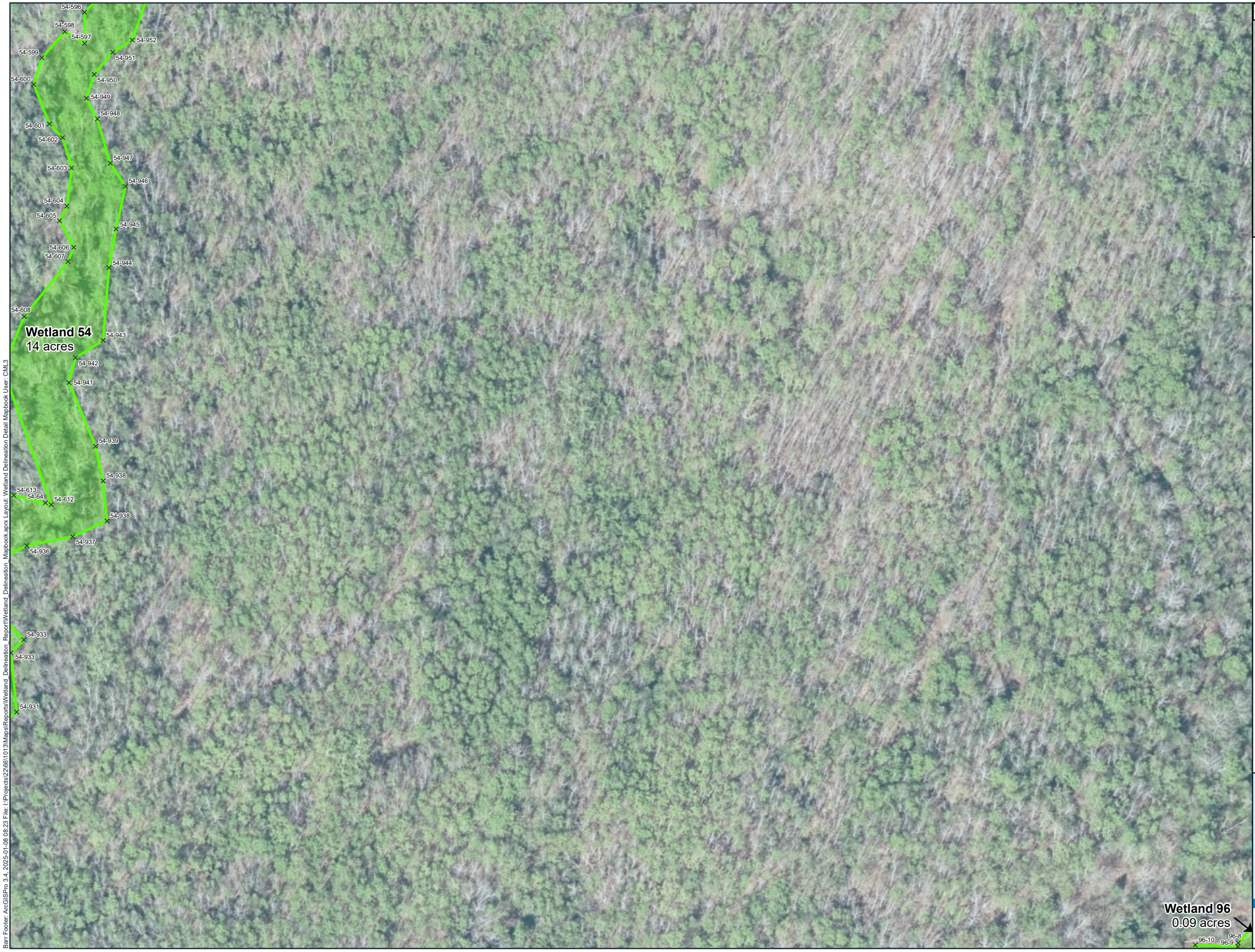

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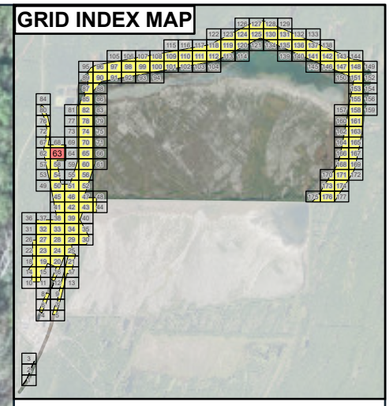

Survey Area

Field Delineated Wetland Boundary

Wetland Area

× Wetland Flag

N

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
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Ontonagon County, MI

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Outside of Survey Area

Wetland 79
30.97 acres

79-100
79-101
79-104
79-105
79-106
79-107
79-108
79-109
79-110
79-111
79-112
79-113
79-114 OPEN

Wetland 96
0.09 acres

96-1
96-2
96-5
96-6
96-7
96-8
96-9
96-10
96-24
96-25
96-26
96-27
96-28
96-29
96-30 OPEN

GRID INDEX MAP

- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- × Wetland Flag

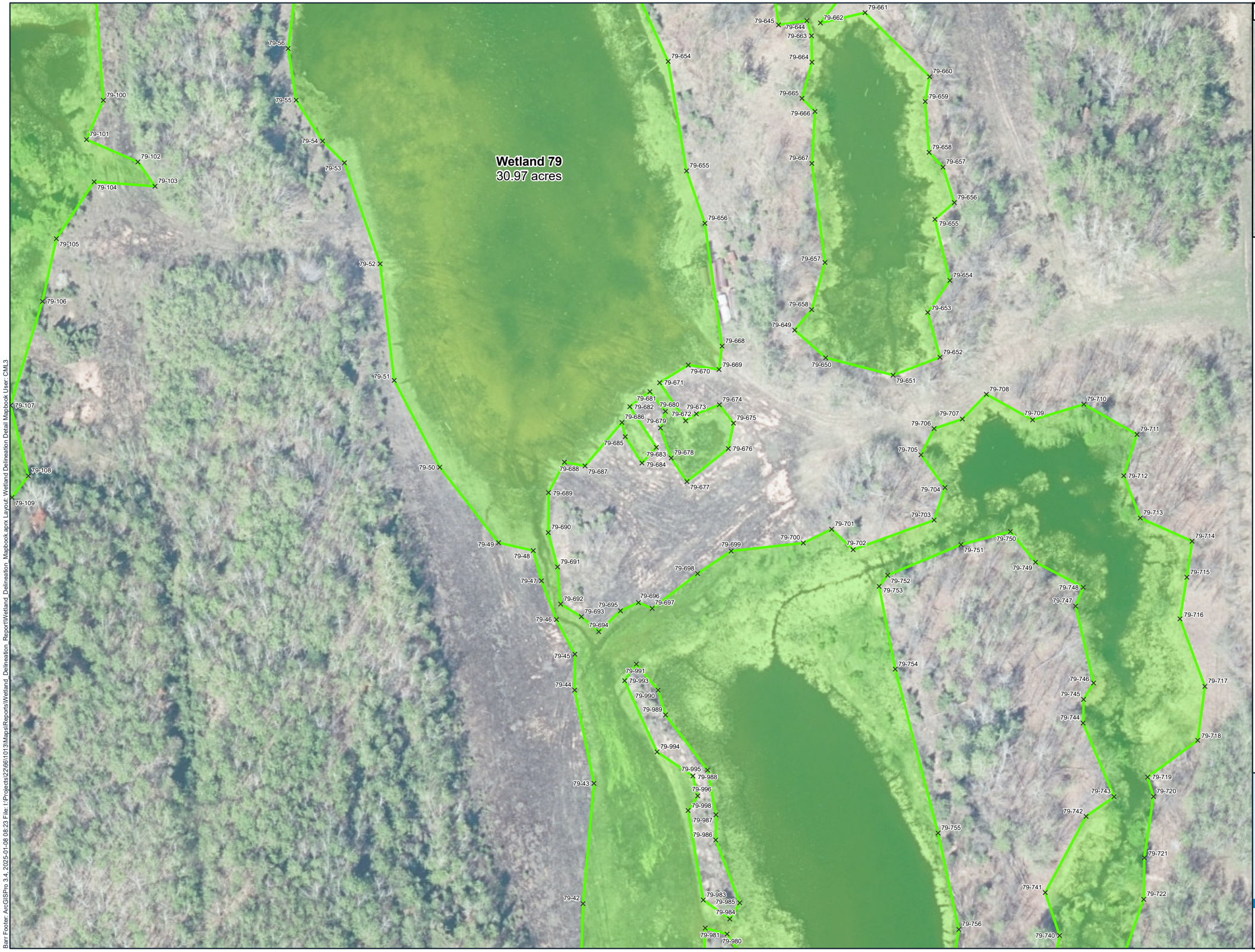
N

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR



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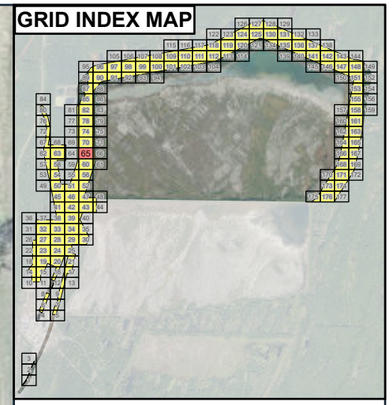

Survey Area

Field Delineated Wetland Boundary

Wetland Area

× Wetland Flag

0 65 130

Feet

Imagery: MiSAIL 2023

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BARR

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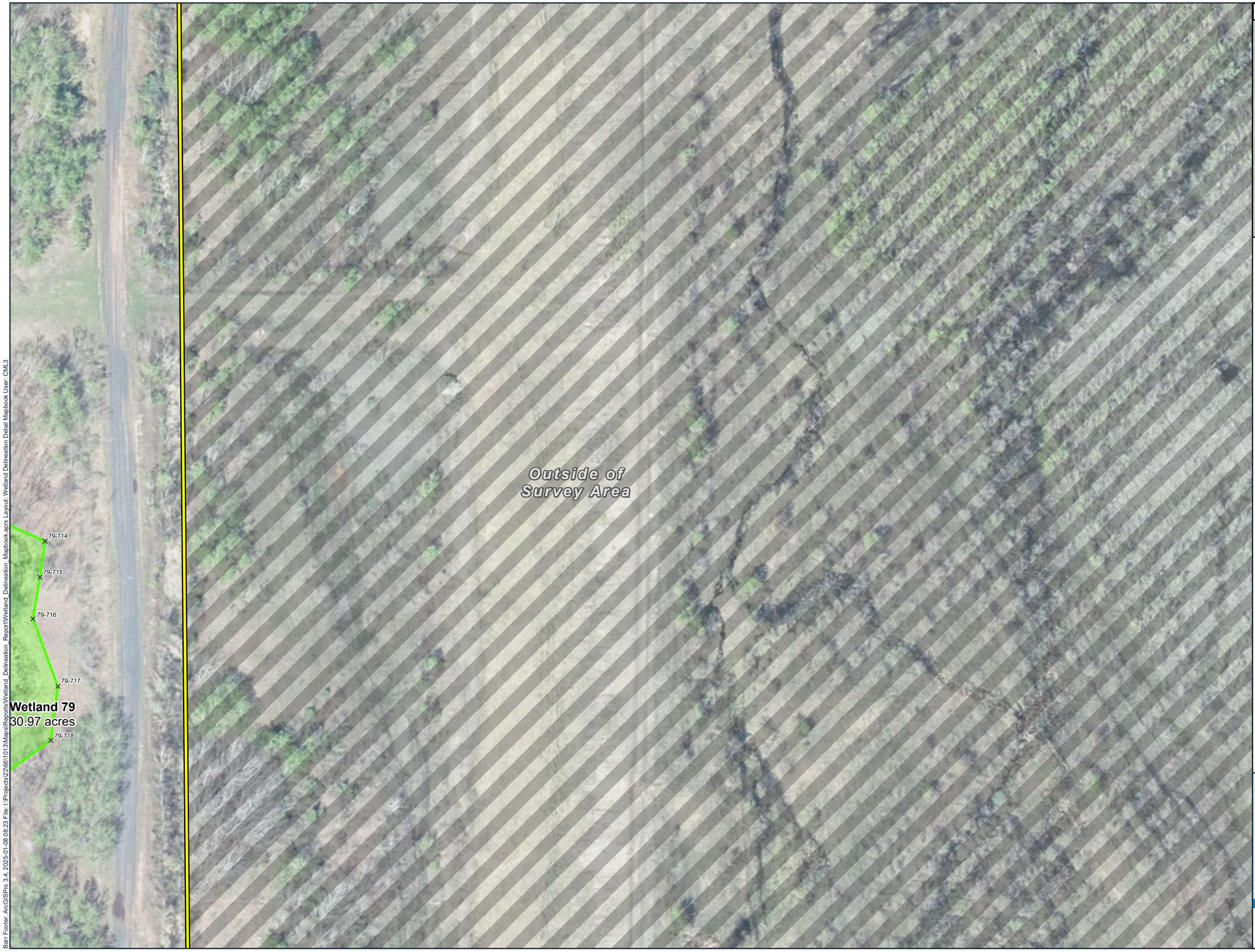

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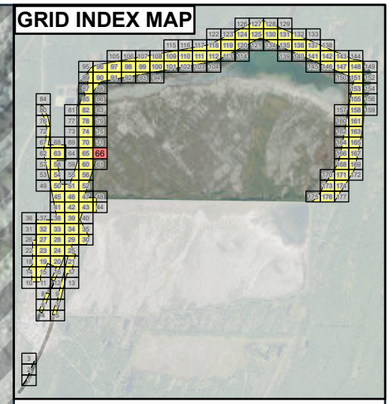

- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- × Wetland Flag

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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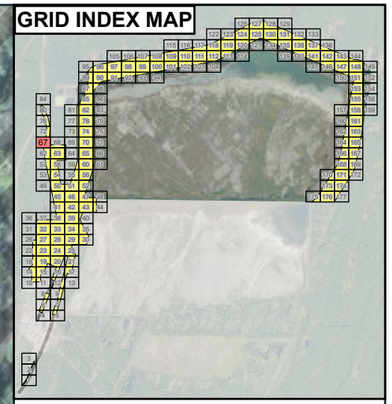

- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- × Wetland Flag

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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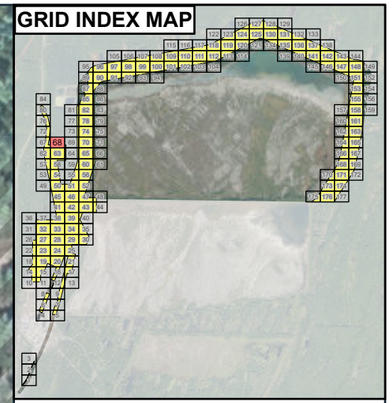

- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- × Wetland Flag

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

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Outside of Survey Area

79-137 79-139 79-120 79-125 79-138 79-83 79-119 79-126 79-84 79-128 79-127 79-129 OPEN 79-117 79-85 79-116 79-115 OPEN 79-116 79-86 79-87 79-88 79-89 79-90 79-91 79-92 79-93 79-94 79-95 79-96 79-97 79-98 79-99

Wetland 79
30.97 acres

GRID INDEX MAP

- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- × Wetland Flag

N

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

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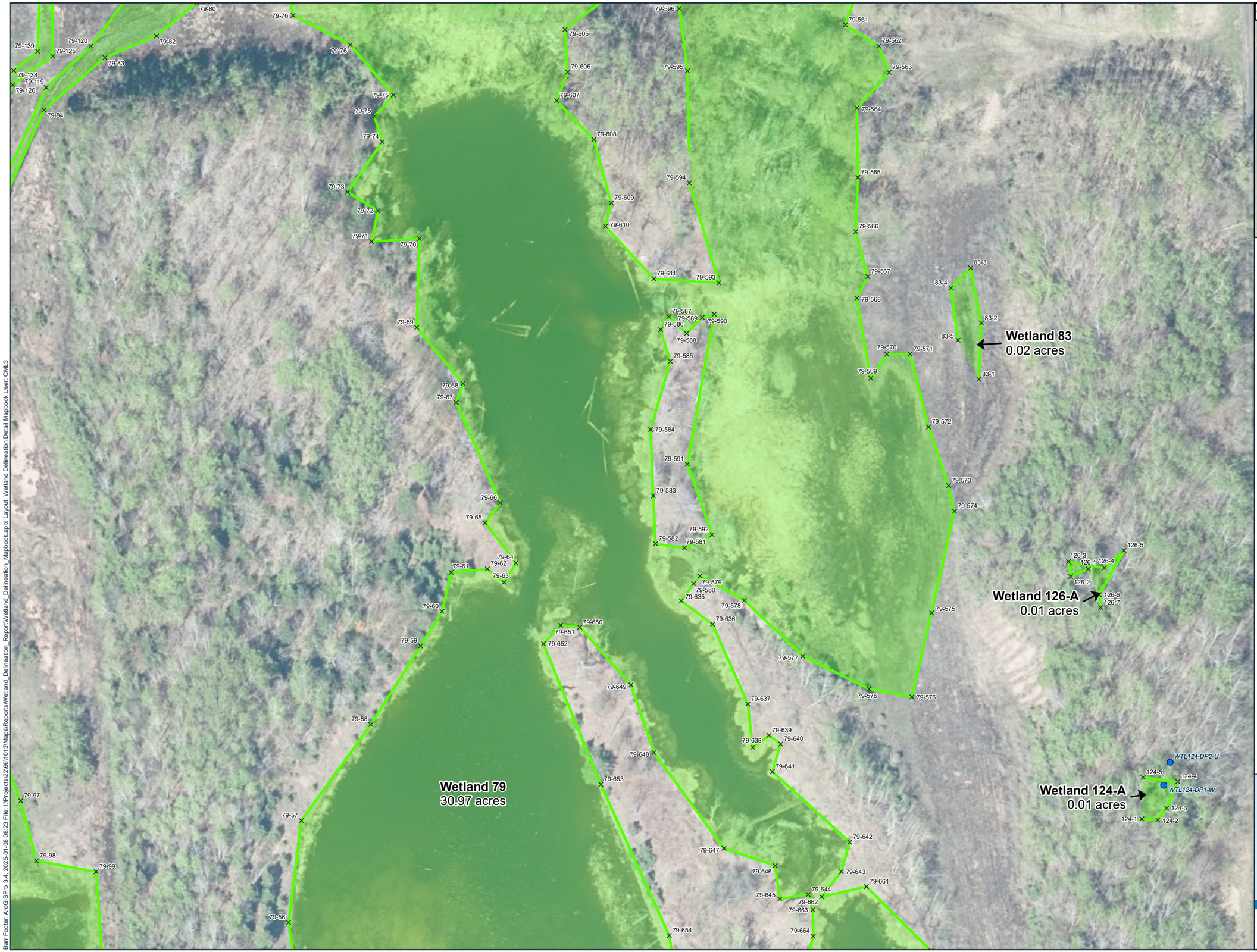

GRID INDEX MAP

Survey Area
Field Delineated Wetland Boundary
Wetland Area
Wetland Flag
Data Point

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

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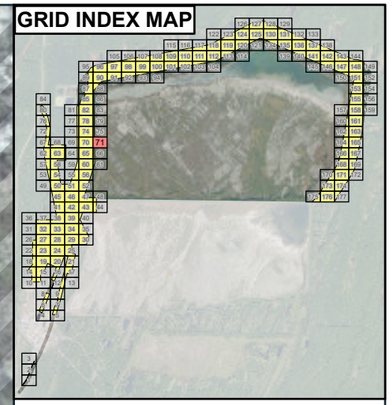

- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- Wetland Flag
- Data Point

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
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Carp Lake Township
Ontonagon County, MI

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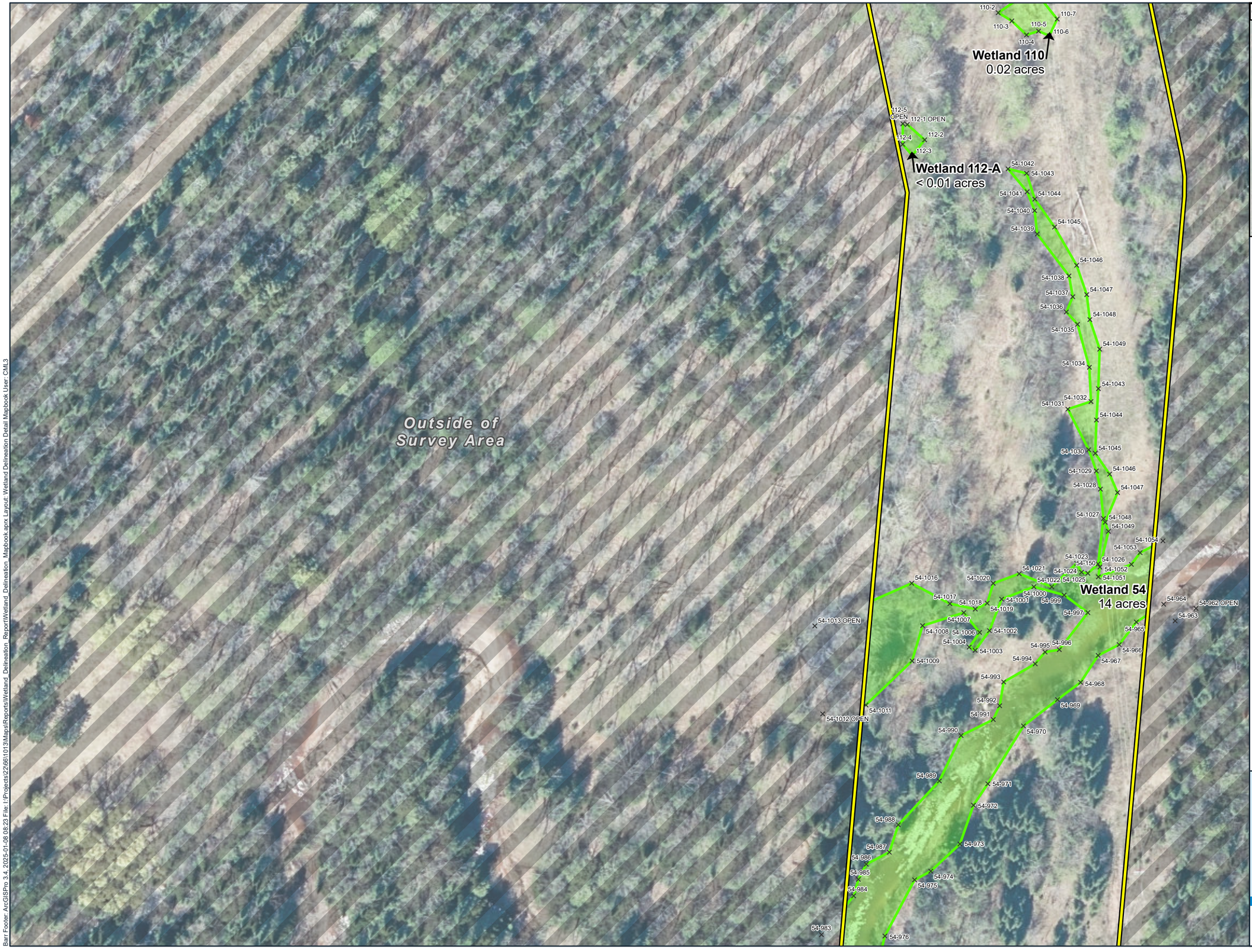

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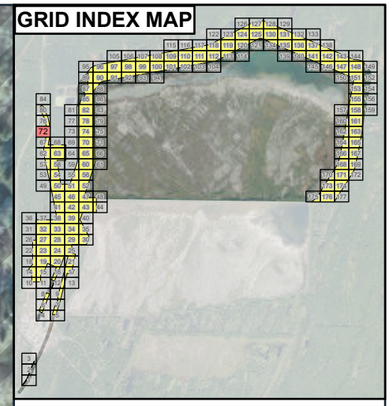

- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- × Wetland Flag

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
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Ontonagon County, MI

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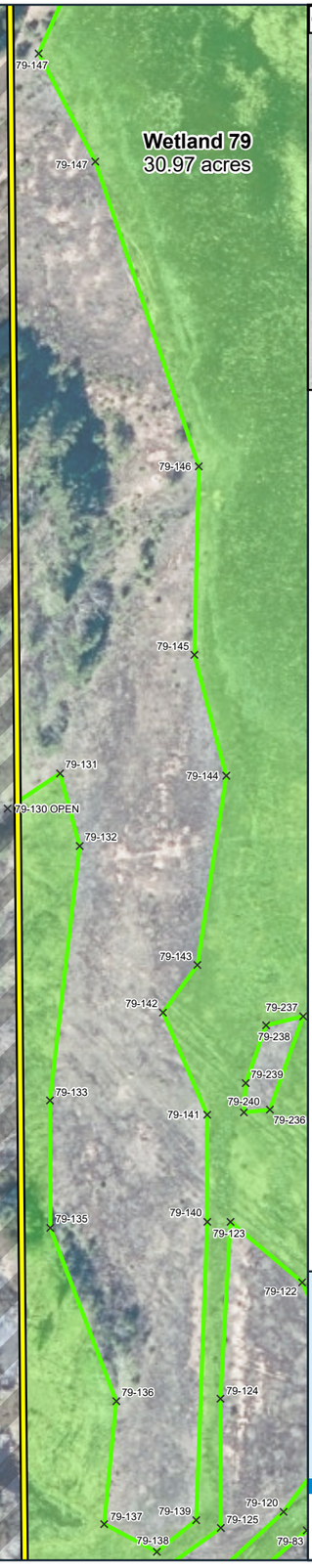

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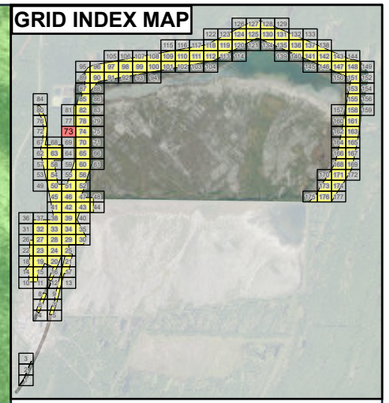

- Survey Area
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- Wetland Area
- × Wetland Flag

0 65 130
Feet

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Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

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Wetland 122-A
0.35 acres

Wetland 79
30.97 acres

WTL79-DP1-U

WTL79-DP1-W

GRID INDEX MAP

Survey Area

Field Delineated Wetland Boundary

Wetland Area

Wetland Flag

Data Point

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

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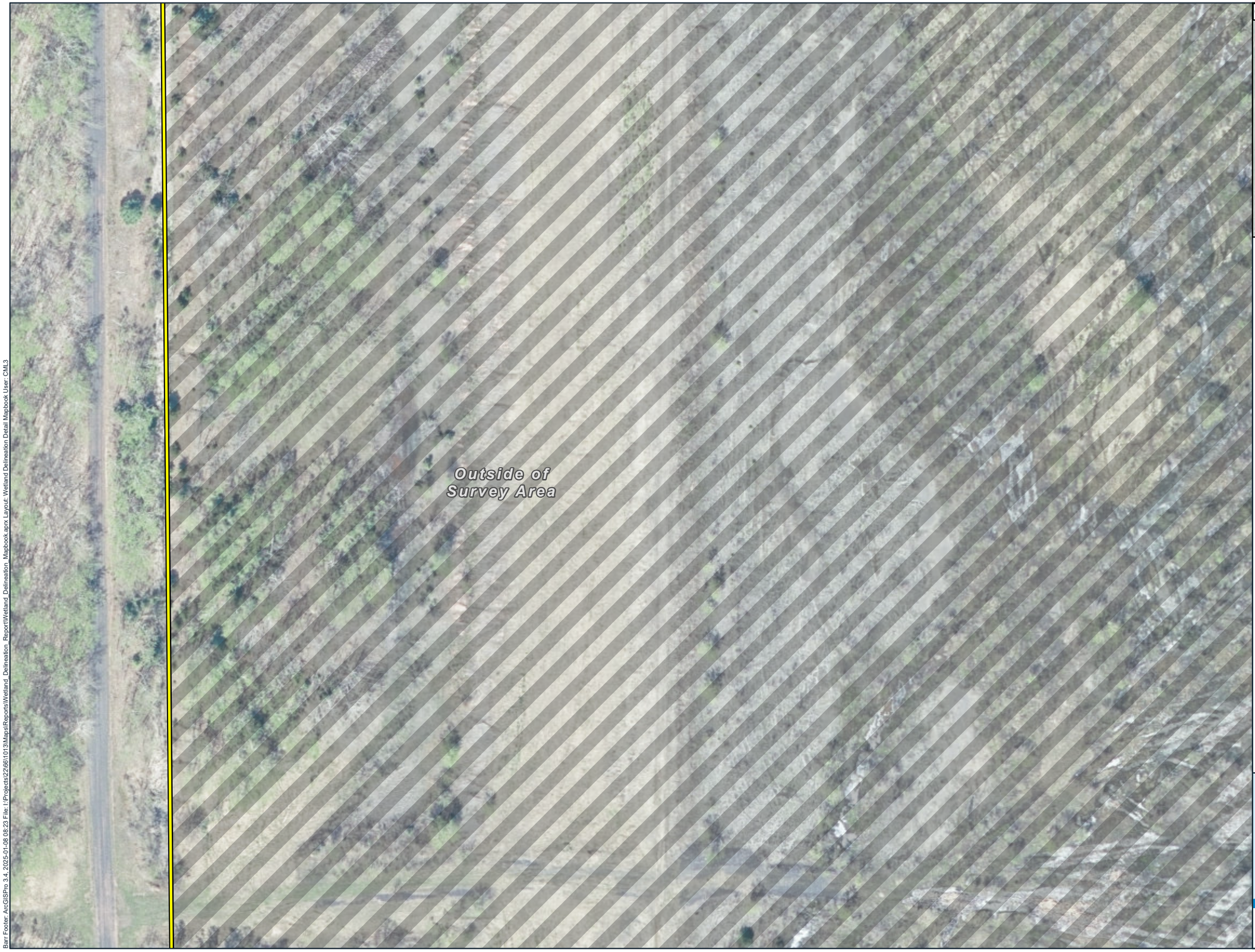

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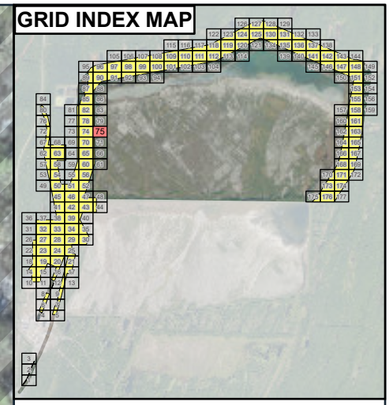

Survey Area

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

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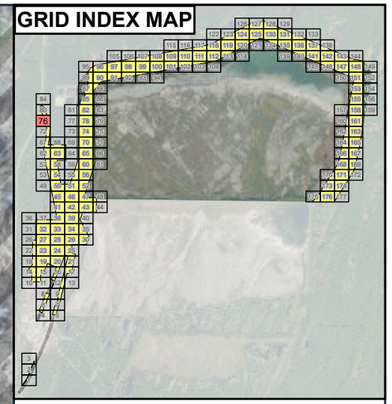

Survey Area

Field Delineated Wetland Boundary

Wetland Area

Wetland Flag

Data Point

N

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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GRID INDEX MAP

- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- × Wetland Flag

N

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

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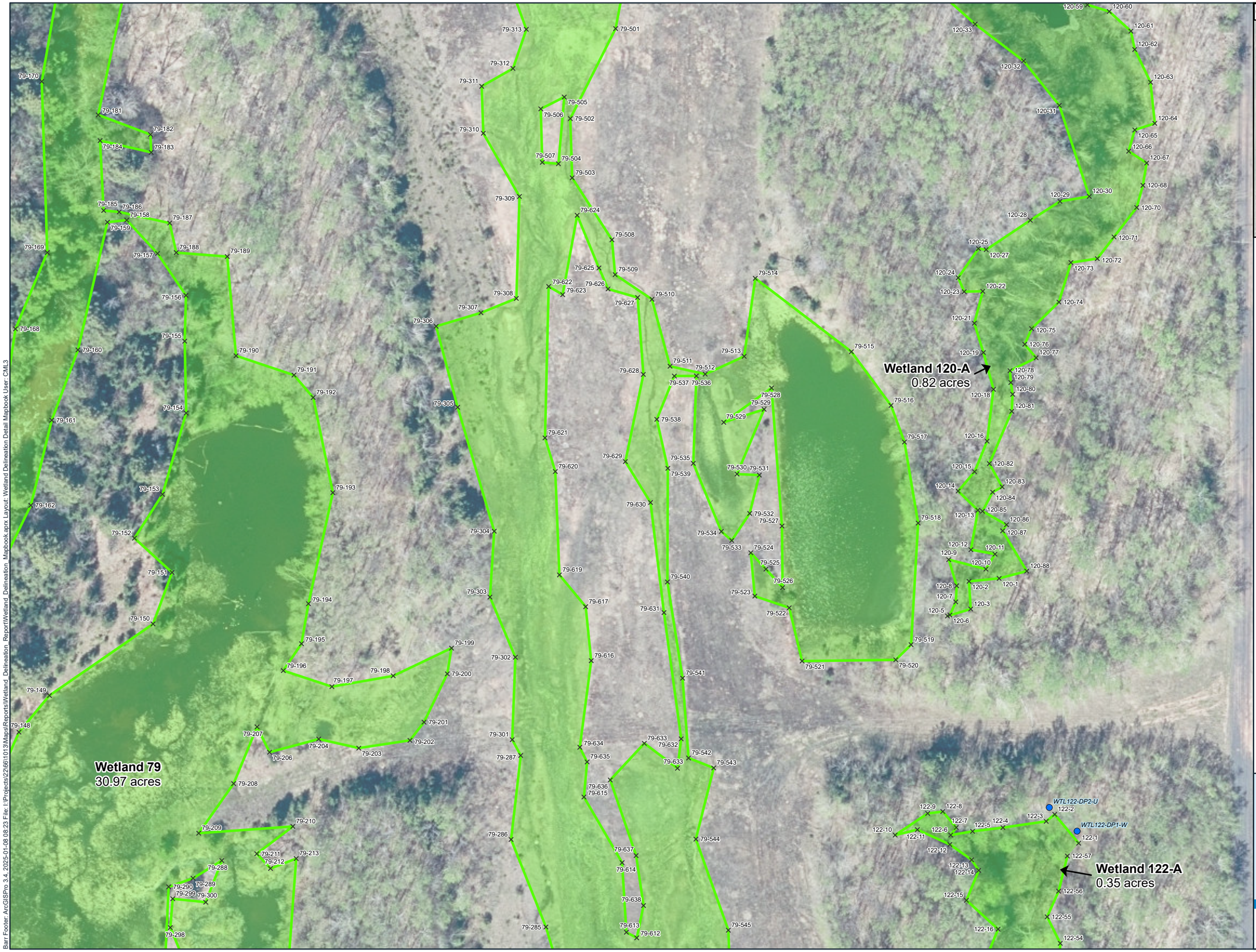

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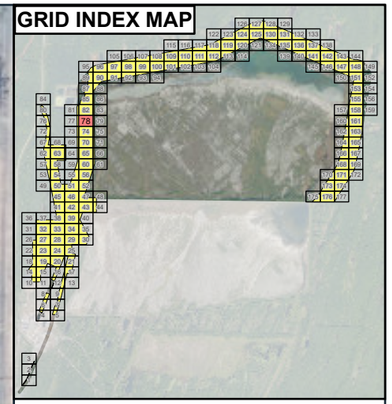

Survey Area

Field Delineated Wetland Boundary

Wetland Area

Wetland Flag

Data Point

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

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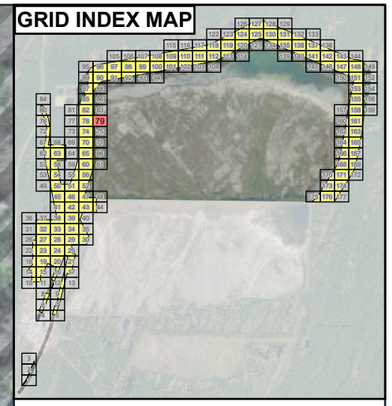

Survey Area

N

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

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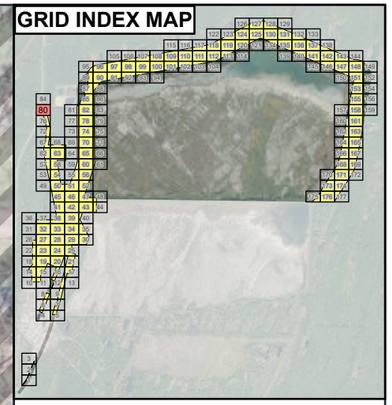

Survey Area

Field Delineated Wetland Boundary

Wetland Area

Wetland Flag

Data Point

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
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Carp Lake Township
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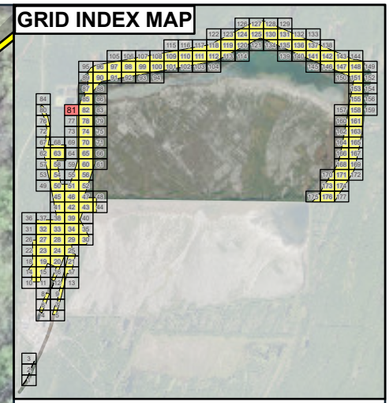

Survey Area

Field Delineated Wetland Boundary

Wetland Area

Wetland Flag

Data Point

0 65 130

Feet

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Wetland Delineation
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White Pine North
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Ontonagon County, MI

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Outside of Survey Area

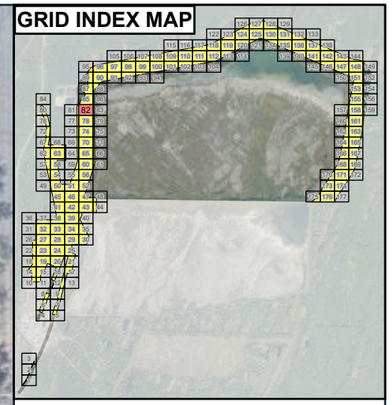
79-345 OPEN

Wetland 79
30.97 acres

Wetland 81
0.08 acres

Wetland 120-A
0.82 acres

GRID INDEX MAP



- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- × Wetland Flag

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
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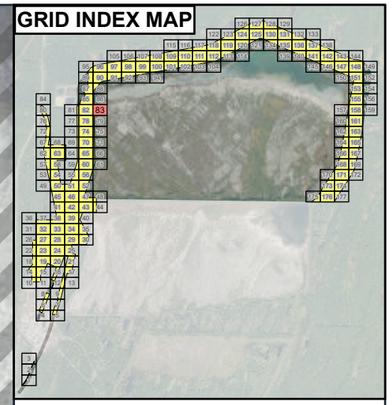

Survey Area

N

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
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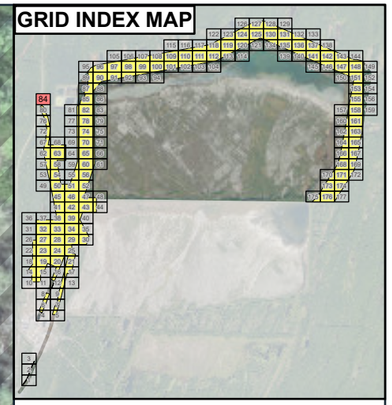

Survey Area

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
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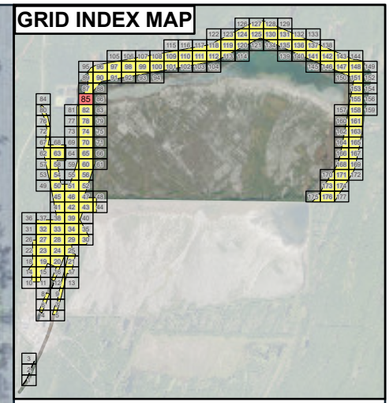
Outside of Survey Area

Wetland 79
30.97 acres

GRID INDEX MAP



- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- × Wetland Flag

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
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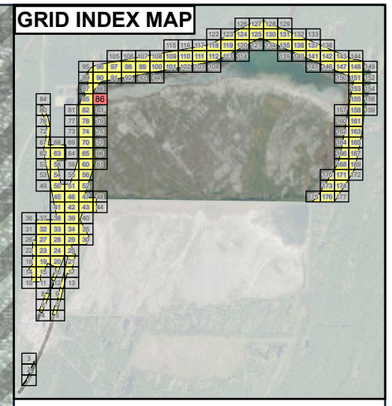

Survey Area

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
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Outside of Survey Area

Wetland 112-B
1.06 acres

112-11
112-12
112-13
112-14 OPEN
112-15 OPEN
112-16
112-17

Wetland 89
0.04 acres

79-386 OPEN
79-387 OPEN
79-388
79-389
79-390
79-391
79-392
79-393
79-394
79-395
79-396
79-397
79-398
79-399
79-400
79-357 OPEN
79-358
79-359
79-360
79-361
79-362
79-363
79-364
79-365
79-366
79-367 OPEN
79-368 OPEN
79-369
79-370
79-371
79-372
79-373
79-374
79-375
79-376
79-377
79-378
79-379
79-380 OPEN
79-381 OPEN
79-382
79-383
79-384
79-385

89-1
89-2
89-3
89-4
89-5
89-6
89-7
89-8
WTL89-DP1-W
WTL89-DP1-U

Wetland 87
0.02 acres

87-1
87-2
87-3
87-4
87-5
87-6
87-7
WTL87-DP1-U
WTL87-DP1-W

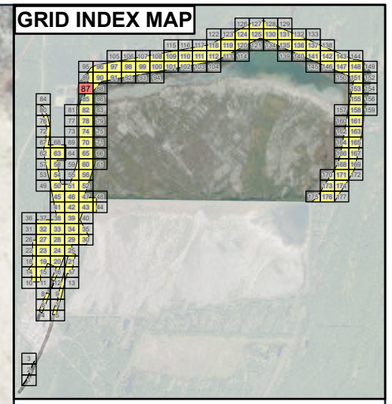
Wetland 79
30.97 acres

Wetland 85
0.02 acres

85-1
85-2
85-3
85-4
85-5
85-6

79-1205
79-1206
79-1207
79-1208
79-1209
79-1210

GRID INDEX MAP



- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- Wetland Flag
- Data Point

0 65 130
Feet

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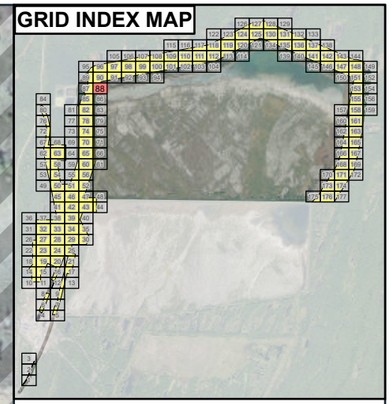
GRID INDEX MAP



- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- × Wetland Flag
- Toe Drain (Desktop Delineated)

N

0 65 130

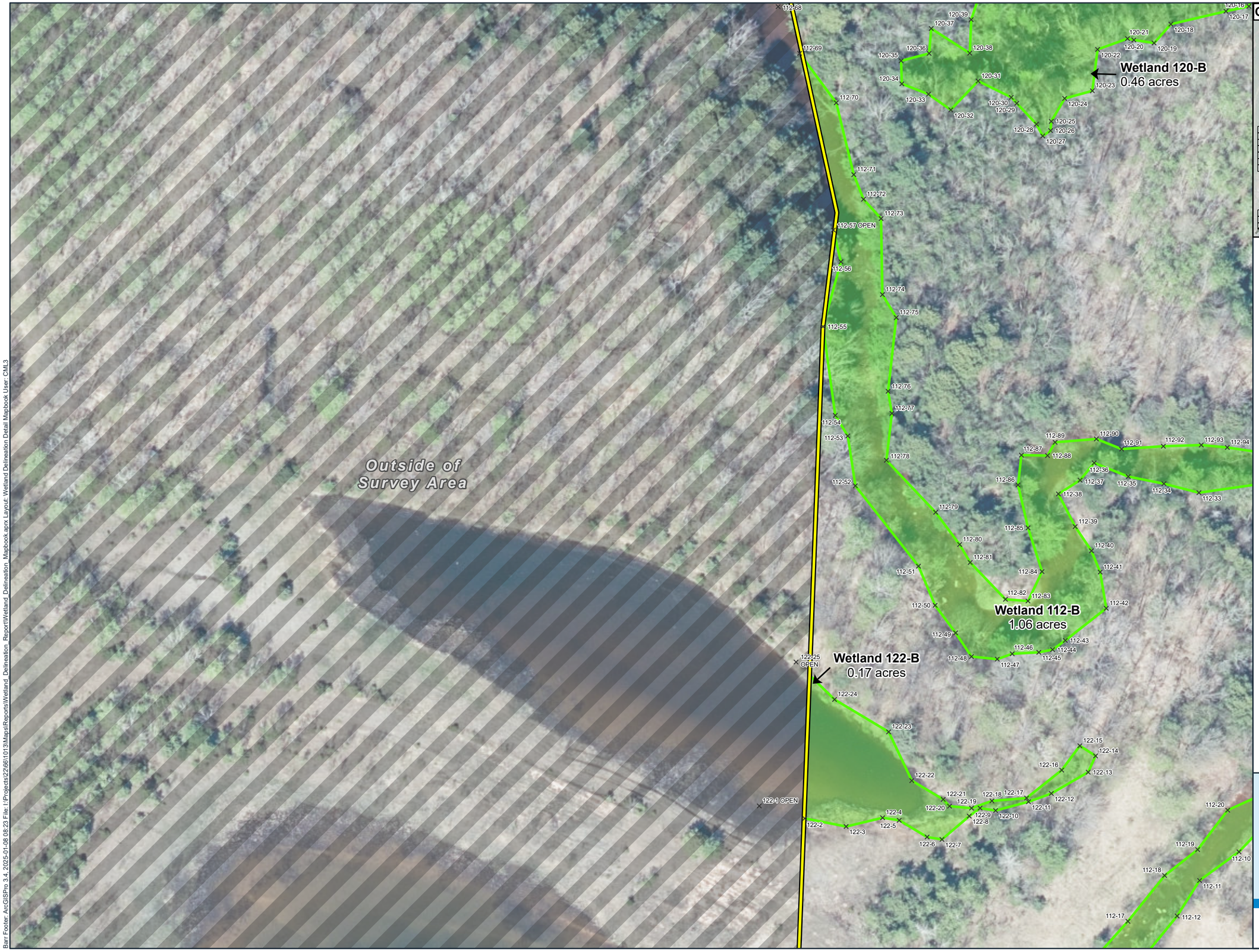
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-13 13:15 File: I:\Projects\22\661013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3



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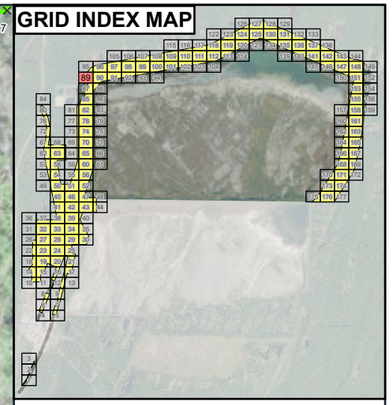

- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- × Wetland Flag

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\23\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3

Wetland 120-B
0.46 acres

Wetland 132-B
0.06 acres

Wetland 128-B
0.09 acres

Wetland 150
0.01 acres

Wetland 148
0.01 acres

Wetland 112-B
1.06 acres

Wetland 114
5.19 acres

Outside of Survey Area

GRID INDEX MAP

Survey Area
Field Delineated Wetland Boundary
Wetland Area
Wetland Area (Water Treatment Facility)
Wetland Flag
Toe Drain (Desktop Delineated)

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-13 13:15 File: I:\Projects\22\661013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3



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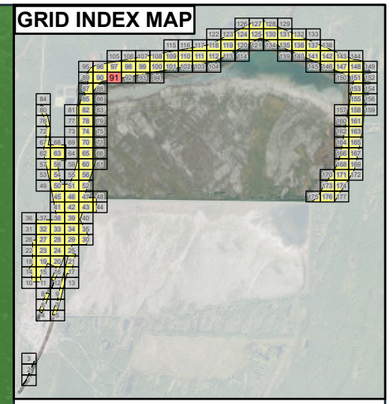


- Survey Area
- Field Delineated Wetland Boundary
- Desktop Delineated Wetland Boundary
- Wetland Area
- Wetland Area (Water Treatment Facility)
- × Wetland Flag
- Toe Drain (Desktop Delineated)

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-13 13:15 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3

Wetland 118
8.85 acres

Wetland 172
0.07 acres

Wetland 174
0.05 acres

Outside of Survey Area

GRID INDEX MAP

- Survey Area
- Field Delineated Wetland Boundary
- Desktop Delineated Wetland Boundary
- Wetland Area
- Wetland Area (Water Treatment Facility)
- × Wetland Flag
- Toe Drain (Desktop Delineated)

N

0 65 130
Feet

Imagery: MiSAIL 2023

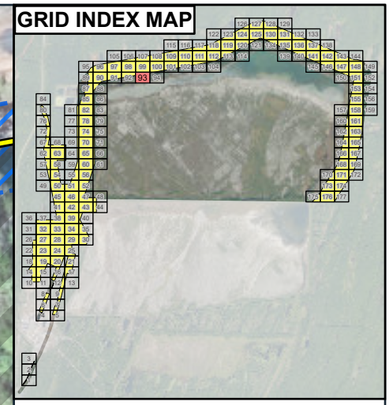
Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\661013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Map User: CML3



GRID INDEX MAP



- Survey Area
- Field Delineated Wetland Boundary
- Desktop Delineated Wetland Boundary
- Wetland Area
- Wetland Area (Water Treatment Facility)
- × Wetland Flag
- Toe Drain (Desktop Delineated)

N

0 65 130

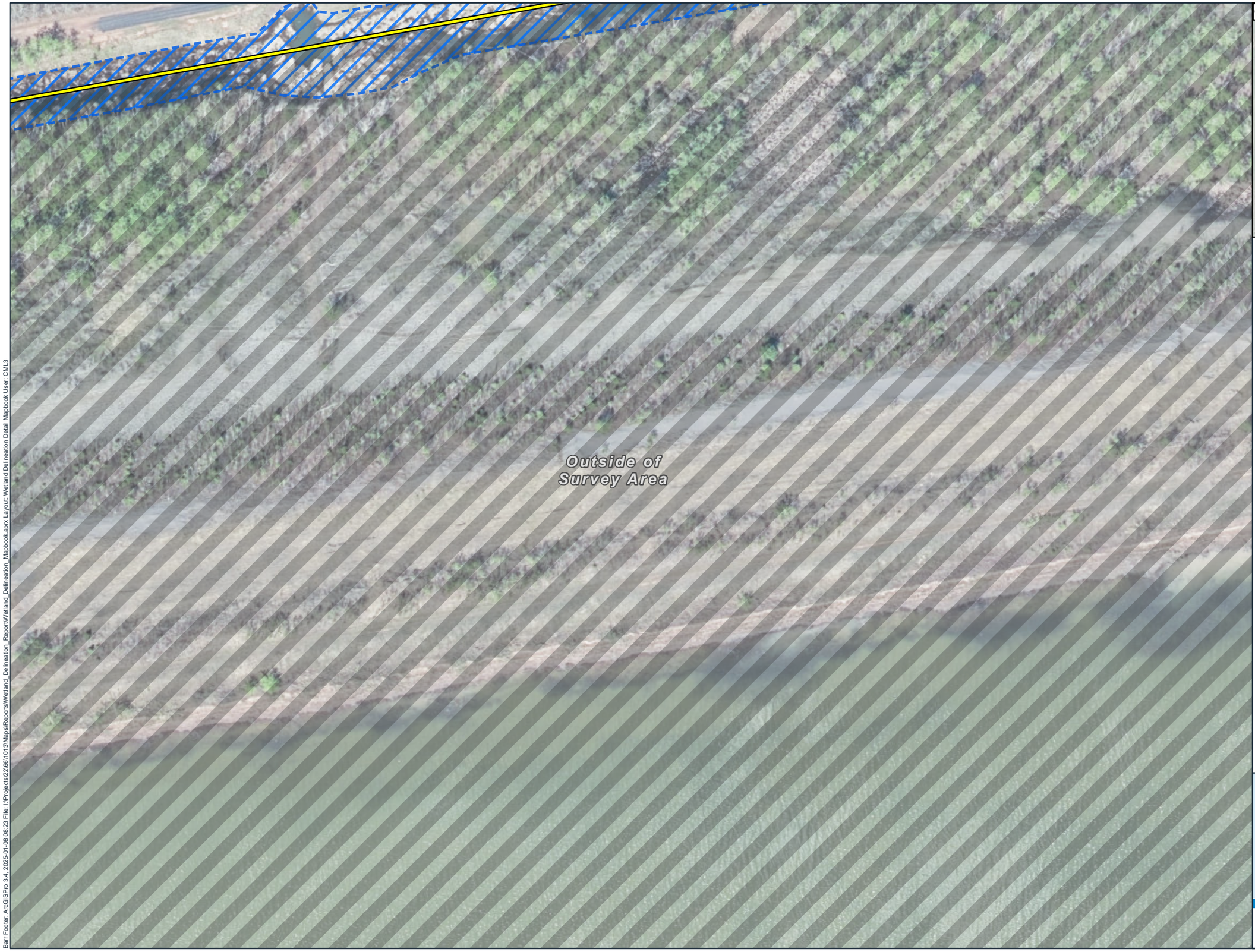
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3



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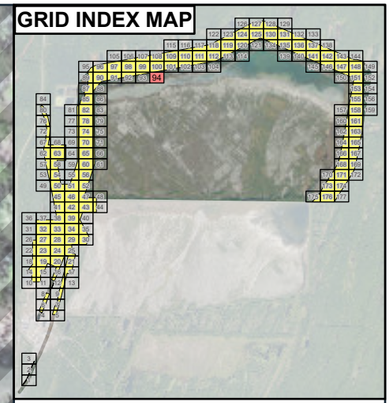

Survey Area

Toe Drain (Desktop Delineated)

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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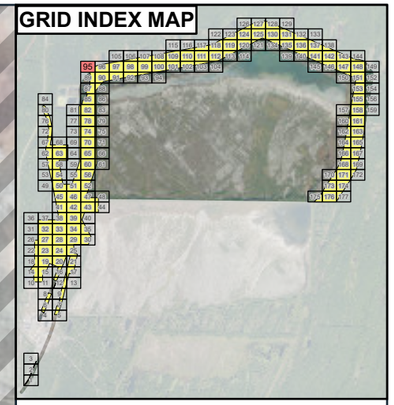

Survey Area

Field Delineated Wetland Boundary

Wetland Area

Wetland Flag

Data Point

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- × Wetland Flag
- ● Data Point

N

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3

Outside of Survey Area

Wetland 140
< 0.01 acres

Wetland 142
0.17 acres

Wetland 144
0.07 acres

Wetland 146
0.02 acres

Wetland 148
acres

Wetland 150
0.01 acres

Wetland 116
4.11 acres

Wetland 134-C
0.06 acres

Wetland 154
0.07 acres

Wetland 116
4.11 acres

Wetland 118
8.85 acres

WTL140-DP1-W
WTL142-DP1-U
WTL144-DP1-U
WTL144-DP1-W
WTL134-DP1-U
WTL134-DP1-W

GRID INDEX MAP

Survey Area
Field Delineated Wetland Boundary
Wetland Area
Wetland Area (Water Treatment Facility)
Wetland Flag
Data Point

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\23\66\01\13\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3

Wetland 158
0.03 acres

Wetland 166
0.01 acres

Wetland 168
0.37 acres

Wetland 182
0.03 acres

Wetland 152
0.09 acres

WTL152-DP1-U

WTL152-DP1-W

Wetland 154
0.07 acres

Wetland 156
0.13 acres

Wetland 160
0.05 acres

Wetland 162
0.07 acres

Wetland 116
1 acres

Wetland 118
8.85 acres

Wetland 172
0.07 acres

Wetland 174
0.05 acres

Wetland 176
9.7 acres

GRID INDEX MAP

Survey Area
Field Delineated Wetland Boundary
Desktop Delineated Wetland Boundary
Wetland Area
Wetland Area (Water Treatment Facility)
Wetland Flag
Data Point

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Foster: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation_Detail Mapbook User: CML3

Wetland 180
0.24 acres

Wetland 182
0.03 acres

Wetland 184
2.75 acres

Wetland 176
9.7 acres

Wetland 174
0.05 acres

Wetland 198
0.93 acres

WTL180-DP1-W
WTL180-DP1-U
WTL198-DP2-U
WTL198-DP2-W
WTL198-DP1-U
WTL198-DP1-W

198-62 OPEN

GRID INDEX MAP

- Survey Area
- Field Delineated Wetland Boundary
- Desktop Delineated Wetland Boundary
- Wetland Area
- Wetland Area (Water Treatment Facility)
- Wetland Flag
- Data Point
- Toe Drain (Desktop Delineated)

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Mapsl\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3

Wetland 184
2.75 acres

Wetland 188
2.35 acres

Wetland 200
0.25 acres

Wetland 176
9.7 acres

Outside of Survey Area

GRID INDEX MAP

- Survey Area
- Field Delineated Wetland Boundary
- Desktop Delineated Wetland Boundary
- Wetland Area
- Wetland Area (Water Treatment Facility)
- × Wetland Flag
- Toe Drain (Desktop Delineated)

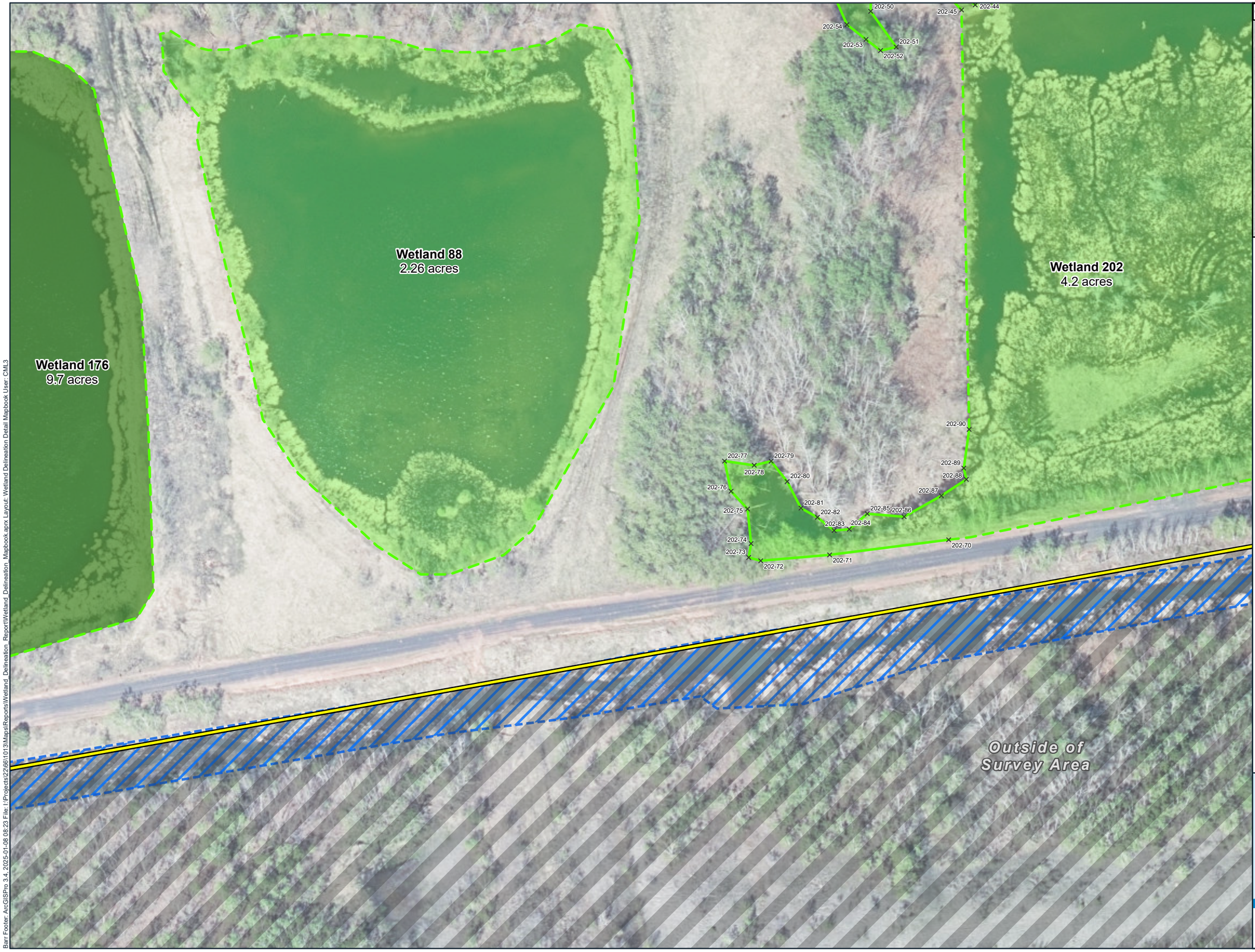
0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\661\013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3



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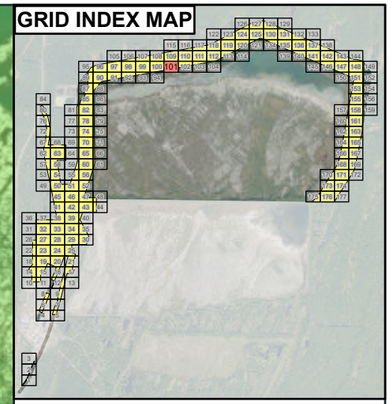


- Survey Area
- Field Delineated Wetland Boundary
- Desktop Delineated Wetland Boundary
- Wetland Area
- Wetland Area (Water Treatment Facility)
- × Wetland Flag
- Toe Drain (Desktop Delineated)

N

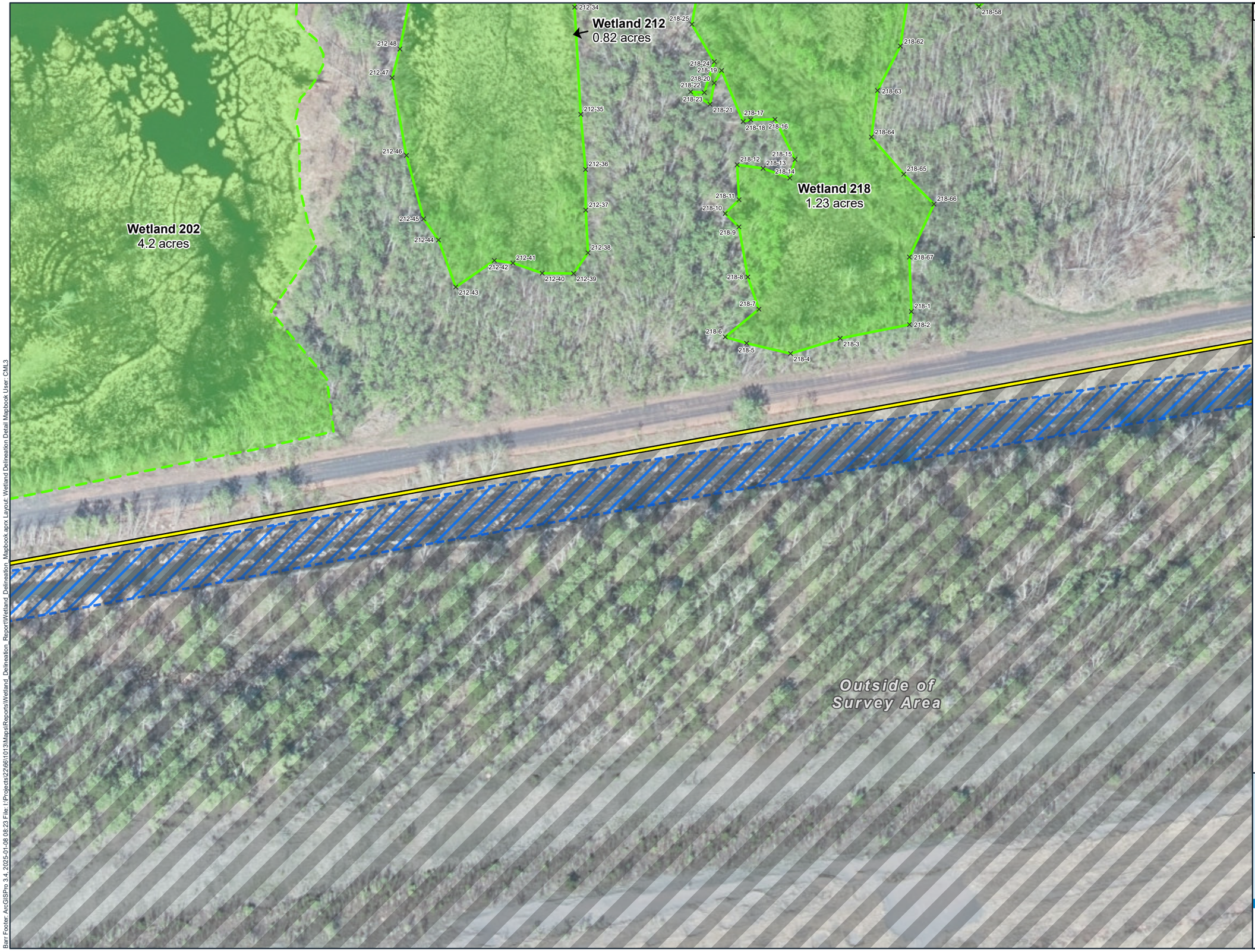
0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Foster: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3



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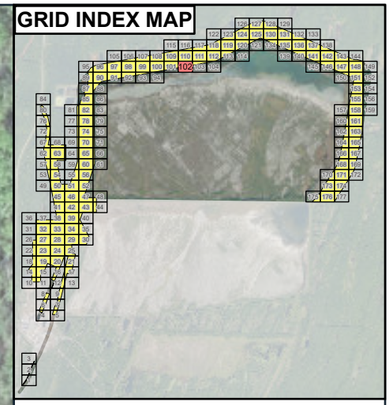


- Survey Area
- Field Delineated Wetland Boundary
- Desktop Delineated Wetland Boundary
- Wetland Area
- × Wetland Flag
- Toe Drain (Desktop Delineated)

N

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\0103\Maps\Reports\Wetland_Delineation_ReportWetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3

Wetland 257
2.76 acres

Wetland 214
0.05 acres

Wetland 216
0.08 acres

Outside of Survey Area

GRID INDEX MAP

- Survey Area
- Field Delineated Wetland Boundary
- Desktop Delineated Wetland Boundary
- Wetland Area
- Wetland Flag
- Toe Drain (Desktop Delineated)

N

0 65 130
Feet

Imagery: MiSAIL 2023

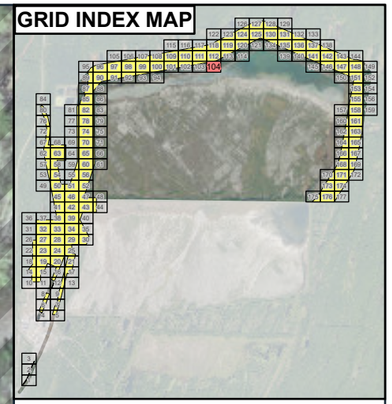
Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\661013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3



GRID INDEX MAP



Survey Area

Toe Drain (Desktop Delineated)

N

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3

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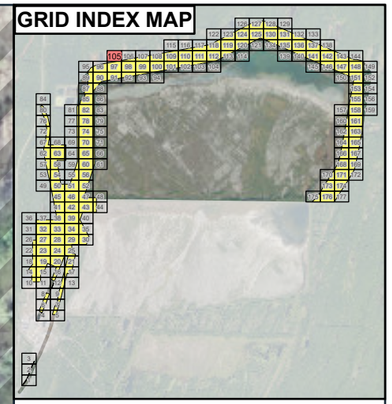
Outside of Survey Area

116-223 OPEN
116-106 OPEN
116-222
116-195 OPEN
116-107 OPEN
116-194
116-193
116-108
116-192
116-109
116-191

Wetland 116
4.11 acres

GRID INDEX MAP



- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- × Wetland Flag

N

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Outside of Survey Area

Wetland 170
0.01 acres

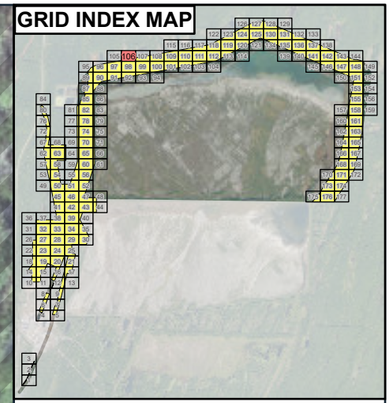
Wetland 168
0.37 acres

Wetland 164
< 0.01 acres

Wetland 158
0.03 acres

Wetland 166
0.01 acres

GRID INDEX MAP



- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- × Wetland Flag

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

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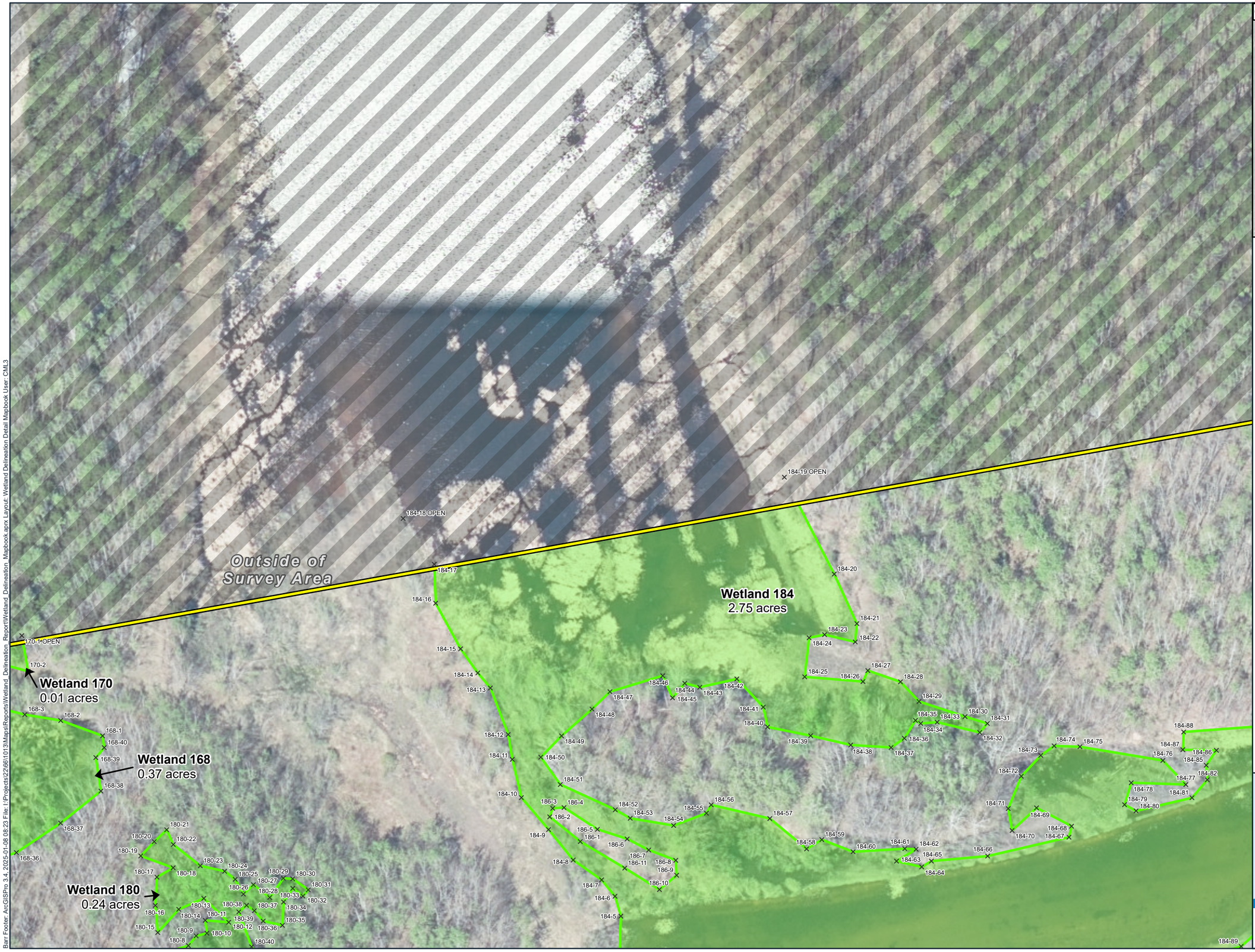

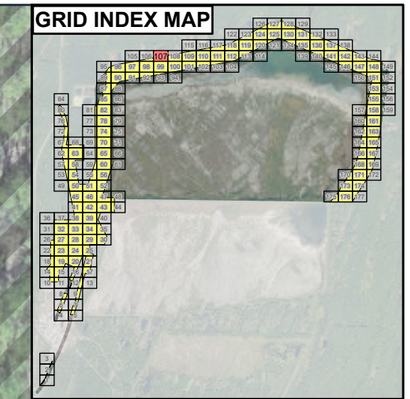

Survey Area

Field Delineated Wetland Boundary

Wetland Area

Wetland Flag

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3

Outside of Survey Area

Wetland 190
1.11 acres

Wetland 188
2.35 acres

Wetland 184
2.75 acres

Wetland 200
0.25 acres

Wetland 176
9.7 acres

WTL188-DP-1-W

190-1 OPEN
190-2
190-3
190-4
190-5
190-6
190-7
190-8
190-9
190-10
190-11
190-12
190-13
190-14
190-15
190-16
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190-18
190-19
190-20
190-21
190-22
190-23
190-24
190-25 OPEN
190-26 OPEN
190-27
190-28
190-29
190-30
190-31
190-32
190-33
190-34
190-35
190-36
190-37
190-38
190-54
190-55
190-56
190-57
190-58
190-59
190-60
190-61 OPEN
190-62 OPEN
190-63
190-64
190-65
190-66

188-1
188-2
188-3
188-4
188-5
188-6
188-7
188-8
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188-12
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184-76
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184-81
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184-84
184-85
184-86
184-87
184-88
184-89
184-90
184-91
184-92

200-16
200-17
200-18
200-19
200-20
200-21
200-25
200-26

GRID INDEX MAP

Survey Area
Field Delineated Wetland Boundary
Desktop Delineated Wetland Boundary
Wetland Area
Wetland Area (Water Treatment Facility)
Wetland Flag
Data Point

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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Outside of Survey Area

Wetland 194
0.07 acres

Wetland 192
0.06 acres

Wetland 196
0.03 acres

Wetland 190
1.11 acres

Wetland 188
2.35 acres

Wetland 176
9.7 acres

Wetland 88
2.26 acres

Wetland 204
< 0.01 acres

Wetland 202
4.2 acres

Wetland 208
0.11 acres

GRID INDEX MAP

- Survey Area
- Field Delineated Wetland Boundary
- Desktop Delineated Wetland Boundary
- Wetland Area
- Wetland Area (Water Treatment Facility)
- × Wetland Flag

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3

Wetland 255
1.75 acres

Wetland 206
0.09 acres

Wetland 208
0.11 acres

Wetland 220
0.14 acres

Wetland 222
0.13 acres

Wetland 226-A
0.03 acres

Wetland 224
0.3 acres

Wetland 210
0.02 acres

Wetland 202
4.2 acres

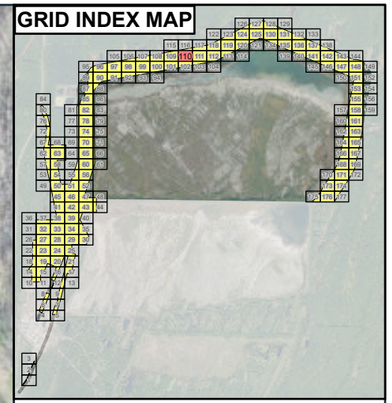
Wetland 212
0.82 acres

Wetland 218
1.23 acres

WTL206-DP1-W

WTL206-DP1-U

GRID INDEX MAP



- Survey Area
- Field Delineated Wetland Boundary
- Desktop Delineated Wetland Boundary
- Wetland Area
- Wetland Flag
- Data Point

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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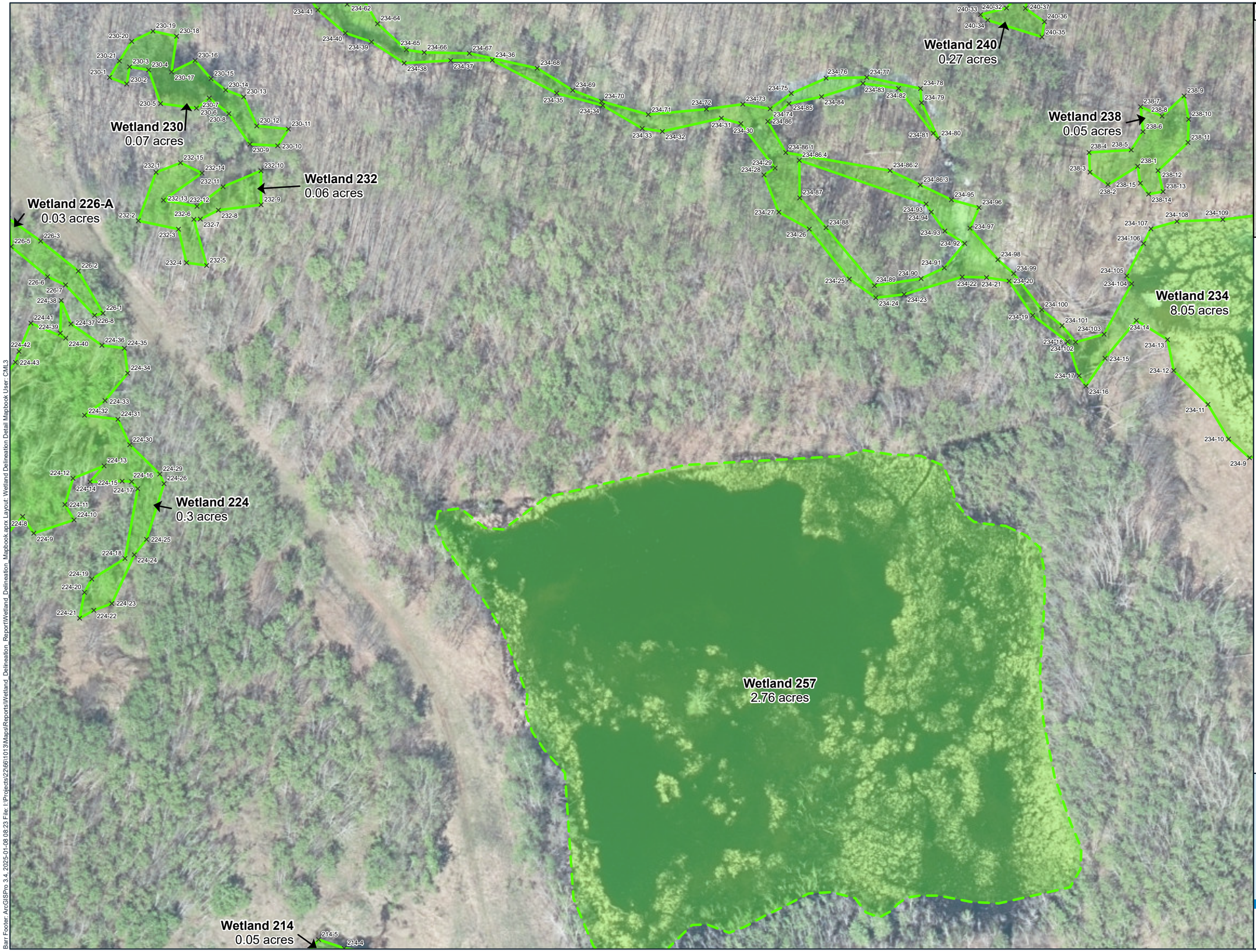

GRID INDEX MAP

Survey Area

Field Delineated Wetland Boundary

Desktop Delineated Wetland Boundary

Wetland Area

× Wetland Flag

N

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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- Survey Area
- Field Delineated Wetland Boundary
- Desktop Delineated Wetland Boundary
- Wetland Area
- × Wetland Flag
- Toe Drain (Desktop Delineated)

N

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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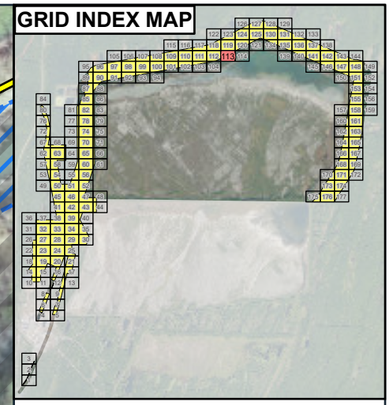

- Survey Area
- Field Delineated Wetland Boundary
- Desktop Delineated Wetland Boundary
- Wetland Area
- Wetland Flag
- Toe Drain (Desktop Delineated)

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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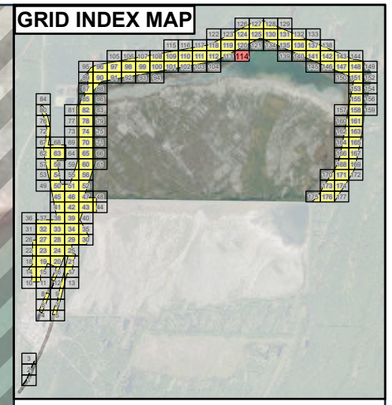

Survey Area

Toe Drain (Desktop Delineated)

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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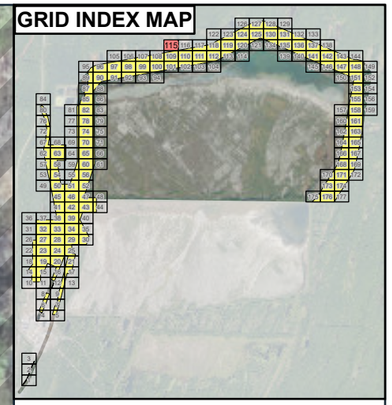

Survey Area

N

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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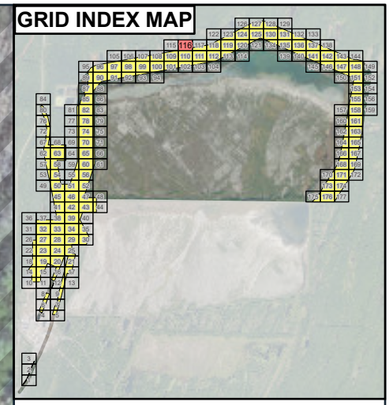
GRID INDEX MAP



- Survey Area
- Field Delineated Wetland Boundary
- Desktop Delineated Wetland Boundary
- Wetland Area
- Wetland Flag
- Data Point

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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Outside of Survey Area

Wetland 228
0.04 acres

Wetland 226-B
0.07 acres

Wetland 230
0.07 acres

Wetland 234
8.05 acres

Wetland 236
0.04 acres

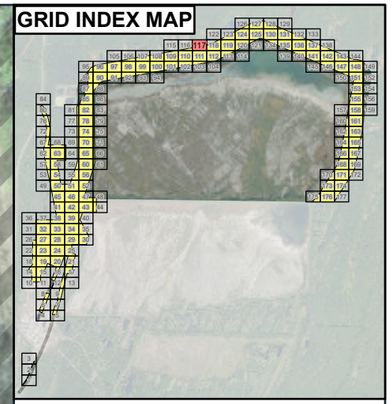
Wetland 240
0.27 acres

Wetland 242
< 0.01 acres

Wetland 244
0.01 acres

Wetland 246
0.12 acres

GRID INDEX MAP



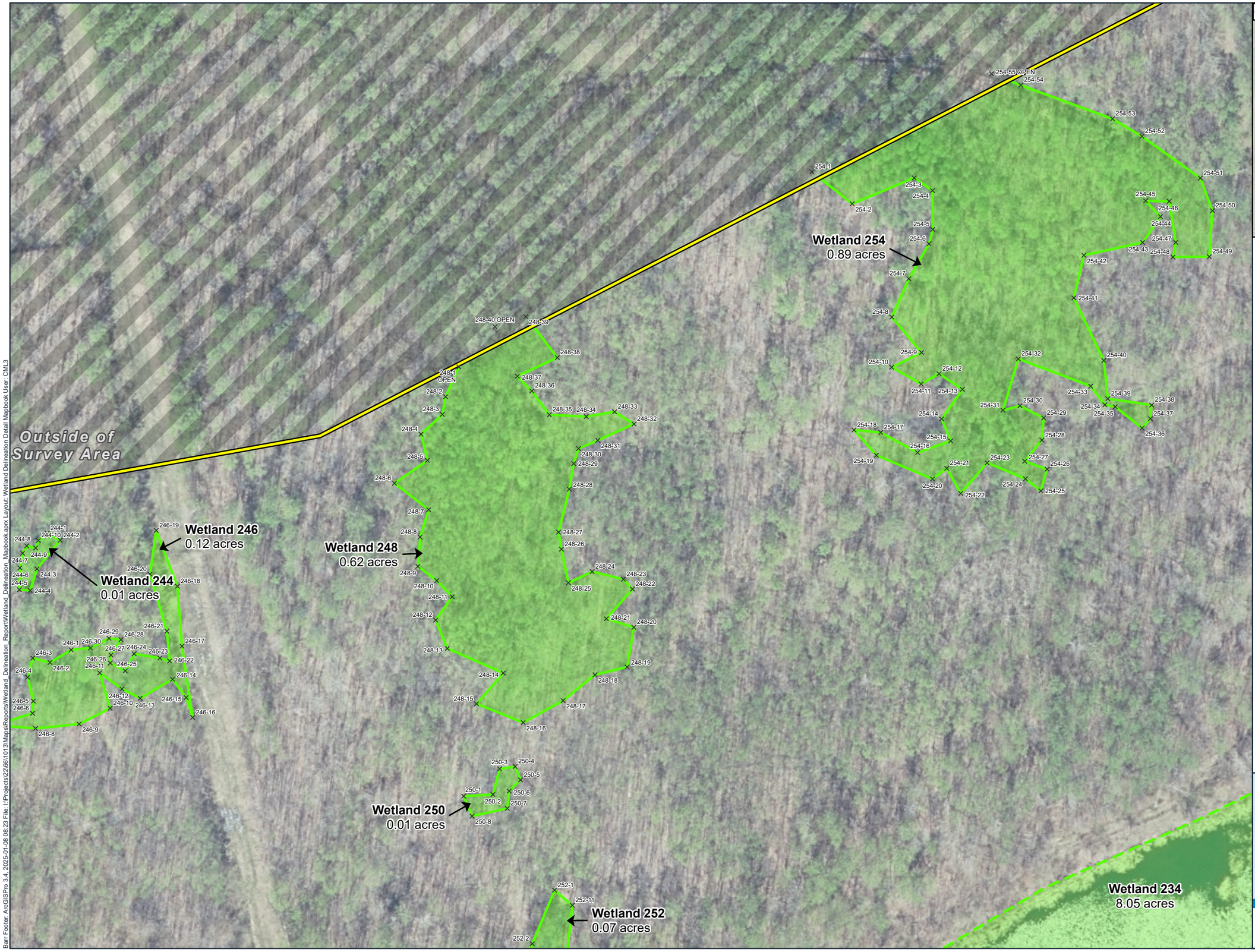
- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- × Wetland Flag

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR



Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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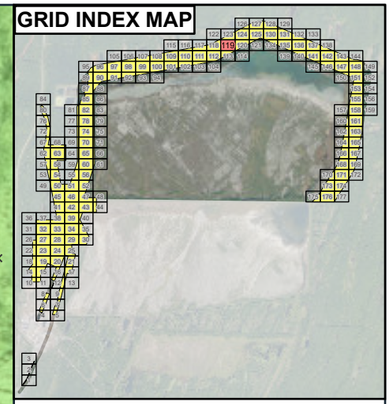
Wetland 256
3.2 acres

Wetland 254
0.89 acres

Wetland 258
12.95 acres

Wetland 234
8.05 acres

GRID INDEX MAP



Survey Area
Field Delineated Wetland Boundary
Desktop Delineated Wetland Boundary
Wetland Area
Wetland Flag
Toe Drain (Desktop Delineated)

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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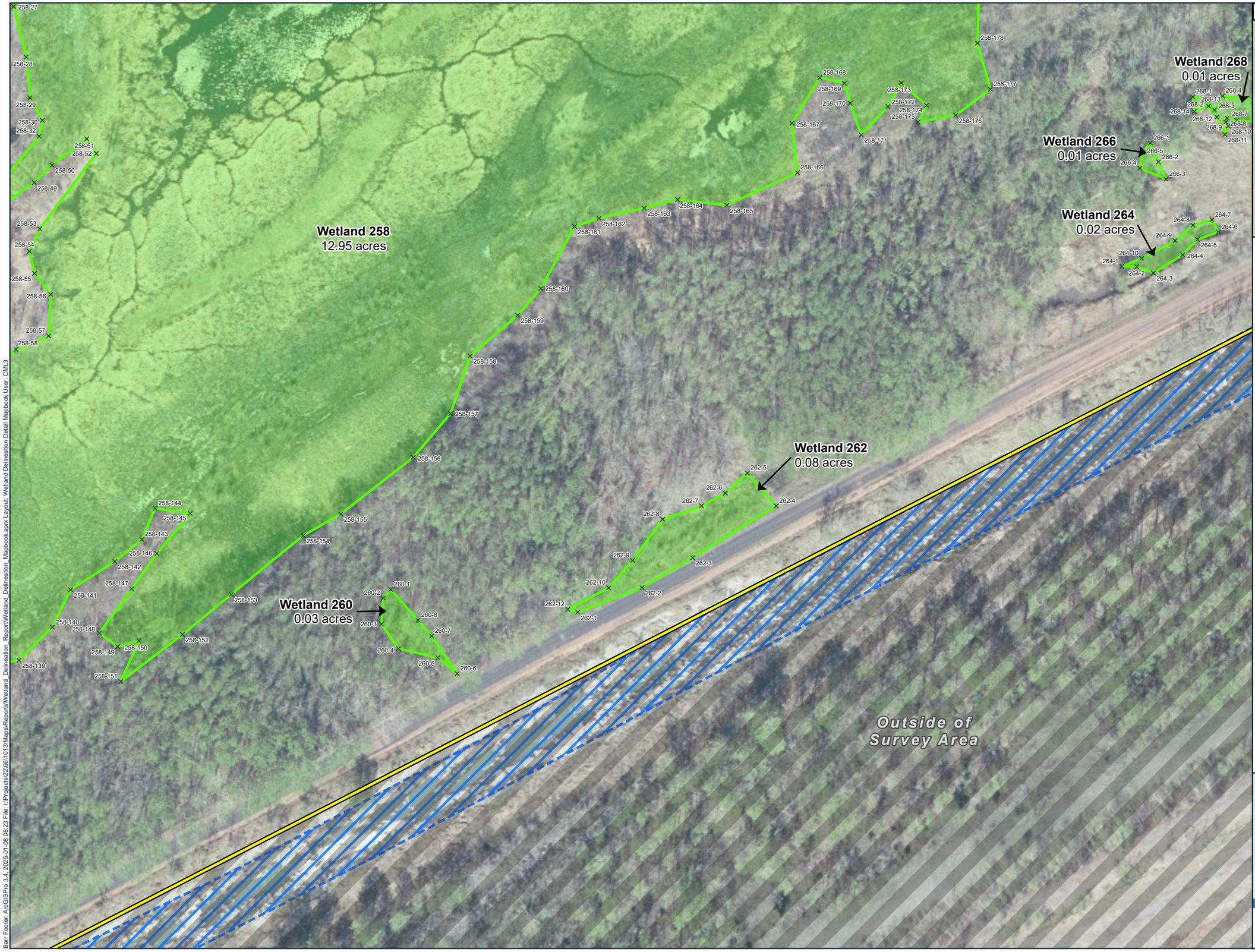

GRID INDEX MAP

- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- Wetland Flag
- Toe Drain (Desktop Delineated)

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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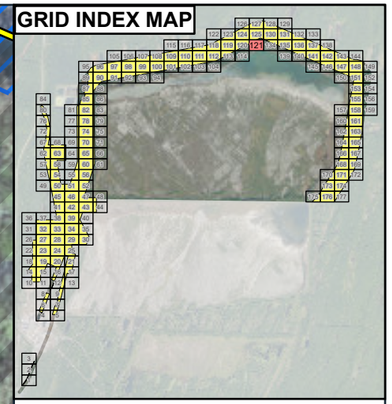

- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- × Wetland Flag
- Toe Drain (Desktop Delineated)

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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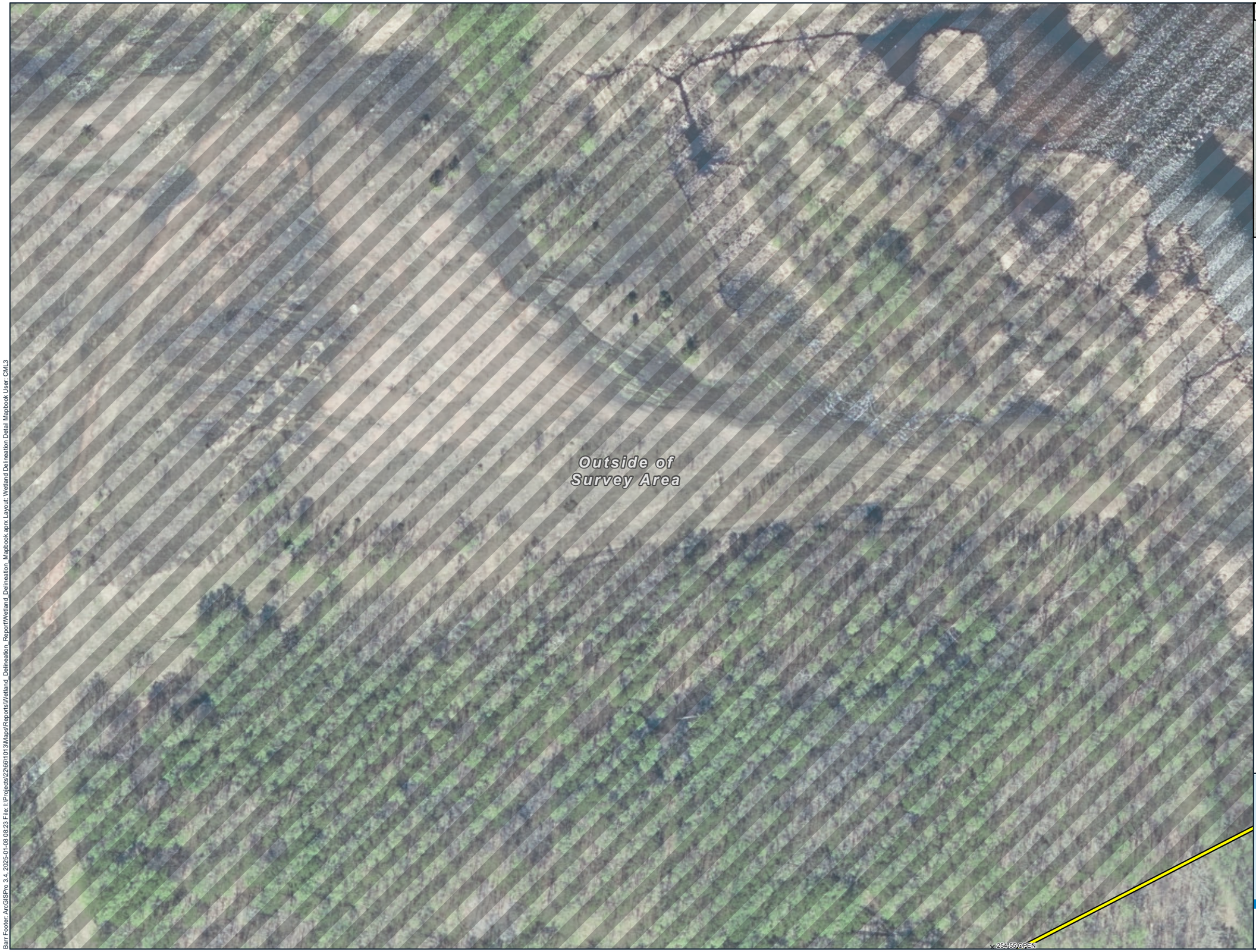

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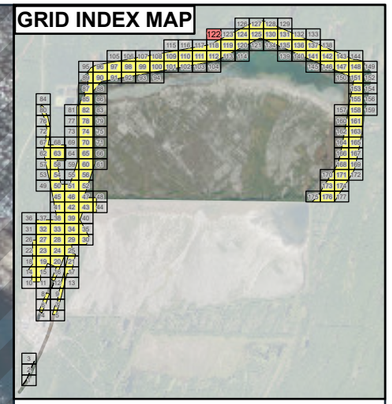

Survey Area

× Wetland Flag

N

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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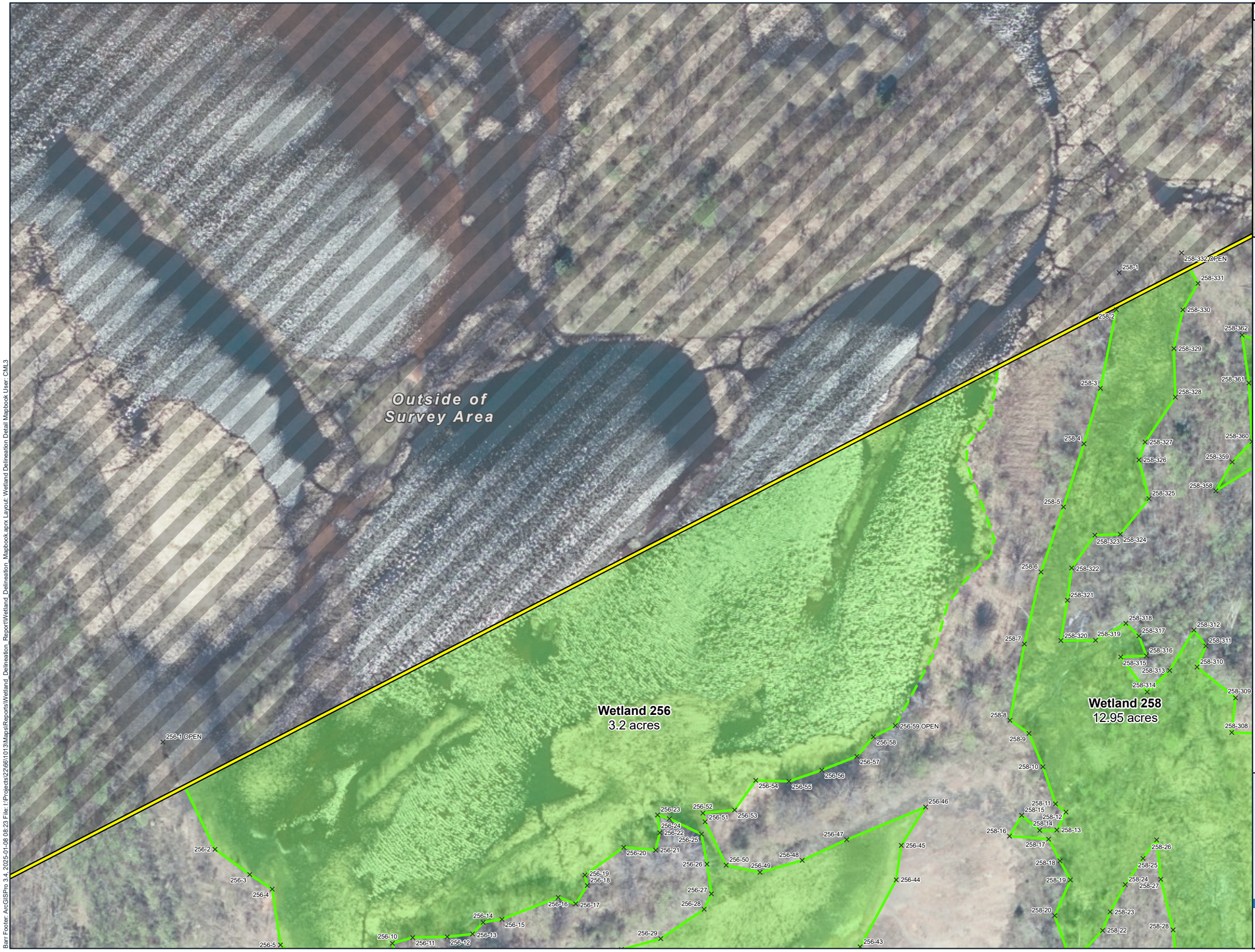

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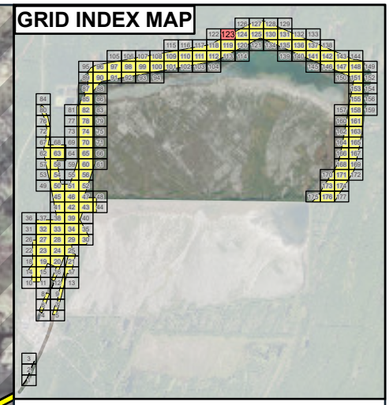

- Survey Area
- Field Delineated Wetland Boundary
- Desktop Delineated Wetland Boundary
- Wetland Area
- × Wetland Flag

N

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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Outside of Survey Area

Wetland 258
12.95 acres

Wetland 270
0.09 acres

GRID INDEX MAP

Survey Area
Field Delineated Wetland Boundary
Desktop Delineated Wetland Boundary
Wetland Area
Wetland Flag

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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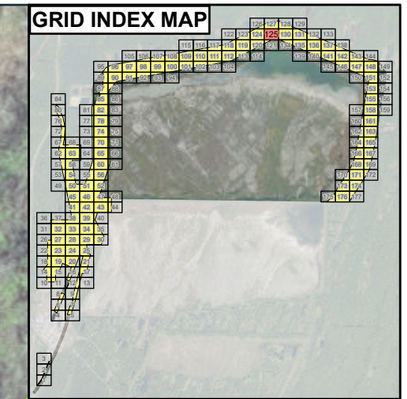

Survey Area

Field Delineated Wetland Boundary

Wetland Area

Wetland Flag

Toe Drain (Desktop Delineated)

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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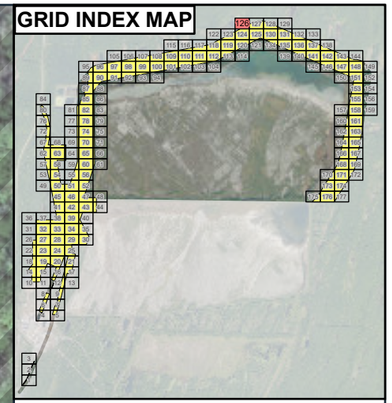
GRID INDEX MAP



- Survey Area
- Field Delineated Wetland Boundary
- Desktop Delineated Wetland Boundary
- Wetland Area
- × Wetland Flag

N

0 65 130
Feet

Imagery: MiSAIL 2023

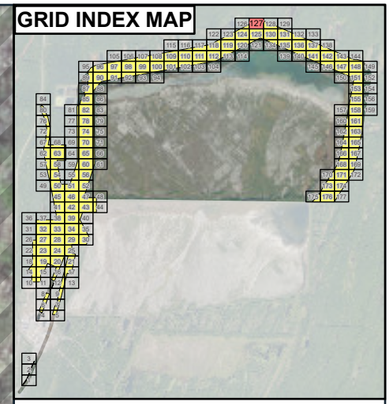
Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3



GRID INDEX MAP



Survey Area

0 65 130

Feet

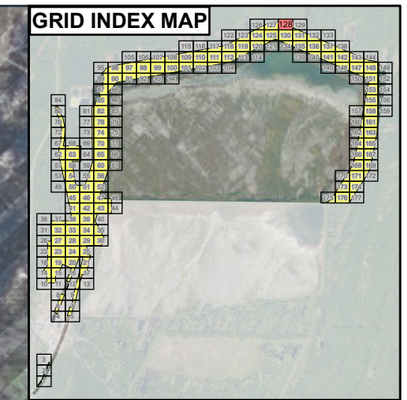
Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3





Survey Area

Field Delineated Wetland Boundary

Wetland Area

Wetland Flag

0 65 130

Feet

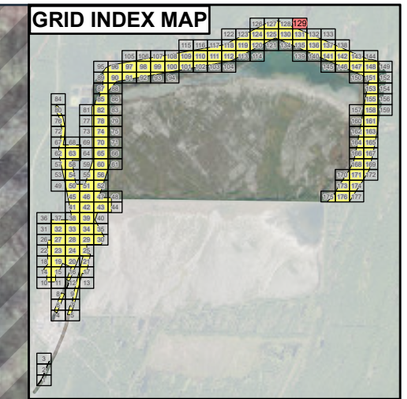
Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3





Survey Area

Field Delineated Wetland Boundary

Wetland Area

Wetland Flag

0 65 130

Feet

Imagery: MiSAIL 2023

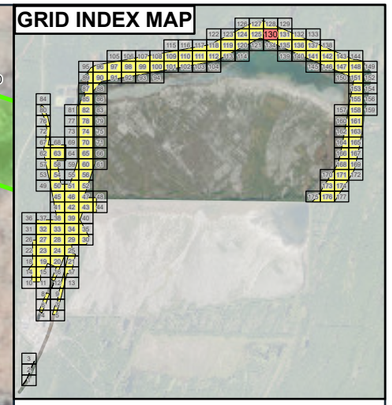
Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3



GRID INDEX MAP



- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- Wetland Flag
- Toe Drain (Desktop Delineated)

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22661013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3

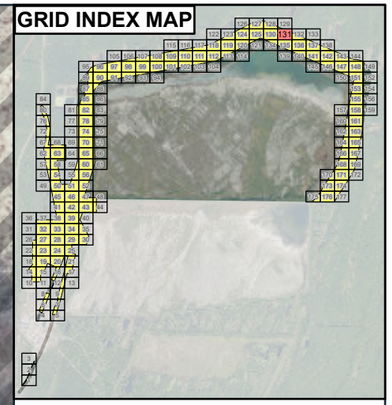
Outside of Survey Area

Wetland 241
9.25 acres

Wetland 243
0.07 acres

Wetland 233
3.37 acres

GRID INDEX MAP



- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- × Wetland Flag

N

0 65 130
Feet

Imagery: MiSAIL 2023

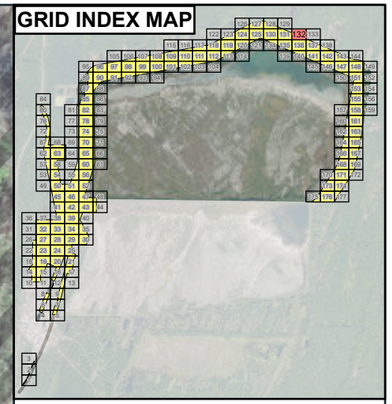
Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3



GRID INDEX MAP



Survey Area

Field Delineated Wetland Boundary

Wetland Area

× Wetland Flag

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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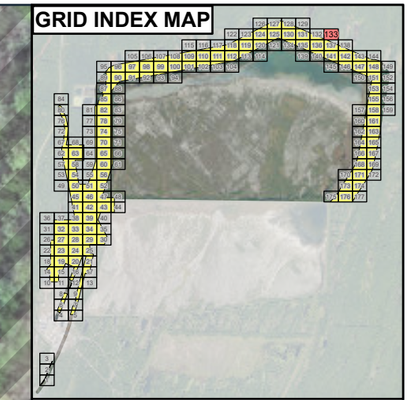


Survey Area

0 65 130
Feet

Imagery: MiSAIL 2023

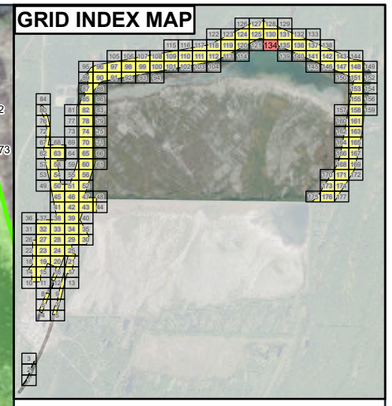
Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3



GRID INDEX MAP



- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- × Wetland Flag
- Toe Drain (Desktop Delineated)

N

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3



GRID INDEX MAP

- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- Wetland Flag
- Toe Drain (Desktop Delineated)

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3

Wetland 233
3.37 acres

Wetland 231
0.02 acres

Wetland 229
0.25 acres

Wetland 227
0.02 acres

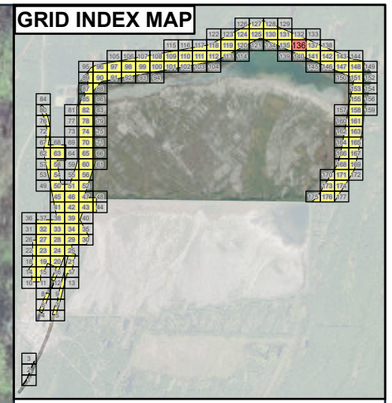
Wetland 225
0.01 acres

Wetland 223
< 0.01 acres

Wetland 221
1.23 acres

Wetland 219
0.05 acres

GRID INDEX MAP



- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- Wetland Flag
- Toe Drain (Desktop Delineated)

N

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3

Outside of Survey Area

Wetland 205
10.24 acres

Wetland 221
1.23 acres

Wetland 219
0.05 acres

205-118 OPEN
205-119 OPEN
205-117
205-116
205-115
205-120
205-121
205-129
205-122
205-123
205-124
205-128
205-130
205-127
205-125
205-126
205-114
205-113
205-112.5
205-131
205-131.5
205-132
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205-105.5
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221-65
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221-57
221-56
221-55
221-54
221-46
221-47
221-53
221-51
221-50
221-52
221-48
221-49
221-2
221-1
219-11
219-10
219-1
219-2

GRID INDEX MAP

Survey Area
Field Delineated Wetland Boundary
Wetland Area
Wetland Flag

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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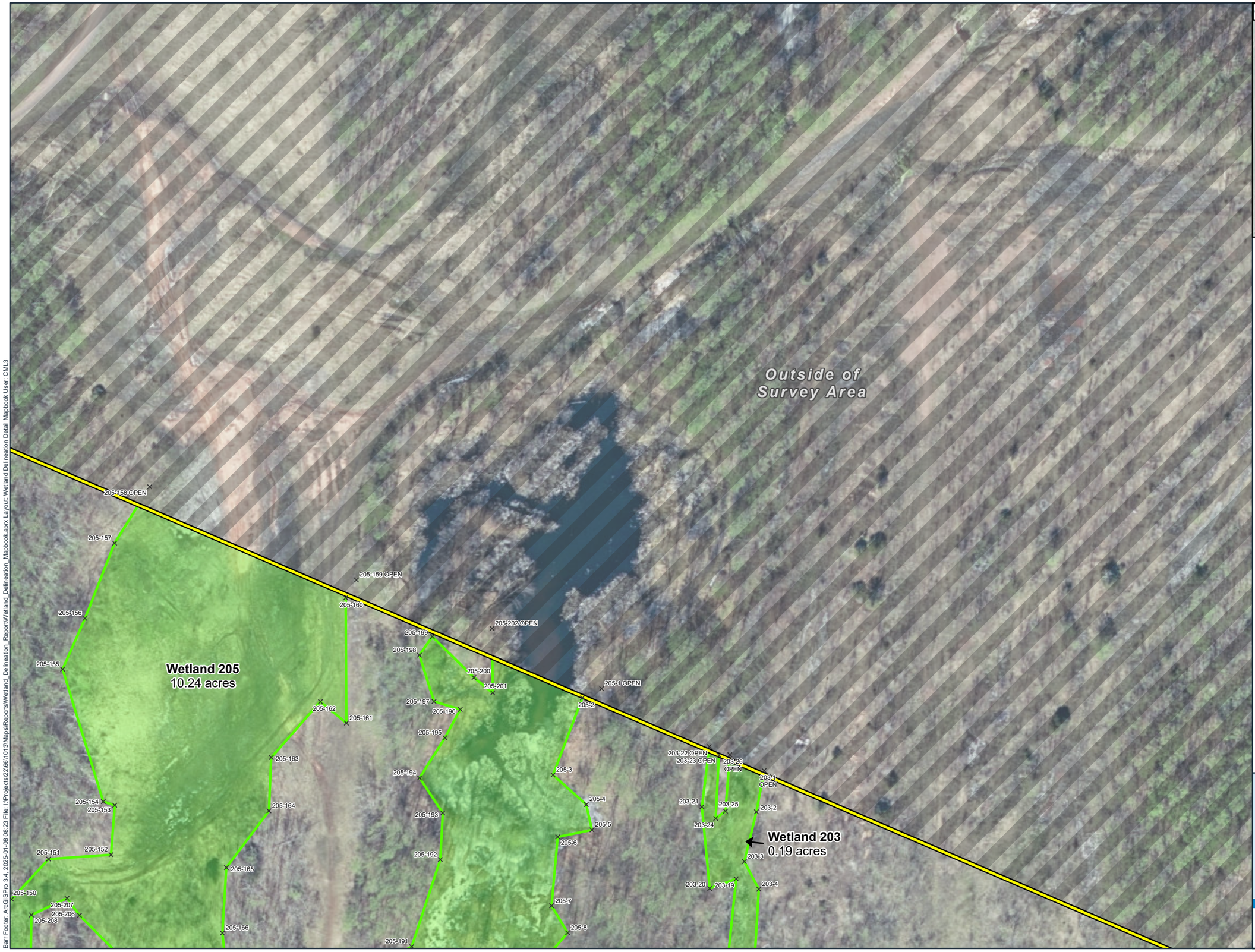

Survey Area

Field Delineated Wetland Boundary

Wetland Area

× Wetland Flag

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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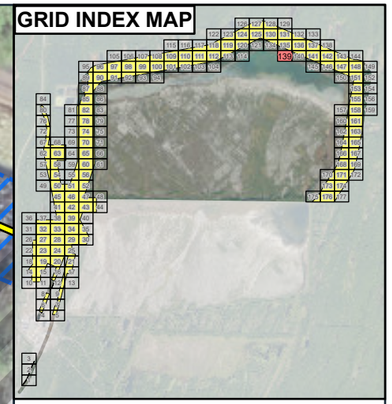

Survey Area

Toe Drain (Desktop Delineated)

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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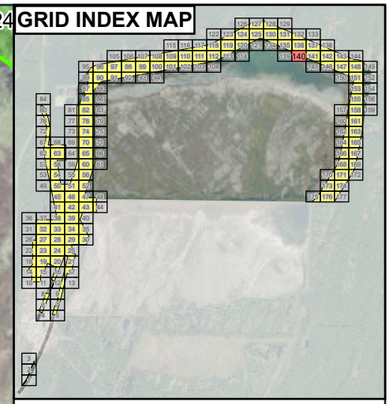

- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- × Wetland Flag
- Toe Drain (Desktop Delineated)

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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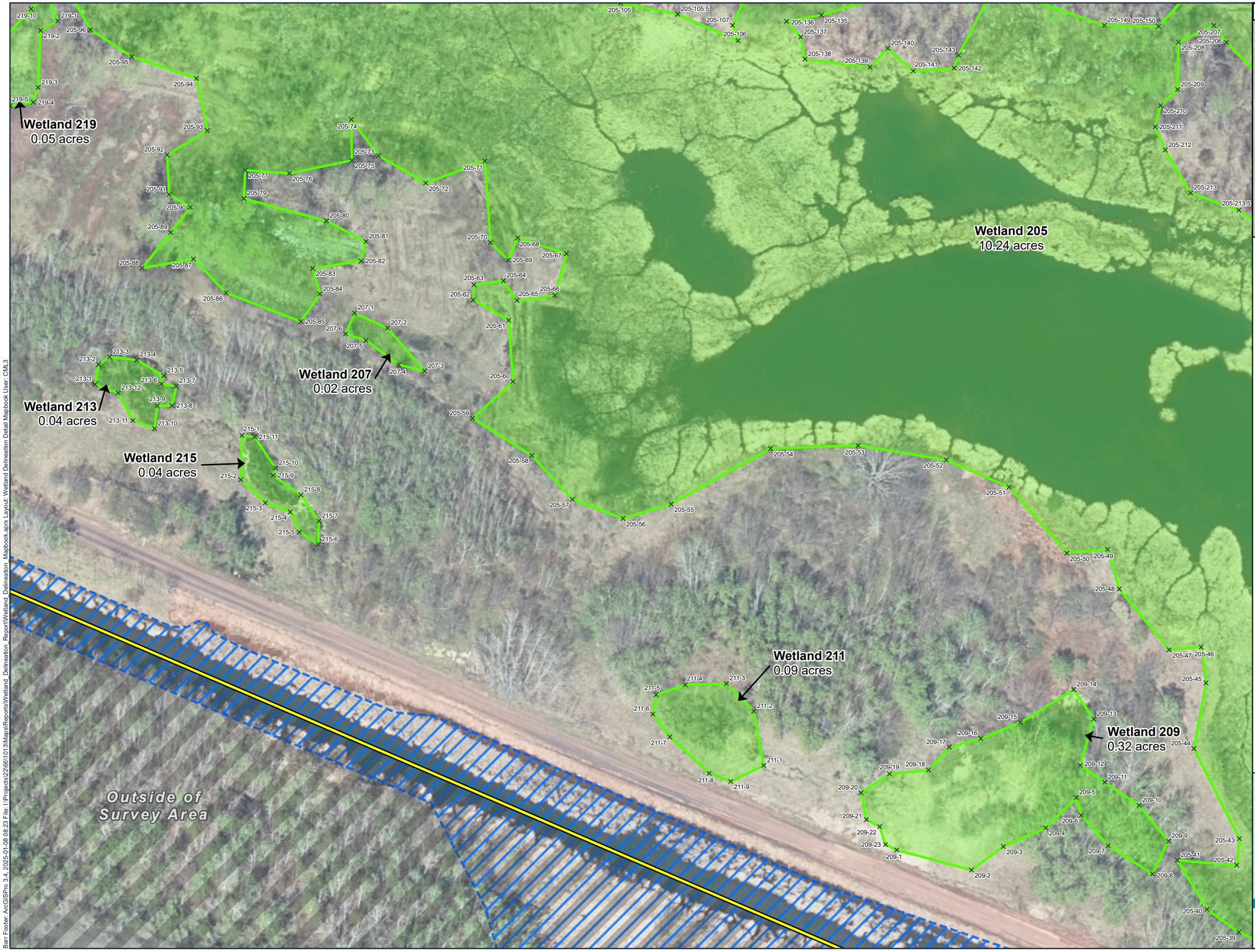

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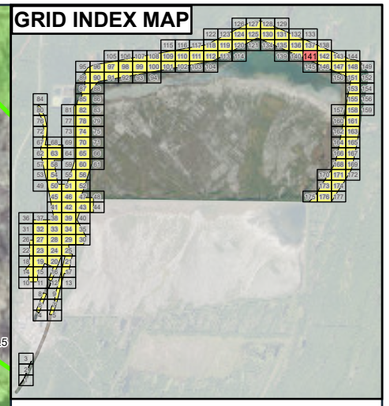

- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- Wetland Flag
- Toe Drain (Desktop Delineated)

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\68\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3

Wetland 203
0.19 acres

Outside of Survey Area

Wetland 205
10.24 acres

Wetland 201
0.04 acres

Wetland 179
1.45 acres

Wetland 199
0.36 acres

Wetland 209
0.32 acres

Wetland 197
0.03 acres

Wetland 195
0.03 acres

Wetland 193
0.17 acres

GRID INDEX MAP

Survey Area
Field Delineated Wetland Boundary
Wetland Area
× Wetland Flag

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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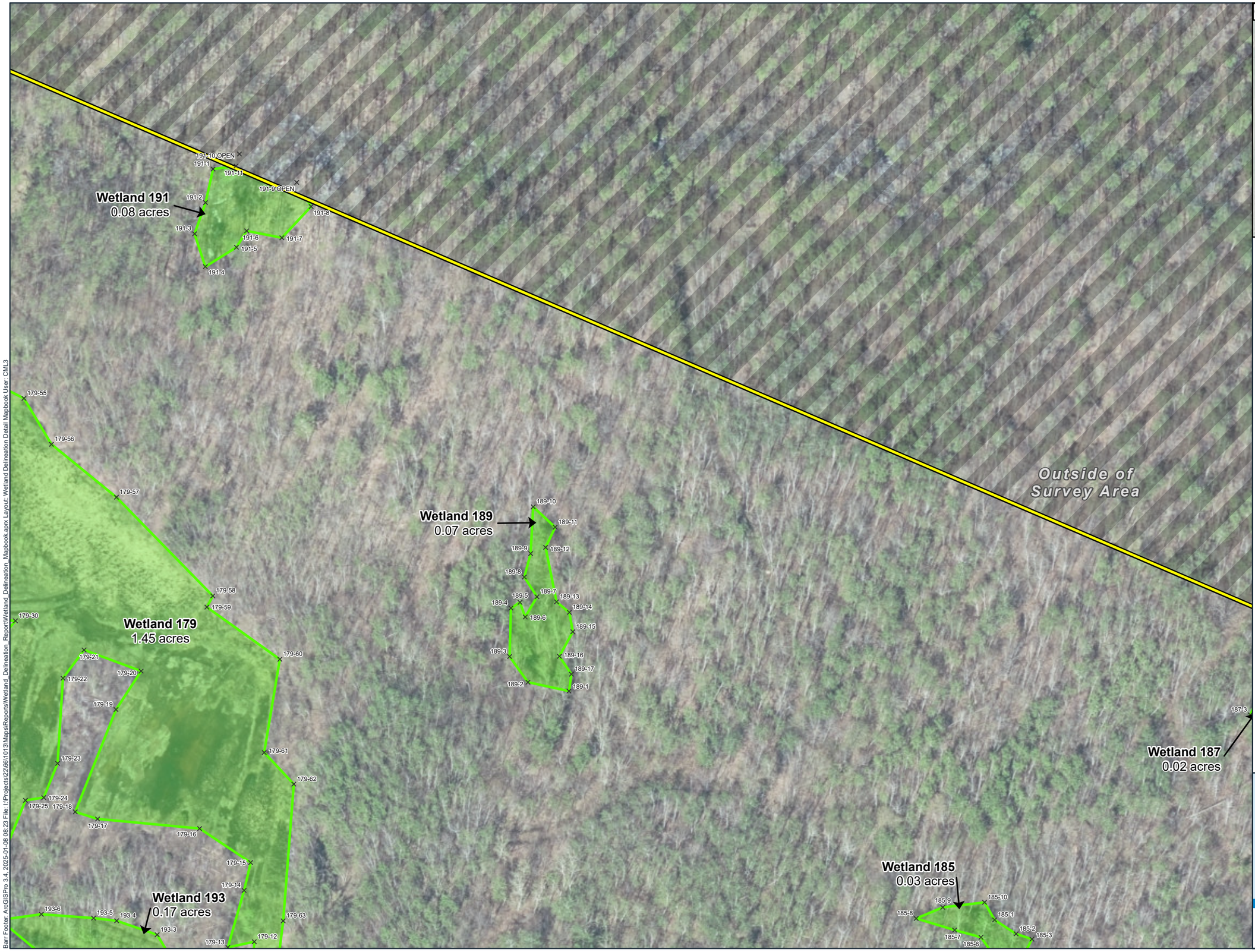

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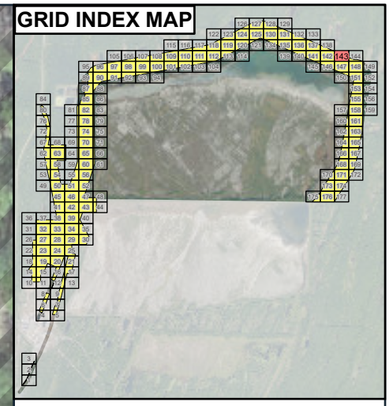

- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- × Wetland Flag

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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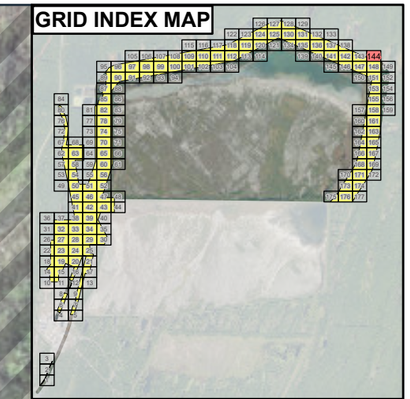

Survey Area

Field Delineated Wetland Boundary

Wetland Area

Wetland Flag

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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Wetland 205
10.24 acres
205-40
205-39
Outside of
Survey Area

GRID INDEX MAP

Survey Area
Field Delineated Wetland Boundary
Wetland Area
Wetland Flag
Toe Drain (Desktop Delineated)

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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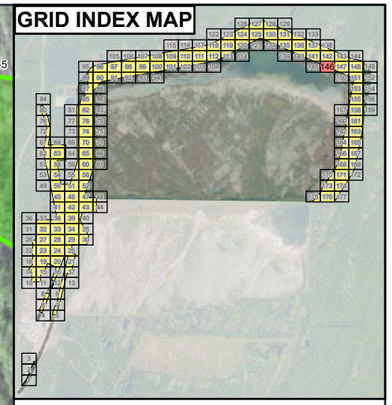

- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- Wetland Flag
- Toe Drain (Desktop Delineated)

N

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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Survey Area

Field Delineated Wetland Boundary

Wetland Area

Wetland Flag

Toe Drain (Desktop Delineated)

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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Outside of Survey Area

Wetland 167
0.37 acres

Wetland 165
0.01 acres

Wetland 163
0.02 acres

Wetland 171
0.58 acres

Wetland 265
0.35 acres

Wetland 173
0.11 acres

Wetland 77
0.04 acres

Wetland 159
0.15 acres

Wetland 157
0.26 acres

Wetland 91
57.64 acres

Wetland 161
0.07 acres

GRID INDEX MAP

Survey Area
Field Delineated Wetland Boundary
Wetland Area
Wetland Flag
Data Point

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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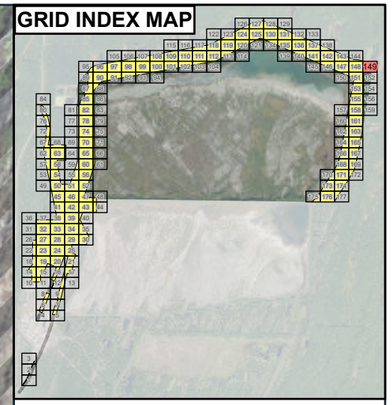
GRID INDEX MAP



- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- × Wetland Flag

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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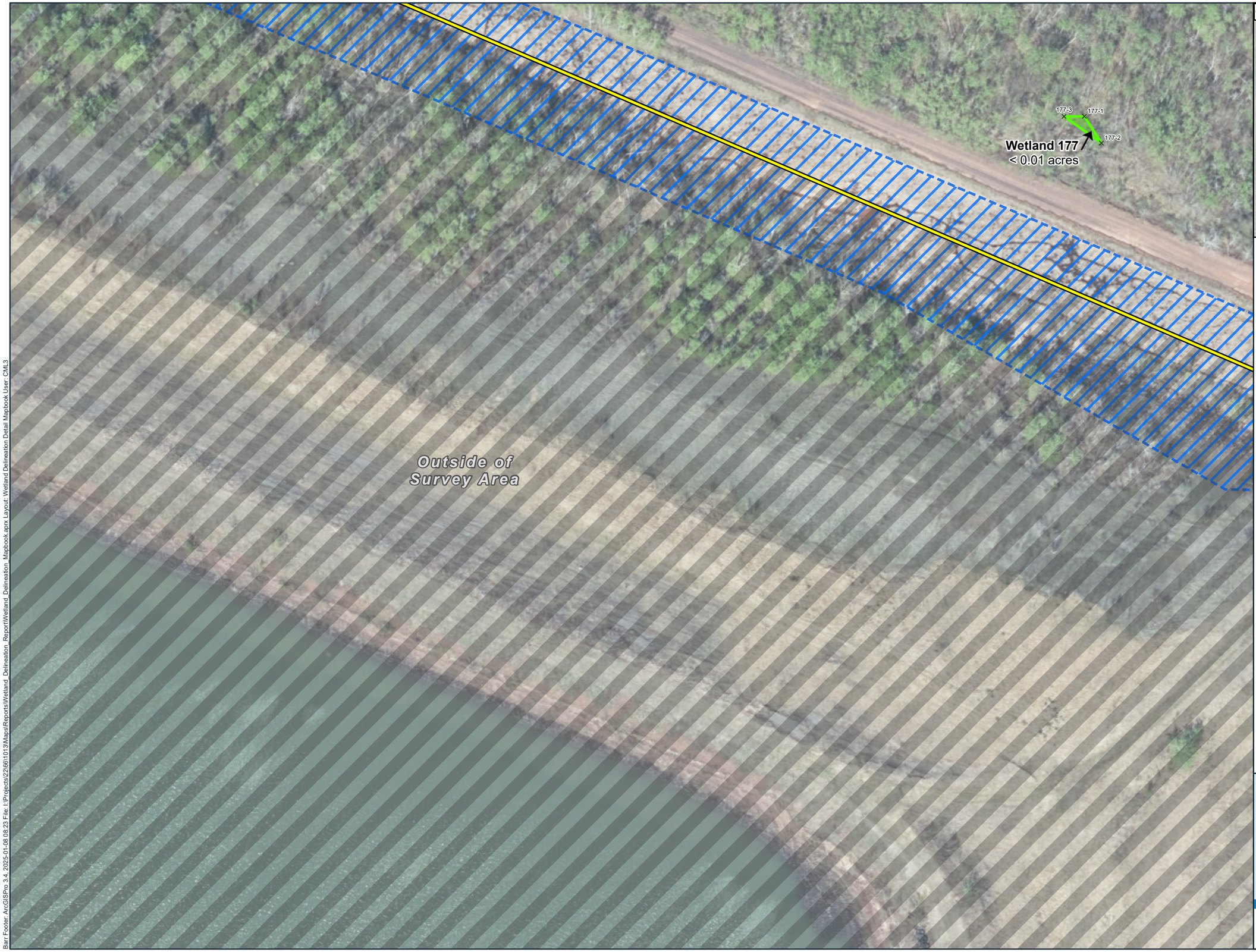

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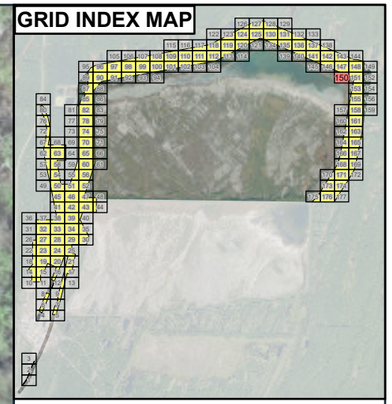

- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- Wetland Flag
- Toe Drain (Desktop Delineated)

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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GRID INDEX MAP

- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- Wetland Flag
- Toe Drain (Desktop Delineated)

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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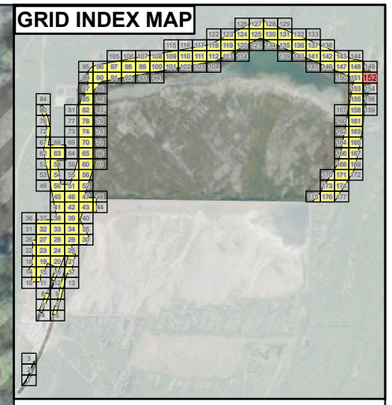

Survey Area

Field Delineated Wetland Boundary

Wetland Area

× Wetland Flag

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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Outside of Survey Area

Wetland 91
57.64 acres

Wetland 127
0.02 acres

WTL91-DP6-W

WTL91-DP6-U

GRID INDEX MAP

Survey Area
Field Delineated Wetland Boundary
Wetland Area
Wetland Flag
Data Point
Toe Drain (Desktop Delineated)

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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91-1763

91-1762

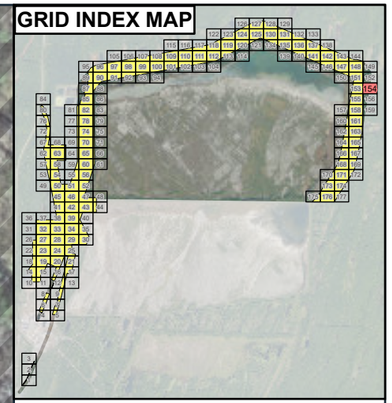
Wetland 91
57.64 acres

Outside of Survey Area

91-1601

91-1602

GRID INDEX MAP



- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- × Wetland Flag

N

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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Outside of Survey Area

Wetland 129
0.06 acres

Wetland 91
57.64 acres

Wetland 131
0.09 acres

GRID INDEX MAP

Survey Area
Field Delineated Wetland Boundary
Wetland Area
Wetland Flag
Toe Drain (Desktop Delineated)

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\06\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3

Wetland 91
57.64 acres
91-1602
91-1603 OPEN
Outside of Survey Area

GRID INDEX MAP

Survey Area
Field Delineated Wetland Boundary
Wetland Area
Wetland Flag

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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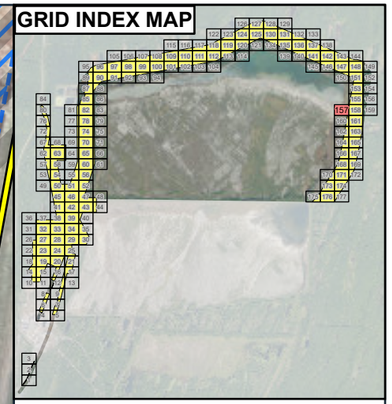
GRID INDEX MAP



- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- Wetland Flag
- Data Point
- Toe Drain (Desktop Delineated)

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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Outside of Survey Area

Wetland 131
0.09 acres

Wetland 139
0.11 acres

Wetland 91
57.64 acres

Wetland 135
0.05 acres

Wetland 137
0.01 acres

Wetland 133
0.24 acres

Wetland 141
0.01 acres

WTL139-DP1-U
WTL139-DP1-W
WTL133-DP1-U
WTL133-DP1-W

GRID INDEX MAP

Survey Area
Field Delineated Wetland Boundary
Wetland Area
Wetland Flag
Data Point
Toe Drain (Desktop Delineated)

N

0 65 130
Feet

Imagery: MiSAIL 2023

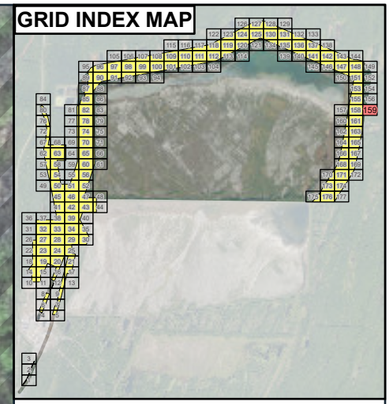
Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3

Outside of
Survey Area

GRID INDEX MAP



Survey Area

N

0 65 130
Feet

Imagery: MiSAIL 2023

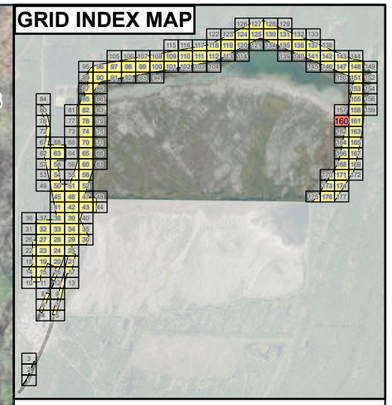
Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3



GRID INDEX MAP



- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- × Wetland Flag
- Toe Drain (Desktop Delineated)

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\6611013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3

Wetland 133
0.24 acres

Wetland 143
0.03 acres

Wetland 145
0.03 acres

Wetland 147
0.01 acres

Wetland 149
0.36 acres

Wetland 151
0.04 acres

Wetland 91
57.64 acres

Outside of Survey Area

WTL143-DP1-W

91-1508 OPEN

91-1494 OPEN

GRID INDEX MAP

Survey Area
Field Delineated Wetland Boundary
Wetland Area
Wetland Flag
Data Point

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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Outside of Survey Area

153-1
153-2
153-3
153-4
153-5
153-7
153-8
153-9
149-20

Wetland 149
0.36 acres

Wetland 153
0.02 acres

91-1092
91-1091
91-1093
91-1090
91-1089
91-1094
91-1095
91-1114
91-1115
91-1116
91-1113
91-1117
91-1112
91-1096

Wetland 91
57.64 acres

GRID INDEX MAP

Survey Area
Field Delineated Wetland Boundary
Wetland Area
Wetland Flag
Toe Drain (Desktop Delineated)

N

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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Wetland 149
0.36 acres

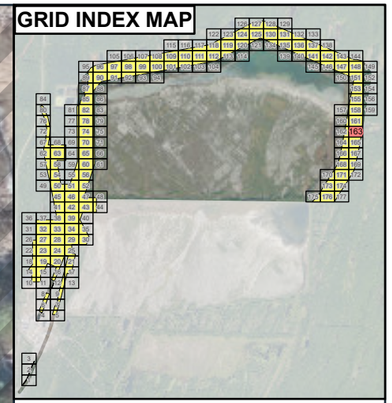
Wetland 153
0.02 acres

Wetland 151
0.04 acres

Wetland 91
57.64 acres

Outside of Survey Area

GRID INDEX MAP



- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- Wetland Flag
- Data Point

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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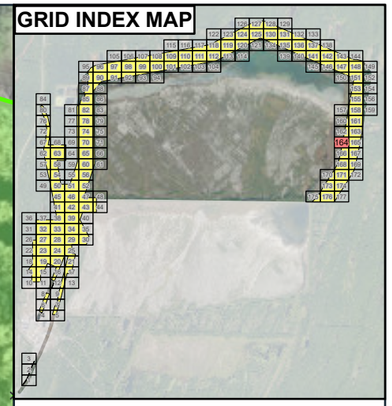
Outside of Survey Area

Wetland 91
57.64 acres

91-1090 91-1089 91-1088 91-1087 91-1086 91-1085 91-1084 91-1083 91-1082 91-1081 91-1080 91-1079 91-1078 91-1094 91-1095 91-1115 91-1116 91-1114 91-1113 91-1117 91-1112 91-1096 91-1111 91-1097 91-1098 91-1110 91-1109 91-1108 91-1107 91-1098.5 91-1106 91-1102 91-1099 91-1100 91-1101 91-1103 91-1105 91-1104 91-1062 91-1063 91-1068 91-1067 91-1069 91-1064 91-1065 91-1066 91-1061 91-1060 91-1059 91-1058

GRID INDEX MAP



- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- × Wetland Flag
- Toe Drain (Desktop Delineated)

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland_Delineation_Mapbook User: CML3

Wetland 91
57.64 acres

Outside of Survey Area

GRID INDEX MAP

Survey Area
Field Delineated Wetland Boundary
Wetland Area
Wetland Flag

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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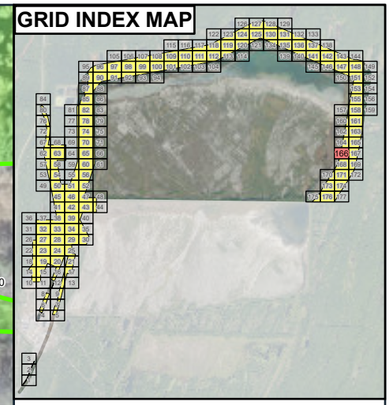
Outside of Survey Area

Wetland 125
0.02 acres

Wetland 123
0.07 acres

Wetland 91
57.64 acres

GRID INDEX MAP



- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- Wetland Flag
- Toe Drain (Desktop Delineated)

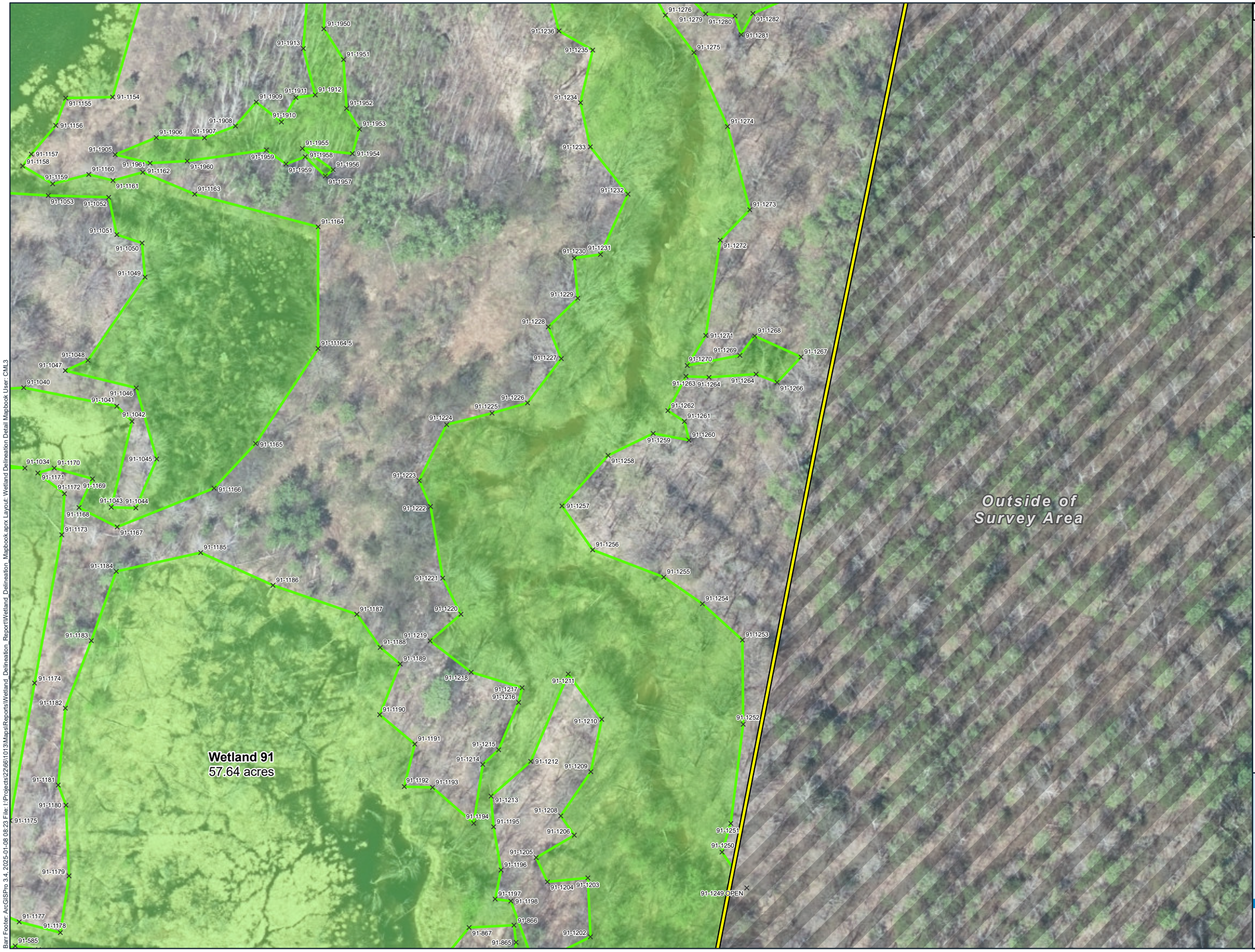
0 65 130
Feet

Imagery: MiSAIL 2023

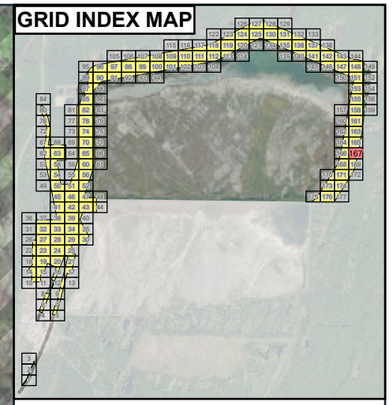
Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3



GRID INDEX MAP



Survey Area

Field Delineated Wetland Boundary

Wetland Area

× Wetland Flag

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3

Outside of Survey Area

Wetland 91
57.64 acres

Wetland 115
0.05 acres

Wetland 121
0.05 acres

WTL91-DP5-W

WTL91-DP5-U

GRID INDEX MAP

Survey Area

Field Delineated Wetland Boundary

Wetland Area

Wetland Flag

Data Point

Toe Drain (Desktop Delineated)

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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Wetland 91
57.64 acres

Wetland 119
0.03 acres

Wetland 121
0.05 acres

Outside of Survey Area

91-1249 OPEN
91-855 OPEN
91-830 OPEN
91-842 OPEN
91-854 OPEN
91-792 OPEN

GRID INDEX MAP

Survey Area
Field Delineated Wetland Boundary
Wetland Area
× Wetland Flag

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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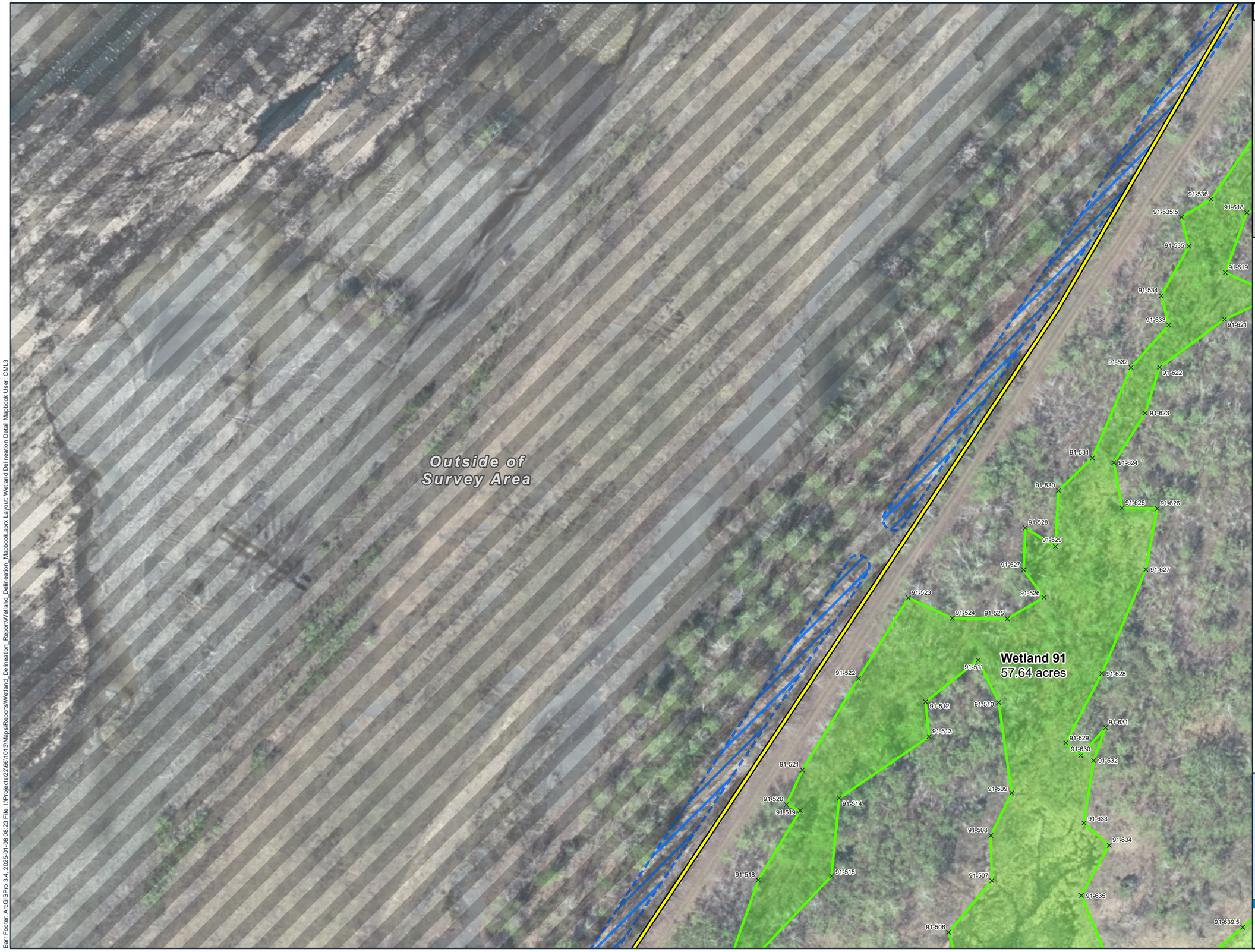
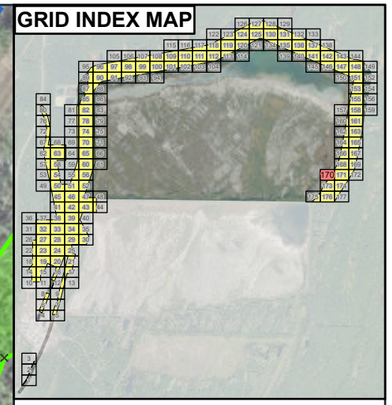


GRID INDEX MAP



Survey Area

Field Delineated Wetland Boundary

Wetland Area

× Wetland Flag

Toe Drain (Desktop Delineated)

N

0 65 130

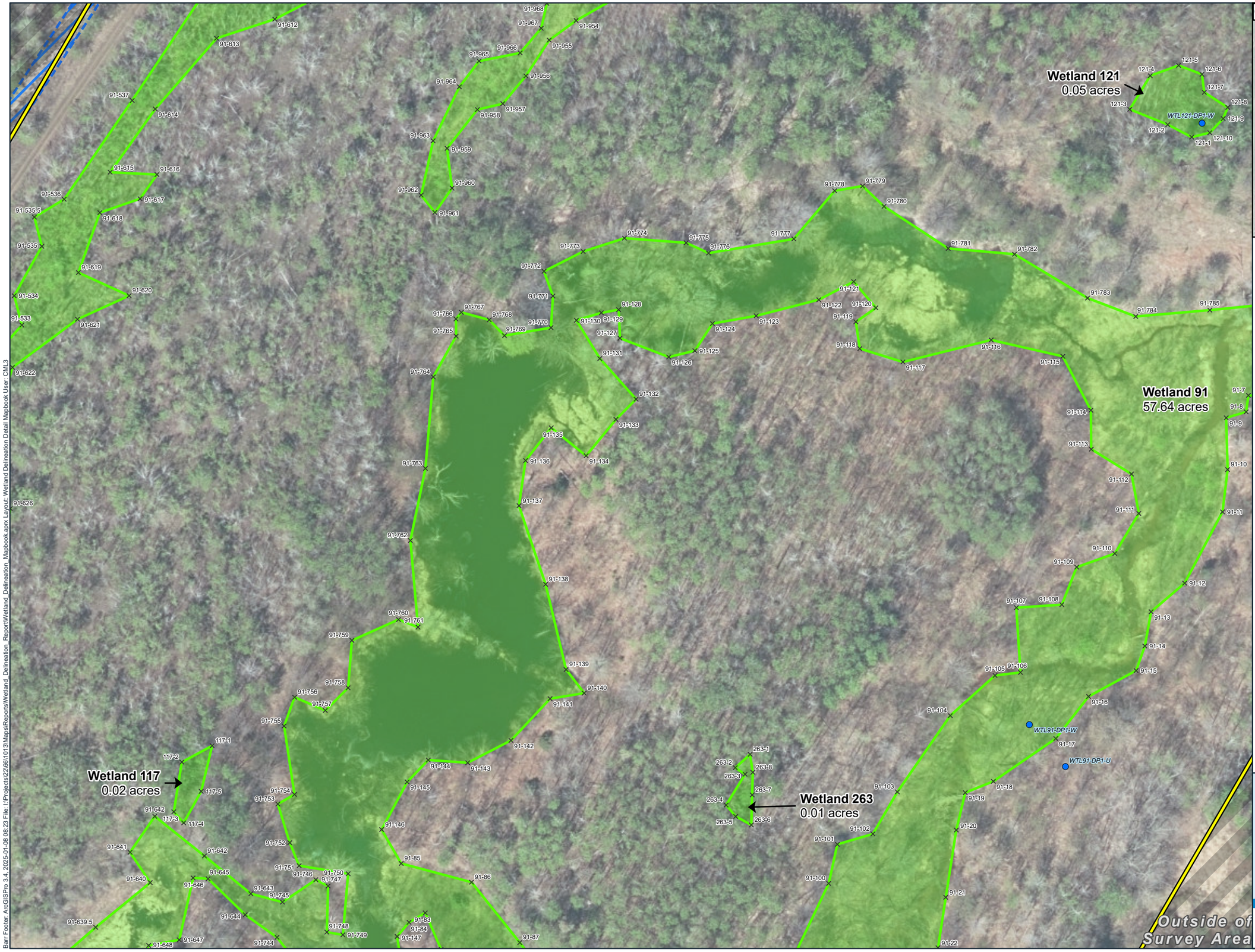
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3



GRID INDEX MAP

- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- Wetland Flag
- Data Point
- Toe Drain (Desktop Delineated)

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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Survey Area

Field Delineated Wetland Boundary

Wetland Area

Wetland Flag

Data Point

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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Outside of Survey Area

Wetland 91
57.64 acres

91-518 91-515 91-507 91-635 91-639.5 91-506 91-636 91-517 91-516 91-637 91-505 91-639 91-504 91-503 91-638 91-502 91-650 91-501 91-651 91-499 91-652 91-500 91-498 91-497 91-496 91-553 91-495 91-494 91-654 91-493 91-491 91-492 91-655 91-490 91-656 91-657 91-658 91-489 91-663 91-664 91-662 91-665 91-661 91-659 91-660 91-488 91-666 91-667 91-712 91-713 91-711 91-710 91-714 91-719 91-721 91-722 91-723 91-724 91-725 91-726 91-727 91-728 91-487 91-718 91-715 91-717 91-716 91-486 91-485 91-670 91-668 91-669 91-707 91-706 91-709 91-705 91-708 91-484 91-671 91-672 91-700 91-699 91-703 91-704 91-673 91-698 91-697 91-696 91-701 91-702 91-695 91-674 91-694 91-693 91-483 91-675 91-683 91-382 91-380 91-379 91-376 91-374 91-374.5 91-373 91-372 91-370 91-369 91-375 91-371 91-368 91-232 91-231 91-233 WTL91-DP3-W 91-230 91-229 91-237 91-236 91-238 91-234 WTL93-DP3-U 91-235 91-228 91-239 91-244 91-240 91-227 91-254 91-243 91-242 91-241 91-226 91-255 91-245 91-225 91-256 91-257 91-258 91-259 91-253 91-224 91-186 91-187 91-188 WTL91-DP2-U WTL91-DP2-W

GRID INDEX MAP

- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- Wetland Flag
- Data Point
- Toe Drain (Desktop Delineated)

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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Survey Area

Field Delineated Wetland Boundary

Wetland Area

Wetland Flag

Data Point

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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Outside of Survey Area

Wetland 91
57.64 acres

91-676
91-482
91-467
91-465
91-468
91-459
91-464
91-460
91-481
91-469
91-458
91-461
91-463
91-457
91-462
91-456
91-470
91-480
91-455
91-453
91-471
91-452
91-454
91-413
91-412
91-451
91-450
91-449
91-414
91-415
91-417
91-479
91-418
91-472
91-419
91-448
91-420
91-447
91-473
91-478
91-421
91-446
91-431
91-432
91-445
91-430
91-433
91-429
91-434
91-444
91-477
91-474
91-476
91-475
91-428
91-422
91-336
91-435
91-443
91-427
91-335
91-442
91-436
91-423
91-424
91-334
91-333
91-334
91-441
91-440
91-426 OPEN
91-439 OPEN
91-437
91-425 OPEN
91-332 OPEN
91-438 OPEN

GRID INDEX MAP

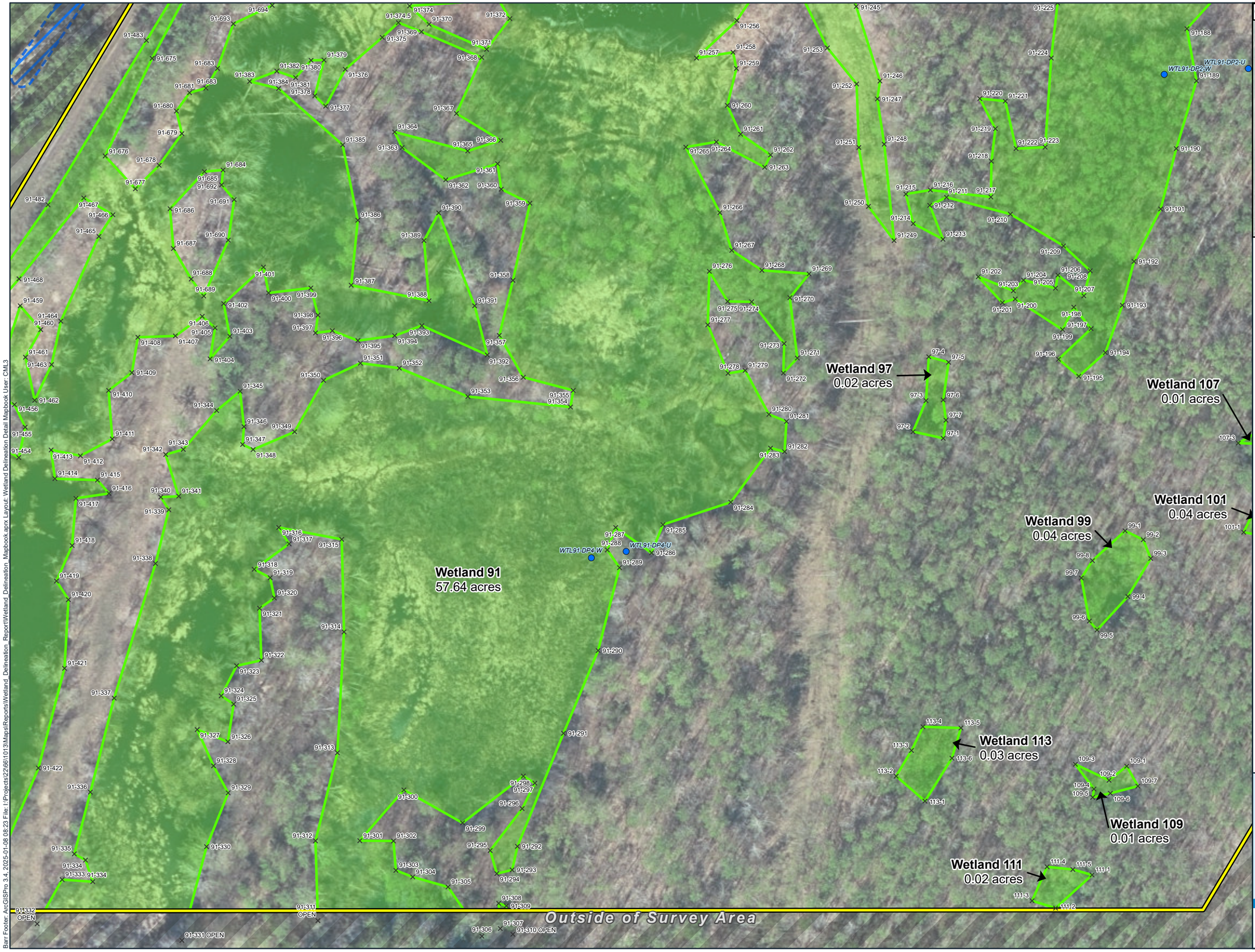
Survey Area
Field Delineated Wetland Boundary
Wetland Area
Wetland Flag
Toe Drain (Desktop Delineated)

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR



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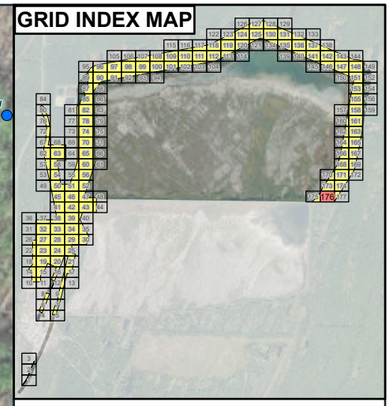

Survey Area

Field Delineated Wetland Boundary

Wetland Area

Wetland Flag

Data Point

Toe Drain (Desktop Delineated)

0 65 130

Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

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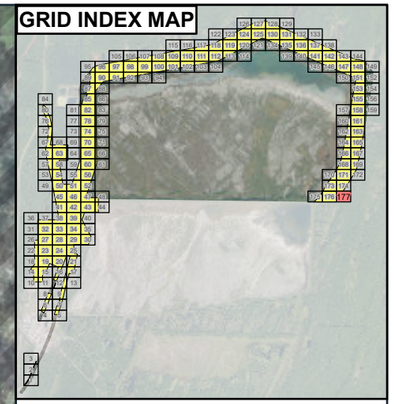
GRID INDEX MAP



- Survey Area
- Field Delineated Wetland Boundary
- Wetland Area
- Wetland Flag
- Data Point

0 65 130
Feet

Imagery: MiSAIL 2023

Wetland Delineation
- Detail Map -
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-08 08:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_Report\Wetland_Delineation_Mapbook.aprx Layout: Wetland Delineation Detail Mapbook User: CML3

Appendix B

Wetland Data Summary

Appendix B
Wetland Data Summary - White Pine North Project
White Pine Copper LLC

Wetland Count	Wetland ID #	Associated Dataform(s)	Cowardin Classification	Acres (on-site)	MI Regulated (Y/N/?)
1	1	WTL1-DP1	PUB/PEM/PSS	7.34	N
2	2	WTL2-DP1	PEM	0.05	Y
3	3	WTL3-DP1, 2, 3, 4, 5, 6	PEM/PSS/PUB	22.24	Y
4	4	WTL2-DP1	PEM	0.02	Y
5	5	WTL3-DP1	PEM/PSS	0.09	Y
6	6	WTL6-DP1	PFO	0.40	Y
7	7	WTL7-DP1	PEM/PSS	0.07	Y
8	8	WTL8-DP1	PEM	0.03	Y
9	9	WTL7-DP1	PEM/PSS	0.05	Y
10	10	WTL8-DP1	PEM	0.02	Y
11	11	WTL11-DP1, 2	PEM/PSS	4.77	Y
12	12	WTL8-DP1	PEM	0.08	Y
13	13	WTL7-DP1	PEM/PSS	0.21	Y
14	14	WTL14-DP1	PSS	0.05	Y
15	15	WTL7-DP1	PEM/PSS	0.05	Y
16	16	WTL14-DP1	PSS	0.02	Y
17	17	WTL7-DP1	PEM/PSS	0.03	Y
18	18	WTL14-DP1	PSS	0.02	Y
19	19	WTL7-DP1	PEM/PSS	0.05	Y
20	20	WTL14-DP1	PSS	0.11	Y
21	21	WTL7-DP1	PEM/PSS	0.02	Y
22	22	WTL22-DP1	PEM	0.07	Y
23	23	WTL23-DP1	PEM/PSS	0.02	Y
24	24	WTL22-DP1	PEM	0.03	Y
25	25	WTL23-DP1	PEM/PSS	0.32	Y
26	26	WTL26-DP1	PEM/PSS	0.08	Y
27	27	WTL7-DP1	PEM/PSS	0.01	Y
28	28	WTL26-DP1	PEM/PSS	0.02	Y
29	29	WTL29-DP1	PSS	0.04	N
30	30	WTL30-DP1	PSS	0.16	Y
31	31	WTL45-DP1	PEM	0.02	Y
32	32	WTL32-DP1	PEM	0.02	Y
33	33	WTL29-DP1	PSS	0.06	N
34	34	WTL32-DP1	PEM	<0.01	Y
35	35	WTL7-DP1	PEM/PSS	0.03	Y
36	36	WTL26-DP1	PEM/PSS	0.01	Y
37	37	WTL11-DP1	PEM/PSS	0.13	Y
38	38	WTL26-DP1	PEM/PSS	0.01	Y
39	39	WTL11-DP1	PEM/PSS	0.05	Y
40	40	WTL40-DP1	PEM	0.04	Y
41	41	WTL23-DP1	PEM/PSS	0.03	Y
42	42	WTL22-DP1	PEM	0.04	Y
43	43	WTL11-DP2	PEM/PSS	0.01	Y
44	44	WTL40-DP1	PEM	0.05	Y
45	45	WTL45-DP1	PEM	0.03	Y
46	46	WTL40-DP1	PEM	0.04	Y
47	47	WTL47-DP1	PEM/PSS	0.68	Y
48	48	WTL40-DP1	PEM	0.18	Y
49	49	WTL47-DP1	PEM/PSS	<0.01	Y
50	50	WTL40-DP1	PEM	0.10	Y
51	51	WTL47-DP1	PEM/PSS	0.01	Y
52	52	WTL52-DP1	PEM	0.17	Y
53	53	WTL47-DP1	PEM/PSS	0.02	Y
54	54	WTL3-DP6	PEM/R	14.00	Y
55	55	WTL47-DP1	PEM/PSS	0.07	Y
56	56	WTL56-DP1	PEM	0.04	Y
57	57	WTL57-DP1	PEM/PSS	0.05	Y
58	58	WTL58-DP1	PEM	0.02	Y
59	59	WTL47-DP1	PEM/PSS	0.01	N
60	60	WTL60-DP1W, WTL56-DP1U	PFO	0.10	Y
61	61	WTL47-DP1W and WTL57-DP1U	PEM/PSS	0.01	N
62	62	WTL62-DP1W, WTL58-DP1U	PEM	0.01	Y
63	63	WTL57-DP1	PEM/PSS	0.02	Y
64	64	WTL60-DP1W, WTL58-DP1U	PFO	0.06	Y
65	65	WTL23-DP1	PEM/PSS	0.09	Y
66	66	WTL60-DP1W, WTL58-DP1U	PFO	0.03	Y
67	67	WTL29-DP1	PSS	0.07	Y
68	68	WTL68-DP1	PEM	0.29	Y
69	69	WTL3-DP1	PEM/PSS	12.48	Y
70	70	WTL26-DP1W, WTL58-DP1U	PEM/PSS	0.01	Y
71	71	WTL45-DP1	PEM	0.03	Y

72	72	WTL58-DP1	PEM	0.07	Y
73	73	WTL23-DP1	PEM/PSS	0.15	Y
74	74	WTL74-DP1	PEM	0.06	Y
75	75	WTL11-DP2	PEM/PSS	0.25	Y
76	76	WTL74-DP1	PEM	0.02	Y
77	77	WTL77-DP1	PEM/PSS	0.04	N
78	78	WTL78-DP1	PEM	0.04	Y
79	79	WTL79-DP1	PEM	30.97	Y
80	80	WTL26-DP1W, WTL56-DP1U	PEM/PSS	0.01	Y
81	81	WTL81-DP1	PEM/PSS	0.08	Y
82	82	WTL82-DP1W, WTL56-DP1U	PEM/PSS	0.01	Y
83	83	WTL7-DP1	PEM/PSS	0.02	Y
84	84	WTL82-DP1W, WTL56-DP1U	PEM/PSS	0.02	Y
85	85	WTL45-DP1	PEM	0.02	Y
86	86	WTL86-DP1W, WTL56-DP1U	PFO	0.06	Y
87	87	WTL87-DP1	PEM/PSS	0.02	Y
88	88	WTL3-DP6	PEM/PUB	2.26	Y
89	89	WTL89-DP1	PEM	0.04	Y
90	90	WTL90-DP1W, WTL56-DP1U	PEM/PSS	0.09	Y
91	91	WTL91-DP1, 2, 3, 4, 5, 6, WTL121-DP1	PEM/PSS/PUB/PFO	57.64	Y
92	92	WTL90-DP1W, WTL56-DP1U	PEM/PSS	0.01	Y
93	93	WTL93-DP1	PEM	0.04	Y
94	94	WTL90-DP1W, WTL56-DP1U	PEM/PSS	0.05	Y
95	95	WTL93-DP1	PEM	0.04	Y
96	96	N/A	R	0.09	Y
97	97	WTL93-DP1	PEM	0.02	Y
98	98	WTL90-DP1W, WTL56-DP1U	PEM/PSS	0.04	N
99	99	WTL93-DP1	PEM	0.04	Y
100	100	WTL90-DP1W, WTL56-DP1U	PEM/PSS	0.02	N
101	101	WTL93-DP1	PEM	0.04	Y
102	102	WTL60-DP1W, WTL56-DP1U	PFO	0.11	N
103	103	WTL93-DP1	PEM	0.02	Y
104	104	WTL104-DP1	PFO	0.03	N
105	105	WTL93-DP1	PEM	0.03	Y
106	106	WTL60-DP1W, WTL104-DP1U	PFO	0.04	N
107	107	WTL93-DP1	PEM	0.01	Y
108	108	WTL40-DP1	PEM	0.02	N
109	109	WTL93-DP1	PEM	0.01	Y
110	110	WTL40-DP1	PEM	0.02	Y
111	111	WTL93-DP1	PEM	0.02	Y
112	112-A	WTL120-B-DP1	PEM/PSS	<0.01	Y
113	112-B	WTL54-DP1, WTL81-DP1, WTL120-DP1	PEM/PSS/R	1.06	Y
114	113	WTL91-DP1	PEM/PSS	0.03	Y
115	114	WTL3-DP6	PUB/PEM	5.19	Y
116	115	WTL29-DP1	PSS	0.05	Y
117	116-east	WTL3-DP6 (PUB), WTL144-DP1 (PFO)	PUB/PEM/PFO	1.42	Y
-	116	WTL3-DP6 (PUB), WTL144-DP1 (PFO)	PUB/PEM/PFO	2.69	N
118	117	WTL93-DP1	PEM	0.02	Y
119	118	WTL3-DP6	PUB/PEM	8.85	N
120	119	WTL93-DP1	PEM	0.03	Y
121	120-A	WTL60-DP1	PFO	0.82	Y
122	120-B	WTL120-B-DP1	PEM/PSS	0.46	Y
123	121	WTL121-DP1	PEM/PSS	0.05	Y
124	122-A	WTL122-DP1	PFO	0.35	Y
125	122-B	WTL91-DP1	PEM	0.17	Y
126	123	WTL93-DP1	PEM	0.07	Y
127	124-A	WTL124-DP1	PEM	0.01	N
128	124-B	WTL184-DP1	PEM	0.28	Y
129	125	WTL91-DP1	PEM/PSS	0.02	Y
130	126-A	WTL124-DP1	PEM	0.01	N
131	126-B	WTL184-DP1	PEM	0.04	Y
132	127	WTL29-DP1	PSS	0.02	Y
133	128-A	WTL26-DP1W, WTL56-DP1U	PEM/PSS	<0.01	Y
134	128-B	WTL128-B-DP1	PEM	0.09	Y
135	129	WTL93-DP1	PEM	0.06	Y
136	130-A	WTL40-DP1W, WTL56-DP1U	PEM	0.02	Y
137	130-B	WTL144-DP1	PFO	0.05	Y
138	131	WTL23-DP1	PEM/PSS	0.09	Y
139	132-A	WTL26-DP1W, WTL56-DP1U	PEM/PSS	0.03	N
140	132-B	WTL144-DP1	PFO	0.06	Y
141	133	WTL133-DP1	PEM/PSS	0.24	Y
142	134-A	WTL26-DP1	PEM/PSS	0.10	Y
143	134-B	WTL134-B-DP1	PEM/PSS	0.05	N
144	134-C	WTL134-C-DP1	PEM/PSS	0.06	Y
145	135	WTL133-DP1	PEM/PSS	0.05	Y
146	137	WTL133-DP1	PEM/PSS	0.01	Y

147	138	WTL144-DP1	PFO	0.11	Y
148	139	WTL139-DP1	PEM	<0.01	Y
149	140	WTL144-DP1	PFO	0.01	Y
150	141	WTL133-DP1	PEM/PSS	0.17	Y
151	142	WTL142-DP1	PEM/PSS	0.03	Y
152	143	WTL143-DP1	PEM/PSS	0.07	Y
153	144	WTL144-DP1	PFO	0.03	Y
154	145	WTL139-DP1	PEM	0.02	Y
155	146	WTL180-DP1	PEM	0.01	Y
156	147	WTL139-DP1	PEM	0.01	Y
157	148	WTL148-DP1	PEM	0.36	Y
158	149	WTL139-DP1, WTL93-DP1	PEM	0.01	Y
159	150	WTL148-DP1	PEM	0.04	Y
160	151	WTL151-DP1	PEM/PSS	0.09	Y
161	152	WTL152-DP1	PEM	0.02	Y
162	153	WTL93-DP1	PEM	0.07	Y
163	154	WTL152-DP1	PEM	0.01	Y
164	155	WTL139-DP1	PEM	0.13	Y
165	156	WTL128-DP1	PEM/PSS	0.26	Y
166	157	WTL77-DP1	PEM/PSS	0.03	Y
167	158	WTL134-DP1	PEM/PSS	0.15	Y
168	159	WTL23-DP1	PEM/PSS	0.05	Y
169	160	WTL144-DP1	PFO	0.07	Y
170	161	WTL133-DP1	PEM/PSS	0.07	Y
171	162	WTL180-DP1	PEM	0.02	Y
172	163	WTL151-DP1	PEM/PSS	<0.01	Y
173	164	WTL120-DP1	PFO	0.01	Y
174	165	WTL133-DP1	PEM/PSS	0.01	Y
175	166	WTL120-DP1	PEM/PSS	0.37	Y
176	167	WTL133-DP1	PEM/PSS	0.37	Y
177	168	WTL120-DP1	PEM/PSS	0.01	Y
178	169	WTL77-DP1	PEM/PSS	0.01	Y
179	170	WTL120-DP1	PEM/PSS	0.58	Y
180	171	WTL11-DP2	PEM/PSS	0.07	Y
181	172	WTL198-DP1	PEM	0.11	Y
182	173	WTL139-DP1	PEM	0.05	Y
183	174	WTL198-DP1	PEM	0.02	Y
184	175	WTL139-DP1	PEM	9.70	Y
185	176	WTL152-DP1	PEM	<0.01	N
186	177	WTL139-DP1	PEM	1.45	Y
187	179	WTL93, 133, 139, and 11-DP1	PEM/PSS	0.24	Y
188	180	WTL180-DP1	PEM	0.01	Y
189	181	WTL93-DP1	PEM	0.03	N
190	182	WTL180-DP1	PEM	0.01	Y
191	183	WTL139-DP1	PEM	2.75	N
192	184	WTL91-DP1	PEM	0.03	Y
193	185	WTL139-DP1	PEM	0.02	N
194	187	WTL139-DP1	PEM/PSS	2.35	N
195	188	WTL198-DP1	PEM	0.07	Y
196	189	WTL143-DP1	PEM/PSS	0.08	N
197	190	WTL206-DP1	PFO	0.06	Y
198	191	WTL143-DP1	PEM/PSS	0.17	Y
199	192	WTL180-DP1	PEM	0.07	Y
200	193	WTL133-DP1	PEM/PSS	0.03	Y
201	194	WTL180-DP1	PEM	0.03	Y
202	195	WTL29-DP1	PEM/PSS	0.03	N
203	196	WTL180-DP1	PEM	0.36	Y
204	197	WTL139-DP1	PEM	0.25	Y
205	198	WTL198-DP1, 2	PEM/PFO	0.04	Y
206	199	WTL23-DP1	PEM/PSS	4.20	Y
207	200	WTL198-DP2	PFO	0.19	Y
208	201	WTL23-DP1	PEM/PSS	<0.01	Y
209	202	WTL198-DP1	PEM	10.24	Y
210	203	WTL151-DP1	PEM/PSS	0.09	Y
211	204	WTL180-DP1	PEM	0.02	Y
212	205	WTL91-DP3, 4	PEM/PSS/PUB	0.11	Y
213	206	WTL206-DP1	PFO	0.32	Y
214	207	WTL23-DP1	PEM/PSS	0.02	Y
215	208	WTL144-DP1	PFO	0.09	Y
216	209	WTL133-DP1	PEM/PSS	0.82	Y
217	210	WTL180-DP1	PEM	0.04	Y
218	211	WTL133-DP1	PEM/PSS	0.05	Y
219	212	WTL206-DP1	PFO	0.04	Y
220	213	WTL133-DP1	PEM/PSS	0.08	Y
221	214	WTL148-DP1	PEM	0.03	N
222	215	WTL133-DP1	PEM/PSS	1.23	Y

223	216	WTL148-DP1	PEM	0.05	N
224	217	WTL133-DP1	PEM/PSS	0.14	Y
225	218	WTL148-DP1	PEM	1.23	Y
226	219	WTL133-DP1	PEM/PSS	0.13	Y
227	220	WTL144-DP1	PFO	<0.01	Y
228	221	WTL133-DP1, WTL91-DP4, and 3	PEM/PSS	0.30	Y
229	222	WTL144-DP1	PFO	0.01	Y
230	223	WTL133-DP1	PEM/PSS	0.03	Y
231	224	WTL144-DP1	PFO	0.07	Y
232	225	WTL133-DP1	PEM/PSS	0.02	Y
233	226-A	WTL144-DP1	PFO	0.04	Y
234	226-B	WTL206-DP1	PEM	0.25	Y
235	227	WTL133-DP1	PEM/PSS	0.07	Y
236	228	WTL206-DP1	PEM	0.02	Y
237	229	WTL133-DP1	PEM/PSS	0.06	Y
238	230	WTL206-DP1	PEM	3.37	Y
239	231	WTL93-DP1	PEM	8.05	Y
240	232	WTL206-DP1	PEM	0.43	Y
241	233	WTL91-DP3 and 4, WTL133, 139, and 121-DP1	PEM/PUB/PSS	0.04	Y
242	234	WTL198-DP1	PEM	0.08	Y
243	235	WTL133, 93, and 139-DP1	PEM/PSS	0.05	Y
244	236	WTL206-DP1	PEM	0.05	Y
245	237	WTL139-DP1	PEM	0.27	Y
246	238	WTL144-DP1	PFO	9.25	Y
247	239	WTL29-DP1	PSS	<0.01	Y
248	240	WTL144-DP1	PFO	0.07	Y
249	241	WTL91-DP3	PEM/PUB/PSS	0.01	Y
250	242	WTL144-DP1	PFO	0.46	Y
251	243	WTL133-DP1	PEM/PSS	0.12	Y
252	244	WTL144-DP1	PFO	0.02	Y
253	245	WTL133, 139-DP1	PEM/PSS	0.62	Y
254	246	WTL144-DP1	PFO	0.06	Y
255	247	WTL133, 139-DP1	PEM/PSS	0.01	Y
256	248	WTL144-DP1	PFO	2.75	Y
257	249	WTL139-DP1	PEM	0.07	Y
258	250	WTL144-DP1	PFO	0.02	Y
259	251	WTL91-DP4	PEM/PSS	0.89	Y
260	252	WTL206-DP1	PEM	1.75	Y
261	253	WTL29-DP1	PSS	3.20	Y
262	254	WTL144-DP1	PFO	2.76	Y
263	255	WTL91-DP3, 4	PEM/PSS/PUB	12.95	Y
264	256	WTL91-DP1	PEM	0.12	Y
265	257	WTL91-DP3, 4	PEM/PSS/PUB	0.03	Y
266	258	WTL91-DP1	PEM	0.03	Y
267	259	WTL2-DP1	PEM	0.08	Y
268	260	WTL148-DP1	PEM/PSS	0.01	Y
269	261	WTL139-DP1	PEM	0.02	Y
270	262	WTL148-DP1	PEM/PSS	0.35	N
271	263	WTL99-DP1	PEM	0.01	Y
272	264	WTL148-DP1	PEM/PSS	0.01	N
273	265	WTL139-DP1	PEM	0.09	N
274	266	WTL142-DP1	PEM/PSS	0.01	N
275	268	WTL142-DP1	PEM/PSS	0.04	N
276	270	WTL144-DP1	PFO	0.01	N
277	272	WTL144-DP1	PFO	0.01	N
278	274	WTL148-DP1	PEM/PSS	0.04	N
279	276	WTL148-DP1	PEM/PSS	0.01	N
			Total	**272.22**	

Appendix C

U.S. Army Corps of Engineers (USACE) Wetland Data Forms

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/25/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL1-DP1-U

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): backslope Local relief (concave, convex, none): concave Slope %: 8-12

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.767579 Long: -89.564520 Datum: WGS 84

Soil Map Unit Name: Dumps and Pits, mine NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 1-12

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL1-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Tsuga canadensis*	15	Yes	FACU
2. *Populus grandidentata*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	25	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Populus grandidentata*	15	Yes	FACU
2. *Acer rubrum*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Populus grandidentata*	5	Yes	FACU
2. *Agrostis gigantea*	5	Yes	FACW
3. *Equisetum arvense*	2	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	12	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	5	x 2 =	10
FAC species	7	x 3 =	21
FACU species	45	x 4 =	180
UPL species	0	x 5 =	0
Column Totals:	57 (A)		211 (B)
Prevalence Index = B/A =			3.70

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: WTL1-DP1-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:
Excavated pit

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/25/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL1-DP1-W

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): concave Slope %: 1-2

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.767486 Long: -89.564643 Datum: WGS 84

Soil Map Unit Name: Dumps and Pits, mine NWI classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 1-13

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 3
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL1-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. *Salix eriocephala*	5	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	5 =Total Cover		
Herb Stratum (Plot size: 5')			
1. *Equisetum arvense*	90	Yes	FAC
2. *Typha angustifolia*	45	Yes	OBL
3. *Rumex crispus*	5	No	FAC
4. *Carex bebbii*	5	No	OBL
5. *Scirpus cyperinus*	5	No	OBL
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	150 =Total Cover		
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
	=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	55	x 1 =	55
FACW species	5	x 2 =	10
FAC species	95	x 3 =	285
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	155 (A)		350 (B)
Prevalence Index = B/A =			2.26

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL1-DP1-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	7.5YR 2.5/2	100					Loamy/Clayey	
4-12	7.5YR 2.5/2	90	7.5YR 3/4	10	C	M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X **No** ___

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/25/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL2-DP1-UP

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): summit Local relief (concave, convex, none): convex Slope %: 2-3

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.77564996319805 Long: -89.56344442763033 Datum: WGS 84

Soil Map Unit Name: Big Iron-Flintsteel Gull Point, frequently flooded, complex, dissected NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 2-1

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL2-DP1-UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	10	Yes	FAC
2. *Betula papyrifera*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Acer rubrum*	5	No	FAC
2. *Ostrya virginiana*	5	No	FACU
3. *Populus tremuloides*	25	Yes	FAC
4. *Salix bebbiana*	10	Yes	FACW
5. *Abies balsamea*	5	No	FAC
6.			
7.			
	50	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Daucus carota*	5	No	UPL
2. *Hieracium caespitosum*	5	No	UPL
3. *Fragaria virginiana*	25	Yes	FACU
4. *Lotus corniculatus*	10	Yes	FACU
5. *Centaurea stoebe*	5	No	UPL
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 6 (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	45	x 3 =	135
FACU species	50	x 4 =	200
UPL species	15	x 5 =	75
Column Totals:	120 (A)		430 (B)
Prevalence Index = B/A =			3.58

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: WTL2-DP1-UP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-14	5YR 3/4	100					Loamy/Clayey	clay

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/25/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL2-DP1-W

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): concave Slope %: 0-2

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.77563683362564 Long: -89.56342199959506 Datum: WGS 84

Soil Map Unit Name: Big Iron-Flintsteel-Gull Point, frequently flooded, complex, dissected NWI classification: PEM/PUB

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 2-1

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 3
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL2-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	20	Yes	FAC
2. *Abies balsamea*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	25	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Salix bebbiana*	30	Yes	FACW
2. *Salix eriocephala*	5	No	FACW
3. *Abies balsamea*	5	No	FAC
4. *Populus tremuloides*	10	Yes	FAC
5.			
6.			
7.			
	50	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Typha X glauca*	20	Yes	OBL
2. *Juncus effusus*	10	Yes	OBL
3. *Scirpus pendulus*	10	Yes	OBL
4. *Glyceria striata*	5	No	OBL
5. *Equisetum arvense*	10	Yes	FAC
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	55	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 8 (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	45	x 1 =	45
FACW species	35	x 2 =	70
FAC species	50	x 3 =	150
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	130 (A)		265 (B)

Prevalence Index = B/A = 2.04

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL2-DP1-W

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 2/1	100					Peat	
3-13	7.5YR 3/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- X 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** X **No** ___

Remarks:

Obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/25/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL3-DP1-U

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): excavated pit Local relief (concave, convex, none): concave Slope %: 6-8

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.7670578 Long: -89.56129401 Datum: WGS 84

Soil Map Unit Name: Big Iron-Flintsteel-Gull point, frequently flooded, complex, dissected NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 3-47

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL3-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	15	Yes	FAC
2. *Betula alleghaniensis*	10	Yes	FAC
3. *Tilia americana*	5	No	FACU
4. *Tsuga canadensis*	5	No	FACU
5. *Abies balsamea*	5	No	FAC
6.			
7.			
	40	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Ostrya virginiana*	10	Yes	FACU
2. *Acer saccharum*	10	Yes	FACU
3. *Acer rubrum*	5	Yes	FAC
4. *Abies balsamea*	5	Yes	FAC
5. *Picea glauca*	5	Yes	FACU
6. *Tsuga canadensis*	5	Yes	FACU
7.			
	40	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Abies balsamea*	10	Yes	FAC
2. *Acer saccharum*	10	Yes	FACU
3. *Ostrya virginiana*	5	No	FACU
4. *Acer rubrum*	5	No	FAC
5. *Betula alleghaniensis*	5	No	FAC
6. *Maianthemum canadense*	10	Yes	FACU
7.			
8.			
9.			
10.			
11.			
12.			
	45	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 11 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 45.5% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	60	x 3 =	180
FACU species	65	x 4 =	260
UPL species	0	x 5 =	0
Column Totals:	125 (A)		440 (B)
Prevalence Index = B/A =			3.52

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: WTL3-DP1-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/1	100					Loamy/Clayey	
4-7	5YR 4/2	100					Loamy/Clayey	
7-14	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:
Excavated pit

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/25/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL3-DP1-W

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): swale Local relief (concave, convex, none): concave Slope %: 3-4

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.767061 Long: -89.561413 Datum: WGS 84

Soil Map Unit Name: Big Iron-Flintsteel-Gull point, frequently flooded, complex, dissected NWI classification: PEM/PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near Flag 3-47

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 0.5
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL3-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	5	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	5	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Alnus incana*	5	Yes	FACW
2. *Abies balsamea*	5	Yes	FAC
3. *Acer rubrum*	5	Yes	FAC
4.			
5.			
6.			
7.			
	15	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Equisetum arvense*	90	Yes	FAC
2. *Acer rubrum*	5	No	FAC
3. *Fraxinus pennsylvanica*	5	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	15	x 2 =	30
FAC species	105	x 3 =	315
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	120 (A)		345 (B)

Prevalence Index = B/A = 2.88

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL3-DP1-W

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	7.5YR 3/2	100					Peat	Peaty-clayey
8-14	7.5YR 3/2	90	7.5YR 3/4	10	C	M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- X Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X **No** ___

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/27/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL3-DP2-U

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): convex Slope %: 2-4

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.77766269 Long: -89.55666829 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 3-122

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL3-DP2-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea glauca*	5	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	5	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Salix eriocephala*	5	Yes	FACW
2. *Salix bebbiana*	5	Yes	FACW
3. *Picea glauca*	5	Yes	FACU
4. *Betula papyrifera*	5	Yes	FACU
5.			
6.			
7.			
	20	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Fragaria virginiana*	25	Yes	FACU
2. *Daucus carota*	15	Yes	UPL
3. *Salix bebbiana*	10	Yes	FACW
4. *Symphyotrichum cordifolium*	10	Yes	UPL
5. *Leucanthemum vulgare*	5	No	UPL
6. *Trifolium pratense*	5	No	FACU
7. *Agrostis gigantea*	5	No	FACW
8. *Solidago altissima*	5	No	FACU
9. *Eurybia macrophylla*	5	No	UPL
10.			
11.			
12.			
	85	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 9 (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	25	x 2 =	50
FAC species	0	x 3 =	0
FACU species	50	x 4 =	200
UPL species	35	x 5 =	175
Column Totals:	110 (A)		425 (B)
Prevalence Index = B/A =			3.86

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: WTL3-DP2-U

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	5YR 4/3	100					Loamy/Clayey	
3-12	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

Area previously cleared

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/27/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL3-DP2-W

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): ravine Local relief (concave, convex, none): concave Slope %: 1-2

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.777610 Long: -89.556560 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: PUB/PEM/PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 3-122

HYDROLOGY

Wetland Hydrology Indicators:

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

- X 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)
- X Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 1
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL3-DP2-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. *Salix eriocephala*	5	Yes	FACW
2. *Salix lucida*	5	Yes	FACW
3. *Populus tremuloides*	5	Yes	FAC
4.			
5.			
6.			
7.			
	15 =Total Cover		
Herb Stratum (Plot size: 5')			
1. *Equisetum arvense*			FAC
2. *Salix lucida*			FACW
3. *Populus tremuloides*			FAC
4. *Salix bebbiana*			FACW
5. *Salix eriocephala*			FACW
6. *Salix interior*			FACW
7. *Agrostis gigantea*			FACW
8. *Typha X glauca*			OBL
9.			
10.			
11.			
12.			
	=Total Cover		
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
	=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	10	x 2 =	20
FAC species	5	x 3 =	15
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	15 (A)		35 (B)

Prevalence Index = B/A = 2.33

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL3-DP2-W

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/2	100					Peat	
8-14	7.5YR 4/2	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- _X_ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- _X_ 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** _X_ **No** ___

Remarks:

Obvious wetland area, previously beaver-impounded, incised, and then re-impounded.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/27/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL3-DP3-U

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): concave Slope %: 3-8

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.779373 Long: -89.557672 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 3-147

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL3-DP3-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	15	Yes	FAC
2. *Fraxinus americana*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	25	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Acer saccharum*	5	No	FACU
2. *Fraxinus americana*	5	No	FACU
3. *Acer rubrum*	10	Yes	FAC
4. *Amelanchier laevis*	10	Yes	UPL
5. *Rubus parviflorus*	10	Yes	FACU
6. *Corylus cornuta*	10	Yes	FACU
7.			
	50	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Pteridium aquilinum*	30	Yes	FACU
2. *Fraxinus pennsylvanica*	5	No	FACW
3. *Corylus cornuta*	15	Yes	FACU
4. *Fraxinus americana*	10	No	FACU
5. *Maianthemum canadense*	15	Yes	FACU
6. *Equisetum arvense*	10	No	FAC
7. *Solidago altissima*	5	No	FACU
8.			
9.			
10.			
11.			
12.			
	90	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 22.2% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	35	x 3 =	105
FACU species	115	x 4 =	460
UPL species	10	x 5 =	50
Column Totals:	165 (A)		625 (B)

Prevalence Index = B/A = 3.79

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: WTL3-DP3-U

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/2	100					Loamy/Clayey	
4-12	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:
Incised ravine

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/27/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL3-DP3-W

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): floodplain Local relief (concave, convex, none): concave Slope %: 1-2

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.779431 Long: -89.557636 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
near flag 3-147

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 2
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL3-DP3-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	5	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	5	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Acer rubrum*	5	Yes	FAC
2. *Salix eriocephala*	5	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	10	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Scirpus atrovirens*	35	Yes	OBL
2. *Salix lucida*	10	Yes	FACW
3. *Euthamia graminifolia*	5	No	FAC
4. *Juncus effusus*	10	Yes	OBL
5. *Symphyotrichum puniceum*	10	Yes	OBL
6. *Salix bebbiana*	5	No	FACW
7. *Solidago gigantea*	5	No	FACW
8. *Poa palustris*	10	Yes	FACW
9. *Carex stipata*	5	No	OBL
10.			
11.			
12.			
	95	=Total Cover	
Woody Vine Stratum (Plot size: 15)			
1. *Parthenocissus inserta*	15	Yes	FACU
2.			
3.			
4.			
	15	=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: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 88.9% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	60	x 1 =	60
FACW species	40	x 2 =	80
FAC species	10	x 3 =	30
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	125 (A)		230 (B)

Prevalence Index = B/A = 1.84

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL3-DP3-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-2	7.5YR 2.5/2	100					Peat	
2-4	7.5YR 4/3	100					Loamy/Clayey	
4-12	7.5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- _X_ 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** _X_ **No** ___

Remarks:
Obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/29/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL3-DP4-U

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S30 T51N R41W

Landform (hillside, terrace, etc.): shoulder Local relief (concave, convex, none): convex Slope %: 3-5

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.78318098 Long: -89.56275186 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 3-778

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL3-DP4-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	90	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	90	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Corylus cornuta*	5	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	5	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Matteuccia struthiopteris*	55	Yes	FAC
2. *Pteridium aquilinum*	20	Yes	FACU
3. *Rubus parviflorus*	15	No	FACU
4. *Apocynum androsaemifolium*	15	No	UPL
5. *Parthenocissus inserta*	5	No	FACU
6. *Maianthemum canadense*	5	No	FACU
7. *Geranium robertianum*	5	No	FACU
8.			
9.			
10.			
11.			
12.			
	120	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	0	x 2 =	0
FAC species	145	x 3 =	435
FACU species	55	x 4 =	220
UPL species	15	x 5 =	75
Column Totals:	215 (A)		730 (B)

Prevalence Index = B/A = 3.40

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: WTL3-DP4-U

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
0-1	7.5YR 2.5/1	100					Loamy/Clayey	
1-4	7.5YR 2.5/2	100					Loamy/Clayey	
4-12	7.5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

SOIL

Sampling Point: WTL3-DP4-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-3	7.5YR 4/1	100					Loamy/Clayey	
3-14	7.5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- _X_ 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** _X_ **No** ___

Remarks:
Previously disturbed, obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/29/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL3-DP4-W

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S30 T51N R41W

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope %: 0-2

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.78313687 Long: -89.56283497 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: PEM/PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 3-778

HYDROLOGY

Wetland Hydrology Indicators:

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

- X 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)
- X Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 0.5
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL3-DP4-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	5	Yes	FAC
2. *Salix bebbiana*	5	Yes	FACW
3. *Betula papyrifera*	5	Yes	FACU
4.			
5.			
6.			
7.			
	15	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Salix bebbiana*	10	Yes	FACW
2. *Salix eriocephala*	20	Yes	FACW
3. *Betula papyrifera*	10	Yes	FACU
4. *Corylus cornuta*	5	No	FACU
5. *Acer rubrum*	5	No	FAC
6.			
7.			
	50	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Onoclea sensibilis*	45	Yes	FACW
2. *Solidago gigantea*	15	Yes	FACW
3. *Poa palustris*	10	Yes	FACW
4. *Juncus effusus*	5	No	OBL
5. *Thalictrum dasycarpum*	5	No	FACW
6. *Lycopus uniflorus*	5	No	OBL
7. *Equisetum arvense*	5	No	FAC
8. *Bidens frondosa*	10	Yes	FACW
9. *Equisetum fluviatile*	5	No	OBL
10. *Carex gynandra*	5	No	OBL
11. *Parthenocissus quinquefolia*	5	No	FACU
12. *Thelypteris palustris*	5	No	FACW
	120	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	20	x 1 =	20
FACW species	125	x 2 =	250
FAC species	15	x 3 =	45
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column Totals:	185 (A)		415 (B)

Prevalence Index = B/A = 2.24

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/29/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL3-DP5-U

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S30 T51N R41W

Landform (hillside, terrace, etc.): concave Local relief (concave, convex, none): concave Slope %: 7-10

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.784541 Long: -89.560165 Datum: WGS 84

Soil Map Unit Name: Big Iron-Flintsteel-Gull Point, frequently flooded, complex NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
near flag 3-990

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL3-DP5-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Abies balsamea*	70	Yes	FAC
2. *Fraxinus americana*	5	No	FACU
3.			
4.			
5.			
6.			
7.			
	75	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Acer rubrum*	5	Yes	FAC
2. *Acer saccharum*	5	Yes	FACU
3. *Betula papyrifera*	5	Yes	FACU
4. *Corylus cornuta*	5	Yes	FACU
5. *Abies balsamea*	10	Yes	FAC
6.			
7.			
	30	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Pteridium aquilinum*	25	Yes	FACU
2. *Aralia nudicaulis*	10	Yes	FACU
3. *Maianthemum canadense*	15	Yes	FACU
4. *Mitchella repens*	5	No	FACU
5. *Acer rubrum*	5	No	FAC
6. *Diervilla lonicera*	10	Yes	UPL
7. *Acer saccharum*	5	No	FACU
8. *Maianthemum racemosum*	5	No	FACU
9. *Pyrola elliptica*	5	No	FACU
10. *Betula papyrifera*	5	No	FACU
11.			
12.			
	90	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 10 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 30.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	90	x 3 =	270
FACU species	95	x 4 =	380
UPL species	10	x 5 =	50
Column Totals:	195 (A)		700 (B)
Prevalence Index = B/A =			3.59

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: WTL3-DP5-U

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	7.5YR 2.5/1	100					Loamy/Clayey	
6-12	7.5YR 3/3	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/29/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL3-DP5-W

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S30 T51N R41W

Landform (hillside, terrace, etc.): Ravine/floodplain Local relief (concave, convex, none): concave Slope %: 0-2

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.784548 Long: -89.560170 Datum: WGS 84

Soil Map Unit Name: Big Iron-Flintsteel-Gull Point, frequently flooded, complex NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 3-991

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL3-DP5-W

Tree Stratum (Plot size: N/A)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. *Salix discolor*	15	Yes	FACW
2. *Salix eriocephala*	10	Yes	FACW
3. *Betula papyrifera*	10	Yes	FACU
4.			
5.			
6.			
7.			
	35 =Total Cover		
Herb Stratum (Plot size: 5')			
1. *Equisetum arvense*	45	Yes	FAC
2. *Solidago gigantea*	25	Yes	FACW
3. *Anemone canadensis*	10	No	FACW
4. *Fragaria virginiana*	10	No	FACU
5. *Poa palustris*	25	Yes	FACW
6. *Solidago altissima*	5	No	FACU
7. *Euthamia graminifolia*	5	No	FAC
8. *Melilotus officinalis*	10	No	FACU
9.			
10.			
11.			
12.			
	135 =Total Cover		
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
	=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: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	85	x 2 =	170
FAC species	50	x 3 =	150
FACU species	35	x 4 =	140
UPL species	0	x 5 =	0
Column Totals:	170 (A)		460 (B)
Prevalence Index = B/A =			2.71

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL3-DP5-W

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	5YR 3/2	100					Loamy/Clayey	
2-4	5YR 4/4	60	5YR 5/6	40	C	M	Loamy/Clayey	
4-6	5YR 4/2	100					Sandy	
6-8	5YR 4/4	60	5YR 5/6	40	C	M	Loamy/Clayey	Distinct redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- X 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** X **No** ___

Remarks:
Obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/29/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL3-DP6-W

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): shoulder Local relief (concave, convex, none): convex Slope %: 3-6

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.784541 Long: -89.560165 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 3-1041

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:
Near flag 3-1041

VEGETATION – Use scientific names of plants.

Sampling Point: WTL3-DP6-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ostrya virginiana*	15	Yes	FACU
2. *Picea glauca*	5	Yes	FACU
3. *Fraxinus americana*	5	Yes	FACU
4.			
5.			
6.			
7.			
	25	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Betula papyrifera*	15	Yes	FACU
2. *Populus tremuloides*	10	Yes	FAC
3. *Corylus cornuta*	5	No	FACU
4. *Amelanchier laevis*	5	No	UPL
5.			
6.			
7.			
	35	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Pteridium aquilinum*	25	Yes	FACU
2. *Trifolium campestre*	10	No	UPL
3. *Leucanthemum vulgare*	15	Yes	UPL
4. *Fragaria virginiana*	10	No	FACU
5. *Trifolium pratense*	10	No	FACU
6. *Daucus carota*	5	No	UPL
7. *Solidago altissima*	5	No	FACU
8. *Populus tremuloides*	10	No	FAC
9. *Hieracium caespitosum*	15	Yes	UPL
10.			
11.			
12.			
	105	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 12.5% (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	95	x 4 =	380
UPL species	50	x 5 =	250
Column Totals:	165 (A)		690 (B)
Prevalence Index = B/A =			4.18

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: WTL3-DP6-W

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	5YR 2.5/1	100					Loamy/Clayey	
3-12	5YR 4/6	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:
Previously disturbed

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/29/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL3-DP6-W

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S30 T51N R41W

Landform (hillside, terrace, etc.): pond fringe Local relief (concave, convex, none): concave Slope %: 0-25

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.784548 Long: -89.560170 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: PEM/PUB

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 3-1041

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 2
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL3-DP6-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus deltoides*	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	5	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Salix eriocephala*	5	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	5	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Brasenia schreberi*	45	Yes	OBL
2. *Typha angustifolia*	30	Yes	OBL
3. *Equisetum arvense*	15	No	FAC
4. *Scirpus atrovirens*	5	No	OBL
5. *Salix eriocephala*	5	No	FACW
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 4 (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	80	x 1 =	80
FACW species	10	x 2 =	20
FAC species	20	x 3 =	60
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	110 (A)		160 (B)
Prevalence Index = B/A =			1.45

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL3-DP6-W

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- _X_ 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** _X_ **No** ___

Remarks:
Obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/25/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL6-DP1-U

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): shoulder Local relief (concave, convex, none): convex Slope %: 2-3

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.7748535509467 Long: -89.56447065238488 Datum: WGS 84

Soil Map Unit Name: Big Iron-Flinsteel-Gull Point, frequently flooded, complex, dissected NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
near flag 6-48

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL6-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Tsuga canadensis*	25	Yes	FACU
2. *Betula alleghaniensis*	15	Yes	FAC
3. *Abies balsamea*	30	Yes	FAC
4. *Acer rubrum*	5	No	FAC
5.			
6.			
7.			
	75	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Abies balsamea*	55	Yes	FAC
2. *Betula alleghaniensis*	10	No	FAC
3.			
4.			
5.			
6.			
7.			
	65	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Abies balsamea*	5	Yes	FAC
2. *Rubus parviflorus*	5	Yes	FACU
3. *Acer rubrum*	5	Yes	FAC
4. *Cornus alternifolia*	5	Yes	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 62.5% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	125	x 3 =	375
FACU species	35	x 4 =	140
UPL species	0	x 5 =	0
Column Totals:	160 (A)		515 (B)

Prevalence Index = B/A = 3.22

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL6-DP1-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-2	10YR 2/1	100					Peat	
2-14	10YR 3/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/25/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL6-DP1-W

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): convex Slope %: 0-1

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.7748535509467 Long: -89.56447065238488 Datum: WGS 84

Soil Map Unit Name: Big Iron-Fintsteel-Gull Point, frequently flooded, complex, dissected NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 6-48

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- X 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)
- X Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 2
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL6-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Tsuga canadensis*	15	No	FACU
2. *Abies balsamea*	55	Yes	FAC
3. *Tilia americana*	5	No	FACU
4. *Populus tremuloides*	30	Yes	FAC
5. *Acer saccharum*	5	No	FACU
6. *Betula alleghaniensis*	5	No	FAC
7.			
	115	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Abies balsamea*	15	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	15	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Aralia nudicaulis*	15	Yes	FACU
2. *Carex gynandra*	10	Yes	OBL
3. *Abies balsamea*	10	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	0	x 2 =	0
FAC species	115	x 3 =	345
FACU species	40	x 4 =	160
UPL species	0	x 5 =	0
Column Totals:	165 (A)		515 (B)

Prevalence Index = B/A = 3.12

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL6-DP1-W

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 2/1	100					Peat	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X **No** ___

Remarks:
Obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/25/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL7-DP1-U

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): concave Slope %: 3-5

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.769837 Long: -89.560288 Datum: WGS 84

Soil Map Unit Name: Nonesuch loam, very stony NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 7-13

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL7-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	5	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Populus tremuloides*	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	5	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Lotus corniculatus*	80	Yes	FACU
2. *Populus tremuloides*	10	No	FAC
3. *Daucus carota*	5	No	UPL
4. *Schedonorus arundinaceus*	5	No	FACU
5. *Agrostis gigantea*	5	No	FACW
6. *Fragaria virginiana*	5	No	FACU
7. *Hieracium caespitosum*	5	No	UPL
8.			
9.			
10.			
11.			
12.			
	115	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	20	x 3 =	60
FACU species	90	x 4 =	360
UPL species	10	x 5 =	50
Column Totals:	125 (A)		480 (B)
Prevalence Index = B/A =			3.84

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL7-DP1-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-14	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:
Area previously cleared

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/26/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL7-DP1-W

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope %: 0-2

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.76990531 Long: -89.56019843 Datum: WGS 84

Soil Map Unit Name: Nonesuch loam, very stony NWI classification: PSS/PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 7-13

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 0.5
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL7-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	5	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Salix eriocephala*	5	Yes	FACW
2. *Salix bebbiana*	5	Yes	FACW
3. *Salix interior*	2	No	FACW
4.			
5.			
6.			
7.			
	12	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Typha angustifolia*	45	Yes	OBL
2. *Salix eriocephala*	35	Yes	FACW
3. *Equisetum arvense*	15	No	FAC
4. *Agrostis gigantea*	5	No	FACW
5. *Symphyotrichum lateriflorum*	5	No	FAC
6. *Euthamia graminifolia*	5	No	FAC
7.			
8.			
9.			
10.			
11.			
12.			
	110	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	45	x 1 =	45
FACW species	52	x 2 =	104
FAC species	30	x 3 =	90
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	127 (A)		239 (B)

Prevalence Index = B/A = 1.88

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL7-DP1-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/2	100					Peat	
4-10	5YR 4/3	65	5YR 4/6	35	C	M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- _X_ 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** _X_ **No** ___

Remarks:

Obvious wetland area, previously cleraaed and excavated

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/25/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL8-DP1-U

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): summit Local relief (concave, convex, none): none Slope %: 1-2

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.7751415312602 Long: -89.56577202057193 Datum: WGS 84

Soil Map Unit Name: Big Iron-Fintsteel-Gull Point, frequently flooded, complex, dissected NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 8-1

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL8-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus grandidentata*	20	Yes	FACU
2. *Populus tremuloides*	40	Yes	FAC
3. *Abies balsamea*	20	Yes	FAC
4.			
5.			
6.			
7.			
	80	=Total Cover	
Sapling/Shrub Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Pteridium aquilinum*	5	Yes	FACU
2. *Acer rubrum*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	0	x 1 =	0
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:	95 (A)		310 (B)

Prevalence Index = B/A = 3.26

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL8-DP1-U

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	7.5YR 4/2	90	5YR 6/4	10			Loamy/Clayey	
5-15	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/25/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL8-DP1-W

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): concave Slope %: 0

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.775267121427575 Long: -89.56563315977091 Datum: WGS 84

Soil Map Unit Name: Big Iron-Fintsteel-Gull Point, frequently flooded, complex, dissected NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 8-1

HYDROLOGY

Wetland Hydrology Indicators:

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

- ____ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- X 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)
- X Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 3
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL8-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula alleghaniensis*	45	Yes	FAC
2. *Acer rubrum*	5	No	FAC
3. *Populus tremuloides*	15	Yes	FAC
4.			
5.			
6.			
7.			
	65	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Betula alleghaniensis*	15	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	15	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Carex gynandra*	20	Yes	OBL
2. *Iris versicolor*	5	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	25	x 1 =	25
FACW species	0	x 2 =	0
FAC species	80	x 3 =	240
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	105 (A)		265 (B)

Prevalence Index = B/A = 2.52

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL8-DP1-W

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/1	100					Peat	high organics
4-14	10YR 2/1	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- X 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** X **No** ___

Remarks:
Obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/26/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL1-DP1-U

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): shoulder Local relief (concave, convex, none): convex Slope %: 3-4

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.77062623 Long: -89.56051526 Datum: WGS 84

Soil Map Unit Name: Big Iron-Flintsteel-Gull Point, frequently flooded, complex, dissected NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 11-1

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL1-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	65	Yes	FAC
2. *Betula papyrifera*	5	No	FACU
3.			
4.			
5.			
6.			
7.			
	70	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Populus tremuloides*	60	Yes	FAC
2. *Salix humilis*	10	No	FACU
3. *Betula papyrifera*	10	No	FACU
4.			
5.			
6.			
7.			
	80	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Abies balsamea*	25	Yes	FAC
2. *Aralia nudicaulis*	10	Yes	FACU
3. *Betula papyrifera*	10	Yes	FACU
4. *Equisetum arvense*	10	Yes	FAC
5. *Acer rubrum*	5	No	FAC
6. *Trifolium campestre*	2	No	UPL
7.			
8.			
9.			
10.			
11.			
12.			
	62	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	0	x 2 =	0
FAC species	165	x 3 =	495
FACU species	45	x 4 =	180
UPL species	2	x 5 =	10
Column Totals:	212 (A)		685 (B)
Prevalence Index = B/A =			3.23

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL1-DP1-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-2	5YR 3/1	100					Loamy/Clayey	
2-12	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/26/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL11-DP1-W

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope %: 1-3

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.77064405 Long: -89.56060171 Datum: WGS 84

Soil Map Unit Name: Big Iron-Flintsteel-Gull Point, frequently flooded, complex, dissected NWI classification: PEM/PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 11-1

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 3
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL11-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	5	Yes	FAC
2. *Betula alleghaniensis*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	10	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Populus tremuloides*	5	Yes	FAC
2. *Abies balsamea*	5	Yes	FAC
3. *Betula alleghaniensis*	5	Yes	FAC
4. *Salix eriocephala*	5	Yes	FACW
5.			
6.			
7.			
	20	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Equisetum arvense*	90	Yes	FAC
2. *Typha angustifolia*	25	No	OBL
3. *Salix eriocephala*	5	No	FACW
4. *Carex bebbii*	5	No	OBL
5. *Salix discolor*	5	No	FACW
6.	5	No	
7.			
8.			
9.			
10.			
11.			
12.			
	135	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 7 (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	30	x 1 =	30
FACW species	15	x 2 =	30
FAC species	115	x 3 =	345
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	160 (A)		405 (B)
Prevalence Index = B/A =			2.53

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL11-DP1-W

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/2	100					Peat	
2-5	5YR 4/3	100					Loamy/Clayey	
5-12	10YR 2/2	100					Peat	peaty loamy clay

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- _X_ 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** _X_ **No** ___

Remarks:

Realtively undisturbed area, obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/26/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL11-DP2-U

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): concave Slope %: 2-4

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.7766901 Long: -89.55841916 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiquents complex, loamy NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 11-251

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL11-DP2-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	5	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Populus tremuloides*	20	Yes	FAC
2. *Salix bebbiana*	5	No	FACW
3. *Salix eriocephala*	5	No	FACW
4. *Salix humilis*	5	No	FACU
5.			
6.			
7.			
	35	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Lotus corniculatus*	25	Yes	FACU
2. *Pteridium aquilinum*	15	Yes	FACU
3. *Hieracium caespitosum*	10	No	UPL
4. *Leucanthemum vulgare*	5	No	UPL
5. *Centaurea stoebe*	10	No	UPL
6. *Carex bebbii*	5	No	OBL
7. *Poa compressa*	15	Yes	FACU
8.			
9.			
10.			
11.			
12.			
	85	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	5	x 1 =	5
FACW species	10	x 2 =	20
FAC species	25	x 3 =	75
FACU species	60	x 4 =	240
UPL species	25	x 5 =	125
Column Totals:	125 (A)		465 (B)
Prevalence Index = B/A =			3.72

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: WTL11-DP2-U

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	7.5YR 3/2	100					Loamy/Clayey	
1-12	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

Area previouslt cleared/graded

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/26/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL11-DP2-W

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope %: 0-2

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.77687037 Long: -89.55805528 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiquents complex, loamy NWI classification: PEM/PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 11-251

HYDROLOGY

Wetland Hydrology Indicators:

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

- X 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)
- X Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 0.5
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL11-DP2-W

Tree Stratum (Plot size: N/A)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Salix lucida*			FACW
2. *Picea mariana*			FACW
3. *Salix bebbiana*			FACW
4. *Salix eriocephala*			FACW
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Equisetum arvense*	95	Yes	FAC
2. *Typha angustifolia*	25	No	OBL
3. *Salix lucida*	20	No	FACW
4. *Euthamia graminifolia*	5	No	FAC
5. *Salix discolor*	4	No	FACW
6. *Salix eriocephala*	5	No	FACW
7. *Symphyotrichum lateriflorum*	5	No	FAC
8. *Scirpus atrovirens*	5	No	OBL
9. *Carex aurea*	5	No	FACW
10. *Eupatorium perfoliatum*	2	No	FACW
11. *Daucus carota*	2	No	UPL
12. *Lycopus uniflorus*	2	No	OBL
	175	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 1 (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	32	x 1 =	32
FACW species	36	x 2 =	72
FAC species	105	x 3 =	315
FACU species	0	x 4 =	0
UPL species	2	x 5 =	10
Column Totals:	175 (A)		429 (B)
Prevalence Index = B/A =			2.45

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL11-DP2-W

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	7.5YR 2.5/1	100					Peat	
3-8	7.5YR 3/2	100					Peat	
8-13								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- _X_ 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** _X_ **No** ___

Remarks:

Excavated and cleared area, obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/25/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL14-DP1-U

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope %: 2-3

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.77491083320914 Long: -89.56656028212878 Datum: WGS 84

Soil Map Unit Name: Big Iron-Fintsteel-Gull Point, frequently flooded, complex, dissected NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 14-12

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 11
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 6

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL14-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	65	Yes	FAC
2. *Acer rubrum*	10	No	FAC
3. *Abies balsamea*	40	Yes	FAC
4.			
5.			
6.			
7.			
	115	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Populus tremuloides*	5	Yes	FAC
2. *Abies balsamea*	10	Yes	FAC
3. *Salix bebbiana*	10	Yes	FACW
4.			
5.			
6.			
7.			
	25	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Pteridium aquilinum*	15	Yes	FACU
2. *Maianthemum canadense*	5	No	FACU
3. *Cornus canadensis*	1	No	FAC
4. *Polygaloides paucifolia*	5	No	FACU
5. *Corylus cornuta*	10	Yes	FACU
6. *Equisetum arvense*	1	No	FAC
7.			
8.			
9.			
10.			
11.			
12.			
	37	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	10	x 2 =	20
FAC species	132	x 3 =	396
FACU species	35	x 4 =	140
UPL species	0	x 5 =	0
Column Totals:	177 (A)		556 (B)

Prevalence Index = B/A = 3.14

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL14-DP1-U

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-17	7.5YR 4/4	90	5YR 4/6	10	C	PL	Loamy/Clayey	Distinct redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: bedrock

Depth (inches): 17

Hydric Soil Present? **Yes** X **No** ___

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/25/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL14-DP1-W

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): concave Slope %: 0

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.77495703402896 Long: -89.56660841025685 Datum: WGS 84

Soil Map Unit Name: Big Iron-Fintsteel-Gull Point, frequently flooded, complex, dissected NWI classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 14-12

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- X 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)
- X Water-Stained Leaves (B9)
- X Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Drainage Patterns (B10)
- X 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)
- X Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 3
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL14-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	10	Yes	FAC
2. *Betula alleghaniensis*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Salix bebbiana*	25	Yes	FACW
2. *Acer rubrum*	5	No	FAC
3. *Betula alleghaniensis*	5	No	FAC
4. *Sambucus canadensis*	5	No	FACW
5.			
6.			
7.			
	40	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Poa palustris*	10	Yes	FACW
2. *Carex gynandra*	15	Yes	OBL
3. *Equisetum arvense*	10	Yes	FAC
4. *Salix bebbiana*	5	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 6 (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	15	x 1 =	15
FACW species	45	x 2 =	90
FAC species	40	x 3 =	120
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		225 (B)

Prevalence Index = B/A = 2.25

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL14-DP1-W

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 2/1	100					Peat	high organics
6-15	10YR 2/1	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- X 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** X **No** ___

Remarks:
Obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/26/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL22-DP1-U

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): shoulder Local relief (concave, convex, none): convex Slope %: 6-8

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.77491083320914 Long: -89.56656028212878 Datum: WGS 84

Soil Map Unit Name: Big Iron-Flintsteel-Gull Point, frequently flooded, complex, dissected NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 22-1

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL22-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	60	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	60	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Acer rubrum*	65	Yes	FAC
2. *Abies balsamea*	10	No	FAC
3. *Salix bebbiana*	5	No	FACW
4.			
5.			
6.			
7.			
	80	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Abies balsamea*	10	No	FAC
2. *Equisetum arvense*	35	Yes	FAC
3. *Dryopteris intermedia*	5	No	FAC
4. *Poa pratensis*	5	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	55	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	5	x 2 =	10
FAC species	185	x 3 =	555
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	195 (A)		585 (B)
Prevalence Index = B/A =			3.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL22-DP1-U

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
0-17	7.5YR 4/4	70	5YR 4/6	25			Loamy/Clayey	
			10YR 2/1	5				

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/26/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL22-DP1-W

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): concave Slope %: 0

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.77495703402896 Long: -89.56660841025685 Datum: WGS 84

Soil Map Unit Name: Big Iron-Flintsteel-Gull Point, frequently flooded, complex, dissected NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 22-1

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 4
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL22-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula alleghaniensis*	55	Yes	FAC
2. *Acer rubrum*	15	Yes	FAC
3. *Populus tremuloides*	5	No	FAC
4.			
5.			
6.			
7.			
	75	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Betula papyrifera*	5	Yes	FACU
2. *Acer rubrum*	15	Yes	FAC
3. *Salix eriocephala*	5	Yes	FACW
4.			
5.			
6.			
7.			
	25	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Scirpus atrovirens*	40	Yes	OBL
2. *Typha X glauca*	5	No	OBL
3. *Lycopus uniflorus*	5	No	OBL
4. *Symphyotrichum lanceolatum*	5	No	FACW
5. *Acer rubrum*	5	No	FAC
6. *Poa palustris*	5	No	FACW
7.			
8.			
9.			
10.			
11.			
12.			
	65	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	50	x 1 =	50
FACW species	15	x 2 =	30
FAC species	95	x 3 =	285
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	165 (A)		385 (B)

Prevalence Index = B/A = 2.33

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL22-DP1-W

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 2/1	100					Peat	high organic
5-17	10YR 2/1	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- X 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** X **No** ___

Remarks:
Obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/26/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL23-DP1-U

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): hillside/excavated embankment Local relief (concave, convex, none): convex Slope %: 4-8

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.77653533 Long: -89.5580251 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 23-2

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL23-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	75	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	75	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Populus tremuloides*	60	Yes	FAC
2. *Acer saccharum*	10	No	FACU
3. *Amelanchier interior*	5	No	UPL
4. *Salix humilis*	10	No	FACU
5. *Lonicera tatarica*	5	No	FACU
6.			
7.			
	90	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Pteridium aquilinum*	15	Yes	FACU
2. *Aralia nudicaulis*	5	Yes	FACU
3. *Fraxinus pennsylvanica*	10	Yes	FACW
4. *Daucus carota*	5	Yes	UPL
5. *Solidago altissima*	5	Yes	FACU
6. *Prunus virginiana*	5	Yes	FACU
7. *Taraxacum officinale*	4	No	FACU
8. *Hieracium caespitosum*	5	Yes	UPL
9. *Fragaria virginiana*	5	Yes	FACU
10. *Trifolium campestre*	5	Yes	UPL
11. *Leucanthemum vulgare*	5	Yes	UPL
12. *Equisetum arvense*	5	Yes	FAC
	79	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 14 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 28.6% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	140	x 3 =	420
FACU species	69	x 4 =	276
UPL species	25	x 5 =	125
Column Totals:	244 (A)		841 (B)
Prevalence Index = B/A =			3.45

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

VEGETATION Continued – Use scientific names of plants.

Sampling Point: WTL23-DP1-U

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
8.			
9.			
10.			
11.			
12.			
13.			
14.			
	75	=Total Cover	
Sapling/Shrub Stratum			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
	90	=Total Cover	
Herb Stratum			
13. *Betula papyrifera*	5	Yes	FACU
14.			
15.			
16.			
17.			
18.			
19.			
20.			
21.			
22.			
23.			
24.			
	79	=Total Cover	
Woody Vine Stratum			
5.			
6.			
7.			
8.			
		=Total Cover	

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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

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

SOIL

Sampling Point: WTL23-DP1-U

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1-3	5YR 3/2	100					Loamy/Clayey	
3-12	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/26/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL23-DP1-W

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope %: 0-1

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.77655578 Long: -89.55807595 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: PEM/PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 23-2

HYDROLOGY

Wetland Hydrology Indicators:

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

- X 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)
- X Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 3
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL23-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	5	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Salix bebbiana*	10	Yes	FACW
2. *Salix eriocephala*	10	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Juncus articulatus*	45	Yes	OBL
2. *Salix discolor*	10	Yes	FACW
3. *Salix bebbiana*	5	No	FACW
4. *Carex vulpinoidea*	5	No	OBL
5. *Typha angustifolia*	5	No	OBL
6. *Equisetum arvense*	5	No	FAC
7. *Agrostis gigantea*	5	No	FACW
8. *Juncus effusus*	10	Yes	OBL
9.			
10.			
11.			
12.			
	90	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 6 (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	65	x 1 =	65
FACW species	40	x 2 =	80
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	115 (A)		175 (B)

Prevalence Index = B/A = 1.52

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL23-DP1-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- _X_ 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** _X_ **No** ___

Remarks:
Excavated area, obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanogan Sampling Date: 6/26/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL26-DP1-U

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope %: 3-4

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.774373 Long: -89.5606566 Datum: WGS 84

Soil Map Unit Name: Big Iron-Flintsteel-Gull Point, frequently flooded, complex, dissected NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil X, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil X, 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 X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 26-14

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL26-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	30	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	30	=Total Cover	
Sapling/Shrub Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Phleum pratense*	30	Yes	FACU
2. *Leucanthemum vulgare*	15	No	UPL
3. *Potentilla norvegica*	10	No	FAC
4. *Lotus corniculatus*	40	Yes	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	95	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 3 (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	40	x 3 =	120
FACU species	70	x 4 =	280
UPL species	15	x 5 =	75
Column Totals:	125 (A)		475 (B)

Prevalence Index = B/A = 3.80

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: WTL26-DP1-U

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

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

Gravel mound, highly disturbed and digging not possible (refusal at 0")

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/26/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL26-DP1-W

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): concave Slope %: 0-1

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.7744626 Long: -89.56048966 Datum: WGS 84

Soil Map Unit Name: Big Iron-Flinstell-Gull Point, frequently flooded, complex. Dissected NWI classification: PEM/PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 26-14

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 1
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL26-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	30	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	30	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Populus tremuloides*	50	Yes	FAC
2. *Fraxinus americana*	10	No	FACU
3. *Salix bebbiana*	20	Yes	FACW
4.			
5.			
6.			
7.			
	80	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Equisetum arvense*	60	Yes	FAC
2. *Typha angustifolia*	20	Yes	OBL
3. *Trifolium pratense*	1	No	FACU
4. *Poa palustris*	5	No	FACW
5. *Salix bebbiana*	5	No	FACW
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	91	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	20	x 1 =	20
FACW species	30	x 2 =	60
FAC species	140	x 3 =	420
FACU species	11	x 4 =	44
UPL species	0	x 5 =	0
Column Totals:	201 (A)		544 (B)

Prevalence Index = B/A = 2.71

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL26-DP1-W

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/1	100					Mucky Peat	
4-13	7.5YR 4/3	100					Loamy/Clayey	with organics

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- X 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** X **No** ___

Remarks:
Obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/27/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL29-DP1-U

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): road embankment Local relief (concave, convex, none): convex Slope %: 3-5

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.77764317 Long: -89.55896621 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 29-7

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL29-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	5	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Populus tremuloides*	2	No	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	2	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Solidago altissima*	60	Yes	FACU
2. *Rubus strigosus*	25	Yes	FAC
3. *Fragaria virginiana*	25	Yes	FACU
4. *Phleum pratense*	10	No	FACU
5. *Asclepias syriaca*	10	No	UPL
6. *Polygonum cilinode*	20	No	UPL
7.			
8.			
9.			
10.			
11.			
12.			
	150	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	0	x 2 =	0
FAC species	32	x 3 =	96
FACU species	95	x 4 =	380
UPL species	30	x 5 =	150
Column Totals:	157 (A)		626 (B)
Prevalence Index = B/A =			3.99

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: WTL29-DP1-U

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/2	100					Loamy/Clayey	
4-12	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:
Previously cleared/graded

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/27/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL29-DP1-W

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope %: 0-1

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.77753748 Long: -89.55895517 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 29-7

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL29-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	5	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Salix bebbiana*	30	Yes	FACW
2. *Salix eriocephala*	55	Yes	FACW
3. *Populus tremuloides*	15	No	FAC
4.			
5.			
6.			
7.			
	100	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Solidago gigantea*	25	Yes	FACW
2. *Equisetum arvense*	25	Yes	FAC
3. *Salix eriocephala*	20	Yes	FACW
4. *Fragaria virginiana*	15	No	FACU
5. *Euthamia graminifolia*	10	No	FAC
6. *Typha angustifolia*	10	No	OBL
7. *Poa palustris*	10	No	FACW
8. *Daucus carota*	5	No	UPL
9. *Salix bebbiana*	5	No	FACW
10. *Achillea millefolium*	5	No	FACU
11.			
12.			
	130	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 6 (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	10	x 1 =	10
FACW species	145	x 2 =	290
FAC species	55	x 3 =	165
FACU species	20	x 4 =	80
UPL species	5	x 5 =	25
Column Totals:	235 (A)		570 (B)

Prevalence Index = B/A = 2.43

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL29-DP1-W

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	7.5YR 2.5/2	100					Peat	
4-13	5YR 4/3	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- _X_ 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** _X_ **No** ___

Remarks:

Obvious wetland area, previously graded/scraped

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/30/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL30-DP1-U

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): terrace Local relief (concave, convex, none): landform Slope %: 6-8

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.773197 Long: -89.562062 Datum: WGS 84

Soil Map Unit Name: Big Iron-Flintsteel-Gull Point, frequently flooded, complex, dissected NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 30-9

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL30-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Tsuga canadensis*	45	Yes	FACU
2. *Betula alleghaniensis*	20	Yes	FAC
3. *Acer saccharum*	10	No	FACU
4.			
5.			
6.			
7.			
	75	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Tsuga canadensis*	20	Yes	FACU
2. *Corylus cornuta*	10	Yes	FACU
3. *Abies balsamea*	10	Yes	FAC
4. *Acer rubrum*	5	No	FAC
5. *Fraxinus americana*	5	No	FACU
6.			
7.			
	50	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Agrostis gigantea*	10	Yes	FACW
2. *Lonicera canadensis*	5	Yes	FACU
3. *Abies balsamea*	5	Yes	FAC
4. *Equisetum arvense*	5	Yes	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 55.6% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	45	x 3 =	135
FACU species	95	x 4 =	380
UPL species	0	x 5 =	0
Column Totals:	150 (A)		535 (B)

Prevalence Index = B/A = 3.57

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL30-DP1-U

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-17	7.5YR 4/4	90	5YR 4/4	10			Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine, MI Sampling Date: 6/30/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL30-DP1-W

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): none Slope %: 0

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.77318392 Long: -89.56211506 Datum: WGS 84

Soil Map Unit Name: Big Iron-Flintsteel-Gull Point, frequently flooded, complex, dissected NWI classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 30-9

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 4
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL30-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	10	Yes	FAC
2. *Tsuga canadensis*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Salix bebbiana*	35	Yes	FACW
2. *Salix lucida*	10	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	45	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Euthamia graminifolia*	30	Yes	FAC
2. *Equisetum arvense*	15	Yes	FAC
3. *Solidago canadensis*	5	No	FACU
4. *Equisetum fluviatile*	5	No	OBL
5. *Lycopus americanus*	5	No	OBL
6. *Symphyotrichum lanceolatum*	5	No	FACW
7.			
8.			
9.			
10.			
11.			
12.			
	65	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	50	x 2 =	100
FAC species	55	x 3 =	165
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	130 (A)		335 (B)

Prevalence Index = B/A = 2.58

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL30-DP1-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-5	10YR 2/1	100					Peat	
5-15	7.5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- X 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** X **No** ___

Remarks:
Obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/26/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL32-DP1-U

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): shoulder Local relief (concave, convex, none): convex Slope %: 3-5

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.77272968 Long: -89.56181834 Datum: WGS 84

Soil Map Unit Name: Big Iron-Flintsteel-Gull Point, frequently flooded, complex NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 32-12

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL32-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	25	Yes	FAC
2. *Fraxinus americana*	10	Yes	FACU
3. *Tsuga canadensis*	5	No	FACU
4.			
5.			
6.			
7.			
	40	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Tsuga canadensis*	15	Yes	FACU
2. *Acer rubrum*	20	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	35	=Total Cover	
Herb Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	0	x 2 =	0
FAC species	45	x 3 =	135
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals:	75 (A)		255 (B)
Prevalence Index = B/A =			3.40

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: WTL32-DP1-U

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-15	7.5YR 4/2	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:
Recently logged

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/30/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL32-DP1-W

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): shoulder Local relief (concave, convex, none): convex Slope %: 3-5

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.77274414 Long: -89.56190404 Datum: WGS 84

Soil Map Unit Name: Big Iron-Flintsteel-Gull Point, frequently flooded, complex NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 32-12

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 4
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL32-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	20	Yes	FAC
2. *Fraxinus americana*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	30	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Abies balsamea*	15	Yes	FAC
2. *Betula alleghaniensis*	15	Yes	FAC
3. *Acer rubrum*	5	No	FAC
4.			
5.			
6.			
7.			
	35	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Scirpus atrovirens*	60	Yes	OBL
2. *Scirpus pendulus*	30	Yes	OBL
3. *Calamagrostis canadensis*	10	No	OBL
4. *Salix bebbiana*	5	No	FACW
5. *Abies balsamea*	5	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	110	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	100	x 1 =	100
FACW species	5	x 2 =	10
FAC species	60	x 3 =	180
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	175 (A)		330 (B)

Prevalence Index = B/A = 1.89

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL32-DP1-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-5	10YR 2/1	100					Peat	
5-10	7.5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- X Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: Bedrock

Depth (inches): 10

Hydric Soil Present? **Yes** X **No** ___

Remarks:
Obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/26/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL40-DP1-U

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): summit Local relief (concave, convex, none): convex Slope %: 2-3

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.77553818 Long: -89.5605568 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Eipaquents complex, loamy NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 40-1

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 17
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 15

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL40-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	40	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	40	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Salix bebbiana*	30	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	30	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Fragaria virginiana*	40	Yes	FACU
2. *Equisetum arvense*	15	Yes	FAC
3. *Lotus corniculatus*	10	No	FACU
4. *Trifolium pratense*	5	No	FACU
5. *Daucus carota*	5	No	UPL
6. *Centaurea stoebe*	5	No	UPL
7. *Taraxacum officinale*	5	No	FACU
8.			
9.			
10.			
11.			
12.			
	85	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	0	x 1 =	0
FACW species	30	x 2 =	60
FAC species	55	x 3 =	165
FACU species	60	x 4 =	240
UPL species	10	x 5 =	50
Column Totals:	155 (A)		515 (B)
Prevalence Index = B/A =			3.32

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL40-DP1-U

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/26/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL40-DP1-W

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): concave Slope %: 0

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.775463 Long: -89.560594 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Eipaquents complex, loamy NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 40-3

HYDROLOGY

Wetland Hydrology Indicators:

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

- X 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)
- X Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 1
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL40-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	30	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	30	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Salix bebbiana*	10	Yes	FACW
2. *Betula alleghaniensis*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	15	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Typha X glauca*	65	Yes	OBL
2. *Euthamia graminifolia*	5	No	FAC
3. *Eleocharis erythropoda*	10	No	OBL
4. *Solidago gigantea*	5	No	FACW
5. *Equisetum arvense*	1	No	FAC
6. *Carex gynandra*	5	No	OBL
7.			
8.			
9.			
10.			
11.			
12.			
	91	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 4 (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	80	x 1 =	80
FACW species	15	x 2 =	30
FAC species	41	x 3 =	123
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	136 (A)		233 (B)
Prevalence Index = B/A =			1.71

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL40-DP1-W

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 2/1	100					Peat	
9-17	7.5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- X 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** X **No** ___

Remarks:

Obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/28/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL45-DP1-U

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S30 T51N R41W

Landform (hillside, terrace, etc.): shoulder Local relief (concave, convex, none): convex Slope %: 3-4

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.78054246 Long: -89.55866453 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 45-1

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL45-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	85	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	85	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Populus tremuloides*	5	Yes	FAC
2. *Fraxinus americana*	10	Yes	FACU
3. *Salix humilis*	5	Yes	FACU
4. *Fraxinus pennsylvanica*	5	Yes	FACW
5.			
6.			
7.			
	25	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Eurybia macrophylla*	70	Yes	UPL
2. *Pteridium aquilinum*	25	No	FACU
3. *Aralia nudicaulis*	15	No	FACU
4. *Solidago altissima*	10	No	FACU
5. *Equisetum arvense*	5	No	FAC
6. *Symphyotrichum lateriflorum*	2	No	FAC
7.			
8.			
9.			
10.			
11.			
12.			
	127	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 6 (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	5	x 2 =	10
FAC species	97	x 3 =	291
FACU species	65	x 4 =	260
UPL species	70	x 5 =	350
Column Totals:	237 (A)		911 (B)
Prevalence Index = B/A =			3.84

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: WTL45-DP1-U

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	7.5YR 2.5/2	100					Loamy/Clayey	
2-10	7.5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/28/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL45-DP1-W

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S30 T51N R41W

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope %: 0-1

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.78063466 Long: -89.55857646 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 45-1

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 2
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL45-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	15	Yes	FAC
2. *Populus deltoides*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Fraxinus pennsylvanica*	10	Yes	FACW
2. *Acer rubrum*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	15	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Poa palustris*	10	Yes	FACW
2. *Equisetum arvense*	5	Yes	FAC
3. *Fraxinus pennsylvanica*	5	Yes	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 7 (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	25	x 2 =	50
FAC species	30	x 3 =	90
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	55 (A)		140 (B)

Prevalence Index = B/A = 2.55

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL45-DP1-W

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	7.5YR 2.5/1	100					Peat	
6-12	5YR 4/4	70	5YR 5/6	30	C	M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- _X_ 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** _X_ **No** ___

Remarks:
Obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/28/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL47-DP1-U

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): shoulder Local relief (concave, convex, none): convex Slope %: 2-4

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.77705075 Long: -89.56003138 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 47-3

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL47-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	95	Yes	FAC
2. *Abies balsamea*	10	No	FAC
3.			
4.			
5.			
6.			
7.			
	105	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Populus tremuloides*	20	Yes	FAC
2. *Fraxinus americana*	25	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	45	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Pteridium aquilinum*	10	Yes	FACU
2. *Fraxinus americana*	5	No	FACU
3. *Poa compressa*	10	Yes	FACU
4. *Parthenocissus quinquefolia*	5	No	FACU
5. *Solidago altissima*	5	No	FACU
6. *Lotus corniculatus*	5	No	FACU
7. *Hieracium caespitosum*	10	Yes	UPL
8.			
9.			
10.			
11.			
12.			
	50	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	125	x 3 =	375
FACU species	65	x 4 =	260
UPL species	10	x 5 =	50
Column Totals:	200 (A)		685 (B)
Prevalence Index = B/A =			3.43

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: WTL47-DP1-U

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	7.5YR 2.5/1	100					Loamy/Clayey	
2-6	5YR 4/3	100					Loamy/Clayey	
6-12	5YR 5/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:
Spoils

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/28/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL47-DP1-W

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope %: 0-1

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.77703852 Long: -89.56011397 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: PEM/PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 47-3

HYDROLOGY

Wetland Hydrology Indicators:

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

- X 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)
- X Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 0.5
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL47-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	15	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	15	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Salix eriocephala*	10	Yes	FACW
2. *Salix discolor*	15	Yes	FACW
3. *Abies balsamea*	5	No	FAC
4. *Betula papyrifera*	2	No	FACU
5.			
6.			
7.			
	32	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Scirpus atrovirens*	10	Yes	OBL
2. *Salix eriocephala*	10	Yes	FACW
3. *Carex bebbii*	10	Yes	OBL
4. *Corylus cornuta*	5	No	FACU
5. *Juncus effusus*	5	No	OBL
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 6 (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	25	x 1 =	25
FACW species	35	x 2 =	70
FAC species	20	x 3 =	60
FACU species	7	x 4 =	28
UPL species	0	x 5 =	0
Column Totals:	87 (A)		183 (B)
Prevalence Index = B/A =			2.10

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL47-DP1-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-2	7.5YR 2.5/1	100					Peat	
2-12	5YR 4/4	70	5YR 5/6	30	C	M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- _X_ 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** _X_ **No** ___

Remarks:
Obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/26/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL52-DP1-U

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): convex Slope %: 5-7

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.77754372 Long: -89.56197123 Datum: WGS 84

Soil Map Unit Name: Rockland-Moquah, frequently flooded-Watton complex NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 52-30

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL52-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Abies balsamea*	10	Yes	FAC
2. *Ostrya virginiana*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	15	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Abies balsamea*	15	Yes	FAC
2. *Populus tremuloides*	16	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	31	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Rubus parviflorus*	15	Yes	FACU
2. *Abies balsamea*	20	Yes	FAC
3. *Agrostis gigantea*	15	Yes	FACW
4. *Equisetum arvense*	5	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	55	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	15	x 2 =	30
FAC species	66	x 3 =	198
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals:	101 (A)		308 (B)
Prevalence Index = B/A =			3.05

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL52-DP1-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-1	5YR 3/2	100					Loamy/Clayey	
1-17	5YR 4/3	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/26/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL52-DP1-W

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): concave Slope %: 0-2

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.777455 Long: -89.561991 Datum: WGS 84

Soil Map Unit Name: Rockland-Moquah, frequently flooded-Watton complex NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 52-1

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 3
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL52-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Abies balsamea*	15	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	15	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Acer rubrum*	5	No	FAC
2. *Abies balsamea*	15	Yes	FAC
3. *Salix bebbiana*	10	Yes	FACW
4. *Betula papyrifera*	5	No	FACU
5.			
6.			
7.			
	35	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Scirpus atrovirens*	70	Yes	OBL
2. *Euthamia graminifolia*	10	No	FAC
3. *Equisetum arvense*	10	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	90	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 4 (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	70	x 1 =	70
FACW species	10	x 2 =	20
FAC species	55	x 3 =	165
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	140 (A)		275 (B)

Prevalence Index = B/A = 1.96

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL52-DP1-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-17	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- X 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** X **No** ___

Remarks:
Obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/26/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL54-DP1-U

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S30 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): none Slope %: 0-2

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.77982665 Long: -89.56310304 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 54-114

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL54-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula papyrifera*	5	Yes	FACU
2. *Salix eriocephala*	10	Yes	FACW
3. *Salix bebbiana*	5	Yes	FACW
4.			
5.			
6.			
7.			
	20	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Leucanthemum vulgare*	10	Yes	UPL
2. *Fragaria virginiana*	5	Yes	FACU
3. *Hieracium caespitosum*	1	No	UPL
4. *Agrostis gigantea*	1	No	FACW
5. *Melilotus officinalis*	5	Yes	FACU
6.			
7.			
	22	=Total Cover	
Herb Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	16	x 2 =	32
FAC species	0	x 3 =	0
FACU species	15	x 4 =	60
UPL species	11	x 5 =	55
Column Totals:	42 (A)		147 (B)
Prevalence Index = B/A =			3.50

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: WTL54-DP1-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-17	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/27/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL54-DP1-W

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S30 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): concave Slope %: 0

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.77991083 Long: -89.56309435 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
54-114

HYDROLOGY

Wetland Hydrology Indicators:

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

- X 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)
- X Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- X Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 3
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL54-DP1-W

Tree Stratum (Plot size: N/A)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Herb Stratum (Plot size: 5')			
1. *Populus tremuloides*	10	No	FAC
2. *Typha angustifolia*	60	Yes	OBL
3. *Scirpus atrovirens*	5	No	OBL
4. *Carex aurea*	5	No	FACW
5. *Juncus articulatus*	10	No	OBL
6. *Agrostis gigantea*	1	No	FACW
7. *Equisetum arvense*	10	No	FAC
8.			
9.			
10.			
11.			
12.			
	101 =Total Cover		
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
	=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: 1 (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	75	x 1 =	75
FACW species	6	x 2 =	12
FAC species	20	x 3 =	60
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	101 (A)		147 (B)
Prevalence Index = B/A =			1.46

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL54-DP1-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-15	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- X 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** X **No** ___

Remarks:
Obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/27/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL56-DP1-U

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): shoulder Local relief (concave, convex, none): convex Slope %: 2-3

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.7794935 Long: -89.56224084 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 56-1

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL56-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	70	Yes	FAC
2. *Fraxinus americana*	15	No	FACU
3. *Ostrya virginiana*	5	No	FACU
4.			
5.			
6.			
7.			
	90	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Acer saccharum*	50	Yes	FACU
2. *Fraxinus americana*	5	No	FACU
3. *Prunus pensylvanica*	5	No	FACU
4.			
5.			
6.			
7.			
	60	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Aralia nudicaulis*	30	Yes	FACU
2. *Rubus parvifolius*	10	Yes	UPL
3. *Acer rubrum*	5	No	FAC
4. *Fraxinus americana*	1	No	FACU
5. *Maianthemum canadense*	1	No	FACU
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	47	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	75	x 3 =	225
FACU species	112	x 4 =	448
UPL species	10	x 5 =	50
Column Totals:	197 (A)		723 (B)
Prevalence Index = B/A =			3.67

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: WTL56-DP1-U

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
0-15	7.5YR 4/3	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/27/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL56-DP1-W

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): concave Slope %: 0

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.77964284314337 Long: -89.56221713198907 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near 56-1

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 10
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL56-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	60	Yes	FAC
2. *Fraxinus americana*	20	Yes	FACU
3. *Acer rubrum*	10	No	FAC
4.			
5.			
6.			
7.			
	90	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Populus tremuloides*	50	Yes	FAC
2. *Acer rubrum*	15	No	FAC
3. *Fraxinus americana*	15	No	FACU
4. *Acer saccharum*	5	No	FACU
5. *Betula alleghaniensis*	5	No	FAC
6. *Corylus cornuta*	5	No	FACU
7.			
	95	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Fraxinus americana*	5	Yes	FACU
2. *Scutellaria lateriflora*	5	Yes	OBL
3. *Glyceria striata*	5	Yes	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	10	x 1 =	10
FACW species	0	x 2 =	0
FAC species	140	x 3 =	420
FACU species	50	x 4 =	200
UPL species	0	x 5 =	0
Column Totals:	200 (A)		630 (B)
Prevalence Index = B/A =			3.15

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL56-DP1-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-6	10YR 2/1	100					Peat	
6-15	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- X 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** X **No** ___

Remarks:
Obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/28/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL57-DP1-U

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): Spoil piles Local relief (concave, convex, none): convex Slope %: 2-5

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.779549 Long: -89.559465 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 57-1

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL57-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	95	Yes	FAC
2. *Fraxinus pennsylvanica*	5	No	FACW
3.			
4.			
5.			
6.			
7.			
	100	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Populus tremuloides*	15	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	15	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Pteridium aquilinum*	35	Yes	FACU
2. *Bromus inermis*	10	Yes	UPL
3. *Solidago altissima*	5	No	FACU
4. *Poa compressa*	10	Yes	FACU
5. *Solidago gigantea*	5	No	FACW
6. *Equisetum arvense*	5	No	FAC
7. *Eurybia macrophylla*	10	Yes	UPL
8. *Parthenocissus quinquefolia*	5	No	FACU
9.			
10.			
11.			
12.			
	85	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	10	x 2 =	20
FAC species	115	x 3 =	345
FACU species	55	x 4 =	220
UPL species	20	x 5 =	100
Column Totals:	200 (A)		685 (B)
Prevalence Index = B/A =			3.43

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: WTL57-DP1-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	5YR 4/2	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:
Spoils from excavated pits

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/28/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL57-DP1-W

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope %: 0-2

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.77958167 Long: -89.55942763 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: PEM/PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 57-1

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 2
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL57-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	55	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	55	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Populus tremuloides*	5	No	FAC
2. *Fraxinus pennsylvanica*	45	Yes	FACW
3. *Salix bebbiana*	10	No	FACW
4. *Salix eriocephala*	20	Yes	FACW
5.			
6.			
7.			
	80	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Equisetum arvense*	65	Yes	FAC
2. *Carex gynandra*	20	Yes	OBL
3. *Scirpus atrovirens*	10	No	OBL
4. *Solidago gigantea*	10	No	FACW
5. *Typha angustifolia*	15	No	OBL
6. *Poa alsodes*	5	No	FAC
7. *Melilotus officinalis*	5	No	FACU
8. *Parthenocissus quinquefolia*	5	No	FACU
9. *Carex bebbii*	5	No	OBL
10.			
11.			
12.			
	140	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	85	x 2 =	170
FAC species	130	x 3 =	390
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	275 (A)		650 (B)
Prevalence Index = B/A =			2.36

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL57-DP1-W

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	7.5YR 2.5/1						Loamy/Clayey	
4-12	7.5YR 4/2	60	7.5YR 5/6	30	C	M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X **No** ___

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/28/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL58-DP1-U

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): summit Local relief (concave, convex, none): convex Slope %: 10-11

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.77753449 Long: -89.56303084 Datum: WGS 84

Soil Map Unit Name: Rockland-Moquah frequently flooded-Watton complex NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 58-4

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL58-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Tsuga canadensis*	70	Yes	FACU
2. *Acer rubrum*	10	No	FAC
3. *Abies balsamea*	20	Yes	FAC
4.			
5.			
6.			
7.			
	100	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Tsuga canadensis*	15	Yes	FACU
2. *Acer rubrum*	5	Yes	FAC
3. *Betula alleghaniensis*	5	Yes	FAC
4.			
5.			
6.			
7.			
	25	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Maianthemum canadense*	20	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 6 (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	40	x 3 =	120
FACU species	105	x 4 =	420
UPL species	0	x 5 =	0
Column Totals:	145 (A)		540 (B)
Prevalence Index = B/A =			3.72

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: WTL58-DP1-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-17	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/28/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL58-DP1-W

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): none Slope %: 0-1

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.77749451 Long: -89.56309732 Datum: WGS 84

Soil Map Unit Name: Rockland-Moquah frequently flooded-Watton complex NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 58-6

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 4
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL58-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula alleghaniensis*	20	Yes	FAC
2. *Tsuga canadensis*	30	Yes	FACU
3. *Acer rubrum*	5	No	FAC
4.			
5.			
6.			
7.			
	55	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Acer rubrum*	10	Yes	FAC
2. *Tsuga canadensis*	10	Yes	FACU
3. *Betula alleghaniensis*	20	Yes	FAC
4.			
5.			
6.			
7.			
	40	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Betula alleghaniensis*	10	Yes	FAC
2. *Poa palustris*	15	Yes	FACW
3. *Scirpus atrovirens*	15	Yes	OBL
4. *Coptis trifolia*	5	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	45	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 8 (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	15	x 1 =	15
FACW species	20	x 2 =	40
FAC species	65	x 3 =	195
FACU species	40	x 4 =	160
UPL species	0	x 5 =	0
Column Totals:	140 (A)		410 (B)

Prevalence Index = B/A = 2.93

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL58-DP1-W

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 2/1	100					Peat	100% organic
9-15	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- X 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** X **No** ___

Remarks:
Obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/28/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL60-DP1-W

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): none Slope %: 0

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.777593 Long: -89.564801 Datum: WGS 84

Soil Map Unit Name: Big Iron-Flintsteel-Gull Point, frequently flooded, complex, dissected NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 60-12. Pair with upland data form WTL56-DP1U

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 4
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL60-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	20	Yes	FAC
2. *Populus tremuloides*	5	No	FAC
3. *Betula alleghaniensis*	10	Yes	FAC
4. *Abies balsamea*	15	Yes	FAC
5.			
6.			
7.			
	50	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Betula alleghaniensis*	45	Yes	FAC
2. *Acer rubrum*	15	Yes	FAC
3. *Abies balsamea*	10	No	FAC
4.			
5.			
6.			
7.			
	70	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Carex gynandra*	65	Yes	OBL
2. *Iris versicolor*	10	No	OBL
3. *Scirpus pendulus*	10	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	85	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 6 (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	85	x 1 =	85
FACW species	0	x 2 =	0
FAC species	120	x 3 =	360
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	205 (A)		445 (B)
Prevalence Index = B/A =			2.17

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL60-DP1-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-10	10YR 2/1	100					Peat	
10-16	7.5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- X 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** X **No** ___

Remarks:
Obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/28/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL62-DP1-W

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): concave Slope %: 0

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.77581705 Long: -89.56559454 Datum: WGS 84

Soil Map Unit Name: Big Iron-Flintsteel-Gull Point, frequently flooded, complex, dissected NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 62-2. Pair with upland data form WTL58-DP1-U

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 3
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL62-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula alleghaniensis*	35	Yes	FAC
2. *Populus tremuloides*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	45	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Salix bebbiana*	15	Yes	FACW
2. *Acer rubrum*	10	Yes	FAC
3. *Abies balsamea*	5	No	FAC
4.			
5.			
6.			
7.			
	30	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Juncus effusus*	15	Yes	OBL
2. *Scirpus atrovirens*	20	Yes	OBL
3. *Symphyotrichum lateriflorum*	5	No	FAC
4. *Fragaria virginiana*	5	No	FACU
5. *Euthamia graminifolia*	5	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 6 (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	35	x 1 =	35
FACW species	15	x 2 =	30
FAC species	70	x 3 =	210
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	125 (A)		295 (B)

Prevalence Index = B/A = 2.36

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL62-DP1-W

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 2/1	100					Peat	100% organic
3-14	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- X 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** X **No** ___

Remarks:
Obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/29/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL68-DP1-U

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S36 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): convex Slope %: 3-5

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.774678 Long: -89.567439 Datum: WGS 84

Soil Map Unit Name: Big Iron-Flinsteel-Gull Point, frequently flooded, complex, dissected NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 68-12

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL68-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	15	Yes	FAC
2. *Betula alleghaniensis*	20	Yes	FAC
3. *Acer sachharum*	10	Yes	
4. *Acer rubrum*	5	No	FAC
5.			
6.			
7.			
	50	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Acer saccharum*	20	Yes	FACU
2. *Acer rubrum*	5	No	FAC
3. *Abies balsamea*	5	No	FAC
4. *Populus tremuloides*	10	Yes	FAC
5.			
6.			
7.			
	40	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Abies balsamea*	3	Yes	FAC
2. *Equisetum arvense*	5	Yes	FAC
3. *Maianthemum canadense*	6	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	14	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 62.5% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	68	x 3 =	204
FACU species	26	x 4 =	104
UPL species	0	x 5 =	0
Column Totals:	94 (A)		308 (B)
Prevalence Index = B/A =			3.28

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL68-DP1-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/29/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL68-DP1-W

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S36 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): concave Slope %: 0

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.77466008899372 Long: -89.56742353219562 Datum: WGS 84

Soil Map Unit Name: Big Iron-Flinsteel-Gull Point, frequently flooded, complex, dissected NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 68-11

HYDROLOGY

Wetland Hydrology Indicators:

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

- X 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)
- X Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 8
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL68-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Abies balsamea*	10	Yes	FAC
2. *Populus grandidentata*	10	Yes	FACU
3. *Betula alleghaniensis*	5	No	FAC
4. *Populus tremuloides*	5	No	FAC
5.			
6.			
7.			
	30	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Acer rubrum*	10	Yes	FAC
2. *Salix lucida*	15	Yes	FACW
3. *Pinus resinosa*	5	No	FACU
4.			
5.			
6.			
7.			
	30	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Agrostis gigantea*	40	Yes	FACW
2. *Equisetum fluviatile*	10	No	OBL
3. *Typha latifolia*	10	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	20	x 1 =	20
FACW species	55	x 2 =	110
FAC species	30	x 3 =	90
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	120 (A)		280 (B)

Prevalence Index = B/A = 2.33

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL68-DP1-W

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/1	100					Peat	100% organic
2-14	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- X 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** X **No** ___

Remarks:
Obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/29/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL74-DP1-U

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope %: 2-3

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.777702 Long: -89.561542 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 74-1

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL74-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	15	Yes	FAC
2. *Salix bebbiana*	15	Yes	FACW
3. *Populus balsamifera*	15	Yes	FACW
4. *Picea glauca*	5	No	FACU
5.			
6.			
7.			
	50	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Leucanthemum vulgare*	5	Yes	UPL
2. *Fragaria virginiana*	5	Yes	FACU
3. *Agrostis gigantea*	10	Yes	FACW
4. *Euthamia graminifolia*	5	Yes	FAC
5. *Symphyotrichum lateriflorum*	5	Yes	FAC
6. *Salix bebbiana*	5	Yes	FACW
7.			
	35	=Total Cover	
Herb Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 77.8% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	45	x 2 =	90
FAC species	25	x 3 =	75
FACU species	10	x 4 =	40
UPL species	5	x 5 =	25
Column Totals:	85 (A)		230 (B)

Prevalence Index = B/A = 2.71

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL74-DP1-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine, MI Sampling Date: 6/29/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL74-DP1-W

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): concave Slope %: 0-1

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.777705 Long: -89.561531 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 74-1

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 2
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL74-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	5	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Salix bebbiana*	10	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	10	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Agrostis gigantea*	40	Yes	FACW
2. *Equisetum arvense*	10	No	FAC
3. *Typha angustifolia*	5	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	55	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	5	x 1 =	5
FACW species	50	x 2 =	100
FAC species	15	x 3 =	45
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	70 (A)		150 (B)

Prevalence Index = B/A = 2.14

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL74-DP1-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- X 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** X **No** ___

Remarks:
Obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 7/30/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL77-DP1-U

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S22 T51N R41W

Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): concave Slope %: 2-3

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.80596197 Long: -89.49342829 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil X, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 77-5

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL77-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	5	=Total Cover	
Sapling/Shrub Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Centaurea stoebe*	45	Yes	UPL
2. *Poa compressa*	20	Yes	FACU
3. *Schedonorus arundinaceus*	10	No	FACU
4. *Fragaria virginiana*	15	No	FACU
5. *Plantago rugelii*	20	Yes	FAC
6. *Phleum pratense*	5	No	FACU
7. *Achillea millefolium*	10	No	FACU
8. *Daucus carota*	5	No	UPL
9. *Agrostis gigantea*	5	No	FACW
10. *Symphyotrichum cordifolium*	5	No	UPL
11.			
12.			
	140	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	5	x 2 =	10
FAC species	25	x 3 =	75
FACU species	60	x 4 =	240
UPL species	55	x 5 =	275
Column Totals:	145 (A)		600 (B)
Prevalence Index = B/A =			4.14

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: WTL77-DP1-U

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	5YR 4/4	100					Loamy/Clayey	
6-8	5YR 4/4	90	5YR 5/6	10			Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

Compacted soils in roadway/access drive, refusal at 8 inches.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 7/30/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL77-DP1-W

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S22 T51N R41W

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope %: 0-2

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.80596735 Long: -89.4934276 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: PEM/PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil X, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No ____	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 77-5

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL77-DP1-W

Tree Stratum (Plot size: N/A)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. *Salix discolor*	5	Yes	FACW
2. *Salix eriocephala*	5	Yes	FACW
3. *Salix bebbiana*	5	Yes	FACW
4.			
5.			
6.			
7.			
	15 =Total Cover		
Herb Stratum (Plot size: 5')			
1. *Equisetum arvense*	25	Yes	FAC
2. *Salix discolor*	5	No	FACW
3. *Salix eriocephala*	10	Yes	FACW
4. *Juncus articulatus*	5	No	OBL
5. *Juncus dudleyi*	10	Yes	FACW
6. *Scirpus cyperinus*	10	Yes	OBL
7. *Scirpus atrovirens*	5	No	OBL
8. *Poa compressa*	5	No	FACU
9. *Bidens frondosa*	5	No	FACW
10. *Lycopus americanus*	5	No	OBL
11. *Euthamia graminifolia*	5	No	FAC
12. *Juncus effusus*	5	No	OBL
	95 =Total Cover		
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
	=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: 7 (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	30	x 1 =	30
FACW species	45	x 2 =	90
FAC species	30	x 3 =	90
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	110 (A)		230 (B)
Prevalence Index = B/A =			2.09

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL77-DP1-W

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	5YR 4/4	100					Loamy/Clayey	
4-10	5YR 4/4	95	5YR 4/6	5	C	M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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:

Tire ruts/compacted oils, refusal at 10". Other wetland plants include Typha angustifolia, Phalaris arundinacea, and Agrostis gigantea.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/29/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL78-DP1-U

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): convex Slope %: 2-3

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.77890099 Long: -89.56173981 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 78-3

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL78-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharum*	10	Yes	FACU
2. *Populus tremuloides*	15	Yes	FAC
3. *Abies balsamea*	10	Yes	FAC
4.			
5.			
6.			
7.			
	35	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Acer sachharum*	10	Yes	
2. *Populus tremuloides*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Aralia nudicaulis*	15	Yes	FACU
2. *Acer saccharum*	5	Yes	FACU
3. *Maianthemum canadense*	5	Yes	FACU
4. *Pyrola elliptica*	5	Yes	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 9 (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	35	x 3 =	105
FACU species	40	x 4 =	160
UPL species	0	x 5 =	0
Column Totals:	75 (A)		265 (B)

Prevalence Index = B/A = 3.53

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: WTL78-DP1-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-17	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/29/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL78-DP1-W

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): concave Slope %: 0-1

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.77890099 Long: -89.56177997 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 78-3

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 3
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL78-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	60	Yes	FAC
2. *Fraxinus americana*	20	Yes	FACU
3. *Acer rubrum*	10	No	FAC
4.			
5.			
6.			
7.			
	90	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Acer rubrum*	10	Yes	FAC
2. *Fraxinus americana*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Carex intumescens*	5	Yes	FACW
2. *Vitis riparia*	10	Yes	FAC
3. *Poa palustris*	5	Yes	FACW
4. *Epipactis helleborine*	5	Yes	UPL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	=Total Cover	
Woody Vine Stratum (Plot size: 15')			
1. *Vitis riparia*	20	Yes	FAC
2.			
3.			
4.			
	20	=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: 9 (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	10	x 2 =	20
FAC species	110	x 3 =	330
FACU species	30	x 4 =	120
UPL species	5	x 5 =	25
Column Totals:	155 (A)		495 (B)

Prevalence Index = B/A = 3.19

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL78-DP1-W

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- X 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** X **No** ___

Remarks:

Obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 7/1/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL79-DP1-U

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S19 T51N R41W

Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): convex Slope %: 1-2

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.79393076 Long: -89.557495 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy, nearly level and steep NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 79-130

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL79-DP1-U

Tree Stratum (Plot size: n/a)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Betula papyrifera*			FACU
2. *Salix bebbiana*			FACW
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Panicum virgatum*	15	Yes	FAC
2. *Fragaria virginiana*	15	Yes	FACU
3. *Leucanthemum vulgare*	10	Yes	UPL
4. *Daucus carota*	10	Yes	UPL
5. *Equisetum arvense*	10	Yes	FAC
6. *Salix discolor*	5	No	FACW
7. *Salix eriocephala*	5	No	FACW
8. *Salix bebbiana*	10	Yes	FACW
9. *Achillea millefolium*	10	Yes	FACU
10. *Danthonia spicata*	10	Yes	UPL
11. *Populus balsamifera*	10	Yes	FACW
12.			
	110	=Total Cover	
Woody Vine Stratum (Plot size: n/a)			
1.			
2.			
3.			
4.			
		=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: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 44.4% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	30	x 2 =	60
FAC species	25	x 3 =	75
FACU species	25	x 4 =	100
UPL species	30	x 5 =	150
Column Totals:	110 (A)		385 (B)
Prevalence Index = B/A =			3.50

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: WTL79-DP1-U

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	5YR 3/2	100					Loamy/Clayey	
2-4	5YR 3/3	100					Loamy/Clayey	
4-12	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:
Previously graded

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 7/1/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL79-DP1-W

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S19 T51N R41W

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope %: 0-2

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.79385903 Long: -89.55731394 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy, nearly level and steep NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 79-130

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 0.5
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL79-DP1-W

Tree Stratum (Plot size: n/a)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Sapling/Shrub Stratum (Plot size: n/a)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Equisetum arvense*	80	Yes	FAC
2. *Juncus dudleyi*	10	No	FACW
3. *Picea mariana*	10	No	FACW
4. *Thuja occidentalis*	10	No	FACW
5. *Scirpus atrovirens*	15	Yes	OBL
6. *Eupatorium perfoliatum*	5	No	FACW
7. *Salix bebbiana*	5	No	FACW
8. *Salix eriocephala*	5	No	FACW
9. *Salix discolor*	5	No	FACW
10. *Typha angustifolia*	5	No	OBL
11. *Juncus articulatus*	10	No	OBL
12. *Carex aurea*	5	No	FACW
	186	=Total Cover	
Woody Vine Stratum (Plot size: n/a)			
1.			
2.			
3.			
4.			
		=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	35	x 1 =	35
FACW species	62	x 2 =	124
FAC species	84	x 3 =	252
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	186 (A)		431 (B)
Prevalence Index = B/A =			2.32

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

VEGETATION Continued – Use scientific names of plants.

Sampling Point: WTL79-DP1-W

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
8.			
9.			
10.			
11.			
12.			
13.			
14.			
	=Total Cover		
Sapling/Shrub Stratum			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
	=Total Cover		
Herb Stratum			
13. *Fraxinus nigra*	5	No	FACW
14. *Betula papyrifera*	5	No	FACU
15. *Euthamia graminifolia*	2	No	FAC
16. *Salix lucida*	2	No	FACW
17. *Juncus effusus*	5	No	OBL
18. *Symphyotrichum lateriflorum*	2	No	FAC
19.			
20.			
21.			
22.			
23.			
24.			
	186 =Total Cover		
Woody Vine Stratum			
5.			
6.			
7.			
8.			
	=Total Cover		

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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

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

SOIL

Sampling Point: WTL79-DP1-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-2	5YR 3/2	100					Loamy/Clayey	
2-12	5YR 4/4	90	5YR 4/6	10	C	M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- _X_ 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** _X_ **No** ___

Remarks:
Previously excavated, obvious wetland scenario

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 7/1/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL81-DP1-U

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S19 T51N R41W

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): convex Slope %: 3-4

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.797823 Long: -89.558455 Datum: WGS 84

Soil Map Unit Name: Rockland Moquah, frequently flooded-Watton complex NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 81-23

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL81-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Tsuga canadensis*	65	Yes	FACU
2. *Acer saccharum*	15	No	FACU
3. *Acer rubrum*	19	No	FAC
4. *Abies balsamea*	15	No	FAC
5. *Populus tremuloides*	5	No	FAC
6.			
7.			
	119	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Acer saccharum*	5	Yes	FACU
2. *Abies balsamea*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	10	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Maianthemum canadense*	5	Yes	FACU
2. *Phegopteris connectilis*	5	Yes	FACU
3. *Acer rubrum*	5	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	49	x 3 =	147
FACU species	95	x 4 =	380
UPL species	0	x 5 =	0
Column Totals:	144 (A)		527 (B)

Prevalence Index = B/A = 3.66

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: WTL81-DP1-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-3	5YR 2.5/1	100					Loamy/Clayey	
3-8	5YR 4/4	100					Loamy/Clayey	
8-12	5YR 4/6	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 7/1/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL81-DP1-W

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S19 T51N R41W

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope %: 0-2

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.79793322 Long: -89.55840289 Datum: WGS 84

Soil Map Unit Name: Rockland Moquah, frequently flooded-Watton complex NWI classification: PEM/PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 81-23

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 3
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL81-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Abies balsamea*	5	Yes	FAC
2. *Acer rubrum*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	15	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Alnus incana*	20	Yes	FACW
2. *Acer rubrum*	15	Yes	FAC
3. *Fraxinus pennsylvanica*	5	No	FACW
4.			
5.			
6.			
7.			
	40	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Onoclea sensibilis*	10	Yes	FACW
2. *Rubus pubescens*	10	Yes	FACW
3. *Trientalis borealis*	5	No	FAC
4. *Athyrium angustum*	5	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 6 (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	45	x 2 =	90
FAC species	40	x 3 =	120
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	85 (A)		210 (B)

Prevalence Index = B/A = 2.47

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL81-DP1-W

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	7.5YR 2.5/1	100					Loamy/Clayey	
4-12	7.5YR 4/2	95	5YR 3/4	5	C	M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X **No** ___

Remarks:
Previously disturbed/logged

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/30/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL82-DP1-W

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S19 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): concave Slope %: 0-1

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.786109 Long: -89.563788 Datum: WGS 84

Soil Map Unit Name: Big Iron-Flintsteel-Gull Point, frequently flooded, complex, dissected NWI classification: PEM/PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Flag 82-12. Pair with upland data form WTL56-DP1-U

HYDROLOGY

Wetland Hydrology Indicators:

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

- X 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)
- X Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 4
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL82-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	40	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	40	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Salix bebbiana*	50	Yes	FACW
2. *Acer rubrum*	10	No	FAC
3. *Fraxinus pennsylvanica*	5	No	FACW
4.			
5.			
6.			
7.			
	65	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Scirpus pendulus*	45	Yes	OBL
2. *Eleocharis erythropoda*	30	Yes	OBL
3. *Poa palustris*	15	No	FACW
4. *Scirpus atrovirens*	5	No	OBL
5. *Typha X glauca*	5	No	OBL
6. *Elymus hystrix*	5	No	FACU
7.			
8.			
9.			
10.			
11.			
12.			
	105	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 4 (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	85	x 1 =	85
FACW species	70	x 2 =	140
FAC species	50	x 3 =	150
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	210 (A)		395 (B)

Prevalence Index = B/A = 1.88

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL82-DP1-W

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 2/1	100					Peat	100% organic
3-15	7.5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- X 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** X **No** ___

Remarks:
Obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine, MI Sampling Date: 6/30/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL86-DP1-W

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S30 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): concave Slope %: 0-1

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.78793423 Long: -89.56446607 Datum: WGS 84

Soil Map Unit Name: Big Iron-Flintsteel-Gull Point, frequently flooded, complex, dissected NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Flag 86-7

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- ____ High Water Table (A2)
- X Saturation (A3)
- X 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)
- X Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 4
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL86-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus nigra*	50	Yes	FACW
2. *Populus tremuloides*	20	Yes	FAC
3. *Abies balsamea*	5	No	FAC
4.			
5.			
6.			
7.			
	75	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Fraxinus nigra*	10	Yes	FACW
2. *Fraxinus pennsylvanica*	5	No	FACW
3. *Acer rubrum*	5	No	FAC
4. *Abies balsamea*	10	Yes	FAC
5.			
6.			
7.			
	30	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Carex intumescens*	20	Yes	FACW
2. *Onoclea sensibilis*	5	No	FACW
3. *Rubus pubescens*	10	Yes	FACW
4. *Carex gracillima*	1	No	FACU
5. *Carex scoparia*	1	No	FACW
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	37	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=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: 6 (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	101	x 2 =	202
FAC species	40	x 3 =	120
FACU species	1	x 4 =	4
UPL species	0	x 5 =	0
Column Totals:	142 (A)		326 (B)

Prevalence Index = B/A = 2.30

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL86-DP1-W

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 2/1	100					Peat	100% organic
3-4	10YR 2/1	100					Muck	
4-16	7.5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils[3]:

- X 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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X **No** ___

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 7/30/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL87-DP1-U

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S19 T51N R41W

Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): concave Slope %: 2-3

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.80105468 Long: -89.55582184 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 87-3

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL87-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Abies balsamea*	10	Yes	FAC
2. *Tsuga canadensis*	15	Yes	FACU
3. *Betula alleghaniensis*	10	Yes	FAC
4. *Acer rubrum*	10	Yes	FAC
5. *Acer saccharum*	5	No	FACU
6. *Thuja occidentalis*	5	No	FACW
7.			
	55	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Abies balsamea*	10	Yes	FAC
2. *Betula papyrifera*	5	Yes	FACU
3. *Lonicera canadensis*	5	Yes	FACU
4.			
5.			
6.			
7.			
	20	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Maianthemum canadense*	20	Yes	FACU
2. *Pteridium aquilinum*	15	Yes	FACU
3. *Aralia nudicaulis*	15	Yes	FACU
4. *Abies balsamea*	5	No	FAC
5. *Fraxinus nigra*	2	No	FACW
6. *Acer rubrum*	5	No	FAC
7. *Acer saccharum*	5	No	FACU
8. *Hieracium caespitosum*	5	No	UPL
9. *Betula papyrifera*	2	No	FACU
10. *Rubus parviflorus*	5	No	FACU
11.			
12.			
	79	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 10 (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	7	x 2 =	14
FAC species	50	x 3 =	150
FACU species	92	x 4 =	368
UPL species	5	x 5 =	25
Column Totals:	154 (A)		557 (B)
Prevalence Index = B/A =			3.62

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: WTL87-DP1-U

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	7.5YR 3/2	100					Sandy	
2-6	7.5YR 4/2	100					Sandy	
6-12	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 7/30/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL87-DP1-W

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S19 T51N R41W

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope %: 0-2

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.80107496 Long: -89.55576075 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: PEM/PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 87-3

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL87-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	10	Yes	FAC
2. *Alnus incana*	15	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	25	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Alnus incana*	15	Yes	FACW
2. *Acer rubrum*	5	Yes	FAC
3. *Ulmus americana*	10	Yes	FACW
4. *Acer negundo*	5	Yes	FAC
5. *Abies balsamea*	5	Yes	FAC
6. *Populus balsamifera*	5	Yes	FACW
7. *Fraxinus pennsylvanica*	5	Yes	FACW
	50	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Equisetum arvense*	30	Yes	FAC
2. *Carex gynandra*	20	Yes	OBL
3. *Carex lupulina*	10	Yes	OBL
4. *Scutellaria lateriflora*	10	Yes	OBL
5. *Anemone canadensis*	10	Yes	FACW
6. *Alnus incana*	10	Yes	FACW
7. *Carex retrorsa*	5	No	OBL
8. *Acer rubrum*	5	No	FAC
9. *Fraxinus pennsylvanica*	5	No	FACW
10. *Solidago gigantea*	5	No	FACW
11. *Rubus pubescens*	5	No	FACW
12. *Onoclea sensibilis*	5	No	FACW
	130	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 15 (A)

Total Number of Dominant Species Across All Strata: 15 (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	95	x 2 =	190
FAC species	60	x 3 =	180
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	205 (A)		420 (B)

Prevalence Index = B/A = 2.05

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

VEGETATION Continued – Use scientific names of plants.

Sampling Point: WTL87-DP1-W

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
8.			
9.			
10.			
11.			
12.			
13.			
14.			
	25	=Total Cover	
Sapling/Shrub Stratum			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
	50	=Total Cover	
Herb Stratum			
13. *Phalaris arundinacea*	5	No	FACW
14. *Calamagrostis canadensis*	5	No	OBL
15.			
16.			
17.			
18.			
19.			
20.			
21.			
22.			
23.			
24.			
	130	=Total Cover	
Woody Vine Stratum			
5.			
6.			
7.			
8.			
		=Total Cover	

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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

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

SOIL

Sampling Point: WTL87-DP1-W

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	7.5YR 4/3	80	7.5YR 4/6	20	C	M	Loamy/Clayey	Distinct redox concentrations
8-10	7.5YR 3/2	70	7.5YR 3/4	30	C	M	Loamy/Clayey	
10-12	7.5YR 4/3	80	7.5YR 4/6	20	C	M	Loamy/Clayey	Distinct redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- _X_ 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** _X_ **No** ___

Remarks:
Previous excavation. Obvious wetland area.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 7/30/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL89-DP1-U

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S19 T51N R41W

Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): concave Slope %: 3-4

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.80133504 Long: -89.55524873 Datum: WGS 84

Soil Map Unit Name: Udorthents-Aflic Udarents-Epiaquents complex, loamy NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
near flag 89-4

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL89-DP1-U

Tree Stratum (Plot size: N/A)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Herb Stratum (Plot size: 5')			
1. *Poa pratensis*	65	Yes	FACU
2. *Solidago altissima*	25	Yes	FACU
3. *Bromus inermis*	15	No	UPL
4. *Dactylis glomerata*	5	No	FACU
5. *Galeopsis tetrahit*	5	No	FACU
6. *Rubus idaeus*	5	No	FAC
7. *Fragaria virginiana*	5	No	FACU
8. *Lotus corniculatus*	15	No	FACU
9. *Phleum pratense*	10	No	FACU
10. *Daucus carota*	5	No	UPL
11. *Tragopogon dubius*	5	No	UPL
12.			
	160 =Total Cover		
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
	=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	130	x 4 =	520
UPL species	25	x 5 =	125
Column Totals:	160 (A)		660 (B)
Prevalence Index = B/A =			4.13

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: WTL89-DP1-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-10	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

Additional soil matrix colors - 0-10 inches, 5YR 5/4 5%

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 7/30/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL89-DP1-W

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S19 T51N R41W

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope %: 0-2

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.80134936 Long: -89.55540195 Datum: WGS 84

Soil Map Unit Name: Udorthents-Aflic Udarents-Epiaquents complex, loamy NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 89-4

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL89-DP1-W

Tree Stratum (Plot size: N/A)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. *Salix eriocephala*	5	Yes	FACW
2. *Salix bebbiana*	5	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	10 =Total Cover		
Herb Stratum (Plot size: 5')			
1. *Scirpus cyperinus*	60	Yes	OBL
2. *Phalaris arundinacea*	30	Yes	FACW
3. *Salix bebbiana*	5	No	FACW
4. *Lotus corniculatus*	10	No	FACU
5. *Solidago gigantea*	5	No	FACW
6. *Euthamia graminifolia*	5	No	FAC
7. *Juncus effusus*	5	No	OBL
8. *Solidago altissima*	2	No	FACU
9. *Poa pratensis*	10	No	FACU
10.			
11.			
12.			
	132 =Total Cover		
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
	=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: 4 (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	65	x 1 =	65
FACW species	50	x 2 =	100
FAC species	5	x 3 =	15
FACU species	22	x 4 =	88
UPL species	0	x 5 =	0
Column Totals:	142 (A)		268 (B)

Prevalence Index = B/A = 1.89

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL89-DP1-W

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	5YR 4/4	90	5YR 4/2	10	D	M	Loamy/Clayey	
6-10	5YR 3/3	80	5YR 4/4	10	C	M	Loamy/Clayey	
			5YR 4/2	10	D	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- _X_ 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** _X_ **No** ___

Remarks:

Obvious wetland area, previously disturbed/cleared

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 6/30/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL90-DP1-W

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S30 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): concave Slope %: 0-1

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.79126337 Long: -89.56515831 Datum: WGS 84

Soil Map Unit Name: Big Iron-Flintsteel-Gull Point, frequently flooded, complex, dissected NWI classification: PEM/PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 90-12. Pair with upland data form WTL56-DP1-U

HYDROLOGY

Wetland Hydrology Indicators:

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

- ____ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- X 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)
- X Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 2
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL90-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	10	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Salix bebbiana*	30	Yes	FACW
2. *Salix nigra*	10	Yes	OBL
3. *Salix eriocephala*	10	Yes	FACW
4.			
5.			
6.			
7.			
	50	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Juncus effusus*	20	Yes	OBL
2. *Phalaris arundinacea*	5	No	FACW
3. *Carex cristatella*	1	No	FACW
4. *Fragaria virginiana*	10	Yes	FACU
5. *Symphyotrichum lateriflorum*	5	No	FAC
6. *Solidago gigantea*	5	No	FACW
7.			
8.			
9.			
10.			
11.			
12.			
	46	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	51	x 2 =	102
FAC species	15	x 3 =	45
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	106 (A)		217 (B)

Prevalence Index = B/A = 2.05

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL90-DP1-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 2/2	100					Mucky Loam/Clay	
3-16	7.5YR 4/3	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- X 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** X **No** ___

Remarks:
Obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 7/30/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL91-DP1-U

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S27 T51N R41W

Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): concave Slope %: 3-5

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.78830909 Long: -89.49512629 Datum: WGS 84

Soil Map Unit Name: Flintsteel-Watton-Gull Point, frequently flooded, complex, dissected NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 91-18

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL91-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Prunus serotina*	10	Yes	FACU
2. *Ostrya virginiana*	20	Yes	FACU
3. *Fraxinus americana*	10	Yes	FACU
4. *Acer rubrum*	5	No	FAC
5. *Acer saccharum*	10	Yes	FACU
6. *Alnus incana*	10	Yes	FACW
7.			
	65	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Ostrya virginiana*	25	Yes	FACU
2. *Prunus serotina*	5	No	FACU
3. *Fraxinus americana*	5	No	FACU
4. *Fraxinus pennsylvanica*	5	No	FACW
5.			
6.			
7.			
	40	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Ostrya virginiana*	10	Yes	FACU
2. *Elymus hystrix*	5	Yes	FACU
3. *Acer rubrum*	5	Yes	FAC
4. *Brachyelytrum aristosum*	5	Yes	UPL
5. *Carex pedunculata*	10	Yes	FAC
6. *Carex intumescens*	5	Yes	FACW
7. *Poa alsodes*	5	Yes	FAC
8. *Arctium minus*	5	Yes	FACU
9. *Carex tenera*	5	Yes	FAC
10. *Acer saccharum*	5	Yes	FACU
11.			
12.			
	60	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 16 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 37.5% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	30	x 3 =	90
FACU species	110	x 4 =	440
UPL species	5	x 5 =	25
Column Totals:	165 (A)		595 (B)

Prevalence Index = B/A = 3.61

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: WTL91-DP1-U

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	7.5YR 3/2	100					Loamy/Clayey	
2-4	7.5YR 4/3	100					Loamy/Clayey	
4-10	7.5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 7/30/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL91-DP1-W

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S27 T51N R41W

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope %: 0-2

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.78836932 Long: -89.4952117 Datum: WGS 84

Soil Map Unit Name: Flintsteel-Watton-Gull Point, frequently flooded, complex, dissected NWI classification: PEM/PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 91-17

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL91-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Alnus incana*	15	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	15	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Alnus incana*	90	Yes	FACW
2. *Acer negundo*	20	No	FAC
3.			
4.			
5.			
6.			
7.			
	110	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Solidago gigantea*	25	Yes	FACW
2. *Rubus idaeus*	20	Yes	FAC
3. *Onoclea sensibilis*	15	Yes	FACW
4. *Thalictrum dasycarpum*	10	No	FACW
5. *Scutellaria galericulata*	5	No	OBL
6. *Clematis virginiana*	10	No	FAC
7. *Elymus virginicus*	5	No	FACW
8. *Impatiens capensis*	5	No	FACW
9. *Circaea alpina*	5	No	FACW
10.			
11.			
12.			
	100	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	5	x 1 =	5
FACW species	170	x 2 =	340
FAC species	50	x 3 =	150
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	225 (A)		495 (B)

Prevalence Index = B/A = 2.20

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL91-DP1-W

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	7.5YR 3/3	90	7.5YR 4/4	10	C	M	Loamy/Clayey	Faint redox concentrations
4-6	7.5YR 3/3	100					Loamy/Clayey	
6-12	7.5YR 4/3	90	7.5YR 4/4	10	C	M	Loamy/Clayey	Faint redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- _X_ 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** _X_ **No** ___

Remarks:
Previous beaver activity, obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 7/31/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL91-DP2-U

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S27 T51N R41W

Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): concave Slope %: 2-3

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.78609367 Long: -89.49777112 Datum: WGS 84

Soil Map Unit Name: Flintsteel-Watton-Gull Point, frequently flooded, complex, dissected NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 91-189

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL91-DP2-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	45	Yes	FAC
2. *Acer saccharum*	5	No	FACU
3. *Acer rubrum*	15	Yes	FAC
4.			
5.			
6.			
7.			
	65	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Acer saccharum*	20	Yes	FACU
2. *Corylus cornuta*	10	Yes	FACU
3. *Fraxinus pennsylvanica*	3	No	FACW
4.			
5.			
6.			
7.			
	33	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Aralia nudicaulis*	10	Yes	FACU
2. *Acer saccharum*	20	Yes	FACU
3. *Pteridium aquilinum*	5	No	FACU
4. *Mitchella repens*	5	No	FACU
5. *Brachyelytrum aristosum*	10	Yes	UPL
6. *Maianthemum canadense*	5	No	FACU
7. *Trientalis borealis*	5	No	FAC
8. *Acer rubrum*	5	No	FAC
9.			
10.			
11.			
12.			
	65	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 28.6% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	3	x 2 =	6
FAC species	70	x 3 =	210
FACU species	80	x 4 =	320
UPL species	10	x 5 =	50
Column Totals:	163 (A)		586 (B)
Prevalence Index = B/A =			3.60

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: WTL91-DP2-U

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	7.5YR 3/2	100					Sandy	
1-6	7.5YR 4/3	100					Loamy/Clayey	
6-8	7.5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:
Previously logged

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 7/31/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL91-DP2-W

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S27 T51N R41W

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope %: 0-2

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.7861149 Long: -89.49800329 Datum: WGS 84

Soil Map Unit Name: Flintsteel-Watton-Gull Point, frequently flooded, complex, dissected NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 91-189

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL91-DP2-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	60	Yes	FAC
2. *Acer rubrum*	20	Yes	FAC
3. *Fraxinus nigra*	5	No	FACW
4.			
5.			
6.			
7.			
	85	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Acer rubrum*	15	Yes	FAC
2. *Fraxinus nigra*	10	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	25	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Fraxinus nigra*	35	Yes	FACW
2. *Calamagrostis canadensis*	20	Yes	OBL
3. *Onoclea sensibilis*	15	No	FACW
4. *Acer rubrum*	10	No	FAC
5. *Carex intumescens*	5	No	FACW
6. *Symphyotrichum laterilorum*	5	No	
7.			
8.			
9.			
10.			
11.			
12.			
	90	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 6 (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	20	x 1 =	20
FACW species	70	x 2 =	140
FAC species	105	x 3 =	315
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	195 (A)		475 (B)

Prevalence Index = B/A = 2.44

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL91-DP2-W

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	7.5YR 3/1	100					Sandy	
1-6	7.5YR 6/2	90	7.5YR 6/6	10	C	M	Loamy/Clayey	
6-10	7.5YR 4/2	60	7.5YR 4/4	40	C	M		Distinct redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X **No** ___

Remarks:
Previously logged

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 7/31/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL91-DP3-U

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S27 T51N R41W

Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): concave Slope %: 2-3

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.78638905 Long: -89.49865164 Datum: WGS 84

Soil Map Unit Name: Flintsteel-Watton-Gull Point, frequently flooded, complex, dissected NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near Flag 91-233

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL91-DP3-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharum*	25	Yes	FACU
2. *Acer rubrum*	10	No	FAC
3. *Ostrya virginiana*	35	Yes	FACU
4.			
5.			
6.			
7.			
	70	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Ostrya virginiana*	15	Yes	FACU
2. *Corylus cornuta*	5	Yes	FACU
3. *Prunus serotina*	5	Yes	FACU
4. *Acer saccharum*	5	Yes	FACU
5.			
6.			
7.			
	30	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Aralia nudicaulis*	15	Yes	FACU
2. *Pteridium aquilinum*	10	Yes	FACU
3. *Ostrya virginiana*	10	Yes	FACU
4. *Brachyelytrum aristosum*	10	Yes	UPL
5. *Oryzopsis asperifolia*	5	No	UPL
6. *Acer saccharum*	5	No	FACU
7. *Maianthemum canadense*	10	Yes	FACU
8. *Lonicera canadensis*	5	No	FACU
9. *Acer rubrum*	5	No	FAC
10.			
11.			
12.			
	75	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 11 (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	145	x 4 =	580
UPL species	15	x 5 =	75
Column Totals:	175 (A)		700 (B)
Prevalence Index = B/A =			4.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: WTL91-DP3-U

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	7.5YR 3/2	100					Loamy/Clayey	
2-10	7.5YR 4/3	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:
Previously logged

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 7/31/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL91-DP3-W

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S27 T51N R41W

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope %: 0-2

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.78646059 Long: -89.49875611 Datum: WGS 84

Soil Map Unit Name: Flintsteel-Watton-Gull Point, frequently flooded, complex, dissected NWI classification: PEM/PUB/PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 91-233

HYDROLOGY

Wetland Hydrology Indicators:

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

- X 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)
- X Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- X Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 1
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL91-DP3-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	10	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Alnus incana*	10	Yes	FACW
2. *Cornus canadensis*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	15	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Brasenia schreberi*	45	Yes	OBL
2. *Senecio hieraciifolius*	15	Yes	FACU
3. *Glyceria grandis*	10	Yes	OBL
4. *Carex gynandra*	10	Yes	OBL
5. *Iris versicolor*	10	Yes	OBL
6. *Scirpus cyperinus*	5	No	OBL
7. *Juncus effusus*	5	No	OBL
8. *Carex retrorsa*	5	No	OBL
9. *Poa palustris*	2	No	FACW
10. *Phalaris arundinacea*	5	No	FACW
11. *Onoclea sensibilis*	10	Yes	FACW
12.			
	122	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 88.9% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	90	x 1 =	90
FACW species	27	x 2 =	54
FAC species	15	x 3 =	45
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	147 (A)		249 (B)

Prevalence Index = B/A = 1.69

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL91-DP3-W

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	7.5YR 3/1	100					Loamy/Clayey	peaty
4-10	7.5YR 4/2	90	7.5YR 4/4	10	C	M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- X Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X **No** ___

Remarks:
Beaver maintained

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 7/31/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL91-DP4-U

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S27 T51N R41W

Landform (hillside, terrace, etc.): hillside/Spoils Local relief (concave, convex, none): convex Slope %: 3-4

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.78513307 Long: -89.49958066 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 91-298

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL91-DP4-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	15	Yes	FAC
2. *Betula papyrifera*	10	Yes	FACU
3. *Acer saccharum*	10	Yes	FACU
4. *Fraxinus americana*	5	No	FACU
5.			
6.			
7.			
	40	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Betula papyrifera*	5	Yes	FACU
2. *Betula alleghaniensis*	5	Yes	FAC
3. *Salix humilis*	15	Yes	FACU
4. *Corylus cornuta*	5	Yes	FACU
5.			
6.			
7.			
	30	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Pteridium aquilinum*	40	Yes	FACU
2. *Corylus cornuta*	25	Yes	FACU
3. *Acer rubrum*	10	No	FAC
4. *Maianthemum canadense*	20	No	FACU
5. *Brachyelytrum aristosum*	5	No	UPL
6. *Salix humilis*	5	No	FACU
7. *Mitchella repens*	5	No	FACU
8.			
9.			
10.			
11.			
12.			
	110	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 22.2% (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	145	x 4 =	580
UPL species	5	x 5 =	25
Column Totals:	180 (A)		695 (B)
Prevalence Index = B/A =			3.86

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: WTL91-DP4-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-10	5YR 4/4	95					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:
Additional matrix color - 5YR 5/3 5% loamy/clayey

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 7/31/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL91-DP4-W

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S27 T51N R41W

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope %: 0-2

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.78511232 Long: -89.49965791 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: PEM/PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 91-298

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 4
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 2

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL91-DP4-W

Tree Stratum (Plot size: N/A)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. *Salix petiolaris*	30	Yes	FACW
2. *Salix lucida*	25	Yes	FACW
3. *Salix eriocephala*	5	No	FACW
4. *Populus tremuloides*	5	No	FAC
5.			
6.			
7.			
	65 =Total Cover		
Herb Stratum (Plot size: 5')			
1. *Typha X glauca*	65	Yes	OBL
2. *Juncus effusus*	15	Yes	OBL
3. *Scirpus cyperinus*	10	No	OBL
4. *Fraxinus nigra*	5	No	FACW
5. *Solidago gigantea*	10	No	FACW
6. *Salix lucida*	5	No	FACW
7. *Lycopus uniflorus*	5	No	OBL
8. *Symphyotrichum puniceum*	5	No	OBL
9. *Calamagrostis canadensis*	10	No	OBL
10. *Poa palustris*	5	No	FACW
11. *Equisetum arvense*	5	No	FAC
12.			
	140 =Total Cover		
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
	=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: 4 (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	110	x 1 =	110
FACW species	85	x 2 =	170
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	205 (A)		310 (B)

Prevalence Index = B/A = 1.51

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL91-DP4-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	7.5YR 2.5/2	100					Peat	
4-12	5YR 4/3	80	5YR 4/2	10	D	M	Loamy/Clayey	
			5YR 4/6	10	C	M		Distinct redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- _X_ 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** _X_ **No** ___

Remarks:
Obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 8/2/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL91-DP5-U

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S27 T51N R41W

Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): concave Slope %: 3-5

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.78978975 Long: -89.49636005 Datum: WGS 84

Soil Map Unit Name: Flintsteel-Watton-Gull Point, frequently flooded, complex, dissected NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 91-952

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL91-DP5-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus grandidentata*	25	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	25	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Populus grandidentata*	65	Yes	FACU
2. *Betula papyrifera*	10	No	FACU
3. *Acer rubrum*	10	No	FAC
4.			
5.			
6.			
7.			
	85	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Danthonia spicata*	65	Yes	UPL
2. *Eurybia macrophylla*	10	No	UPL
3. *Symphyotrichum cordifolium*	10	No	UPL
4. *Fragaria virginiana*	10	No	FACU
5. *Solidago altissima*	15	Yes	FACU
6. *Acer rubrum*	10	No	FAC
7. *Betula papyrifera*	5	No	FACU
8. *Phleum pratense*	5	No	FACU
9. *Fraxinus nigra*	5	No	FACW
10. *Daucus carota*	5	No	UPL
11. *Leucanthemum vulgare*	5	No	UPL
12. *Symphyotrichum lateriflorum*	5	No	FAC
	150	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	25	x 3 =	75
FACU species	135	x 4 =	540
UPL species	95	x 5 =	475
Column Totals:	260 (A)		1100 (B)
Prevalence Index = B/A =			4.23

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: WTL91-DP5-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-10	5YR 3/3	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:
Previously cleared, excavated

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 8/2/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL91-DP5-W

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S27 T51N R41W

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope %: 0-2

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.78983237 Long: -89.49649335 Datum: WGS 84

Soil Map Unit Name: Flintsteel-Watton-Gull Point, frequently flooded, complex, dissected NWI classification: PEM/PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 91-952

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL91-DP5-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	10	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Populus tremuloides*	45	Yes	FAC
2. *Salix bebbiana*	20	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	65	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Juncus effusus*	40	Yes	OBL
2. *Scirpus cyperinus*	55	Yes	OBL
3. *Trifolium repens*	5	No	FACU
4. *Euthamia graminifolia*	5	No	FAC
5. *Calamagrostis canadensis*	15	No	OBL
6. *Agrostis gigantea*	10	No	FACW
7. *Acer rubrum*	5	No	FAC
8. *Carex scoparia*	5	No	FACW
9. *Typha X glauca*	5	No	OBL
10.			
11.			
12.			
	145	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	115	x 1 =	115
FACW species	35	x 2 =	70
FAC species	65	x 3 =	195
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	220 (A)		400 (B)
Prevalence Index = B/A =			1.82

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL91-DP5-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	5YR 5/2	60	5YR 4/4	40	C	M	Loamy/Clayey	Distinct redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X **No** ___

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 8/4/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL91-DP6-U

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S22 T51N R41W

Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): concave Slope %: 5-6

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.80329162 Long: -89.49306799 Datum: WGS 84

Soil Map Unit Name: Histols and Aquents, ponded NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 91-1773

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL91-DP6-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharum*	80	Yes	FACU
2. *Betula papyrifera*	5	No	FACU
3. *Populus tremuloides*	10	No	FAC
4. *Betula alleghaniensis*	5	No	FAC
5.			
6.			
7.			
	100	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Acer saccharum*	5	Yes	FACU
2. *Ostrya virginiana*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	10	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Gymnocarpium dryopteris*	80	Yes	FACU
2. *Aralia nudicaulis*	15	No	FACU
3. *Fraxinus pennsylvanica*	25	Yes	FACW
4. *Ribes cynosbati*	5	No	FACU
5. *Populus tremuloides*	5	No	FAC
6. *Athyrium angustum*	15	No	FAC
7. *Maianthemum canadense*	5	No	FACU
8. *Equisetum sylvaticum*	2	No	FACW
9. *Pyrola elliptica*	5	No	FACU
10. *Coptis trifolia*	2	No	FACW
11. *Acer rubrum*	2	No	FAC
12.			
	161	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	29	x 2 =	58
FAC species	37	x 3 =	111
FACU species	205	x 4 =	820
UPL species	0	x 5 =	0
Column Totals:	271 (A)		989 (B)
Prevalence Index = B/A =			3.65

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: WTL91-DP6-U

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	5YR 4/3	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 8/4/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL91-DP6-W

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S22 T51N R41W

Landform (hillside, terrace, etc.): floodplain Local relief (concave, convex, none): concave Slope %: 0-2

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.80341784 Long: -89.49320047 Datum: WGS 84

Soil Map Unit Name: Histols and Aquents, ponded NWI classification: R/PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 91-1773

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL91-DP6-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	5	No	FAC
2. *Acer saccharum*	60	Yes	FACU
3. *Fraxinus pennsylvanica*	20	No	FACW
4. *Betula alleghaniensis*	20	No	FAC
5.			
6.			
7.			
	105	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Alnus incana*	10	Yes	FACW
2. *Fraxinus pennsylvanica*	10	Yes	FACW
3. *Betula alleghaniensis*	5	Yes	FAC
4.			
5.			
6.			
7.			
	25	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Matteuccia struthiopteris*	45	Yes	FAC
2. *Carex gynandra*	25	Yes	OBL
3. *Onoclea sensibilis*	10	No	FACW
4. *Fraxinus nigra*	10	No	FACW
5. *Rubus pubescens*	5	No	FACW
6. *Equisetum sylvaticum*	5	No	FACW
7. *Thalictrum dasycarpum*	2	No	FACW
8. *Carex intumescens*	5	No	FACW
9. *Alnus incana*	5	No	FACW
10. *Calamagrostis canadensis*	5	No	OBL
11.			
12.			
	117	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	82	x 2 =	164
FAC species	75	x 3 =	225
FACU species	60	x 4 =	240
UPL species	0	x 5 =	0
Column Totals:	247 (A)		659 (B)

Prevalence Index = B/A = 2.67

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL91-DP6-W

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	5YR 4/4	100					Loamy/Clayey	
4-8	5YR 4/3	95	5YR 3/2	5	D	M	Loamy/Clayey	
8-16	5YR 3/2	90	5YR 4/3	5	C	M	Loamy/Clayey	Faint redox concentrations
			5YR 2.5/2	5				organic masses

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- _X_ 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** _X_ **No** ___

Remarks:
Obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 7/30/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL93-DP1-U

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S27 T51N R41W

Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): convex Slope %: 3-5

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.78745707 Long: -89.49657723 Datum: WGS 84

Soil Map Unit Name: Flintsteel-Watton-Gull Point, frequently flooded, complex, dissected NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 93-3

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL93-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	70	Yes	FAC
2. *Acer rubrum*	10	No	FAC
3. *Betula papyrifera*	5	No	FACU
4.			
5.			
6.			
7.			
	85	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Ostrya virginiana*	20	Yes	FACU
2. *Fraxinus americana*	5	No	FACU
3. *Acer rubrum*	5	No	FAC
4. *Prunus virginiana*	5	No	FACU
5.			
6.			
7.			
	35	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Mitchella repens*	30	Yes	FACU
2. *Maianthemum canadense*	15	Yes	FACU
3. *Pteridium aquilinum*	15	Yes	FACU
4. *Acer rubrum*	10	No	FAC
5. *Aralia nudicaulis*	15	Yes	FACU
6. *Lonicera canadensis*	5	No	FACU
7. *Prunus serotina*	5	No	FACU
8.			
9.			
10.			
11.			
12.			
	95	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 16.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	95	x 3 =	285
FACU species	120	x 4 =	480
UPL species	0	x 5 =	0
Column Totals:	215 (A)		765 (B)
Prevalence Index = B/A =			3.56

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: WTL93-DP1-U

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	7.5YR 2.5/2	100					Loamy/Clayey	
4-8	7.5YR 4/3	100					Loamy/Clayey	refusal at 8 inches, rock

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 7/30/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL93-DP1-W

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope %: 0-2

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.78754394 Long: -89.49662551 Datum: WGS 84

Soil Map Unit Name: Flintsteel-Watton-Gull Point, frequently flooded, complex, dissected NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 93-3

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 4
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL93-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	10	Yes	FACW
2. *Populus tremuloides*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	15	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Acer rubrum*	5	Yes	FAC
2. *Fraxinus pennsylvanica*	5	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	10	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Iris versicolor*	5	Yes	OBL
2. *Fraxinus pennsylvanica*	5	Yes	FACW
3. *Poa palustris*	5	Yes	FACW
4. *Carex intumescens*	5	Yes	FACW
5. *Lycopus uniflorus*	2	No	OBL
6. *Carex lupulina*	5	Yes	OBL
7. *Carex gynandra*	10	Yes	OBL
8.			
9.			
10.			
11.			
12.			
	37	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 10 (A)

Total Number of Dominant Species Across All Strata: 10 (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	22	x 1 =	22
FACW species	30	x 2 =	60
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	62 (A)		112 (B)

Prevalence Index = B/A = 1.81

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL93-DP1-W

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	7.5YR 2.5/1	100					Peat	
2-6	7.5YR 2.5/1	100					Peat	Sandy, gravelly peat
6-12	7.5YR 3/1	100					Loamy/Clayey	gravelly clay

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- _X_ 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** _X_ **No** ___

Remarks:

Previously disturbed/ecavated. Obvious wetland area.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 7/1/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL104-DP1-U

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S19 T51N R41W

Landform (hillside, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope %: 2-3

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.79689089 Long: -89.56598442 Datum: WGS 84

Soil Map Unit Name: Big Iron-Flintsteel-Gull Point, frequently flooded, complex, dissected NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 104-2

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL104-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	60	Yes	FAC
2. *Betula alleghaniensis*	15	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	75	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Abies balsamea*	15	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	15	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Maianthemum canadense*	15	Yes	FACU
2. *Trientalis borealis*	5	Yes	FAC
3. *Pteridium aquilinum*	5	Yes	FACU
4. *Coptis trifolia*	5	Yes	FACW
5. *Acer rubrum*	1	No	FAC
6. *Lonicera canadensis*	5	Yes	FACU
7.			
8.			
9.			
10.			
11.			
12.			
	36	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 62.5% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	96	x 3 =	288
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column Totals:	126 (A)		398 (B)
Prevalence Index = B/A =			3.16

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL104-DP1-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-4	10YR 4/4	100					Loamy/Clayey	
4-16	10YR 4/6	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 7/1/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL104-DP1-W

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S19 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): concave Slope %: 0

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.79686964 Long: -89.56586678 Datum: WGS 84

Soil Map Unit Name: Big Iron-Flintsteel-Gull Point, frequently flooded, complex, dissected NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 104-2

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- X 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)
- X Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 0.5
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL104-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus nigra*	30	Yes	FACW
2. *Betula alleghaniensis*	30	Yes	FAC
3. *Acer rubrum*	20	Yes	FAC
4. *Tsuga canadensis*	5	No	FACU
5.			
6.			
7.			
	85	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Abies balsamea*	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	10	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Osmunda spectabilis*	10	Yes	OBL
2. *Carex gynandra*	5	Yes	OBL
3. *Carex brunnescens*	5	Yes	FACW
4. *Dryopteris intermedia*	5	Yes	FAC
5. *Scutellaria lateriflora*	1	No	OBL
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	26	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 8 (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	16	x 1 =	16
FACW species	35	x 2 =	70
FAC species	65	x 3 =	195
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	121 (A)		301 (B)

Prevalence Index = B/A = 2.49

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL104-DP1-W

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/1	100					Mucky Peat	100% organic
4-15	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- X 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** X **No** ___

Remarks:
Obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 7/30/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL120B-DP1-U

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S19 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): convex Slope %: 2-3

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.8042225112488 Long: -89.5554717261689 Datum: WGS 84

Soil Map Unit Name: Rockland-Moquah, frequently flooded-Watton complex NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 120-44

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL120B-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Tsuga canadensis*	35	Yes	FACU
2. *Abies balsamea*	35	Yes	FAC
3. *Acer rubrum*	10	No	FAC
4. *Acer saccharum*	20	No	FACU
5. *Betula alleghaniensis*	30	Yes	FAC
6.			
7.			
	130	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Abies balsamea*	20	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Herb Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	95	x 3 =	285
FACU species	55	x 4 =	220
UPL species	0	x 5 =	0
Column Totals:	150 (A)		505 (B)

Prevalence Index = B/A = 3.37

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL120B-DP1-U

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-17	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 7/30/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL120-B-DP1-W

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S19 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): concave Slope %: 0-1

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.8042282764136 Long: -89.5554165194316 Datum: WGS 84

Soil Map Unit Name: Rockland-Moquah, frequently flooded-Watton complex NWI classification: PSS/PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 120-44

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 1
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL120-B-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus nigra*			FACW
2. *Acer rubrum*			FAC
3. *Tsuga canadensis*			FACU
4. *Betula alleghaniensis*			FAC
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. *Alnus incana*			FACW
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Herb Stratum (Plot size: 5')			
1. *Carex gynandra*	35	Yes	OBL
2. *Equisetum fluviatile*	5	No	OBL
3. *Cicuta maculata*	5	No	OBL
4. *Lycopus americanus*	5	No	OBL
5. *Scirpus cyperinus*	5	No	OBL
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	55 =Total Cover		
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
	=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: 1 (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	55	x 1 =	55
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:	55 (A)		55 (B)

Prevalence Index = B/A = 1.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL120-B-DP1-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-6	10YR 2/1	100					Mucky Peat	
6-16	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- X 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** X **No** ___

Remarks:
Obvious wetland

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Assessment City/County: White Pine/Ontanagon Sampling Date: 8/2/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL121-DP1-U

Investigator(s): Randall Phillips; Jess Thompson Section, Township, Range: Sec 27 T51N R41W

Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): concave Slope %: 5-8

Subregion (LRR or MLRA): LRR K Lat: 46.78952392 Long: -89.49473873 Datum:

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 121-10

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL121-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	45	Yes	FAC
2. *Acer rubrum*	30	Yes	FAC
3. *Acer saccharum*	5	No	FACU
4. *Prunus avium*	10	No	FACU
5.			
6.			
7.			
	90	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Fraxinus pennsylvanica*	10	Yes	FACW
2. *Acer saccharum*	10	Yes	FACU
3. *Acer rubrum*	5	No	FAC
4. *Ostrya virginiana*	10	Yes	FACU
5.			
6.			
7.			
	35	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Pteridium aquilinum*	35	Yes	FACU
2. *Aralia nudicaulis*	65	Yes	FACU
3. *Acer saccharum*	20	No	FACU
4. *Acer rubrum*	5	No	FAC
5. *Brachyelytrum aristosum*	5	No	UPL
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	130	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 42.9% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	85	x 3 =	255
FACU species	155	x 4 =	620
UPL species	5	x 5 =	25
Column Totals:	255 (A)		920 (B)
Prevalence Index = B/A =			3.61

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: WTL121-DP1-U

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	7.5YR 4/3	100					Loamy/Clayey	
6-12	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Assessment City/County: White Pine/Ontanagon Sampling Date: 8/2/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL121-DP1-W

Investigator(s): Randall Phillips; Jess Thompson Section, Township, Range: Sec 27 T51N R41W

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope %: 0-2

Subregion (LRR or MLRA): LRR K Lat: 46.78953375 Long: -89.49474618 Datum: WGS84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: PEM/PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 121-10

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL121-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	5	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Alnus incana*	55	Yes	FACW
2. *Acer rubrum*	5	No	FAC
3.			
4.			
5.			
6.			
7.			
	60	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Scirpus cyperinus*	25	Yes	OBL
2. *Acer rubrum*	5	No	FAC
3. *Carex projecta*	15	Yes	FACW
4. *Carex scoparia*	5	No	FACW
5. *Carex gynandra*	10	Yes	OBL
6. *Poa alsodes*	2	No	FAC
7. *Juncus effusus*	10	Yes	OBL
8. *Calamagrostis canadensis*	5	No	OBL
9. *Fraxinus nigra*	5	No	FACW
10. *Fraxinus pennsylvanica*	5	No	FACW
11.			
12.			
	87	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 6 (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	85	x 2 =	170
FAC species	17	x 3 =	51
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	152 (A)		271 (B)

Prevalence Index = B/A = 1.78

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL121-DP1-W

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	5YR 4/2	70	5YR 4/4	30	C	M	Loamy/Clayey	Distinct redox concentrations
4-10	5YR 4/2	70	5YR 4/4	30	C	M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X **No** ___

Remarks:

previously logged, compacted soils, logging roads and laydown areas (also for logging-disturbed areas of WTL91)

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 7/2/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL122-DP1-U

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S19 T51N R41W

Landform (hillside, terrace, etc.): shoulder Local relief (concave, convex, none): convex Slope %: 5-7

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.795582 Long: -89.555011 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 122-2

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL122-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	65	Yes	FAC
2. *Populus tremuloides*	10	No	FAC
3.			
4.			
5.			
6.			
7.			
	75	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Acer rubrum*	15	Yes	FAC
2. *Fraxinus pennsylvanica*	15	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	30	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Carex pedunculata*	10	Yes	FAC
2. *Fraxinus pennsylvanica*	10	Yes	FACW
3. *Matteuccia struthiopteris*	5	No	FAC
4. *Aralia nudicaulis*	10	Yes	FACU
5. *Maianthemum canadense*	1	No	FACU
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	36	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	25	x 2 =	50
FAC species	105	x 3 =	315
FACU species	11	x 4 =	44
UPL species	0	x 5 =	0
Column Totals:	141 (A)		409 (B)

Prevalence Index = B/A = 2.90

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL122-DP1-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-17	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 7/2/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL122-DP1-W

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S19 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): concave Slope %: 0-2

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.79551613 Long: -89.55504104 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 122-2

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- X 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)
- X Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- X Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 1
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL122-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	60	Yes	FAC
2. *Fraxinus pennsylvanica*	20	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	80	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Fraxinus pennsylvanica*	15	Yes	FACW
2. *Abies balsamea*	10	Yes	FAC
3. *Acer rubrum*	15	Yes	FAC
4.			
5.			
6.			
7.			
	40	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Carex gynandra*	10	Yes	OBL
2. *Fraxinus nigra*	5	No	FACW
3. *Onoclea sensibilis*	5	No	FACW
4. *Carex scoparia*	10	Yes	FACW
5. *Equisetum arvense*	1	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	31	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 7 (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	10	x 1 =	10
FACW species	55	x 2 =	110
FAC species	86	x 3 =	258
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	151 (A)		378 (B)

Prevalence Index = B/A = 2.50

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL122-DP1-W

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	10YR 2/1	100					Muck	
1-15	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils[3]:

- X 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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X **No** ___

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 7/2/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL124-DP1-U

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S30 T51N R41W

Landform (hillside, terrace, etc.): shoulder Local relief (concave, convex, none): convex Slope %: 3-5

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.792235 Long: -89.554514 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

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

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:
near flag 124-4

VEGETATION – Use scientific names of plants.

Sampling Point: WTL124-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	60	Yes	FAC
2. *Fraxinus americana*	10	No	FACU
3.			
4.			
5.			
6.			
7.			
	70	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Acer rubrum*	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	10	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Rubus idaeus*	15	Yes	FAC
2. *Viola pubescens*	30	Yes	FACU
3. *Osmorhiza claytonii*	5	No	FACU
4. *Galium aparine*	5	No	FACU
5. *Polygonum cilinode*	5	No	UPL
6. *Solidago gigantea*	1	No	FACW
7. *Arctium lappa*	2	No	UPL
8.			
9.			
10.			
11.			
12.			
	63	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	0	x 1 =	0
FACW species	1	x 2 =	2
FAC species	85	x 3 =	255
FACU species	50	x 4 =	200
UPL species	7	x 5 =	35
Column Totals:	143 (A)		492 (B)
Prevalence Index = B/A =			3.44

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL124-DP1-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-15	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine, MI Sampling Date: 7/2/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL124-DP1-W

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S30 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): concave Slope %: 0-1

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.792235 Long: -89.554514 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 124-4

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 2
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL124-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	30	Yes	FAC
2. *Acer saccharum*	30	Yes	FACU
3. *Fraxinus americana*	10	No	FACU
4.			
5.			
6.			
7.			
	70	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Fraxinus americana*	15	Yes	FACU
2. *Acer rubrum*	20	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	35	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Solanum dulcamara*	20	Yes	FAC
2. *Fraxinus americana*	5	No	FACU
3. *Rubus pubescens*	5	No	FACW
4. *Poa pratensis*	5	No	FACU
5. *Rubus idaeus*	1	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	36	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	71	x 3 =	213
FACU species	65	x 4 =	260
UPL species	0	x 5 =	0
Column Totals:	141 (A)		483 (B)
Prevalence Index = B/A =			3.43

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL124-DP1-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-17	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- X 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** X **No** ___

Remarks:
Obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 7/30/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL128B-DP1-U

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S19 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): convex Slope %: 2-4

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.8045291652326 Long: -89.5530198628391 Datum: WGS 84

Soil Map Unit Name: Belding fine sandy loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 128-20

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL128B-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	90	Yes	FAC
2. *Betula alleghaniensis*	10	No	FAC
3.			
4.			
5.			
6.			
7.			
	100	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Fraxinus pennsylvanica*	15	Yes	FACW
2. *Acer saccharum*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	25	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Maianthemum canadense*	20	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	15	x 2 =	30
FAC species	100	x 3 =	300
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals:	145 (A)		450 (B)
Prevalence Index = B/A =			3.10

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: WTL128B-DP1-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-2	10YR 4/3	100					Loamy/Clayey	
2-16	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 7/30/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL128B-DP1-W

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S19 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): concave Slope %: 0

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.8045461394969 Long: -89.5529246263397 Datum: WGS 84

Soil Map Unit Name: Belding fine sandy loam NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 128-20

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 1
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL128B-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula alleghaniensis*	20	Yes	FAC
2. *Acer rubrum*	35	Yes	FAC
3. *Fraxinus pennsylvanica*	10	No	FACW
4.			
5.			
6.			
7.			
	65	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Betula alleghaniensis*	5	Yes	FAC
2. *Acer rubrum*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	15	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Lycopus americanus*	15	Yes	OBL
2. *Carex*	15	Yes	
3. *Juncus effusus*	5	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20
FACW species	10	x 2 =	20
FAC species	70	x 3 =	210
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		250 (B)

Prevalence Index = B/A = 2.50

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL128B-DP1-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 2/1	100					Peat	
5-16	10YR 4/4	100					Loamy/Clayey	clay

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- X 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** X **No** ___

Remarks:

Obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 8/4/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTI133-DP1-U

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S22 T51N R41W

Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): concave Slope %: 2-4

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.79876189 Long: -89.49500908 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 133-2

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTI133-DP1-U

Tree Stratum (Plot size: N/A)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Herb Stratum (Plot size: 5')			
1. *Lotus corniculatus*	75	Yes	FACU
2. *Phleum pratense*	15	No	FACU
3. *Poa pratensis*	10	No	FACU
4. *Poa compressa*	5	No	FACU
5. *Daucus carota*	5	No	UPL
6. *Fragaria virginiana*	25	No	FACU
7. *Solidago altissima*	5	No	FACU
8. *Salix bebbiana*	5	No	FACW
9.			
10.			
11.			
12.			
	145 =Total Cover		
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
	=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	5	x 2 =	10
FAC species	0	x 3 =	0
FACU species	135	x 4 =	540
UPL species	5	x 5 =	25
Column Totals:	145 (A)		575 (B)
Prevalence Index = B/A =			3.97

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: WTI133-DP1-U

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	5YR 4/4	100					Loamy/Clayey	refusal at 6 inches, gravelly clay below

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:
Previously graded/cleraed/maintained

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 8/4/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL133-DP1-W

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S22 T51N R41W

Landform (hillside, terrace, etc.): excavated depression Local relief (concave, convex, none): concave Slope %: 0-2

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.79868939 Long: -89.49514141 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: PEM/PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 133-2

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL133-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. *Salix interior*	5	No	FACW
2. *Salix eriocephala*	20	Yes	FACW
3. *Salix bebbiana*	15	Yes	FACW
4.			
5.			
6.			
7.			
	40	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Typha X glauca*	45	Yes	OBL
2. *Salix interior*	15	No	FACW
3. *Scirpus cyperinus*	40	Yes	OBL
4. *Juncus effusus*	10	No	OBL
5. *Carex scoparia*	5	No	FACW
6. *Symphyotrichum puniceum*	5	No	OBL
7. *Bidens frondosa*	5	No	FACW
8. *Eupatorium perfoliatum*	5	No	FACW
9. *Juncus articulatus*	5	No	OBL
10.			
11.			
12.			
	135	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 4 (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	105	x 1 =	105
FACW species	70	x 2 =	140
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	175 (A)		245 (B)
Prevalence Index = B/A =			1.40

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL133-DP1-W

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	5YR 4/3	90	5YR 4/2	10	D	M	Loamy/Clayey	
6-12	5YR 4/3	90	5YR 4/6	10	C	M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- _X_ 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** _X_ **No** ___

Remarks:
Obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 7/2/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL134B-DP1-U

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): summit Local relief (concave, convex, none): convex Slope %: 7-9

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.78772227 Long: -89.55513278 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near Flag 134-11

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL134B-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	60	Yes	FAC
2. *Fraxinus pennsylvanica*	10	No	FACW
3.			
4.			
5.			
6.			
7.			
	70	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Prunus virginiana*	40	Yes	FACU
2. *Acer saccharum*	5	No	FACU
3. *Populus tremuloides*	15	Yes	FAC
4.			
5.			
6.			
7.			
	60	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Parthenocissus quinquefolia*	10	Yes	FACU
2. *Maianthemum canadense*	5	Yes	FACU
3. *Acer rubrum*	1	No	FAC
4. *Dryopteris intermedia*	1	No	FAC
5. *Polygonatum pubescens*	1	No	FACU
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	18	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	10	x 2 =	20
FAC species	77	x 3 =	231
FACU species	61	x 4 =	244
UPL species	0	x 5 =	0
Column Totals:	148 (A)		495 (B)
Prevalence Index = B/A =			3.34

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: WTL134B-DP1-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-17	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 7/2/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL134B-DP1-W

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S31 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): concave Slope %: 0

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.78781033 Long: -89.5550776 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
near flag 134-11

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- X 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)
- X Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 0.5
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:
near flag 134-11

VEGETATION – Use scientific names of plants.

Sampling Point: WTL134B-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	10	Yes	FAC
2. *Fraxinus pennsylvanica*	10	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Sambucus racemosa*	10	Yes	FACU
2. *Fraxinus pennsylvanica*	5	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	15	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Carex retrorsa*	15	Yes	OBL
2. *Scutellaria lateriflora*	10	Yes	OBL
3. *Vitis riparia*	10	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	25	x 1 =	25
FACW species	15	x 2 =	30
FAC species	20	x 3 =	60
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	70 (A)		155 (B)

Prevalence Index = B/A = 2.21

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL134B-DP1-W

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/1	100					Mucky Peat	100% organic
2-16	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- X 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** X **No** ___

Remarks:
Obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 7/31/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL134C-DP1-U

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S19 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): convex Slope %: 1-2

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.8055311079057 Long: -89.5485548888028 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 134-1

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL134C-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharum*	35	Yes	FACU
2. *Fraxinus americana*	20	Yes	FACU
3. *Betula alleghaniensis*	20	Yes	FAC
4.			
5.			
6.			
7.			
	75	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Acer rubrum*	20	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Fraxinus pennsylvanica*	5	Yes	FACW
2. *Acer saccharum*	15	Yes	FACU
3. *Abies balsamea*	5	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 57.1% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	45	x 3 =	135
FACU species	70	x 4 =	280
UPL species	0	x 5 =	0
Column Totals:	120 (A)		425 (B)

Prevalence Index = B/A = 3.54

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL134C-DP1-U

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-17	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 7/31/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL134C-DP1-W

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S19 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): concave Slope %: 0

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.805519610687 Long: -89.5493784082025 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 134-1

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____

Water Table Present? Yes ____ No X Depth (inches): ____

Saturation Present? Yes X No ____ Depth (inches): 4

(includes capillary fringe)

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL134C-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	15	Yes	FAC
2. *Acer saccharum*	20	Yes	FACU
3. *Betula alleghaniensis*	30	Yes	FAC
4.			
5.			
6.			
7.			
	65	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Acer rubrum*	20	Yes	FAC
2. *Fraxinus pennsylvanica*	20	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	40	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Acer rubrum*	5	Yes	FAC
2. *Fraxinus pennsylvanica*	5	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	0	x 1 =	0
FACW species	25	x 2 =	50
FAC species	70	x 3 =	210
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals:	115 (A)		340 (B)

Prevalence Index = B/A = 2.96

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL134C-DP1-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-2	10YR 2/1	100					Mucky Peat	
2-16	5YR 4/4	100					Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- X 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** X **No** ___

Remarks:
Obvious Wetland

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 8/4/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL139-DP1-U

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S22 T51N R41W

Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): convex Slope %: 2-4

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.7993614 Long: -89.49441832 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 139-6

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL139-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	65	Yes	FAC
2. *Acer saccharum*	10	No	FACU
3.			
4.			
5.			
6.			
7.			
	75	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Acer saccharum*	45	Yes	FACU
2. *Ostrya virginiana*	10	No	FACU
3. *Acer rubrum*	5	No	FAC
4. *Fraxinus pennsylvanica*	5	No	FACW
5. *Corylus cornuta*	5	No	FACU
6.			
7.			
	70	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Lonicera canadensis*	35	Yes	FACU
2. *Aralia nudicaulis*	15	Yes	FACU
3. *Acer saccharum*	20	Yes	FACU
4. *Mitchella repens*	15	Yes	FACU
5. *Corylus cornuta*	5	No	FACU
6. *Pteridium aquilinum*	5	No	FACU
7. *Acer rubrum*	5	No	FAC
8. *Carex pedunculata*	5	No	FAC
9. *Corylus cornuta*	5	No	FACU
10. *Tilia americana*	5	No	FACU
11.			
12.			
	115	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 16.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	80	x 3 =	240
FACU species	175	x 4 =	700
UPL species	0	x 5 =	0
Column Totals:	260 (A)		950 (B)
Prevalence Index = B/A =			3.65

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: WTL139-DP1-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	5YR 4/3	100					Loamy/Clayey	
8-12	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 8/4/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL139-DP1-W

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S22 T51N R41W

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope %: 0-3

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.79927327 Long: -89.49428129 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 139-6

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL139-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharum*	10	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	10	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Fraxinus pennsylvanica*	10	Yes	FACW
2. *Salix bebbiana*	5	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	15	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Carex gynandra*	65	Yes	OBL
2. *Impatiens capensis*	15	Yes	FACW
3. *Rubus pubescens*	10	No	FACW
4. *Glyceria striata*	5	No	OBL
5. *Juncus effusus*	15	Yes	OBL
6. *Solidago gigantea*	5	No	FACW
7. *Symphyotrichum lateriflorum*	5	No	FAC
8. *Scirpus cyperinus*	5	No	OBL
9. *Calamagrostis canadensis*	10	No	OBL
10.			
11.			
12.			
	135	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	100	x 1 =	100
FACW species	45	x 2 =	90
FAC species	5	x 3 =	15
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	160 (A)		245 (B)
Prevalence Index = B/A =			1.53

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL139-DP1-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-10	5YR 3/2	70	5YR 4/6	20	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X **No** ___

Remarks:

Historical hauling/ logging road - Second matrix color 0-10 5YR 4/3 10% loamy/clayey

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 7/31/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL142-DP1-U

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S19 T51N R41W

Landform (hillside, terrace, etc.): shoulder Local relief (concave, convex, none): convex Slope %: 0

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.8049254734168 Long: -89.5513825289416 Datum: WGS 84

Soil Map Unit Name: Ingalls loamy fine sand NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 142-2

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL142-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	40	Yes	FAC
2. *Acer rubrum*	25	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	65	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Acer rubrum*	15	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	15	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Acer rubrum*	10	Yes	FAC
2. *Maianthemum a?*	15	Yes	
3. *Maianthemum canadense*	5	No	FACU
4. *Lonicera canadensis*	5	No	FACU
5. *Dryopteris intermedia*	5	No	FAC
6. *Abies balsamea*	5	No	FAC
7.			
8.			
9.			
10.			
11.			
12.			
	45	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	100	x 3 =	300
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	110 (A)		340 (B)

Prevalence Index = B/A = 3.09

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL142-DP1-U

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
0-17	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 7/31/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL142-DP1-W

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S19 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): concave Slope %: 0

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.8049254734168 Long: -89.5513825289416 Datum: WGS 84

Soil Map Unit Name: Ingalls loamy fine sand NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 142-2

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____

Water Table Present? Yes ____ No X Depth (inches): ____

Saturation Present? Yes X No ____ Depth (inches): 6

(includes capillary fringe)

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL142-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula alleghaniensis*	35	Yes	FAC
2. *Populus tremuloides*	5	No	FAC
3.			
4.			
5.			
6.			
7.			
	40	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Fraxinus pennsylvanica*	10	Yes	FACW
2. *Acer rubrum*	15	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	25	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Lycopus americanus*	10	Yes	OBL
2. *Carex intumescens*	5	Yes	FACW
3. *Poa palustris*	5	Yes	FACW
4. *Bidens frondosa*	5	Yes	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 7 (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	10	x 1 =	10
FACW species	25	x 2 =	50
FAC species	55	x 3 =	165
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	90 (A)		225 (B)

Prevalence Index = B/A = 2.50

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL142-DP1-W

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-7	10YR 2/1	100					Mucky Peat	
7-16	7.5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- X 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** X **No** ___

Remarks:
Obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 8/4/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL143-DP1-U

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S22 T51N R41W

Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): concave Slope %: 2-3

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.79800586 Long: -89.49388616 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 143-1

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL143-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	15	No	FAC
2. *Populus grandidentata*	70	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	85	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Ostrya virginiana*	10	Yes	FACU
2. *Fraxinus pennsylvanica*	5	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	15	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Mitchella repens*	25	Yes	FACU
2. *Brachyelytrum aristosum*	10	Yes	UPL
3. *Aralia nudicaulis*	10	Yes	FACU
4. *Fraxinus pennsylvanica*	5	No	FACW
5. *Acer saccharum*	10	Yes	FACU
6. *Maianthemum canadense*	5	No	FACU
7.			
8.			
9.			
10.			
11.			
12.			
	65	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 14.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	15	x 3 =	45
FACU species	130	x 4 =	520
UPL species	10	x 5 =	50
Column Totals:	165 (A)		635 (B)
Prevalence Index = B/A =			3.85

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: WTL143-DP1-U

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	7.5YR 3/3	100					Loamy/Clayey	
6-10	7.5YR 4/3	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 8/4/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL143-DP1-W

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S22 T51N R41W

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope %: 0-2

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.79800225 Long: -89.49388466 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: PEM/PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 143-1

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL143-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus nigra*	15	Yes	FACW
2. *Ostrya virginiana*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Fraxinus nigra*	5	Yes	FACW
2. *Fraxinus pennsylvanica*	15	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Carex intumescens*	10	Yes	FACW
2. *Rubus pubescens*	15	Yes	FACW
3. *Fraxinus pennsylvanica*	20	Yes	FACW
4. *Aralia nudicaulis*	5	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	0	x 1 =	0
FACW species	80	x 2 =	160
FAC species	0	x 3 =	0
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	90 (A)		200 (B)

Prevalence Index = B/A = 2.22

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL143-DP1-W

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	7.5YR 4/3	90	5YR 4/4	10	C	M	Loamy/Clayey	Faint redox concentrations
10-12	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- _X_ 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** _X_ **No** ___

Remarks:
Obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 7/31/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL144-DP1-U

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S19 T51N R41W

Landform (hillside, terrace, etc.): summit Local relief (concave, convex, none): convex Slope %: 0

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.8049698771435 Long: -89.5511149179538 Datum: WGS 84

Soil Map Unit Name: Ingalls loamy fine sand NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 144-1

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL144-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	45	Yes	FAC
2. *Abies balsamea*	20	Yes	FAC
3. *Acer rubrum*	10	No	FAC
4.			
5.			
6.			
7.			
	75	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Abies balsamea*	15	Yes	FAC
2. *Acer rubrum*	5	No	FAC
3. *Populus tremuloides*	10	Yes	FAC
4.			
5.			
6.			
7.			
	30	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Aralia nudicaulis*	15	Yes	FACU
2. *Acer rubrum*	40	Yes	FAC
3. *Betula alleghaniensis*	20	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	75	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	165	x 3 =	495
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	180 (A)		555 (B)

Prevalence Index = B/A = 3.08

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

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

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WTL144-DP1-U

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-18	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 7/31/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL144-DP1-W

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S19 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): concave Slope %: 0

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.8049859985028 Long: -89.5511401090427 Datum: WGS 84

Soil Map Unit Name: Ingalls loamy fine sand NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 144-1

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL144-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	40	Yes	FAC
2. *Acer rubrum*	40	Yes	FAC
3. *Fraxinus nigra*	10	No	FACW
4.			
5.			
6.			
7.			
	90	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Acer rubrum*	60	Yes	FAC
2. *Abies balsamea*	20	Yes	FAC
3. *Betula alleghaniensis*	5	No	FAC
4.			
5.			
6.			
7.			
	85	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Carex intumescens*	5	Yes	FACW
2. *Betula alleghaniensis*	5	Yes	FAC
3. *Poa palustris*	5	Yes	FACW
4. *Fraxinus pennsylvanica*	5	Yes	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 8 (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	25	x 2 =	50
FAC species	170	x 3 =	510
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	195 (A)		560 (B)

Prevalence Index = B/A = 2.87

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WTL144-DP1-W

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
0-4	10YR 2/2	40	10YR 5/2	30	D	M	Loamy/Clayey	
			2.5YR 3/4	30	C	M		
4-15	2.5YR 8/2	65	5YR 4/4	35	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- X Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X **No** ___

Remarks:
Obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Assessment City/County: White Pine/Ontanagon Sampling Date: 8/1/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL148-DP1-U

Investigator(s): Fran Thompson; Alison McClear Section, Township, Range: Sec 19 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): convex Slope %: 2-4

Subregion (LRR or MLRA): LRR K Lat: 46.80400667 Long: -89.55174448 Datum: WGS84

Soil Map Unit Name: Udorthents-Aflic Udarents-Epiaquents complex, loamy NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 148-6

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL148-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	40	Yes	FAC
2. *Acer rubrum*	30	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	70	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Populus tremuloides*	25	Yes	FAC
2. *Abies balsamea*	15	Yes	FAC
3. *Fraxinus pennsylvanica*	5	No	FACW
4.			
5.			
6.			
7.			
	45	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Betula alleghaniensis*	5	Yes	FAC
2. *Daucus carota*	5	Yes	UPL
3. *Solidago altissima*	5	Yes	FACU
4. *Solidago gigantea*	5	Yes	FACW
5. *Lotus corniculatus*	5	Yes	FACU
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 9 (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	10	x 2 =	20
FAC species	115	x 3 =	345
FACU species	10	x 4 =	40
UPL species	5	x 5 =	25
Column Totals:	140 (A)		430 (B)
Prevalence Index = B/A =			3.07

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WTL148-DP1-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-17	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Assessment City/County: White Pine/Ontanagon Sampling Date: 8/1/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL148-DP1-W

Investigator(s): Fran Thompson; Alison McClear Section, Township, Range: Sec 19 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): concave Slope %: 0-1

Subregion (LRR or MLRA): LRR K Lat: 46.80397768 Long: -89.55177363 Datum: WGS84

Soil Map Unit Name: Udorthents-Aflic Udarents-Epiaquents complex, loamy NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 148-6

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- X Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL148-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	45	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	45	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Salix bebbiana*	25	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	25	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Calamagrostis canadensis*	5	Yes	OBL
2. *Poa palustris*	5	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 4 (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	30	x 2 =	60
FAC species	45	x 3 =	135
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	80 (A)		200 (B)
Prevalence Index = B/A =			2.50

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WTL148-DP1-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/1	100					Peat	100% organic
2-16	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- X 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** X **No** ___

Remarks:
Obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 8/4/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL151-DP1-U

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S22 T51N R41W

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): convex Slope %: 0-2

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.79642598 Long: -89.4937153 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 151-2

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL151-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus grandidentata*	20	Yes	FACU
2. *Populus tremuloides*	15	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	35	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Salix eriocephala*	5	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	5	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Poa compressa*	45	Yes	
2. *Phleum pratense*	30	Yes	FACU
3. *Fragaria virginiana*	20	No	FACU
4. *Daucus carota*	10	No	UPL
5. *Trifolium pratense*	10	No	FACU
6. *Picea glauca*	5	No	FACU
7. *Populus tremuloides*	5	No	FAC
8. *Symphyotrichum cordifolium*	5	No	UPL
9.			
10.			
11.			
12.			
	130	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	20	x 3 =	60
FACU species	85	x 4 =	340
UPL species	15	x 5 =	75
Column Totals:	125 (A)		485 (B)
Prevalence Index = B/A =			3.88

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WTL151-DP1-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-4	5YR 3/3	100					Loamy/Clayey	refusal at 4"

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:
previously graded

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 8/4/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL151-DP1-W

Investigator(s): Randall Phillips; Tommy Barfuss Section, Township, Range: S22 T51N R41W

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope %: 0-1

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.79649915 Long: -89.49373626 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: PEM/PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 151-2

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL151-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus balsamifera*	5	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	5	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Populus balsamifera*	65	Yes	FACW
2. *Salix bebbiana*	10	No	FACW
3. *Salix discolor*	5	No	FACW
4. *Populus tremuloides*	5	No	FAC
5. *Salix eriocephala*	10	No	FACW
6.			
7.			
	95	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Equisetum arvense*	85	Yes	FAC
2. *Salix eriocephala*	5	No	FACW
3. *Fraxinus pennsylvanica*	10	No	FACW
4. *Euthamia graminifolia*	5	No	FAC
5. *Phleum pratense*	5	No	FACU
6. *Fragaria virginiana*	15	No	FACU
7. *Symphyotrichum lateriflorum*	10	No	FAC
8. *Scirpus cyperinus*	5	No	OBL
9. *Salix lucida*	5	No	FACW
10. *Juncus articulatus*	5	No	OBL
11. *Carex aurea*	5	No	FACW
12.			
	155	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	10	x 1 =	10
FACW species	120	x 2 =	240
FAC species	105	x 3 =	315
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals:	255 (A)		645 (B)

Prevalence Index = B/A = 2.53

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WTL151-DP1-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	5YR 4/4	100					Loamy/Clayey	refusal at 6 inches, rock

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- _X_ 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** _X_ **No** ___

Remarks:
Excavated depression, obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 8/1/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL152-DP1-U

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S19 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): convex Slope %: 3-4

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.8053670323535 Long: -89.5475688061321 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 152-1

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- ____ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL152-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	85	Yes	FAC
2. *Fraxinus americana*	10	No	FACU
3.			
4.			
5.			
6.			
7.			
	95	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Acer rubrum*	20	Yes	FAC
2. *Fraxinus pennsylvanica*	10	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	30	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Pteridium aquilinum*	30	Yes	FACU
2. *Aralia nudicaulis*	20	Yes	FACU
3. *Solidago gigantea*	5	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	55	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	105	x 3 =	315
FACU species	60	x 4 =	240
UPL species	0	x 5 =	0
Column Totals:	180 (A)		585 (B)
Prevalence Index = B/A =			3.25

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WTL152-DP1-U

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
0-1	10YR 3/4	100					Loamy/Clayey	
1-16	7.5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 8/1/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL152-DP1-W

Investigator(s): Fran Thompson; Christian Tibaudo Section, Township, Range: S19 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): concave Slope %: 0

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.8053641244428 Long: -89.5475778110678 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 152-1

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- X Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____

Water Table Present? Yes ____ No X Depth (inches): ____

Saturation Present? Yes ____ No X Depth (inches): ____
(includes capillary fringe)

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL152-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	20	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Sapling/Shrub Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Typha X glauca*	40	Yes	OBL
2. *Bidens frondosa*	10	No	FACW
3. *Impatiens capensis*	5	No	FACW
4. *Lycopus americanus*	5	No	OBL
5. *Onoclea sensibilis*	5	No	FACW
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	65	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	45	x 1 =	45
FACW species	20	x 2 =	40
FAC species	20	x 3 =	60
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	85 (A)		145 (B)

Prevalence Index = B/A = 1.71

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WTL152-DP1-W

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
0-6	10YR 2/1	100					Muck	
6-17	7.5YR 4/3	90	5YR 4/4	10			Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils[3]:

- X 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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X **No** ___

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 8/2/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL180-DP1-U

Investigator(s): Fran Thompson; Allison McClear Section, Township, Range: S20 T51N R41W

Landform (hillside, terrace, etc.): summit Local relief (concave, convex, none): convex Slope %: 3-4

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.80585755 Long: -89.54457891 Datum: WGS 84

Soil Map Unit Name: Big Iron silt loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 180-69

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- ____ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL180-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus americana*	30	Yes	FACU
2. *Acer rubrum*	30	Yes	FAC
3. *Acer negundo*	20	Yes	FAC
4.			
5.			
6.			
7.			
	80	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Acer negundo*	5	Yes	FAC
2. *Acer rubrum*	15	Yes	FAC
3. *Amelanchier interior*	5	Yes	UPL
4.			
5.			
6.			
7.			
	25	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Rubus strigosus*	10	No	FAC
2. *Rubus parviflorus*	40	Yes	FACU
3. *Solidago gigantea*	5	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	55	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 57.1% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	80	x 3 =	240
FACU species	70	x 4 =	280
UPL species	5	x 5 =	25
Column Totals:	160 (A)		555 (B)
Prevalence Index = B/A =			3.47

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WTL180-DP1-U

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
0-6	5YR 4/4	100					Loamy/Clayey	
6-15	5YR 4/4	80	7.5YR 4/6	20	C	M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 8/2/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL180-DP1-W

Investigator(s): Fran Thompson; Allison McClear Section, Township, Range: S20 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): concave Slope %: 0

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.80597031 Long: -89.54468329 Datum: WGS 84

Soil Map Unit Name: Big Iron silt loam NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 180-69

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- X Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- ____ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 12
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 8

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL180-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	60	Yes	FAC
2. *Populus tremuloides*	30	Yes	FAC
3. *Fraxinus pennsylvanica*	5	No	FACW
4.			
5.			
6.			
7.			
	95	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Fraxinus pennsylvanica*	10	Yes	FACW
2. *Amelanchier interior*	5	Yes	UPL
3.			
4.			
5.			
6.			
7.			
	15	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Carex intumescens*	5	Yes	FACW
2. *Onoclea sensibilis*	5	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	25	x 2 =	50
FAC species	90	x 3 =	270
FACU species	0	x 4 =	0
UPL species	5	x 5 =	25
Column Totals:	120 (A)		345 (B)

Prevalence Index = B/A = 2.88

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Additional plants outside of plot - Carex gynandra, Equisetum fluviatale, Impatiens capensis, Vitis riparia

SOIL

Sampling Point: WTL180-DP1-W

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
0-4	10YR 2/1	100					Muck	
4-16	7.5YR 4/3	70	5YR 4/6	20	C	M	Loamy/Clayey	
			7.5YR 5/2	10	D	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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:

Hyrdric soil present - redox depressions (F8)

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 8/3/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL198-DP1-U

Investigator(s): Fran Thompson; Allison McClear Section, Township, Range: S20 T51N R41W

Landform (hillside, terrace, etc.): shoulder Local relief (concave, convex, none): convex Slope %: 3-4

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.80523672 Long: -89.54301699 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 198-36

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- ____ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL198-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	80	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	80	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Fraxinus pennsylvanica*	5	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	5	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Pteridium aquilinum*	60	Yes	FACU
2. *Aralia nudicaulis*	20	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	5	x 2 =	10
FAC species	80	x 3 =	240
FACU species	80	x 4 =	320
UPL species	0	x 5 =	0
Column Totals:	165 (A)		570 (B)
Prevalence Index = B/A =			3.45

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WTL198-DP1-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	7.5YR 4/3	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 8/3/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL198-DP1-W

Investigator(s): Fran Thompson; Allison McClear Section, Township, Range: S20 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): concave Slope %: 0-1

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.80525893 Long: -89.54292635 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 198-36

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- X Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- ____ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 6
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL198-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	10	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Salix bebbiana*	20	Yes	FACW
2. *Amelanchier interior*	5	Yes	UPL
3.			
4.			
5.			
6.			
7.			
	25	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Typha X glauca*	80	Yes	OBL
2. *Carex gynandra*	10	No	OBL
3. *Equisetum fluviatile*	5	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	95	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	95	x 1 =	95
FACW species	20	x 2 =	40
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	5	x 5 =	25
Column Totals:	130 (A)		190 (B)

Prevalence Index = B/A = 1.46

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WTL198-DP1-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-8	10YR 2/1	100					Loamy/Clayey	
8-17	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- X 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** X **No** ___

Remarks:
Obvious wetland area

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 8/3/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL198-DP2-U

Investigator(s): Fran Thompson; Allison McClear Section, Township, Range: S20 T51N R41W

Landform (hillside, terrace, etc.): shoulder Local relief (concave, convex, none): convex Slope %: 2-3

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.80549115 Long: -89.54275646 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 198-4

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- ____ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL198-DP2-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	55	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	55	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Populus tremuloides*	20	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Solidago gigantea*	10	No	FACW
2. *Eurybia macrophylla*	30	Yes	UPL
3. *Daucus carota*	5	No	UPL
4. *Trifolium hybridum*	5	No	FACU
5. *Acer rubrum*	5	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	55	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	80	x 3 =	240
FACU species	5	x 4 =	20
UPL species	35	x 5 =	175
Column Totals:	130 (A)		455 (B)
Prevalence Index = B/A =			3.50

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WTL198-DP2-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 8/3/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL198-DP2-W

Investigator(s): Fran Thompson; Allison McClear Section, Township, Range: S20 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): concave Slope %: 0

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.80541136 Long: -89.54281977 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 198-4

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 8

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL198-DP2-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	85	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	85	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Salix bebbiana*	15	Yes	FACW
2. *Amelanchier interior*	5	Yes	UPL
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Agrostis stolonifera*	20	Yes	FACW
2. *Scirpus pendulus*	20	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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	20	x 1 =	20
FACW species	35	x 2 =	70
FAC species	85	x 3 =	255
FACU species	0	x 4 =	0
UPL species	5	x 5 =	25
Column Totals:	145 (A)		370 (B)

Prevalence Index = B/A = 2.55

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WTL198-DP2-W

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
0-2	10YR 2/1	100					Loamy/Clayey	
2-16	10YR 8/2	80	5YR 4/4	20			Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X **No** ___

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 8/3/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL206-DP1-U

Investigator(s): Fran Thompson; Allison McClear Section, Township, Range: S20 T51N R41W

Landform (hillside, terrace, etc.): summit Local relief (concave, convex, none): convex Slope %: 3-4

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.80771062 Long: -89.53477374 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 206-12

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- ____ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL206-DP1-U

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	35	Yes	FAC
2. *Acer rubrum*	30	Yes	FAC
3. *Fraxinus nigra*	15	No	FACW
4.			
5.			
6.			
7.			
	80	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Fraxinus nigra*	20	Yes	FACW
2. *Fraxinus americana*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	30	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Eurybia macrophylla*	10	Yes	UPL
2. *Matteuccia struthiopteris*	10	Yes	FAC
3. *Circaea canadensis*	5	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 57.1% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	35	x 2 =	70
FAC species	75	x 3 =	225
FACU species	15	x 4 =	60
UPL species	10	x 5 =	50
Column Totals:	135 (A)		405 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WTL206-DP1-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-18	5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: White Pine North Wetland & Stream Baseline Assessment City/County: White Pine/Ontanagon Sampling Date: 8/3/2024

Applicant/Owner: White Pine Copper LLC State: MI Sampling Point: WTL206-DP1-W

Investigator(s): Fran Thompson; Allison McClear Section, Township, Range: S20 T51N R41W

Landform (hillside, terrace, etc.): toeslope Local relief (concave, convex, none): concave Slope %: 0-1

Subregion (LRR or MLRA): LRR K, MLRA 92 Lat: 46.8077194 Long: -89.53478627 Datum: WGS 84

Soil Map Unit Name: Udorthents-Alfic Udarents-Epiaquents complex, loamy NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Near flag 206-12

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- X Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- ____ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 8

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WTL206-DP1-W

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	40	Yes	FAC
2. *Fraxinus pennsylvanica*	30	Yes	FACW
3. *Populus tremuloides*	20	Yes	FAC
4.			
5.			
6.			
7.			
	90	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Fraxinus pennsylvanica*	30	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	30	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Matteuccia struthiopteris*	35	Yes	FAC
2. *Carex intumescens*	20	Yes	FACW
3. *Impatiens capensis*	10	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	65	=Total Cover	
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
		=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: 6 (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	90	x 2 =	180
FAC species	95	x 3 =	285
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	185 (A)		465 (B)

Prevalence Index = B/A = 2.51

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WTL206-DP1-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-4	10YR 2/1	90	7.5YR 5/6	10	C	M	Loamy/Clayey	
4-17	7.5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

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**)
- ___ 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**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ 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** X **No** ___

Remarks:
Obvious wetland area

Appendix D

Michigan Rapid Assessment Method (MiRAM) Forms

AREA 1 - Forested

DNRE

MiRAM Version 2.1

Rating Form

July 23, 2010

MICHIGAN RAPID ASSESSMENT METHOD FOR WETLANDS (MIRAM)

Department of Natural Resources and Environment
Land and Water Management Division

Background Information	page 2
Field Datasheet	page 3
Narrative Rating	page 4
Quantitative Rating	page 5
Rating Summary	page 13

The Michigan Rapid Assessment Method for Wetlands (MiRAM) is a tool to determine the "functional value" of a particular wetland and to assign a rating level to that wetland as compared to other wetlands. The goal of this rating system is to assess individual wetlands on an equal scale regardless of ecological type. MiRAM offers a relatively rapid assessment of wetland functions and values, but it is not intended to replace more detailed quantitative measures of ecosystem function, such as Indices of Biological Integrity (IBI), Floristic Quality Assessment (FQA), or other detailed ecological studies.

The initial step of MiRAM is the proper identification of the Wetland Evaluation Area (Wetland) using the MiRAM Boundary Guidelines in the *MiRAM User's Manual*. The MiRAM evaluation contains two rating systems: the **Narrative Rating,** and the **Quantitative Rating**. First, the Evaluator is required to complete the Narrative Rating, which relies on accurate identification of several types of wetlands with significant ecological values, which automatically rates the Wetland as having high functional value. If the Wetland is not identified as having high functional value by the Narrative Rating, the Evaluator must complete the Quantitative Rating. The Quantitative Rating is a series of metrics regarding the Wetland. The Quantitative Rating is designed to provide a numeric score that reflects the functional value of a Wetland, which includes a Wetland's ecological condition (integrity) and its potential to provide ecological and societal services (functions and values).

The MiRAM requires a knowledge and understanding of wetlands and is designed to be used by Michigan Department of Natural Resources and Environment (DNRE) staff and other wetland professionals. Although the MiRAM rating form has been designed to provide sufficient information for a trained Evaluator to properly complete, it is highly recommended that the Evaluator read and understand the *MiRAM User's Manual,* as it provides additional explanations and examples.

The MiRAM was designed to be used during times when adequate plant growth allows for proper identification of most plant species within the Wetland. Typically, this follows the growing season for a particular region. MiRAM evaluations conducted outside the growing season will receive an additional 10 points due to the inability to properly identify all wetland features during this time of year. MiRAM is not designed to be used in times of snow cover.

If the Wetland and/or buffer areas have been impacted (cutting, mowing, development, etc.) during the past five years, the DNRE may rate the Wetland as if those impacts have not occurred and will presume that the impacted areas were of the best/highest quality possible for that type of wetland.

It is not the intent of MiRAM to modify the existing regulatory process in Michigan. Instead, it is intended that the MiRAM will supplement the existing process by providing additional information. The numeric score obtained from the MiRAM is not, and should not be considered, an absolute number with intrinsic meaning, but should be considered in light of other available information. It should be noted that the MiRAM is an assessment of "functional value" and is different from the determination of whether a particular location *is* a wetland (i.e., jurisdictional wetland).

The most recent version of this document and the *MiRAM User's Manual* are posted at:

www.michigan.gov/wetlands

Background Information

Wetland

Proposed Project Site Name or DNRE File #: White Pine Copper LLC
Date of Evaluation: 8/4/2024
County: Ontonagon
Township: 51N
Town: White Pine
Range: 41W
Section: 22
Decimal Lat/Long: 46.80341784, -89.49320047

Evaluator

Name: Randall Phillips, Jessica Abraham
Address: 3033 Orchard Vista Dr SE, Suite 200
City: Grand Rapids State: MI Zip: 49546
Phone: 616-512-7042
Email: RPhillips@barr.com

Is a Wetland Delineation Report available?
[X] YES [ ] NO Date Completed:_____
If "YES", completed by (name of person/firm/agency): November, 2024 Barr Engineering

Check (√) each box below when item is complete.

[X] **MiRAM Boundary**. See *MiRAM User's Manual* for more information
Size of the Wetland Evaluation Area: 1.72 acres

[X] **Location Map**. A county road map showing the location of the Wetland Evaluation Area, north arrow, map scale information, roads, landmarks, etc. *Attach* a map to the end of this document.

[X] **Color Photographs**. Photos should show the wetland vegetation components, habitat/community types, hydrologic features, and any other pertinent site features. *Attach* to the end of this document.

[X] **Landscape Sketch or Aerial Photograph**.

1. Clearly label the Proposed Project Site and Wetland Evaluation Area. Indicate the location of the MiRAM Boundary.
2. Label and indicate the extent of all general wetland community types identified within the Wetland Evaluation Area. Examples include: marsh, wet meadow, hardwood swamp, conifer swamp, shrub swamp, etc. Some wetland communities may be further classified as natural communities. Natural communities are predominantly structured by natural processes rather than modern anthropogenic disturbances. Examples include: bog, prairie fen, muskeg, wet prairie, southern wet meadow, etc.
3. Identify and label all hydrologic features, such as: streams, 100-year floodplains, ponds, vernal pools, and small patches of open water within a marsh or swamp.
4. Identify and label surrounding upland features.
5. Include north arrow and map scale information.
6. *Attach* the landscape sketch or aerial photo to the end of this document.

Comments: List any important site features or apparent disturbance events that have occurred within or near the Wetland Evaluation Area.

For location map and MiRAM boundary please see Appendix C, Figure 1 located at the end of this form.
For color photographs please see Appendix D, page 158.

This MiRAM area represents the forested areas along the White Pine Tailings facility. Areas to the west of the wetland have been impacted from the tailings facility.

Field Datasheet

List plant species observed within the Wetland. *Attach* additional sheets as necessary.
Nomenclature will follow Voss (1972,1985,1996) or Gleason and Cronquist (1991).

Forest Overstory Stratum (woody plants 3 inches or more DBH, regardless of height)

Acer saccharum	
Acer rubrum	
Fraxinus pennsylvanica	
Betula alleghaniensis	

Shrub/Sapling Stratum (woody plants less than 3 inches DBH and greater than 3.28 feet tall)

Alnus incana	
Betula alleghaniensis	
Fraxinus pennsylvanica	

Herbaceous Stratum (non-woody plants, regardless of size, and woody plants less than 3.28 feet tall)

Matteuccia struthiopteris	*Alnus incana*
Carex gynandra	*Calamagrostis canadensis*
Onoclea sensibilis	*Osmunda claytoniana*
Fraxinus nigra	
Rubus pubescens	
Equisetum sylvaticum	
Thalictrum dasycarpum	
Carex intumescens	

Checklist of features and conditions to observe during the field inspection:

- [X] Hydrologic Condition and Interactions
- [X] Hydrologic Alterations
- [X] Substrate/Soil Disturbances
- [X] Habitat Structure Development
- [X] Habitat Alterations
- [X] Habitat/Wetland Condition
- [X] Amphibian Breeding Pools
- [X] Vegetation Diversity
- [X] Vegetation Condition
- [X] Amount of Open Water
- [X] Percent of Invasive/Non-native Species
- [X] Community Interspersion
- [X] Vertical/Horizontal Structure
- [X] S1, S2, or S3 Natural Community

Approximately how much of the Wetland Evaluation Area was reviewed during the field inspection? 95 %

Has vegetation within the Wetland Evaluation Area been altered and/or buffer areas impacted <u>within the past 5 years</u>? ☐ YES ☒ NO

Please Note: The Wetland Evaluation Area (encompassed by the MiRAM Boundary) is simply referred to as the "Wetland" throughout the remainder of this document.

Narrative Rating

Completion of the Narrative Rating allows the Evaluator to quickly identify whether the Wetland is one of several wetland types that typically have exceptional ecological value. If any of the metrics are answered affirmatively, the Wetland has *exceptional ecological value and is automatically rated as having high functional value* and completion of the Quantitative Rating is not necessary. If none of the metrics are answered affirmatively, proceed to the Quantitative Rating.

Answer all of the following metrics.

1. U.S. Fish and Wildlife Service (USFWS) Critical Habitat.

Is any part of the Wetland located within an area designated as Critical Habitat and does the Wetland *actually* contain habitat suitable for either species listed below?

Piping Plover (*Charadrius melodus*) Critical Habitat Units are designated only within the following counties: Alger, Benzie, Charlevoix, Cheboygan, Chippewa, Emmet, Iosco, Leelanau, Luce, Mackinac, Mason, Muskegon, Presque Isle, and Schoolcraft. See URL below for Unit locations.
(The link provided was broken and has been removed)

Hines's Emerald Dragonfly (*Somatochlora Hineana*) Critical Habitat Units are designated only within the following counties: Alpena, Mackinac, and Presque Isle. See URL below for Unit locations.
(The link provided was broken and has been removed)

☐ **YES** ☒ **NO**

If "**yes"**, the Wetland has ***high functional value***.

2. Threatened or Endangered (T/E) Species.

Do federal/state-listed T/E plant or animal species occur within the Wetland? Complete the following questions to answer this metric.

a. ☐YES ☒NO Has an approved T/E survey been completed? If "Yes," go to question b. If "No," go to question c.

b. ☐YES ☐NO Does the T/E survey indicate T/E species present within the Wetland? If "Yes," answer "Yes" to this metric. If "No," answer "No" to this metric.

c. ☐YES ☒NO Has the Evaluator (or others known to the Evaluator) observed any T/E species within the Wetland? If "Yes," answer "Yes" to this metric. If "No," go to question d.

d. ☐YES ☒NO Does the DNRE Endangered Species Assessment (ESA) web site interactive map, **mcgi.state.mi.us/esa,** indicate that there is a potential for unique natural features at or near your site of interest"?" If "No," answer "No" to this metric. If "Yes," request a DNRE formal review by submitting the online form. Type "MiRAM" within the "Project Information" field on the form. Go to question e.

e. ☐YES ☐NO Did the DNRE review confirm potential T/E occurrence in the Wetland? If "Yes," answer "Yes" to this metric. If "No," answer "No" to this metric. **The Evaluator may proceed with the Narrative Rating and Quantitative Rating while waiting for a formal response from DNRE**.

☐ **YES** ☒ **NO**

If "**yes"**, the Wetland has ***high functional value***.

3. Rare Wetland Natural Community Type.

Are more than 5 acres *or* more than 25% of the Wetland comprised of a Rare Wetland Natural Community Type*? Check (√) all Rare Wetland Natural Community Types

☐ **S1 or S2 Natural Community Type.**
Has the Wetland been identified by the Evaluator — *or other persons* — as being an S1 or S2 natural community type as defined by the Michigan Natural Features Inventory (MNFI)? See the *MiRAM User's Manual* for more information.

☐ **Southern Bog**, defined as any bog occurring below the northern limit of Michigan's Floristic Tension Zone (see figure for approximate location).

☒ **Old-Growth/Mature Forested Wetland.** Lacks evidence of any significant harvesting. Dominated by large, overstory trees (mean overstory DBH ≥20 inches, including at least two trees/acre having DBH ≥28 inches) and the canopy is multi-aged and multi-layered. Aggregations of canopy trees are interspersed with canopy gaps and large snags. Large nursery logs and tip-up mounds litter the forest floor. Does the forested Wetland have all/most of these characteristics?

*If the Rare Wetland Community Type is less than 5 acres *and* less than 25% of the Wetland, the rare community should be split off and evaluated separately.

☒ **YES** ☐ **NO**

If "**yes"**, the Wetland has ***high functional value***.



4. Great Lakes Coastal Wetland.

Is any part of the Wetland within 1,000 feet of the ordinary high water mark of any of the Great Lakes, including Lake St. Clair?

☐ **YES** ☒ **NO**

If "**yes"**, the Wetland has ***high functional value***.

Quantitative Rating

Completion of the Quantitative Rating assists the Evaluator in recognizing the functional value of the Wetland. Complete all metrics by completing all sections, circling the correct point value(s), and assigning a score.

Metric 1. Wetland Size and Distribution

Maximum 9 points.

1a. Wetland Size Estimate the size of the Wetland (i.e., Wetland Evaluation Area). Select a size class. **Maximum 6 points.**			**Score**
50	acres	Select this option if the wetland's actual size ≥ 50 acres.	6 pts
25	acres to <50 acres		5 pts
10	acres to <25 acres		4 pts
3	acres to <10 acres		3 pts
¼	acre to <3 acres		2 pts
less than ¼ acre			0 pt

1b. Wetland Scarcity Utilize the USFWS National Wetlands Inventory (NWI) maps to estimate percentage of wetland area remaining within a 2-mile radius from the Wetland's center. For the purpose of this submetric, areas of open water within the Great Lakes, inland lakes, streams, etc., should be excluded from the wetland percentage. Select the most appropriate percentage category. **Maximum 3 points.**		**Score**
0 to 20% of surrounding 2-mile radius is wetland	3 pts	
>20 to 80% of surrounding 2-mile radius is wetland	2 pts	2
>80% of surrounding 2-mile radius is wetland	1 pt	

8	**Metric 1 Total** add 1a & 1b **(9 points max.)**

Metric 2. Upland Buffers and Intensity of Surrounding Land Use

Maximum 12 points.

2a. Average Buffer Width around the Wetland's Perimeter

Step 1: Using the most recent aerial photograph available, sketch a 150-foot wide "buffer zone" around the Wetland.
Step 2: Estimate the buffer widths from the Wetland's edge to any non-buffer areas (up to 150 feet).
Step 3: Average the buffer widths along the Wetland's perimeter.
Step 4: Select the buffer width that is most appropriate. **Maximum 6 points**.

Buffers Include:

- shrubland, young forest, natural grassland, prairie
- abandoned row crop field (vegetated & naturalizing)
- hay field (non-row crop), lightly grazed pasture
- lightly managed forest (selectively logged)
- designated wildlife area, lightly managed parkland
- other wetland, lake, river

Non-Buffers Include:

- lawns, golf courses, manicured parkland
- residential, commercial, industrial
- roadways (including shoulders), parking lots
- row crop field
- conservation tillage, heavily grazed pasture
- clear-cutting, mining, construction activity

			Score
Wide Buffer Width:	≥150 feet around the perimeter	6 pts	
Medium Buffer Width:	75 to <150 feet around the perimeter	4 pts	6
Narrow Buffer Width:	25 to <75 feet around the perimeter	2 pt	
Very Narrow Buffer Width:	0 (no buffer) to <25 feet around the perimeter	0 pt	

2b. Intensity of Surrounding Land Use within 1,000 feet of the Wetland

Step 1: Using the most recent aerial photograph available, sketch a 1,000-foot wide "land use zone" around the Wetland.

Step 2: Estimate percent coverages comprised by each of the four types of land use listed below.

Step 3: If any land use type comprises more than 25% of the total land use, it is considered to be a "dominant" land use type for the purposes of MiRAM and will receive points. Sum the available points from all dominant land use types and then average the score. Round to the nearest 0.5 increment. **Maximum 6 points**.

Type of Land Use	Examples within each Type of Land Use			Score
Very Low Intensity:	• maturing forest • natural grassland, prairie	• designated wildlife area • other wetland, lake, river	6 pts	6
Low Intensity:	• shrubland/young forest • recent selective logging • hay field (non-row crop)	• lightly managed parkland • old field, lightly grazed pasture • one-lane road/two track	4 pts	
Moderately High Intensity:	• residential & lawns • manicured parkland • golf course	• conservation tillage • recent clear-cut (<10 years) • two-lane road	2 pts	
High Intensity:	• commercial, industrial • high-density residential • heavily grazed pasture • row crop field	• multi-lane paved roadway • construction activity • parking lot • mining	1 pt	

12	**Metric 2 Total** add 2a & 2b **(12 points max.)**

Metric 3. Hydrology

Limited to 26 points.

3a. Sources of Water: Select all that apply. **Maximum 8 points**.		Score
Precipitation: Directly and/or as runoff from upland areas.	1 pt	1
Groundwater: Seeps or evidence, such as significant amounts of skunk cabbage (*Symplocarpus foetidus*) or other fen-adapted species.	2 pts	0
Seasonal/Intermittent Surface Water: Seasonal inundation from a lake, pond, or stream. (A Wetland can only receive points for this source of water or the next, not both.)	2 pts	2
Perennial Surface Water: Perennial inundation from a lake, stream or pond.	5 pts	0

3b. Connectivity: Select all that apply. **Maximum 8 points**.		Score
100-Year Floodplain. As defined in the Floodplain Authority under Part 31 of the NREPA.	2 pts	2
Between a Stream/Lake/Pond and Human Land Use. The Wetland is located between a surface waterbody and any human land use, such that run-off from the adjacent land use could flow through the Wetland before it discharges into the surface waterbody.	2 pts	2
Wetland/Upland Complex. The Wetland is part of a large scale (10+ acres) non-linear complex of wetlands with small areas of unmanicured/undeveloped vegetated uplands that do not restrict movement of organisms between the wetland areas.	2 pts	2
Riparian Corridor. The Wetland is part of a linear *riparian* corridor that provides organism movement along a stream/river. Typically, these corridors should exceed 100 feet in width and extend at least one half mile.	2 pts	2

3c. Duration of Inundation/Saturation Select the option(s) from below that best describe(s) the dominant hydrologic characteristic of the Wetland. For the purposes of this submetric, "dominant" is defined as comprising at least 25% of the Wetland's area. If the Wetland contains several areas that have distinctly different hydrologic characteristics, select all that apply and average the points. Round to the nearest 0.5 increment. **Maximum 4 points.**		**Score**
Permanently Inundated	4 pts	3
Permanently Saturated to Regularly Inundated	3 pts	
Regularly Saturated to Seasonally Inundated	2 pts	
Seasonally Saturated in the Upper 12 Inches of Soil	1 pt	

3d. Alterations to Natural Hydrologic Regime

This submetric evaluates the intactness of the natural hydrologic regime of the Wetland.
Check (√) all forms of past or ongoing hydrologic alteration(s) that are potentially influencing the Wetland.

- ☐ ditch(es) in or near the wetland
- ☐ tile(s) in or near the wetland
- ☐ dike(s) in or near the wetland
- ☐ weir(s) in or near the wetland
- ☐ stormwater inputs (addition of water)
- ☐ stream channelization
- ☐ point source discharge(s) (non-stormwater)
- ☒ filling/grading activities in or near the wetland
- ☒ road bed(s)/RR grades(s) in or near the wetland
- ☒ dredging activities in or near the wetland
- ☐ other (specify)
- ☐ other (specify)

Evaluate whether an alteration is significant or minor in relation to the Wetland's overall area and hydrologic regime. For this submetric, "significant" is defined as affecting approximately 10% or greater of the Wetland. "Minor" is defined as affecting less than approximately 10% of the Wetland. A hydrologic alteration may also impact the Substrate/Soil (submetric 4a) and/or Habitat (submetric 4b).

Select an option below that best describes the extent of (or lack of) alteration(s) to the Wetland's natural hydrologic regime. If uncertain, select adjoining options and average the available points. Round to the nearest 0.5 increment. If the Wetland's natural hydrologic regime has been significantly altered, it shall receive no more than 6 points for this submetric. **Maximum 8 points.**			**Score**
No Hydrologic Alterations Apparent:	There has been no significant alteration(s) to the Wetland's natural hydrologic regime, and/or ongoing minor alteration(s) is/are rare.	8 pts	6
Recovered:	Significant hydrologic alteration(s) occurred more than 20 years prior to the assessment, and/or ongoing minor hydrologic alteration(s) is/are only occasional.	6 pts	
Recovering:	A single significant hydrologic alteration occurred within 20 years prior to the assessment, and/or ongoing minor hydrologic alteration(s) is/are frequent.	4 pts	
Recent or No Recovery:	Multiple significant hydrologic alterations have occurred in the 20 years prior to the assessment, and/or significant alteration(s) is/are ongoing.	1 pt	

20	**Metric 3 Total** add 3a – 3d **(26 points max.)**

Metric 4. Habitat Alteration and Habitat Structure Development
Maximum 20 Points.

4a. Substrate/Soil Disturbance

This submetric evaluates the intactness or lack of disturbance to the Wetland's substrate and soil. Check (√) all possible forms of past or ongoing substrate/soil disturbance that are observed within the Wetland.

- [x] human-induced erosion or exposure
- [ ] human-induced sedimentation or burial
- [ ] filling
- [ ] grading
- [ ] dredging
- [ ] plowing, disking
- [ ] intensive grazing (hooves)
- [ ] off-road vehicle use
- [x] construction vehicle use
- [ ] other (specify)

Evaluate whether a disturbance is significant or minor in relation to the Wetland's overall area. For this submetric, "significant" is defined as affecting approximately 10% or greater of the Wetland. "Minor" is defined as affecting less than approximately 10% of the Wetland. A substrate disturbance may also be an alteration of the natural hydrologic regime (Submetric 3d) and/or an alteration of habitat (Submetric 4b).

Select an option below that best describes the extent of (or lack of) disturbances to the Wetland's substrate. If uncertain, select adjoining options and average the points. Round to the nearest 0.5 increment. If the Wetland's substrate has been significantly altered, it should receive no more than 3 points. **Maximum 4 points.**

			Score
No Substrate Disturbance Apparent:	There has been no significant disturbance to the Wetland's substrate and/or ongoing minor disturbance events are rare.	4 pts	3
Recovered:	Significant substrate disturbance occurred more than 20 years prior to the assessment, and/or ongoing minor substrate disturbance events are only occasional (e.g., light sedimentation from a nearby dirt road).	3 pts	
Recovering:	A single significant substrate disturbance event occurred within 20 years prior to the assessment, and/or ongoing minor substrate disturbance events are frequent.	2 pts	
Recent or No Recovery:	Multiple significant substrate disturbance events have occurred in the 20 years prior to the assessment, and/or significant disturbance is ongoing.	1 pt	

4b. Habitat Alteration

This submetric evaluates the intactness of the natural habitat within the Wetland. A "significant" alteration is defined as affecting 10% or greater of the Wetland. "Minor" alternation affects less than 10% of the Wetland. Check (√) all possible forms of past or ongoing habitat alteration(s) that are observed within the Wetland.

- [ ] barriers such as road bed(s)/RR grades(s)
- [ ] selective cutting
- [ ] clearcutting
- [ ] mowing or shrub removal
- [ ] coarse woody debris (CWD) removal
- [ ] intensive grazing
- [ ] nutrient enrichment, e.g., nuisance algae
- [ ] herbicide/chemical treatment
- [x] sedimentation
- [ ] dredging
- [ ] filling/grading
- [ ] plowing/disking/farming
- [ ] other (specify)

Utilize aerial photography and field evidence to determine if any habitat alterations occurred prior to approximately 20 years ago. Determine the approximate pre-disturbance extent of vertical and horizontal habitat attributes, such as large, woody debris, plant species diversity, hummocks, patchiness, niche diversity, etc. Disregard changes that can be attributed to wetland community succession or other natural processes. A habitat alteration may also be an alteration of the natural hydrologic regime (Submetric 3d) and/or a substrate disturbance (Submetric 4a).

Select an option below that best describes the extent of (or lack of) alteration(s) to the Wetland's habitat. If unclear, select adjoining options and average the available points. Round to the nearest 0.5 increment. **Maximum 9 points**.

			Score
No Habitat Alterations Apparent:	There has been no significant alteration to the Wetland's natural habitat, and/or ongoing minor alteration(s) is/are rare.	9 pts	8
Recovered:	Significant habitat alteration(s) occurred more than 20 years prior to the assessment, and/or ongoing minor habitat alteration(s) is/are only occasional.	6 pts	
Recovering:	A single, significant habitat alteration occurred within 20 years prior to the assessment, and/or ongoing minor habitat alteration(s) is/are frequent.	3 pts	
Recent or No Recovery:	Multiple significant habitat alterations have occurred in the 20 years prior to the assessment, and/or significant alteration(s) is/are ongoing.	1 pt	

4c. Habitat Structure Development

Determine an overall qualitative rating of how well developed the Wetland is in comparison to the best of its type. For this submetric, a wetland's type is defined as any ecologically and/or hydrogeomorphically similar wetland habitat typical of the region. Well-developed communities, regardless of successional state, often exhibit many of the following habitat characteristics:

- Quality vertical habitat, such as hummocks, organic debris, and diverse plant height ranges.
- Quality horizontal habitat, such as varying vegetation density and patchiness, moderate ratios of open space to cover, plant species diversity, and a wide range of plant ages.
- Other ecological attributes, such as a diverse assortment of the following: breeding areas, rearing areas, feeding areas, niche space, etc.

Select an option below that best describes the Wetland's habitat structure development. If unclear, select adjoining options and average the points. Round to the nearest 0.5 increment.
Maximum 7 points.

			Score
Excellent:	Wetland appears to represent the best of its type.	7 pts	5
Good:	Wetland appears to be a good example of its type but because of past or present disturbance, or other reasons, is not excellent.	5 pts	
Fair:	Wetland appears to be a moderately good example of its type but because of past or present disturbance, or other reasons, is not good.	3 pts	
Poor:	Wetland is a poor example of its type because of past or present disturbance, or other reasons.	1 pt	

16 **Metric 4 Total** add 4a – 4c **(20 points max.)**

Metric 5. Special Situations

Refer to the Narrative Rating for definitions and the *User's Manual* for guidance, **Limited to 10 points**

5a. High Ecological Value. See Narrative Rating for definitions of each.
10 points for each that apply.

Score
10

☐ 1. Contains USFWS-designated Critical Habitat
☐ 2. Federal or State-listed T/E Plant or Animal Species
☐ 3. S1, S2, or S3 Natural Community Type (at least 5 acres or 25% of the Wetland)
☐ 4. Southern Bog (at least 5 acres or 25% of the Wetland)
☒ 5. Old-Growth/Mature Forested Wetland (at least 5 acres or 25% of the Wetland)
☐ 6. Great Lakes Coastal Wetland

5b. Forested Wetland. **5 points**.
Exhibits combined canopy cover from any group(s) of trees. Stem DBH must be at least 3 inches to qualify as a tree. Total area must comprise at least 5 acres or 25% of the Wetland. Does not qualify if most of the trees are ungrouped and widely scattered (e.g., a savanna), or located only thinly along the Wetland's margin.

Score
5

5c. Urban/Suburban Wetland. **5 points**.
Greater than 50% of the surrounding landscape (1,000 foot radius) is comprised of low-permeability surfaces, such as roads, lawns, parking lots, buildings, sidewalks, etc.

Score
0

5d. Low-Quality Wetland. Negative 10 points.
The Wetland is less than 1 acre and non-contiguous as defined in Part 303 and either: *1)* a stormwater pond that was excavated from upland and constructed for stormwater treatment in conjunction with a development project *or 2)* more than 75% covered by highly-invasive vegetation. See Submetric 6c for a list of highly-invasive species.

Score
0

10 **Metric 5 Total** **(10 points max.)** ***Can be negative***

Metric 6. Vegetation, Interspersion, and Habitat Features
Maximum 20 points.

6a. Wetland Vegetation Components

Determine the Qualitative Cover Score of each Vegetation Component (Herbaceous, Shrub/Sapling, Forest Overstory). Using the Qualitative Cover Scoring Table, start on the left and proceed to the right, until a point value is obtained for each Vegetation Component. Vegetation Components may exist in overlapping layers, e.g., significant areas of shrub/sapling and/or herbaceous may exist under a forest canopy. Only groups of trees, clusters of shrubs, or dense patches of herbaceous stems may count toward area coverage. Do not include widely-scattered trees, lone shrub/saplings, or sparse patches of herbaceous stems. See Submetric 6c to aid in the proper identification of broad-leaved cattail (*Typha latifolia*), a non-invasive, native species.

Qualitative Cover Scoring Table

Vegetation Component ► is >¼ acre	>25% of Wetland area ►	Native species dominate the coverage ►	High native diversity ►	3 pts
			Moderate to low native diversity ►	2 pts
		Invasive or non-native species dominate the coverage ►	Moderate to high native diversity ►	2 pts
			Low native diversity ►	1 pt
	<25% of Wetland area ►	Native species dominate the coverage ►	Moderate to high native diversity ►	2 pts
			Low native diversity ►	1 pt
		Invasive or non-native species dominate the coverage ►	Moderate native diversity ►	1 pt
			Low native diversity ►	0 pt
Vegetation Component is <¼ acre ►	>25% of Wetland area ►	Native species dominate the coverage ►	Moderate to high native diversity ►	2 pts
			Low native diversity ►	1 pt
		Invasive or non-native species dominate the coverage ►		0 pt
	<25% of Wetland area ►			0 pt

	Score
Forest Overstory Component, qualitative cover score derived from table **maximum 3 points**. Forested wetland areas are characterized by a group of trees at least 3 inches in DBH, regardless of height. The Wetland does not have a forested component if the trees are widely scattered (e.g., a savanna), located only thinly along the Wetland's margin, or if it is clear that most of the trees are actually located on upland around the perimeter of the Wetland.	3
Shrub/Sapling Component, qualitative cover score derived from table **maximum 3 points**. Shrub/Sapling wetland areas are dominated by clusters of woody plants less than 3 inches in DBH and greater than 3.28 feet in height. Species include true shrubs, young trees, and stunted trees. Shrub wetlands may represent a successional stage leading to a forested wetland or they may be relatively stable plant communities.	2
Herbaceous Component, qualitative cover score derived from table **maximum 3 points**. Herbaceous wetlands are areas dominated by dense patches of erect, non-woody plants, regardless of size, and woody plants less than 3.28 feet in height. The MiRAM includes the robust-stemmed yellow pond lily (*Nuphar advena*) and American lotus (*Nelumbo lutea*) within the herbaceous component because of their tendency to hold their stems and leaves well above the water. All floating-leaf species (including *Nymphaea* spp.) are excluded from the herbaceous component, and are instead included within the open water component (see Submetric 6b).	3

6b. Open Water Component

Open water is an unobstructed, inundated area of water containing few or no rooted emergent or woody plant species. It can occur as a distinct zone along a river or lake or as a combination of small ponds, streams, or pools (e.g., within a marsh or swamp) and as an "understory" below a forest canopy (e.g., a forested vernal pool).

This Habitat Component includes combined acreage from any of the following areas:

- **Small ponds, streams, and pools**.
- **Seasonal standing water areas** (e.g., mudflats and dried-down vernal pools) that were inundated long enough during the growing season to support aquatic life.
- **Aquatic bed areas**, also known as submergent marsh or submerged aquatic vegetation (SAV). Aquatic bed is dominated by plants that grow at or below the surface of the water for most of the growing season in most years. The MiRAM includes aquatic bed within the definition of open water, due to the potential difficulty in differentiating the two entities. For the purposes of the MiRAM, all floating-leaf aquatic taxa, such as water lilies (*Nymphaea* spp.), are included in the definition of aquatic bed and, therefore, are also included in the definition of open water.
- **100-foot wide strip of open water along a lake or river** (see Boundary Guidelines in the *User's Manual*). When the Wetland is adjacent to a lake or large river, calculate the acreage of the 100-foot wide open water strip that is included within the Wetland (see MiRAM Boundary Determination Guidelines). Simply divide the linear feet of shoreline length by 400. For example, if the vegetated portion of the wetland interfaces with 200 linear feet of a lake, then the extent of the lake's open water included within the Wetland would be calculated as: 200/400 = 0.5 acre.
- **Shallow pools free of dense shrub canopy** (e.g., open area within an inundated shrub swamp).
- **Shallow pools free of densely-packed herbaceous vegetation** (e.g., open area within a marsh or bog).

Estimate the total open water coverage. **Maximum 3 points**.			**Score**
High:	2.5 acres or more	3 pts	1
Moderate:	1.0 acre to <2.5 acres	2 pts	
Low:	0.25 acre to <1.0 acre	1 pt	
Virtually Absent:	<0.25 acre	0 pt	

6c. Coverage of Highly-Invasive Plant Species

Estimate the combined total coverage of any of the species listed below. Assign points based on a range from virtually absent (1 point) to extensive (negative 5 points).

- common reed (*Phragmites australis)*
- purple loosestrife (*Lythrum salicaria*)
- reed canary grass (*Phalaris arundinacea*)
- common buckthorn (*Rhamnus cathartica*)
- glossy buckthorn (*Rhamnus frangula*)
- narrow-leaved cattail (*Typha angustifolia*)
- hybrid cattail (*Typha x glauca*)
- marsh thistle (*Cirsium palustre*)
- multiflora rose (*Rosa multiflora*)
- non-native honeysuckle (*Lonicera spp.*)

Key to Aid in Identification of Invasive and Non-Invasive Cattail (Typha) Species

Native, non-invasive: Male and female portions of the flower spike are not separated (or only slightly separated) on most of the stems within the same local stand. Female flower spikes are light brown and are 0.8-1.2 inches thick at maturity (before expanding when dried). Most leaf blades are approximately 0.5 to1 inch wide at widest part. Typically, not tightly packed into an area (non-invasive). .....**broad-leaved cattail (*T. latifolia)***

Non-native, Invasive: Male and female portions of the flower spike are separated on most of the stems within the same local stand. Female flower spikes are dark brown and less than 0.8 inch thick at maturity (before expanding when dried). Most leaf blades are less than 0.5 inch wide at widest part. Typically, tightly packed within an area, crowding out other plant species (invasive). .....**narrow-leaved cattail (*T. angustifolia)***

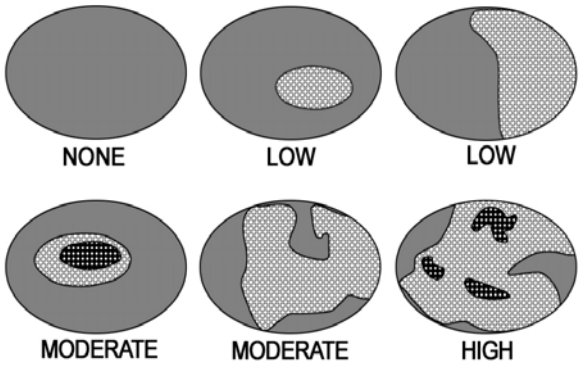
Non-native, Invasive: Hybridization may have occurred if most plants within the same local stand do not cleanly fit the characteristics of either pure species described above. The gap between the male and female portions of the flower spikes is highly variable, with many plants within the same local stand having no gap, and many having relatively wide gaps. Typically, extremely vigorous and often tightly packed within an area, crowding out other plant species (invasive).....**hybrid cattail (*T. x glauca)***

Estimate the total coverage. **Maximum 1 point**.			**Score**
Virtually Absent:	<1% aerial coverage of highly-invasive species	1 pt	1
Nearly Absent:	1% to <5% aerial coverage of highly-invasive species	0 pt	
Low:	5% to <25% aerial coverage of highly-invasive species	-1 pt	
Moderate:	25% to <75% aerial coverage of highly-invasive species	-3 pts	
Extensive:	≥75% aerial coverage of highly-invasive species	-5 pts	

6d. Horizontal (Plan View) Interspersion

Evaluate the Wetland from a "plan view," i.e., as if you are looking down upon it. The graphic shows hypothetical wetlands for estimating degree of interspersion.

Select only one option. **Maximum 5 points**.



		Score
Wetland has a high degree of interspersion	5 pts	3
Wetland has a moderate degree of interspersion	3 pts	
Wetland has a low degree of interspersion	1 pt	
Wetland has no interspersion	0 pt	

6e. Habitat Features

Determine the amount of each habitat feature that is present in the Wetland. **Maximum 3 points for each habitat feature.**

1. Hummocks/Tussocks/Tree Mounds, e.g., sedge/grass tussocks, decaying nursery logs (remnants of large logs), root tip-up mounds (uprooted trees), etc. Percent coverage is based on total area of all raised features (hummocks/tussocks/tree mounds) and includes the depressional matrix within any group of raised features.

				Score
Virtually Absent: 0 pt <5% of the area	Sparse: 1 pt 5% to 10% of the area	Moderate: 2 pts 11% to 50% of the area	Dense: 3 pts >50% of the area	2

2. Coarse Woody Debris (CWD). Per log, average width ≥6 inches; each at least 10 feet long. e.g., fallen trees and/or large branches, etc.

				Score
Virtually Absent: 0 pt < 1 per acre	Sparse: 1 pt 1 to 5 per acre	Moderate: 2 pts 6 to 10 per acre	Dense: 3 pts >10 per acre	3

3. Large Standing Trees, Living or Dead (≥12 inches DBH).

				Score
Virtually Absent: 0 pt < 1 per acre	Sparse: 1 pt 1 to 5 per acre	Moderate: 2 pts 6 to 10 per acre	Dense: 3 pts >10 per acre	3

4. Amphibian Breeding/Nursery Habitat, e.g., temporary pools with standing water of sufficient duration and depth to support frog and/or salamander reproduction. Permanent areas of vegetated standing water along the edges of ponds, lakes, and some streams also serve as amphibian habitat.

				Score
Virtually Absent: 0 pt < 5% of the area	Sparse: 1 pt 5% to 10% of the area	Moderate: 2 pts 11% to 50% of the area	Dense: 3 pts >50% of the area	2

20	**Metric 6 Total** add 6a – 6f **(20 points max.)**

Metric 7. Scenic, Recreational, and Cultural Value

Maximum 3 points.

Select all that apply. Maximum 1 point per submetric.		Score
7a. Scenic: The public can view the Wetland from a public road or public land OR the Wetland has significant scenic value (assign 1 point).	1 pt	0
7b. Recreational: The general public has access to the Wetland or the Wetland is assumed to be used for recreational activities (assign 1 point).	1 pt	0
7c. Cultural/Historical: The Wetland, or any part of the Wetland, has been recognized as having important cultural or historic value (assign 1 point).	1 pt.	0

0	**Metric 7 Total (3 points max.)**

MiRAM Summary

Narrative Rating

Question 1: U.S. Fish and Wildlife Service (USFWS) Critical Habitat	☐YES ☒NO
Question 2: Threatened or Endangered (T/E) Species Habitat	☐YES ☒NO
Question 3: Rare Wetland Natural Community Type	☒YES ☐NO
Question 4: Great Lakes Coastal Wetland	☐YES ☒NO

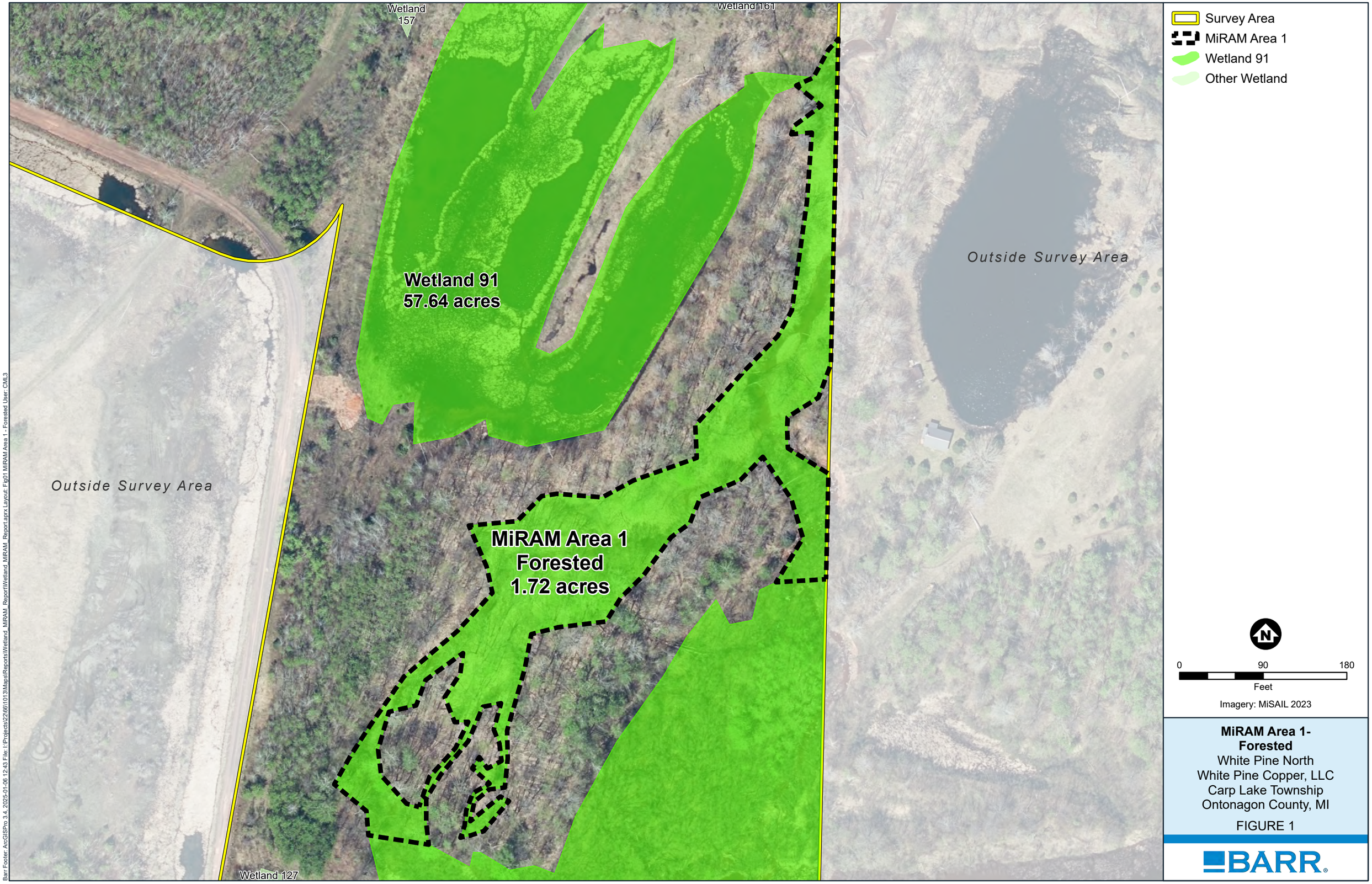
Quantitative Rating

	Score	Maximum
Metric 1: Wetland Size and Distribution	8	9
Metric 2: Upland Buffers and Intensity of Surrounding Land Use	12	12
Metric 3: Hydrology	20	26
Metric 4: Habitat Alteration and Habitat Structure Development	16	20
Metric 5: Special Situations	10	10
Metric 6: Vegetation, Interspersion, and Habitat Features	20	20
Metric 7: Scenic, Recreational, and Cultural Value	0	3
Seasonally Adjusted Score (add 10 pts if outside the growing season)	0	10

Grand Total
Add totals from all seven metrics

86	**100 Max.**

Scoring comments:



MiRAM Area 1-
Forested
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

FIGURE 1

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-06 12:43 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_MiRAM_Report\Wetland_MiRAM_Report.aprx Layout: Fig01 MiRAM Area 1 - Forested User: CML3

AREA 2 -Riverine

DNRE

MiRAM Version 2.1

Rating Form

July 23, 2010

MICHIGAN RAPID ASSESSMENT METHOD FOR WETLANDS (MIRAM)

Department of Natural Resources and Environment
Land and Water Management Division

Background Information	page 2
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Quantitative Rating	page 5
Rating Summary	page 13

The Michigan Rapid Assessment Method for Wetlands (MiRAM) is a tool to determine the "functional value" of a particular wetland and to assign a rating level to that wetland as compared to other wetlands. The goal of this rating system is to assess individual wetlands on an equal scale regardless of ecological type. MiRAM offers a relatively rapid assessment of wetland functions and values, but it is not intended to replace more detailed quantitative measures of ecosystem function, such as Indices of Biological Integrity (IBI), Floristic Quality Assessment (FQA), or other detailed ecological studies.

The initial step of MiRAM is the proper identification of the Wetland Evaluation Area (Wetland) using the MiRAM Boundary Guidelines in the *MiRAM User's Manual*. The MiRAM evaluation contains two rating systems: the **Narrative Rating,** and the **Quantitative Rating**. First, the Evaluator is required to complete the Narrative Rating, which relies on accurate identification of several types of wetlands with significant ecological values, which automatically rates the Wetland as having high functional value. If the Wetland is not identified as having high functional value by the Narrative Rating, the Evaluator must complete the Quantitative Rating. The Quantitative Rating is a series of metrics regarding the Wetland. The Quantitative Rating is designed to provide a numeric score that reflects the functional value of a Wetland, which includes a Wetland's ecological condition (integrity) and its potential to provide ecological and societal services (functions and values).

The MiRAM requires a knowledge and understanding of wetlands and is designed to be used by Michigan Department of Natural Resources and Environment (DNRE) staff and other wetland professionals. Although the MiRAM rating form has been designed to provide sufficient information for a trained Evaluator to properly complete, it is highly recommended that the Evaluator read and understand the *MiRAM User's Manual,* as it provides additional explanations and examples.

The MiRAM was designed to be used during times when adequate plant growth allows for proper identification of most plant species within the Wetland. Typically, this follows the growing season for a particular region. MiRAM evaluations conducted outside the growing season will receive an additional 10 points due to the inability to properly identify all wetland features during this time of year. MiRAM is not designed to be used in times of snow cover.

If the Wetland and/or buffer areas have been impacted (cutting, mowing, development, etc.) during the past five years, the DNRE may rate the Wetland as if those impacts have not occurred and will presume that the impacted areas were of the best/highest quality possible for that type of wetland.

It is not the intent of MiRAM to modify the existing regulatory process in Michigan. Instead, it is intended that the MiRAM will supplement the existing process by providing additional information. The numeric score obtained from the MiRAM is not, and should not be considered, an absolute number with intrinsic meaning, but should be considered in light of other available information. It should be noted that the MiRAM is an assessment of "functional value" and is different from the determination of whether a particular location *is* a wetland (i.e., jurisdictional wetland).

The most recent version of this document and the *MiRAM User's Manual* are posted at:

www.michigan.gov/wetlands

Background Information

Wetland

Proposed Project Site Name or DNRE File #: White Pine Copper LLC
Date of Evaluation: 7/30/2024
County: Ontonagon
Township: 51N
Town: White Pine
Range: 41W
Section: 27
Decimal Lat/Long: 46.78836932, -89.4952117

Evaluator

Name: Randall Phillips, Jessica Abraham
Address: 3033 Orchard Vista Dr SE, Suite 200
City: Grand Rapids State: MI Zip: 49546
Phone: 616-512-7042
Email: RPhillips@barr.com

Is a Wetland Delineation Report available?

[X] YES [ ] NO Date Completed: November, 2024

If "YES", completed by (name of person/firm/agency): Barr Engineering

Check (√) each box below when item is complete.

[X] **MiRAM Boundary**. See *MiRAM User's Manual* for more information

Size of the Wetland Evaluation Area: 1.9 acres

[X] **Location Map**. A county road map showing the location of the Wetland Evaluation Area, north arrow, map scale information, roads, landmarks, etc. *Attach* a map to the end of this document.

[X] **Color Photographs**. Photos should show the wetland vegetation components, habitat/community types, hydrologic features, and any other pertinent site features. *Attach* to the end of this document.

[X] **Landscape Sketch or Aerial Photograph**.

1. Clearly label the Proposed Project Site and Wetland Evaluation Area. Indicate the location of the MiRAM Boundary.
2. Label and indicate the extent of all general wetland community types identified within the Wetland Evaluation Area. Examples include: marsh, wet meadow, hardwood swamp, conifer swamp, shrub swamp, etc. Some wetland communities may be further classified as natural communities. Natural communities are predominantly structured by natural processes rather than modern anthropogenic disturbances. Examples include: bog, prairie fen, muskeg, wet prairie, southern wet meadow, etc.
3. Identify and label all hydrologic features, such as: streams, 100-year floodplains, ponds, vernal pools, and small patches of open water within a marsh or swamp.
4. Identify and label surrounding upland features.
5. Include north arrow and map scale information.
6. *Attach* the landscape sketch or aerial photo to the end of this document.

Comments: List any important site features or apparent disturbance events that have occurred within or near the Wetland Evaluation Area.

For location map and MiRAM boundary please see Appendix C, Figure 2 located at the end of this form.

For color photographs, please see Appendix D, page137.

This MiRAM represents the riparian corridor. Previous disturbance has been from the White Pine Tailings Facility, and is continually impacted from beaver activity upstream.

Field Datasheet

List plant species observed within the Wetland. *Attach* additional sheets as necessary.
Nomenclature will follow Voss (1972,1985,1996) or Gleason and Cronquist (1991).

Forest Overstory Stratum (woody plants 3 inches or more DBH, regardless of height)

Alnus incana	
Fraxinus nigra	
Populus tremuloides	

Shrub/Sapling Stratum (woody plants less than 3 inches DBH and greater than 3.28 feet tall)

Alnus incana	
Acer negundo	
Salix lucida	
Salix discolor	
Salix bebbiana	

Herbaceous Stratum (non-woody plants, regardless of size, and woody plants less than 3.28 feet tall)

Alnus incana	*Elymus virginicus*
Circaea alpina	*Impatiens capensis*
Clematis virginiana	*Calamagrostis canadensis*
Solidago gigantea	*Rubus pubescens*
Rubus idaeus	*Lysimachia ciliata*
Onoclea sensibilis	*Glyceria grandis*
Thalictrum dasycarpum	*Carex gynandra*
Scutellaria galericulata	*Carex retrorsa*

Checklist of features and conditions to observe during the field inspection:

- [X] Hydrologic Condition and Interactions
- [X] Hydrologic Alterations
- [X] Substrate/Soil Disturbances
- [X] Habitat Structure Development
- [X] Habitat Alterations
- [X] Habitat/Wetland Condition
- [X] Amphibian Breeding Pools
- [X] Vegetation Diversity
- [X] Vegetation Condition
- [X] Amount of Open Water
- [X] Percent of Invasive/Non-native Species
- [X] Community Interspersion
- [X] Vertical/Horizontal Structure
- [X] S1, S2, or S3 Natural Community

Approximately how much of the Wetland Evaluation Area was reviewed during the field inspection? 95 %

Has vegetation within the Wetland Evaluation Area been altered and/or buffer areas impacted within the past 5 years? [X] YES [ ] NO

Please Note: The Wetland Evaluation Area (encompassed by the MiRAM Boundary) is simply referred to as the "Wetland" throughout the remainder of this document.

Narrative Rating

Completion of the Narrative Rating allows the Evaluator to quickly identify whether the Wetland is one of several wetland types that typically have exceptional ecological value. If any of the metrics are answered affirmatively, the Wetland has *exceptional ecological value and is automatically rated as having high functional value* and completion of the Quantitative Rating is not necessary. If none of the metrics are answered affirmatively, proceed to the Quantitative Rating.

Answer all of the following metrics.

1. U.S. Fish and Wildlife Service (USFWS) Critical Habitat.

Is any part of the Wetland located within an area designated as Critical Habitat and does the Wetland *actually* contain habitat suitable for either species listed below?

Piping Plover (*Charadrius melodus*) Critical Habitat Units are designated only within the following counties: Alger, Benzie, Charlevoix, Cheboygan, Chippewa, Emmet, Iosco, Leelanau, Luce, Mackinac, Mason, Muskegon, Presque Isle, and Schoolcraft. See URL below for Unit locations.
(The link provided was broken and has been removed)

Hines's Emerald Dragonfly (*Somatochlora Hineana*) Critical Habitat Units are designated only within the following counties: Alpena, Mackinac, and Presque Isle. See URL below for Unit locations.
(The link provided was broken and has been removed)

☐ **YES** ☒ **NO**

If "**yes"**, the Wetland has ***high functional value***.

2. Threatened or Endangered (T/E) Species.

Do federal/state-listed T/E plant or animal species occur within the Wetland? Complete the following questions to answer this metric.

a. ☐YES ☒NO Has an approved T/E survey been completed? If "Yes," go to question b. If "No," go to question c.

b. ☐YES ☐NO Does the T/E survey indicate T/E species present within the Wetland? If "Yes," answer "Yes" to this metric. If "No," answer "No" to this metric.

c. ☐YES ☒NO Has the Evaluator (or others known to the Evaluator) observed any T/E species within the Wetland? If "Yes," answer "Yes" to this metric. If "No," go to question d.

d. ☐YES ☒NO Does the DNRE Endangered Species Assessment (ESA) web site interactive map, **mcgi.state.mi.us/esa,** indicate that there is a potential for unique natural features at or near your site of interest"?" If "No," answer "No" to this metric. If "Yes," request a DNRE formal review by submitting the online form. Type "MiRAM" within the "Project Information" field on the form. Go to question e.

e. ☐YES ☐NO Did the DNRE review confirm potential T/E occurrence in the Wetland? If "Yes," answer "Yes" to this metric. If "No," answer "No" to this metric. **The Evaluator may proceed with the Narrative Rating and Quantitative Rating while waiting for a formal response from DNRE**.

☐ **YES** ☒ **NO**

If "**yes"**, the Wetland has ***high functional value***.

3. Rare Wetland Natural Community Type.

Are more than 5 acres *or* more than 25% of the Wetland comprised of a Rare Wetland Natural Community Type*? Check (√) all Rare Wetland Natural Community Types

☐ **S1 or S2 Natural Community Type.**
Has the Wetland been identified by the Evaluator — *or other persons* — as being an S1 or S2 natural community type as defined by the Michigan Natural Features Inventory (MNFI)? See the *MiRAM User's Manual* for more information.

☐ **Southern Bog**, defined as any bog occurring below the northern limit of Michigan's Floristic Tension Zone (see figure for approximate location).

☐ **Old-Growth/Mature Forested Wetland.** Lacks evidence of any significant harvesting. Dominated by large, overstory trees (mean overstory DBH ≥20 inches, including at least two trees/acre having DBH ≥28 inches) and the canopy is multi-aged and multi-layered. Aggregations of canopy trees are interspersed with canopy gaps and large snags. Large nursery logs and tip-up mounds litter the forest floor. Does the forested Wetland have all/most of these characteristics?

*If the Rare Wetland Community Type is less than 5 acres *and* less than 25% of the Wetland, the rare community should be split off and evaluated separately.

☐ **YES** ☒ **NO**

If "**yes"**, the Wetland has ***high functional value***.



4. Great Lakes Coastal Wetland.

Is any part of the Wetland within 1,000 feet of the ordinary high water mark of any of the Great Lakes, including Lake St. Clair?

☐ **YES** ☒ **NO**

If "**yes"**, the Wetland has ***high functional value***.

Quantitative Rating

Completion of the Quantitative Rating assists the Evaluator in recognizing the functional value of the Wetland. Complete all metrics by completing all sections, circling the correct point value(s), and assigning a score.

Metric 1. Wetland Size and Distribution

Maximum 9 points.

1a. Wetland Size Estimate the size of the Wetland (i.e., Wetland Evaluation Area). Select a size class. **Maximum 6 points.**			**Score**
50 acres	Select this option if the wetland's actual size ≥ 50 acres.	6 pts	6
25 acres to <50 acres		5 pts	
10 acres to <25 acres		4 pts	
3 acres to <10 acres		3 pts	
¼ acre to <3 acres		2 pts	
less than ¼ acre		0 pt	

1b. Wetland Scarcity Utilize the USFWS National Wetlands Inventory (NWI) maps to estimate percentage of wetland area remaining within a 2-mile radius from the Wetland's center. For the purpose of this submetric, areas of open water within the Great Lakes, inland lakes, streams, etc., should be excluded from the wetland percentage. Select the most appropriate percentage category. **Maximum 3 points.**		**Score**
0 to 20% of surrounding 2-mile radius is wetland	3 pts	2
>20 to 80% of surrounding 2-mile radius is wetland	2 pts	
>80% of surrounding 2-mile radius is wetland	1 pt	

8	**Metric 1 Total** add 1a & 1b **(9 points max.)**

Metric 2. Upland Buffers and Intensity of Surrounding Land Use

Maximum 12 points.

2a. Average Buffer Width around the Wetland's Perimeter

Step 1: Using the most recent aerial photograph available, sketch a 150-foot wide "buffer zone" around the Wetland.
Step 2: Estimate the buffer widths from the Wetland's edge to any non-buffer areas (up to 150 feet).
Step 3: Average the buffer widths along the Wetland's perimeter.
Step 4: Select the buffer width that is most appropriate. **Maximum 6 points**.

Buffers Include:

- shrubland, young forest, natural grassland, prairie
- abandoned row crop field (vegetated & naturalizing)
- hay field (non-row crop), lightly grazed pasture
- lightly managed forest (selectively logged)
- designated wildlife area, lightly managed parkland
- other wetland, lake, river

Non-Buffers Include:

- lawns, golf courses, manicured parkland
- residential, commercial, industrial
- roadways (including shoulders), parking lots
- row crop field
- conservation tillage, heavily grazed pasture
- clear-cutting, mining, construction activity

			Score
Wide Buffer Width:	≥150 feet around the perimeter	6 pts	6
Medium Buffer Width:	75 to <150 feet around the perimeter	4 pts	
Narrow Buffer Width:	25 to <75 feet around the perimeter	2 pt	
Very Narrow Buffer Width:	0 (no buffer) to <25 feet around the perimeter	0 pt	

2b. Intensity of Surrounding Land Use within 1,000 feet of the Wetland

Step 1: Using the most recent aerial photograph available, sketch a 1,000-foot wide "land use zone" around the Wetland.

Step 2: Estimate percent coverages comprised by each of the four types of land use listed below.

Step 3: If any land use type comprises more than 25% of the total land use, it is considered to be a "dominant" land use type for the purposes of MiRAM and will receive points. Sum the available points from all dominant land use types and then average the score. Round to the nearest 0.5 increment. **Maximum 6 points**.

Type of Land Use	Examples within each Type of Land Use			Score
Very Low Intensity:	• maturing forest • natural grassland, prairie	• designated wildlife area • other wetland, lake, river	6 pts	6
Low Intensity:	• shrubland/young forest • recent selective logging • hay field (non-row crop)	• lightly managed parkland • old field, lightly grazed pasture • one-lane road/two track	4 pts	
Moderately High Intensity:	• residential & lawns • manicured parkland • golf course	• conservation tillage • recent clear-cut (<10 years) • two-lane road	2 pts	
High Intensity:	• commercial, industrial • high-density residential • heavily grazed pasture • row crop field	• multi-lane paved roadway • construction activity • parking lot • mining	1 pt	

12	**Metric 2 Total** add 2a & 2b **(12 points max.)**

Metric 3. Hydrology

Limited to 26 points.

3a. Sources of Water: Select all that apply. **Maximum 8 points**.		Score
Precipitation: Directly and/or as runoff from upland areas.	1 pt	1
Groundwater: Seeps or evidence, such as significant amounts of skunk cabbage (*Symplocarpus foetidus*) or other fen-adapted species.	2 pts	2
Seasonal/Intermittent Surface Water: Seasonal inundation from a lake, pond, or stream. (A Wetland can only receive points for this source of water or the next, not both.)	2 pts	0
Perennial Surface Water: Perennial inundation from a lake, stream or pond.	5 pts	5

3b. Connectivity: Select all that apply. **Maximum 8 points**.		Score
100-Year Floodplain. As defined in the Floodplain Authority under Part 31 of the NREPA.	2 pts	2
Between a Stream/Lake/Pond and Human Land Use. The Wetland is located between a surface waterbody and any human land use, such that run-off from the adjacent land use could flow through the Wetland before it discharges into the surface waterbody.	2 pts	0
Wetland/Upland Complex. The Wetland is part of a large scale (10+ acres) non-linear complex of wetlands with small areas of unmanicured/undeveloped vegetated uplands that do not restrict movement of organisms between the wetland areas.	2 pts	0
Riparian Corridor. The Wetland is part of a linear *riparian* corridor that provides organism movement along a stream/river. Typically, these corridors should exceed 100 feet in width and extend at least one half mile.	2 pts	2

3c. Duration of Inundation/Saturation Select the option(s) from below that best describe(s) the dominant hydrologic characteristic of the Wetland. For the purposes of this submetric, "dominant" is defined as comprising at least 25% of the Wetland's area. If the Wetland contains several areas that have distinctly different hydrologic characteristics, select all that apply and average the points. Round to the nearest 0.5 increment. **Maximum 4 points.**		**Score**
Permanently Inundated	4 pts	4
Permanently Saturated to Regularly Inundated	3 pts	
Regularly Saturated to Seasonally Inundated	2 pts	
Seasonally Saturated in the Upper 12 Inches of Soil	1 pt	

3d. Alterations to Natural Hydrologic Regime

This submetric evaluates the intactness of the natural hydrologic regime of the Wetland.
Check (√) all forms of past or ongoing hydrologic alteration(s) that are potentially influencing the Wetland.

- [x] ditch(es) in or near the wetland
- [ ] tile(s) in or near the wetland
- [ ] dike(s) in or near the wetland
- [ ] weir(s) in or near the wetland
- [ ] stormwater inputs (addition of water)
- [ ] stream channelization
- [ ] point source discharge(s) (non-stormwater)
- [x] filling/grading activities in or near the wetland
- [x] road bed(s)/RR grades(s) in or near the wetland
- [ ] dredging activities in or near the wetland
- [ ] other (specify)
- [ ] other (specify)

Evaluate whether an alteration is significant or minor in relation to the Wetland's overall area and hydrologic regime. For this submetric, "significant" is defined as affecting approximately 10% or greater of the Wetland. "Minor" is defined as affecting less than approximately 10% of the Wetland. A hydrologic alteration may also impact the Substrate/Soil (submetric 4a) and/or Habitat (submetric 4b).

Select an option below that best describes the extent of (or lack of) alteration(s) to the Wetland's natural hydrologic regime. If uncertain, select adjoining options and average the available points. Round to the nearest 0.5 increment. If the Wetland's natural hydrologic regime has been significantly altered, it shall receive no more than 6 points for this submetric. **Maximum 8 points.**			**Score**
No Hydrologic Alterations Apparent:	There has been no significant alteration(s) to the Wetland's natural hydrologic regime, and/or ongoing minor alteration(s) is/are rare.	8 pts	6
Recovered:	Significant hydrologic alteration(s) occurred more than 20 years prior to the assessment, and/or ongoing minor hydrologic alteration(s) is/are only occasional.	6 pts	
Recovering:	A single significant hydrologic alteration occurred within 20 years prior to the assessment, and/or ongoing minor hydrologic alteration(s) is/are frequent.	4 pts	
Recent or No Recovery:	Multiple significant hydrologic alterations have occurred in the 20 years prior to the assessment, and/or significant alteration(s) is/are ongoing.	1 pt	

22	**Metric 3 Total** add 3a – 3d **(26 points max.)**

Metric 4. Habitat Alteration and Habitat Structure Development
Maximum 20 Points.

4a. Substrate/Soil Disturbance

This submetric evaluates the intactness or lack of disturbance to the Wetland's substrate and soil. Check (√) all possible forms of past or ongoing substrate/soil disturbance that are observed within the Wetland.

- ☒ human-induced erosion or exposure
- ☐ human-induced sedimentation or burial
- ☐ filling
- ☐ grading
- ☒ dredging
- ☐ plowing, disking
- ☐ intensive grazing (hooves)
- ☐ off-road vehicle use
- ☒ construction vehicle use
- ☐ other (specify)

Evaluate whether a disturbance is significant or minor in relation to the Wetland's overall area. For this submetric, "significant" is defined as affecting approximately 10% or greater of the Wetland. "Minor" is defined as affecting less than approximately 10% of the Wetland. A substrate disturbance may also be an alteration of the natural hydrologic regime (Submetric 3d) and/or an alteration of habitat (Submetric 4b).

Select an option below that best describes the extent of (or lack of) disturbances to the Wetland's substrate. If uncertain, select adjoining options and average the points. Round to the nearest 0.5 increment. If the Wetland's substrate has been significantly altered, it should receive no more than 3 points. **Maximum 4 points.**			**Score**
No Substrate Disturbance Apparent:	There has been no significant disturbance to the Wetland's substrate and/or ongoing minor disturbance events are rare.	4 pts	3
Recovered:	Significant substrate disturbance occurred more than 20 years prior to the assessment, and/or ongoing minor substrate disturbance events are only occasional (e.g., light sedimentation from a nearby dirt road).	3 pts	
Recovering:	A single significant substrate disturbance event occurred within 20 years prior to the assessment, and/or ongoing minor substrate disturbance events are frequent.	2 pts	
Recent or No Recovery:	Multiple significant substrate disturbance events have occurred in the 20 years prior to the assessment, and/or significant disturbance is ongoing.	1 pt	

4b. Habitat Alteration

This submetric evaluates the intactness of the natural habitat within the Wetland. A "significant" alteration is defined as affecting 10% or greater of the Wetland. "Minor" alternation affects less than 10% of the Wetland. Check (√) all possible forms of past or ongoing habitat alteration(s) that are observed within the Wetland.

- ☐ barriers such as road bed(s)/RR grades(s)
- ☐ selective cutting
- ☐ clearcutting
- ☐ mowing or shrub removal
- ☐ coarse woody debris (CWD) removal
- ☐ intensive grazing
- ☐ nutrient enrichment, e.g., nuisance algae
- ☐ herbicide/chemical treatment
- ☒ sedimentation
- ☐ dredging
- ☐ filling/grading
- ☐ plowing/disking/farming
- ☐ other (specify)

Utilize aerial photography and field evidence to determine if any habitat alterations occurred prior to approximately 20 years ago. Determine the approximate pre-disturbance extent of vertical and horizontal habitat attributes, such as large, woody debris, plant species diversity, hummocks, patchiness, niche diversity, etc. Disregard changes that can be attributed to wetland community succession or other natural processes. A habitat alteration may also be an alteration of the natural hydrologic regime (Submetric 3d) and/or a substrate disturbance (Submetric 4a).

Select an option below that best describes the extent of (or lack of) alteration(s) to the Wetland's habitat. If unclear, select adjoining options and average the available points. Round to the nearest 0.5 increment. **Maximum 9 points**.			**Score**
No Habitat Alterations Apparent:	There has been no significant alteration to the Wetland's natural habitat, and/or ongoing minor alteration(s) is/are rare.	9 pts	6
Recovered:	Significant habitat alteration(s) occurred more than 20 years prior to the assessment, and/or ongoing minor habitat alteration(s) is/are only occasional.	6 pts	
Recovering:	A single, significant habitat alteration occurred within 20 years prior to the assessment, and/or ongoing minor habitat alteration(s) is/are frequent.	3 pts	
Recent or No Recovery:	Multiple significant habitat alterations have occurred in the 20 years prior to the assessment, and/or significant alteration(s) is/are ongoing.	1 pt	

4c. Habitat Structure Development

Determine an overall qualitative rating of how well developed the Wetland is in comparison to the best of its type. For this submetric, a wetland's type is defined as any ecologically and/or hydrogeomorphically similar wetland habitat typical of the region. Well-developed communities, regardless of successional state, often exhibit many of the following habitat characteristics:

- Quality vertical habitat, such as hummocks, organic debris, and diverse plant height ranges.
- Quality horizontal habitat, such as varying vegetation density and patchiness, moderate ratios of open space to cover, plant species diversity, and a wide range of plant ages.
- Other ecological attributes, such as a diverse assortment of the following: breeding areas, rearing areas, feeding areas, niche space, etc.

Select an option below that best describes the Wetland's habitat structure development. If unclear, select adjoining options and average the points. Round to the nearest 0.5 increment.
Maximum 7 points.

			Score
Excellent:	Wetland appears to represent the best of its type.	7 pts	5
Good:	Wetland appears to be a good example of its type but because of past or present disturbance, or other reasons, is not excellent.	5 pts	
Fair:	Wetland appears to be a moderately good example of its type but because of past or present disturbance, or other reasons, is not good.	3 pts	
Poor:	Wetland is a poor example of its type because of past or present disturbance, or other reasons.	1 pt	

14 **Metric 4 Total** add 4a – 4c **(20 points max.)**

Metric 5. Special Situations

Refer to the Narrative Rating for definitions and the *User's Manual* for guidance, **Limited to 10 points**

5a. High Ecological Value. See Narrative Rating for definitions of each.
10 points for each that apply.

☐ 1. Contains USFWS-designated Critical Habitat
☐ 2. Federal or State-listed T/E Plant or Animal Species
☐ 3. S1, S2, or S3 Natural Community Type (at least 5 acres or 25% of the Wetland)
☐ 4. Southern Bog (at least 5 acres or 25% of the Wetland)
☐ 5. Old-Growth/Mature Forested Wetland (at least 5 acres or 25% of the Wetland)
☐ 6. Great Lakes Coastal Wetland

Score: 0

5b. Forested Wetland. **5 points**.
Exhibits combined canopy cover from any group(s) of trees. Stem DBH must be at least 3 inches to qualify as a tree. Total area must comprise at least 5 acres or 25% of the Wetland. Does not qualify if most of the trees are ungrouped and widely scattered (e.g., a savanna), or located only thinly along the Wetland's margin.

Score: 0

5c. Urban/Suburban Wetland. **5 points**.
Greater than 50% of the surrounding landscape (1,000 foot radius) is comprised of low-permeability surfaces, such as roads, lawns, parking lots, buildings, sidewalks, etc.

Score: 0

5d. Low-Quality Wetland. Negative 10 points.
The Wetland is less than 1 acre and non-contiguous as defined in Part 303 and either: *1)* a stormwater pond that was excavated from upland and constructed for stormwater treatment in conjunction with a development project *or 2)* more than 75% covered by highly-invasive vegetation. See Submetric 6c for a list of highly-invasive species.

Score: 0

0 **Metric 5 Total** **(10 points max.)** ***Can be negative***

Metric 6. Vegetation, Interspersion, and Habitat Features
Maximum 20 points.

6a. Wetland Vegetation Components

Determine the Qualitative Cover Score of each Vegetation Component (Herbaceous, Shrub/Sapling, Forest Overstory). Using the Qualitative Cover Scoring Table, start on the left and proceed to the right, until a point value is obtained for each Vegetation Component. Vegetation Components may exist in overlapping layers, e.g., significant areas of shrub/sapling and/or herbaceous may exist under a forest canopy. Only groups of trees, clusters of shrubs, or dense patches of herbaceous stems may count toward area coverage. Do not include widely-scattered trees, lone shrub/saplings, or sparse patches of herbaceous stems. See Submetric 6c to aid in the proper identification of broad-leaved cattail (*Typha latifolia*), a non-invasive, native species.

Qualitative Cover Scoring Table

Vegetation Component ► is >¼ acre	>25% of Wetland area ►	Native species dominate the coverage ►	High native diversity ►	3 pts
			Moderate to low native diversity ►	2 pts
		Invasive or non-native species dominate the coverage ►	Moderate to high native diversity ►	2 pts
			Low native diversity ►	1 pt
	<25% of Wetland area ►	Native species dominate the coverage ►	Moderate to high native diversity ►	2 pts
			Low native diversity ►	1 pt
		Invasive or non-native species dominate the coverage ►	Moderate native diversity ►	1 pt
			Low native diversity ►	0 pt
Vegetation Component is <¼ acre ►	>25% of Wetland area ►	Native species dominate the coverage ►	Moderate to high native diversity ►	2 pts
			Low native diversity ►	1 pt
		Invasive or non-native species dominate the coverage ►		0 pt
	<25% of Wetland area ►			0 pt

	Score
Forest Overstory Component, qualitative cover score derived from table **maximum 3 points**. Forested wetland areas are characterized by a group of trees at least 3 inches in DBH, regardless of height. The Wetland does not have a forested component if the trees are widely scattered (e.g., a savanna), located only thinly along the Wetland's margin, or if it is clear that most of the trees are actually located on upland around the perimeter of the Wetland.	2
Shrub/Sapling Component, qualitative cover score derived from table **maximum 3 points**. Shrub/Sapling wetland areas are dominated by clusters of woody plants less than 3 inches in DBH and greater than 3.28 feet in height. Species include true shrubs, young trees, and stunted trees. Shrub wetlands may represent a successional stage leading to a forested wetland or they may be relatively stable plant communities.	2
Herbaceous Component, qualitative cover score derived from table **maximum 3 points**. Herbaceous wetlands are areas dominated by dense patches of erect, non-woody plants, regardless of size, and woody plants less than 3.28 feet in height. The MiRAM includes the robust-stemmed yellow pond lily (*Nuphar advena*) and American lotus (*Nelumbo lutea*) within the herbaceous component because of their tendency to hold their stems and leaves well above the water. All floating-leaf species (including *Nymphaea* spp.) are excluded from the herbaceous component, and are instead included within the open water component (see Submetric 6b).	3

6b. Open Water Component

Open water is an unobstructed, inundated area of water containing few or no rooted emergent or woody plant species. It can occur as a distinct zone along a river or lake or as a combination of small ponds, streams, or pools (e.g., within a marsh or swamp) and as an "understory" below a forest canopy (e.g., a forested vernal pool).

This Habitat Component includes combined acreage from any of the following areas:

- **Small ponds, streams, and pools**.
- **Seasonal standing water areas** (e.g., mudflats and dried-down vernal pools) that were inundated long enough during the growing season to support aquatic life.
- **Aquatic bed areas**, also known as submergent marsh or submerged aquatic vegetation (SAV). Aquatic bed is dominated by plants that grow at or below the surface of the water for most of the growing season in most years. The MiRAM includes aquatic bed within the definition of open water, due to the potential difficulty in differentiating the two entities. For the purposes of the MiRAM, all floating-leaf aquatic taxa, such as water lilies (*Nymphaea* spp.), are included in the definition of aquatic bed and, therefore, are also included in the definition of open water.
- **100-foot wide strip of open water along a lake or river** (see Boundary Guidelines in the *User's Manual*). When the Wetland is adjacent to a lake or large river, calculate the acreage of the 100-foot wide open water strip that is included within the Wetland (see MiRAM Boundary Determination Guidelines). Simply divide the linear feet of shoreline length by 400. For example, if the vegetated portion of the wetland interfaces with 200 linear feet of a lake, then the extent of the lake's open water included within the Wetland would be calculated as: 200/400 = 0.5 acre.
- **Shallow pools free of dense shrub canopy** (e.g., open area within an inundated shrub swamp).
- **Shallow pools free of densely-packed herbaceous vegetation** (e.g., open area within a marsh or bog).

Estimate the total open water coverage. **Maximum 3 points**.			**Score**
High:	2.5 acres or more	3 pts	3
Moderate:	1.0 acre to <2.5 acres	2 pts	
Low:	0.25 acre to <1.0 acre	1 pt	
Virtually Absent:	<0.25 acre	0 pt	

6c. Coverage of Highly-Invasive Plant Species

Estimate the combined total coverage of any of the species listed below. Assign points based on a range from virtually absent (1 point) to extensive (negative 5 points).

- common reed (*Phragmites australis)*
- purple loosestrife (*Lythrum salicaria*)
- reed canary grass (*Phalaris arundinacea*)
- common buckthorn (*Rhamnus cathartica*)
- glossy buckthorn (*Rhamnus frangula*)
- narrow-leaved cattail (*Typha angustifolia*)
- hybrid cattail (*Typha x glauca*)
- marsh thistle (*Cirsium palustre*)
- multiflora rose (*Rosa multiflora*)
- non-native honeysuckle (*Lonicera spp.*)

Key to Aid in Identification of Invasive and Non-Invasive Cattail (Typha) Species

Native, non-invasive: Male and female portions of the flower spike are not separated (or only slightly separated) on most of the stems within the same local stand. Female flower spikes are light brown and are 0.8-1.2 inches thick at maturity (before expanding when dried). Most leaf blades are approximately 0.5 to1 inch wide at widest part. Typically, not tightly packed into an area (non-invasive). .....**broad-leaved cattail (*T. latifolia)***

Non-native, Invasive: Male and female portions of the flower spike are separated on most of the stems within the same local stand. Female flower spikes are dark brown and less than 0.8 inch thick at maturity (before expanding when dried). Most leaf blades are less than 0.5 inch wide at widest part. Typically, tightly packed within an area, crowding out other plant species (invasive). .....**narrow-leaved cattail (*T. angustifolia)***

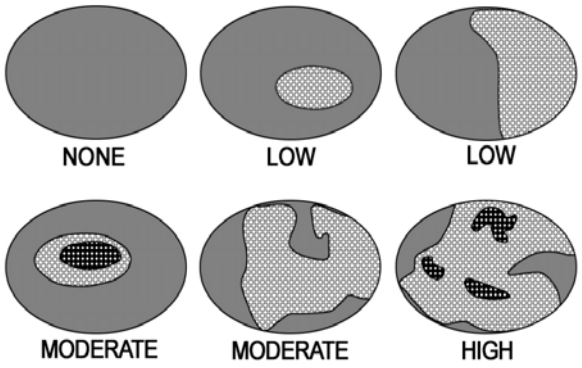
Non-native, Invasive: Hybridization may have occurred if most plants within the same local stand do not cleanly fit the characteristics of either pure species described above. The gap between the male and female portions of the flower spikes is highly variable, with many plants within the same local stand having no gap, and many having relatively wide gaps. Typically, extremely vigorous and often tightly packed within an area, crowding out other plant species (invasive).....**hybrid cattail (*T. x glauca)***

Estimate the total coverage. **Maximum 1 point**.			**Score**
Virtually Absent:	<1% aerial coverage of highly-invasive species	1 pt	1
Nearly Absent:	1% to <5% aerial coverage of highly-invasive species	0 pt	
Low:	5% to <25% aerial coverage of highly-invasive species	-1 pt	
Moderate:	25% to <75% aerial coverage of highly-invasive species	-3 pts	
Extensive:	≥75% aerial coverage of highly-invasive species	-5 pts	

6d. Horizontal (Plan View) Interspersion

Evaluate the Wetland from a "plan view," i.e., as if you are looking down upon it. The graphic shows hypothetical wetlands for estimating degree of interspersion.

Select only one option.
Maximum 5 points.



		Score
Wetland has a high degree of interspersion	5 pts	3
Wetland has a moderate degree of interspersion	3 pts	
Wetland has a low degree of interspersion	1 pt	
Wetland has no interspersion	0 pt	

6e. Habitat Features

Determine the amount of each habitat feature that is present in the Wetland. **Maximum 3 points for each habitat feature.**

1. Hummocks/Tussocks/Tree Mounds, e.g., sedge/grass tussocks, decaying nursery logs (remnants of large logs), root tip-up mounds (uprooted trees), etc. Percent coverage is based on total area of all raised features (hummocks/tussocks/tree mounds) and includes the depressional matrix within any group of raised features.

				Score
Virtually Absent: 0 pt <5% of the area	Sparse: 1 pt 5% to 10% of the area	Moderate: 2 pts 11% to 50% of the area	Dense: 3 pts >50% of the area	2

2. Coarse Woody Debris (CWD). Per log, average width ≥6 inches; each at least 10 feet long. e.g., fallen trees and/or large branches, etc.

				Score
Virtually Absent: 0 pt < 1 per acre	Sparse: 1 pt 1 to 5 per acre	Moderate: 2 pts 6 to 10 per acre	Dense: 3 pts >10 per acre	2

3. Large Standing Trees, Living or Dead (≥12 inches DBH).

				Score
Virtually Absent: 0 pt < 1 per acre	Sparse: 1 pt 1 to 5 per acre	Moderate: 2 pts 6 to 10 per acre	Dense: 3 pts >10 per acre	1

4. Amphibian Breeding/Nursery Habitat, e.g., temporary pools with standing water of sufficient duration and depth to support frog and/or salamander reproduction. Permanent areas of vegetated standing water along the edges of ponds, lakes, and some streams also serve as amphibian habitat.

				Score
Virtually Absent: 0 pt < 5% of the area	Sparse: 1 pt 5% to 10% of the area	Moderate: 2 pts 11% to 50% of the area	Dense: 3 pts >50% of the area	3

20	**Metric 6 Total** add 6a – 6f **(20 points max.)**

Metric 7. Scenic, Recreational, and Cultural Value

Maximum 3 points.

Select all that apply. Maximum 1 point per submetric.		Score
7a. Scenic: The public can view the Wetland from a public road or public land OR the Wetland has significant scenic value (assign 1 point).	1 pt	0
7b. Recreational: The general public has access to the Wetland or the Wetland is assumed to be used for recreational activities (assign 1 point).	1 pt	0
7c. Cultural/Historical: The Wetland, or any part of the Wetland, has been recognized as having important cultural or historic value (assign 1 point).	1 pt.	0

0	**Metric 7 Total (3 points max.)**

MiRAM Summary

Narrative Rating

Question 1: U.S. Fish and Wildlife Service (USFWS) Critical Habitat	☐YES ☒NO
Question 2: Threatened or Endangered (T/E) Species Habitat	☐YES ☒NO
Question 3: Rare Wetland Natural Community Type	☐YES ☒NO
Question 4: Great Lakes Coastal Wetland	☐YES ☒NO

Quantitative Rating

	Score	Maximum
Metric 1: Wetland Size and Distribution	8	9
Metric 2: Upland Buffers and Intensity of Surrounding Land Use	12	12
Metric 3: Hydrology	22	26
Metric 4: Habitat Alteration and Habitat Structure Development	14	20
Metric 5: Special Situations	0	10
Metric 6: Vegetation, Interspersion, and Habitat Features	20	20
Metric 7: Scenic, Recreational, and Cultural Value	0	3
Seasonally Adjusted Score (add 10 pts if outside the growing season)	0	10

Grand Total
Add totals from all seven metrics

76	**100 Max.**

Scoring comments:



Survey Area
MiRAM Area 2
Wetland 91
Other Wetland

N

0 70 140
Feet

Imagery: MiSAIL 2023

MiRAM Area 2-
Riverine
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

FIGURE 2

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-06 12:43 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_MiRAM_Report\Wetland_MiRAM_Report.aprx Layout: Fig02 MiRAM Area 2 - Riverine User: CML3

AREA 3 - Beaver Impoundment

DNRE

MiRAM Version 2.1

Rating Form

July 23, 2010

MICHIGAN RAPID ASSESSMENT METHOD FOR WETLANDS (MIRAM)

Department of Natural Resources and Environment
Land and Water Management Division

Background Information	page 2
Field Datasheet	page 3
Narrative Rating	page 4
Quantitative Rating	page 5
Rating Summary	page 13

The Michigan Rapid Assessment Method for Wetlands (MiRAM) is a tool to determine the "functional value" of a particular wetland and to assign a rating level to that wetland as compared to other wetlands. The goal of this rating system is to assess individual wetlands on an equal scale regardless of ecological type. MiRAM offers a relatively rapid assessment of wetland functions and values, but it is not intended to replace more detailed quantitative measures of ecosystem function, such as Indices of Biological Integrity (IBI), Floristic Quality Assessment (FQA), or other detailed ecological studies.

The initial step of MiRAM is the proper identification of the Wetland Evaluation Area (Wetland) using the MiRAM Boundary Guidelines in the *MiRAM User's Manual*. The MiRAM evaluation contains two rating systems: the **Narrative Rating,** and the **Quantitative Rating**. First, the Evaluator is required to complete the Narrative Rating, which relies on accurate identification of several types of wetlands with significant ecological values, which automatically rates the Wetland as having high functional value. If the Wetland is not identified as having high functional value by the Narrative Rating, the Evaluator must complete the Quantitative Rating. The Quantitative Rating is a series of metrics regarding the Wetland. The Quantitative Rating is designed to provide a numeric score that reflects the functional value of a Wetland, which includes a Wetland's ecological condition (integrity) and its potential to provide ecological and societal services (functions and values).

The MiRAM requires a knowledge and understanding of wetlands and is designed to be used by Michigan Department of Natural Resources and Environment (DNRE) staff and other wetland professionals. Although the MiRAM rating form has been designed to provide sufficient information for a trained Evaluator to properly complete, it is highly recommended that the Evaluator read and understand the *MiRAM User's Manual,* as it provides additional explanations and examples.

The MiRAM was designed to be used during times when adequate plant growth allows for proper identification of most plant species within the Wetland. Typically, this follows the growing season for a particular region. MiRAM evaluations conducted outside the growing season will receive an additional 10 points due to the inability to properly identify all wetland features during this time of year. MiRAM is not designed to be used in times of snow cover.

If the Wetland and/or buffer areas have been impacted (cutting, mowing, development, etc.) during the past five years, the DNRE may rate the Wetland as if those impacts have not occurred and will presume that the impacted areas were of the best/highest quality possible for that type of wetland.

It is not the intent of MiRAM to modify the existing regulatory process in Michigan. Instead, it is intended that the MiRAM will supplement the existing process by providing additional information. The numeric score obtained from the MiRAM is not, and should not be considered, an absolute number with intrinsic meaning, but should be considered in light of other available information. It should be noted that the MiRAM is an assessment of "functional value" and is different from the determination of whether a particular location *is* a wetland (i.e., jurisdictional wetland).

The most recent version of this document and the *MiRAM User's Manual* are posted at:

www.michigan.gov/wetlands

Background Information

Wetland

Proposed Project Site Name or DNRE File #: White Pine Copper LLC
Date of Evaluation: 6/29/2024
County: Ontonagon
Township: 51N
Town: White Pine
Range: 41W
Section: 30
Decimal Lat/Long: 46.784548, -89.560170

Evaluator

Name: Randall Phillips & Jessica Abraham
Address: 3033 Orchard Vista Dr SE, Suite 200
City: Grand Rapids State: MI Zip: 49546
Phone: 616-512-7042
Email: RPhillips@barr.com

Is a Wetland Delineation Report available?

[X] YES [ ] NO Date Completed:_____

If "YES", completed by (name of person/firm/agency): November 20204 Barr Engineering

Check (√) each box below when item is complete.

[X] **MiRAM Boundary**. See *MiRAM User's Manual* for more information

Size of the Wetland Evaluation Area: 5.14 acres

[X] **Location Map**. A county road map showing the location of the Wetland Evaluation Area, north arrow, map scale information, roads, landmarks, etc. *Attach* a map to the end of this document.

[X] **Color Photographs**. Photos should show the wetland vegetation components, habitat/community types, hydrologic features, and any other pertinent site features. *Attach* to the end of this document.

[X] **Landscape Sketch or Aerial Photograph**.

1. Clearly label the Proposed Project Site and Wetland Evaluation Area. Indicate the location of the MiRAM Boundary.
2. Label and indicate the extent of all general wetland community types identified within the Wetland Evaluation Area. Examples include: marsh, wet meadow, hardwood swamp, conifer swamp, shrub swamp, etc. Some wetland communities may be further classified as natural communities. Natural communities are predominantly structured by natural processes rather than modern anthropogenic disturbances. Examples include: bog, prairie fen, muskeg, wet prairie, southern wet meadow, etc.
3. Identify and label all hydrologic features, such as: streams, 100-year floodplains, ponds, vernal pools, and small patches of open water within a marsh or swamp.
4. Identify and label surrounding upland features.
5. Include north arrow and map scale information.
6. *Attach* the landscape sketch or aerial photo to the end of this document.

Comments: List any important site features or apparent disturbance events that have occurred within or near the Wetland Evaluation Area.

For location map and MiRAM boundary please see Appendix C, Figure 3 located at the end of this form.
For color photographs please see Appendix D, page 22.

This MiRAM area represents the beaver impoundment areas due to past and current beaver activity. This area has also been impacted from previous excavation for the White Pine Tailings Facility.

Field Datasheet

List plant species observed within the Wetland. *Attach* additional sheets as necessary.
Nomenclature will follow Voss (1972,1985,1996) or Gleason and Cronquist (1991).

Forest Overstory Stratum (woody plants 3 inches or more DBH, regardless of height)

Populus deltoides	

Shrub/Sapling Stratum (woody plants less than 3 inches DBH and greater than 3.28 feet tall)

Salix eriocephala	
Salix discolor	
Cornus sericea	

Herbaceous Stratum (non-woody plants, regardless of size, and woody plants less than 3.28 feet tall)

Brasenia schreberi	*Eupatorium perfoliatum*
Typha angustifolia	*Euthamia graminifolia*
Equisetum arvense	*Clamagrostis canadensis*
Scirpus atrovirens	*Alnus incana*
Salix eriocephala	*Onoclea sensibilis*
Schoenoplectus tabernaemontani	*Carex vulpenoidea*
Scirpus cyperinus	*Carex retrorsa*
Agrostis gigantea	*Juncus articulatus*

Checklist of features and conditions to observe during the field inspection:

- [X] Hydrologic Condition and Interactions
- [X] Hydrologic Alterations
- [X] Substrate/Soil Disturbances
- [X] Habitat Structure Development
- [X] Habitat Alterations
- [X] Habitat/Wetland Condition
- [X] Amphibian Breeding Pools
- [X] Vegetation Diversity
- [X] Vegetation Condition
- [X] Amount of Open Water
- [X] Percent of Invasive/Non-native Species
- [X] Community Interspersion
- [X] Vertical/Horizontal Structure
- [X] S1, S2, or S3 Natural Community

Approximately how much of the Wetland Evaluation Area was reviewed during the field inspection? 95 %

Has vegetation within the Wetland Evaluation Area been altered and/or buffer areas impacted within the past 5 years? ☐ YES ☒ NO

Please Note: The Wetland Evaluation Area (encompassed by the MiRAM Boundary) is simply referred to as the "Wetland" throughout the remainder of this document.

Narrative Rating

Completion of the Narrative Rating allows the Evaluator to quickly identify whether the Wetland is one of several wetland types that typically have exceptional ecological value. If any of the metrics are answered affirmatively, the Wetland has *exceptional ecological value and is automatically rated as having high functional value* and completion of the Quantitative Rating is not necessary. If none of the metrics are answered affirmatively, proceed to the Quantitative Rating.

Answer all of the following metrics.

1. U.S. Fish and Wildlife Service (USFWS) Critical Habitat.

Is any part of the Wetland located within an area designated as Critical Habitat and does the Wetland *actually* contain habitat suitable for either species listed below?

Piping Plover (*Charadrius melodus*) Critical Habitat Units are designated only within the following counties: Alger, Benzie, Charlevoix, Cheboygan, Chippewa, Emmet, Iosco, Leelanau, Luce, Mackinac, Mason, Muskegon, Presque Isle, and Schoolcraft. See URL below for Unit locations.
(The link provided was broken and has been removed)

Hines's Emerald Dragonfly (*Somatochlora Hineana*) Critical Habitat Units are designated only within the following counties: Alpena, Mackinac, and Presque Isle. See URL below for Unit locations.
(The link provided was broken and has been removed)

☐ **YES** ☒ **NO**

If "**yes"**, the Wetland has ***high functional value***.

2. Threatened or Endangered (T/E) Species.

Do federal/state-listed T/E plant or animal species occur within the Wetland? Complete the following questions to answer this metric.

a. ☐YES ☒NO Has an approved T/E survey been completed? If "Yes," go to question b. If "No," go to question c.

b. ☐YES ☐NO Does the T/E survey indicate T/E species present within the Wetland? If "Yes," answer "Yes" to this metric. If "No," answer "No" to this metric.

c. ☐YES ☒NO Has the Evaluator (or others known to the Evaluator) observed any T/E species within the Wetland? If "Yes," answer "Yes" to this metric. If "No," go to question d.

d. ☐YES ☒NO Does the DNRE Endangered Species Assessment (ESA) web site interactive map, **mcgi.state.mi.us/esa,** indicate that there is a potential for unique natural features at or near your site of interest"?" If "No," answer "No" to this metric. If "Yes," request a DNRE formal review by submitting the online form. Type "MiRAM" within the "Project Information" field on the form. Go to question e.

e. ☐YES ☐NO Did the DNRE review confirm potential T/E occurrence in the Wetland? If "Yes," answer "Yes" to this metric. If "No," answer "No" to this metric. **The Evaluator may proceed with the Narrative Rating and Quantitative Rating while waiting for a formal response from DNRE**.

☐ **YES** ☒ **NO**

If "**yes"**, the Wetland has ***high functional value***.

3. Rare Wetland Natural Community Type.

Are more than 5 acres *or* more than 25% of the Wetland comprised of a Rare Wetland Natural Community Type*? Check (√) all Rare Wetland Natural Community Types

☐ **S1 or S2 Natural Community Type.**
Has the Wetland been identified by the Evaluator — *or other persons* — as being an S1 or S2 natural community type as defined by the Michigan Natural Features Inventory (MNFI)? See the *MiRAM User's Manual* for more information.

☐ **Southern Bog**, defined as any bog occurring below the northern limit of Michigan's Floristic Tension Zone (see figure for approximate location).

☐ **Old-Growth/Mature Forested Wetland.** Lacks evidence of any significant harvesting. Dominated by large, overstory trees (mean overstory DBH ≥20 inches, including at least two trees/acre having DBH ≥28 inches) and the canopy is multi-aged and multi-layered. Aggregations of canopy trees are interspersed with canopy gaps and large snags. Large nursery logs and tip-up mounds litter the forest floor. Does the forested Wetland have all/most of these characteristics?

*If the Rare Wetland Community Type is less than 5 acres *and* less than 25% of the Wetland, the rare community should be split off and evaluated separately.

☐ **YES** ☒ **NO**

If "**yes"**, the Wetland has ***high functional value***.



4. Great Lakes Coastal Wetland.

Is any part of the Wetland within 1,000 feet of the ordinary high water mark of any of the Great Lakes, including Lake St. Clair?

☐ **YES** ☒ **NO**

If "**yes"**, the Wetland has ***high functional value***.

Quantitative Rating

Completion of the Quantitative Rating assists the Evaluator in recognizing the functional value of the Wetland. Complete all metrics by completing all sections, circling the correct point value(s), and assigning a score.

Metric 1. Wetland Size and Distribution

Maximum 9 points.

1a. Wetland Size Estimate the size of the Wetland (i.e., Wetland Evaluation Area). Select a size class. **Maximum 6 points.**			**Score**
50	acres	Select this option if the wetland's actual size ≥ 50 acres.	6 pts
25	acres to <50 acres		5 pts
10	acres to <25 acres		4 pts
3	acres to <10 acres		3 pts
¼	acre to <3 acres		2 pts
less than ¼ acre			0 pt

1b. Wetland Scarcity Utilize the USFWS National Wetlands Inventory (NWI) maps to estimate percentage of wetland area remaining within a 2-mile radius from the Wetland's center. For the purpose of this submetric, areas of open water within the Great Lakes, inland lakes, streams, etc., should be excluded from the wetland percentage. Select the most appropriate percentage category. **Maximum 3 points.**		**Score**
0 to 20% of surrounding 2-mile radius is wetland	3 pts	2
>20 to 80% of surrounding 2-mile radius is wetland	2 pts	
>80% of surrounding 2-mile radius is wetland	1 pt	

8	**Metric 1 Total** add 1a & 1b **(9 points max.)**

Metric 2. Upland Buffers and Intensity of Surrounding Land Use

Maximum 12 points.

2a. Average Buffer Width around the Wetland's Perimeter

Step 1: Using the most recent aerial photograph available, sketch a 150-foot wide "buffer zone" around the Wetland.
Step 2: Estimate the buffer widths from the Wetland's edge to any non-buffer areas (up to 150 feet).
Step 3: Average the buffer widths along the Wetland's perimeter.
Step 4: Select the buffer width that is most appropriate. **Maximum 6 points**.

Buffers Include:

- shrubland, young forest, natural grassland, prairie
- abandoned row crop field (vegetated & naturalizing)
- hay field (non-row crop), lightly grazed pasture
- lightly managed forest (selectively logged)
- designated wildlife area, lightly managed parkland
- other wetland, lake, river

Non-Buffers Include:

- lawns, golf courses, manicured parkland
- residential, commercial, industrial
- roadways (including shoulders), parking lots
- row crop field
- conservation tillage, heavily grazed pasture
- clear-cutting, mining, construction activity

			Score
Wide Buffer Width:	≥150 feet around the perimeter	6 pts	6
Medium Buffer Width:	75 to <150 feet around the perimeter	4 pts	
Narrow Buffer Width:	25 to <75 feet around the perimeter	2 pt	
Very Narrow Buffer Width:	0 (no buffer) to <25 feet around the perimeter	0 pt	

2b. Intensity of Surrounding Land Use within 1,000 feet of the Wetland

Step 1: Using the most recent aerial photograph available, sketch a 1,000-foot wide "land use zone" around the Wetland.

Step 2: Estimate percent coverages comprised by each of the four types of land use listed below.

Step 3: If any land use type comprises more than 25% of the total land use, it is considered to be a "dominant" land use type for the purposes of MiRAM and will receive points. Sum the available points from all dominant land use types and then average the score. Round to the nearest 0.5 increment. **Maximum 6 points**.

Type of Land Use	Examples within each Type of Land Use			Score
Very Low Intensity:	• maturing forest • natural grassland, prairie	• designated wildlife area • other wetland, lake, river	6 pts	6
Low Intensity:	• shrubland/young forest • recent selective logging • hay field (non-row crop)	• lightly managed parkland • old field, lightly grazed pasture • one-lane road/two track	4 pts	
Moderately High Intensity:	• residential & lawns • manicured parkland • golf course	• conservation tillage • recent clear-cut (<10 years) • two-lane road	2 pts	
High Intensity:	• commercial, industrial • high-density residential • heavily grazed pasture • row crop field	• multi-lane paved roadway • construction activity • parking lot • mining	1 pt	

12	**Metric 2 Total** add 2a & 2b **(12 points max.)**

Metric 3. Hydrology

Limited to 26 points.

3a. Sources of Water: Select all that apply. **Maximum 8 points**.		Score
Precipitation: Directly and/or as runoff from upland areas.	1 pt	1
Groundwater: Seeps or evidence, such as significant amounts of skunk cabbage (*Symplocarpus foetidus*) or other fen-adapted species.	2 pts	0
Seasonal/Intermittent Surface Water: Seasonal inundation from a lake, pond, or stream. (A Wetland can only receive points for this source of water or the next, not both.)	2 pts	0
Perennial Surface Water: Perennial inundation from a lake, stream or pond.	5 pts	5

3b. Connectivity: Select all that apply. **Maximum 8 points**.		Score
100-Year Floodplain. As defined in the Floodplain Authority under Part 31 of the NREPA.	2 pts	2
Between a Stream/Lake/Pond and Human Land Use. The Wetland is located between a surface waterbody and any human land use, such that run-off from the adjacent land use could flow through the Wetland before it discharges into the surface waterbody.	2 pts	0
Wetland/Upland Complex. The Wetland is part of a large scale (10+ acres) non-linear complex of wetlands with small areas of unmanicured/undeveloped vegetated uplands that do not restrict movement of organisms between the wetland areas.	2 pts	2
Riparian Corridor. The Wetland is part of a linear *riparian* corridor that provides organism movement along a stream/river. Typically, these corridors should exceed 100 feet in width and extend at least one half mile.	2 pts	2

3c. Duration of Inundation/Saturation Select the option(s) from below that best describe(s) the dominant hydrologic characteristic of the Wetland. For the purposes of this submetric, "dominant" is defined as comprising at least 25% of the Wetland's area. If the Wetland contains several areas that have distinctly different hydrologic characteristics, select all that apply and average the points. Round to the nearest 0.5 increment. **Maximum 4 points.**		**Score**
Permanently Inundated	4 pts	4
Permanently Saturated to Regularly Inundated	3 pts	
Regularly Saturated to Seasonally Inundated	2 pts	
Seasonally Saturated in the Upper 12 Inches of Soil	1 pt	

3d. Alterations to Natural Hydrologic Regime

This submetric evaluates the intactness of the natural hydrologic regime of the Wetland.
Check (√) all forms of past or ongoing hydrologic alteration(s) that are potentially influencing the Wetland.

- ☐ ditch(es) in or near the wetland
- ☐ tile(s) in or near the wetland
- ☐ dike(s) in or near the wetland
- ☐ weir(s) in or near the wetland
- ☒ stormwater inputs (addition of water)
- ☐ stream channelization
- ☐ point source discharge(s) (non-stormwater)
- ☒ filling/grading activities in or near the wetland
- ☐ road bed(s)/RR grades(s) in or near the wetland
- ☒ dredging activities in or near the wetland
- ☐ other (specify)
- ☐ other (specify)

Evaluate whether an alteration is significant or minor in relation to the Wetland's overall area and hydrologic regime. For this submetric, "significant" is defined as affecting approximately 10% or greater of the Wetland. "Minor" is defined as affecting less than approximately 10% of the Wetland. A hydrologic alteration may also impact the Substrate/Soil (submetric 4a) and/or Habitat (submetric 4b).

Select an option below that best describes the extent of (or lack of) alteration(s) to the Wetland's natural hydrologic regime. If uncertain, select adjoining options and average the available points. Round to the nearest 0.5 increment. If the Wetland's natural hydrologic regime has been significantly altered, it shall receive no more than 6 points for this submetric. **Maximum 8 points.**			**Score**
No Hydrologic Alterations Apparent:	There has been no significant alteration(s) to the Wetland's natural hydrologic regime, and/or ongoing minor alteration(s) is/are rare.	8 pts	6
Recovered:	Significant hydrologic alteration(s) occurred more than 20 years prior to the assessment, and/or ongoing minor hydrologic alteration(s) is/are only occasional.	6 pts	
Recovering:	A single significant hydrologic alteration occurred within 20 years prior to the assessment, and/or ongoing minor hydrologic alteration(s) is/are frequent.	4 pts	
Recent or No Recovery:	Multiple significant hydrologic alterations have occurred in the 20 years prior to the assessment, and/or significant alteration(s) is/are ongoing.	1 pt	

22	**Metric 3 Total** add 3a – 3d **(26 points max.)**

Metric 4. Habitat Alteration and Habitat Structure Development
Maximum 20 Points.

4a. Substrate/Soil Disturbance

This submetric evaluates the intactness or lack of disturbance to the Wetland's substrate and soil. Check (√) all possible forms of past or ongoing substrate/soil disturbance that are observed within the Wetland.

- [X] human-induced erosion or exposure
- [ ] human-induced sedimentation or burial
- [ ] filling
- [ ] grading
- [X] dredging
- [ ] plowing, disking
- [ ] intensive grazing (hooves)
- [X] off-road vehicle use
- [X] construction vehicle use
- [ ] other (specify)

Evaluate whether a disturbance is significant or minor in relation to the Wetland's overall area. For this submetric, "significant" is defined as affecting approximately 10% or greater of the Wetland. "Minor" is defined as affecting less than approximately 10% of the Wetland. A substrate disturbance may also be an alteration of the natural hydrologic regime (Submetric 3d) and/or an alteration of habitat (Submetric 4b).

Select an option below that best describes the extent of (or lack of) disturbances to the Wetland's substrate. If uncertain, select adjoining options and average the points. Round to the nearest 0.5 increment. If the Wetland's substrate has been significantly altered, it should receive no more than 3 points. **Maximum 4 points.**

			Score
No Substrate Disturbance Apparent:	There has been no significant disturbance to the Wetland's substrate and/or ongoing minor disturbance events are rare.	4 pts	3
Recovered:	Significant substrate disturbance occurred more than 20 years prior to the assessment, and/or ongoing minor substrate disturbance events are only occasional (e.g., light sedimentation from a nearby dirt road).	3 pts	
Recovering:	A single significant substrate disturbance event occurred within 20 years prior to the assessment, and/or ongoing minor substrate disturbance events are frequent.	2 pts	
Recent or No Recovery:	Multiple significant substrate disturbance events have occurred in the 20 years prior to the assessment, and/or significant disturbance is ongoing.	1 pt	

4b. Habitat Alteration

This submetric evaluates the intactness of the natural habitat within the Wetland. A "significant" alteration is defined as affecting 10% or greater of the Wetland. "Minor" alternation affects less than 10% of the Wetland. Check (√) all possible forms of past or ongoing habitat alteration(s) that are observed within the Wetland.

- [X] barriers such as road bed(s)/RR grades(s)
- [ ] selective cutting
- [ ] clearcutting
- [X] mowing or shrub removal
- [ ] coarse woody debris (CWD) removal
- [ ] intensive grazing
- [ ] nutrient enrichment, e.g., nuisance algae
- [ ] herbicide/chemical treatment
- [X] sedimentation
- [ ] dredging
- [ ] filling/grading
- [ ] plowing/disking/farming
- [ ] other (specify)

Utilize aerial photography and field evidence to determine if any habitat alterations occurred prior to approximately 20 years ago. Determine the approximate pre-disturbance extent of vertical and horizontal habitat attributes, such as large, woody debris, plant species diversity, hummocks, patchiness, niche diversity, etc. Disregard changes that can be attributed to wetland community succession or other natural processes. A habitat alteration may also be an alteration of the natural hydrologic regime (Submetric 3d) and/or a substrate disturbance (Submetric 4a).

Select an option below that best describes the extent of (or lack of) alteration(s) to the Wetland's habitat. If unclear, select adjoining options and average the available points. Round to the nearest 0.5 increment. **Maximum 9 points**.

			Score
No Habitat Alterations Apparent:	There has been no significant alteration to the Wetland's natural habitat, and/or ongoing minor alteration(s) is/are rare.	9 pts	6
Recovered:	Significant habitat alteration(s) occurred more than 20 years prior to the assessment, and/or ongoing minor habitat alteration(s) is/are only occasional.	6 pts	
Recovering:	A single, significant habitat alteration occurred within 20 years prior to the assessment, and/or ongoing minor habitat alteration(s) is/are frequent.	3 pts	
Recent or No Recovery:	Multiple significant habitat alterations have occurred in the 20 years prior to the assessment, and/or significant alteration(s) is/are ongoing.	1 pt	

4c. Habitat Structure Development

Determine an overall qualitative rating of how well developed the Wetland is in comparison to the best of its type. For this submetric, a wetland's type is defined as any ecologically and/or hydrogeomorphically similar wetland habitat typical of the region. Well-developed communities, regardless of successional state, often exhibit many of the following habitat characteristics:

- Quality vertical habitat, such as hummocks, organic debris, and diverse plant height ranges.
- Quality horizontal habitat, such as varying vegetation density and patchiness, moderate ratios of open space to cover, plant species diversity, and a wide range of plant ages.
- Other ecological attributes, such as a diverse assortment of the following: breeding areas, rearing areas, feeding areas, niche space, etc.

Select an option below that best describes the Wetland's habitat structure development. If unclear, select adjoining options and average the points. Round to the nearest 0.5 increment.
Maximum 7 points.

			Score
Excellent:	Wetland appears to represent the best of its type.	7 pts	5
Good:	Wetland appears to be a good example of its type but because of past or present disturbance, or other reasons, is not excellent.	5 pts	
Fair:	Wetland appears to be a moderately good example of its type but because of past or present disturbance, or other reasons, is not good.	3 pts	
Poor:	Wetland is a poor example of its type because of past or present disturbance, or other reasons.	1 pt	

14 **Metric 4 Total**
add 4a – 4c
(20 points max.)

Metric 5. Special Situations

Refer to the Narrative Rating for definitions and the *User's Manual* for guidance, **Limited to 10 points**

5a. High Ecological Value. See Narrative Rating for definitions of each.
10 points for each that apply.

☐ 1. Contains USFWS-designated Critical Habitat
☐ 2. Federal or State-listed T/E Plant or Animal Species
☐ 3. S1, S2, or S3 Natural Community Type (at least 5 acres or 25% of the Wetland)
☐ 4. Southern Bog (at least 5 acres or 25% of the Wetland)
☐ 5. Old-Growth/Mature Forested Wetland (at least 5 acres or 25% of the Wetland)
☐ 6. Great Lakes Coastal Wetland

Score: 0

5b. Forested Wetland. **5 points**.
Exhibits combined canopy cover from any group(s) of trees. Stem DBH must be at least 3 inches to qualify as a tree. Total area must comprise at least 5 acres or 25% of the Wetland. Does not qualify if most of the trees are ungrouped and widely scattered (e.g., a savanna), or located only thinly along the Wetland's margin.

Score: 0

5c. Urban/Suburban Wetland. **5 points**.
Greater than 50% of the surrounding landscape (1,000 foot radius) is comprised of low-permeability surfaces, such as roads, lawns, parking lots, buildings, sidewalks, etc.

Score: 0

5d. Low-Quality Wetland. Negative 10 points.
The Wetland is less than 1 acre and non-contiguous as defined in Part 303 and either: *1)* a stormwater pond that was excavated from upland and constructed for stormwater treatment in conjunction with a development project *or 2)* more than 75% covered by highly-invasive vegetation. See Submetric 6c for a list of highly-invasive species.

Score: 0

0 **Metric 5 Total**
(10 points max.)
Can be negative

Metric 6. Vegetation, Interspersion, and Habitat Features
Maximum 20 points.

6a. Wetland Vegetation Components

Determine the Qualitative Cover Score of each Vegetation Component (Herbaceous, Shrub/Sapling, Forest Overstory). Using the Qualitative Cover Scoring Table, start on the left and proceed to the right, until a point value is obtained for each Vegetation Component. Vegetation Components may exist in overlapping layers, e.g., significant areas of shrub/sapling and/or herbaceous may exist under a forest canopy. Only groups of trees, clusters of shrubs, or dense patches of herbaceous stems may count toward area coverage. Do not include widely-scattered trees, lone shrub/saplings, or sparse patches of herbaceous stems. See Submetric 6c to aid in the proper identification of broad-leaved cattail (*Typha latifolia*), a non-invasive, native species.

Qualitative Cover Scoring Table

Vegetation Component ► is >¼ acre	>25% of Wetland area ►	Native species dominate the coverage ►	High native diversity ►	3 pts
			Moderate to low native diversity ►	2 pts
		Invasive or non-native species dominate the coverage ►	Moderate to high native diversity ►	2 pts
			Low native diversity ►	1 pt
	<25% of Wetland area ►	Native species dominate the coverage ►	Moderate to high native diversity ►	2 pts
			Low native diversity ►	1 pt
		Invasive or non-native species dominate the coverage ►	Moderate native diversity ►	1 pt
			Low native diversity ►	0 pt
Vegetation Component is <¼ acre ►	>25% of Wetland area ►	Native species dominate the coverage ►	Moderate to high native diversity ►	2 pts
			Low native diversity ►	1 pt
		Invasive or non-native species dominate the coverage ►		0 pt
	<25% of Wetland area ►			0 pt

Forest Overstory Component, qualitative cover score derived from table **maximum 3 points**.	**Score**
Forested wetland areas are characterized by a group of trees at least 3 inches in DBH, regardless of height. The Wetland does not have a forested component if the trees are widely scattered (e.g., a savanna), located only thinly along the Wetland's margin, or if it is clear that most of the trees are actually located on upland around the perimeter of the Wetland.	0

Shrub/Sapling Component, qualitative cover score derived from table **maximum 3 points**.	**Score**
Shrub/Sapling wetland areas are dominated by clusters of woody plants less than 3 inches in DBH and greater than 3.28 feet in height. Species include true shrubs, young trees, and stunted trees. Shrub wetlands may represent a successional stage leading to a forested wetland or they may be relatively stable plant communities.	2

Herbaceous Component, qualitative cover score derived from table **maximum 3 points**.	**Score**
Herbaceous wetlands are areas dominated by dense patches of erect, non-woody plants, regardless of size, and woody plants less than 3.28 feet in height. The MiRAM includes the robust-stemmed yellow pond lily (*Nuphar advena*) and American lotus (*Nelumbo lutea*) within the herbaceous component because of their tendency to hold their stems and leaves well above the water. All floating-leaf species (including *Nymphaea* spp.) are excluded from the herbaceous component, and are instead included within the open water component (see Submetric 6b).	1

6b. Open Water Component

Open water is an unobstructed, inundated area of water containing few or no rooted emergent or woody plant species. It can occur as a distinct zone along a river or lake or as a combination of small ponds, streams, or pools (e.g., within a marsh or swamp) and as an "understory" below a forest canopy (e.g., a forested vernal pool).

This Habitat Component includes combined acreage from any of the following areas:

- **Small ponds, streams, and pools**.
- **Seasonal standing water areas** (e.g., mudflats and dried-down vernal pools) that were inundated long enough during the growing season to support aquatic life.
- **Aquatic bed areas**, also known as submergent marsh or submerged aquatic vegetation (SAV). Aquatic bed is dominated by plants that grow at or below the surface of the water for most of the growing season in most years. The MiRAM includes aquatic bed within the definition of open water, due to the potential difficulty in differentiating the two entities. For the purposes of the MiRAM, all floating-leaf aquatic taxa, such as water lilies (*Nymphaea* spp.), are included in the definition of aquatic bed and, therefore, are also included in the definition of open water.
- **100-foot wide strip of open water along a lake or river** (see Boundary Guidelines in the *User's Manual*). When the Wetland is adjacent to a lake or large river, calculate the acreage of the 100-foot wide open water strip that is included within the Wetland (see MiRAM Boundary Determination Guidelines). Simply divide the linear feet of shoreline length by 400. For example, if the vegetated portion of the wetland interfaces with 200 linear feet of a lake, then the extent of the lake's open water included within the Wetland would be calculated as: 200/400 = 0.5 acre.
- **Shallow pools free of dense shrub canopy** (e.g., open area within an inundated shrub swamp).
- **Shallow pools free of densely-packed herbaceous vegetation** (e.g., open area within a marsh or bog).

Estimate the total open water coverage. **Maximum 3 points**.			**Score**
High:	2.5 acres or more	3 pts	3
Moderate:	1.0 acre to <2.5 acres	2 pts	
Low:	0.25 acre to <1.0 acre	1 pt	
Virtually Absent:	<0.25 acre	0 pt	

6c. Coverage of Highly-Invasive Plant Species

Estimate the combined total coverage of any of the species listed below. Assign points based on a range from virtually absent (1 point) to extensive (negative 5 points).

- common reed (*Phragmites australis)*
- purple loosestrife (*Lythrum salicaria*)
- reed canary grass (*Phalaris arundinacea*)
- common buckthorn (*Rhamnus cathartica*)
- glossy buckthorn (*Rhamnus frangula*)
- narrow-leaved cattail (*Typha angustifolia*)
- hybrid cattail (*Typha x glauca*)
- marsh thistle (*Cirsium palustre*)
- multiflora rose (*Rosa multiflora*)
- non-native honeysuckle (*Lonicera spp.*)

Key to Aid in Identification of Invasive and Non-Invasive Cattail (Typha) Species

Native, non-invasive: Male and female portions of the flower spike are not separated (or only slightly separated) on most of the stems within the same local stand. Female flower spikes are light brown and are 0.8-1.2 inches thick at maturity (before expanding when dried). Most leaf blades are approximately 0.5 to1 inch wide at widest part. Typically, not tightly packed into an area (non-invasive). .....**broad-leaved cattail (*T. latifolia)***

Non-native, Invasive: Male and female portions of the flower spike are separated on most of the stems within the same local stand. Female flower spikes are dark brown and less than 0.8 inch thick at maturity (before expanding when dried). Most leaf blades are less than 0.5 inch wide at widest part. Typically, tightly packed within an area, crowding out other plant species (invasive). .....**narrow-leaved cattail (*T. angustifolia)***

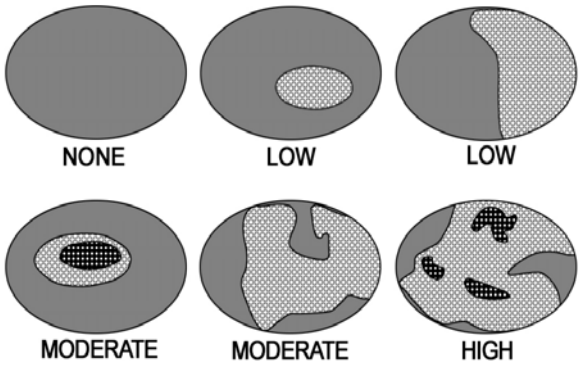
Non-native, Invasive: Hybridization may have occurred if most plants within the same local stand do not cleanly fit the characteristics of either pure species described above. The gap between the male and female portions of the flower spikes is highly variable, with many plants within the same local stand having no gap, and many having relatively wide gaps. Typically, extremely vigorous and often tightly packed within an area, crowding out other plant species (invasive).....**hybrid cattail (*T. x glauca)***

Estimate the total coverage. **Maximum 1 point**.			**Score**
Virtually Absent:	<1% aerial coverage of highly-invasive species	1 pt	0
Nearly Absent:	1% to <5% aerial coverage of highly-invasive species	0 pt	
Low:	5% to <25% aerial coverage of highly-invasive species	-1 pt	
Moderate:	25% to <75% aerial coverage of highly-invasive species	-3 pts	
Extensive:	≥75% aerial coverage of highly-invasive species	-5 pts	

6d. Horizontal (Plan View) Interspersion

Evaluate the Wetland from a "plan view," i.e., as if you are looking down upon it. The graphic shows hypothetical wetlands for estimating degree of interspersion.

Select only one option.
Maximum 5 points.



		Score
Wetland has a high degree of interspersion	5 pts	3
Wetland has a moderate degree of interspersion	3 pts	
Wetland has a low degree of interspersion	1 pt	
Wetland has no interspersion	0 pt	

6e. Habitat Features

Determine the amount of each habitat feature that is present in the Wetland. **Maximum 3 points for each habitat feature.**

1. Hummocks/Tussocks/Tree Mounds, e.g., sedge/grass tussocks, decaying nursery logs (remnants of large logs), root tip-up mounds (uprooted trees), etc. Percent coverage is based on total area of all raised features (hummocks/tussocks/tree mounds) and includes the depressional matrix within any group of raised features.

				Score
Virtually Absent: 0 pt <5% of the area	Sparse: 1 pt 5% to 10% of the area	Moderate: 2 pts 11% to 50% of the area	Dense: 3 pts >50% of the area	1

2. Coarse Woody Debris (CWD). Per log, average width ≥6 inches; each at least 10 feet long. e.g., fallen trees and/or large branches, etc.

				Score
Virtually Absent: 0 pt < 1 per acre	Sparse: 1 pt 1 to 5 per acre	Moderate: 2 pts 6 to 10 per acre	Dense: 3 pts >10 per acre	3

3. Large Standing Trees, Living or Dead (≥12 inches DBH).

				Score
Virtually Absent: 0 pt < 1 per acre	Sparse: 1 pt 1 to 5 per acre	Moderate: 2 pts 6 to 10 per acre	Dense: 3 pts >10 per acre	1

4. Amphibian Breeding/Nursery Habitat, e.g., temporary pools with standing water of sufficient duration and depth to support frog and/or salamander reproduction. Permanent areas of vegetated standing water along the edges of ponds, lakes, and some streams also serve as amphibian habitat.

				Score
Virtually Absent: 0 pt < 5% of the area	Sparse: 1 pt 5% to 10% of the area	Moderate: 2 pts 11% to 50% of the area	Dense: 3 pts >50% of the area	3

17	**Metric 6 Total** add 6a – 6f **(20 points max.)**

Metric 7. Scenic, Recreational, and Cultural Value

Maximum 3 points.

Select all that apply. Maximum 1 point per submetric.		Score
7a. Scenic: The public can view the Wetland from a public road or public land OR the Wetland has significant scenic value (assign 1 point).	1 pt	0
7b. Recreational: The general public has access to the Wetland or the Wetland is assumed to be used for recreational activities (assign 1 point).	1 pt	0
7c. Cultural/Historical: The Wetland, or any part of the Wetland, has been recognized as having important cultural or historic value (assign 1 point).	1 pt.	0

0	**Metric 7 Total (3 points max.)**

MiRAM Summary

Narrative Rating

Question 1: U.S. Fish and Wildlife Service (USFWS) Critical Habitat	☐YES ☒NO
Question 2: Threatened or Endangered (T/E) Species Habitat	☐YES ☒NO
Question 3: Rare Wetland Natural Community Type	☐YES ☒NO
Question 4: Great Lakes Coastal Wetland	☐YES ☒NO

Quantitative Rating

	Score	Maximum
Metric 1: Wetland Size and Distribution	8	9
Metric 2: Upland Buffers and Intensity of Surrounding Land Use	12	12
Metric 3: Hydrology	22	26
Metric 4: Habitat Alteration and Habitat Structure Development	14	20
Metric 5: Special Situations	0	10
Metric 6: Vegetation, Interspersion, and Habitat Features	17	20
Metric 7: Scenic, Recreational, and Cultural Value	0	3
Seasonally Adjusted Score (add 10 pts if outside the growing season)	0	10

Grand Total ***Add totals from all seven metrics***	73	**100 Max.**

Scoring comments:



Survey Area
MiRAM Area 3
Wetland 3
Other Wetland

0 120 240
Feet

Imagery: MiSAIL 2023

MiRAM Area 3-
Beaver Impounded
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

FIGURE 3

BARR

Barr Footer: ArcGISPro 3.4, 2025-01-06 12:43 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_MiRAM_Report\Wetland_MiRAM_Report.aprx Layout: Fig03 MiRAM Area 3 - Beaver Impounded User: CML3

AREA 4 - Previously Excavated

DNRE

MiRAM Version 2.1

Rating Form

July 23, 2010

MICHIGAN RAPID ASSESSMENT METHOD FOR WETLANDS (MIRAM)

Department of Natural Resources and Environment
Land and Water Management Division

Background Information	page 2
Field Datasheet	page 3
Narrative Rating	page 4
Quantitative Rating	page 5
Rating Summary	page 13

The Michigan Rapid Assessment Method for Wetlands (MiRAM) is a tool to determine the "functional value" of a particular wetland and to assign a rating level to that wetland as compared to other wetlands. The goal of this rating system is to assess individual wetlands on an equal scale regardless of ecological type. MiRAM offers a relatively rapid assessment of wetland functions and values, but it is not intended to replace more detailed quantitative measures of ecosystem function, such as Indices of Biological Integrity (IBI), Floristic Quality Assessment (FQA), or other detailed ecological studies.

The initial step of MiRAM is the proper identification of the Wetland Evaluation Area (Wetland) using the MiRAM Boundary Guidelines in the *MiRAM User's Manual*. The MiRAM evaluation contains two rating systems: the **Narrative Rating,** and the **Quantitative Rating**. First, the Evaluator is required to complete the Narrative Rating, which relies on accurate identification of several types of wetlands with significant ecological values, which automatically rates the Wetland as having high functional value. If the Wetland is not identified as having high functional value by the Narrative Rating, the Evaluator must complete the Quantitative Rating. The Quantitative Rating is a series of metrics regarding the Wetland. The Quantitative Rating is designed to provide a numeric score that reflects the functional value of a Wetland, which includes a Wetland's ecological condition (integrity) and its potential to provide ecological and societal services (functions and values).

The MiRAM requires a knowledge and understanding of wetlands and is designed to be used by Michigan Department of Natural Resources and Environment (DNRE) staff and other wetland professionals. Although the MiRAM rating form has been designed to provide sufficient information for a trained Evaluator to properly complete, it is highly recommended that the Evaluator read and understand the *MiRAM User's Manual,* as it provides additional explanations and examples.

The MiRAM was designed to be used during times when adequate plant growth allows for proper identification of most plant species within the Wetland. Typically, this follows the growing season for a particular region. MiRAM evaluations conducted outside the growing season will receive an additional 10 points due to the inability to properly identify all wetland features during this time of year. MiRAM is not designed to be used in times of snow cover.

If the Wetland and/or buffer areas have been impacted (cutting, mowing, development, etc.) during the past five years, the DNRE may rate the Wetland as if those impacts have not occurred and will presume that the impacted areas were of the best/highest quality possible for that type of wetland.

It is not the intent of MiRAM to modify the existing regulatory process in Michigan. Instead, it is intended that the MiRAM will supplement the existing process by providing additional information. The numeric score obtained from the MiRAM is not, and should not be considered, an absolute number with intrinsic meaning, but should be considered in light of other available information. It should be noted that the MiRAM is an assessment of "functional value" and is different from the determination of whether a particular location *is* a wetland (i.e., jurisdictional wetland).

The most recent version of this document and the *MiRAM User's Manual* are posted at:

www.michigan.gov/wetlands

Background Information

Wetland

Proposed Project Site Name or DNRE File #: White Pine Copper LLC
Date of Evaluation:
County: Ontonagon
Township: 51N
Town: White Pine
Range: 41W
Section: 19
Decimal Lat/Long: 46.79385903, -89.55731394

Evaluator

Name: Randall Phillips, Jessica Abraham
Address: 3033 Orchard Vista Dr SE, Suite 200
City: Grand Rapids State: MI Zip: 49546
Phone: 616-512-7042
Email: RPhillips@barr.com

Is a Wetland Delineation Report available?
[X] YES [ ] NO Date Completed: November, 2024
If "YES", completed by (name of person/firm/agency): Barr Engineering

Check (√) each box below when item is complete.

[X] **MiRAM Boundary**. See *MiRAM User's Manual* for more information
Size of the Wetland Evaluation Area: 5.05 acres

[X] **Location Map**. A county road map showing the location of the Wetland Evaluation Area, north arrow, map scale information, roads, landmarks, etc. *Attach* a map to the end of this document.

[X] **Color Photographs**. Photos should show the wetland vegetation components, habitat/community types, hydrologic features, and any other pertinent site features. *Attach* to the end of this document.

[X] **Landscape Sketch or Aerial Photograph**.

1. Clearly label the Proposed Project Site and Wetland Evaluation Area. Indicate the location of the MiRAM Boundary.
2. Label and indicate the extent of all general wetland community types identified within the Wetland Evaluation Area. Examples include: marsh, wet meadow, hardwood swamp, conifer swamp, shrub swamp, etc. Some wetland communities may be further classified as natural communities. Natural communities are predominantly structured by natural processes rather than modern anthropogenic disturbances. Examples include: bog, prairie fen, muskeg, wet prairie, southern wet meadow, etc.
3. Identify and label all hydrologic features, such as: streams, 100-year floodplains, ponds, vernal pools, and small patches of open water within a marsh or swamp.
4. Identify and label surrounding upland features.
5. Include north arrow and map scale information.
6. *Attach* the landscape sketch or aerial photo to the end of this document.

Comments: List any important site features or apparent disturbance events that have occurred within or near the Wetland Evaluation Area.

For location map and MiRAM boundary please see Appendix C, Figure 4 located at the end of this form.
For color photographs please see Appendix D, page 115.

This MiRAM represents the most disturbed wetland areas from the White Pine Tailings Facility construction and maintenance where the soil and vegetation has been previously scraped.

Field Datasheet

List plant species observed within the Wetland. *Attach* additional sheets as necessary.
Nomenclature will follow Voss (1972,1985,1996) or Gleason and Cronquist (1991).

Forest Overstory Stratum (woody plants 3 inches or more DBH, regardless of height)

N/A	

Shrub/Sapling Stratum (woody plants less than 3 inches DBH and greater than 3.28 feet tall)

Salix eriocephala	
Populus tremuloides	

Herbaceous Stratum (non-woody plants, regardless of size, and woody plants less than 3.28 feet tall)

Equisetum arvense	*Salix bebbiana*	*Salix lucida*
Juncus articulatus	*Salix eriocephala*	*Juncus effusus*
Juncus dudleyi	*Salix discolor*	*Symphyotrichum lateriflorum*
Picea mariana	*Typha angustifolia*	
Thuja occidentalis	*Carex aurea*	
Scirpus atrovirens	*Fraxinus nigra*	
Scirpus cyperinus	*Betula papyrifera*	
Eupatorium perfoliatum	*Euthamia graminifolia*	

Checklist of features and conditions to observe during the field inspection:

- [X] Hydrologic Condition and Interactions
- [X] Hydrologic Alterations
- [X] Substrate/Soil Disturbances
- [X] Habitat Structure Development
- [X] Habitat Alterations
- [X] Habitat/Wetland Condition
- [X] Amphibian Breeding Pools
- [X] Vegetation Diversity
- [X] Vegetation Condition
- [X] Amount of Open Water
- [X] Percent of Invasive/Non-native Species
- [X] Community Interspersion
- [X] Vertical/Horizontal Structure
- [X] S1, S2, or S3 Natural Community

Approximately how much of the Wetland Evaluation Area was reviewed during the field inspection? 95 %

Has vegetation within the Wetland Evaluation Area been altered and/or buffer areas impacted within the past 5 years? [X] YES [ ] NO

Please Note: The Wetland Evaluation Area (encompassed by the MiRAM Boundary) is simply referred to as the "Wetland" throughout the remainder of this document.

Narrative Rating

Completion of the Narrative Rating allows the Evaluator to quickly identify whether the Wetland is one of several wetland types that typically have exceptional ecological value. If any of the metrics are answered affirmatively, the Wetland has *exceptional ecological value and is automatically rated as having high functional value* and completion of the Quantitative Rating is not necessary. If none of the metrics are answered affirmatively, proceed to the Quantitative Rating.

Answer all of the following metrics.

1. U.S. Fish and Wildlife Service (USFWS) Critical Habitat.

Is any part of the Wetland located within an area designated as Critical Habitat and does the Wetland *actually* contain habitat suitable for either species listed below?

Piping Plover (*Charadrius melodus*) Critical Habitat Units are designated only within the following counties: Alger, Benzie, Charlevoix, Cheboygan, Chippewa, Emmet, Iosco, Leelanau, Luce, Mackinac, Mason, Muskegon, Presque Isle, and Schoolcraft. See URL below for Unit locations.
(The link provided was broken and has been removed)

Hines's Emerald Dragonfly (*Somatochlora Hineana*) Critical Habitat Units are designated only within the following counties: Alpena, Mackinac, and Presque Isle. See URL below for Unit locations.
(The link provided was broken and has been removed)

☐ **YES** ☒ **NO**

If "**yes"**, the Wetland has ***high functional value***.

2. Threatened or Endangered (T/E) Species.

Do federal/state-listed T/E plant or animal species occur within the Wetland? Complete the following questions to answer this metric.

a. ☐YES ☒NO Has an approved T/E survey been completed? If "Yes," go to question b. If "No," go to question c.

b. ☐YES ☐NO Does the T/E survey indicate T/E species present within the Wetland? If "Yes," answer "Yes" to this metric. If "No," answer "No" to this metric.

c. ☐YES ☒NO Has the Evaluator (or others known to the Evaluator) observed any T/E species within the Wetland? If "Yes," answer "Yes" to this metric. If "No," go to question d.

d. ☐YES ☒NO Does the DNRE Endangered Species Assessment (ESA) web site interactive map, **mcgi.state.mi.us/esa,** indicate that there is a potential for unique natural features at or near your site of interest"?" If "No," answer "No" to this metric. If "Yes," request a DNRE formal review by submitting the online form. Type "MiRAM" within the "Project Information" field on the form. Go to question e.

e. ☐YES ☐NO Did the DNRE review confirm potential T/E occurrence in the Wetland? If "Yes," answer "Yes" to this metric. If "No," answer "No" to this metric. **The Evaluator may proceed with the Narrative Rating and Quantitative Rating while waiting for a formal response from DNRE**.

☐ **YES** ☒ **NO**

If "**yes"**, the Wetland has ***high functional value***.

3. Rare Wetland Natural Community Type.

Are more than 5 acres *or* more than 25% of the Wetland comprised of a Rare Wetland Natural Community Type*? Check (√) all Rare Wetland Natural Community Types

☐ **S1 or S2 Natural Community Type.**
Has the Wetland been identified by the Evaluator — *or other persons* — as being an S1 or S2 natural community type as defined by the Michigan Natural Features Inventory (MNFI)? See the *MiRAM User's Manual* for more information.

☐ **Southern Bog**, defined as any bog occurring below the northern limit of Michigan's Floristic Tension Zone (see figure for approximate location).

☐ **Old-Growth/Mature Forested Wetland.** Lacks evidence of any significant harvesting. Dominated by large, overstory trees (mean overstory DBH ≥20 inches, including at least two trees/acre having DBH ≥28 inches) and the canopy is multi-aged and multi-layered. Aggregations of canopy trees are interspersed with canopy gaps and large snags. Large nursery logs and tip-up mounds litter the forest floor. Does the forested Wetland have all/most of these characteristics?

*If the Rare Wetland Community Type is less than 5 acres *and* less than 25% of the Wetland, the rare community should be split off and evaluated separately.

☐ **YES** ☒ **NO**

If "**yes"**, the Wetland has ***high functional value***.



4. Great Lakes Coastal Wetland.

Is any part of the Wetland within 1,000 feet of the ordinary high water mark of any of the Great Lakes, including Lake St. Clair?

☐ **YES** ☒ **NO**

If "**yes"**, the Wetland has ***high functional value***.

Quantitative Rating

Completion of the Quantitative Rating assists the Evaluator in recognizing the functional value of the Wetland. Complete all metrics by completing all sections, circling the correct point value(s), and assigning a score.

Metric 1. Wetland Size and Distribution

Maximum 9 points.

1a. Wetland Size Estimate the size of the Wetland (i.e., Wetland Evaluation Area). Select a size class. **Maximum 6 points.**			**Score**
50 acres	Select this option if the wetland's actual size ≥ 50 acres.	6 pts	6
25 acres to <50 acres		5 pts	
10 acres to <25 acres		4 pts	
3 acres to <10 acres		3 pts	
¼ acre to <3 acres		2 pts	
less than ¼ acre		0 pt	

1b. Wetland Scarcity Utilize the USFWS National Wetlands Inventory (NWI) maps to estimate percentage of wetland area remaining within a 2-mile radius from the Wetland's center. For the purpose of this submetric, areas of open water within the Great Lakes, inland lakes, streams, etc., should be excluded from the wetland percentage. Select the most appropriate percentage category. **Maximum 3 points.**		**Score**
0 to 20% of surrounding 2-mile radius is wetland	3 pts	2
>20 to 80% of surrounding 2-mile radius is wetland	2 pts	
>80% of surrounding 2-mile radius is wetland	1 pt	

8	**Metric 1 Total** add 1a & 1b **(9 points max.)**

Metric 2. Upland Buffers and Intensity of Surrounding Land Use

Maximum 12 points.

2a. Average Buffer Width around the Wetland's Perimeter

Step 1: Using the most recent aerial photograph available, sketch a 150-foot wide "buffer zone" around the Wetland.
Step 2: Estimate the buffer widths from the Wetland's edge to any non-buffer areas (up to 150 feet).
Step 3: Average the buffer widths along the Wetland's perimeter.
Step 4: Select the buffer width that is most appropriate. **Maximum 6 points**.

Buffers Include:

- shrubland, young forest, natural grassland, prairie
- abandoned row crop field (vegetated & naturalizing)
- hay field (non-row crop), lightly grazed pasture
- lightly managed forest (selectively logged)
- designated wildlife area, lightly managed parkland
- other wetland, lake, river

Non-Buffers Include:

- lawns, golf courses, manicured parkland
- residential, commercial, industrial
- roadways (including shoulders), parking lots
- row crop field
- conservation tillage, heavily grazed pasture
- clear-cutting, mining, construction activity

			Score
Wide Buffer Width:	≥150 feet around the perimeter	6 pts	6
Medium Buffer Width:	75 to <150 feet around the perimeter	4 pts	
Narrow Buffer Width:	25 to <75 feet around the perimeter	2 pt	
Very Narrow Buffer Width:	0 (no buffer) to <25 feet around the perimeter	0 pt	

2b. Intensity of Surrounding Land Use within 1,000 feet of the Wetland

Step 1: Using the most recent aerial photograph available, sketch a 1,000-foot wide "land use zone" around the Wetland.

Step 2: Estimate percent coverages comprised by each of the four types of land use listed below.

Step 3: If any land use type comprises more than 25% of the total land use, it is considered to be a "dominant" land use type for the purposes of MiRAM and will receive points. Sum the available points from all dominant land use types and then average the score. Round to the nearest 0.5 increment. **Maximum 6 points**.

Type of Land Use	Examples within each Type of Land Use			Score
Very Low Intensity:	• maturing forest • natural grassland, prairie	• designated wildlife area • other wetland, lake, river	6 pts	6
Low Intensity:	• shrubland/young forest • recent selective logging • hay field (non-row crop)	• lightly managed parkland • old field, lightly grazed pasture • one-lane road/two track	4 pts	
Moderately High Intensity:	• residential & lawns • manicured parkland • golf course	• conservation tillage • recent clear-cut (<10 years) • two-lane road	2 pts	
High Intensity:	• commercial, industrial • high-density residential • heavily grazed pasture • row crop field	• multi-lane paved roadway • construction activity • parking lot • mining	1 pt	

12	**Metric 2 Total** add 2a & 2b **(12 points max.)**

Metric 3. Hydrology

Limited to 26 points.

3a. Sources of Water: Select all that apply. **Maximum 8 points**.		Score
Precipitation: Directly and/or as runoff from upland areas.	1 pt	1
Groundwater: Seeps or evidence, such as significant amounts of skunk cabbage (*Symplocarpus foetidus*) or other fen-adapted species.	2 pts	0
Seasonal/Intermittent Surface Water: Seasonal inundation from a lake, pond, or stream. (A Wetland can only receive points for this source of water or the next, not both.)	2 pts	2
Perennial Surface Water: Perennial inundation from a lake, stream or pond.	5 pts	0

3b. Connectivity: Select all that apply. **Maximum 8 points**.		Score
100-Year Floodplain. As defined in the Floodplain Authority under Part 31 of the NREPA.	2 pts	2
Between a Stream/Lake/Pond and Human Land Use. The Wetland is located between a surface waterbody and any human land use, such that run-off from the adjacent land use could flow through the Wetland before it discharges into the surface waterbody.	2 pts	2
Wetland/Upland Complex. The Wetland is part of a large scale (10+ acres) non-linear complex of wetlands with small areas of unmanicured/undeveloped vegetated uplands that do not restrict movement of organisms between the wetland areas.	2 pts	2
Riparian Corridor. The Wetland is part of a linear *riparian* corridor that provides organism movement along a stream/river. Typically, these corridors should exceed 100 feet in width and extend at least one half mile.	2 pts	0

3c. Duration of Inundation/Saturation Select the option(s) from below that best describe(s) the dominant hydrologic characteristic of the Wetland. For the purposes of this submetric, "dominant" is defined as comprising at least 25% of the Wetland's area. If the Wetland contains several areas that have distinctly different hydrologic characteristics, select all that apply and average the points. Round to the nearest 0.5 increment. **Maximum 4 points.**		**Score**
Permanently Inundated	4 pts	2
Permanently Saturated to Regularly Inundated	3 pts	
Regularly Saturated to Seasonally Inundated	2 pts	
Seasonally Saturated in the Upper 12 Inches of Soil	1 pt	

3d. Alterations to Natural Hydrologic Regime

This submetric evaluates the intactness of the natural hydrologic regime of the Wetland.
Check (√) all forms of past or ongoing hydrologic alteration(s) that are potentially influencing the Wetland.

- ☐ ditch(es) in or near the wetland
- ☐ tile(s) in or near the wetland
- ☐ dike(s) in or near the wetland
- ☐ weir(s) in or near the wetland
- ☐ stormwater inputs (addition of water)
- ☐ stream channelization
- ☐ point source discharge(s) (non-stormwater)
- ☒ filling/grading activities in or near the wetland
- ☒ road bed(s)/RR grades(s) in or near the wetland
- ☒ dredging activities in or near the wetland
- ☐ other (specify)
- ☐ other (specify)

Evaluate whether an alteration is significant or minor in relation to the Wetland's overall area and hydrologic regime. For this submetric, "significant" is defined as affecting approximately 10% or greater of the Wetland. "Minor" is defined as affecting less than approximately 10% of the Wetland. A hydrologic alteration may also impact the Substrate/Soil (submetric 4a) and/or Habitat (submetric 4b).

Select an option below that best describes the extent of (or lack of) alteration(s) to the Wetland's natural hydrologic regime. If uncertain, select adjoining options and average the available points. Round to the nearest 0.5 increment. If the Wetland's natural hydrologic regime has been significantly altered, it shall receive no more than 6 points for this submetric. **Maximum 8 points.**			**Score**
No Hydrologic Alterations Apparent:	There has been no significant alteration(s) to the Wetland's natural hydrologic regime, and/or ongoing minor alteration(s) is/are rare.	8 pts	3
Recovered:	Significant hydrologic alteration(s) occurred more than 20 years prior to the assessment, and/or ongoing minor hydrologic alteration(s) is/are only occasional.	6 pts	
Recovering:	A single significant hydrologic alteration occurred within 20 years prior to the assessment, and/or ongoing minor hydrologic alteration(s) is/are frequent.	4 pts	
Recent or No Recovery:	Multiple significant hydrologic alterations have occurred in the 20 years prior to the assessment, and/or significant alteration(s) is/are ongoing.	1 pt	

14	**Metric 3 Total** add 3a – 3d **(26 points max.)**

Metric 4. Habitat Alteration and Habitat Structure Development
Maximum 20 Points.

4a. Substrate/Soil Disturbance

This submetric evaluates the intactness or lack of disturbance to the Wetland's substrate and soil. Check (√) all possible forms of past or ongoing substrate/soil disturbance that are observed within the Wetland.

- ☒ human-induced erosion or exposure
- ☐ human-induced sedimentation or burial
- ☐ filling
- ☒ grading
- ☐ dredging
- ☐ plowing, disking
- ☐ intensive grazing (hooves)
- ☐ off-road vehicle use
- ☒ construction vehicle use
- ☐ other (specify)

Evaluate whether a disturbance is significant or minor in relation to the Wetland's overall area. For this submetric, "significant" is defined as affecting approximately 10% or greater of the Wetland. "Minor" is defined as affecting less than approximately 10% of the Wetland. A substrate disturbance may also be an alteration of the natural hydrologic regime (Submetric 3d) and/or an alteration of habitat (Submetric 4b).

Select an option below that best describes the extent of (or lack of) disturbances to the Wetland's substrate. If uncertain, select adjoining options and average the points. Round to the nearest 0.5 increment. If the Wetland's substrate has been significantly altered, it should receive no more than 3 points. **Maximum 4 points.**			**Score**
No Substrate Disturbance Apparent:	There has been no significant disturbance to the Wetland's substrate and/or ongoing minor disturbance events are rare.	4 pts	2
Recovered:	Significant substrate disturbance occurred more than 20 years prior to the assessment, and/or ongoing minor substrate disturbance events are only occasional (e.g., light sedimentation from a nearby dirt road).	3 pts	
Recovering:	A single significant substrate disturbance event occurred within 20 years prior to the assessment, and/or ongoing minor substrate disturbance events are frequent.	2 pts	
Recent or No Recovery:	Multiple significant substrate disturbance events have occurred in the 20 years prior to the assessment, and/or significant disturbance is ongoing.	1 pt	

4b. Habitat Alteration

This submetric evaluates the intactness of the natural habitat within the Wetland. A "significant" alteration is defined as affecting 10% or greater of the Wetland. "Minor" alternation affects less than 10% of the Wetland. Check (√) all possible forms of past or ongoing habitat alteration(s) that are observed within the Wetland.

- ☒ barriers such as road bed(s)/RR grades(s)
- ☐ selective cutting
- ☒ clearcutting
- ☒ mowing or shrub removal
- ☐ coarse woody debris (CWD) removal
- ☐ intensive grazing
- ☐ nutrient enrichment, e.g., nuisance algae
- ☐ herbicide/chemical treatment
- ☒ sedimentation
- ☐ dredging
- ☒ filling/grading
- ☐ plowing/disking/farming
- ☐ other (specify)

Utilize aerial photography and field evidence to determine if any habitat alterations occurred prior to approximately 20 years ago. Determine the approximate pre-disturbance extent of vertical and horizontal habitat attributes, such as large, woody debris, plant species diversity, hummocks, patchiness, niche diversity, etc. Disregard changes that can be attributed to wetland community succession or other natural processes. A habitat alteration may also be an alteration of the natural hydrologic regime (Submetric 3d) and/or a substrate disturbance (Submetric 4a).

Select an option below that best describes the extent of (or lack of) alteration(s) to the Wetland's habitat. If unclear, select adjoining options and average the available points. Round to the nearest 0.5 increment. **Maximum 9 points**.			**Score**
No Habitat Alterations Apparent:	There has been no significant alteration to the Wetland's natural habitat, and/or ongoing minor alteration(s) is/are rare.	9 pts	3
Recovered:	Significant habitat alteration(s) occurred more than 20 years prior to the assessment, and/or ongoing minor habitat alteration(s) is/are only occasional.	6 pts	
Recovering:	A single, significant habitat alteration occurred within 20 years prior to the assessment, and/or ongoing minor habitat alteration(s) is/are frequent.	3 pts	
Recent or No Recovery:	Multiple significant habitat alterations have occurred in the 20 years prior to the assessment, and/or significant alteration(s) is/are ongoing.	1 pt	

4c. Habitat Structure Development

Determine an overall qualitative rating of how well developed the Wetland is in comparison to the best of its type. For this submetric, a wetland's type is defined as any ecologically and/or hydrogeomorphically similar wetland habitat typical of the region. Well-developed communities, regardless of successional state, often exhibit many of the following habitat characteristics:

- Quality vertical habitat, such as hummocks, organic debris, and diverse plant height ranges.
- Quality horizontal habitat, such as varying vegetation density and patchiness, moderate ratios of open space to cover, plant species diversity, and a wide range of plant ages.
- Other ecological attributes, such as a diverse assortment of the following: breeding areas, rearing areas, feeding areas, niche space, etc.

Select an option below that best describes the Wetland's habitat structure development. If unclear, select adjoining options and average the points. Round to the nearest 0.5 increment.
Maximum 7 points.

			Score
Excellent:	Wetland appears to represent the best of its type.	7 pts	2
Good:	Wetland appears to be a good example of its type but because of past or present disturbance, or other reasons, is not excellent.	5 pts	
Fair:	Wetland appears to be a moderately good example of its type but because of past or present disturbance, or other reasons, is not good.	3 pts	
Poor:	Wetland is a poor example of its type because of past or present disturbance, or other reasons.	1 pt	

7 **Metric 4 Total**
add 4a – 4c
(20 points max.)

Metric 5. Special Situations

Refer to the Narrative Rating for definitions and the *User's Manual* for guidance, **Limited to 10 points**

5a. High Ecological Value. See Narrative Rating for definitions of each.
10 points for each that apply.

☐ 1. Contains USFWS-designated Critical Habitat
☐ 2. Federal or State-listed T/E Plant or Animal Species
☐ 3. S1, S2, or S3 Natural Community Type (at least 5 acres or 25% of the Wetland)
☐ 4. Southern Bog (at least 5 acres or 25% of the Wetland)
☐ 5. Old-Growth/Mature Forested Wetland (at least 5 acres or 25% of the Wetland)
☐ 6. Great Lakes Coastal Wetland

Score: 0

5b. Forested Wetland. **5 points**.
Exhibits combined canopy cover from any group(s) of trees. Stem DBH must be at least 3 inches to qualify as a tree. Total area must comprise at least 5 acres or 25% of the Wetland. Does not qualify if most of the trees are ungrouped and widely scattered (e.g., a savanna), or located only thinly along the Wetland's margin.

Score: 0

5c. Urban/Suburban Wetland. **5 points**.
Greater than 50% of the surrounding landscape (1,000 foot radius) is comprised of low-permeability surfaces, such as roads, lawns, parking lots, buildings, sidewalks, etc.

Score: 0

5d. Low-Quality Wetland. Negative 10 points.
The Wetland is less than 1 acre and non-contiguous as defined in Part 303 and either: *1)* a stormwater pond that was excavated from upland and constructed for stormwater treatment in conjunction with a development project *or 2)* more than 75% covered by highly-invasive vegetation. See Submetric 6c for a list of highly-invasive species.

Score: 0

0 **Metric 5 Total**
(10 points max.)
Can be negative

Metric 6. Vegetation, Interspersion, and Habitat Features
Maximum 20 points.

6a. Wetland Vegetation Components

Determine the Qualitative Cover Score of each Vegetation Component (Herbaceous, Shrub/Sapling, Forest Overstory). Using the Qualitative Cover Scoring Table, start on the left and proceed to the right, until a point value is obtained for each Vegetation Component. Vegetation Components may exist in overlapping layers, e.g., significant areas of shrub/sapling and/or herbaceous may exist under a forest canopy. Only groups of trees, clusters of shrubs, or dense patches of herbaceous stems may count toward area coverage. Do not include widely-scattered trees, lone shrub/saplings, or sparse patches of herbaceous stems. See Submetric 6c to aid in the proper identification of broad-leaved cattail (*Typha latifolia*), a non-invasive, native species.

Qualitative Cover Scoring Table

Vegetation Component ► is >¼ acre	>25% of Wetland area ►	Native species dominate the coverage ►	High native diversity ►	3 pts
			Moderate to low native diversity ►	2 pts
		Invasive or non-native species dominate the coverage ►	Moderate to high native diversity ►	2 pts
			Low native diversity ►	1 pt
	<25% of Wetland area ►	Native species dominate the coverage ►	Moderate to high native diversity ►	2 pts
			Low native diversity ►	1 pt
		Invasive or non-native species dominate the coverage ►	Moderate native diversity ►	1 pt
			Low native diversity ►	0 pt
Vegetation Component is <¼ acre ►	>25% of Wetland area ►	Native species dominate the coverage ►	Moderate to high native diversity ►	2 pts
			Low native diversity ►	1 pt
		Invasive or non-native species dominate the coverage ►		0 pt
	<25% of Wetland area ►			0 pt

Forest Overstory Component, qualitative cover score derived from table **maximum 3 points**.	**Score**
Forested wetland areas are characterized by a group of trees at least 3 inches in DBH, regardless of height. The Wetland does not have a forested component if the trees are widely scattered (e.g., a savanna), located only thinly along the Wetland's margin, or if it is clear that most of the trees are actually located on upland around the perimeter of the Wetland.	0

Shrub/Sapling Component, qualitative cover score derived from table **maximum 3 points**.	**Score**
Shrub/Sapling wetland areas are dominated by clusters of woody plants less than 3 inches in DBH and greater than 3.28 feet in height. Species include true shrubs, young trees, and stunted trees. Shrub wetlands may represent a successional stage leading to a forested wetland or they may be relatively stable plant communities.	2

Herbaceous Component, qualitative cover score derived from table **maximum 3 points**.	**Score**
Herbaceous wetlands are areas dominated by dense patches of erect, non-woody plants, regardless of size, and woody plants less than 3.28 feet in height. The MiRAM includes the robust-stemmed yellow pond lily (*Nuphar advena*) and American lotus (*Nelumbo lutea*) within the herbaceous component because of their tendency to hold their stems and leaves well above the water. All floating-leaf species (including *Nymphaea* spp.) are excluded from the herbaceous component, and are instead included within the open water component (see Submetric 6b).	2

6b. Open Water Component

Open water is an unobstructed, inundated area of water containing few or no rooted emergent or woody plant species. It can occur as a distinct zone along a river or lake or as a combination of small ponds, streams, or pools (e.g., within a marsh or swamp) and as an "understory" below a forest canopy (e.g., a forested vernal pool).

This Habitat Component includes combined acreage from any of the following areas:

- **Small ponds, streams, and pools**.
- **Seasonal standing water areas** (e.g., mudflats and dried-down vernal pools) that were inundated long enough during the growing season to support aquatic life.
- **Aquatic bed areas**, also known as submergent marsh or submerged aquatic vegetation (SAV). Aquatic bed is dominated by plants that grow at or below the surface of the water for most of the growing season in most years. The MiRAM includes aquatic bed within the definition of open water, due to the potential difficulty in differentiating the two entities. For the purposes of the MiRAM, all floating-leaf aquatic taxa, such as water lilies (*Nymphaea* spp.), are included in the definition of aquatic bed and, therefore, are also included in the definition of open water.
- **100-foot wide strip of open water along a lake or river** (see Boundary Guidelines in the *User's Manual*). When the Wetland is adjacent to a lake or large river, calculate the acreage of the 100-foot wide open water strip that is included within the Wetland (see MiRAM Boundary Determination Guidelines). Simply divide the linear feet of shoreline length by 400. For example, if the vegetated portion of the wetland interfaces with 200 linear feet of a lake, then the extent of the lake's open water included within the Wetland would be calculated as: 200/400 = 0.5 acre.
- **Shallow pools free of dense shrub canopy** (e.g., open area within an inundated shrub swamp).
- **Shallow pools free of densely-packed herbaceous vegetation** (e.g., open area within a marsh or bog).

Estimate the total open water coverage. **Maximum 3 points**.			**Score**
High:	2.5 acres or more	3 pts	1
Moderate:	1.0 acre to <2.5 acres	2 pts	
Low:	0.25 acre to <1.0 acre	1 pt	
Virtually Absent:	<0.25 acre	0 pt	

6c. Coverage of Highly-Invasive Plant Species

Estimate the combined total coverage of any of the species listed below. Assign points based on a range from virtually absent (1 point) to extensive (negative 5 points).

- common reed (*Phragmites australis)*
- purple loosestrife (*Lythrum salicaria*)
- reed canary grass (*Phalaris arundinacea*)
- common buckthorn (*Rhamnus cathartica*)
- glossy buckthorn (*Rhamnus frangula*)
- narrow-leaved cattail (*Typha angustifolia*)
- hybrid cattail (*Typha x glauca*)
- marsh thistle (*Cirsium palustre*)
- multiflora rose (*Rosa multiflora*)
- non-native honeysuckle (*Lonicera spp.*)

Key to Aid in Identification of Invasive and Non-Invasive Cattail (Typha) Species

Native, non-invasive: Male and female portions of the flower spike are not separated (or only slightly separated) on most of the stems within the same local stand. Female flower spikes are light brown and are 0.8-1.2 inches thick at maturity (before expanding when dried). Most leaf blades are approximately 0.5 to1 inch wide at widest part. Typically, not tightly packed into an area (non-invasive). .....**broad-leaved cattail (*T. latifolia)***

Non-native, Invasive: Male and female portions of the flower spike are separated on most of the stems within the same local stand. Female flower spikes are dark brown and less than 0.8 inch thick at maturity (before expanding when dried). Most leaf blades are less than 0.5 inch wide at widest part. Typically, tightly packed within an area, crowding out other plant species (invasive). .....**narrow-leaved cattail (*T. angustifolia)***

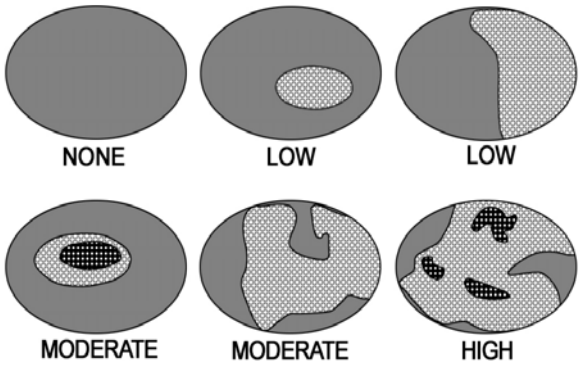
Non-native, Invasive: Hybridization may have occurred if most plants within the same local stand do not cleanly fit the characteristics of either pure species described above. The gap between the male and female portions of the flower spikes is highly variable, with many plants within the same local stand having no gap, and many having relatively wide gaps. Typically, extremely vigorous and often tightly packed within an area, crowding out other plant species (invasive).....**hybrid cattail (*T. x glauca)***

Estimate the total coverage. **Maximum 1 point**.			**Score**
Virtually Absent:	<1% aerial coverage of highly-invasive species	1 pt	0
Nearly Absent:	1% to <5% aerial coverage of highly-invasive species	0 pt	
Low:	5% to <25% aerial coverage of highly-invasive species	-1 pt	
Moderate:	25% to <75% aerial coverage of highly-invasive species	-3 pts	
Extensive:	≥75% aerial coverage of highly-invasive species	-5 pts	

6d. Horizontal (Plan View) Interspersion

Evaluate the Wetland from a "plan view," i.e., as if you are looking down upon it. The graphic shows hypothetical wetlands for estimating degree of interspersion.

Select only one option.
Maximum 5 points.



		Score
Wetland has a high degree of interspersion	5 pts	1
Wetland has a moderate degree of interspersion	3 pts	
Wetland has a low degree of interspersion	1 pt	
Wetland has no interspersion	0 pt	

6e. Habitat Features

Determine the amount of each habitat feature that is present in the Wetland. **Maximum 3 points for each habitat feature.**

1. Hummocks/Tussocks/Tree Mounds, e.g., sedge/grass tussocks, decaying nursery logs (remnants of large logs), root tip-up mounds (uprooted trees), etc. Percent coverage is based on total area of all raised features (hummocks/tussocks/tree mounds) and includes the depressional matrix within any group of raised features.

				Score
Virtually Absent: 0 pt <5% of the area	Sparse: 1 pt 5% to 10% of the area	Moderate: 2 pts 11% to 50% of the area	Dense: 3 pts >50% of the area	1

2. Coarse Woody Debris (CWD). Per log, average width ≥6 inches; each at least 10 feet long. e.g., fallen trees and/or large branches, etc.

				Score
Virtually Absent: 0 pt < 1 per acre	Sparse: 1 pt 1 to 5 per acre	Moderate: 2 pts 6 to 10 per acre	Dense: 3 pts >10 per acre	0

3. Large Standing Trees, Living or Dead (≥12 inches DBH).

				Score
Virtually Absent: 0 pt < 1 per acre	Sparse: 1 pt 1 to 5 per acre	Moderate: 2 pts 6 to 10 per acre	Dense: 3 pts >10 per acre	0

4. Amphibian Breeding/Nursery Habitat, e.g., temporary pools with standing water of sufficient duration and depth to support frog and/or salamander reproduction. Permanent areas of vegetated standing water along the edges of ponds, lakes, and some streams also serve as amphibian habitat.

				Score
Virtually Absent: 0 pt < 5% of the area	Sparse: 1 pt 5% to 10% of the area	Moderate: 2 pts 11% to 50% of the area	Dense: 3 pts >50% of the area	1

8	**Metric 6 Total** add 6a – 6f **(20 points max.)**

Metric 7. Scenic, Recreational, and Cultural Value

Maximum 3 points.

Select all that apply. Maximum 1 point per submetric.		Score
7a. Scenic: The public can view the Wetland from a public road or public land OR the Wetland has significant scenic value (assign 1 point).	1 pt	0
7b. Recreational: The general public has access to the Wetland or the Wetland is assumed to be used for recreational activities (assign 1 point).	1 pt	0
7c. Cultural/Historical: The Wetland, or any part of the Wetland, has been recognized as having important cultural or historic value (assign 1 point).	1 pt.	0

0	**Metric 7 Total (3 points max.)**

MiRAM Summary

Narrative Rating

Question 1: U.S. Fish and Wildlife Service (USFWS) Critical Habitat	☐YES ☒NO
Question 2: Threatened or Endangered (T/E) Species Habitat	☐YES ☒NO
Question 3: Rare Wetland Natural Community Type	☐YES ☒NO
Question 4: Great Lakes Coastal Wetland	☐YES ☒NO

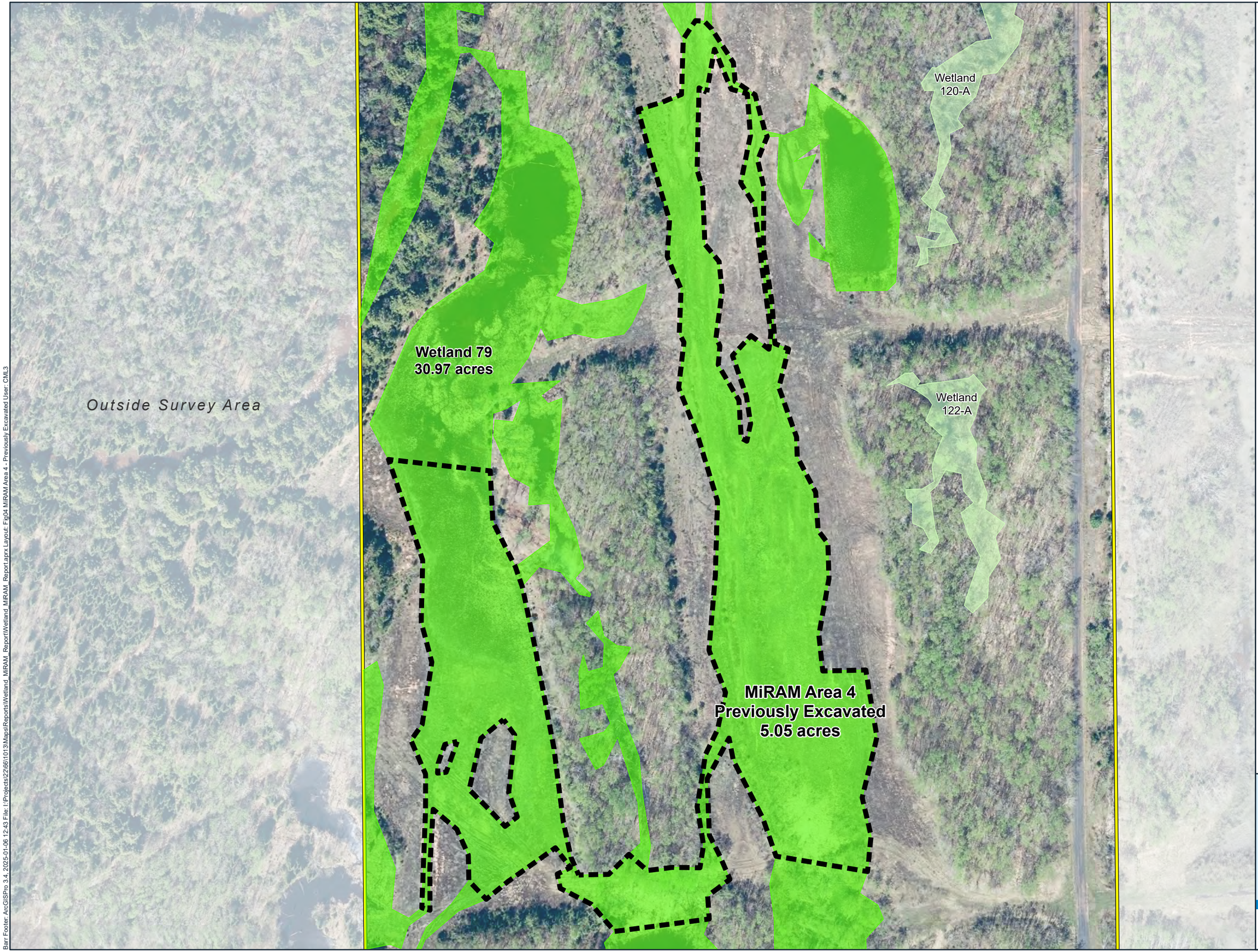
Quantitative Rating

	Score	Maximum
Metric 1: Wetland Size and Distribution	8	9
Metric 2: Upland Buffers and Intensity of Surrounding Land Use	12	12
Metric 3: Hydrology	14	26
Metric 4: Habitat Alteration and Habitat Structure Development	7	20
Metric 5: Special Situations	0	10
Metric 6: Vegetation, Interspersion, and Habitat Features	8	20
Metric 7: Scenic, Recreational, and Cultural Value	0	3
Seasonally Adjusted Score (add 10 pts if outside the growing season)	0	10

Grand Total
Add totals from all seven metrics

49	**100 Max.**

Scoring comments:



Survey Area
MiRAM Area 4
Wetland 79
Other Wetland

0 120 240
Feet

Imagery: MiSAIL 2023

MiRAM Area 4-
Previously Excavated
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

FIGURE 4

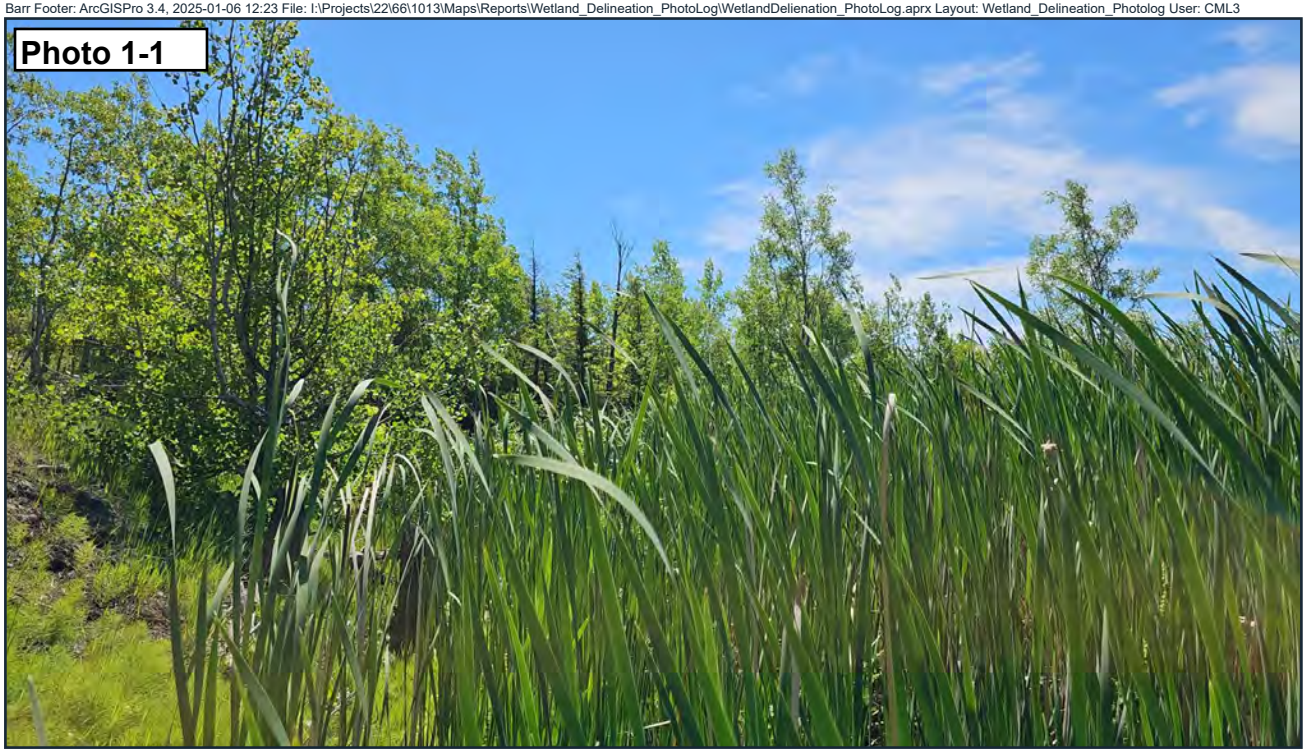
BARR

Barr Footer: ArcGISPro 3.4, 2025-01-06 12:43 File: I:\Projects\23\66\1013\Maps\Reports\Wetland_MiRAM_Report\Wetland_MiRAM_Report.aprx Layout: Fig04 MiRAM Area 4 - Previously Excavated User: CML3

Appendix E

Wetland Delineation Photolog

Photo 1-1



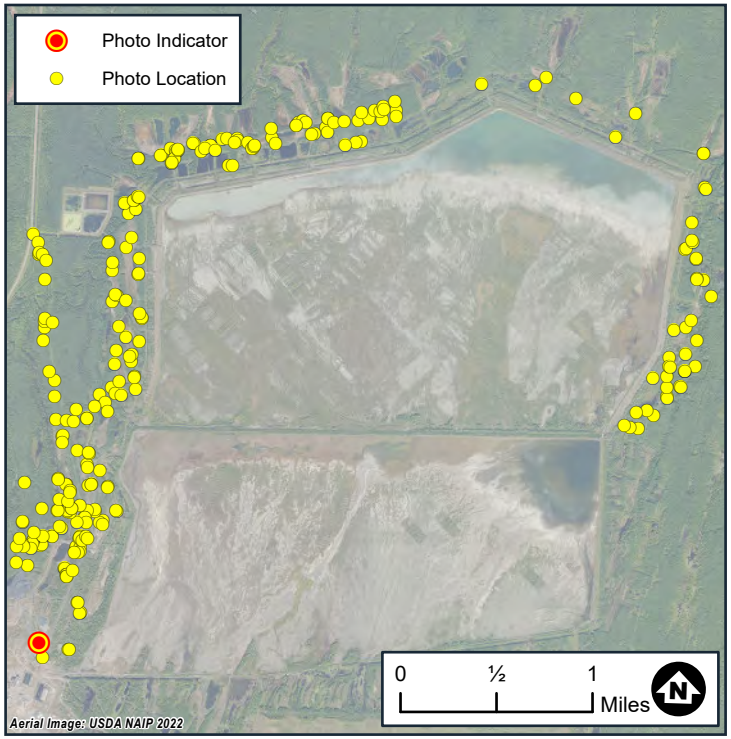
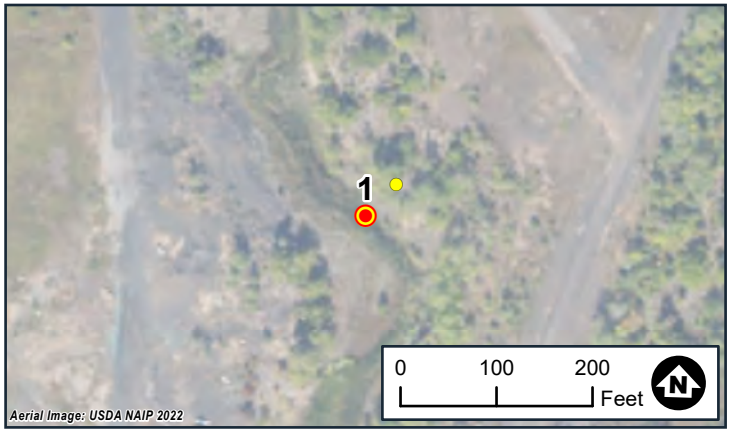


Photo 1-2





Page 1 of 262

Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/25/2024
Wetland ID:WTL1
Flag No.:1-13
Sample Point ID:WTL1 DP1 W

Note: Photo locations are approximate

Photo 2-1



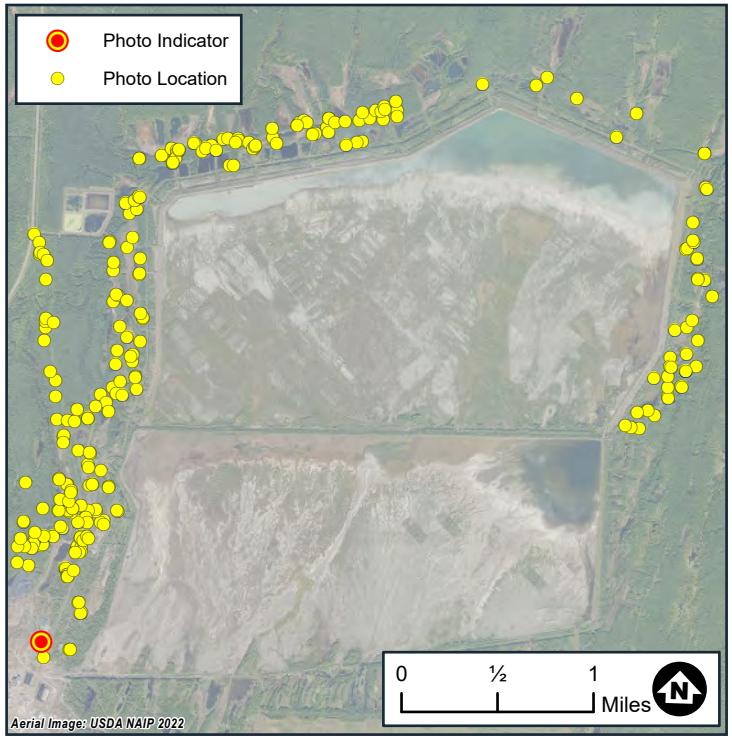
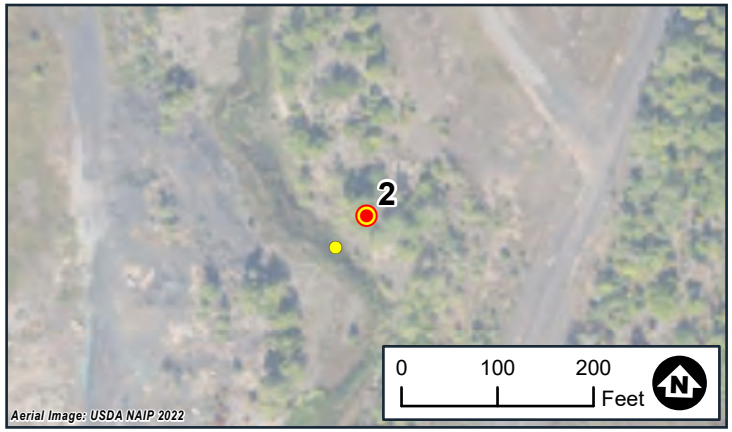


Photo 2-2





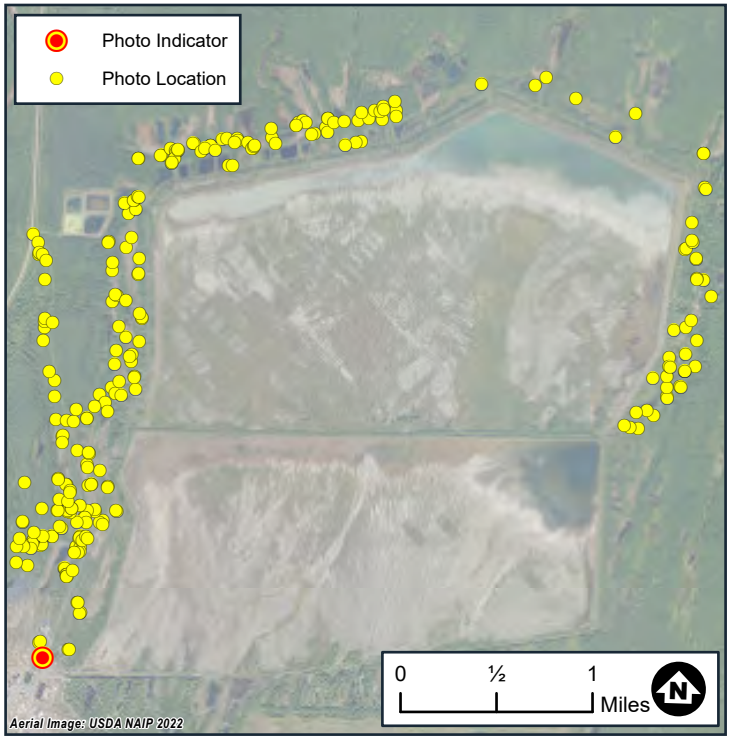
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

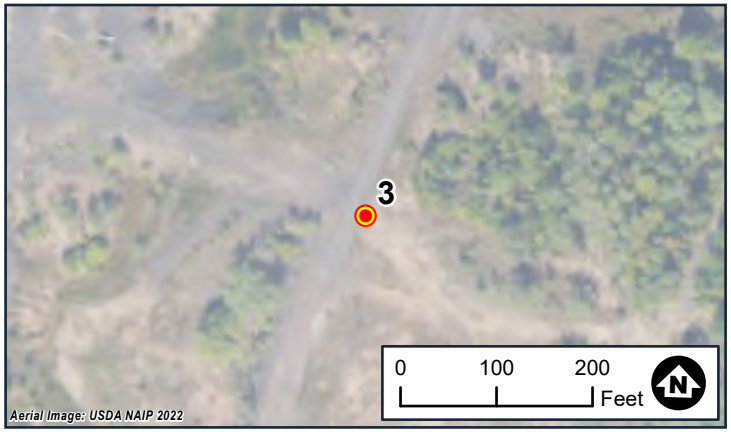
BARR

Date: 6/25/2024
Wetland ID:WTL1
Flag No.:1-12
Sample Point ID:WTL1 DP1 U

Note: Photo locations are approximate







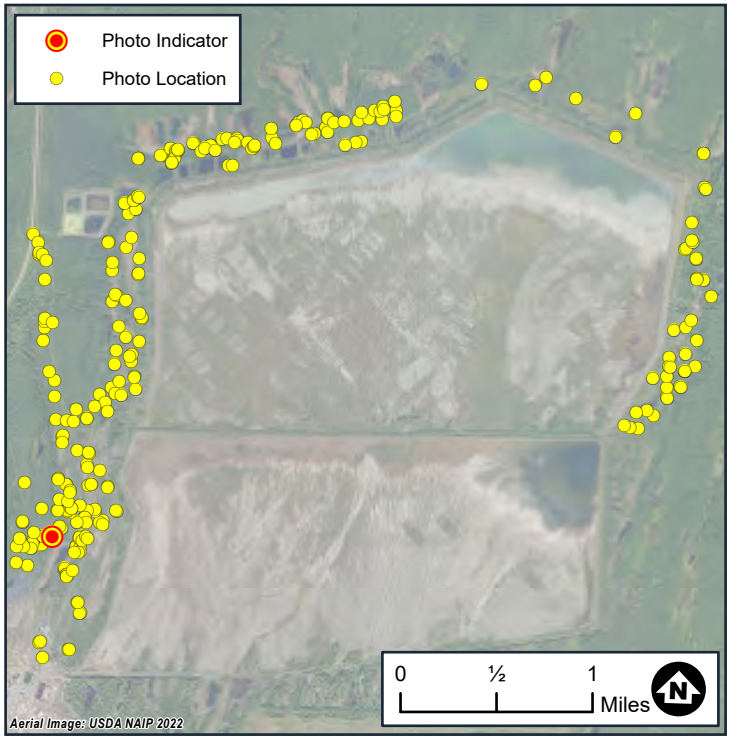
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

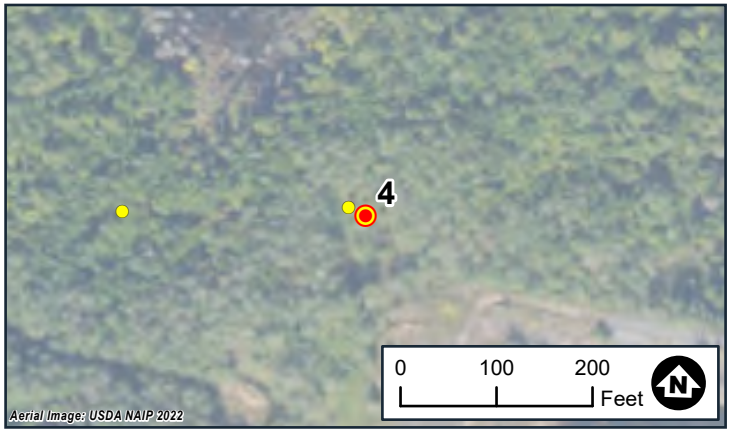
BARR

Date: 6/25/2024
Wetland ID:WTL2
Flag No.:2-1
Sample Point ID:WTL2-DP1-W

Note: Photo locations are approximate







Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/25/2024
Wetland ID:WTL2
Flag No.:2-1
Sample Point ID:WTL2-DP2- U

Note: Photo locations are approximate

Photo 5-1



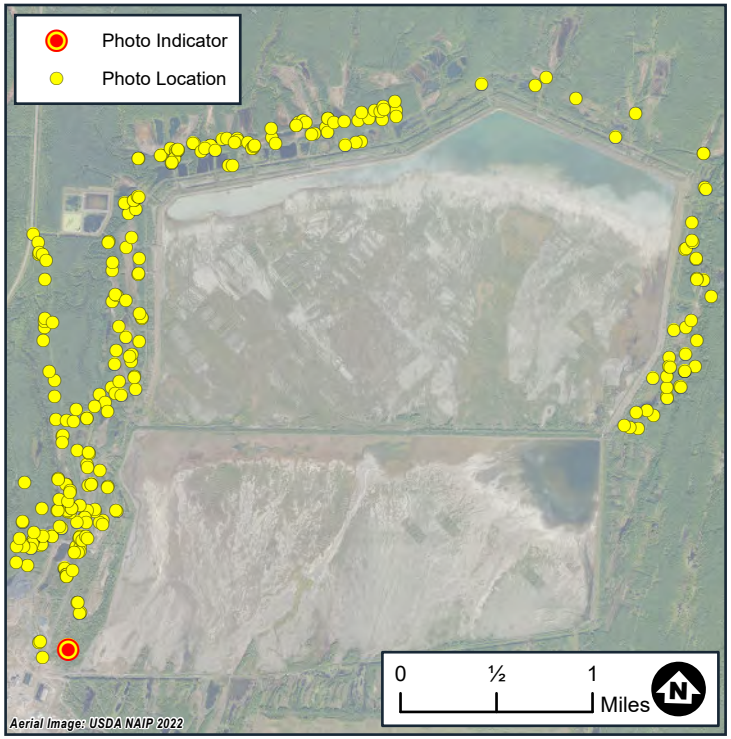
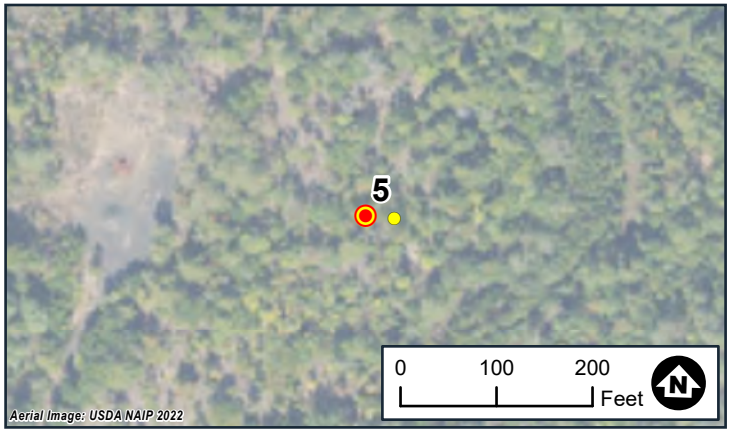


Photo 5-2





Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/25/2024
Wetland ID:WTL3
Flag No.:3-47
Sample Point ID:WTL3 DP1 W

Note: Photo locations are approximate

Photo 6-1



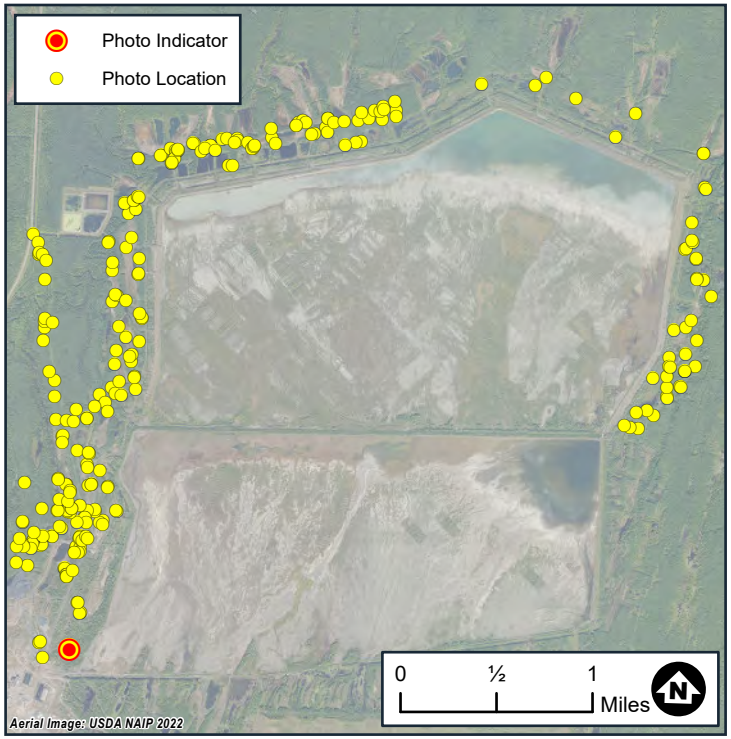
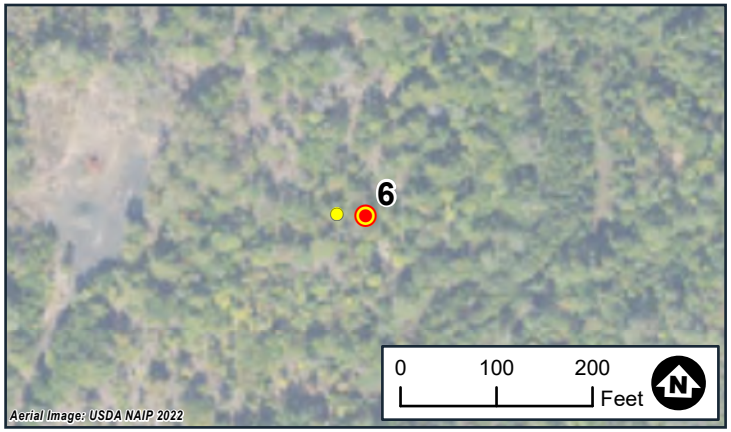


Photo 6-2





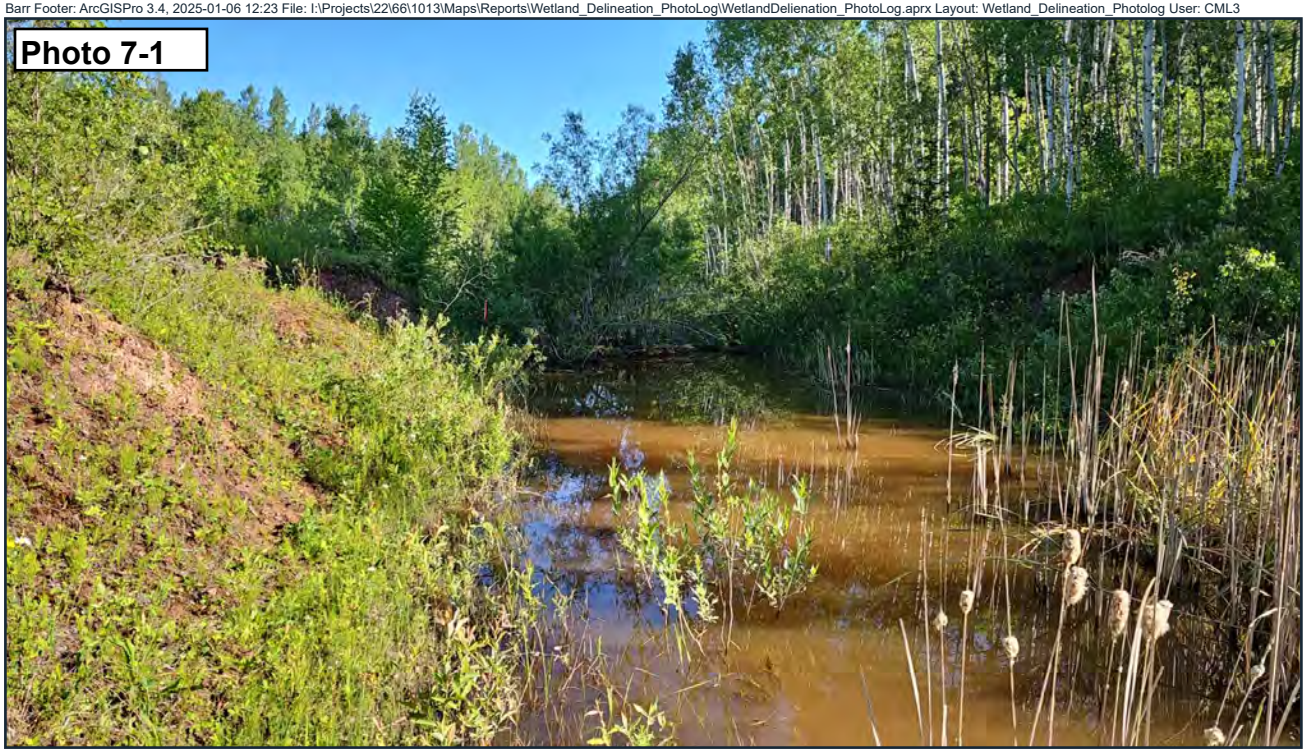
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/25/2024
Wetland ID:WTL3
Flag No.:3-47
Sample Point ID:WTL3 DP1 U

Note: Photo locations are approximate

Photo 7-1



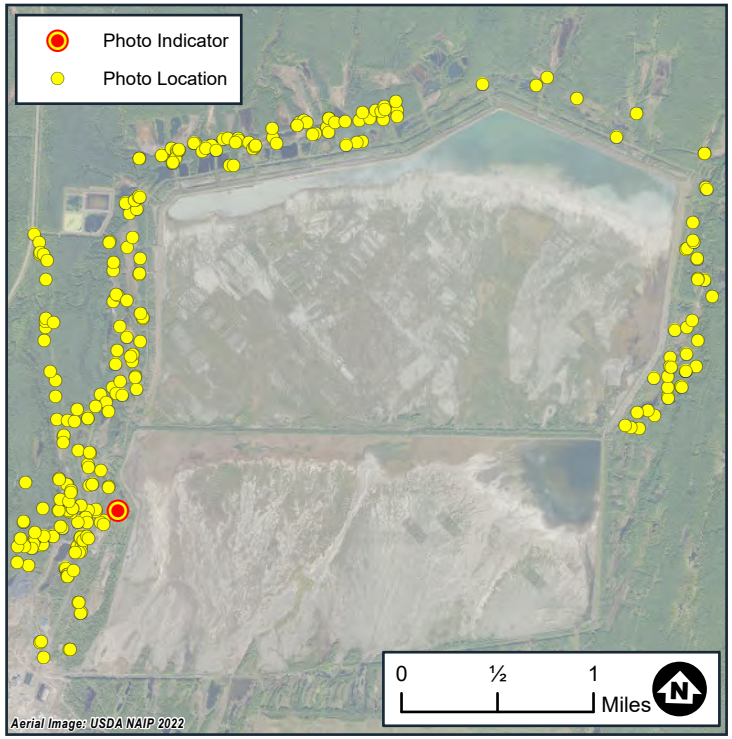
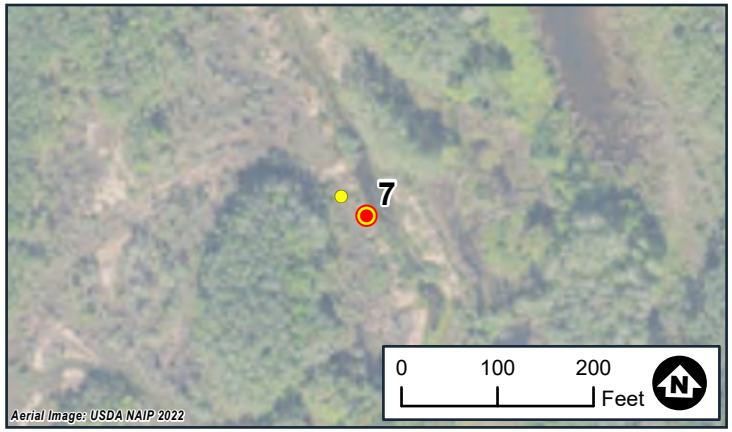


Photo 7-2





Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/27/2024
Wetland ID:WTL3
Flag No.:3-122
Sample Point ID:WTL3-DP2-W

Note: Photo locations are approximate

Photo 8-1



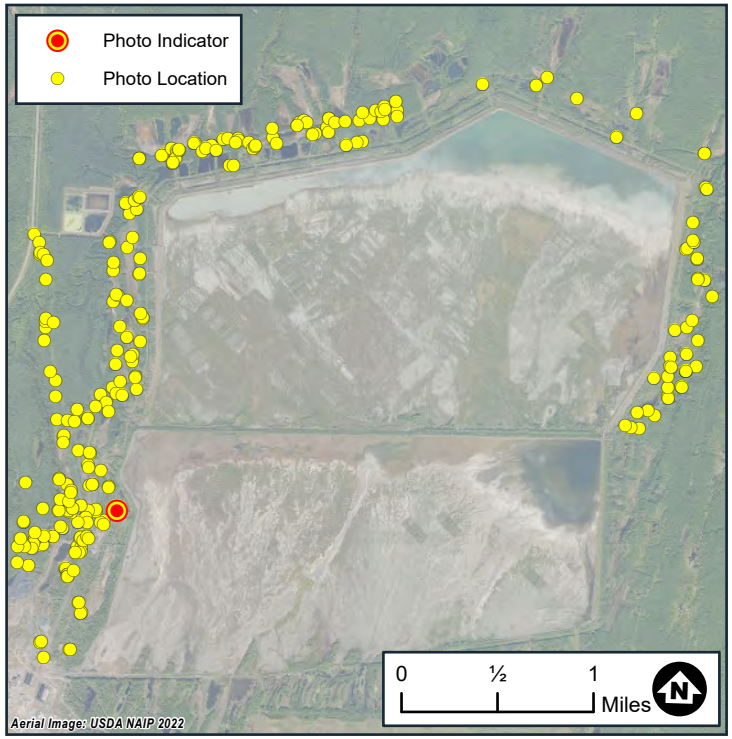
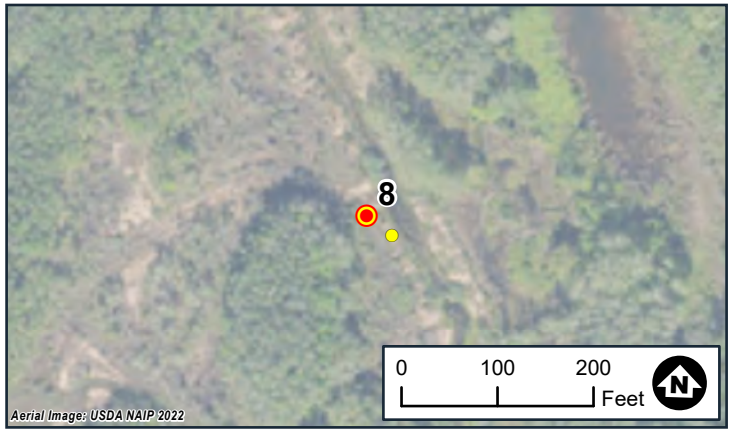


Photo 8-2





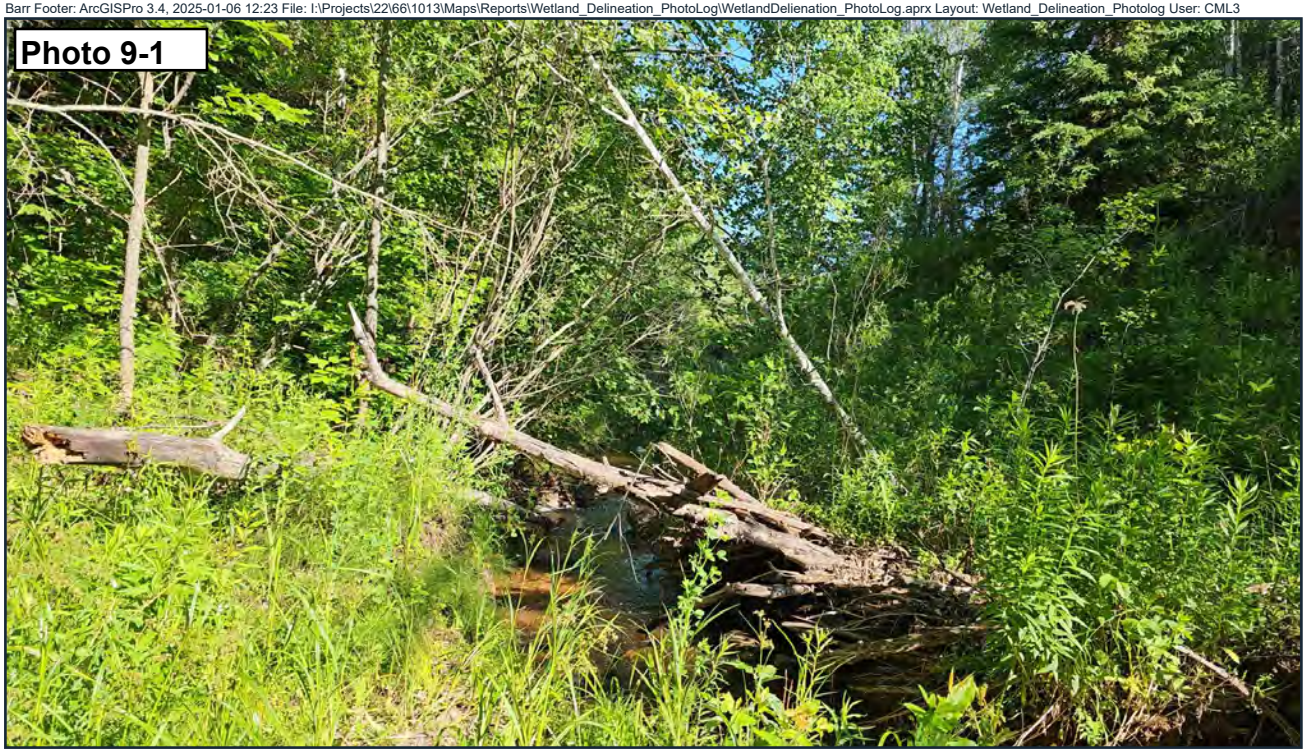
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/27/2024
Wetland ID:WTL3
Flag No.:3-122
Sample Point ID:WTL3-DP2-U

Note: Photo locations are approximate

Photo 9-1



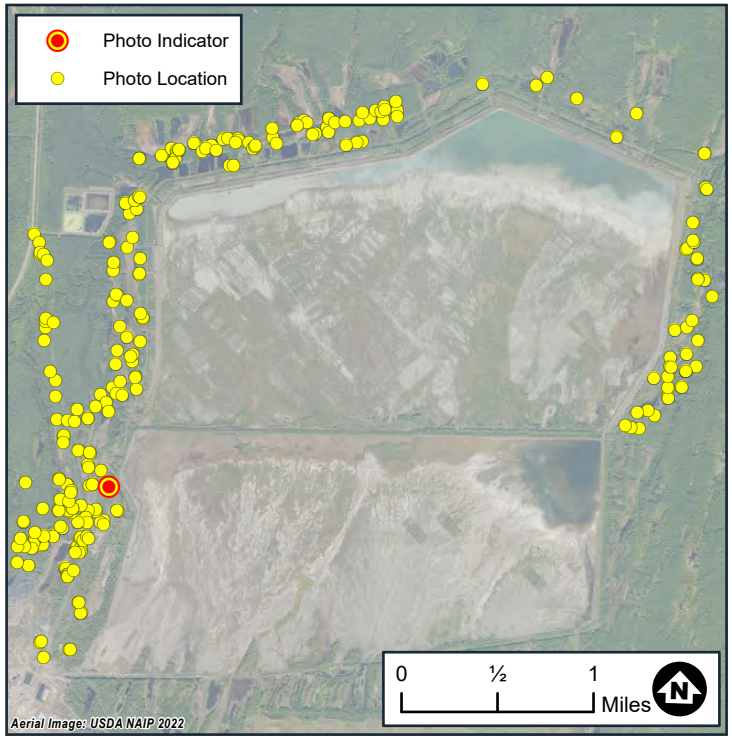
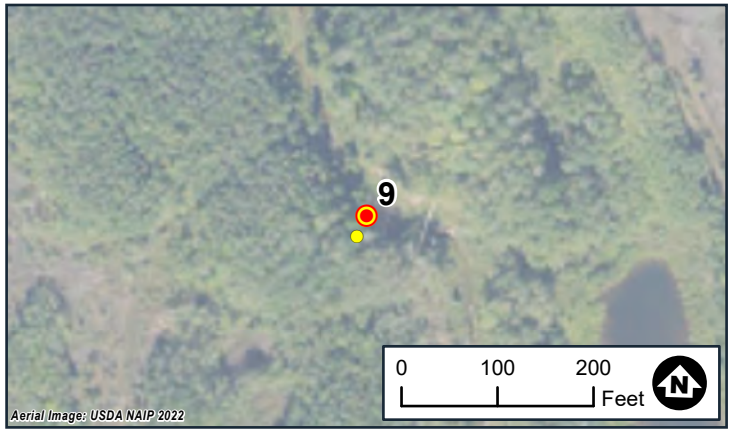


Photo 9-2





Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/27/2024
Wetland ID:WTL3
Flag No.:3-147
Sample Point ID:WTL3-DP3-W

Note: Photo locations are approximate

Photo 10-1



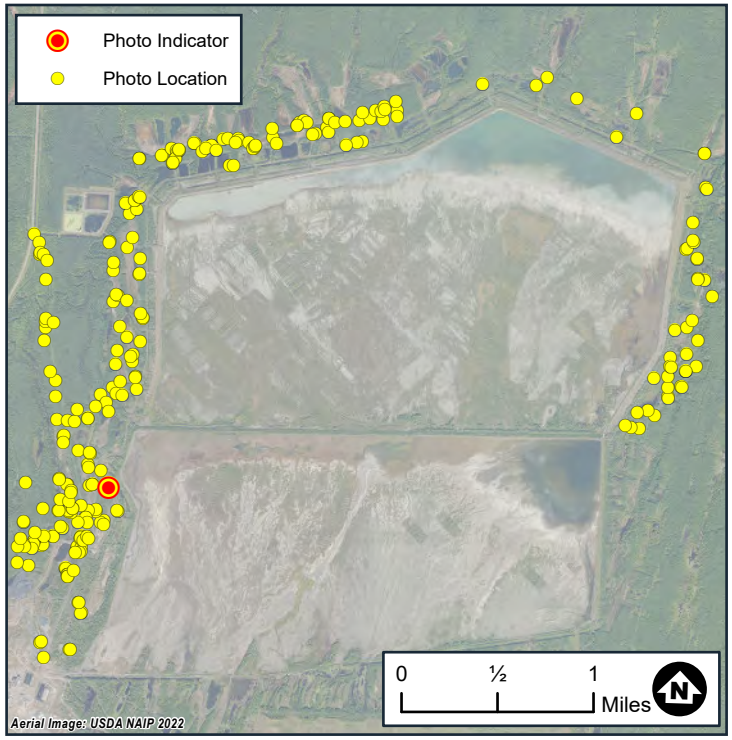
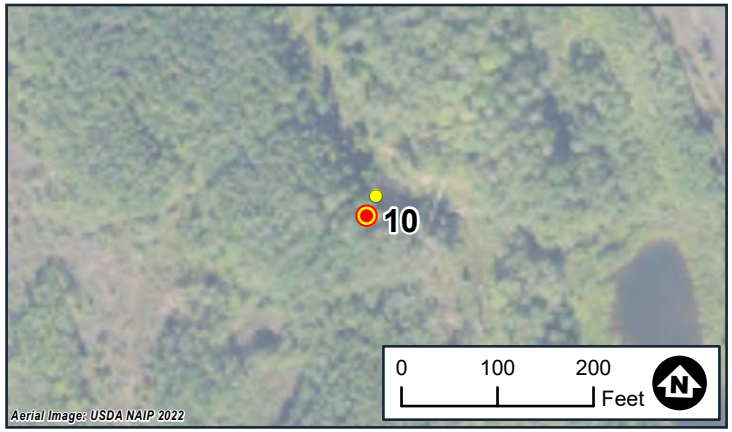


Photo 10-2





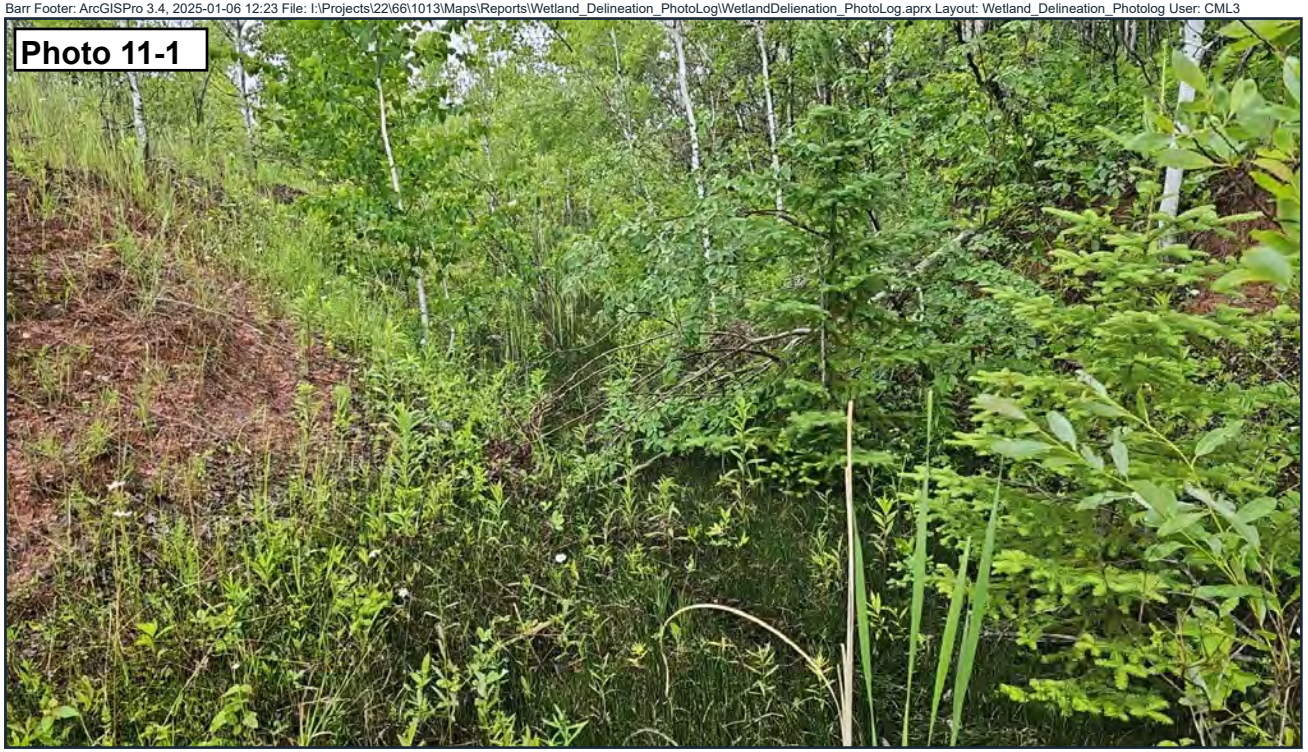
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/27/2024
Wetland ID:WTL3
Flag No.:3-147
Sample Point ID:WTL3-DP3-U

Note: Photo locations are approximate

Photo 11-1



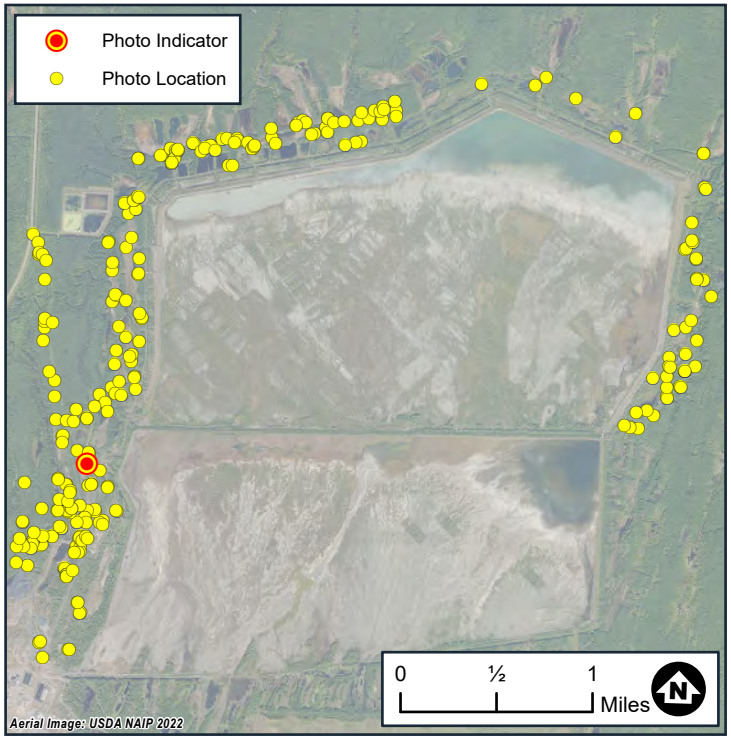
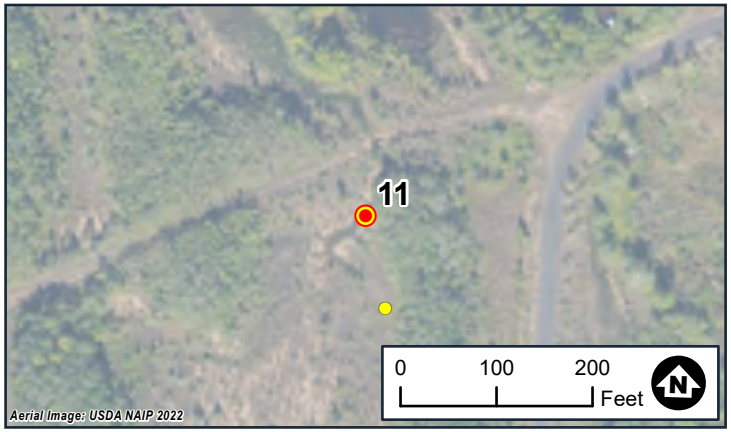


Photo 11-2





Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/28/2024
Wetland ID:WTL3
Flag No.:3-494
Sample Point ID:N/A

Note: Photo locations are approximate

Photo 12-1



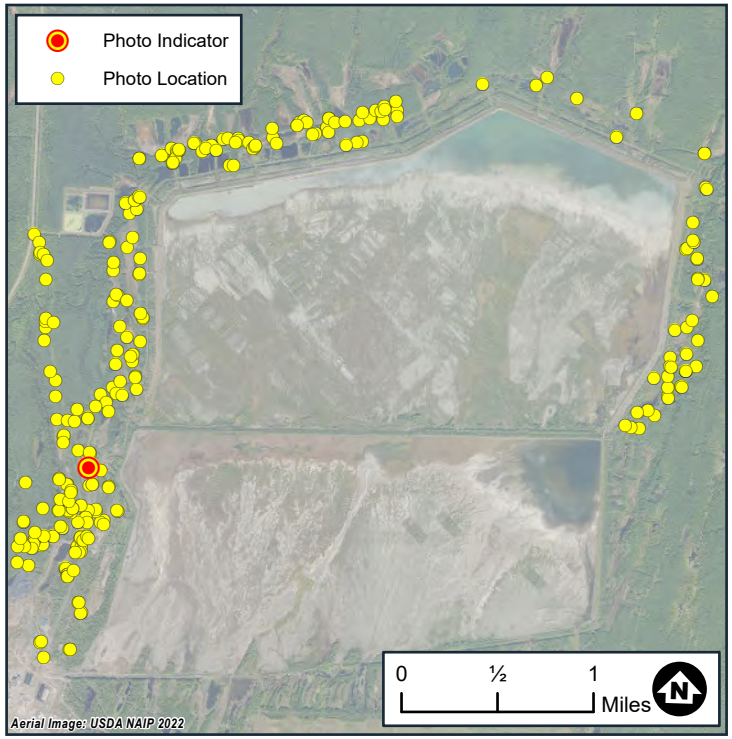
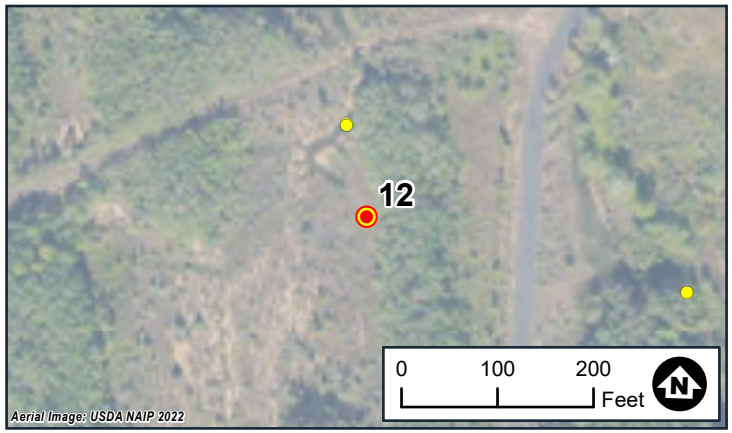


Photo 12-2





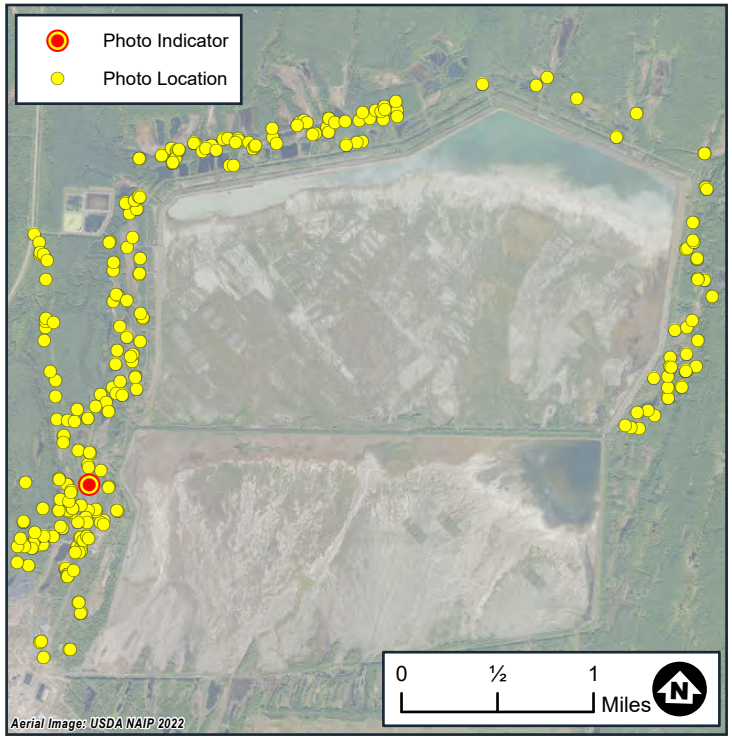
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

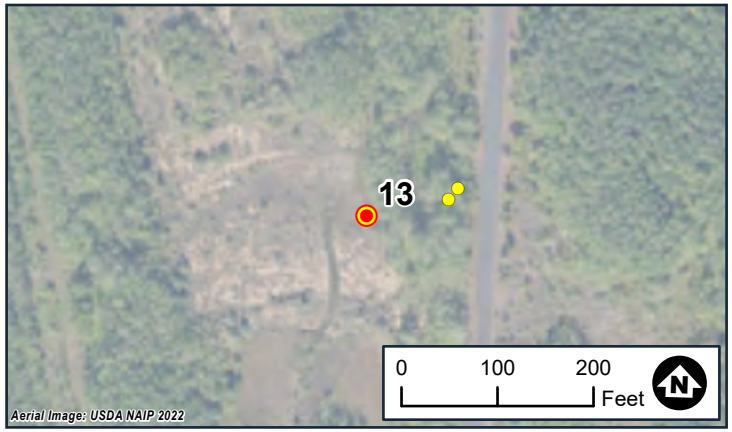
Date: 6/28/2024
Wetland ID:WTL3
Flag No.:3-501
Sample Point ID:N/A

Note: Photo locations are approximate









Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/28/2024
Wetland ID:WTL3
Flag No.:3-507
Sample Point ID:N/A

Note: Photo locations are approximate

Photo 14-1



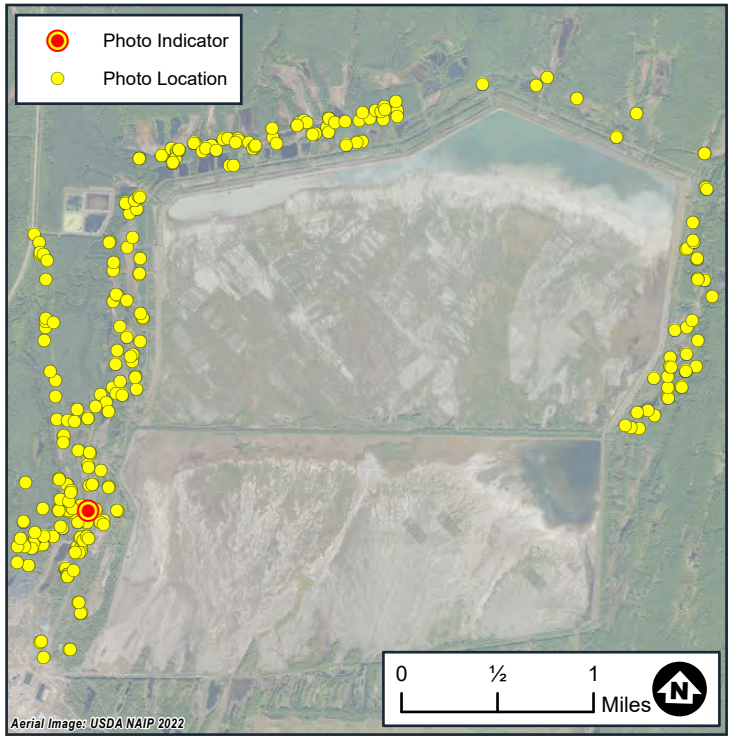
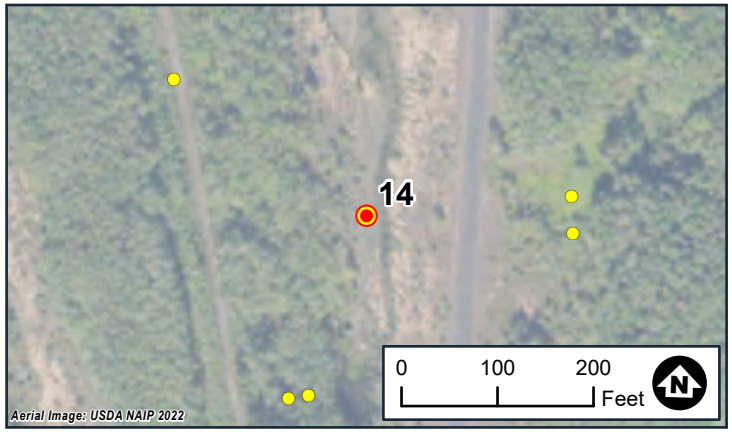


Photo 14-2





Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/28/2024
Wetland ID:WTL3
Flag No.:3-528
Sample Point ID:N/A

Note: Photo locations are approximate

Photo 15-1



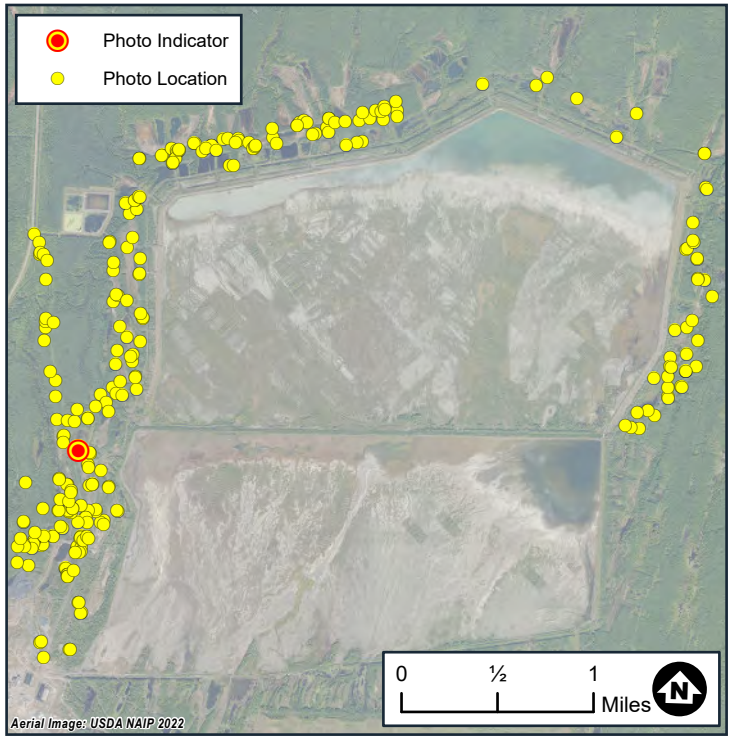
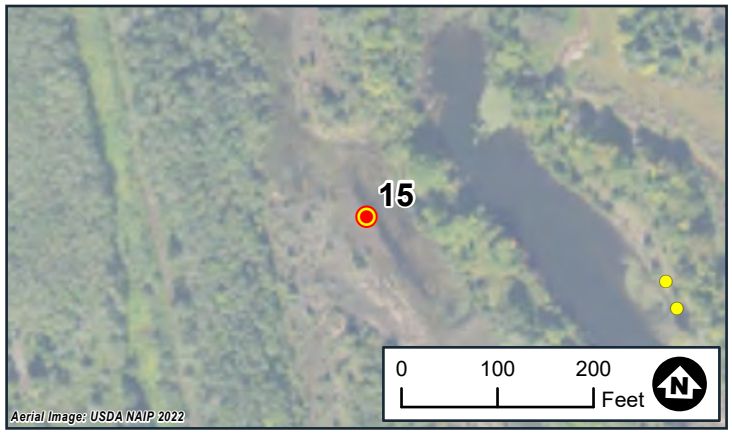


Photo 15-2





Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/29/2024
Wetland ID:WTL3
Flag No.:3-679
Sample Point ID:N/A

Note: Photo locations are approximate

Photo 16-1



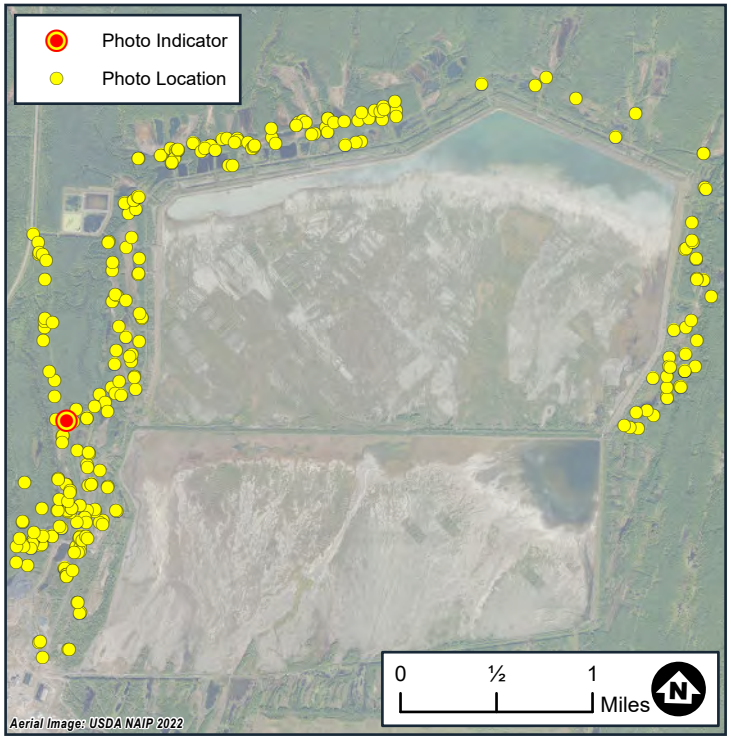
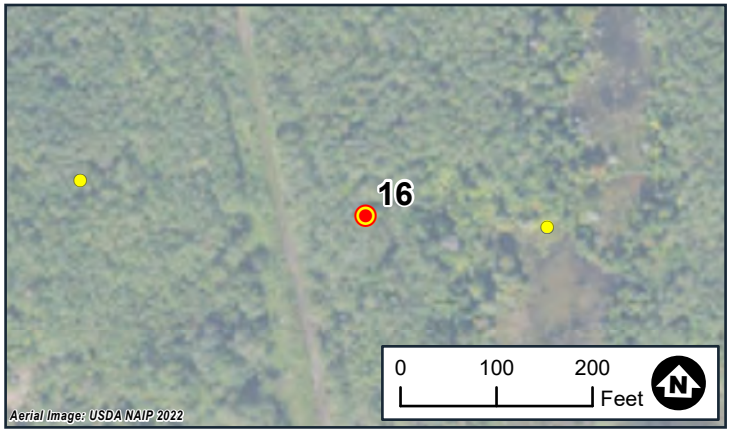


Photo 16-2





Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/29/2024
Wetland ID:WTL3
Flag No.:3-760
Sample Point ID:N/A

Note: Photo locations are approximate

Photo 17-1



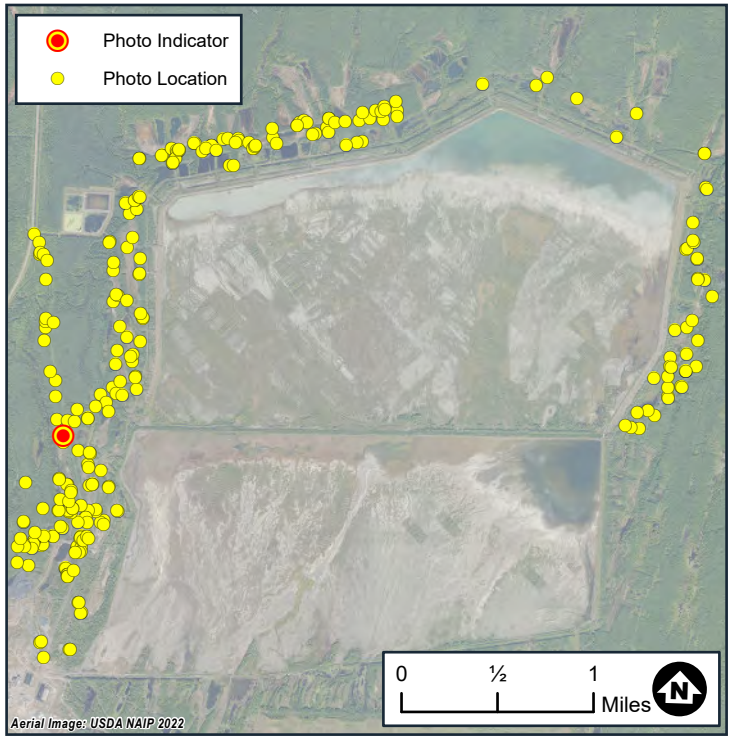
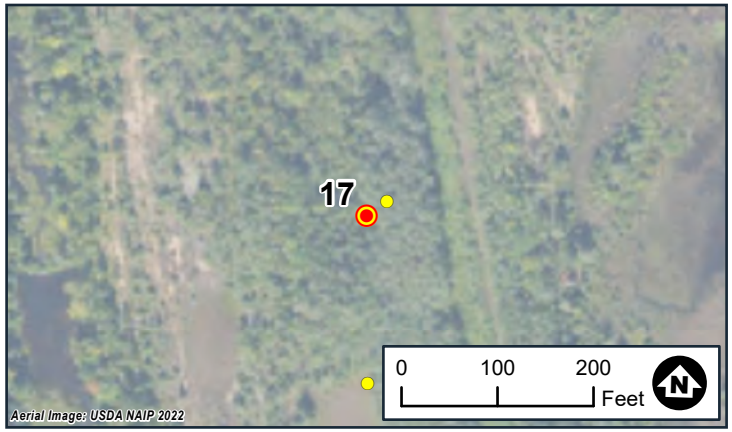


Photo 17-2





Page 17 of 262
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/29/2024
Wetland ID:WTL3
Flag No.:3-778
Sample Point ID:WTL3-DP4-W

Note: Photo locations are approximate

Photo 18-1



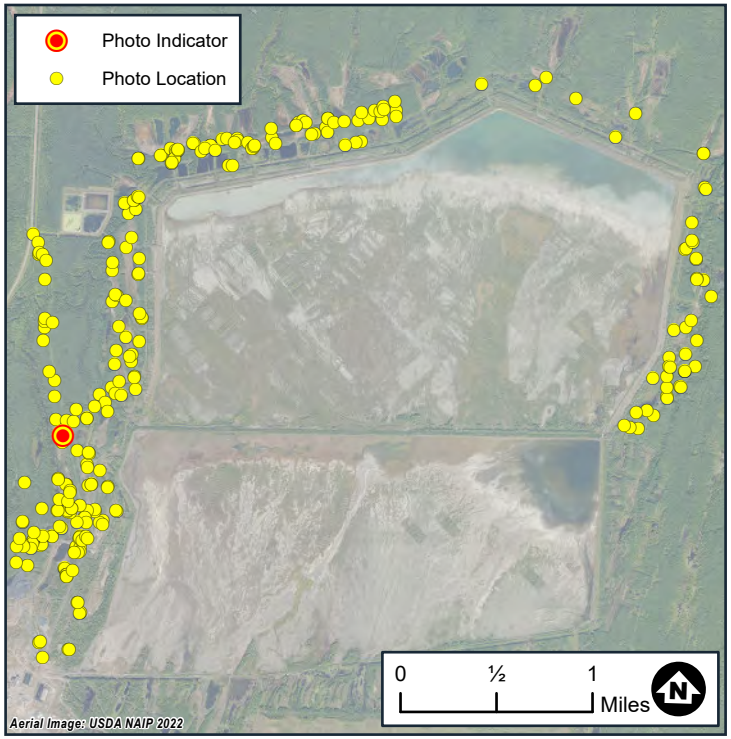
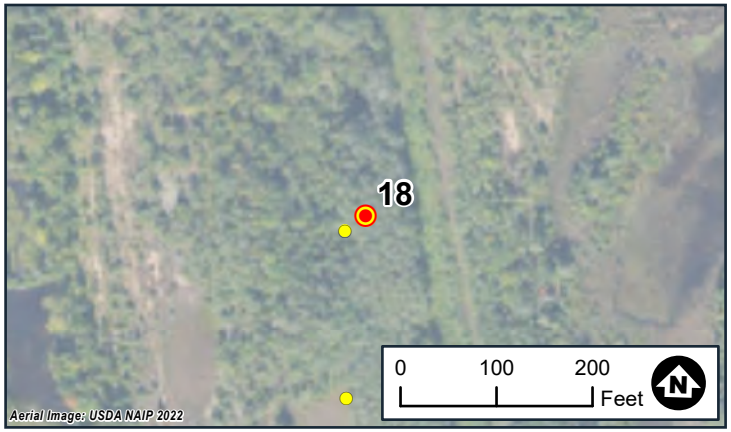


Photo 18-2



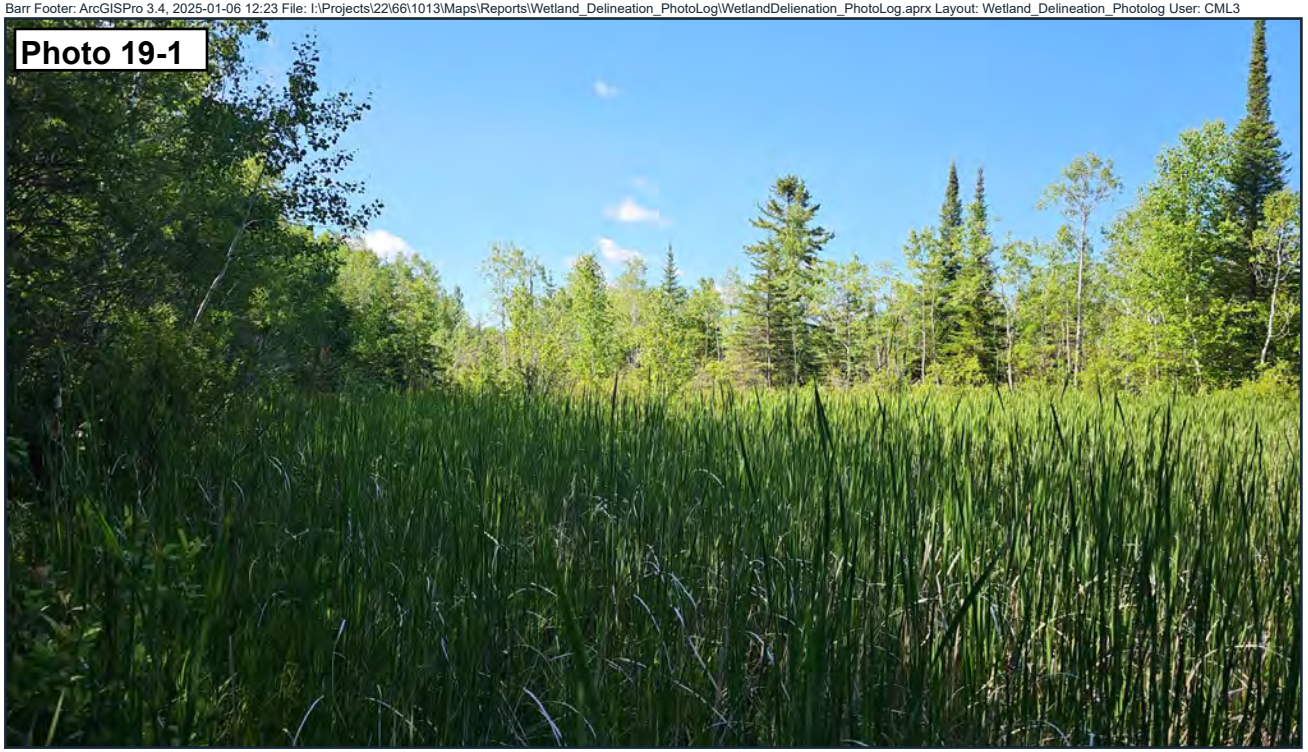


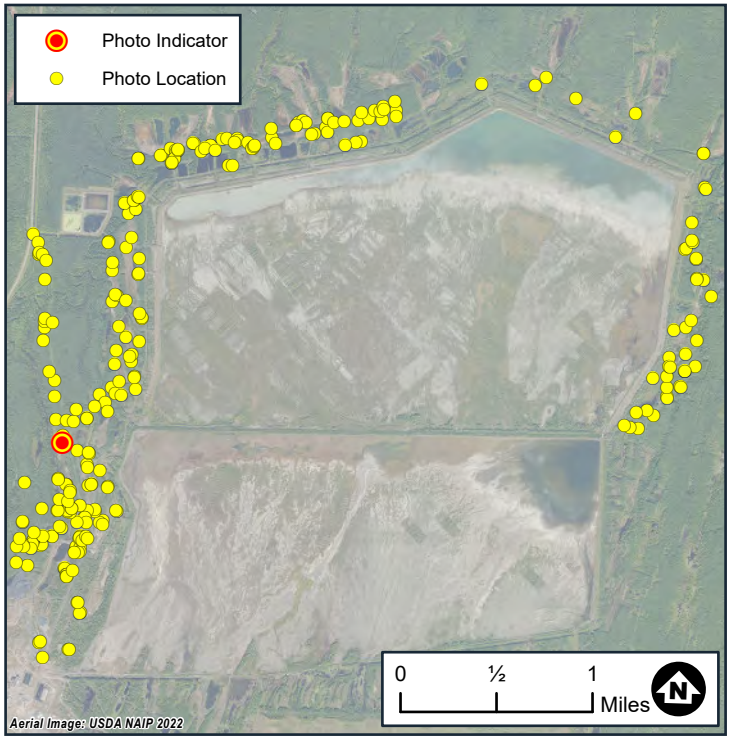
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

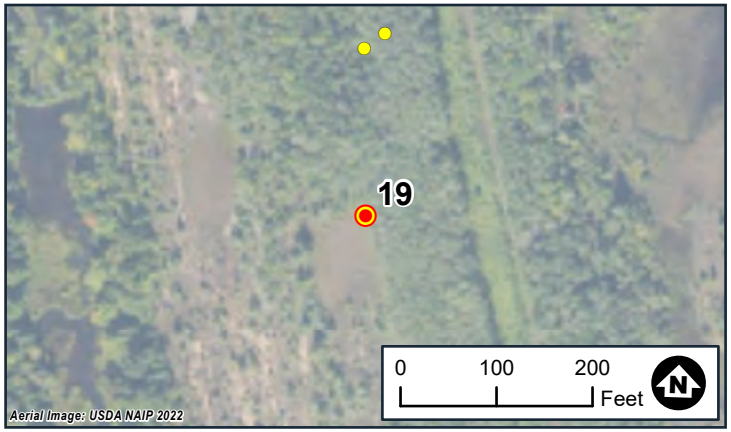
Date: 6/29/2024
Wetland ID:WTL3
Flag No.:3-778
Sample Point ID:WTL3-DP4-U

Note: Photo locations are approximate









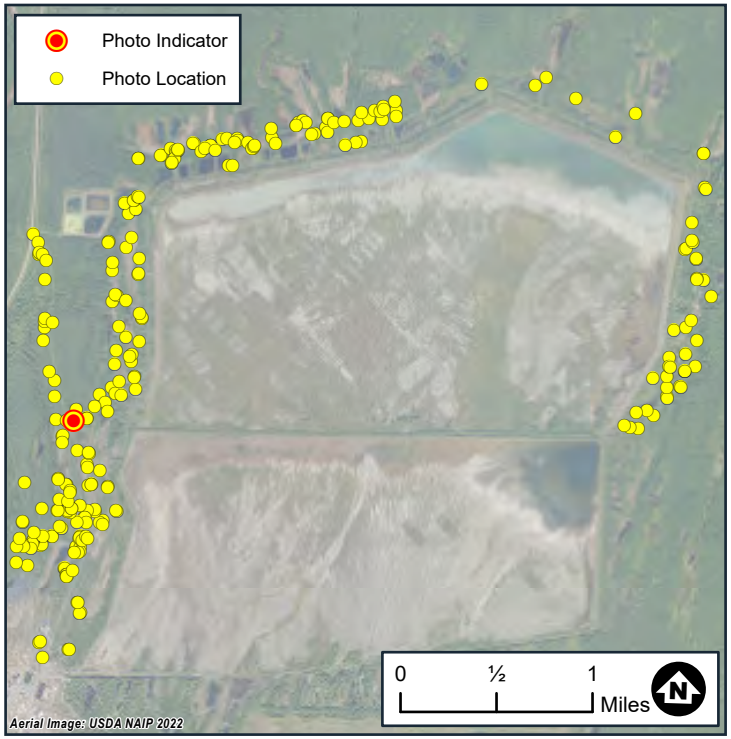
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

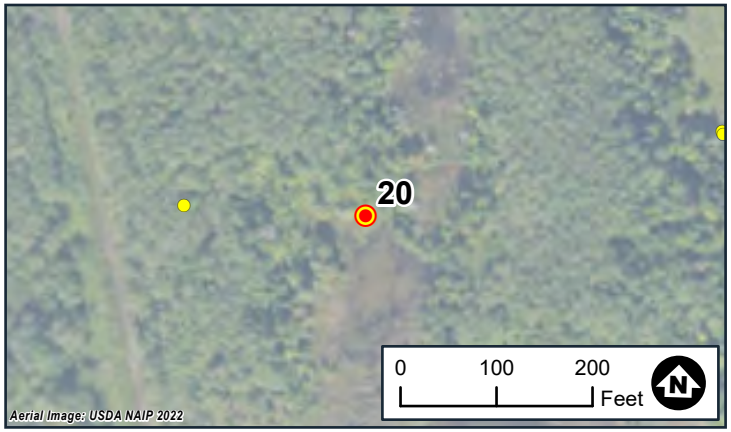
BARR

Date: 6/29/2024
Wetland ID:WTL3
Flag No.:3-790
Sample Point ID:N/A

Note: Photo locations are approximate





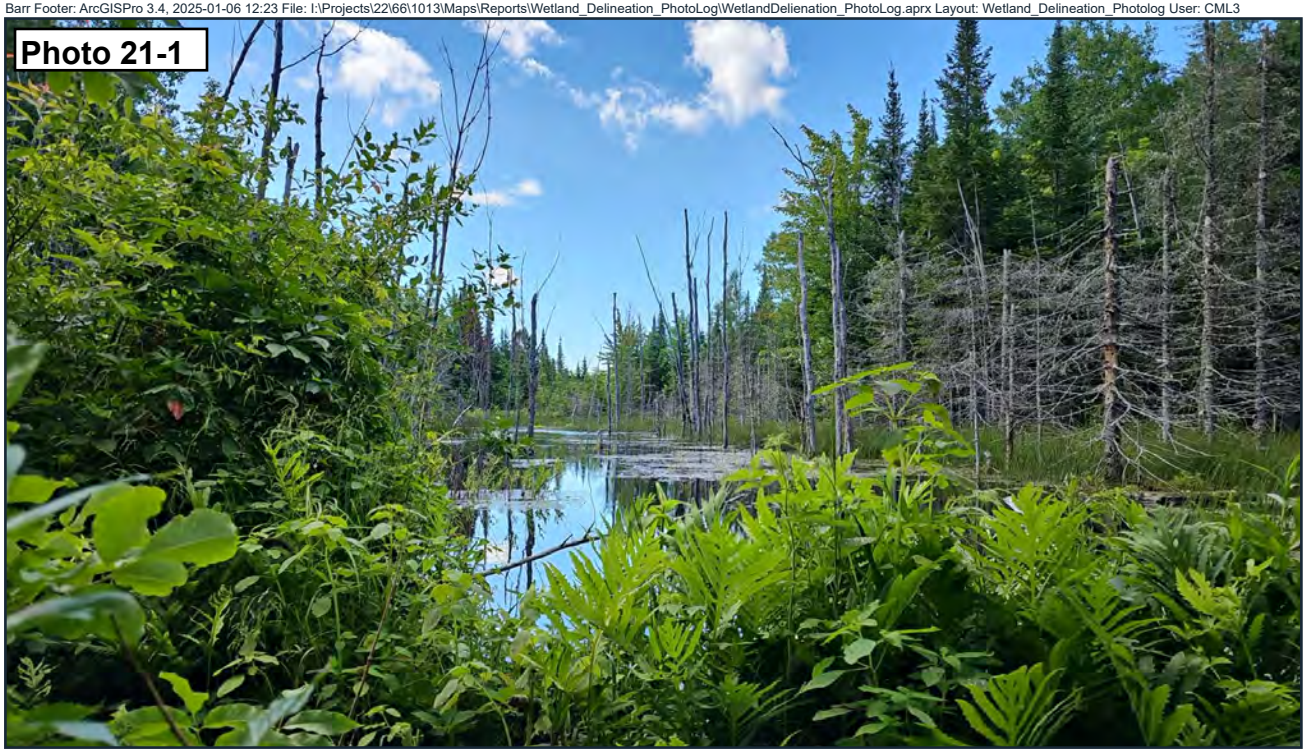


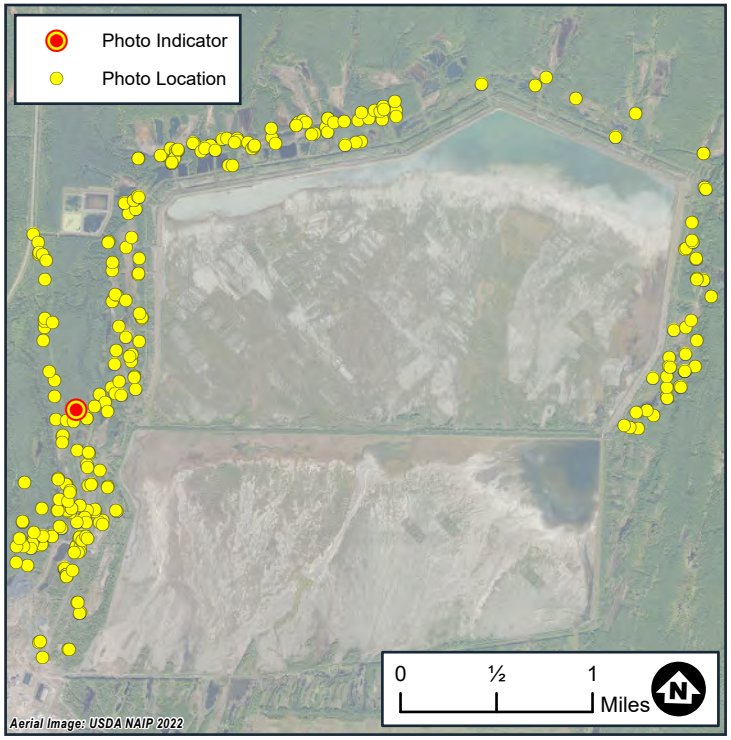
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

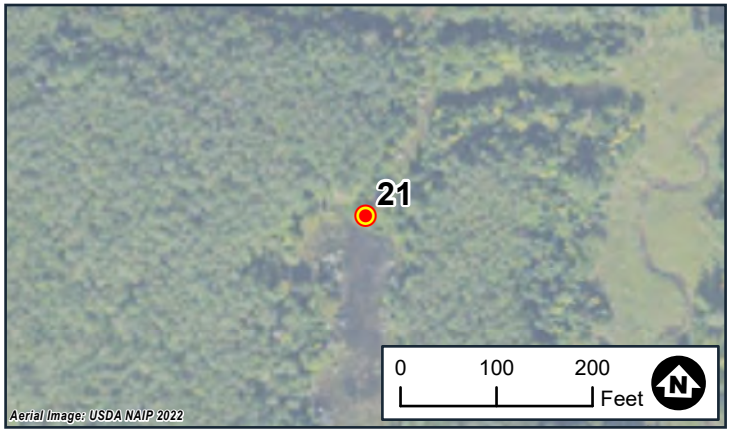
Date: 6/29/2024
Wetland ID:WTL3
Flag No.:3-847
Sample Point ID:N/A

Note: Photo locations are approximate









Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/29/2024
Wetland ID:WTL3
Flag No.:3-862
Sample Point ID:N/A

Note: Photo locations are approximate

Photo 22-1



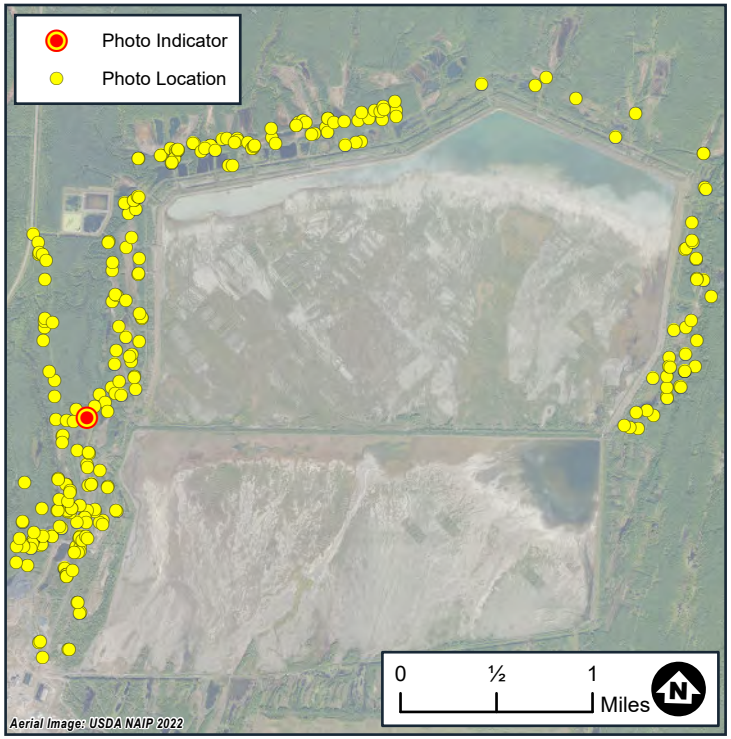
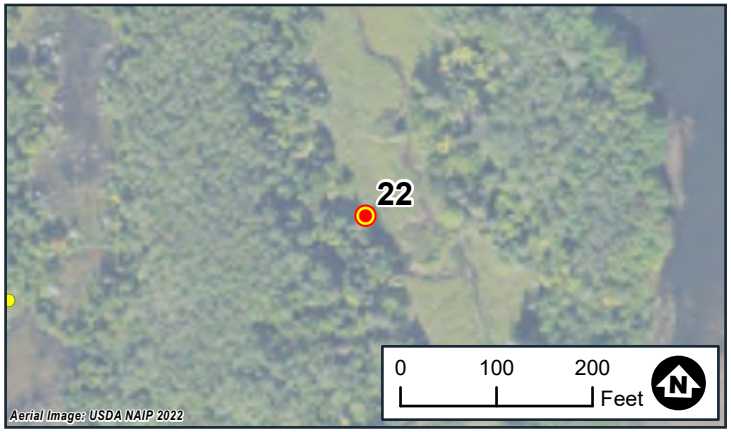


Photo 22-2





Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/29/2024
Wetland ID:WTL3
Flag No.:3-991
Sample Point ID:WTL3-DP5-W

Note: Photo locations are approximate

Photo 23-1



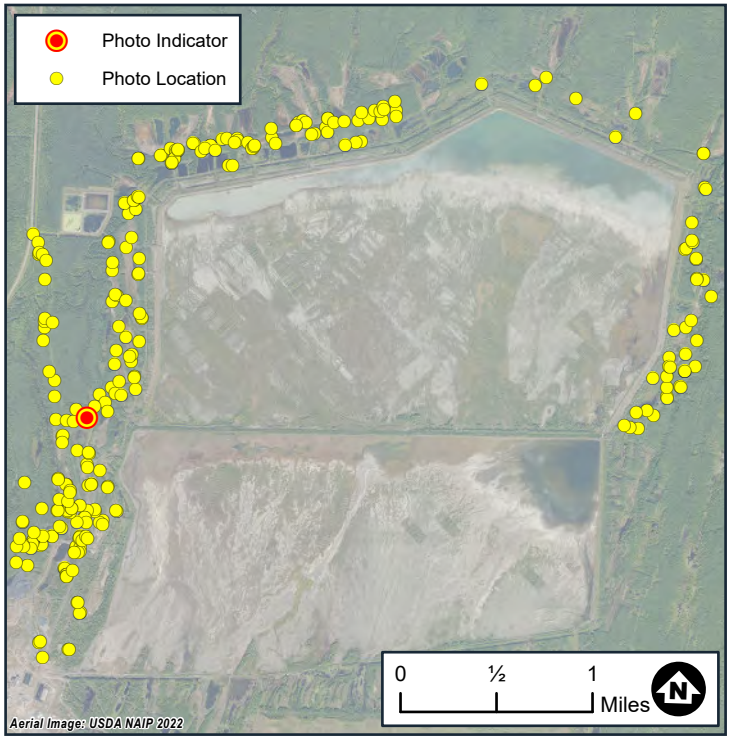
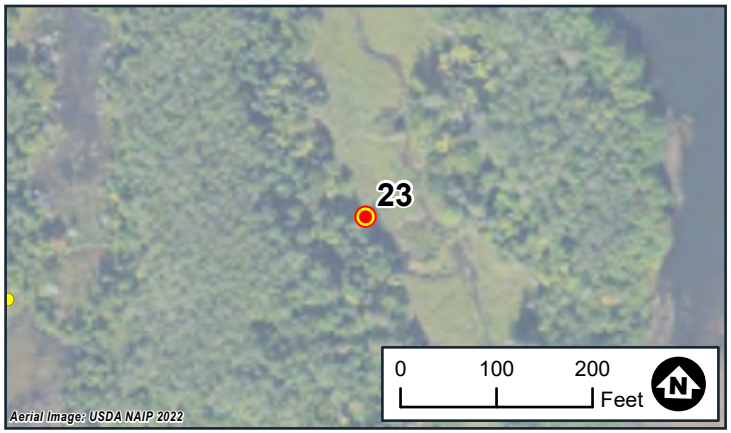


Photo 23-2





Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/29/2024
Wetland ID:WTL3
Flag No.:3-990
Sample Point ID:WTL3-DP5-U

Note: Photo locations are approximate

Photo 24-1



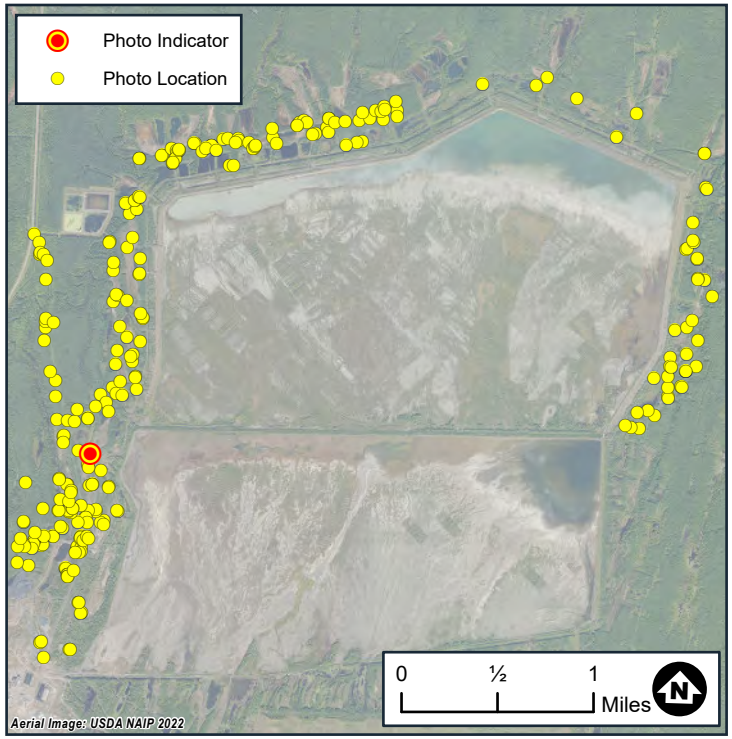
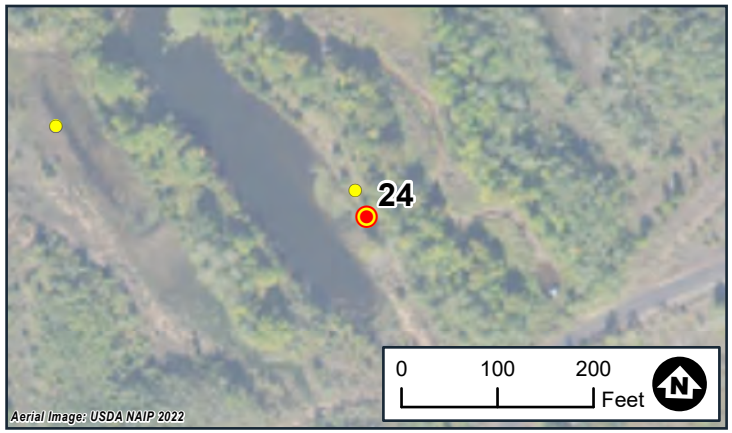


Photo 24-2





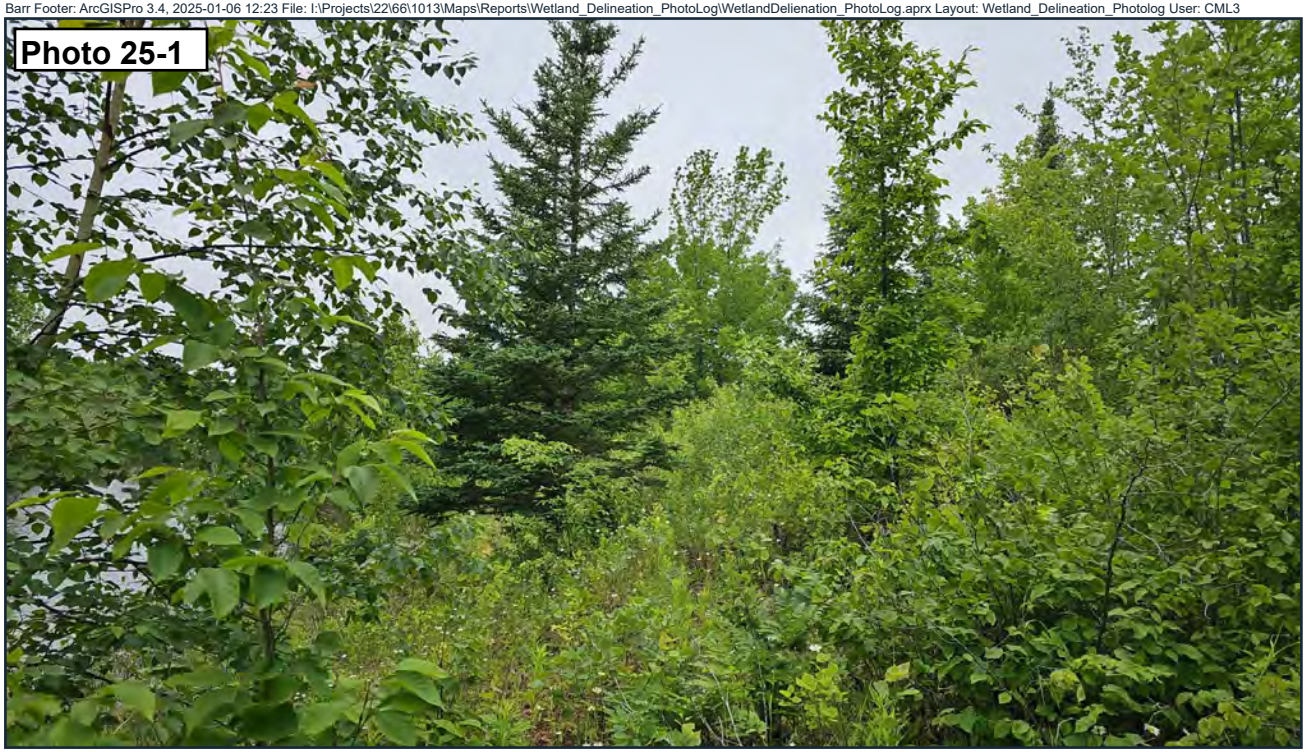
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/29/2024
Wetland ID:WTL3
Flag No.:3-1041
Sample Point ID:WTL3-DP6-W

Note: Photo locations are approximate

Photo 25-1



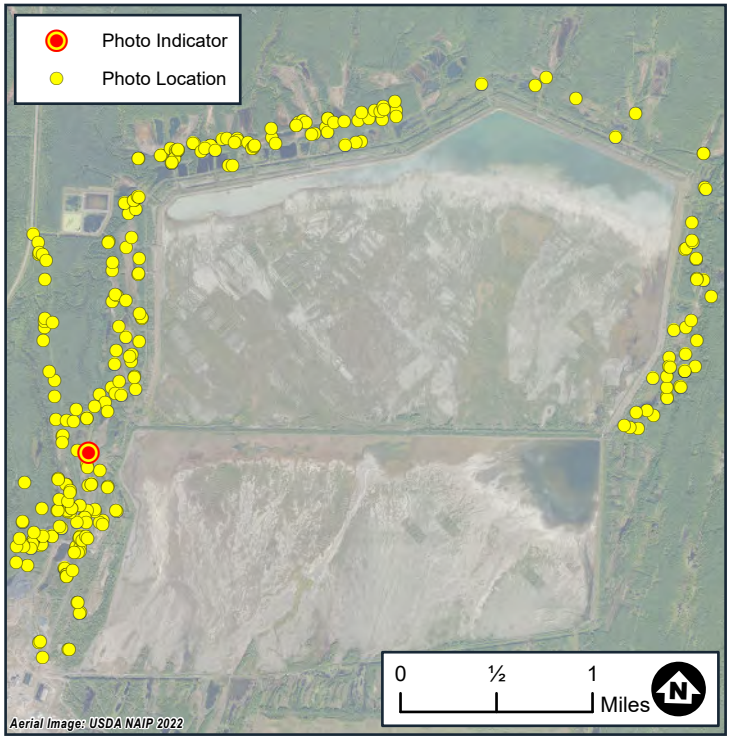
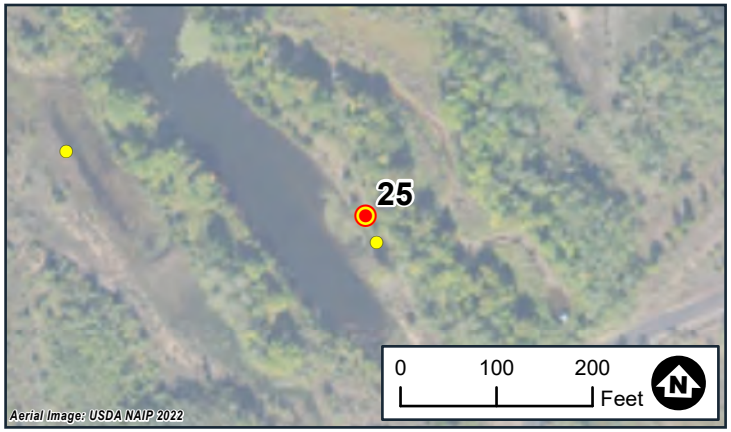


Photo 25-2





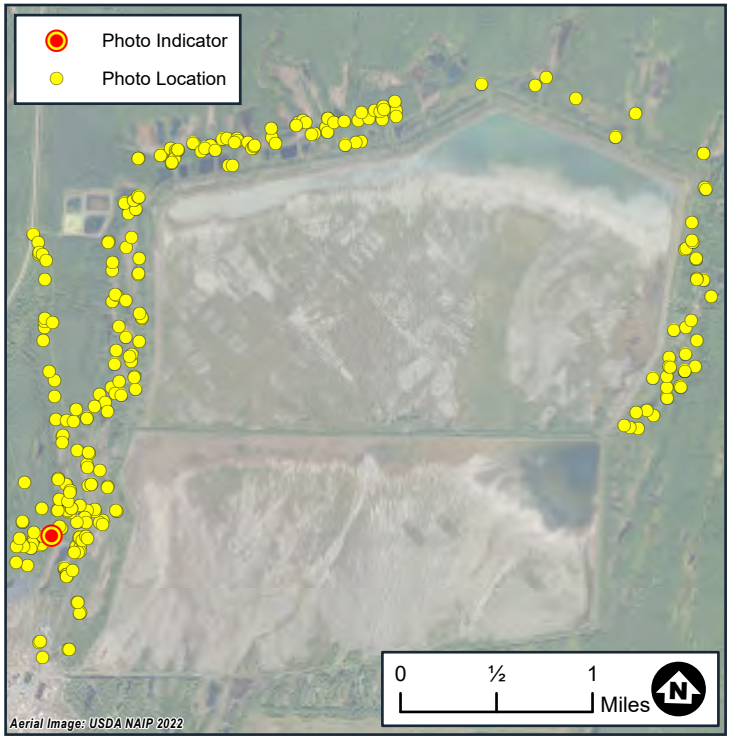
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

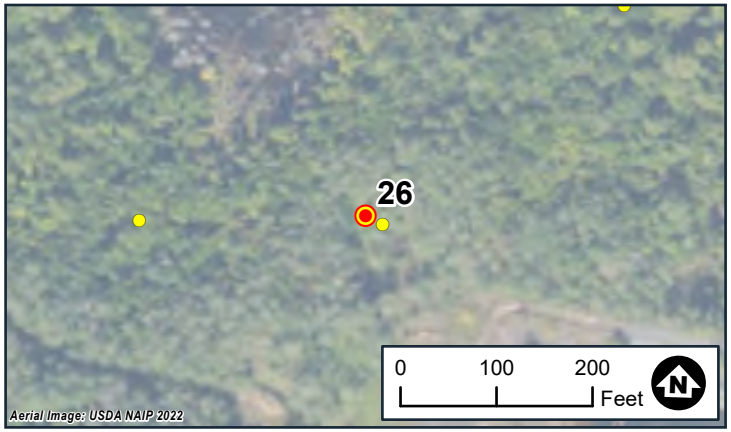
BARR

Date: 6/29/2024
Wetland ID:WTL3
Flag No.:3-1041
Sample Point ID:WTL3-DP5-U

Note: Photo locations are approximate







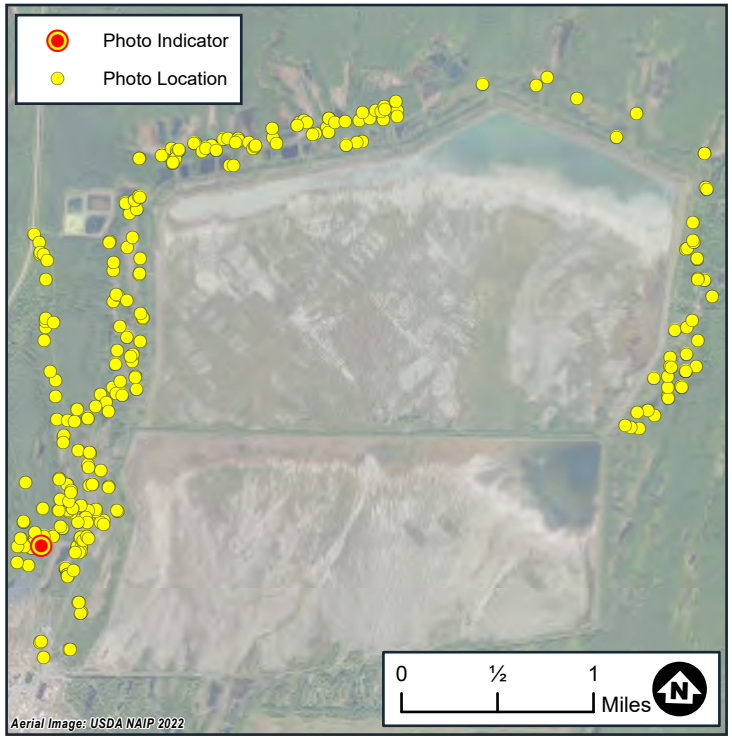
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

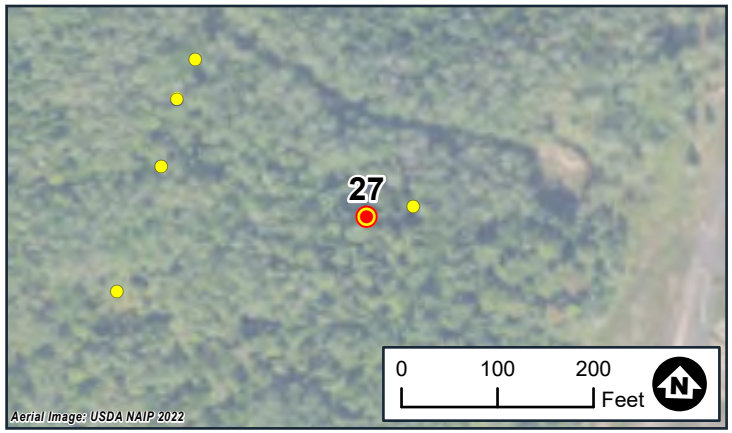
BARR

Date: 6/25/2024
Wetland ID:WTL4
Flag No.:4-1
Sample Point ID:N/A

Note: Photo locations are approximate







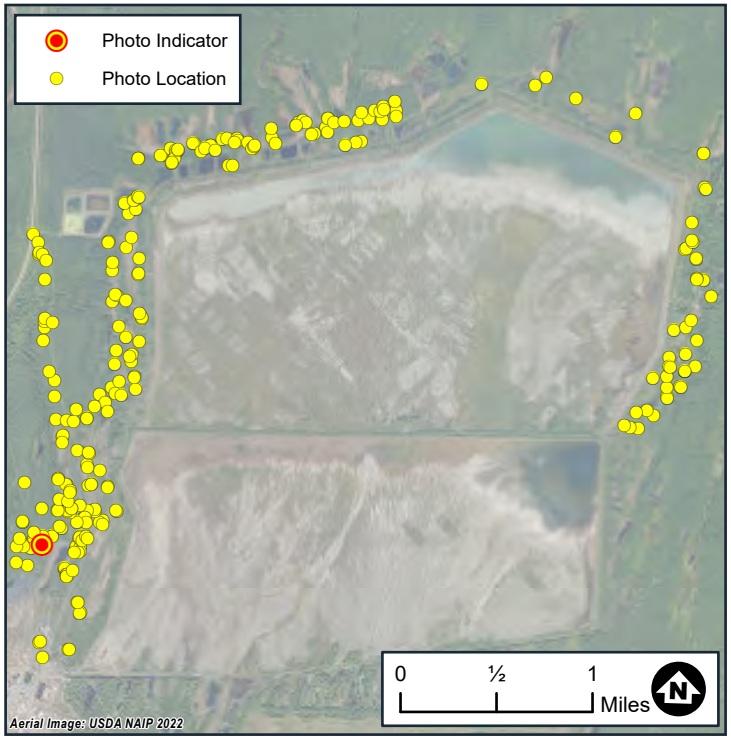
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

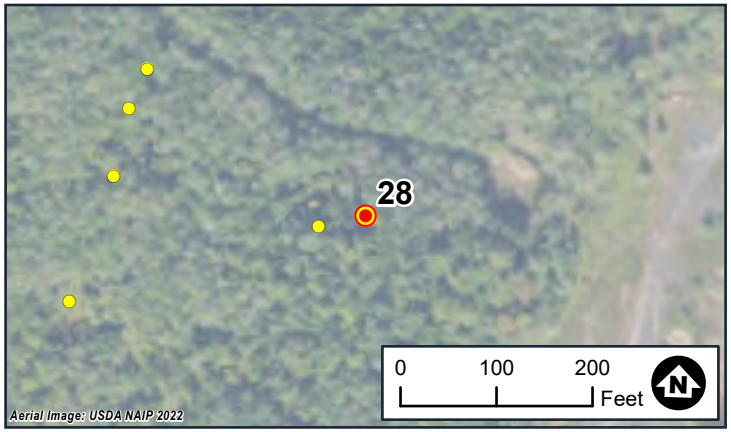
BARR

Date: 6/25/2024
Wetland ID:WTL6
Flag No.:6-48
Sample Point ID:WTL-6-DP3-W

Note: Photo locations are approximate







Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/25/2024
Wetland ID:WTL6
Flag No.:6-48
Sample Point ID:WTL6-DP1-PFO

Note: Photo locations are approximate

Photo 29-1



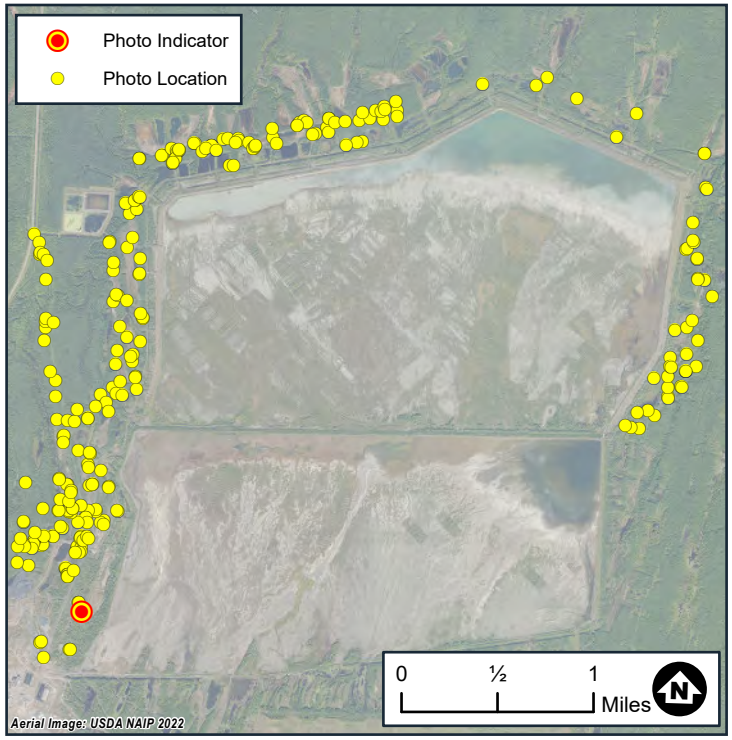
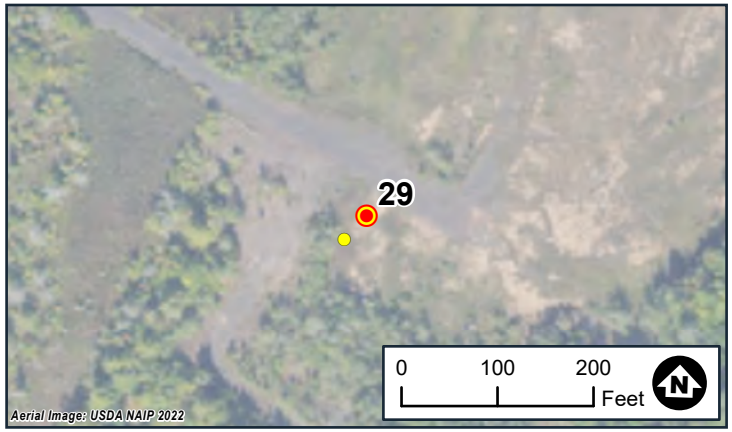


Photo 29-2





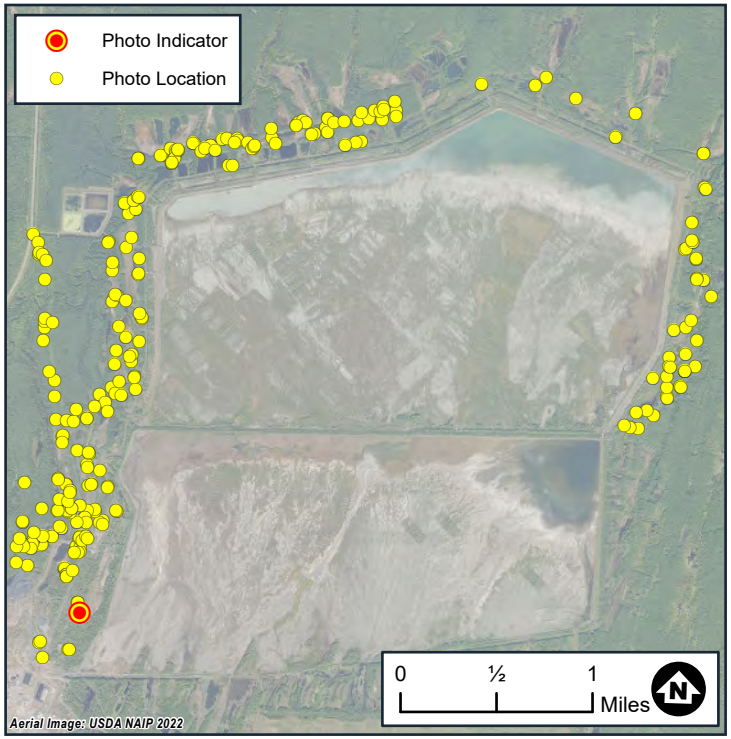
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

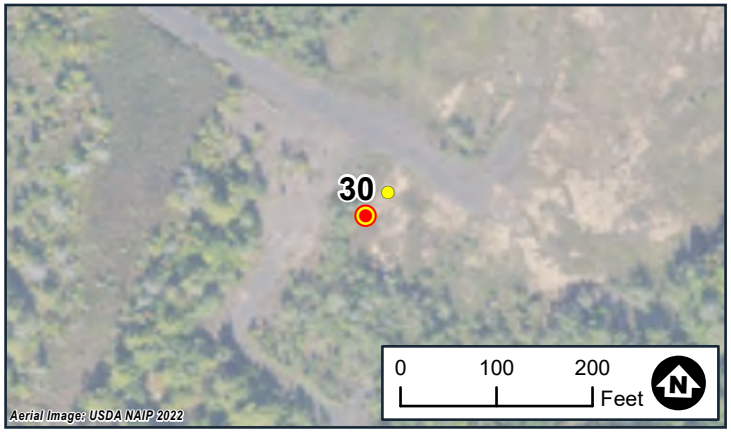
Date: 6/26/2024
Wetland ID:WTL7
Flag No.:7-13
Sample Point ID:WTL7-DP1-W

Note: Photo locations are approximate









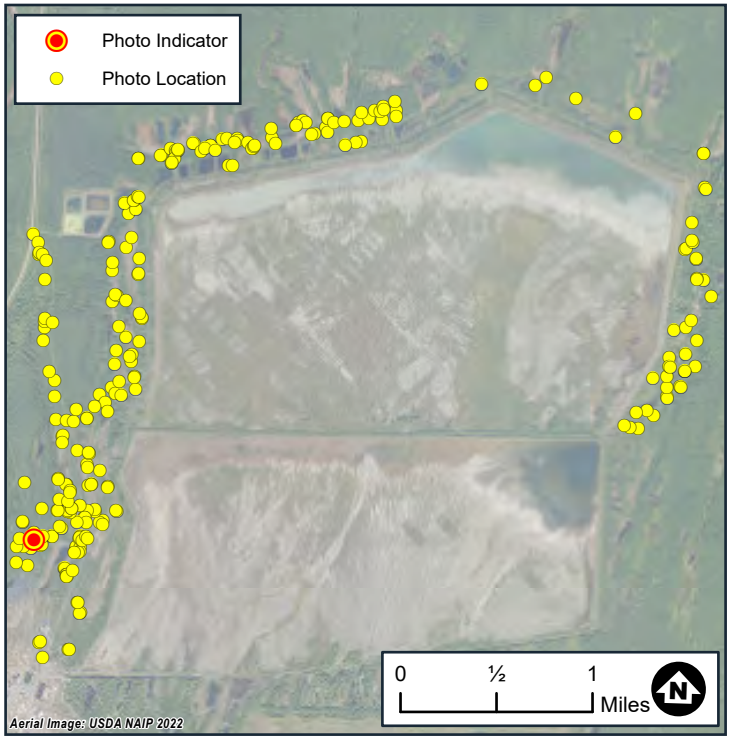
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

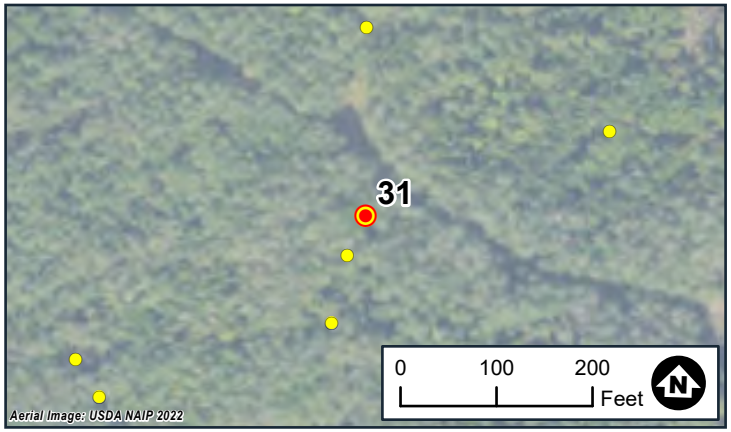
BARR

Date: 6/26/2024
Wetland ID:WTL7
Flag No.:7-13
Sample Point ID:WTL7-DP1-U

Note: Photo locations are approximate







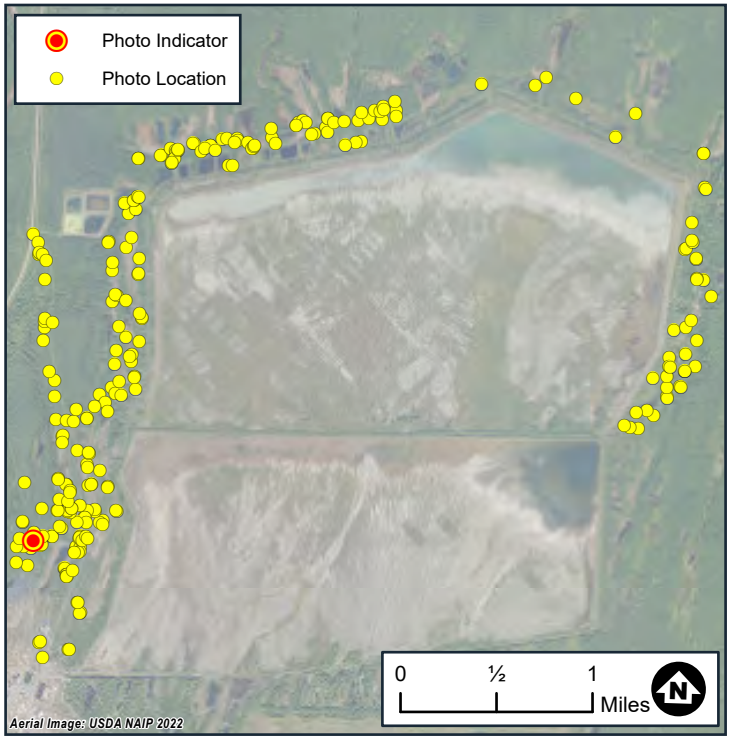
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

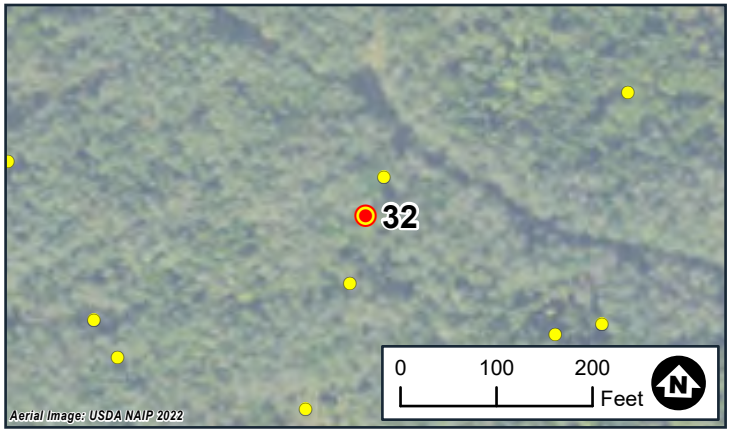
BARR

Date: 6/25/2024
Wetland ID:WTL8
Flag No.:8-1
Sample Point ID:WTL8-DP1-W

Note: Photo locations are approximate







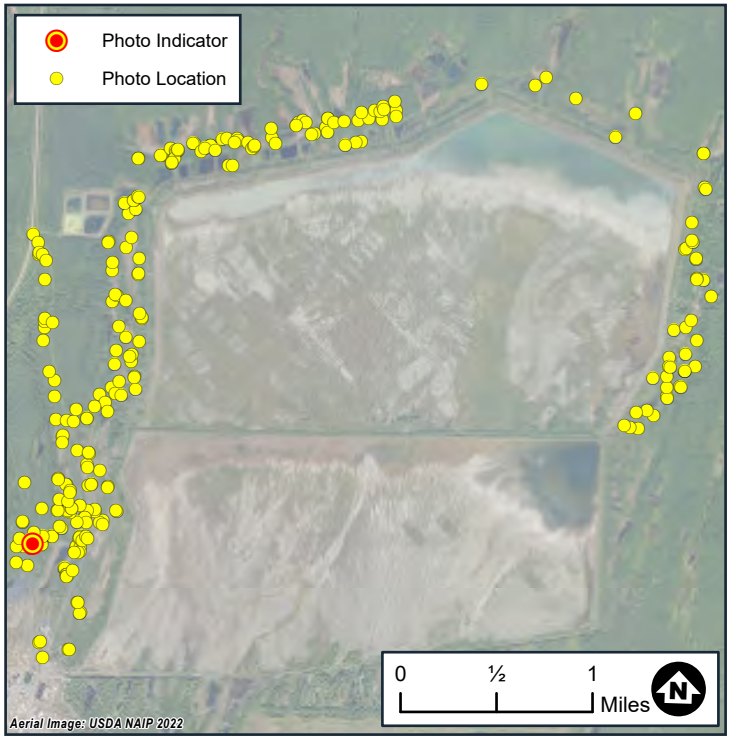
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

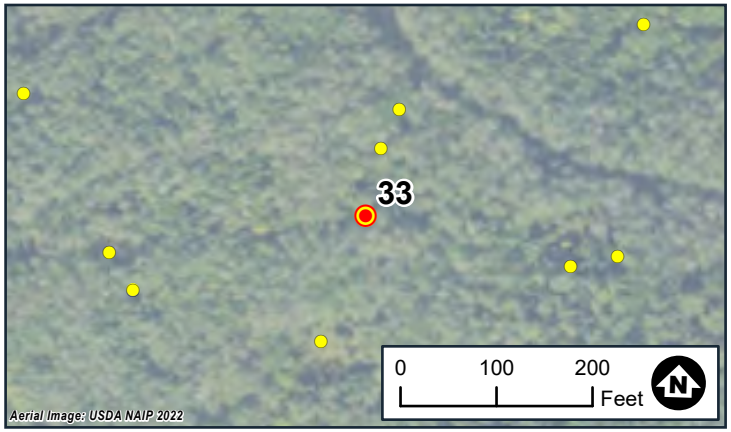
BARR

Date: 6/25/2024
Wetland ID:WTL8
Flag No.:8-1
Sample Point ID:WTL8-DP2-U

Note: Photo locations are approximate







Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/25/2024
Wetland ID:WTL10
Flag No.:10-1
Sample Point ID:N/A

Note: Photo locations are approximate

Photo 34-1



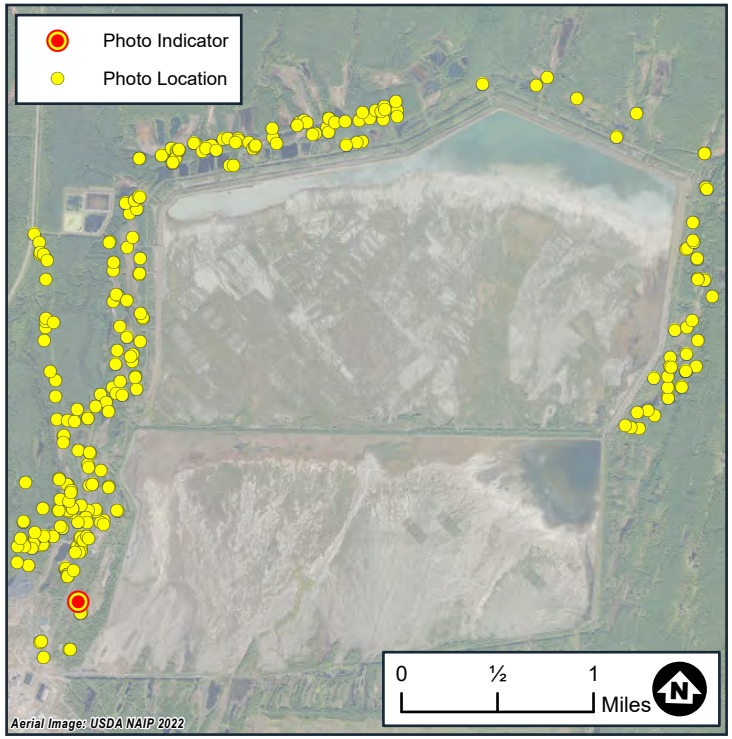
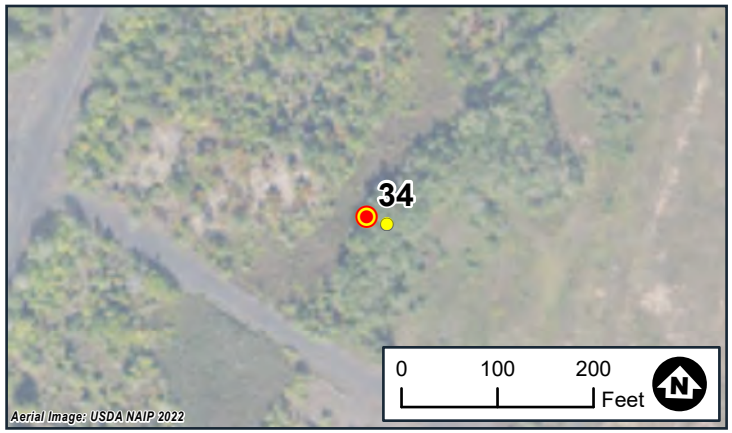


Photo 34-2





Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/26/2024
Wetland ID:WTL11
Flag No.:11-1
Sample Point ID:WTL11-DP1-W

Note: Photo locations are approximate

Photo 35-1



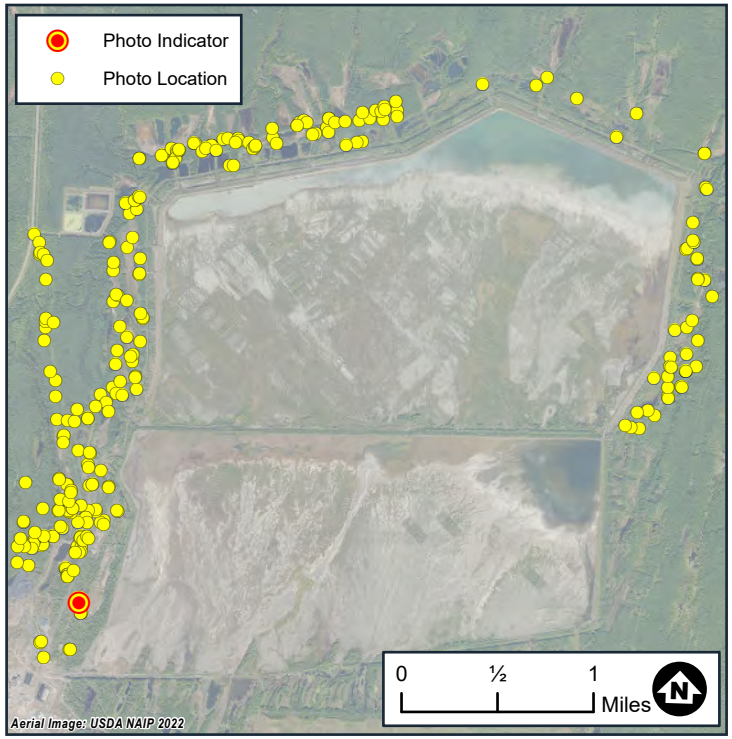
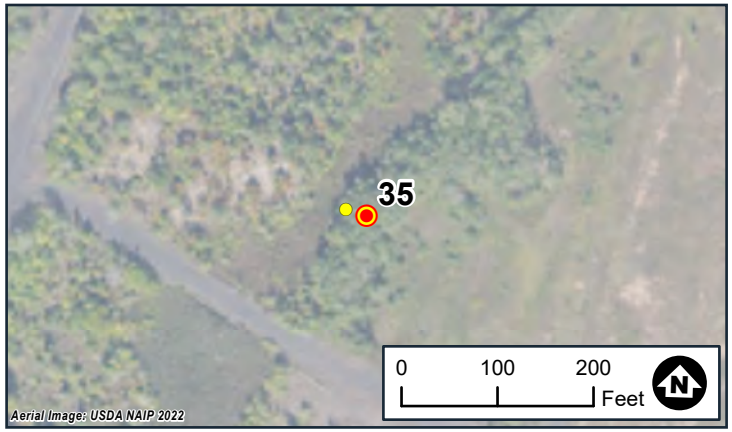


Photo 35-2



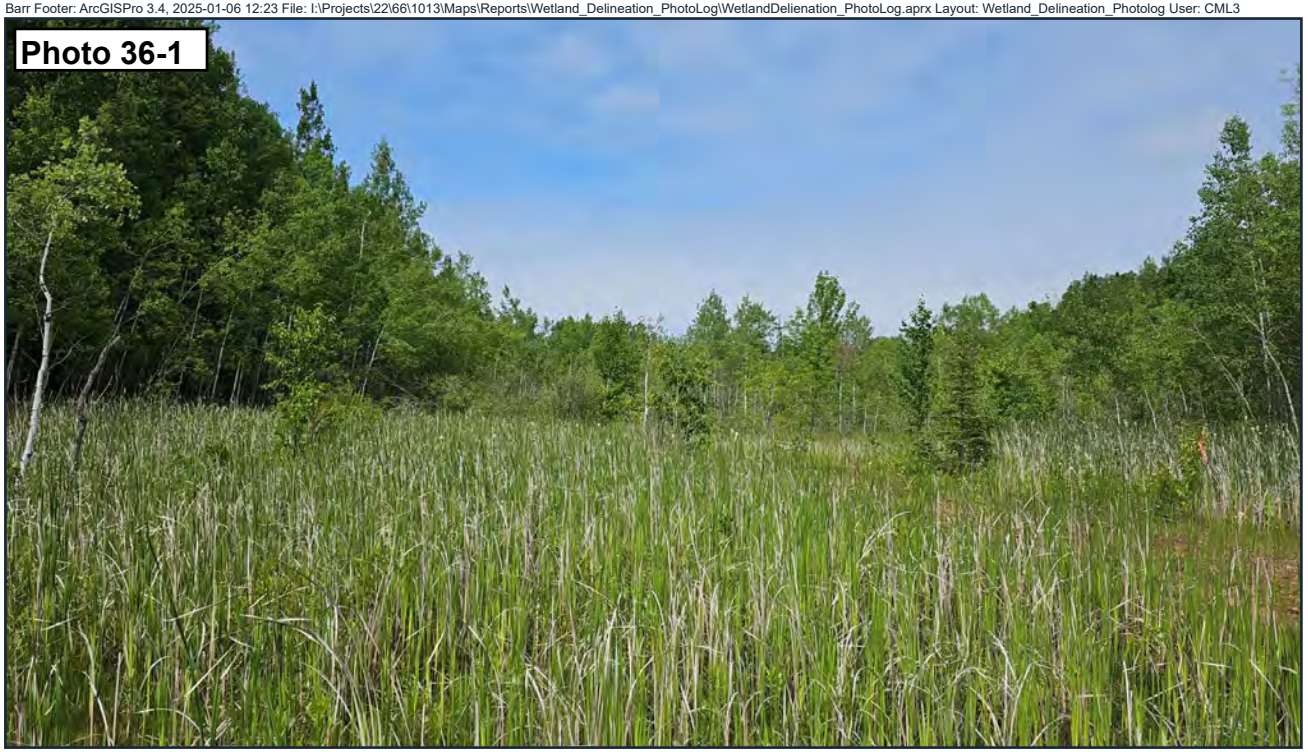


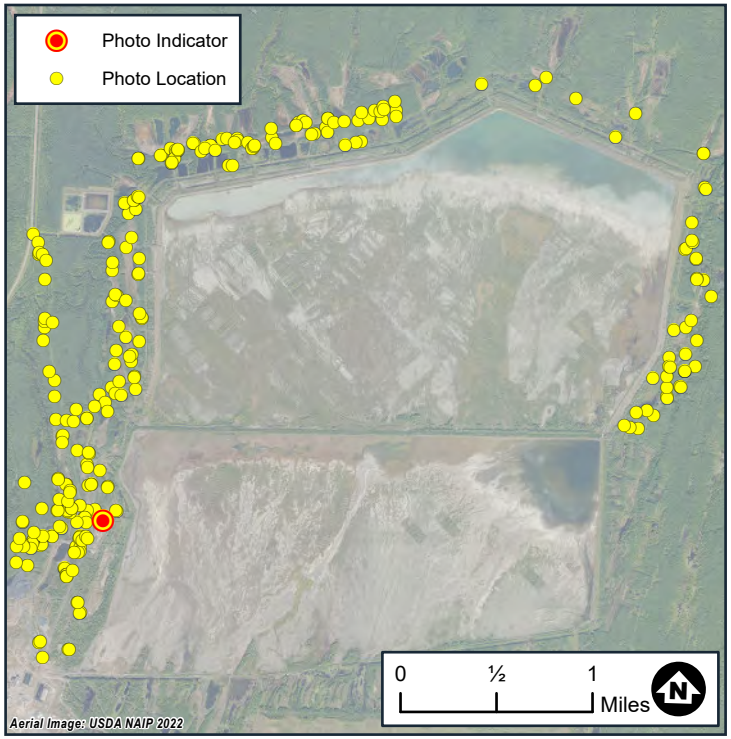
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

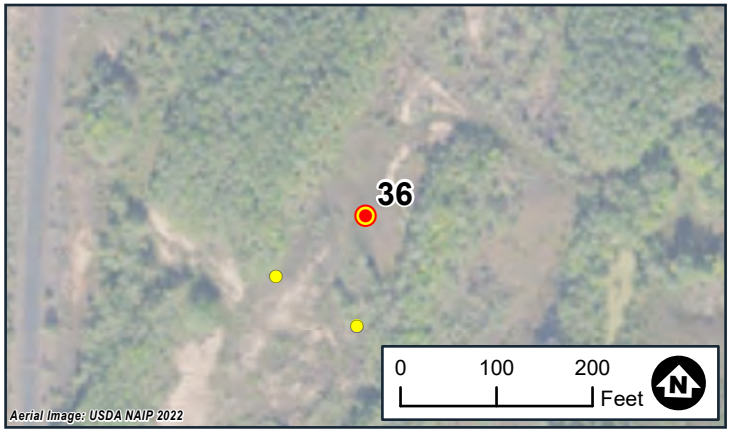
Date: 6/26/2024
Wetland ID:WTL11
Flag No.:11-1
Sample Point ID:WTL11-DP1-U

Note: Photo locations are approximate









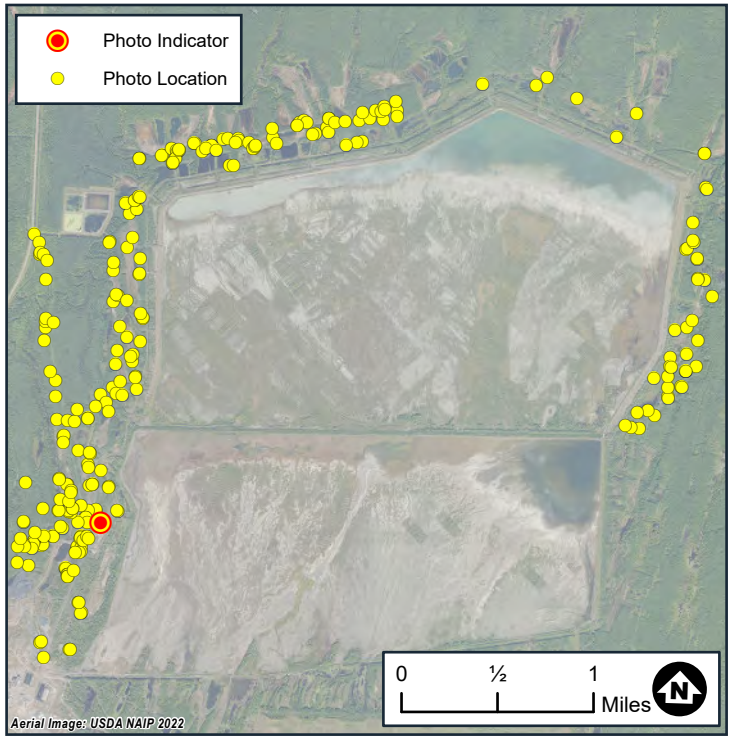
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

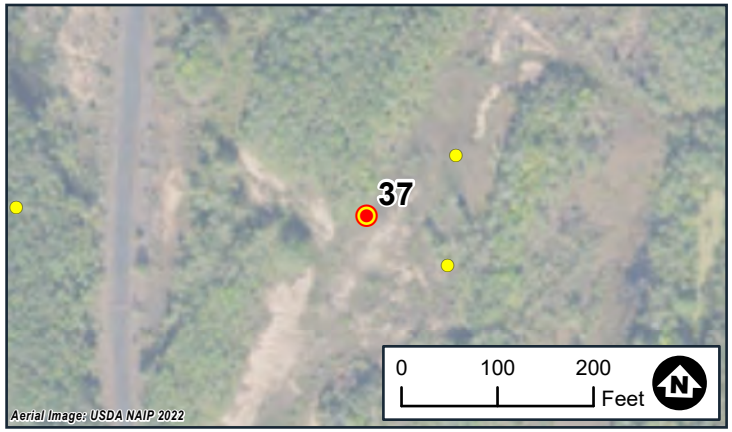
Date: 6/26/2024
Wetland ID:WTL11
Flag No.:11-251
Sample Point ID:WTL11-DP2-W

Note: Photo locations are approximate









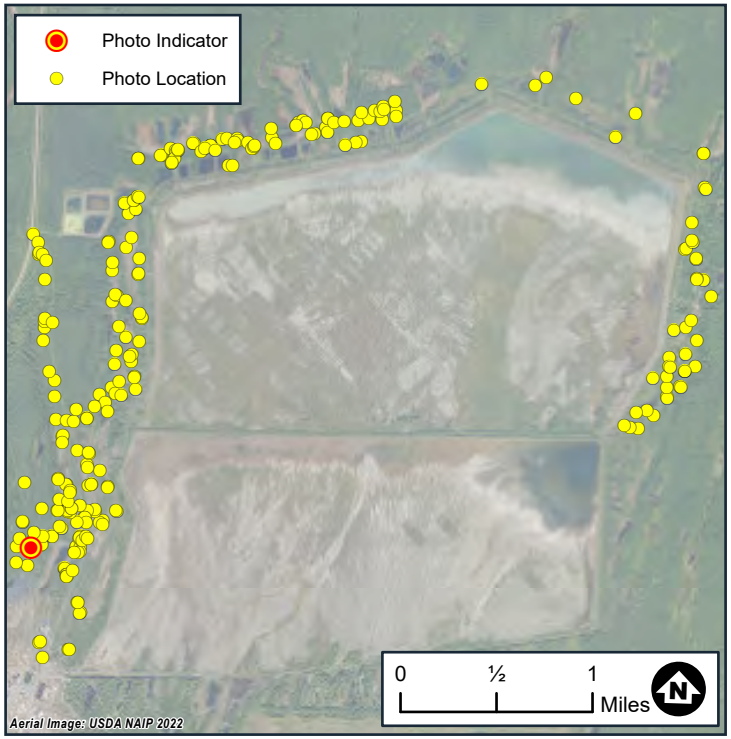
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

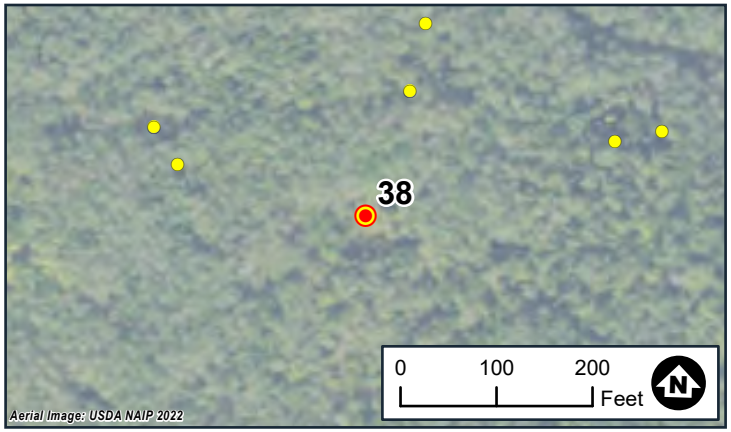
BARR

Date: 6/26/2024
Wetland ID:WTL11
Flag No.:11-251
Sample Point ID:WTL11-DP2-U

Note: Photo locations are approximate







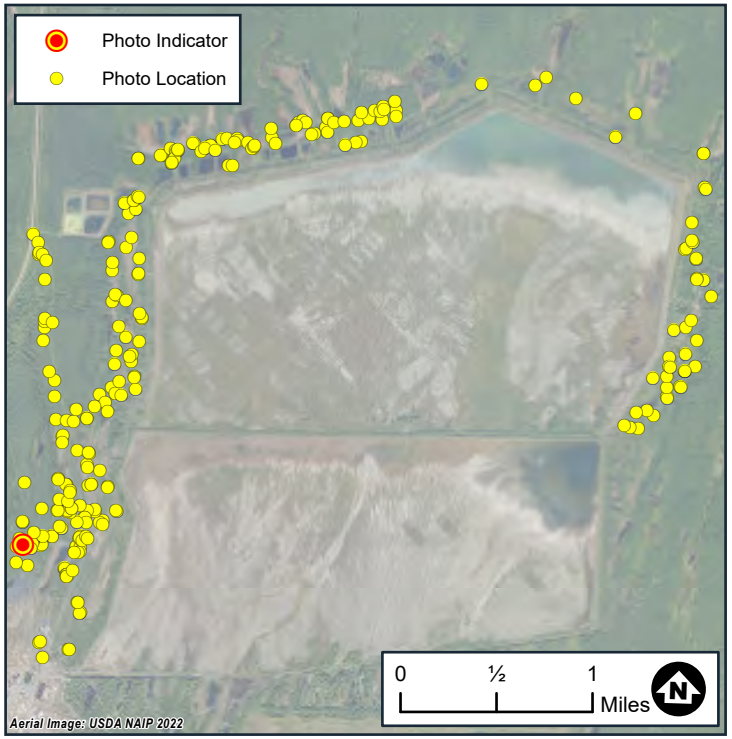
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

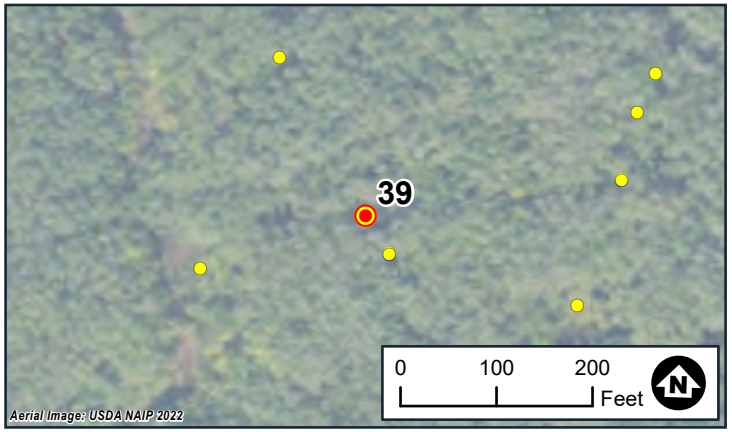
BARR

Date: 6/25/2024
Wetland ID:WTL12
Flag No.:12-1
Sample Point ID:N/A

Note: Photo locations are approximate







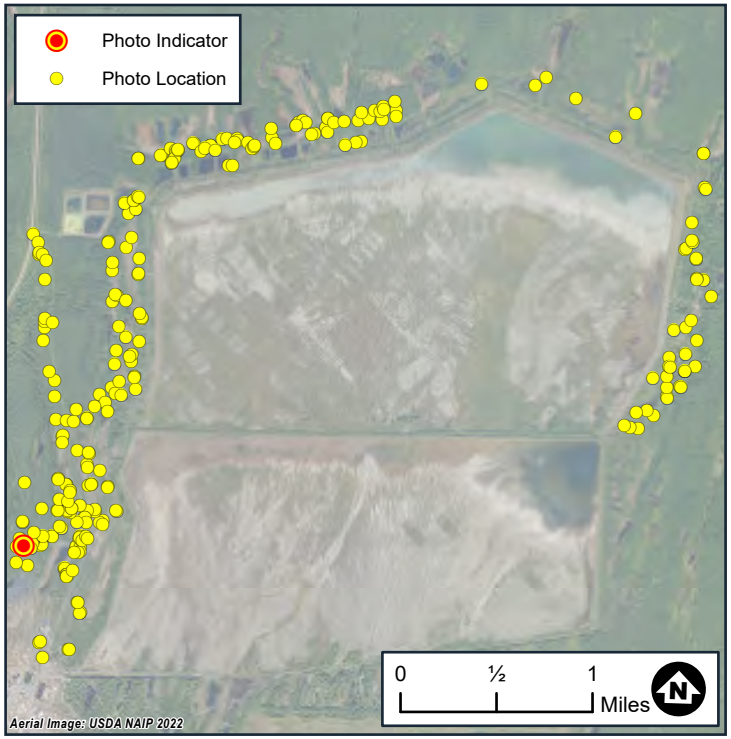
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

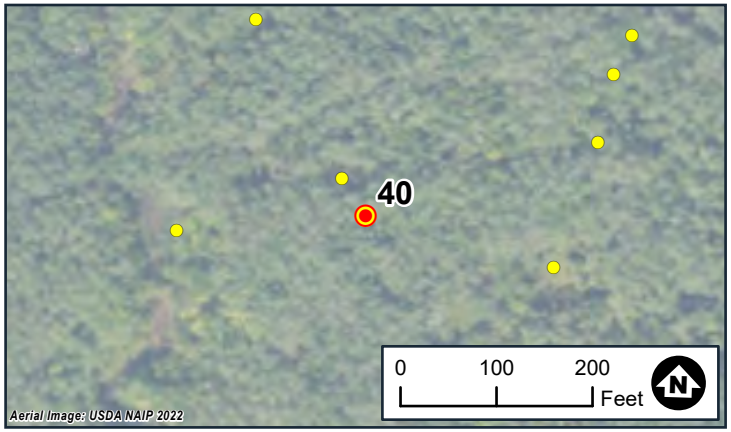
BARR

Date: 6/25/2024
Wetland ID:WTL14
Flag No.:14-12
Sample Point ID:WTL14-DP1-W

Note: Photo locations are approximate







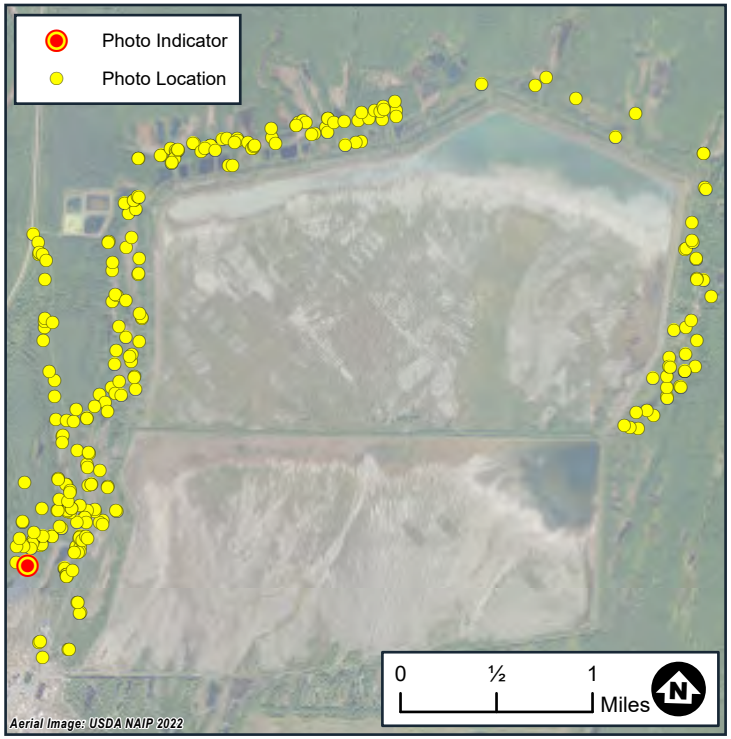
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

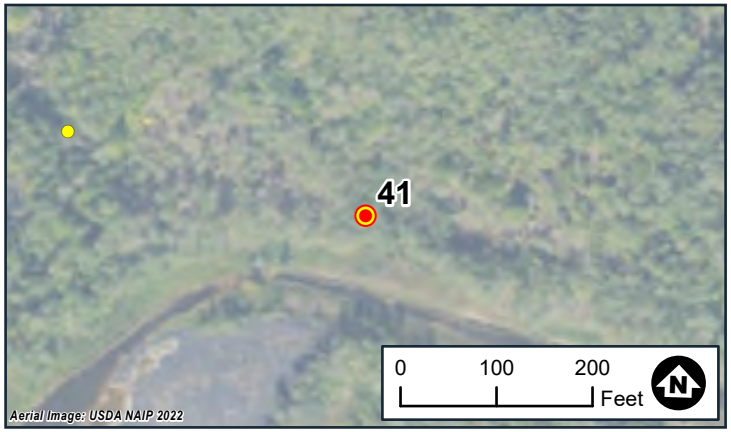
BARR

Date: 6/25/2024
Wetland ID:WTL14
Flag No.:14-12
Sample Point ID:WTL14-DP2-U

Note: Photo locations are approximate







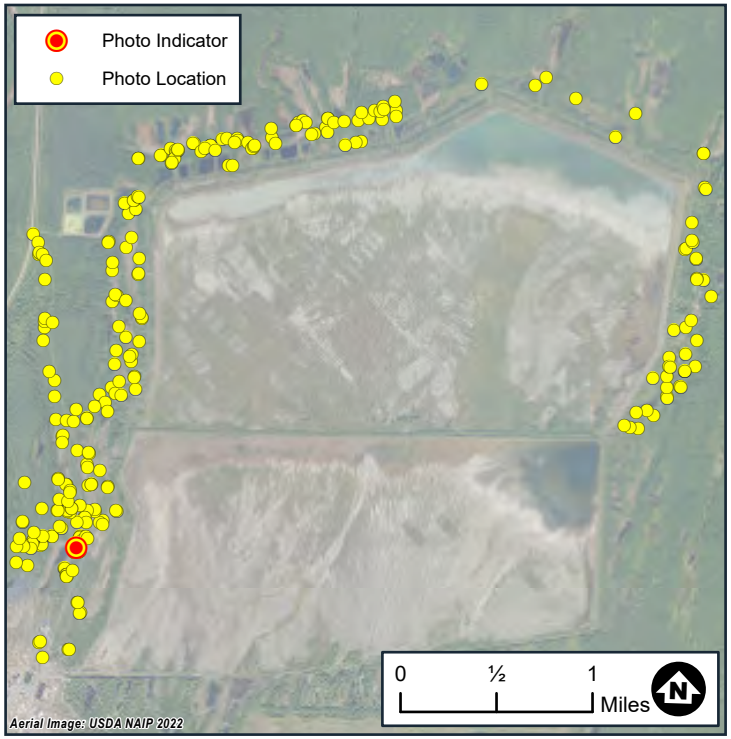
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

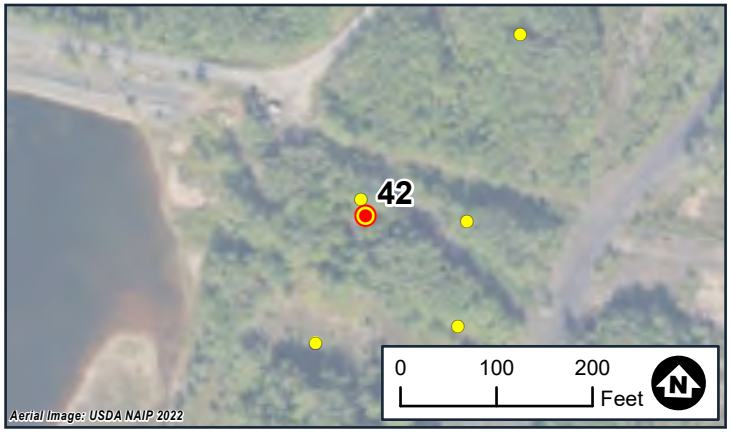
BARR

Date: 6/25/2024
Wetland ID:WTL18
Flag No.:18-19
Sample Point ID:N/A

Note: Photo locations are approximate







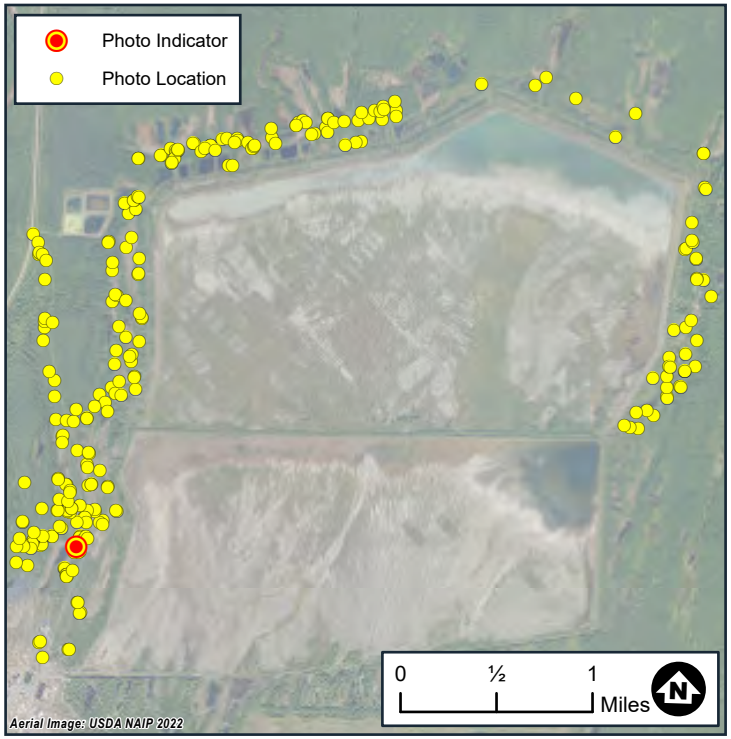
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

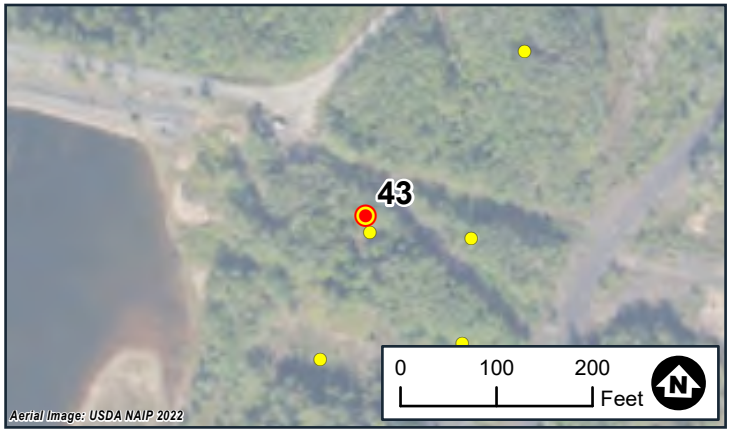
BARR

Date: 6/26/2024
Wetland ID:WTL22
Flag No.:22-1
Sample Point ID:WTL22-DP1-W

Note: Photo locations are approximate







Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/26/2024
Wetland ID:WTL22
Flag No.:22-1
Sample Point ID:WTL22-DP2-U

Note: Photo locations are approximate

Photo 44-1



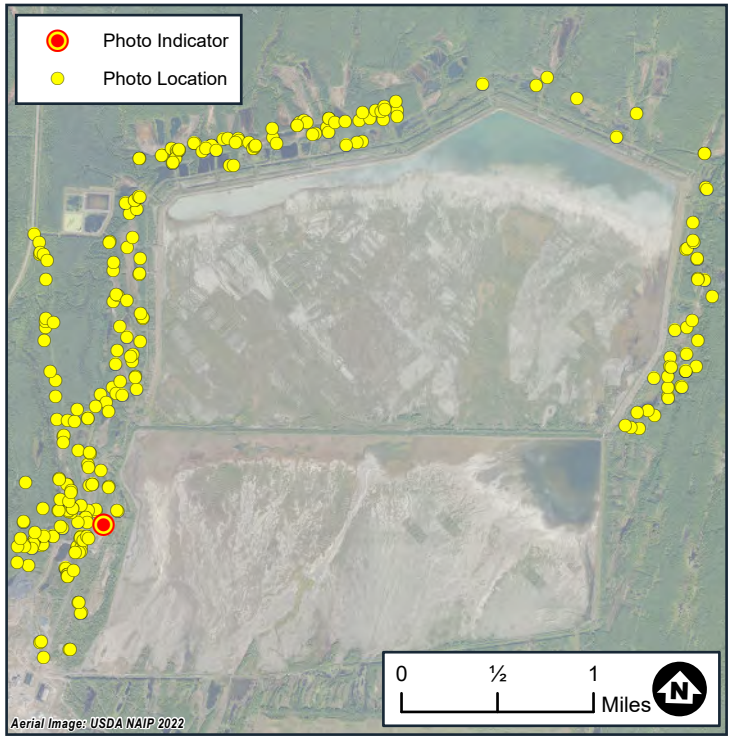
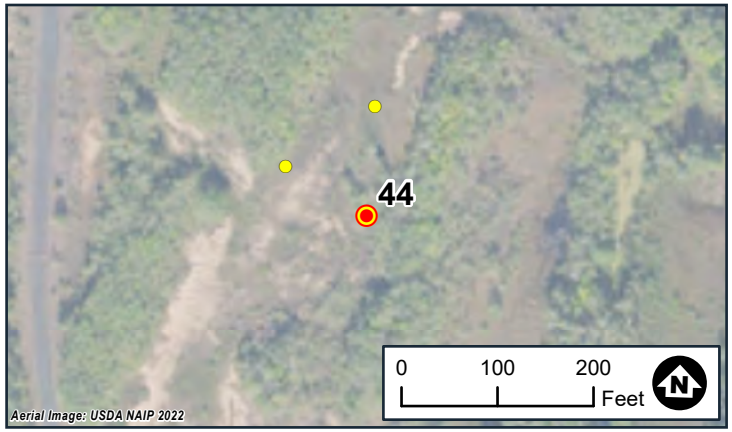


Photo 44-2





Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/26/2024
Wetland ID:WTL23
Flag No.:23-2
Sample Point ID:WTL23-DP1-W

Note: Photo locations are approximate

Photo 45-1



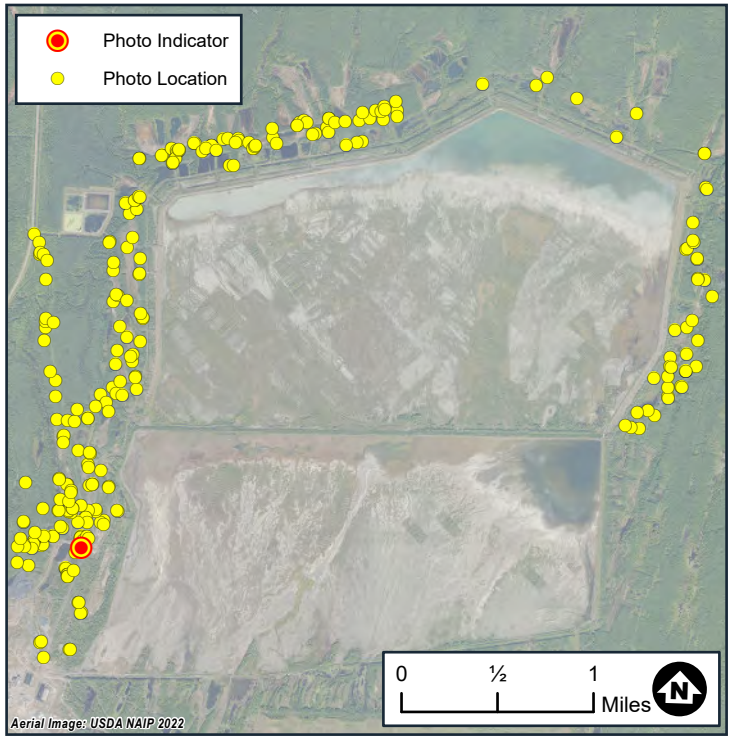
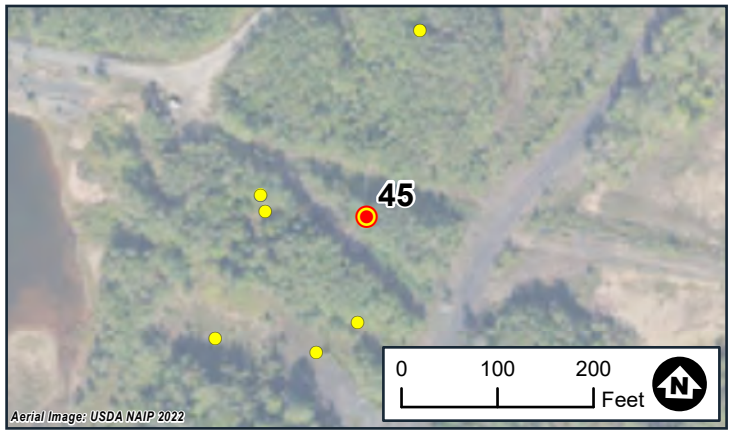


Photo 45-2





Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/26/2024
Wetland ID:WTL24
Flag No.:24-12
Sample Point ID:N/A

Note: Photo locations are approximate

Photo 46-1



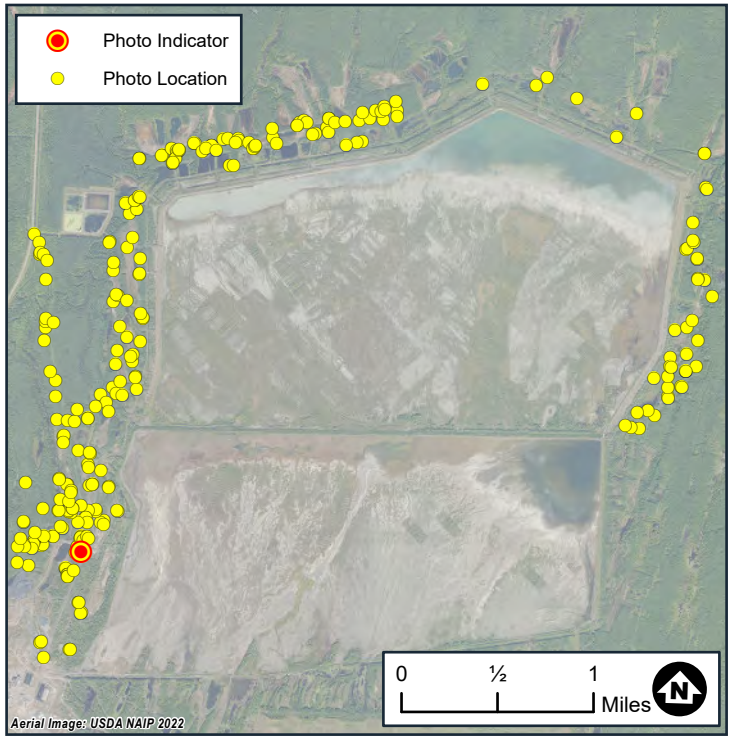
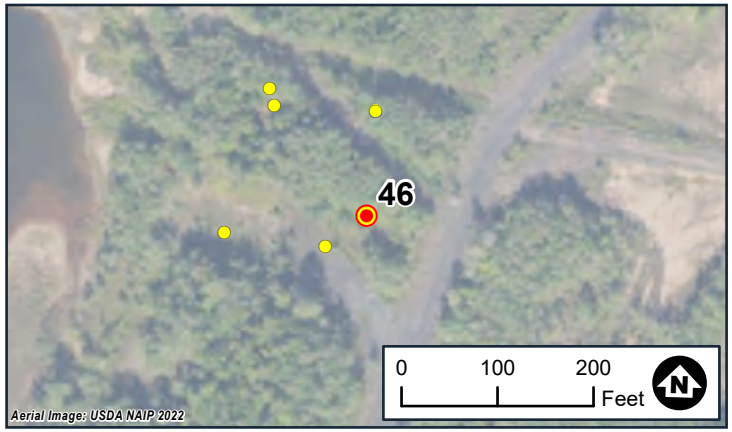


Photo 46-2





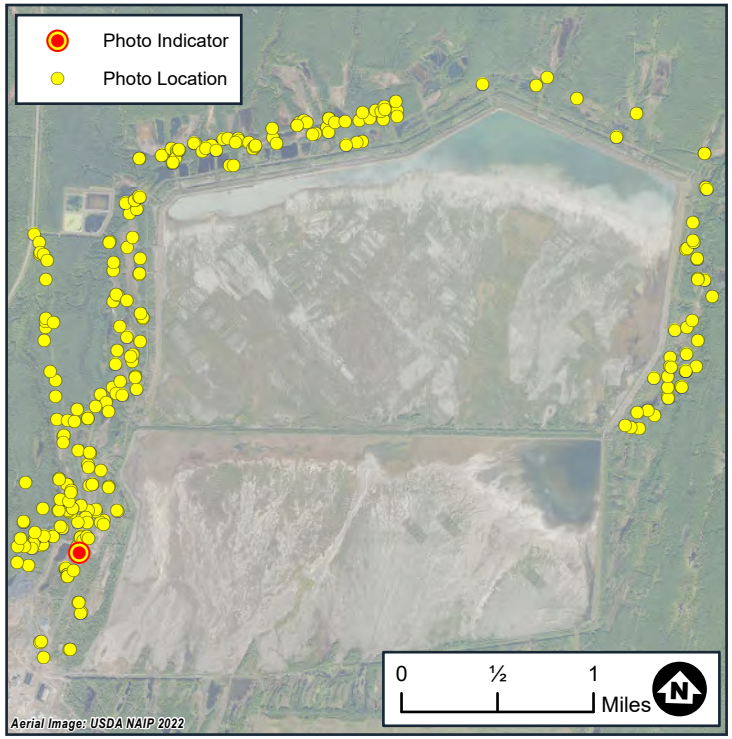
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

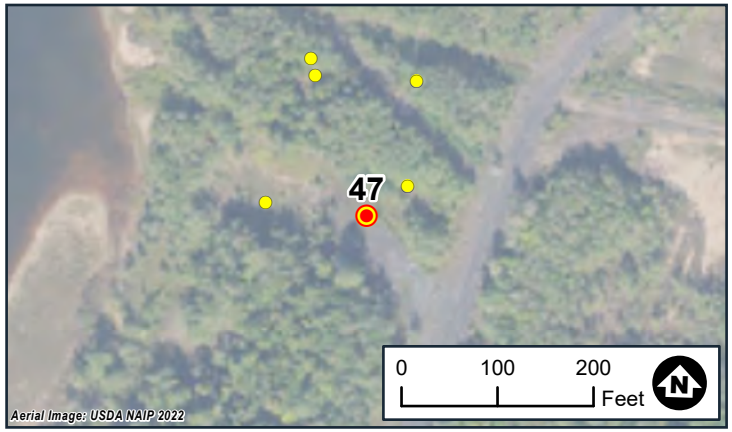
Date: 6/26/2024
Wetland ID:WTL26
Flag No.:26-1
Sample Point ID:WTL26-DP1-W

Note: Photo locations are approximate









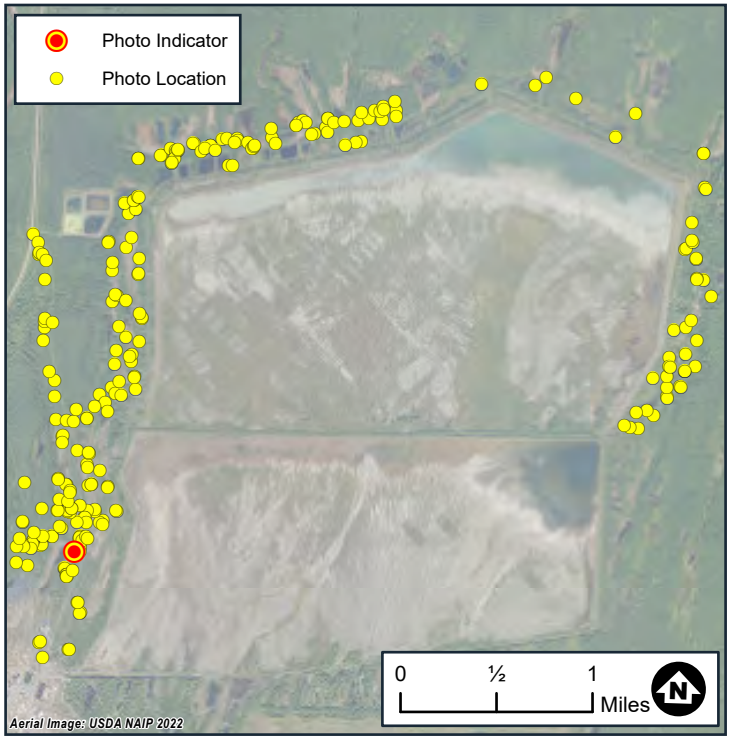
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

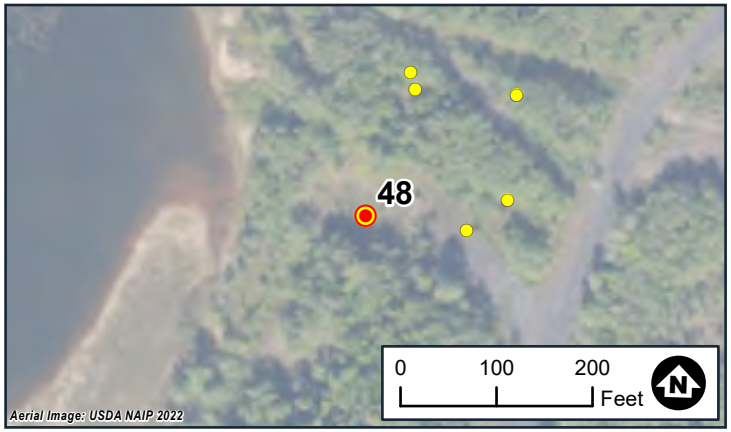
BARR

Date: 6/26/2024
Wetland ID:WTL26
Flag No.:26-14
Sample Point ID:WTL26-DP2-U

Note: Photo locations are approximate







Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/26/2024
Wetland ID:WTL28
Flag No.:28-1
Sample Point ID:N/A

Note: Photo locations are approximate

Barr Footer: ArcGISPro 3.4, 2025-01-06 12:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_PhotoLog\WetlandDelienation_PhotoLog.aprx Layout: Wetland_Delineation_Photolog User: CML3

Photo 49-1



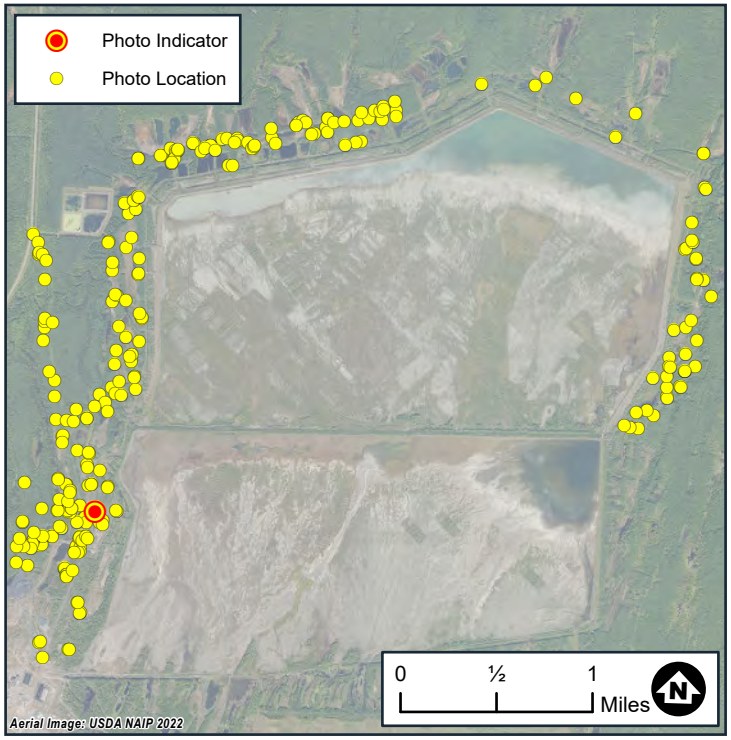
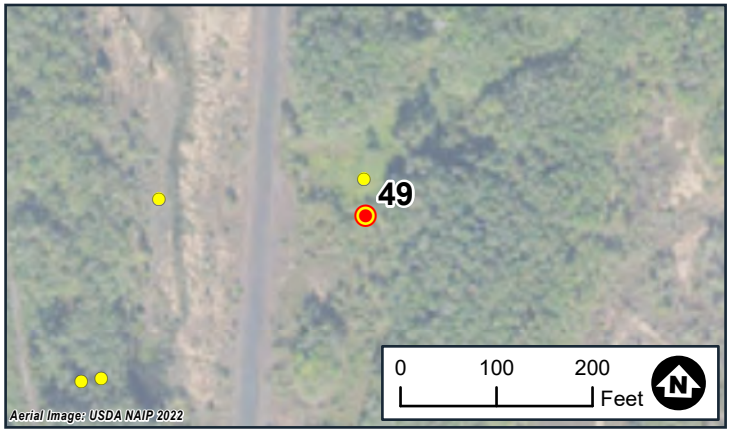


Photo 49-2





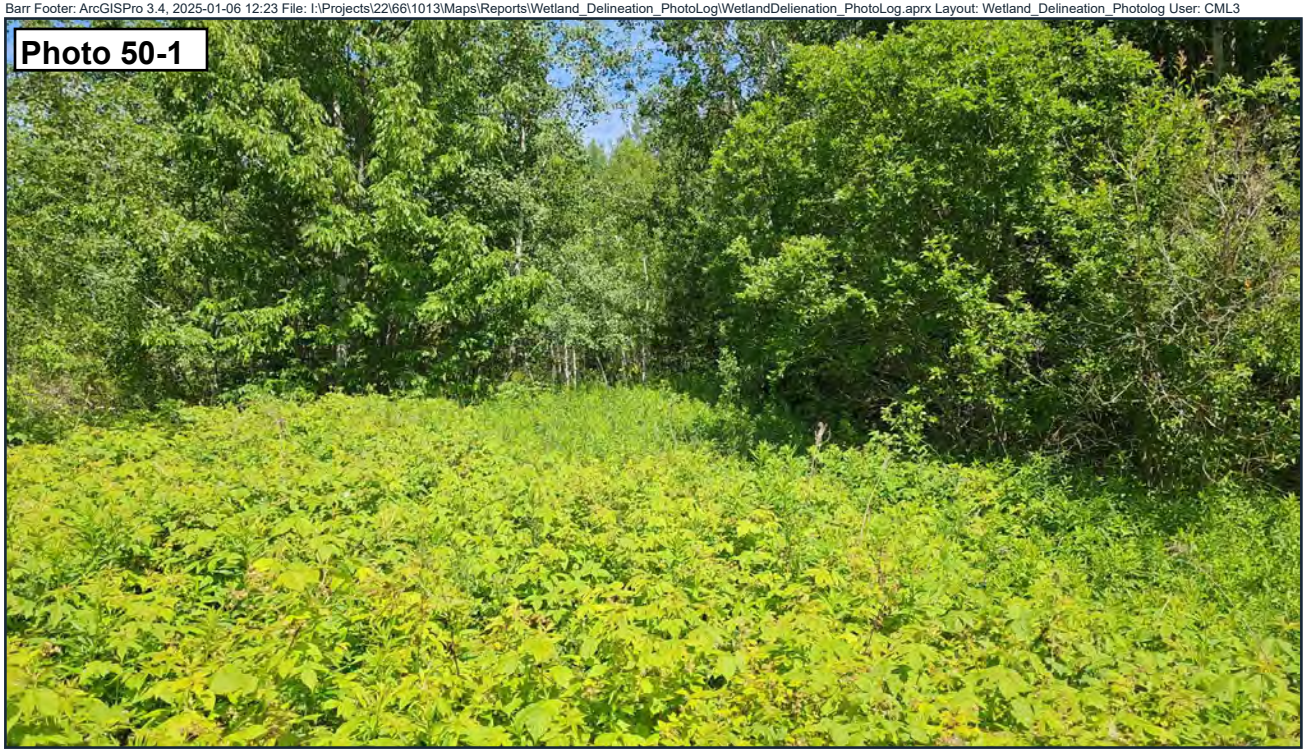
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/27/2024
Wetland ID:WTL29
Flag No.:29-7
Sample Point ID:WTL29-DP1-W

Note: Photo locations are approximate

Photo 50-1



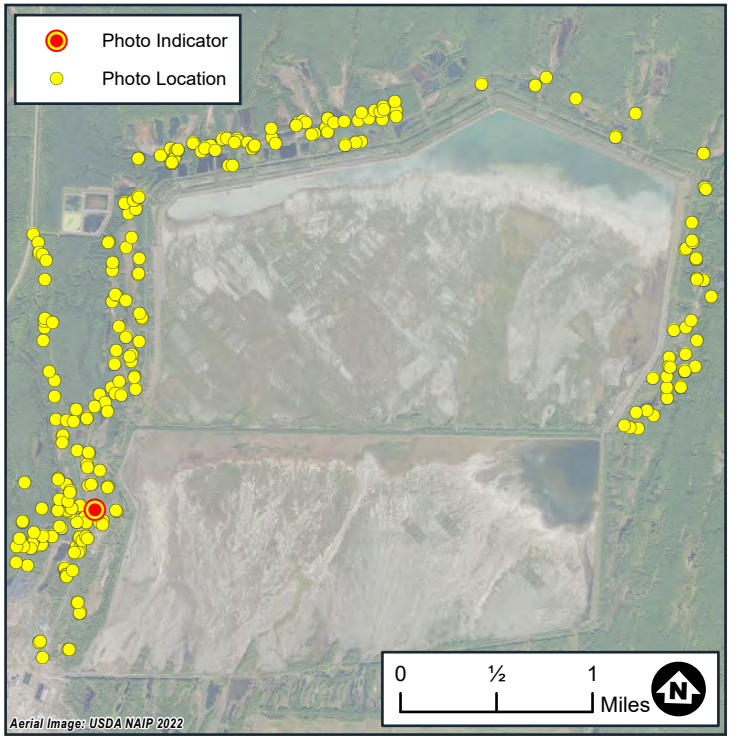
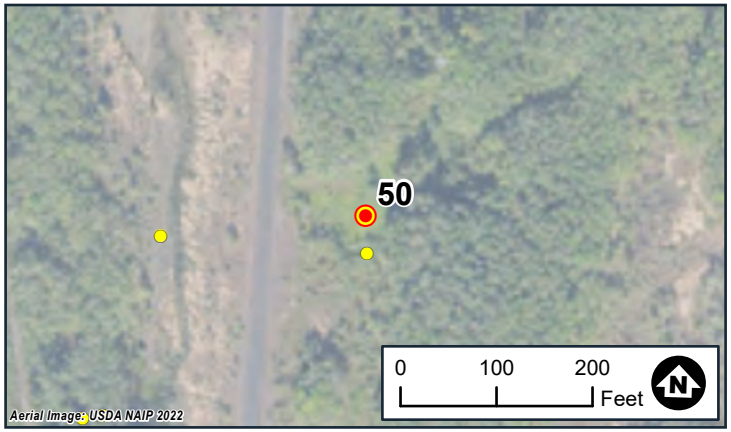


Photo 50-2





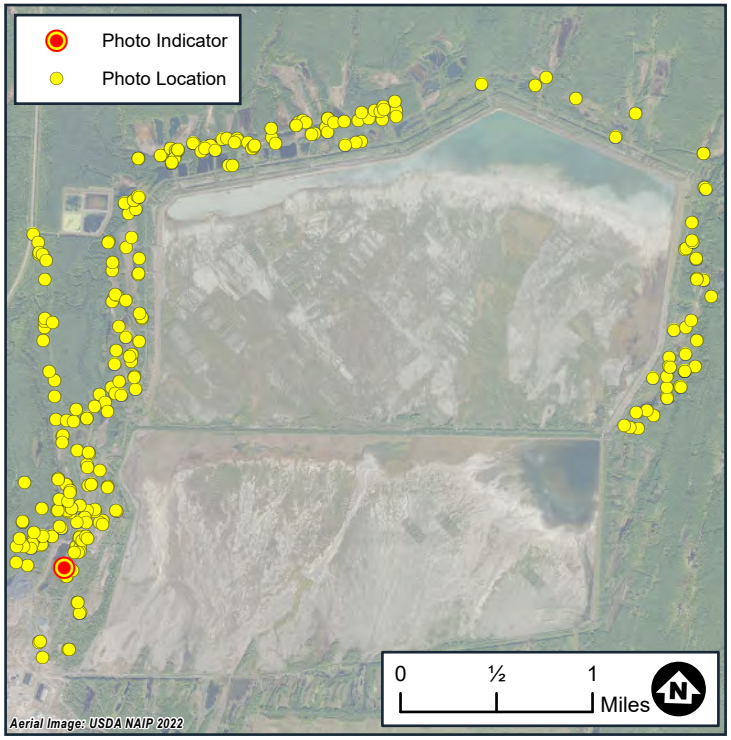
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

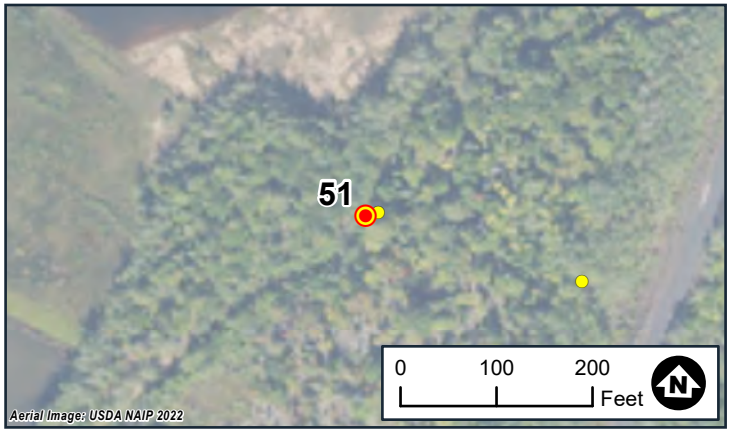
Date: 6/27/2024
Wetland ID:WTL29
Flag No.:29-7
Sample Point ID:WTL29-DP1-U

Note: Photo locations are approximate









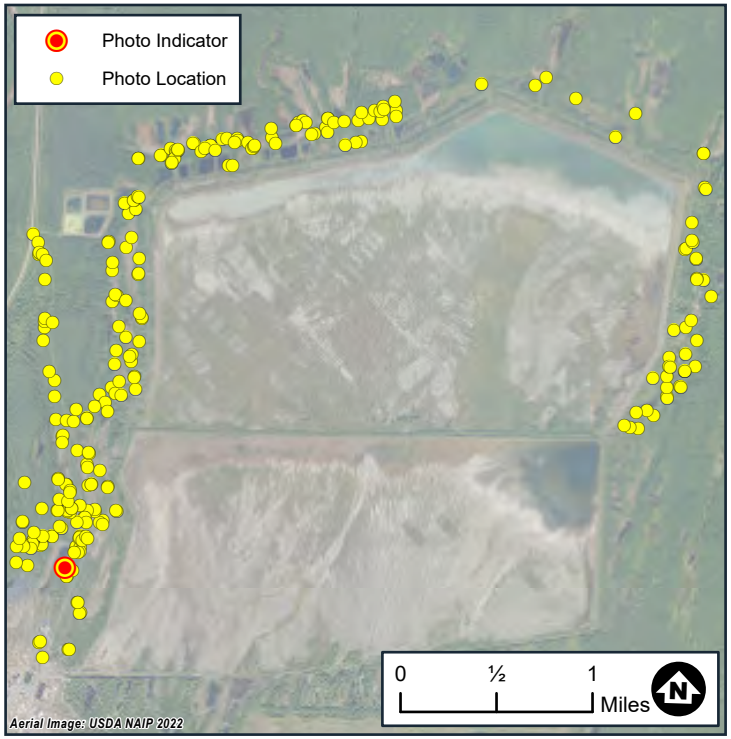
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

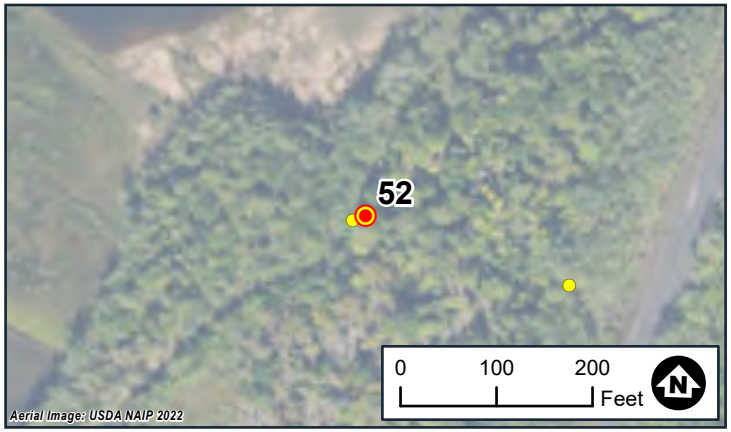
BARR

Date: 6/26/2024
Wetland ID:WTL30
Flag No.:30-9
Sample Point ID:WTL30-DP1-W

Note: Photo locations are approximate







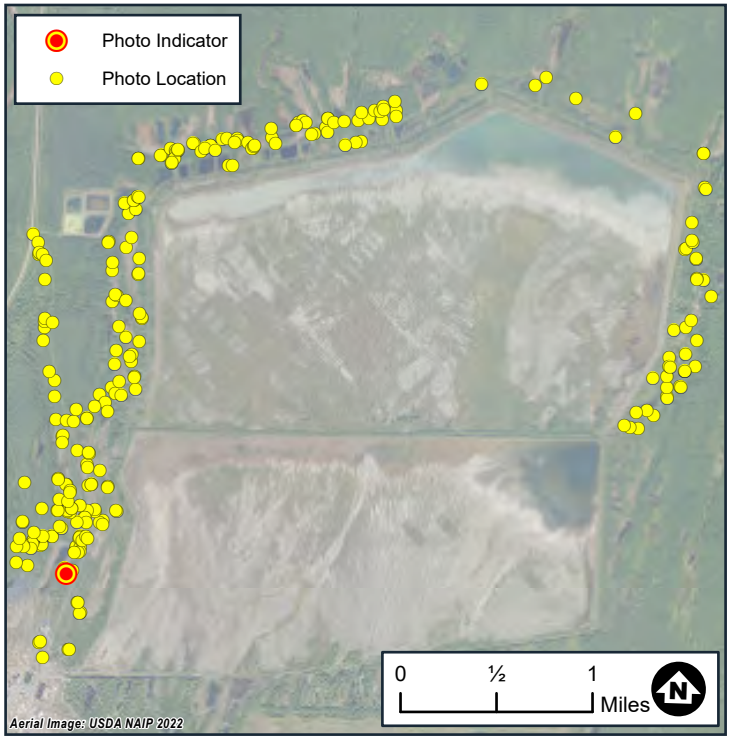
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

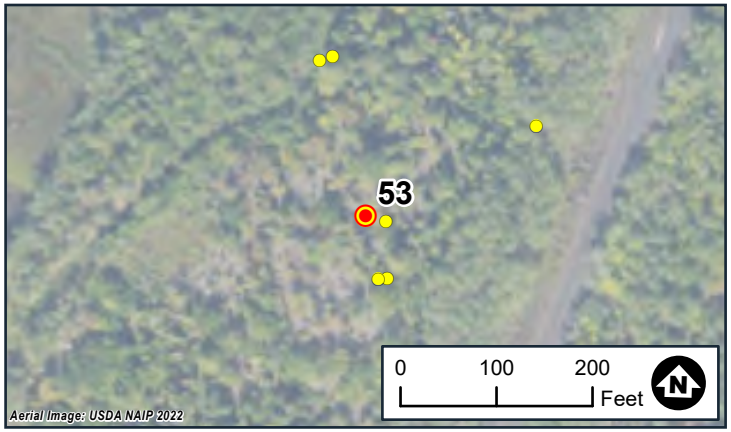
BARR

Date: 6/26/2024
Wetland ID:WTL30
Flag No.:30-9
Sample Point ID:WTL30-DP2-U

Note: Photo locations are approximate







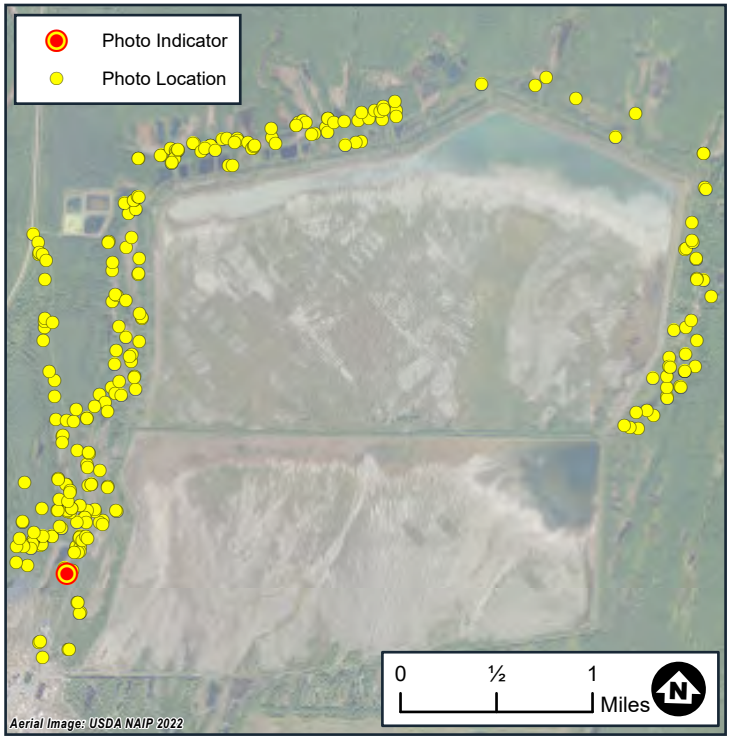
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

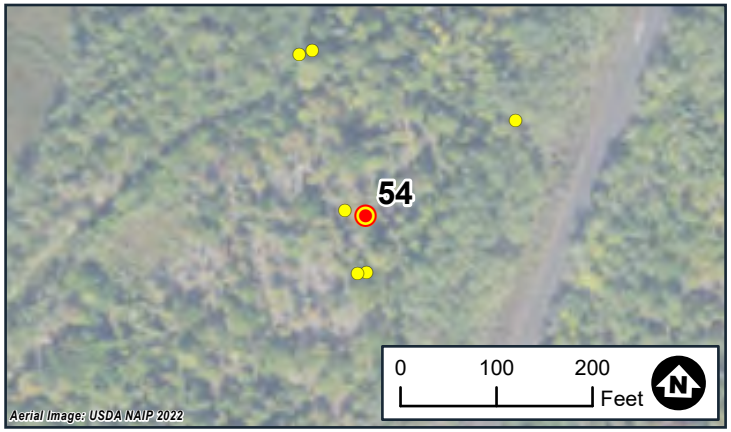
BARR

Date: 6/26/2024
Wetland ID:WTL32
Flag No.:32-12
Sample Point ID:WTL32-DP1-W

Note: Photo locations are approximate







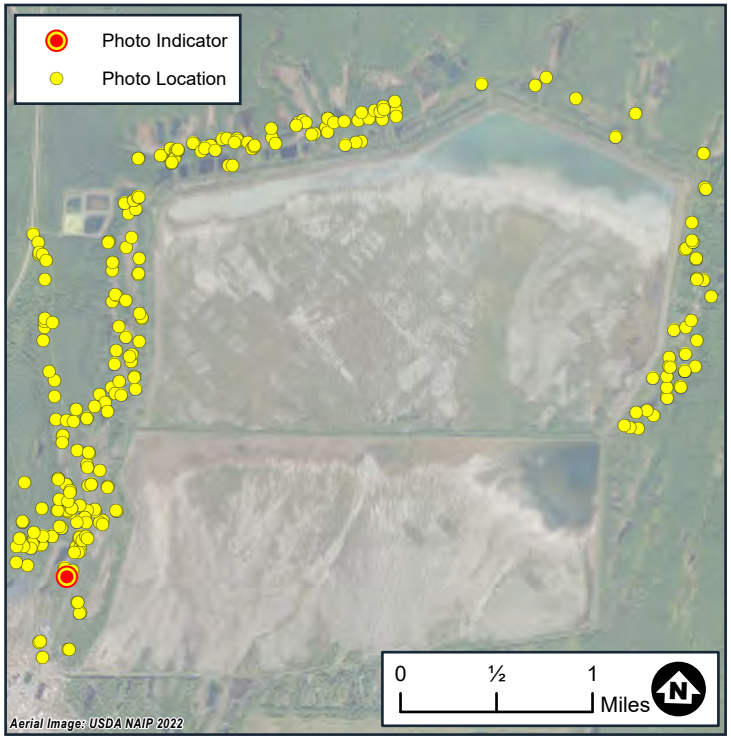
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

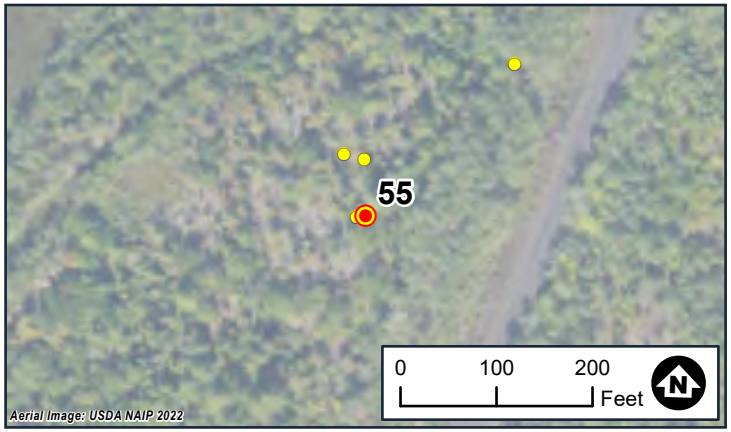
BARR

Date: 6/26/2024
Wetland ID:WTL32
Flag No.:32-12
Sample Point ID:WTL32-DP2-U

Note: Photo locations are approximate







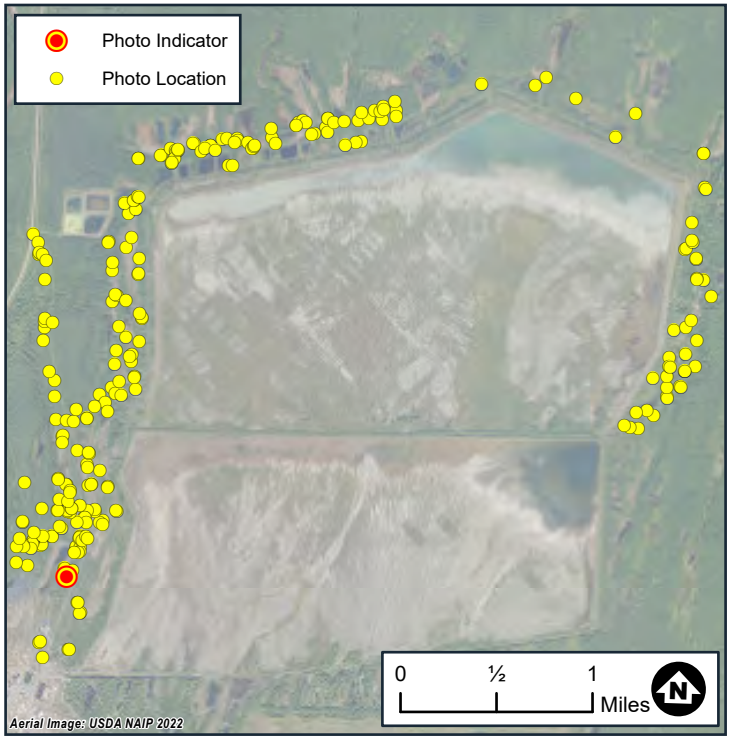
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

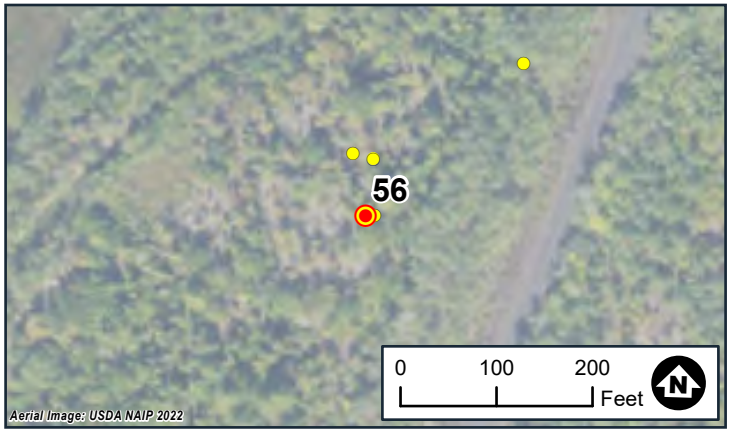
BARR

Date: 6/26/2024
Wetland ID:WTL34
Flag No.:34-6
Sample Point ID:N/A

Note: Photo locations are approximate







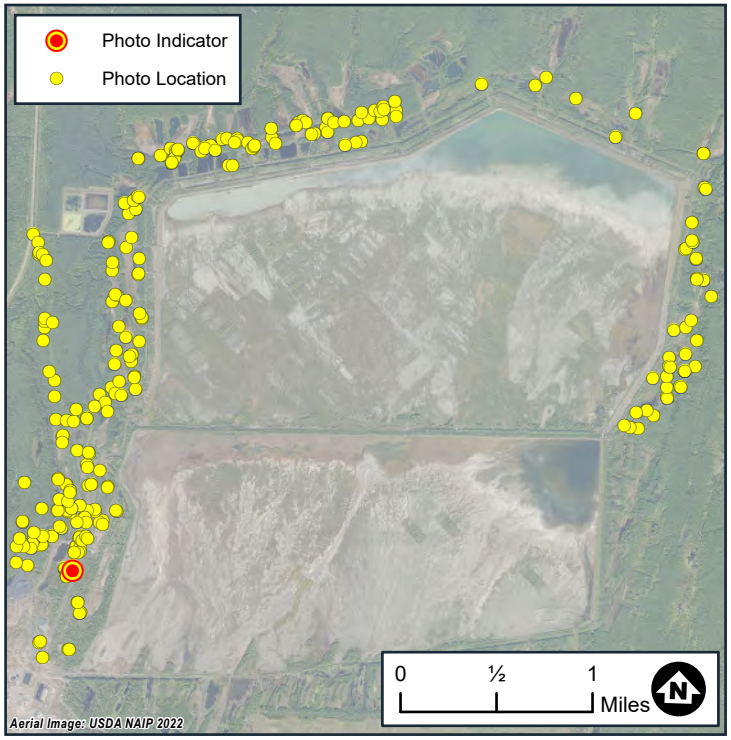
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

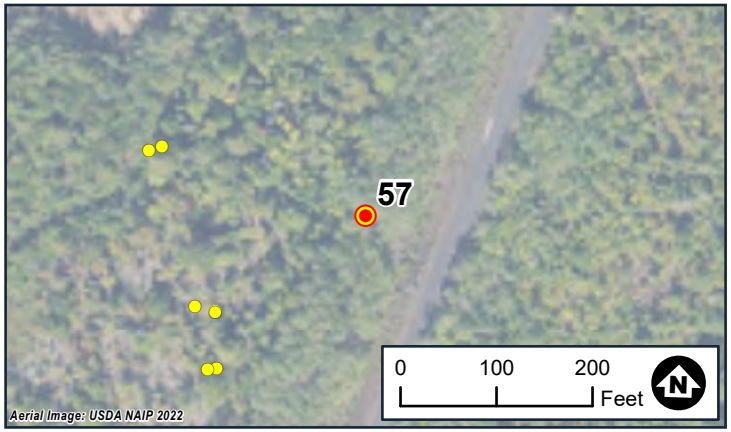
Date: 6/26/2024
Wetland ID:WTL34
Flag No.:34-6
Sample Point ID:N/A

Note: Photo locations are approximate









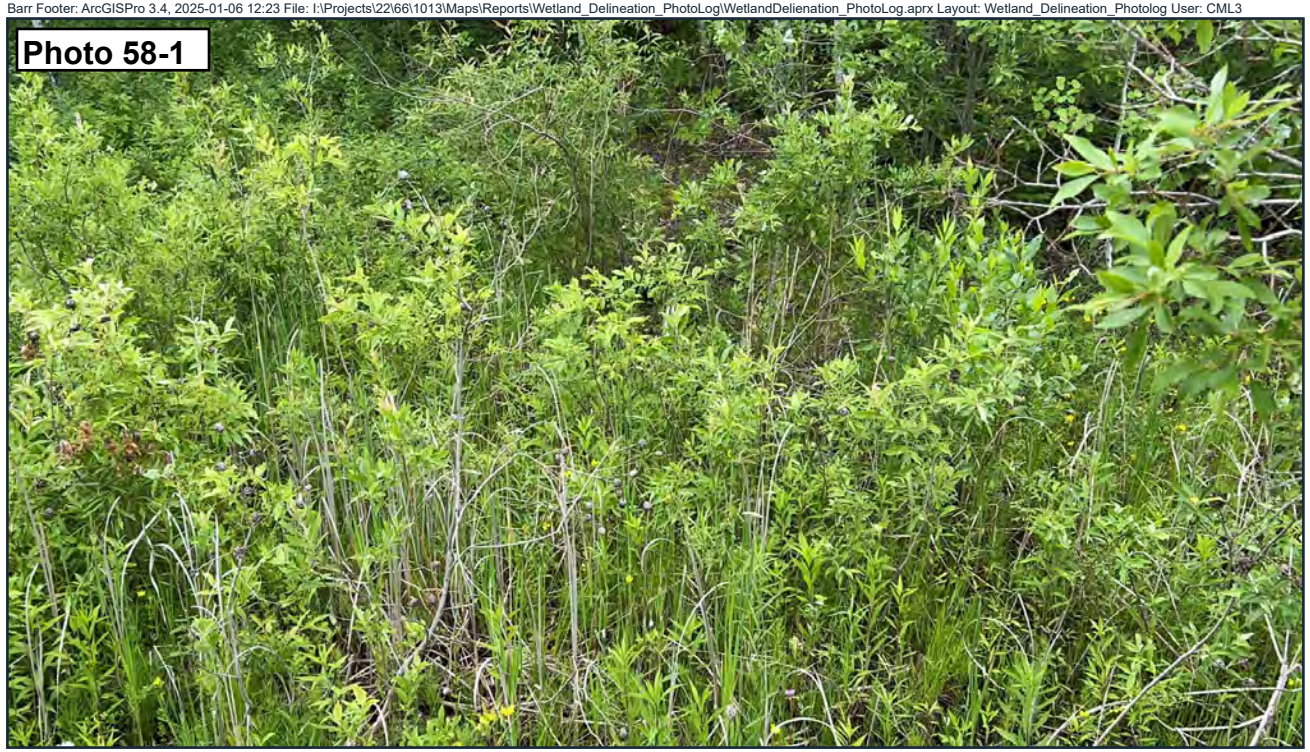
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/26/2024
Wetland ID:WTL36
Flag No.:36-5
Sample Point ID:N/A

Note: Photo locations are approximate

Photo 58-1



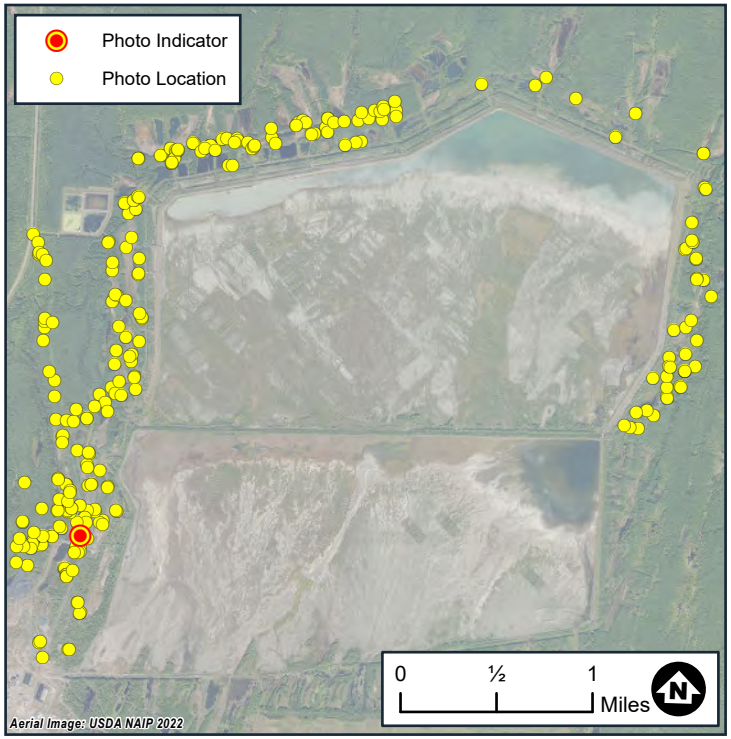
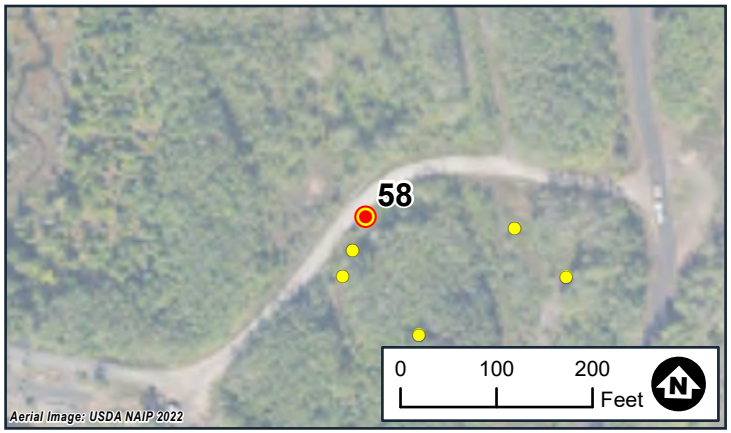


Photo 58-2





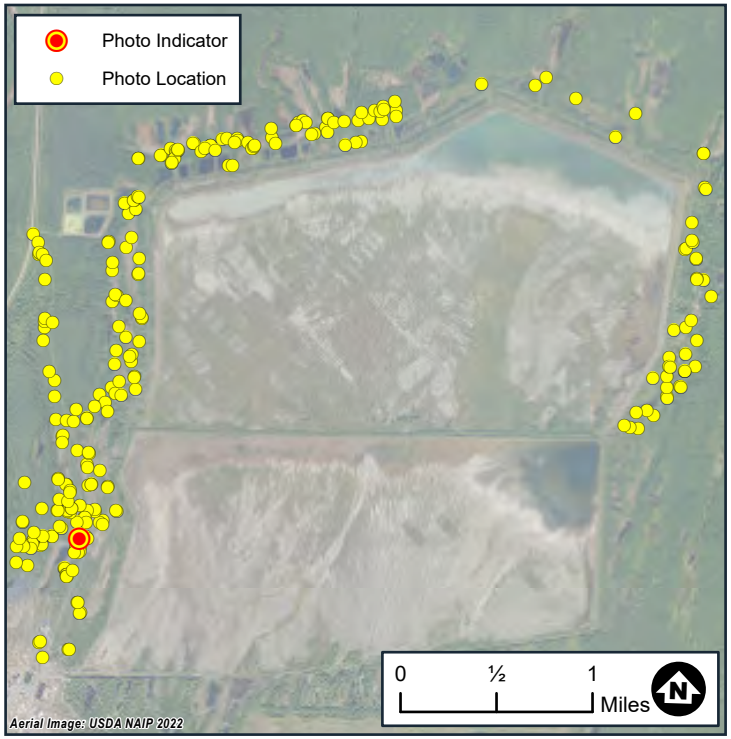
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

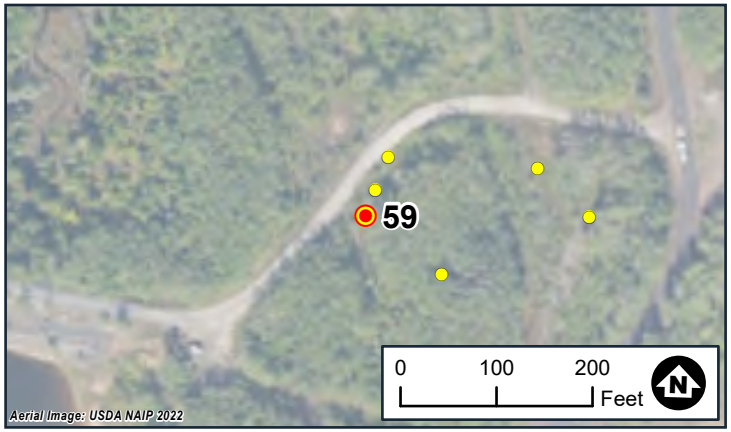
BARR

Date: 6/26/2024
Wetland ID:WTL39
Flag No.:39-2
Sample Point ID:N/A

Note: Photo locations are approximate







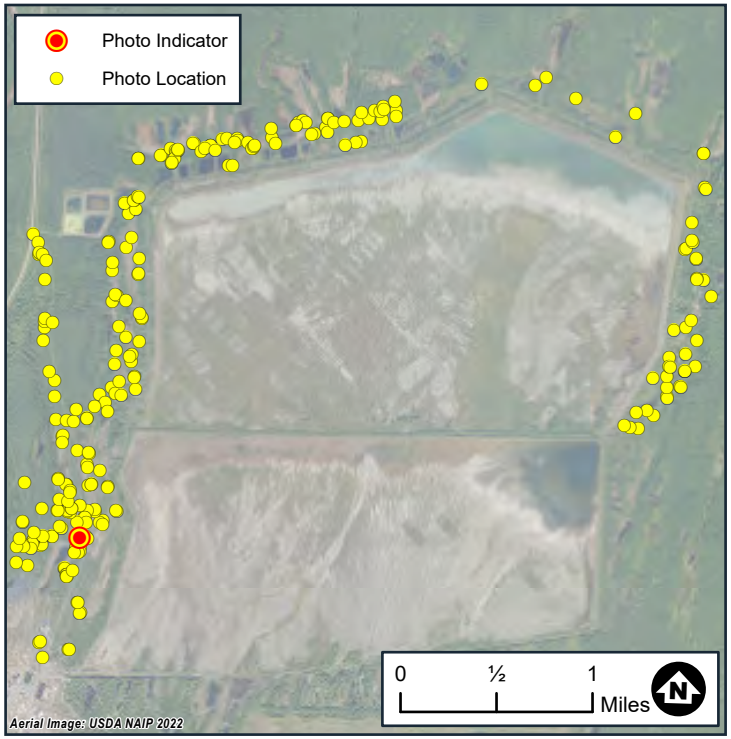
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

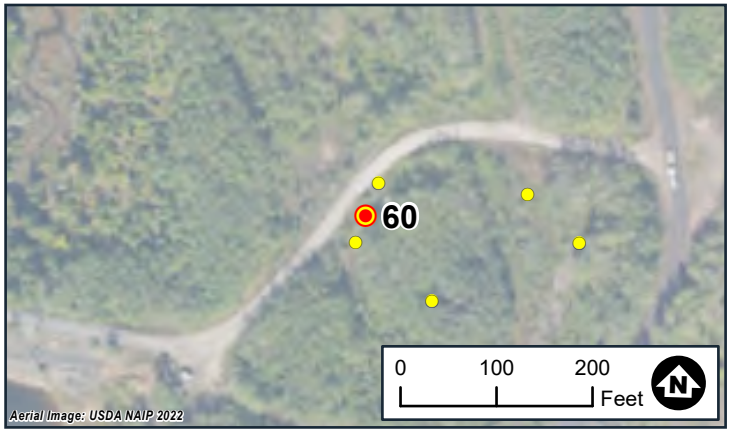
BARR

Date: 6/26/2024
Wetland ID:WTL40
Flag No.:40-13
Sample Point ID:WTL40-DP1-W

Note: Photo locations are approximate







Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/26/2024
Wetland ID:WTL40
Flag No.:40-1
Sample Point ID:WTL40-DP2-U

Note: Photo locations are approximate

Photo 61-1



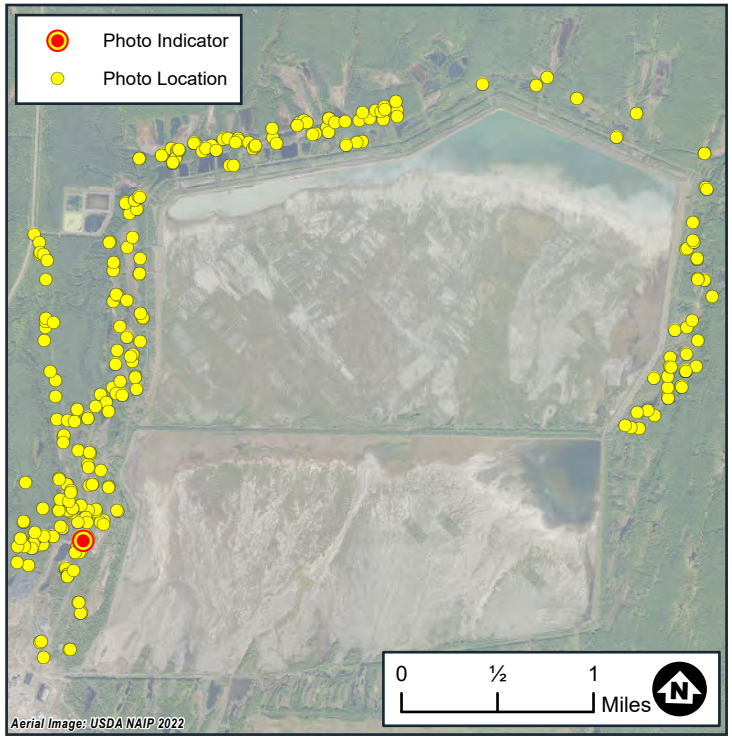
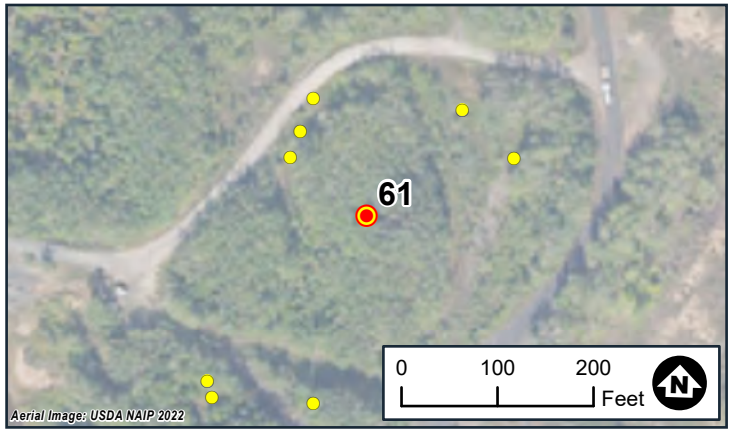


Photo 61-2





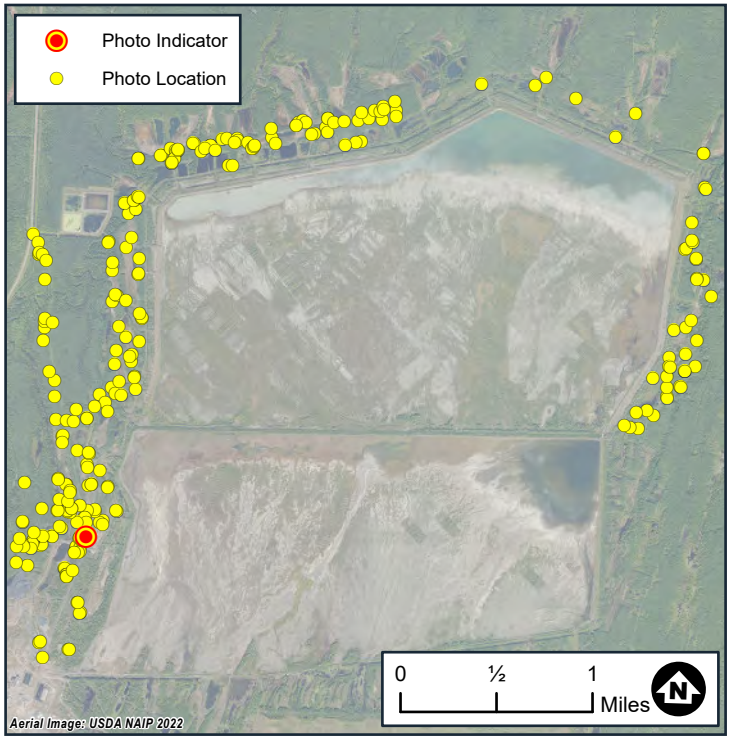
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

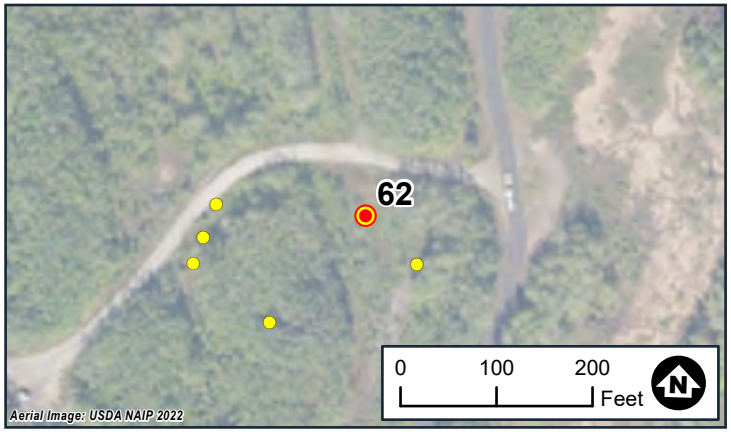
Date: 6/26/2024
Wetland ID:WTL42
Flag No.:42-1
Sample Point ID:N/A

Note: Photo locations are approximate









Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/26/2024
Wetland ID:WTL44
Flag No.:44-1
Sample Point ID:N/A

Note: Photo locations are approximate

Photo 63-1



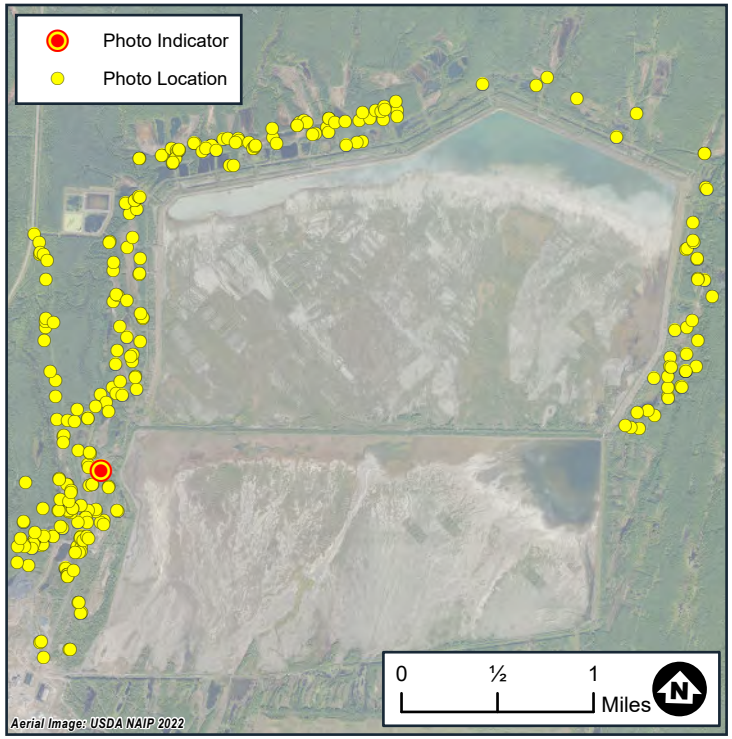
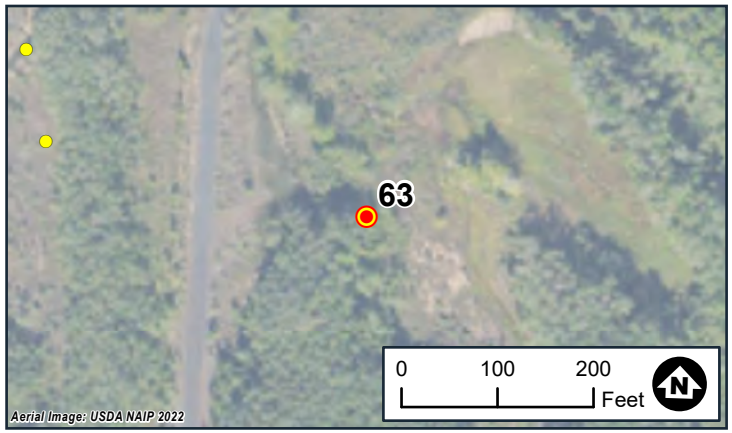


Photo 63-2





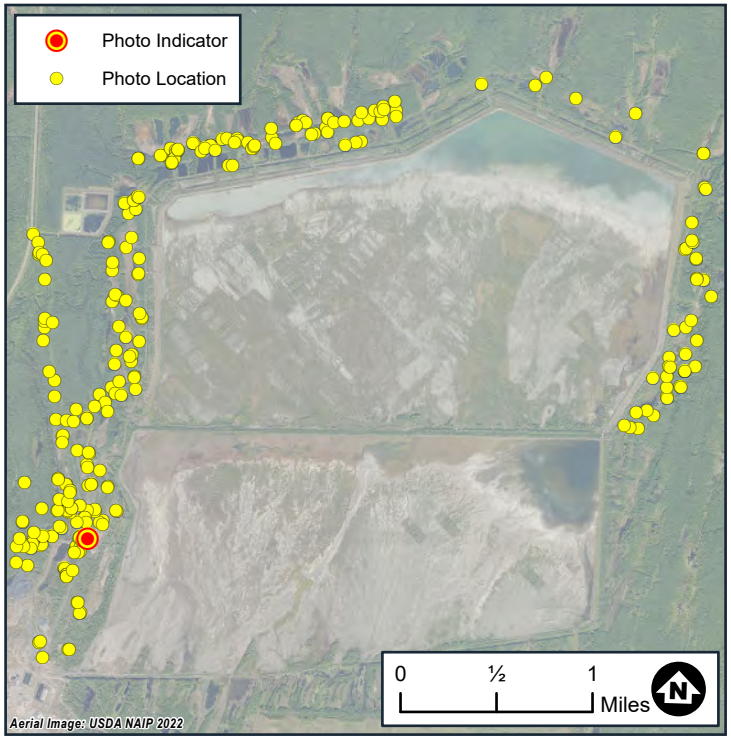
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

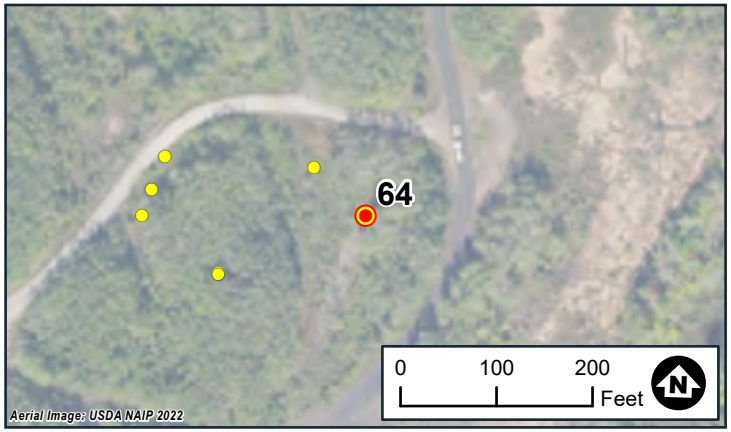
Date: 6/28/2024
Wetland ID:WTL45
Flag No.:45-1
Sample Point ID:WTL45-DP1-W

Note: Photo locations are approximate









Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/26/2024
Wetland ID:WTL46
Flag No.:46-1
Sample Point ID:N/A

Note: Photo locations are approximate

Photo 65-1



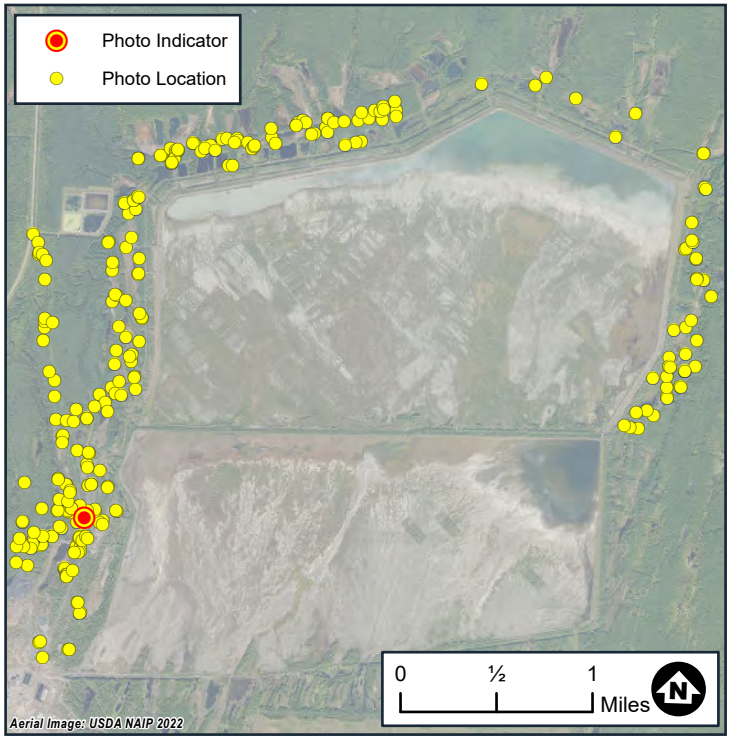
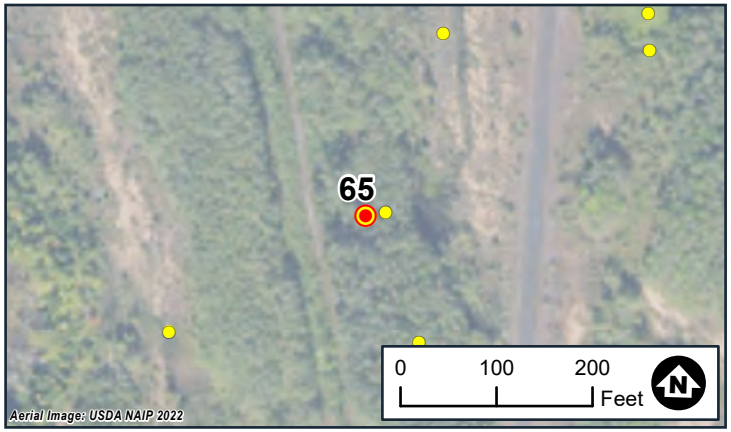


Photo 65-2





Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

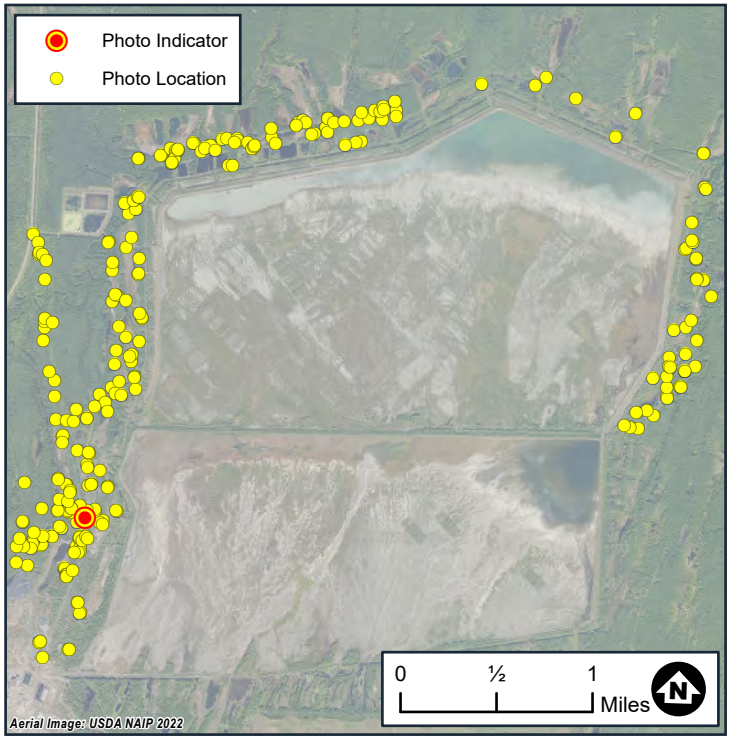
BARR

Date: 6/28/2024
Wetland ID:WTL47
Flag No.:47-3
Sample Point ID:WTL47-DP1-W

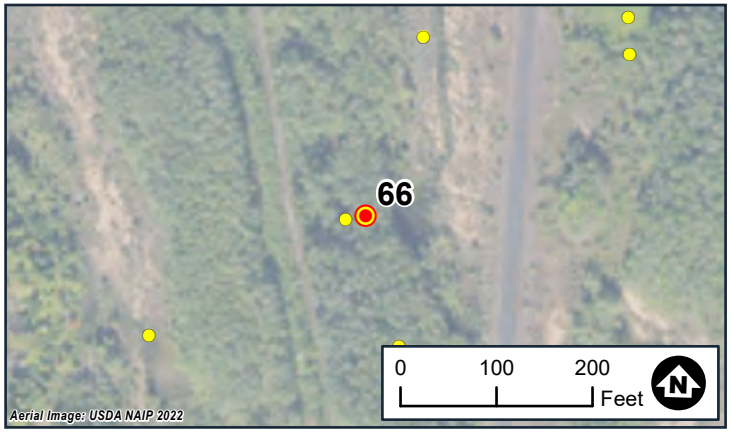
Note: Photo locations are approximate

Barr Footer: ArcGISPro 3.4, 2025-01-06 12:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_PhotoLog\WetlandDelienation_PhotoLog.aprx Layout: Wetland_Delineation_Photolog User: CML3









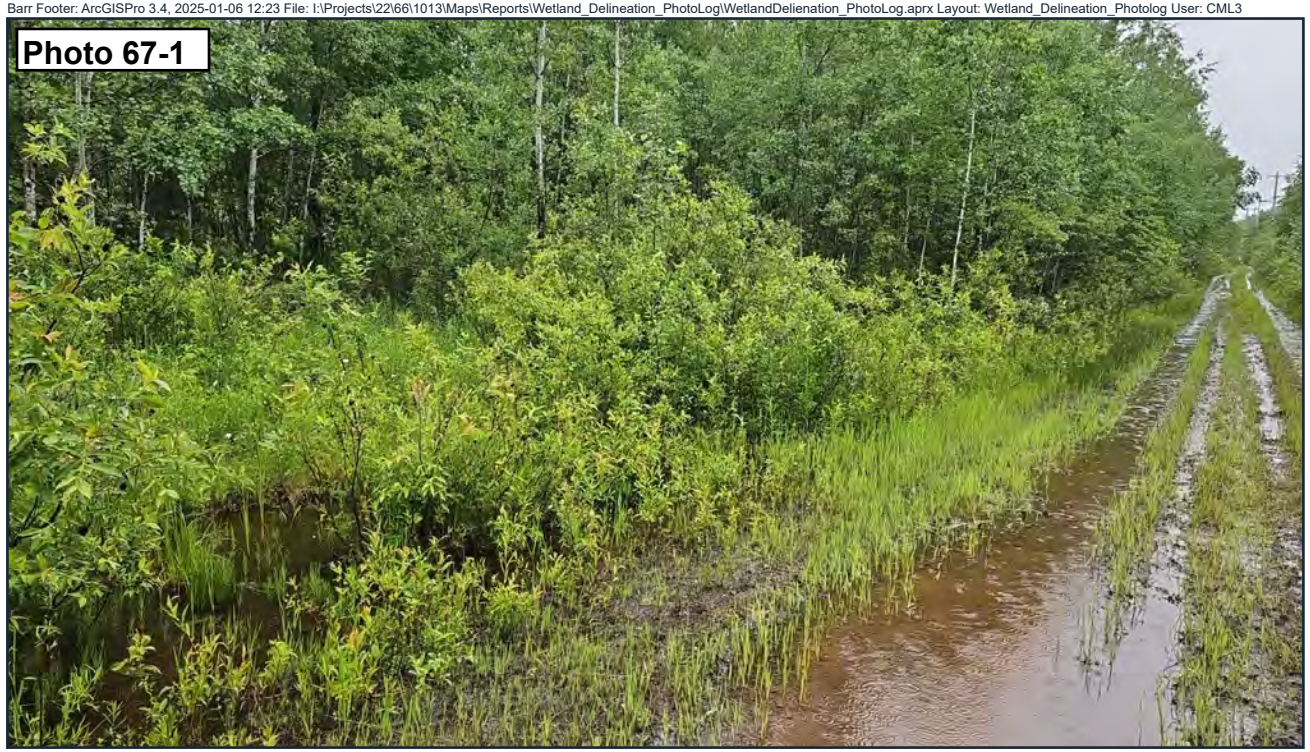
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/28/2024
Wetland ID:WTL47
Flag No.:47-3
Sample Point ID:WTL47-DP1-U

Note: Photo locations are approximate

Photo 67-1



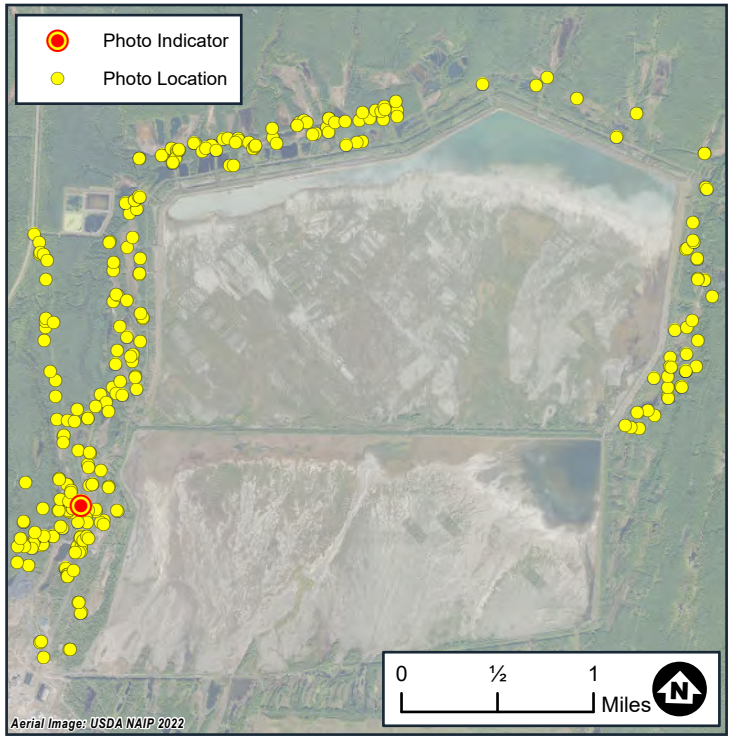
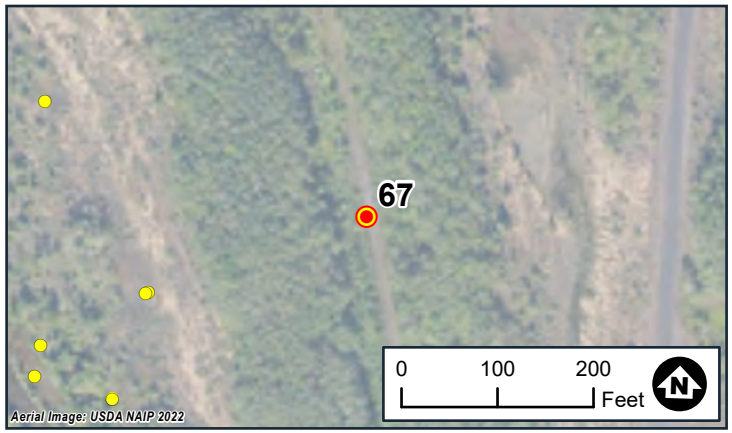


Photo 67-2





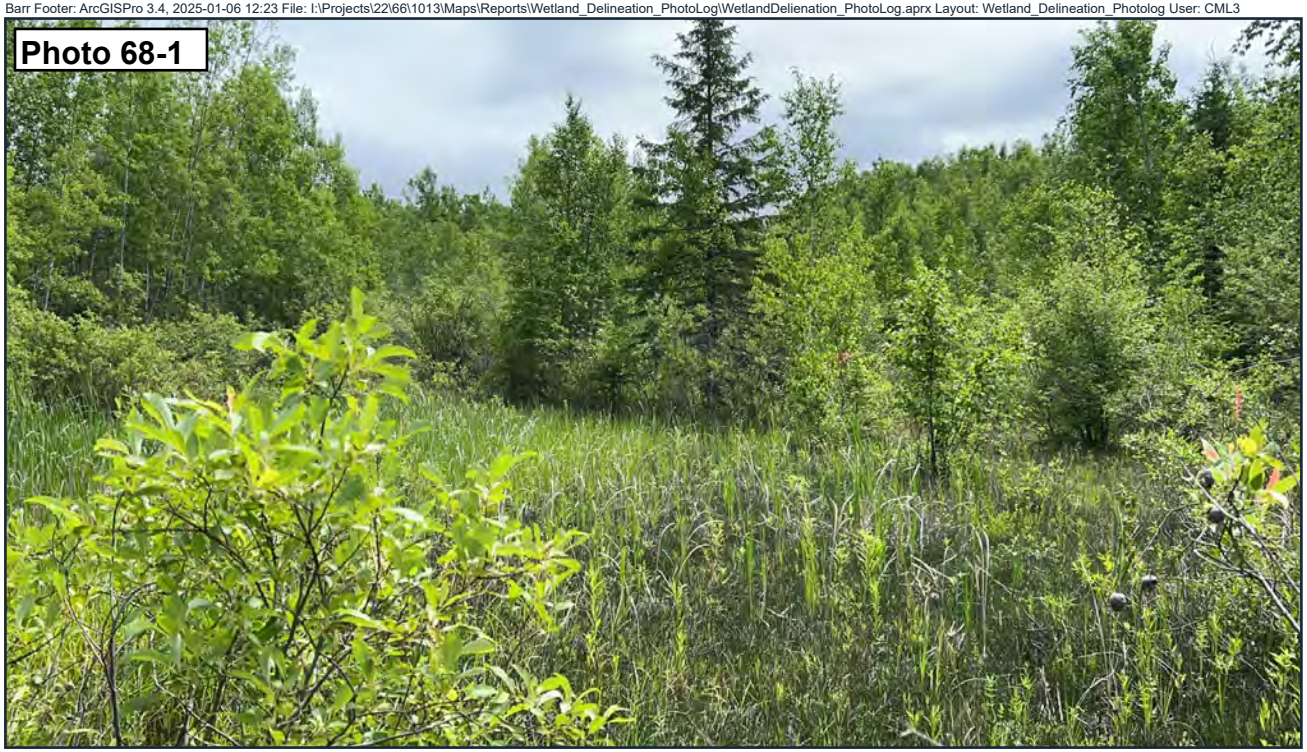
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/28/2024
Wetland ID:WTL47
Flag No.:47-80
Sample Point ID:N/A

Note: Photo locations are approximate

Photo 68-1



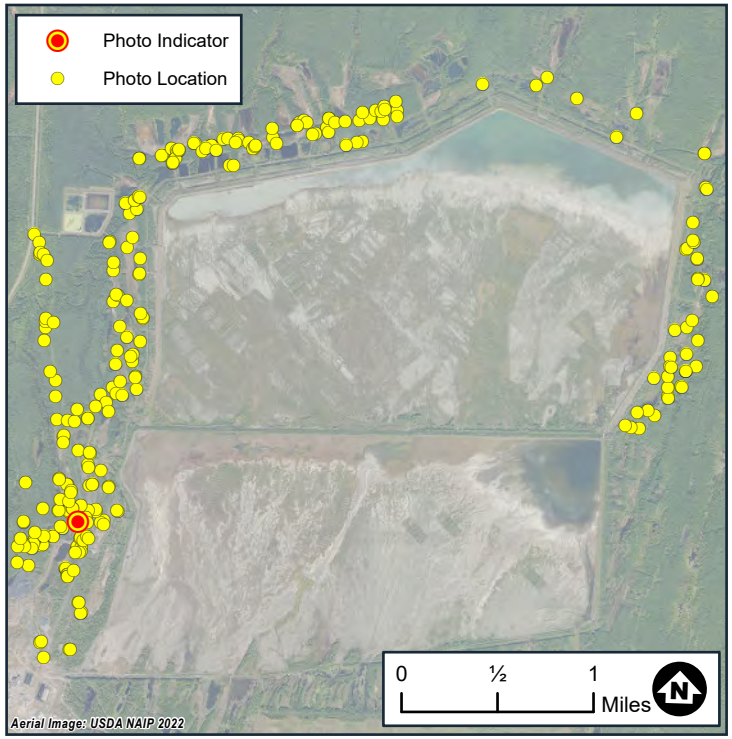
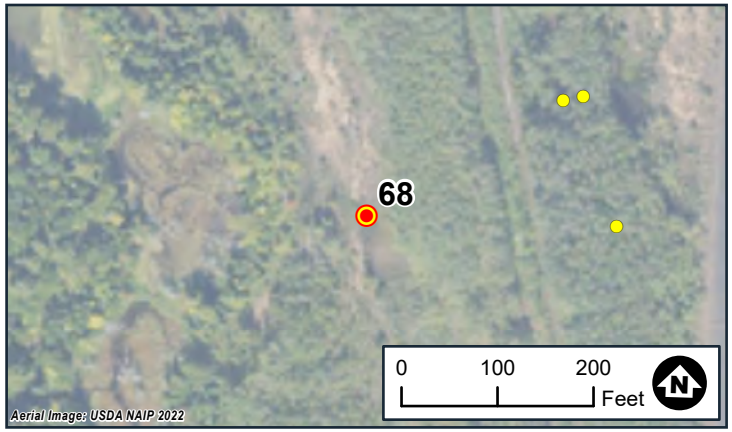


Photo 68-2





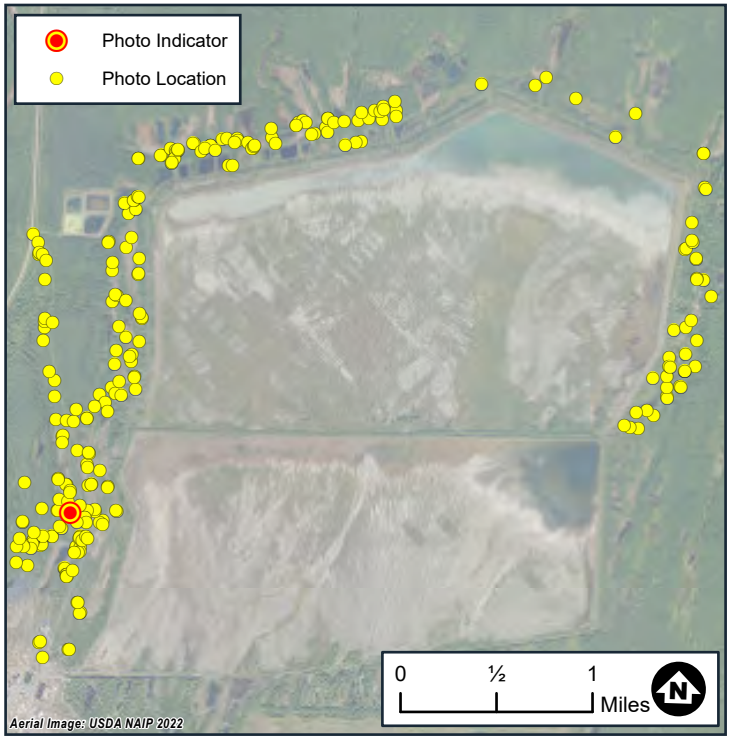
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

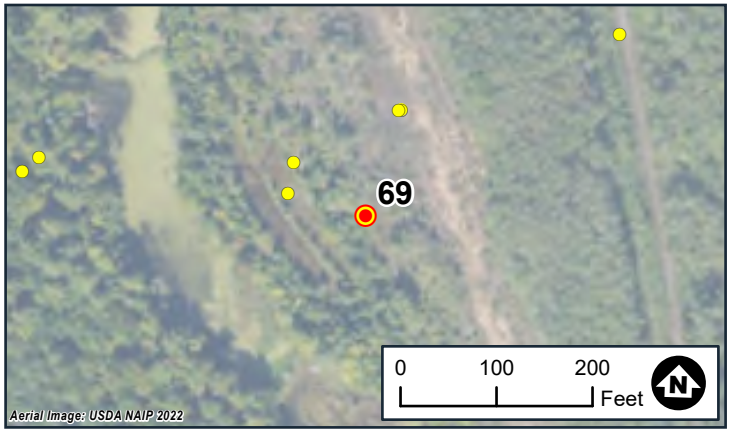
BARR

Date: 6/26/2024
Wetland ID:WTL48
Flag No.:48-1
Sample Point ID:N/A

Note: Photo locations are approximate





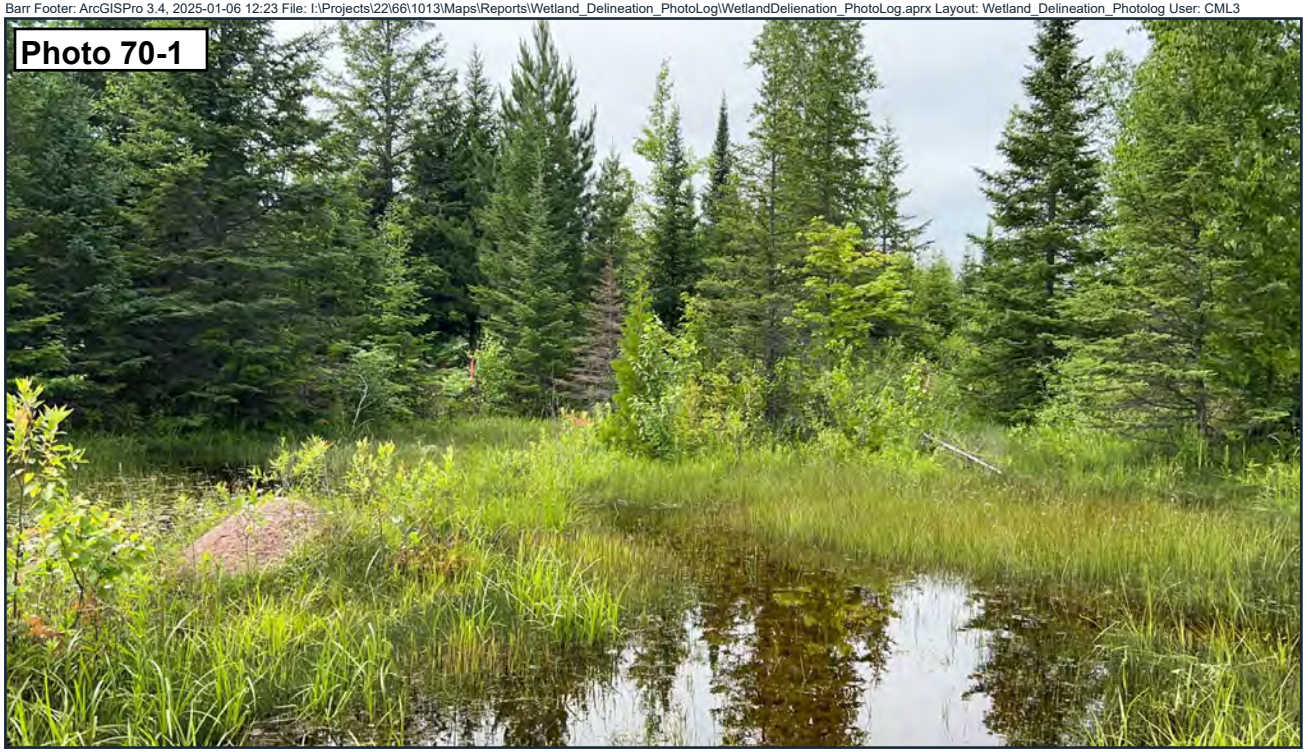


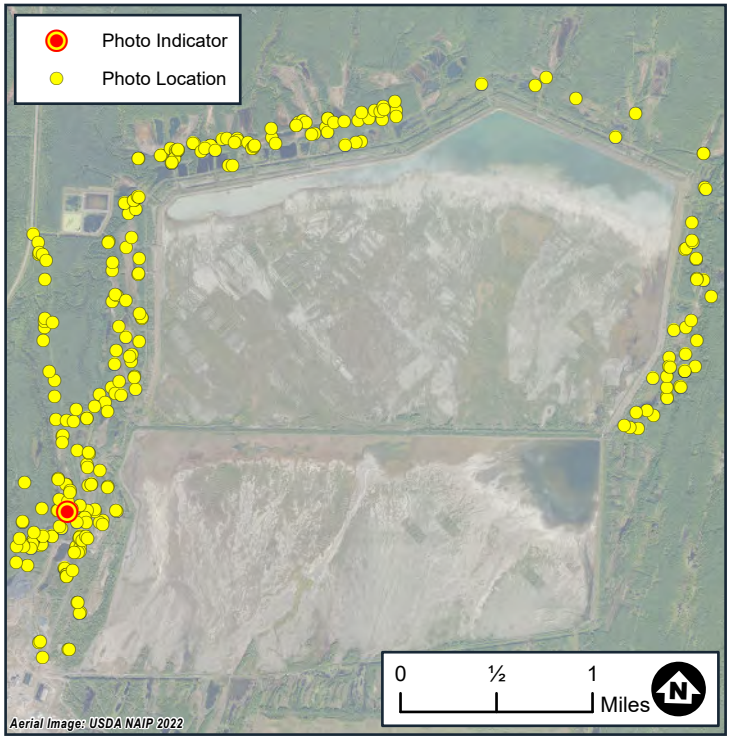
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

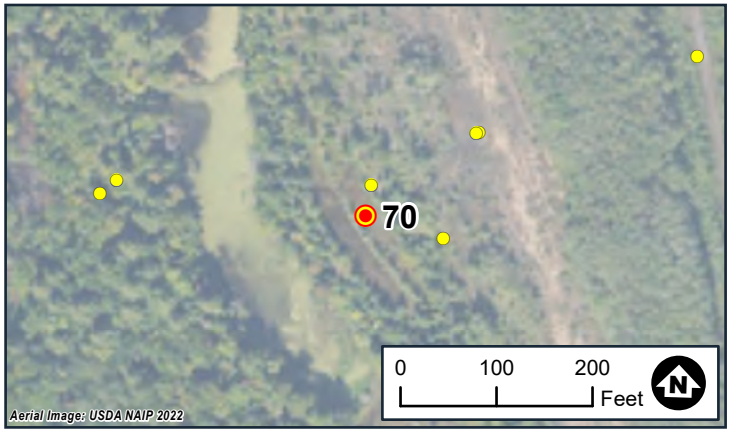
Date: 6/26/2024
Wetland ID:WTL50
Flag No.:50-17
Sample Point ID:N/A

Note: Photo locations are approximate









Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/26/2024
Wetland ID:WTL52
Flag No.:52-1
Sample Point ID:WTL52-DP1-W

Note: Photo locations are approximate

Photo 71-1



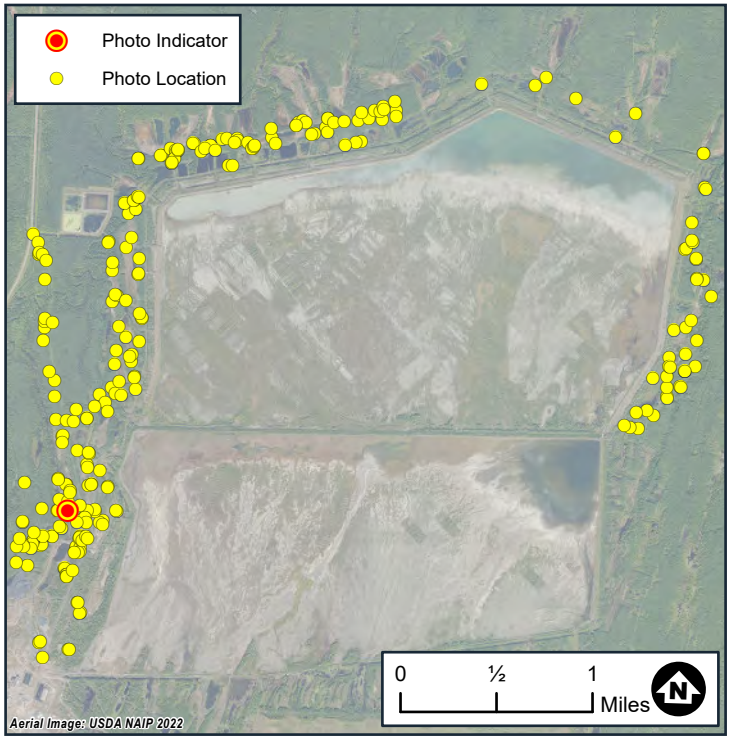
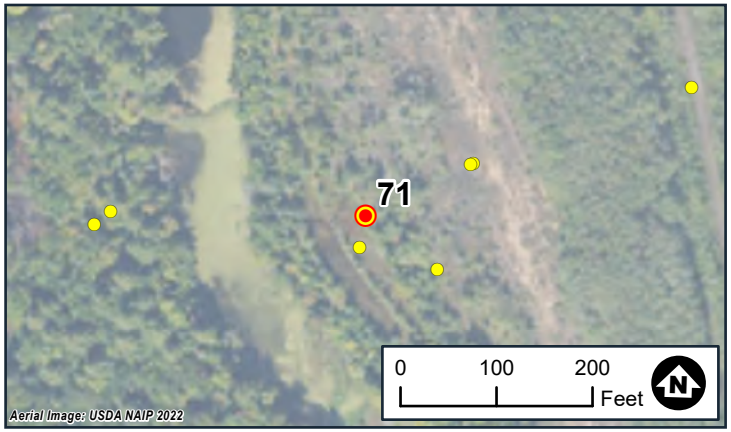


Photo 71-2





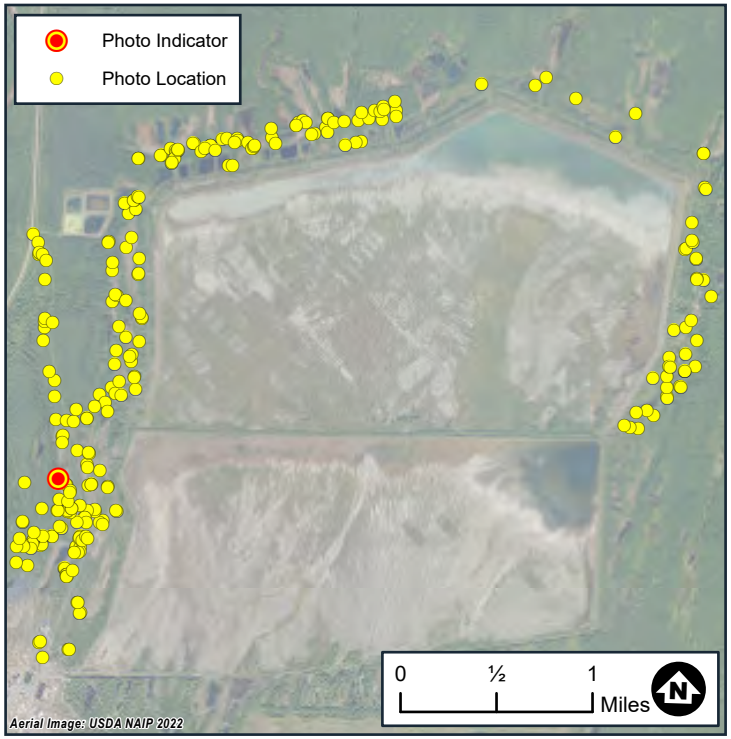
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

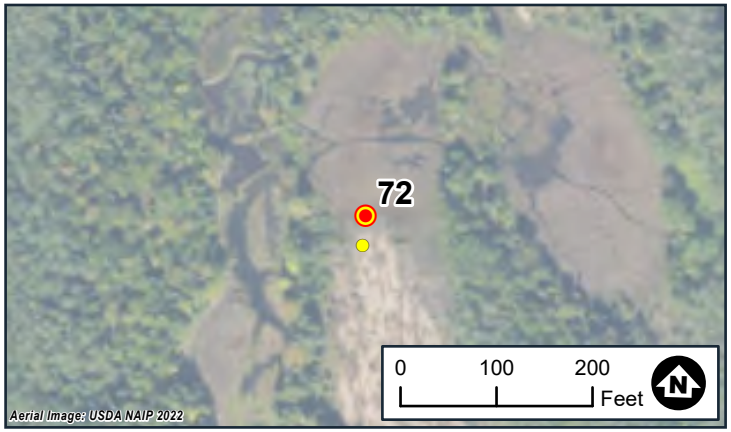
BARR

Date: 6/26/2024
Wetland ID:WTL52
Flag No.:52-30
Sample Point ID:WTL52-DP2-U

Note: Photo locations are approximate







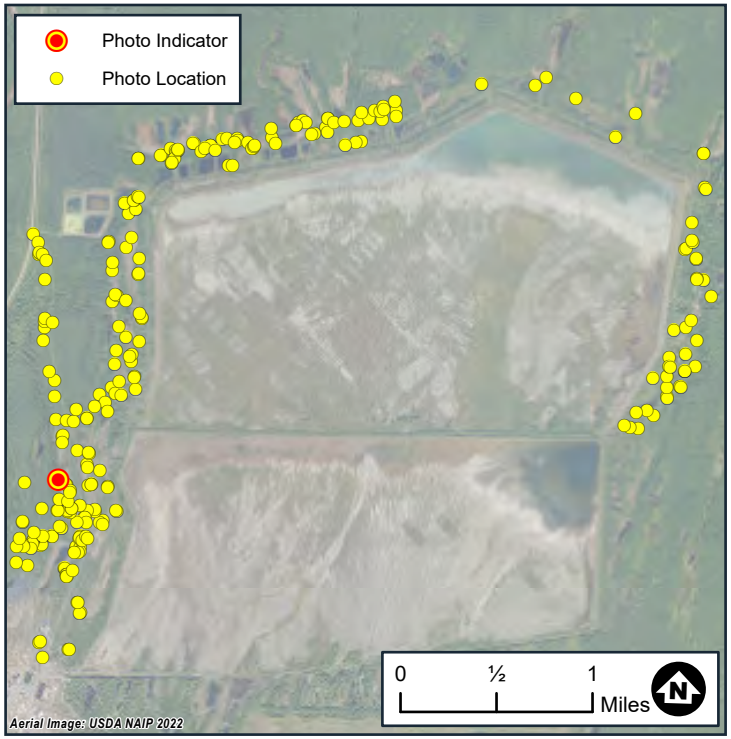
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

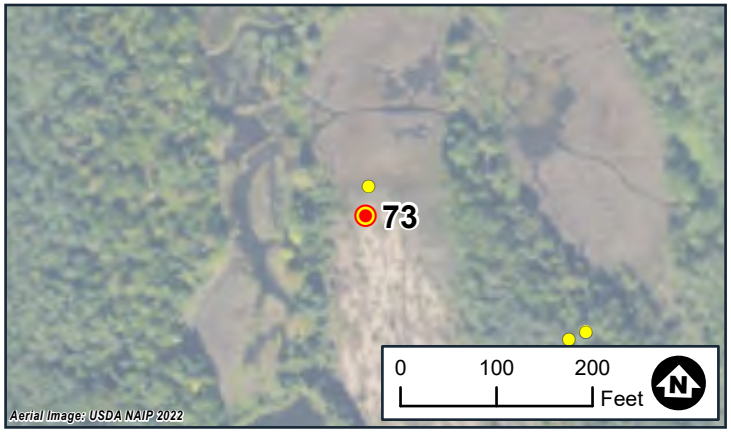
BARR

Date: 6/27/2024
Wetland ID:WTL54
Flag No.:54-114
Sample Point ID:WTL54-DP1-W

Note: Photo locations are approximate







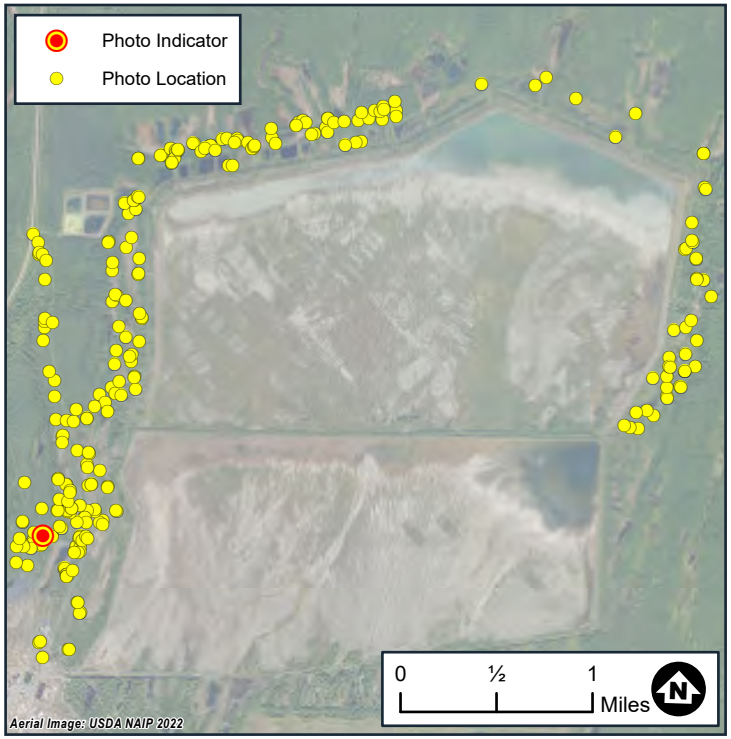
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

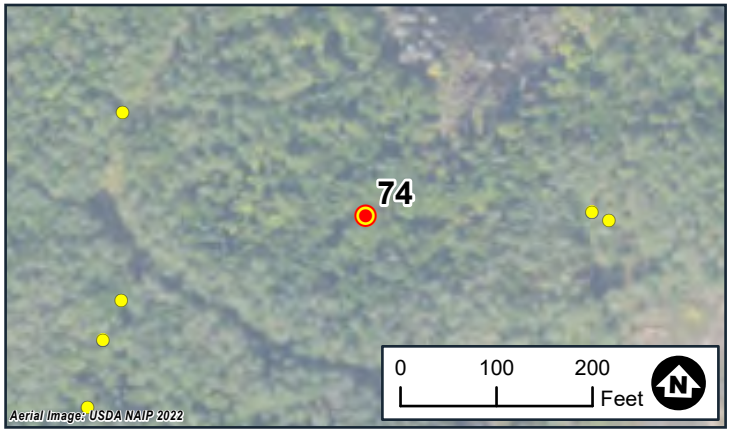
BARR

Date: 6/27/2024
Wetland ID:WTL54
Flag No.:54-114
Sample Point ID:WTL54-DP2-U

Note: Photo locations are approximate







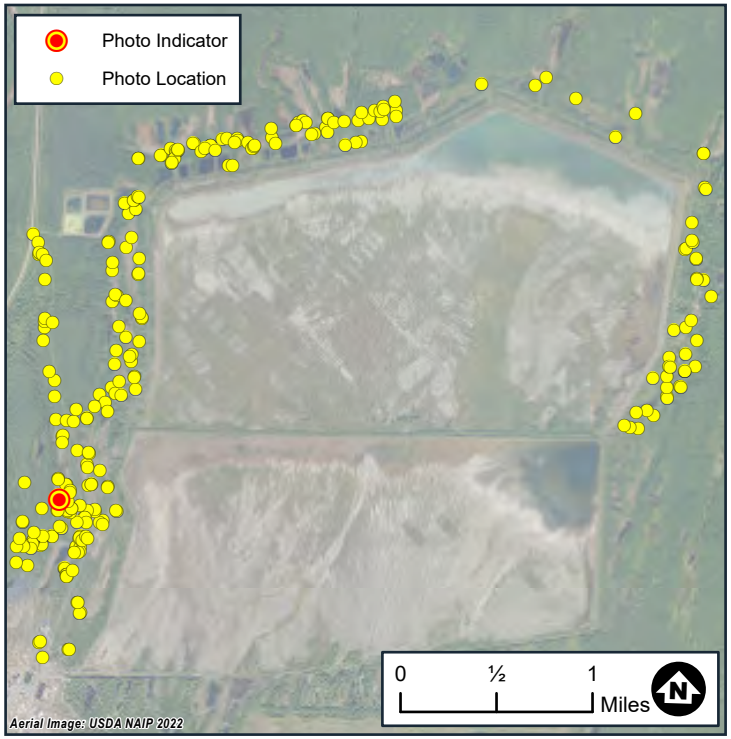
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

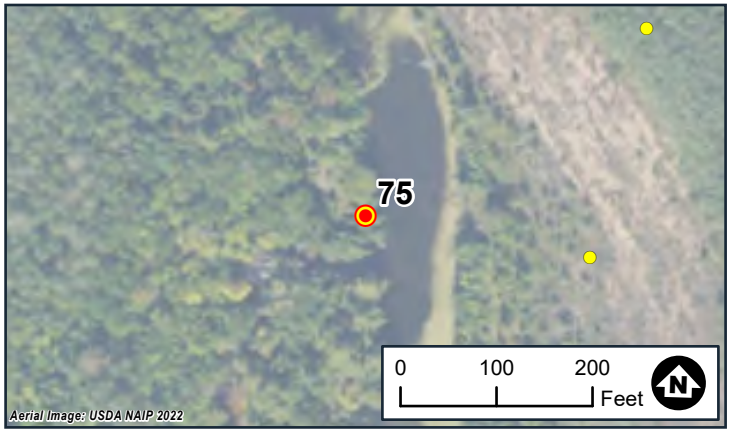
BARR

Date: 6/27/2024
Wetland ID:WTL54
Flag No.:54-314
Sample Point ID:WTL54-DP3-W

Note: Photo locations are approximate







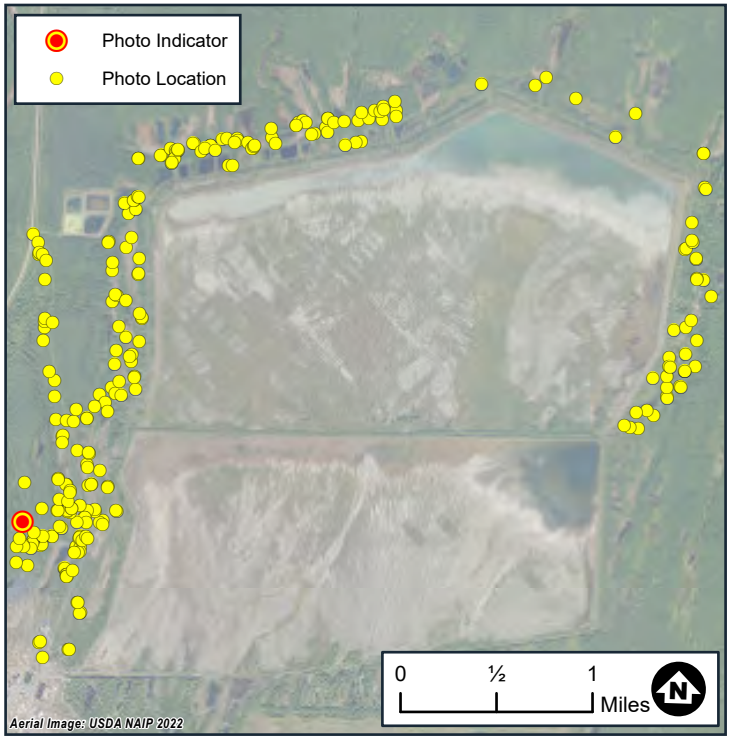
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

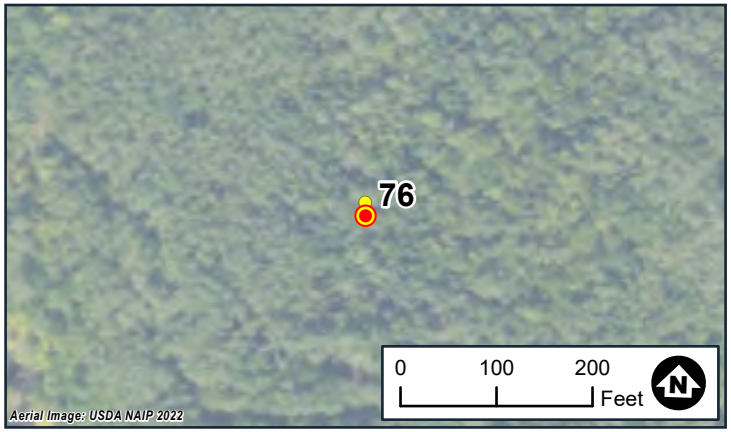
BARR

Date: 6/29/2024
Wetland ID:WTL54
Flag No.:54-407
Sample Point ID:N/A

Note: Photo locations are approximate







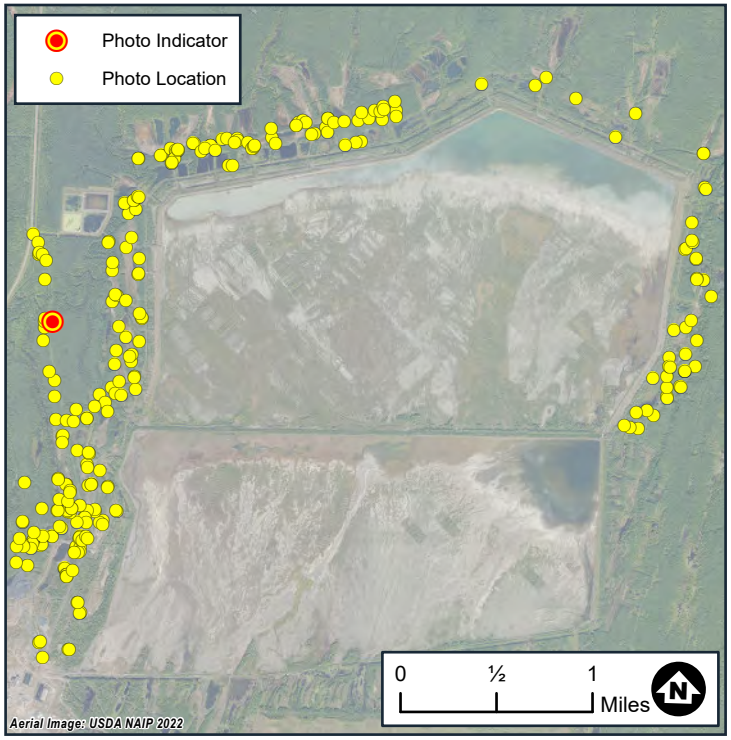
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

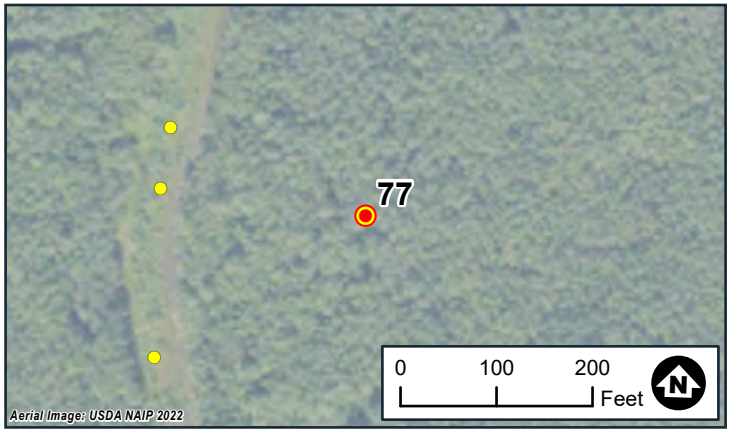
Date: 6/29/2024
Wetland ID:WTL54
Flag No.:54-500
Sample Point ID:N/A

Note: Photo locations are approximate









Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/30/2024
Wetland ID:WTL54
Flag No.:54-598
Sample Point ID:N/A

Note: Photo locations are approximate

Photo 78-1



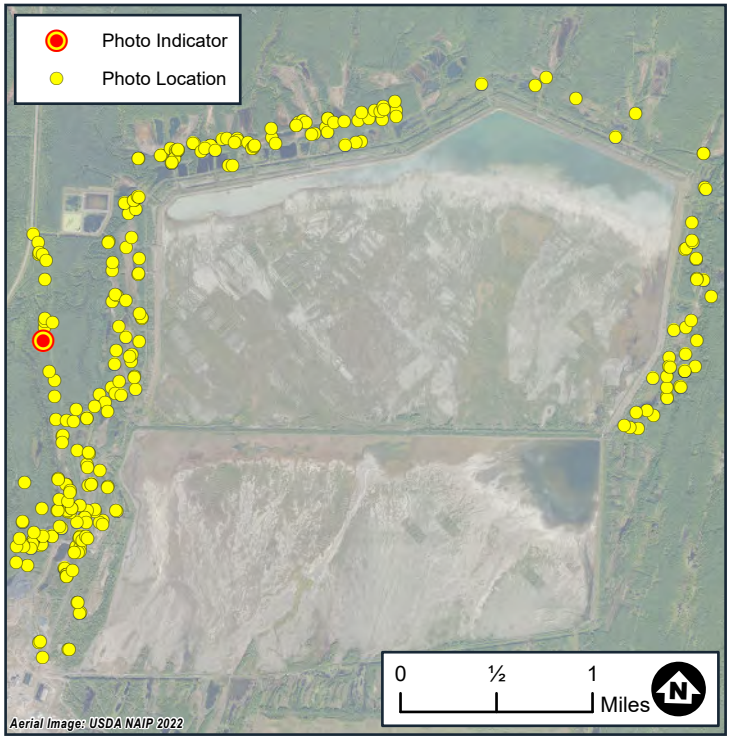
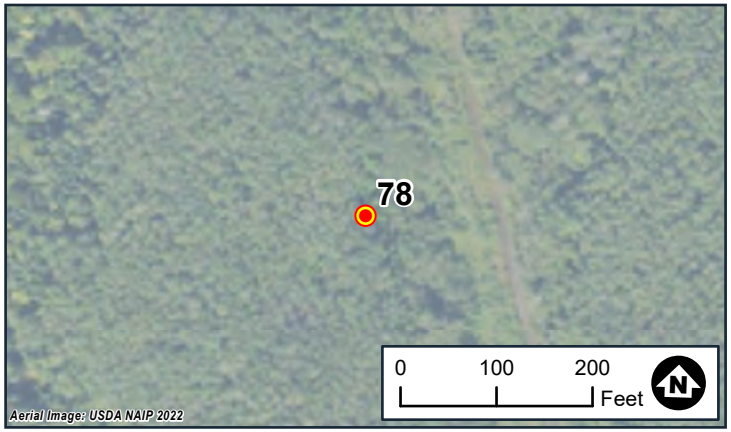


Photo 78-2





Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/30/2024
Wetland ID:WTL54
Flag No.:54-649
Sample Point ID:N/A

Note: Photo locations are approximate

Photo 79-1



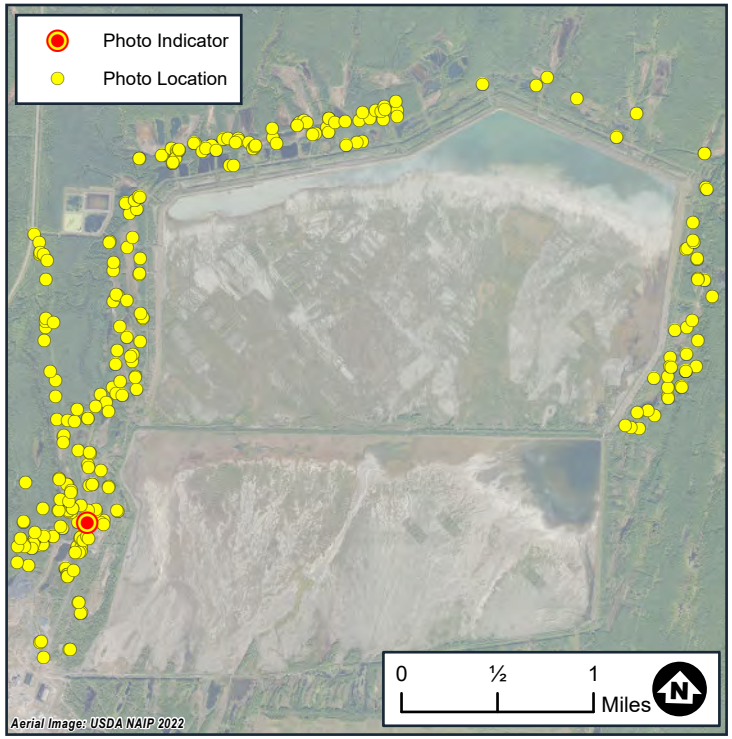
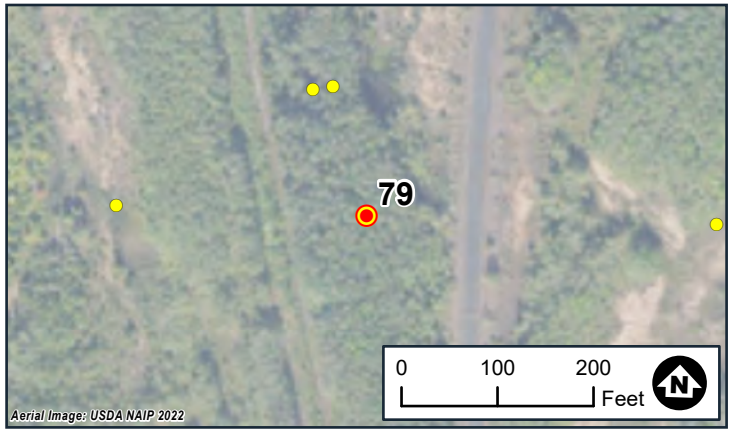


Photo 79-2





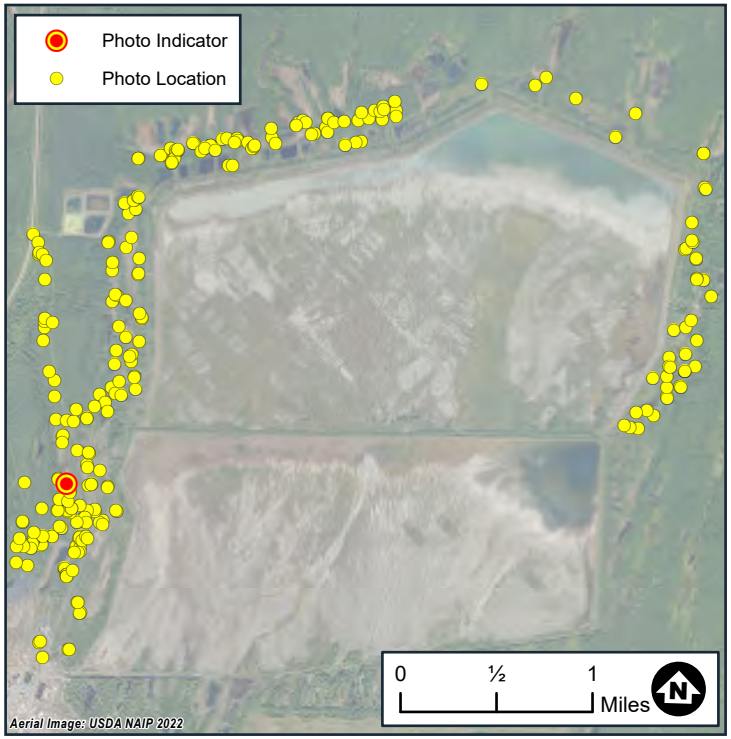
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

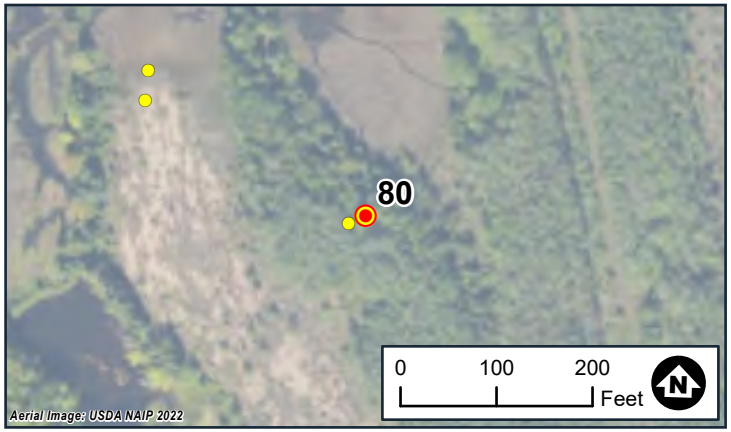
BARR

Date: 6/28/2024
Wetland ID:WTL55
Flag No.:55-12
Sample Point ID:N/A

Note: Photo locations are approximate







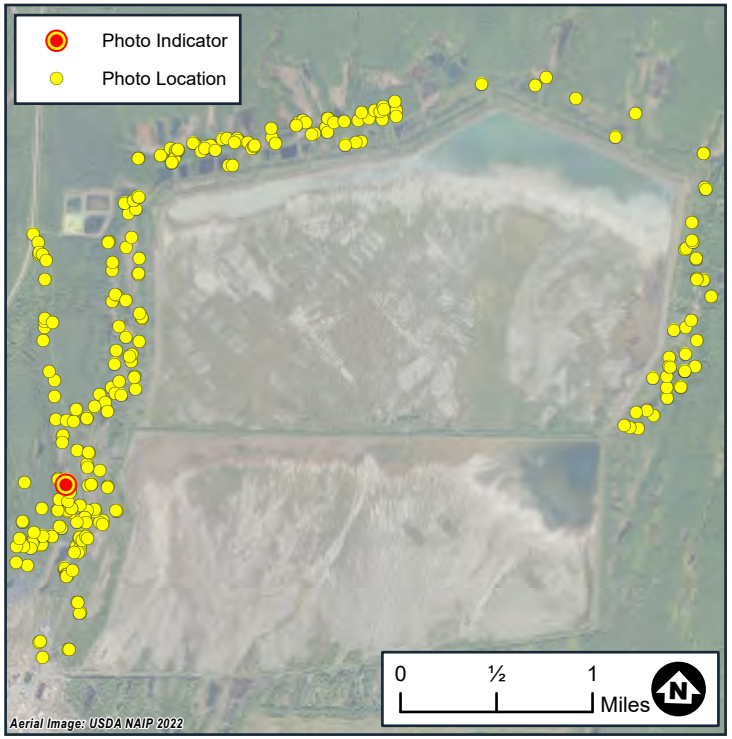
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

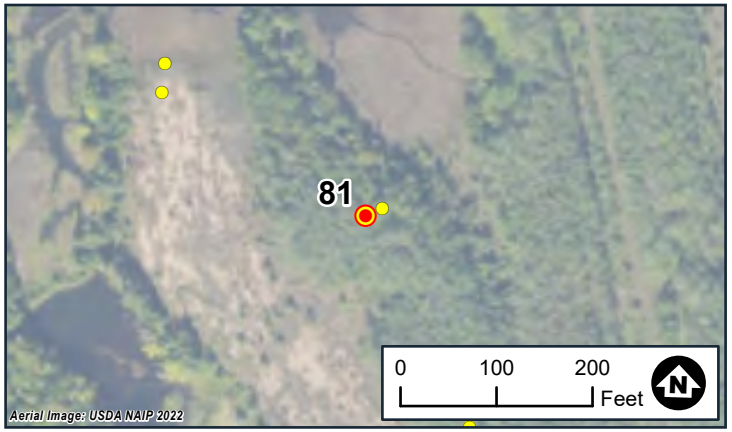
BARR

Date: 6/26/2024
Wetland ID:WTL56
Flag No.:56-1
Sample Point ID:WTL56-DP2-W

Note: Photo locations are approximate





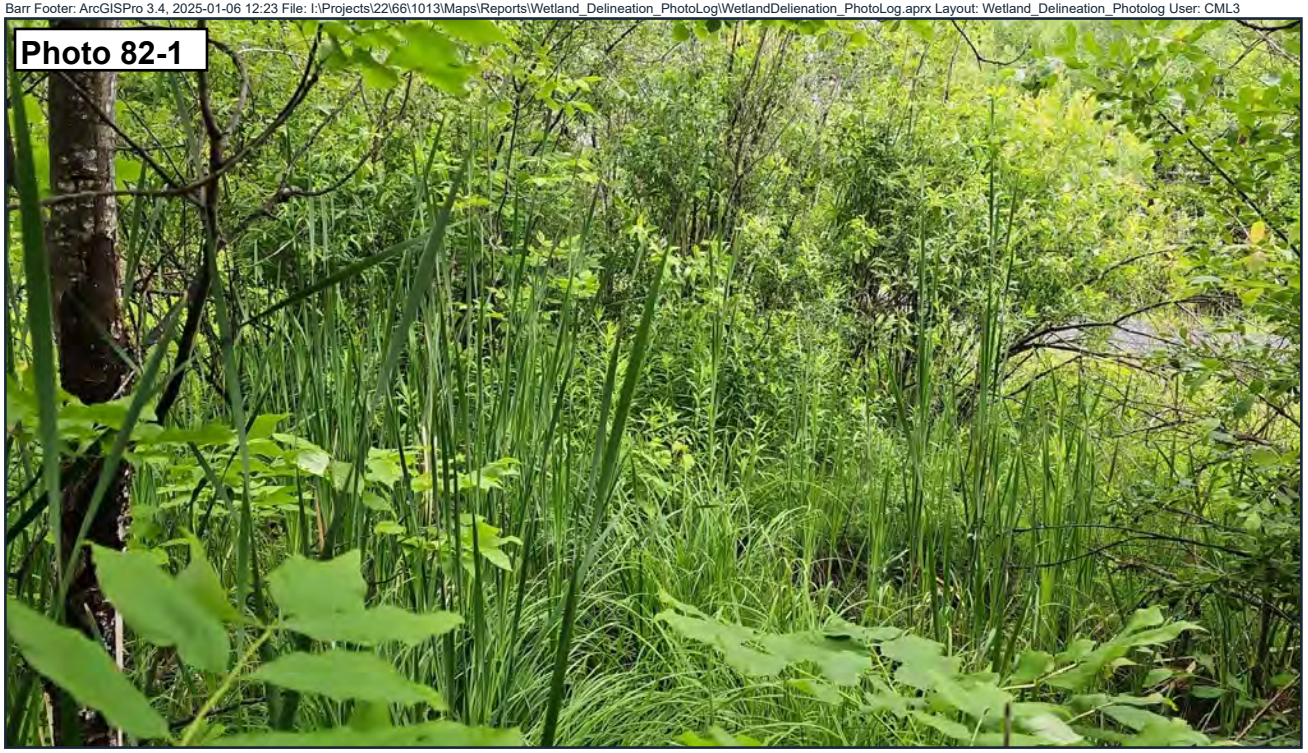


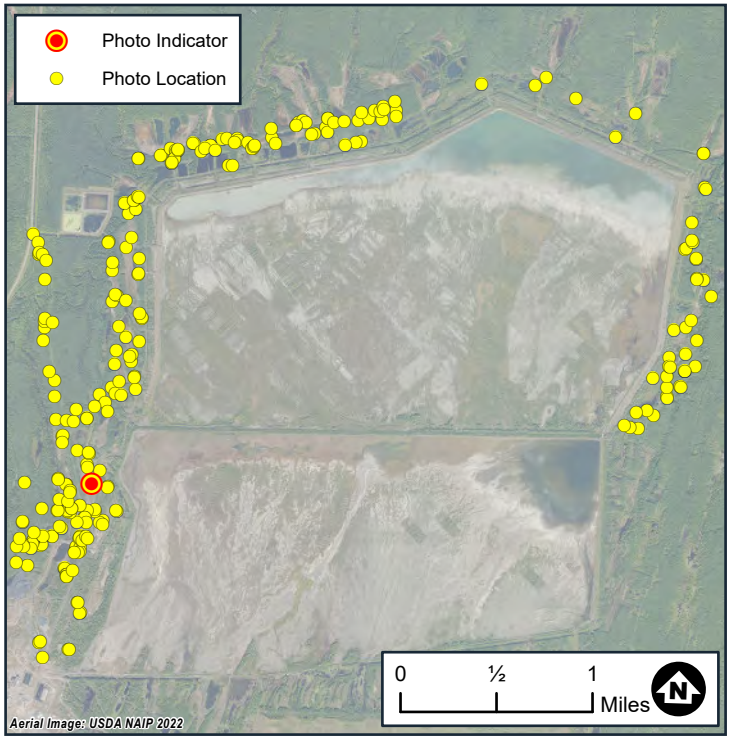
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

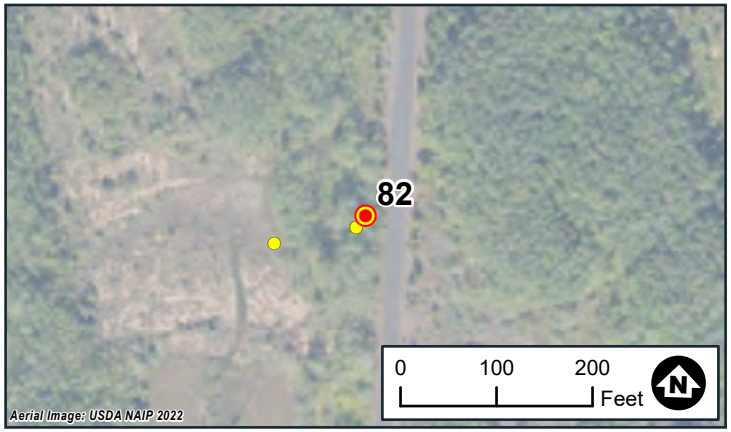
Date: 6/27/2024
Wetland ID:WTL56
Flag No.:56-1
Sample Point ID:WTL56-DP2-U

Note: Photo locations are approximate









Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/28/2024
Wetland ID:WTL57
Flag No.:57-1
Sample Point ID:WTL57-DP1-W

Note: Photo locations are approximate

Photo 83-1



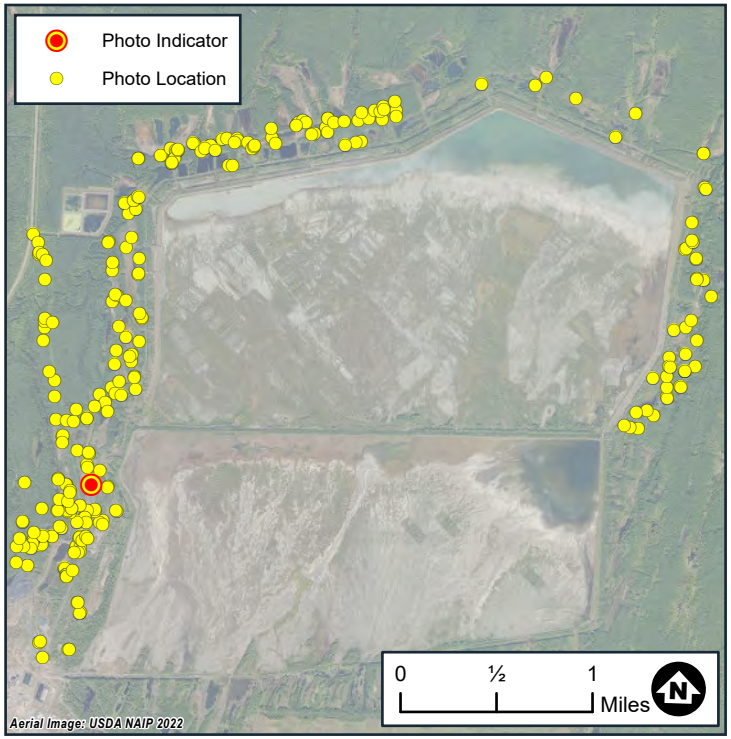
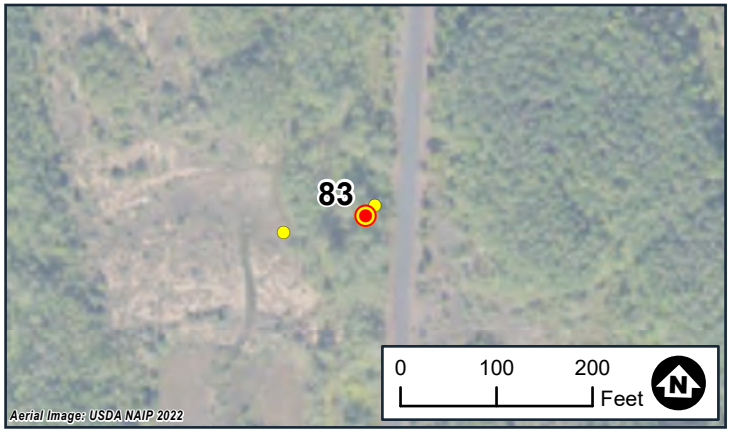


Photo 83-2





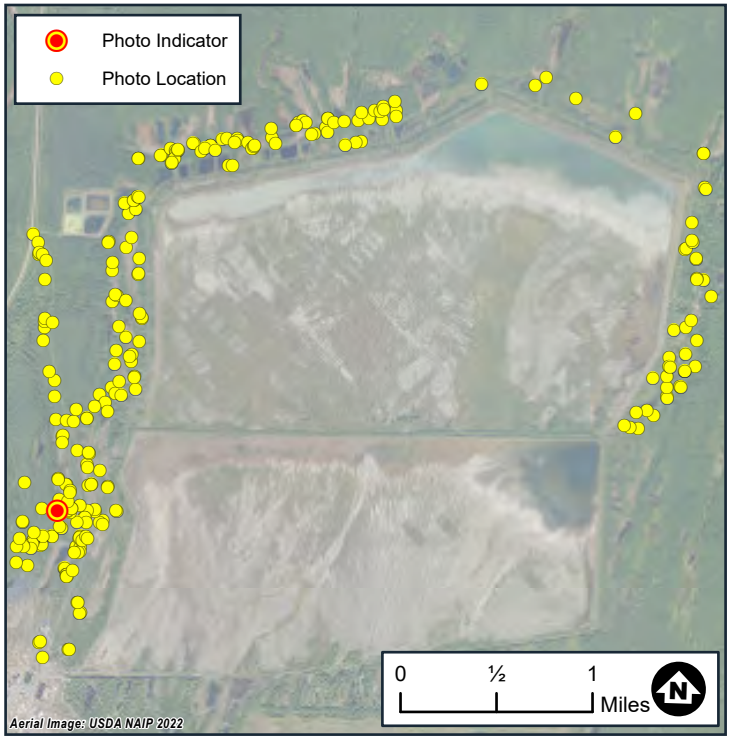
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

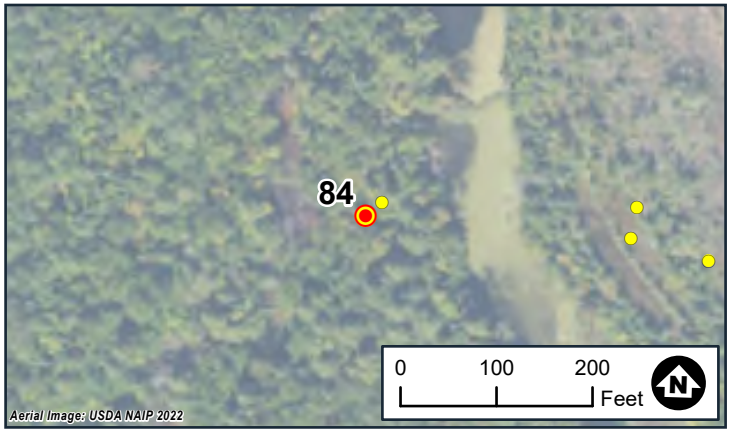
BARR

Date: 6/28/2024
Wetland ID:WTL57
Flag No.:57-1
Sample Point ID:WTL57-DP1-U

Note: Photo locations are approximate







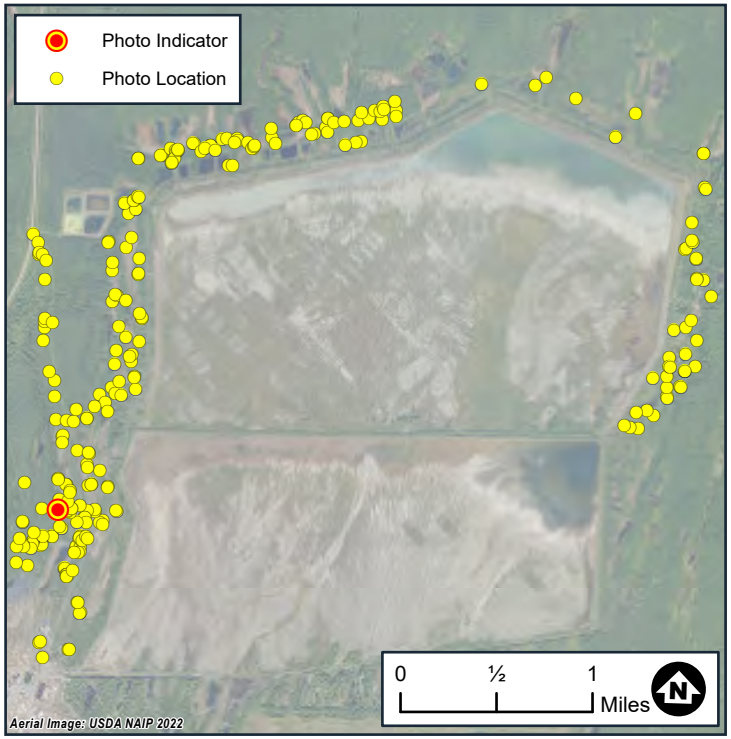
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

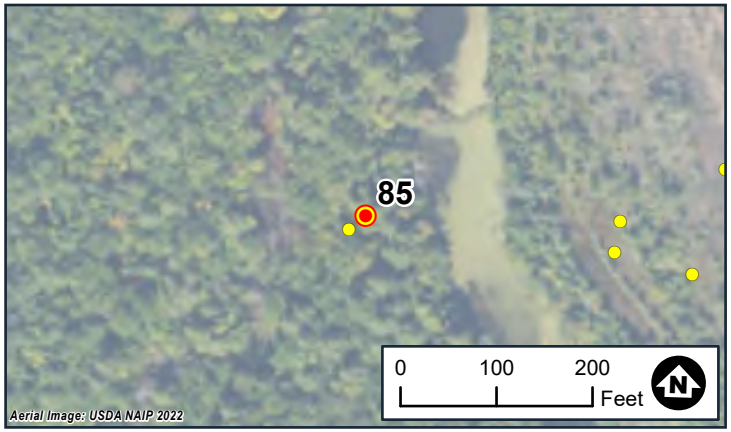
BARR

Date: 6/28/2024
Wetland ID:WTL58
Flag No.:58-6
Sample Point ID:WTL58-DP1-W

Note: Photo locations are approximate







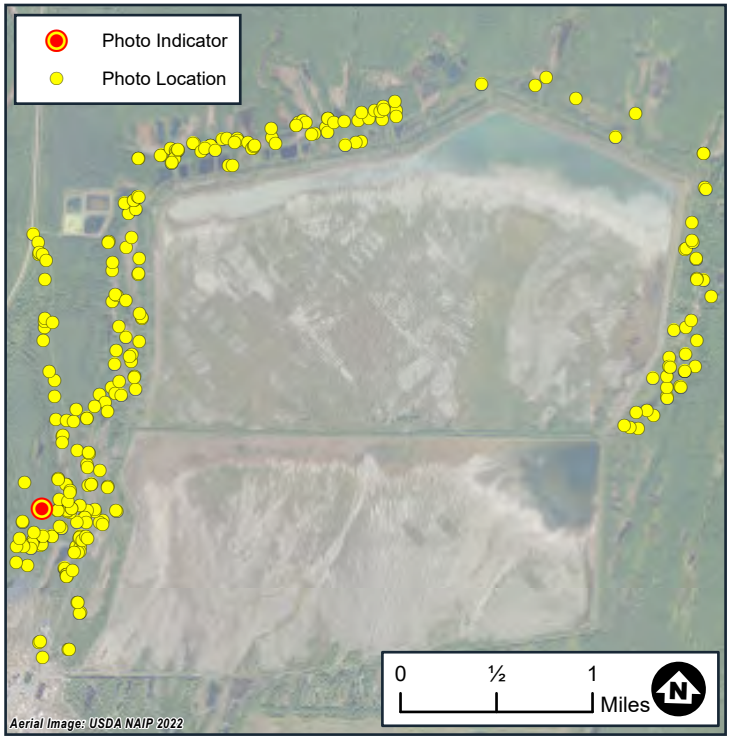
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

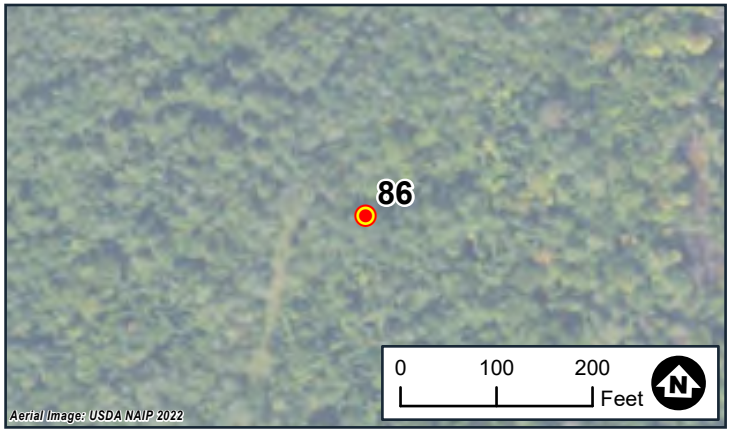
BARR

Date: 6/28/2024
Wetland ID:WTL58
Flag No.:58-4
Sample Point ID:WTL58-DP2-U

Note: Photo locations are approximate







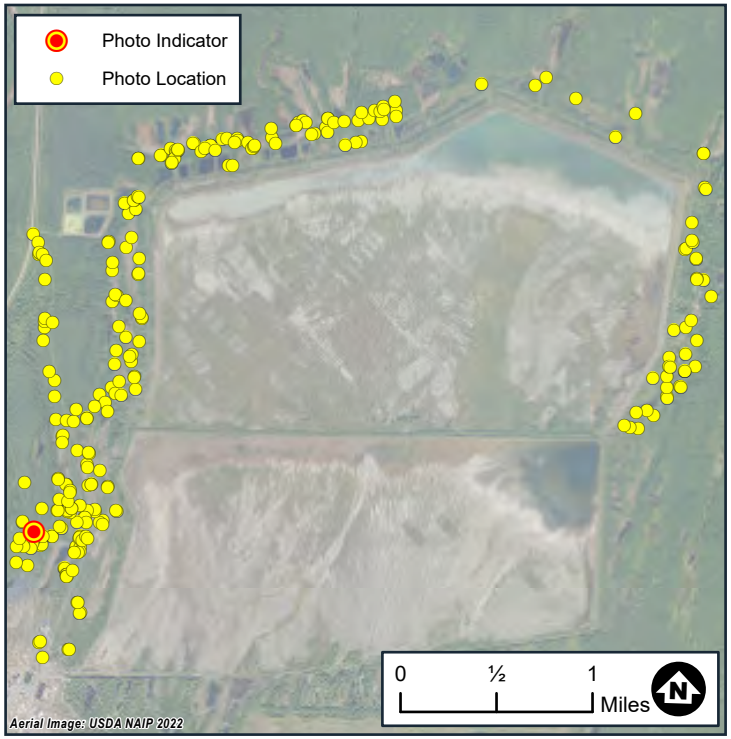
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

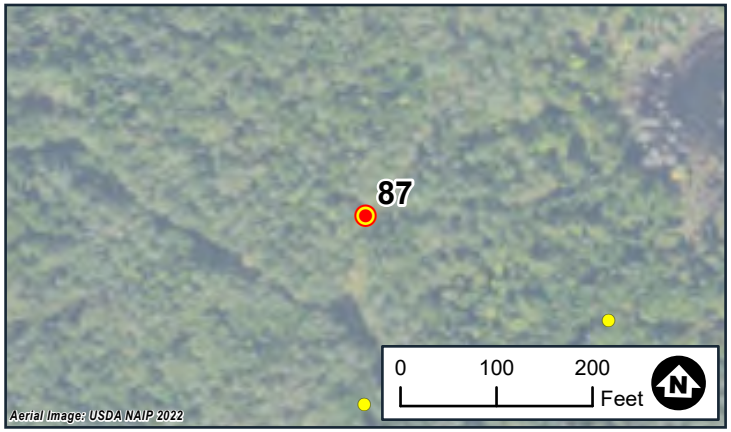
BARR

Date: 6/28/2024
Wetland ID:WTL60
Flag No.:60-12
Sample Point ID:N/A

Note: Photo locations are approximate







Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/28/2024
Wetland ID:WTL62
Flag No.:62-2
Sample Point ID:WTL62-DP1-W

Note: Photo locations are approximate

Photo 88-1



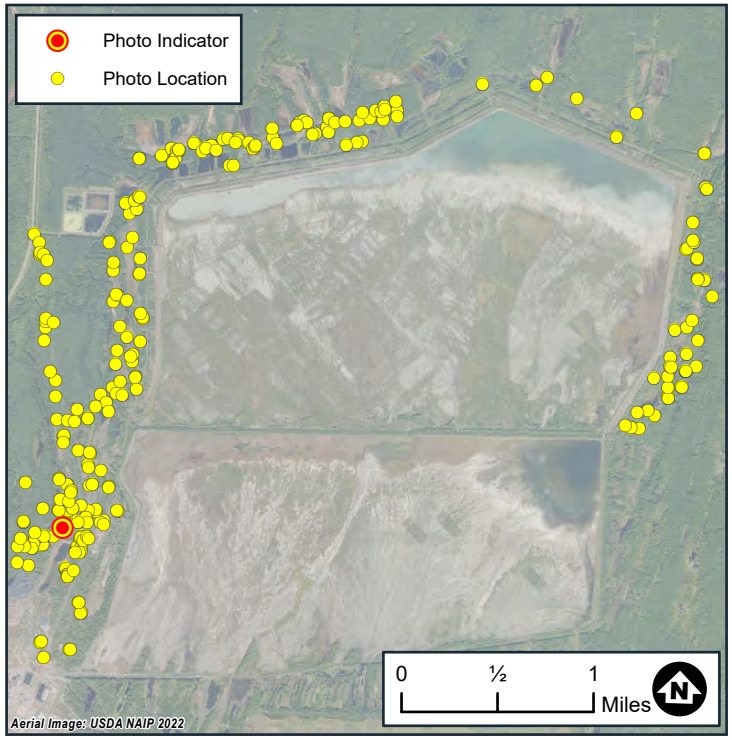
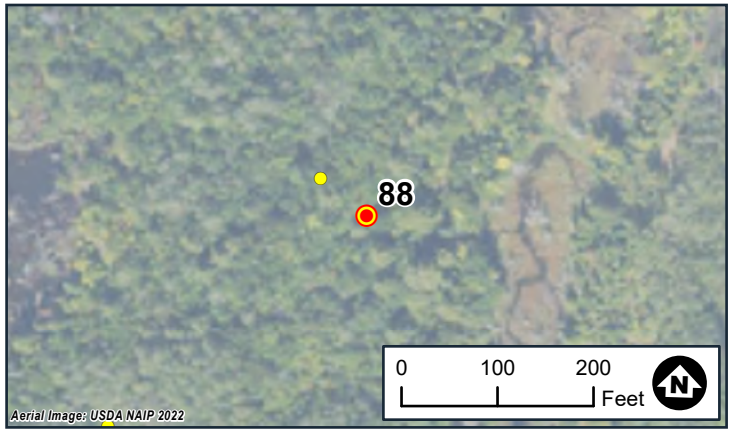


Photo 88-2





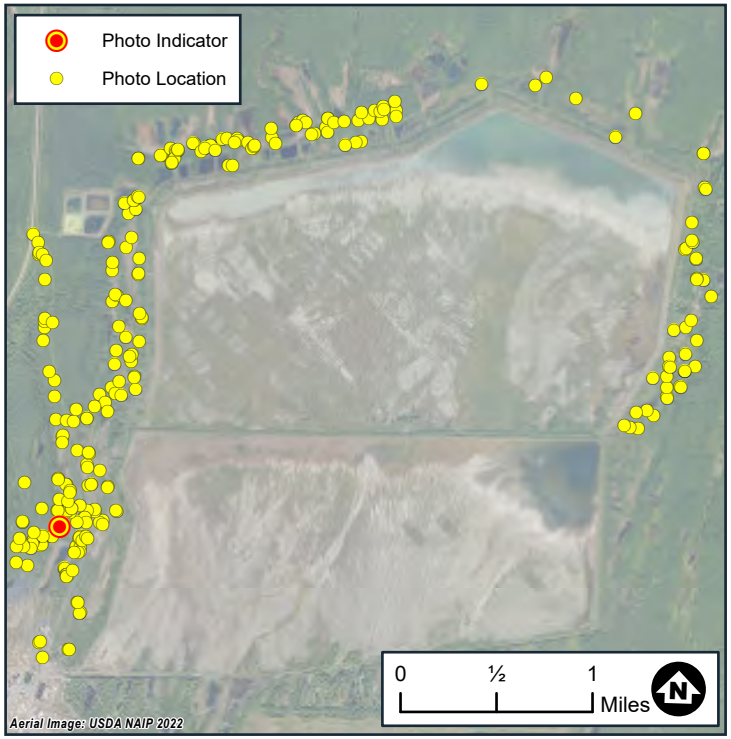
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

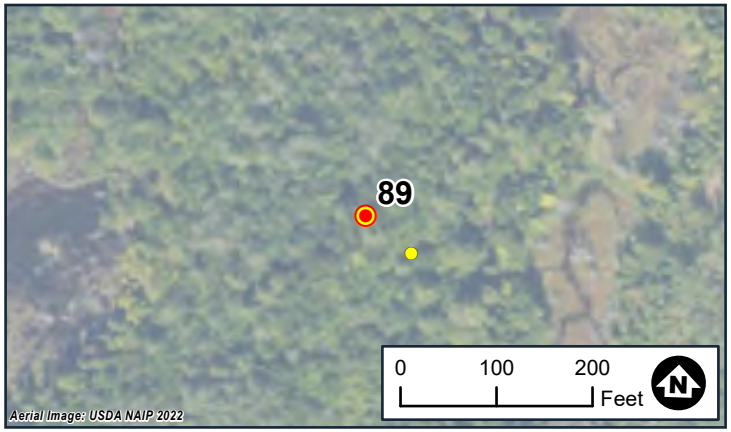
BARR

Date: 6/29/2024
Wetland ID:WTL64
Flag No.:64-1
Sample Point ID:N/A

Note: Photo locations are approximate







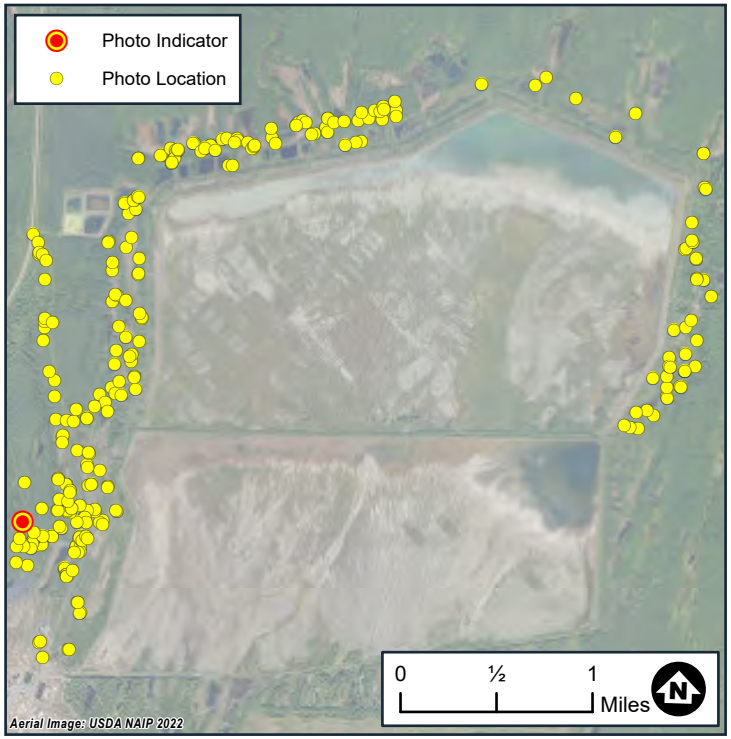
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

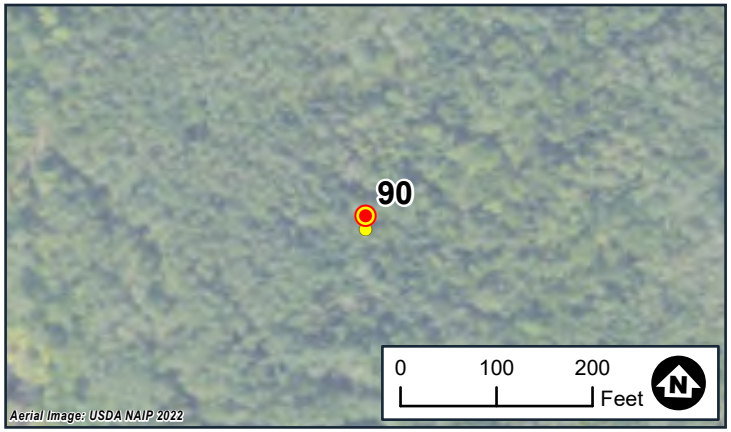
BARR

Date: 6/29/2024
Wetland ID:WTL66
Flag No.:66-1
Sample Point ID:N/A

Note: Photo locations are approximate







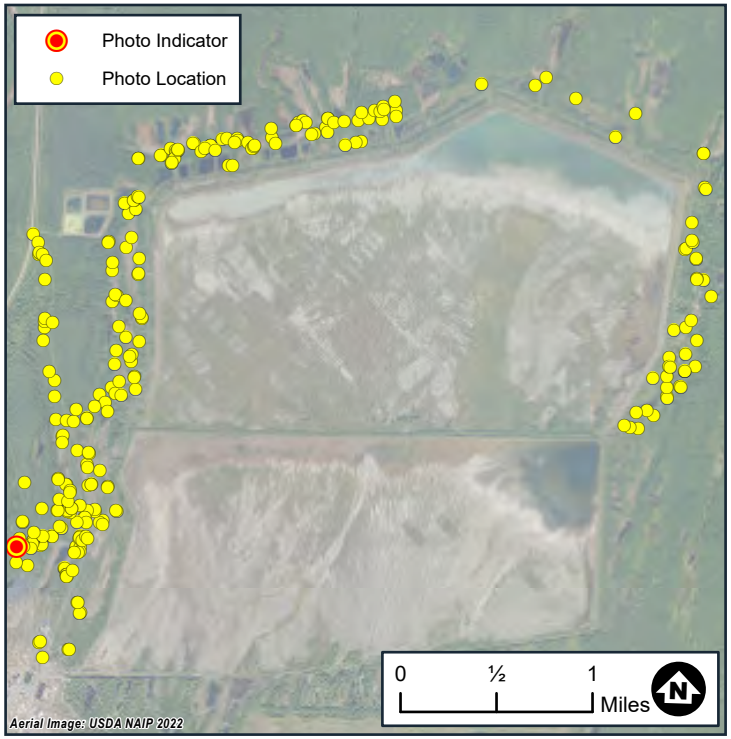
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

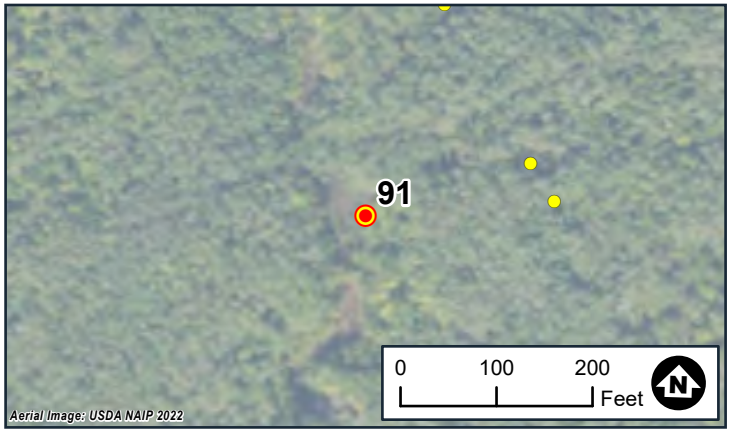
BARR

Date: 6/29/2024
Wetland ID:WTL68
Flag No.:68-11
Sample Point ID:WTL68-DP2-W

Note: Photo locations are approximate







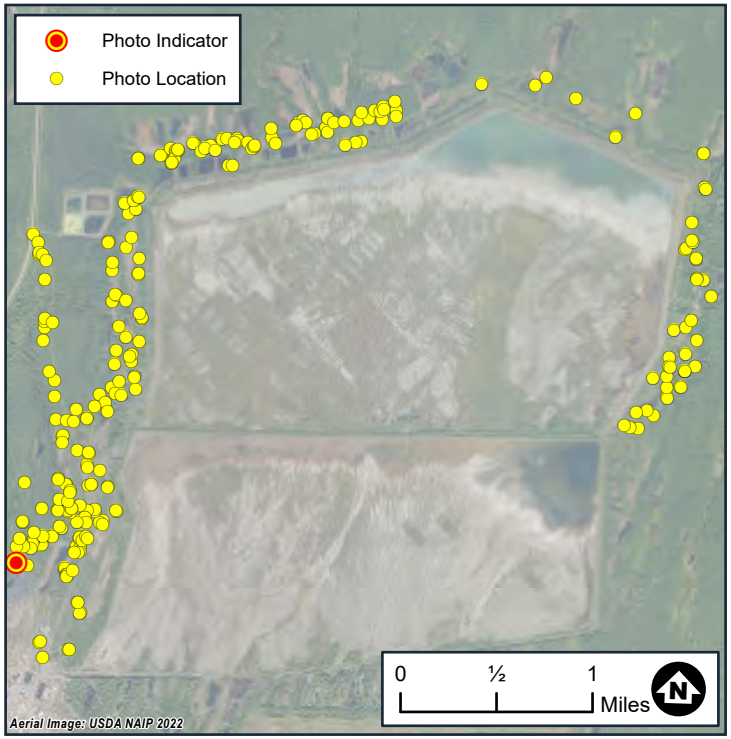
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

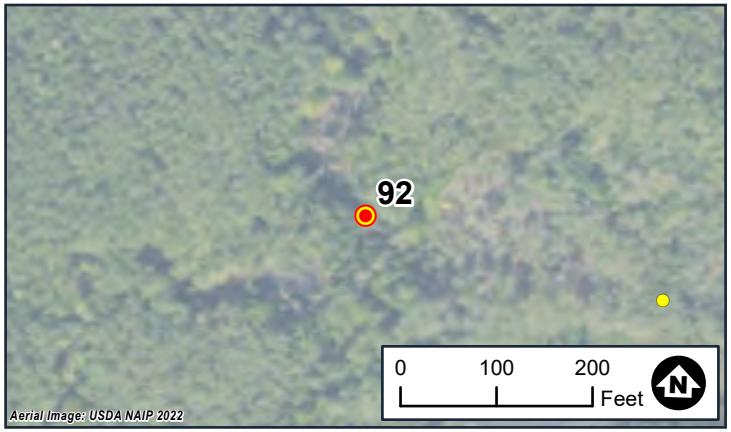
BARR

Date: 6/29/2024
Wetland ID:WTL68
Flag No.:68-12
Sample Point ID:WTL68-DP2-U

Note: Photo locations are approximate







Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/29/2024
Wetland ID:WTL68
Flag No.:68-48
Sample Point ID:N/A

Note: Photo locations are approximate

Photo 93-1



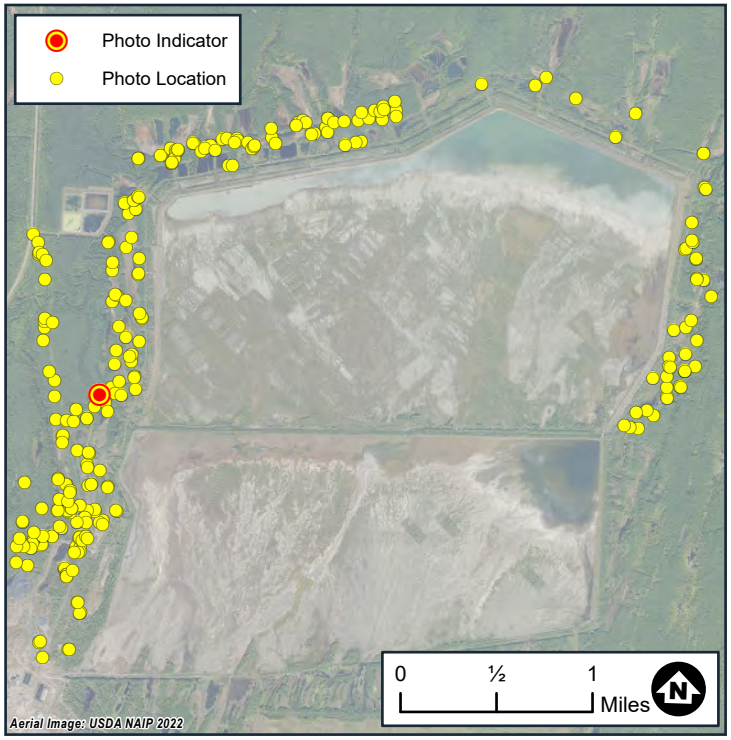
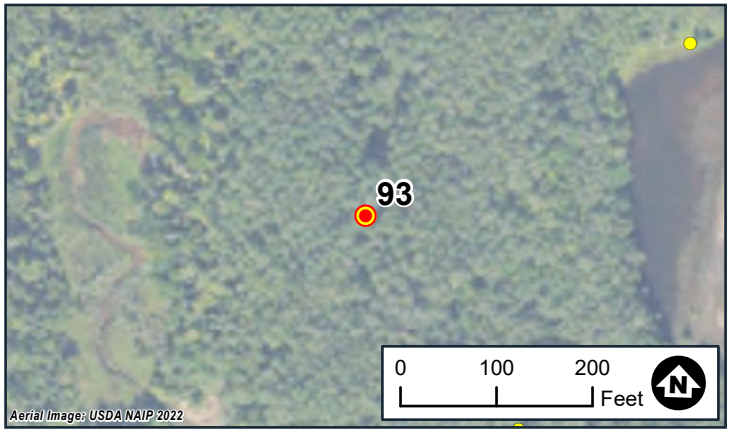


Photo 93-2





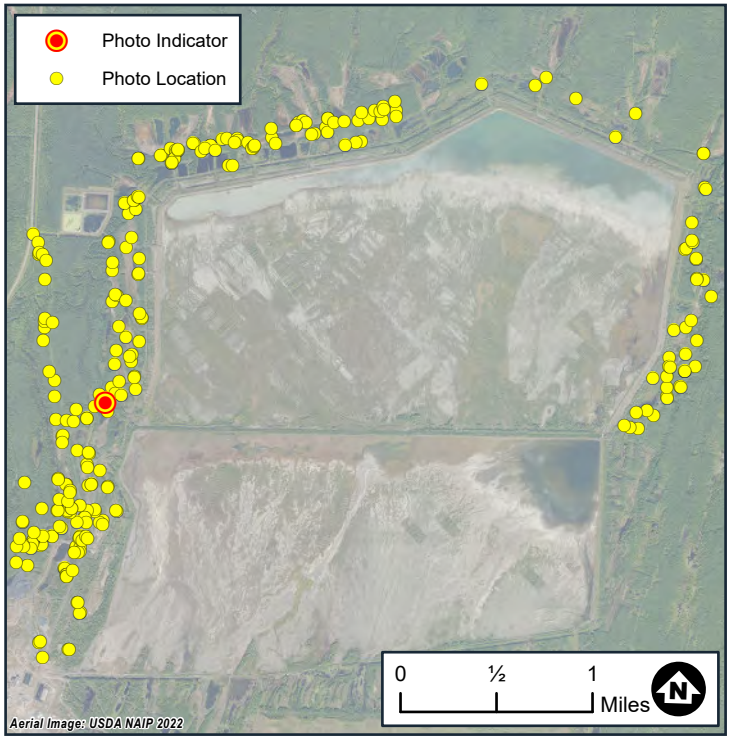
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

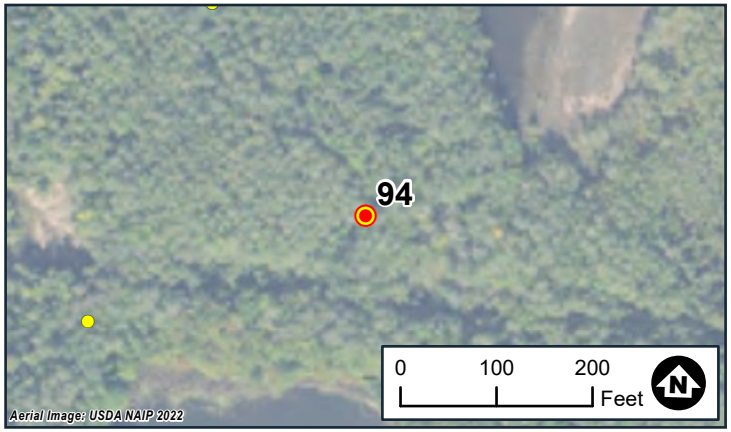
Date: 6/30/2024
Wetland ID:WTL69
Flag No.:69-137
Sample Point ID:N/A

Note: Photo locations are approximate









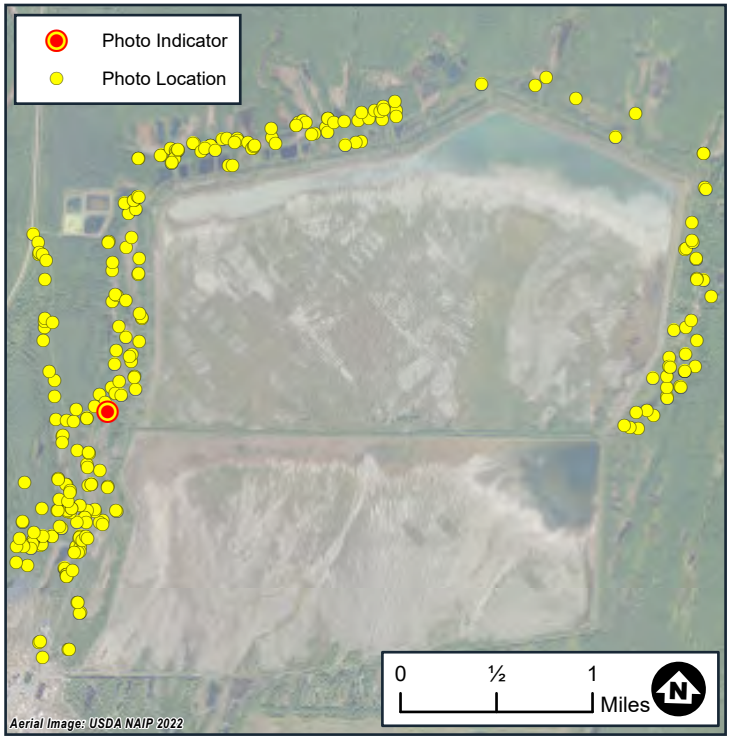
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

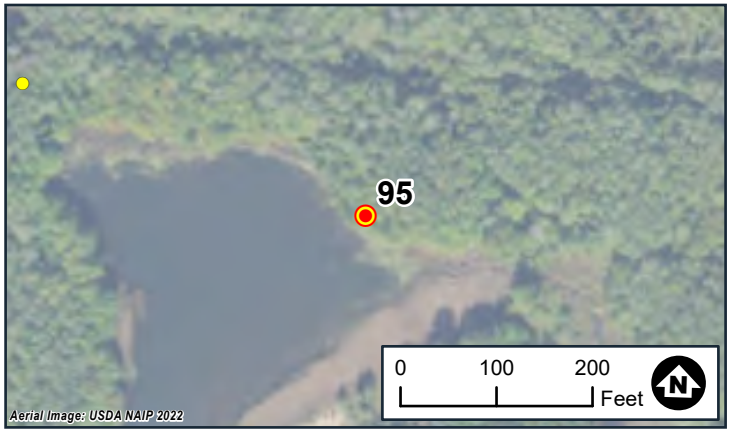
BARR

Date: 6/30/2024
Wetland ID:WTL69
Flag No.:69-168
Sample Point ID:N/A

Note: Photo locations are approximate







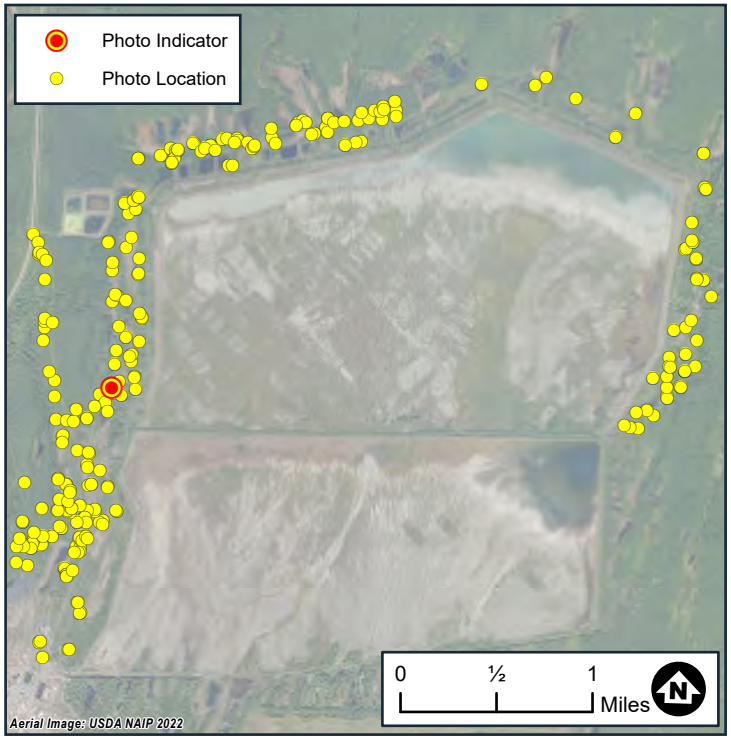
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

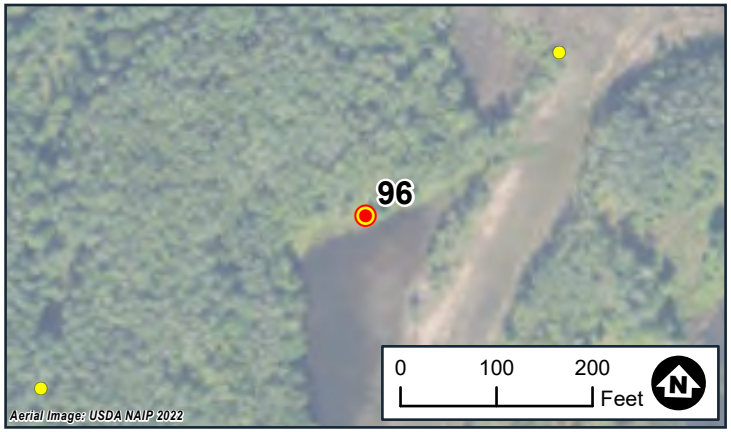
BARR

Date: 6/30/2024
Wetland ID:WTL69
Flag No.:69-196
Sample Point ID:N/A

Note: Photo locations are approximate







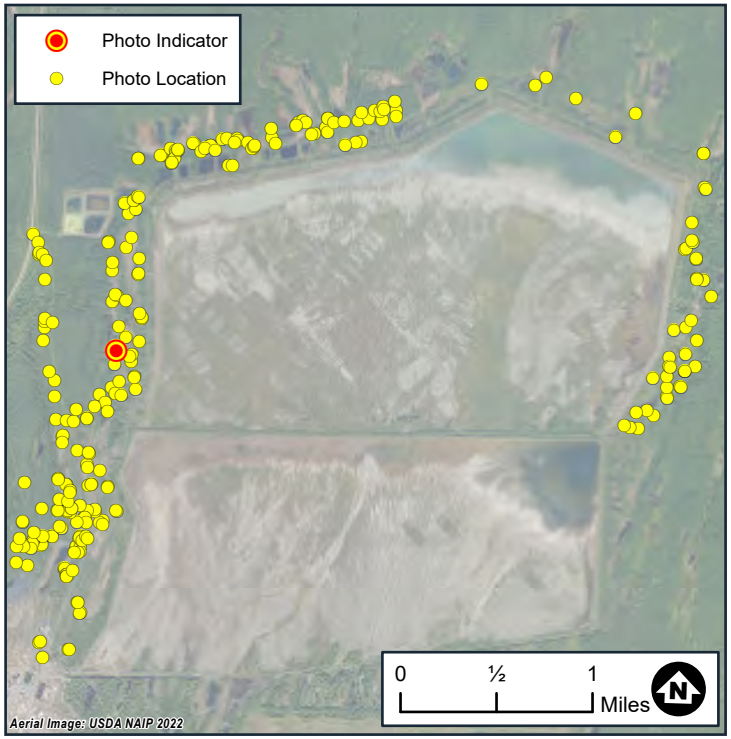
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

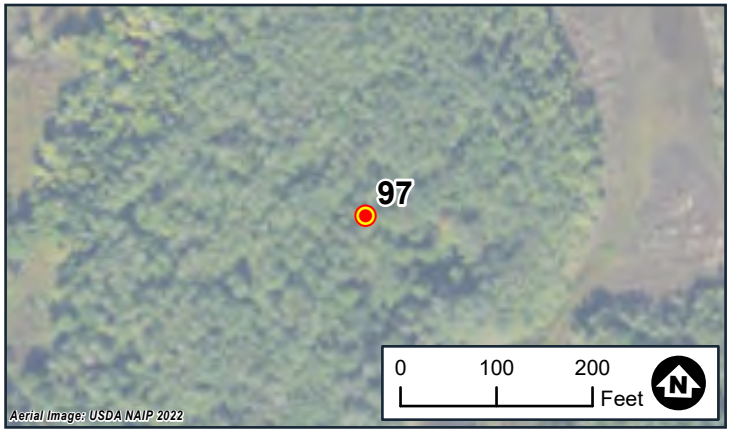
BARR

Date: 6/30/2024
Wetland ID:WTL69
Flag No.:69-284
Sample Point ID:N/A

Note: Photo locations are approximate







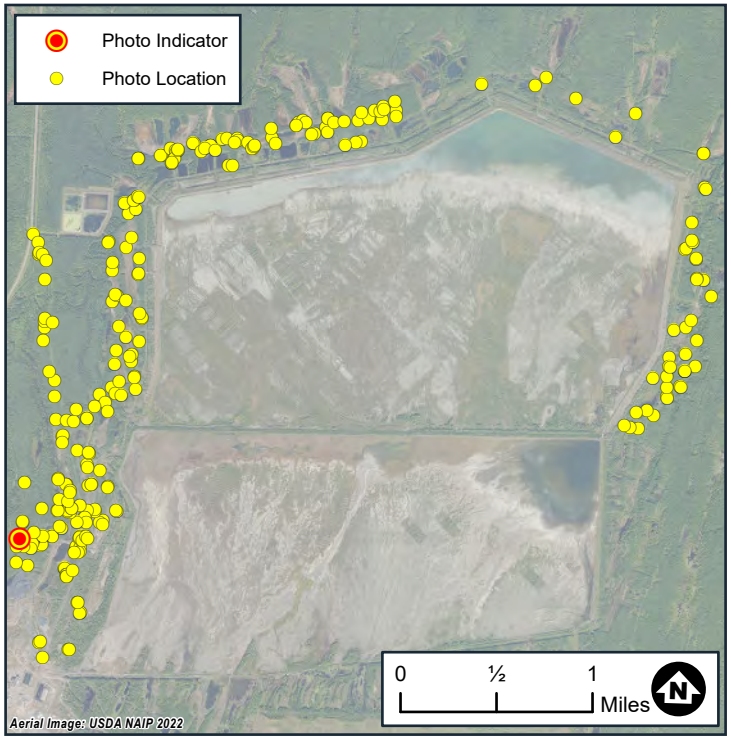
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

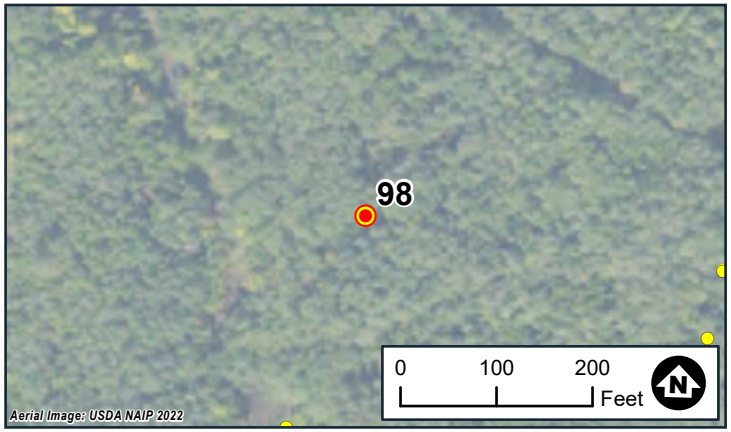
Date: 7/2/2024
Wetland ID:WTL69
Flag No.:69-358
Sample Point ID:N/A

Note: Photo locations are approximate









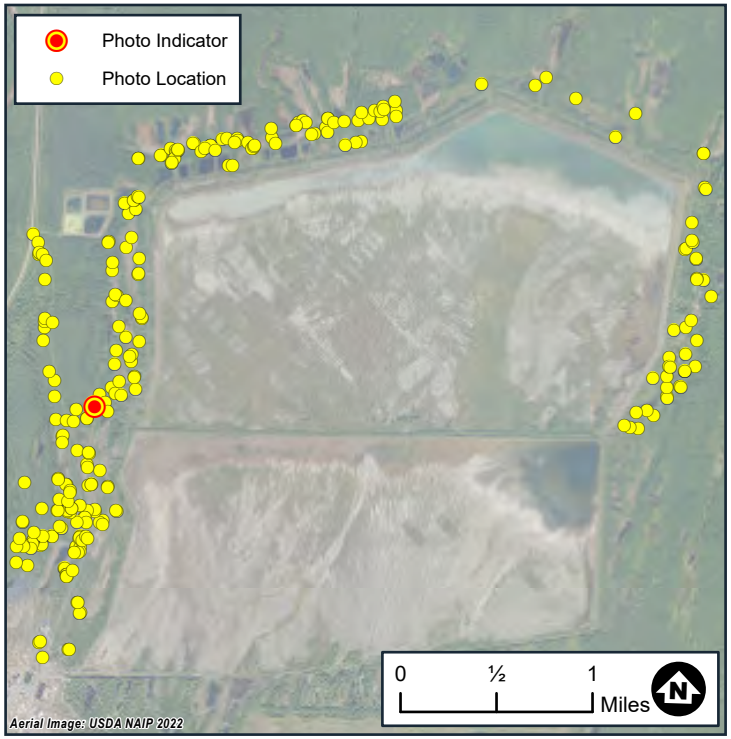
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

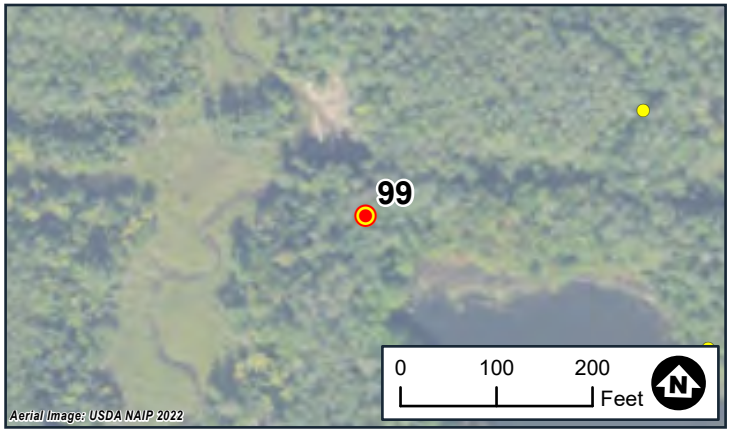
BARR

Date: 6/29/2024
Wetland ID:WTL70
Flag No.:70-1
Sample Point ID:N/A

Note: Photo locations are approximate







Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/30/2024
Wetland ID:WTL71
Flag No.:71-1
Sample Point ID:N/A

Note: Photo locations are approximate

Photo 100-1



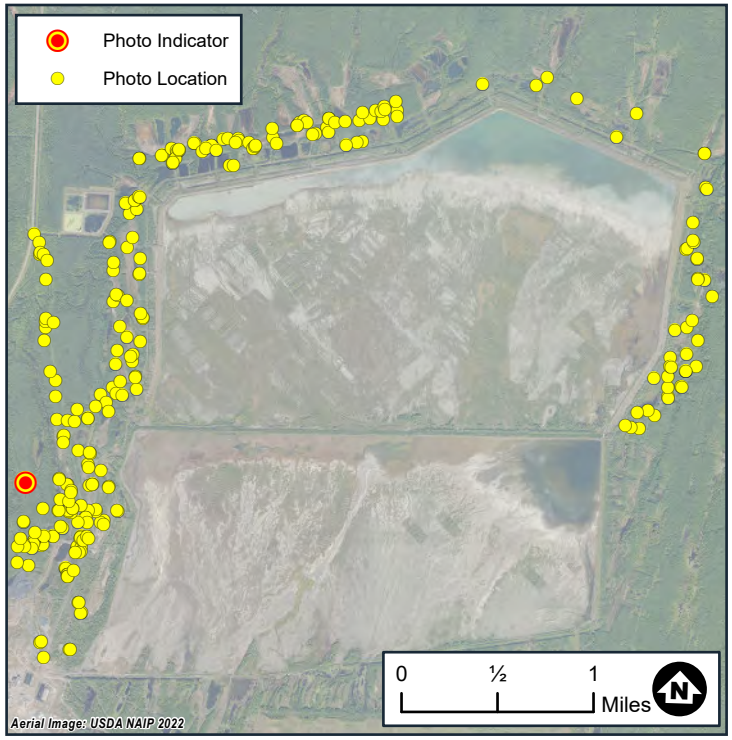
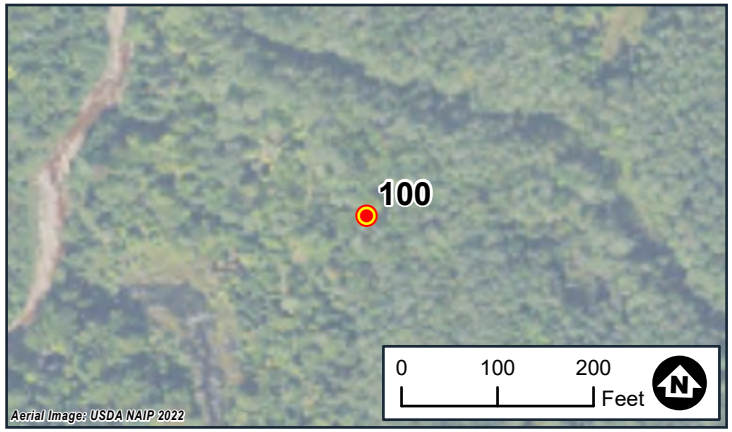


Photo 100-2





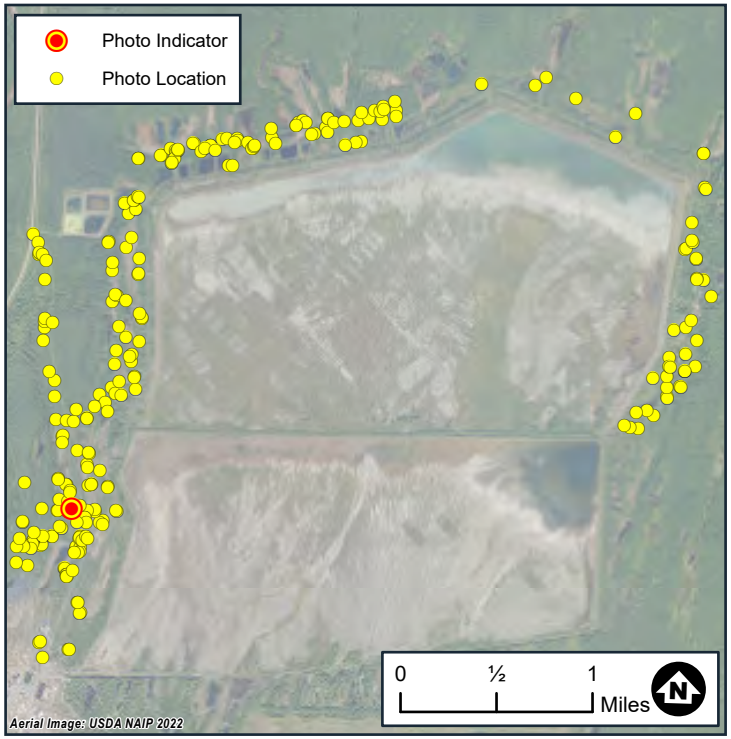
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

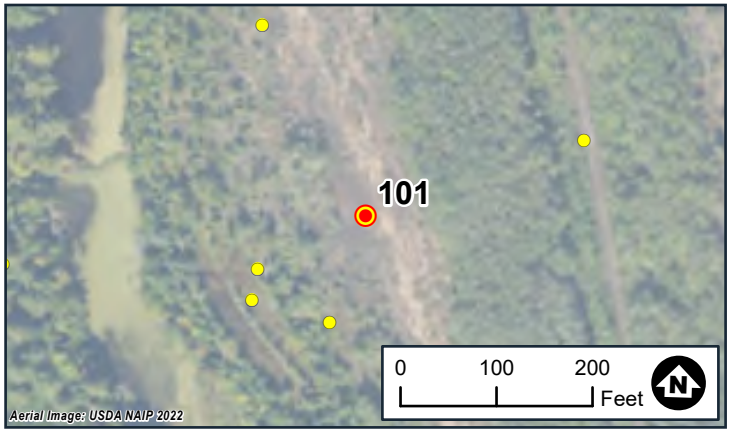
BARR

Date: 6/29/2024
Wetland ID:WTL72
Flag No.:72-3
Sample Point ID:N/A

Note: Photo locations are approximate







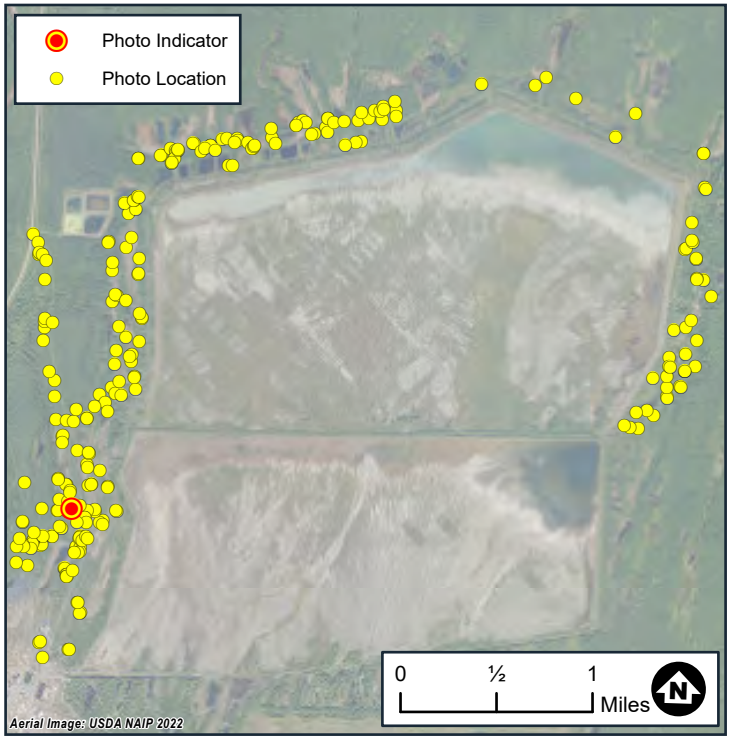
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

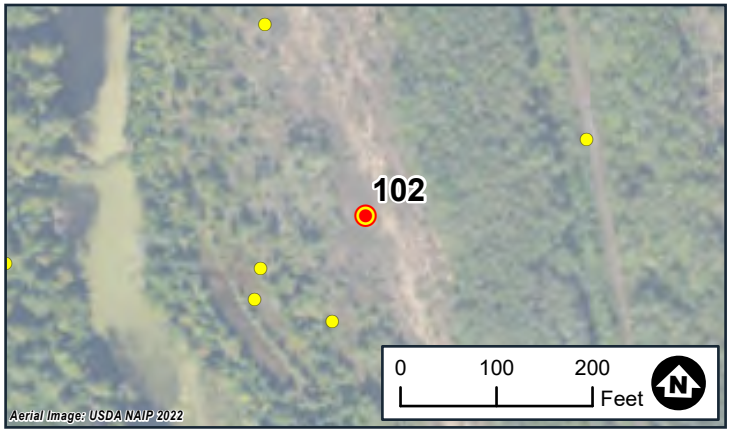
BARR

Date: 6/29/2024
Wetland ID:WTL74
Flag No.:74-1
Sample Point ID:WTL74-DP1-W

Note: Photo locations are approximate







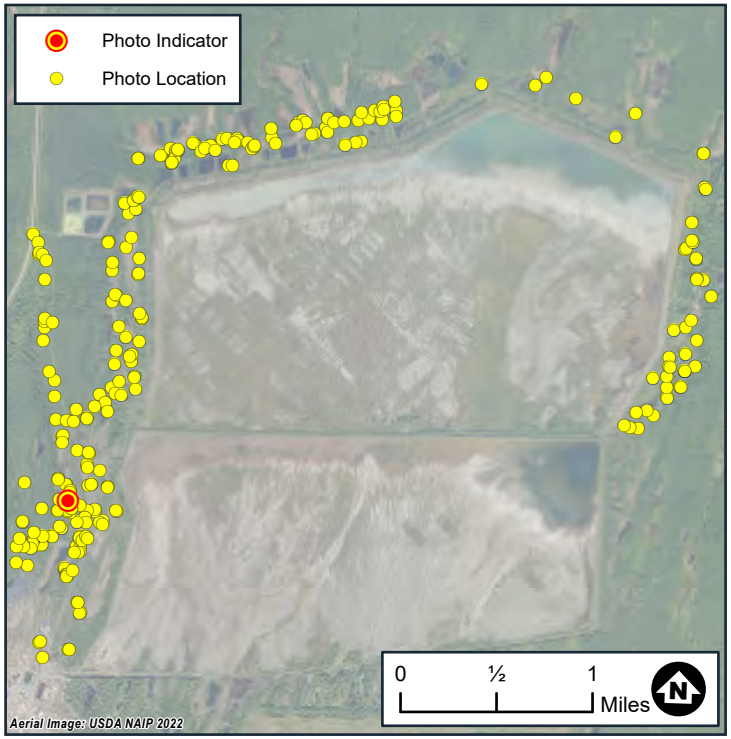
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

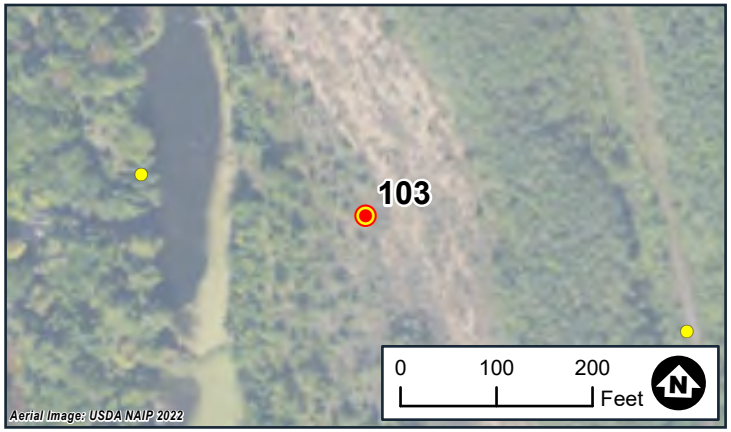
BARR

Date: 6/29/2024
Wetland ID:WTL74
Flag No.:74-1
Sample Point ID:WTL74-DP2-U

Note: Photo locations are approximate







Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/29/2024
Wetland ID:WTL76
Flag No.:76-1
Sample Point ID:N/A

Note: Photo locations are approximate

Barr Footer: ArcGISPro 3.4, 2025-01-06 12:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_PhotoLog\WetlandDelienation_PhotoLog.aprx Layout: Wetland_Delineation_Photolog User: CML3

Photo 104-1



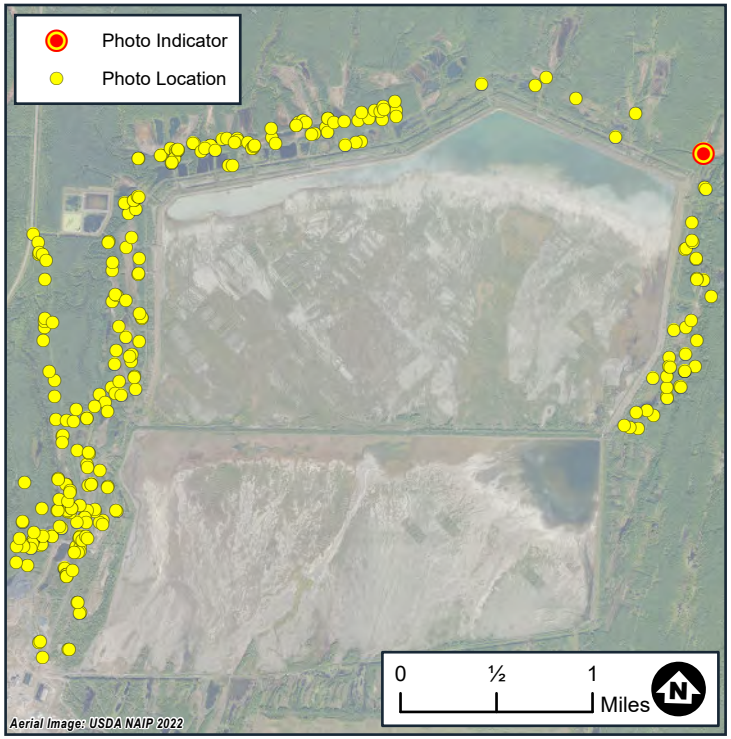
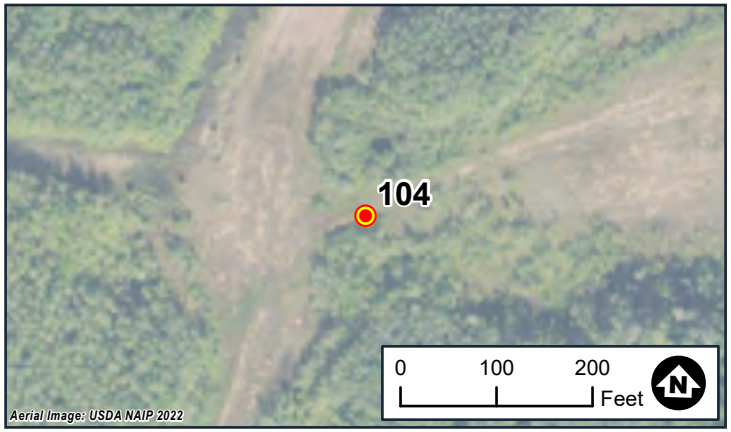


Photo 104-2



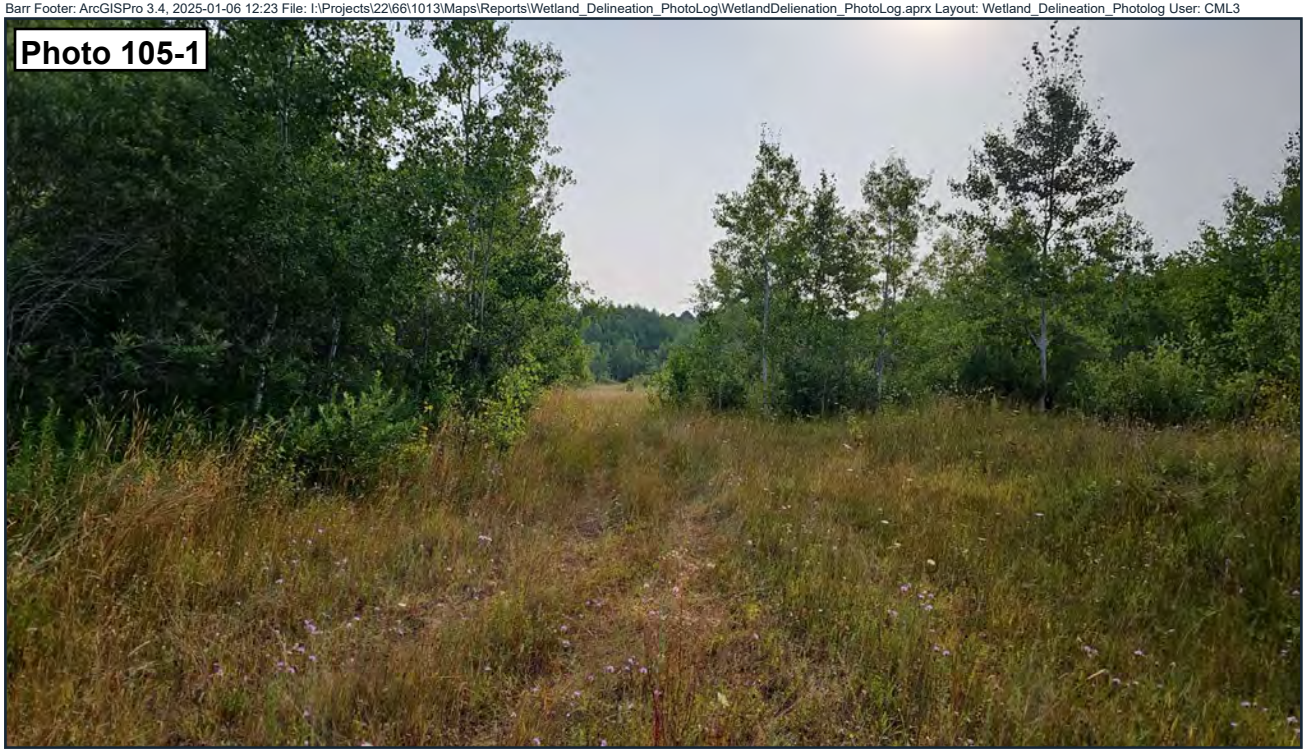


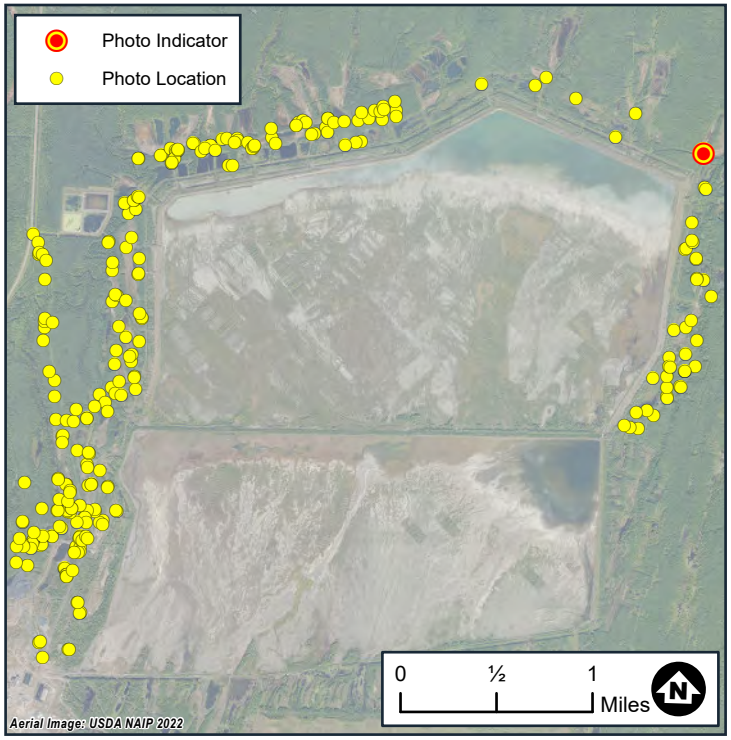
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

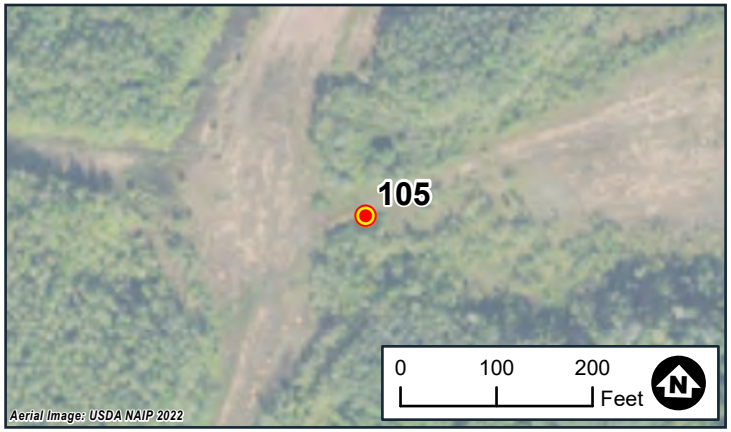
Date: 7/30/2024
Wetland ID:WTL77
Flag No.:77-5
Sample Point ID:WTL77-DP1-W

Note: Photo locations are approximate









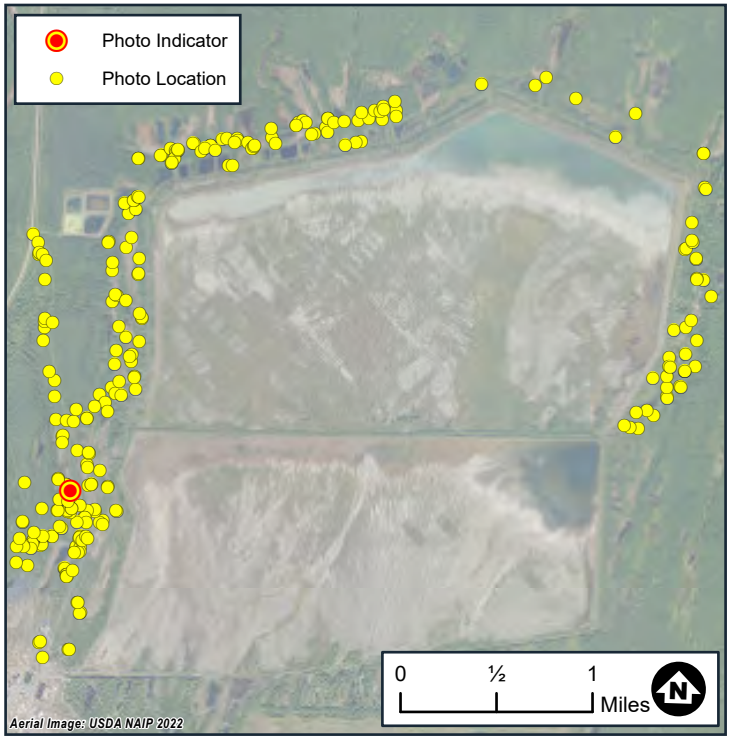
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

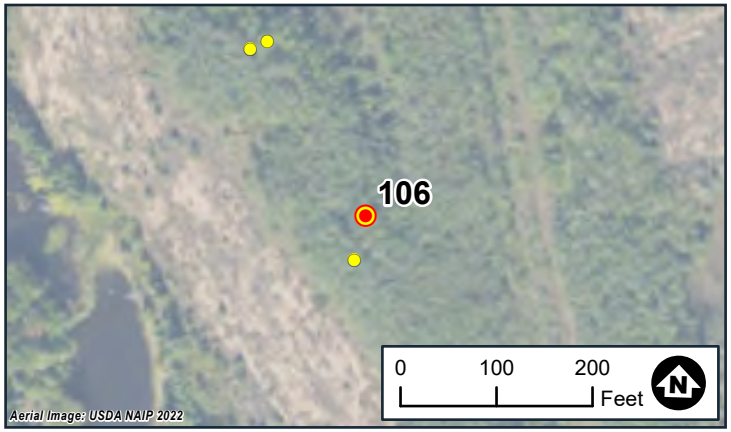
BARR

Date: 7/30/2024
Wetland ID:WTL77
Flag No.:77-5
Sample Point ID:WTL77-DP1-U

Note: Photo locations are approximate







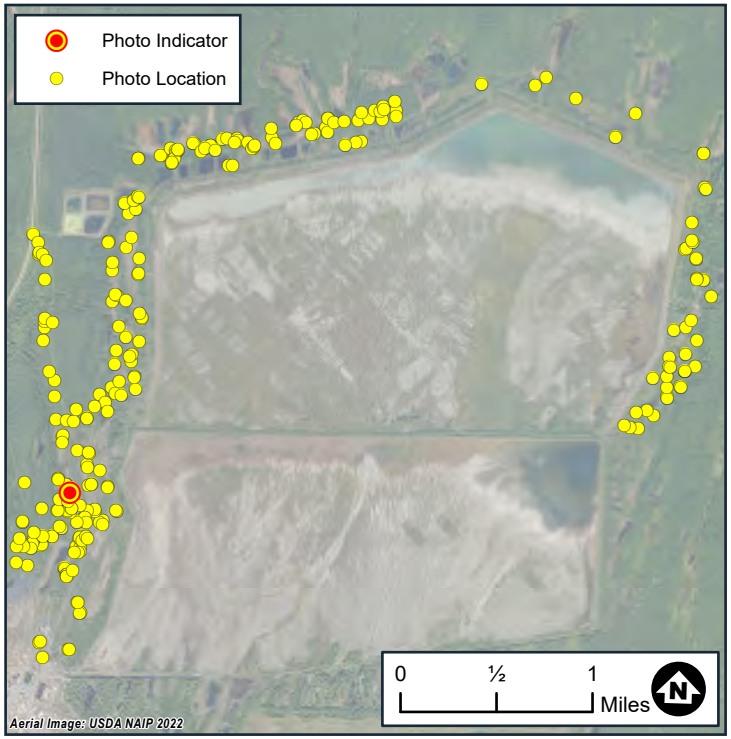
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

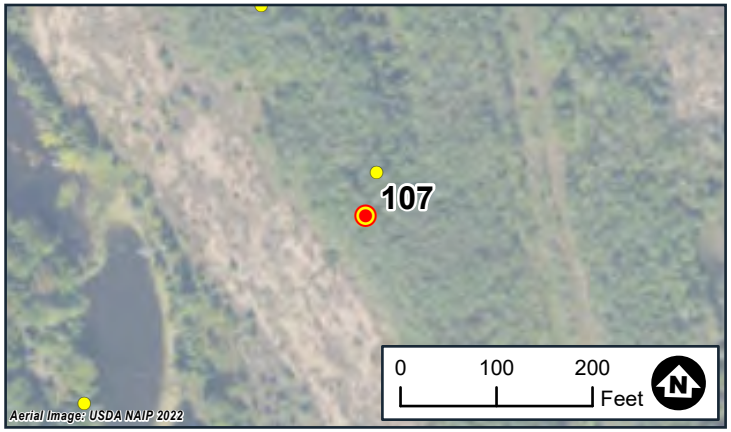
BARR

Date: 6/29/2024
Wetland ID:WTL78
Flag No.:78-3
Sample Point ID:WTL78-DP1-W

Note: Photo locations are approximate







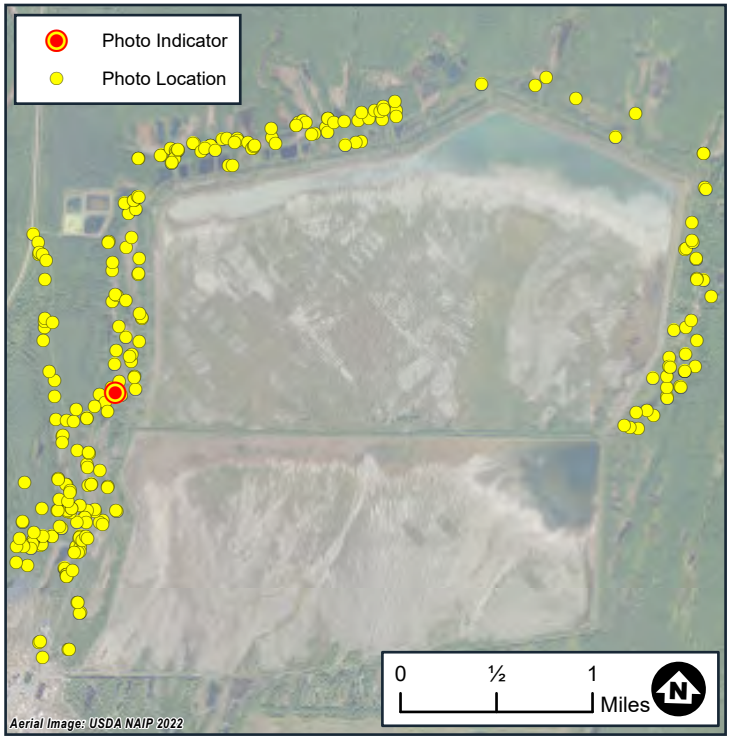
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

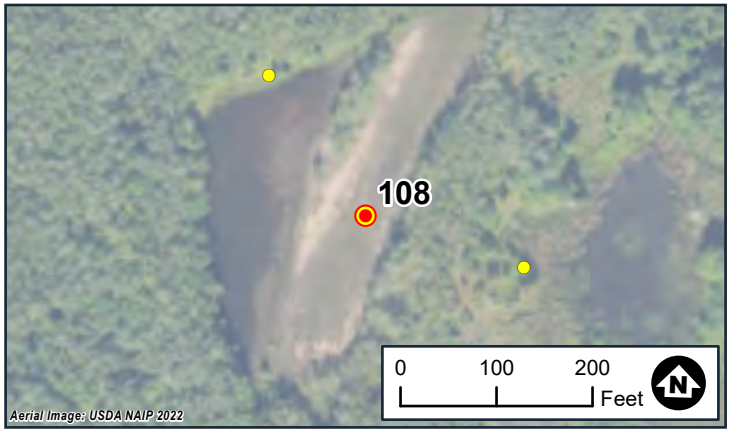
BARR

Date: 6/29/2024
Wetland ID:WTL78
Flag No.:78-3
Sample Point ID:WTL78-DP2-U

Note: Photo locations are approximate







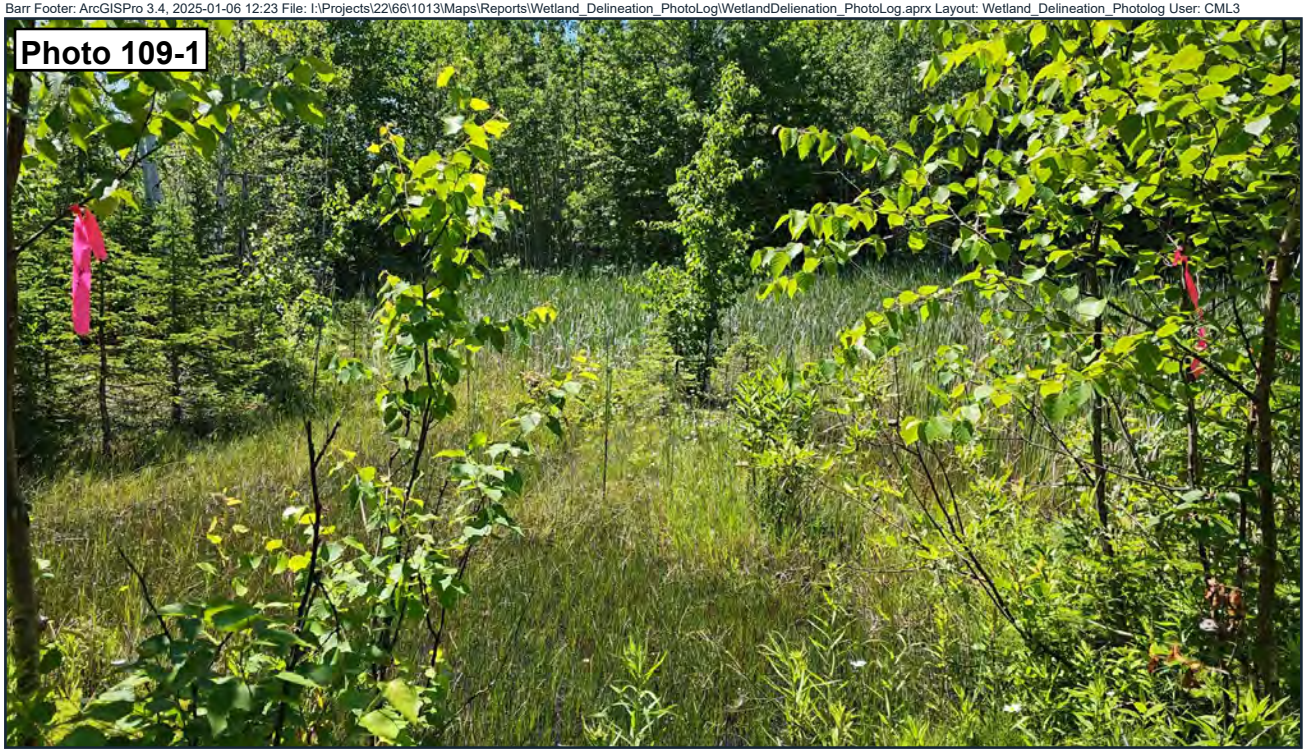
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/30/2024
Wetland ID:WTL79
Flag No.:79-2
Sample Point ID:N/A

Note: Photo locations are approximate

Photo 109-1



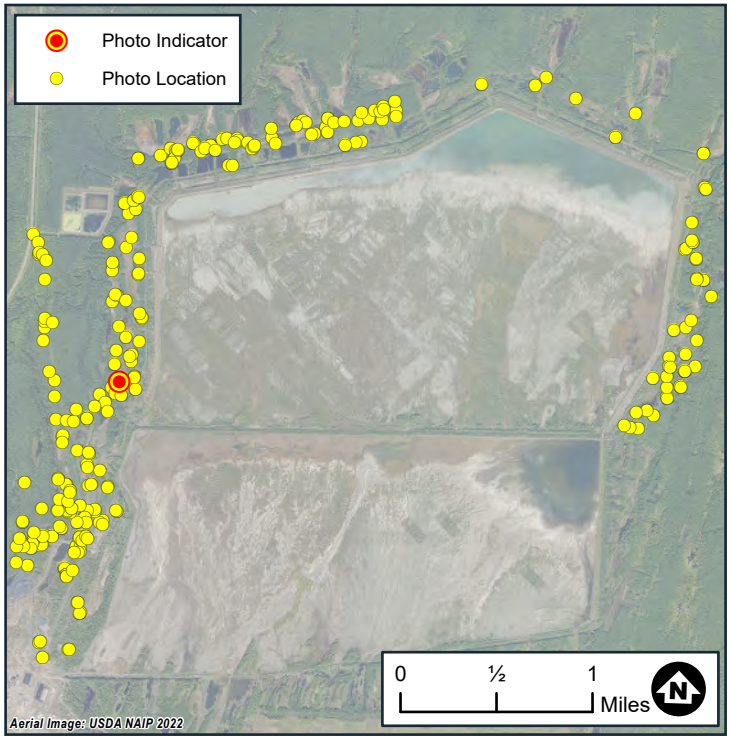
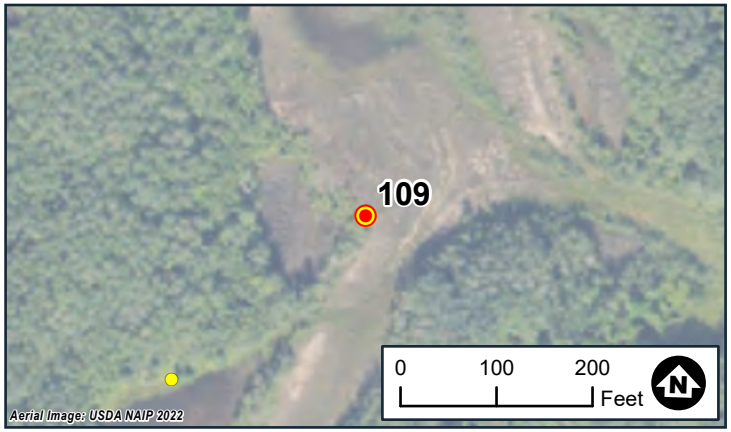


Photo 109-2





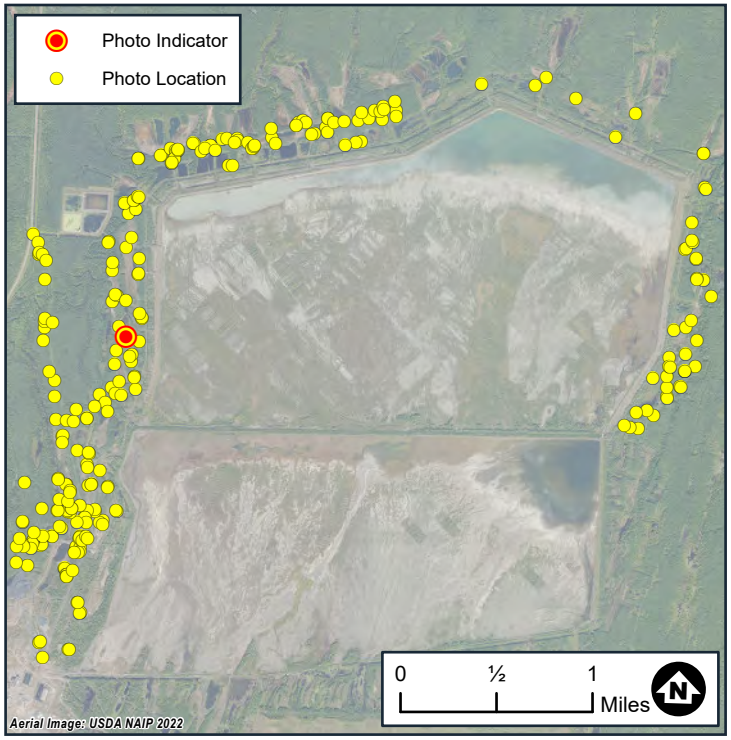
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

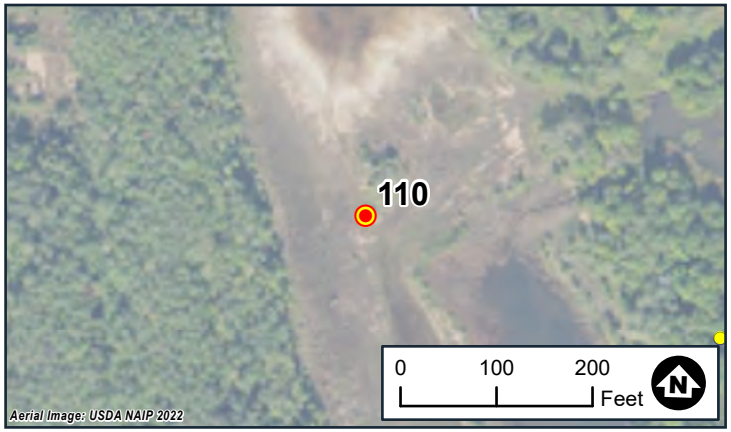
Date: 6/30/2024
Wetland ID:WTL79
Flag No.:79-14
Sample Point ID:N/A

Note: Photo locations are approximate









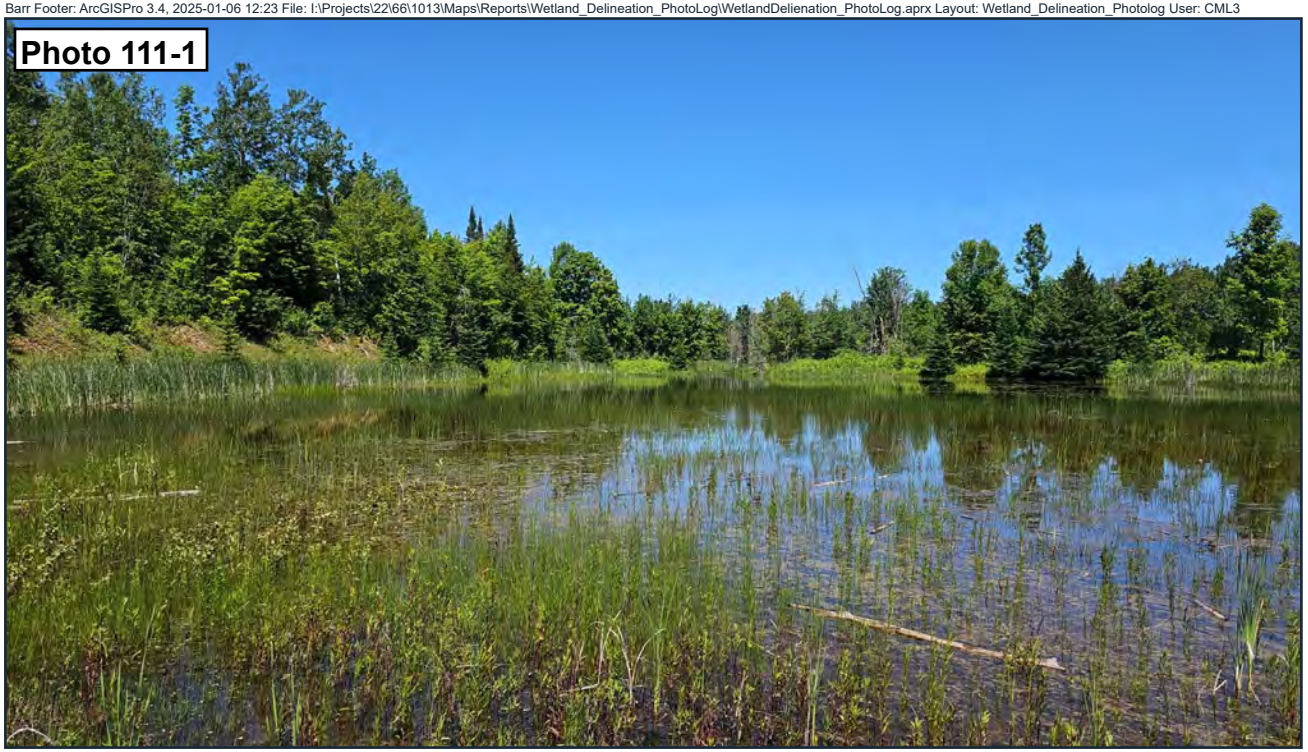
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/30/2024
Wetland ID:WTL79
Flag No.:79-47
Sample Point ID:N/A

Note: Photo locations are approximate

Photo 111-1



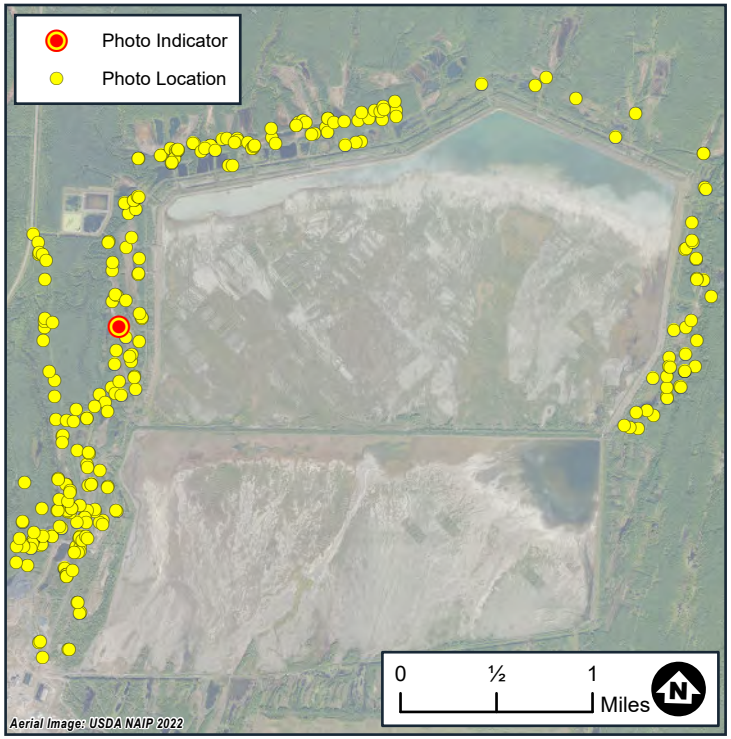
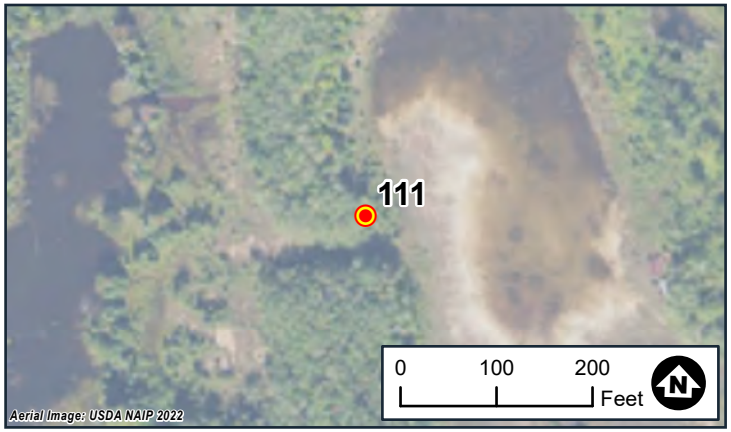


Photo 111-2





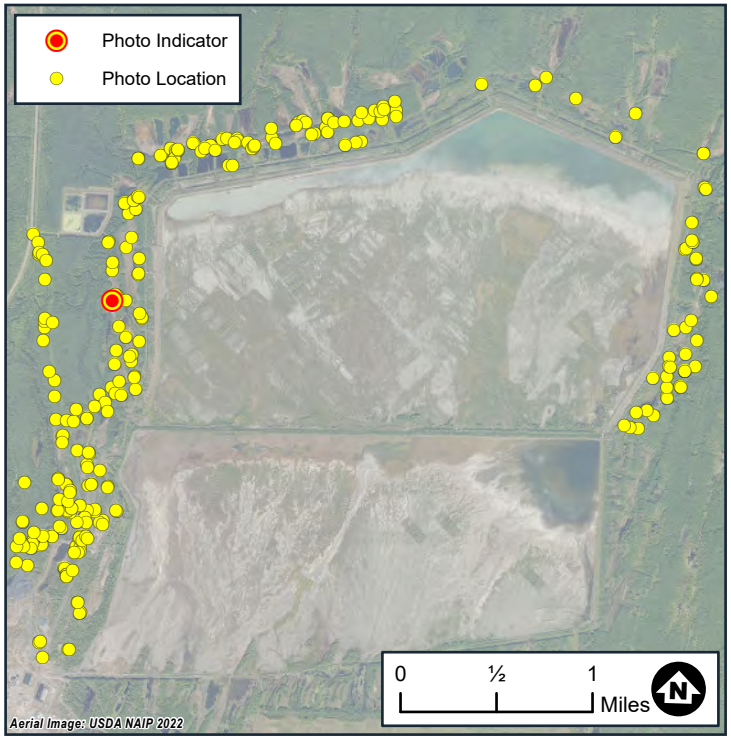
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

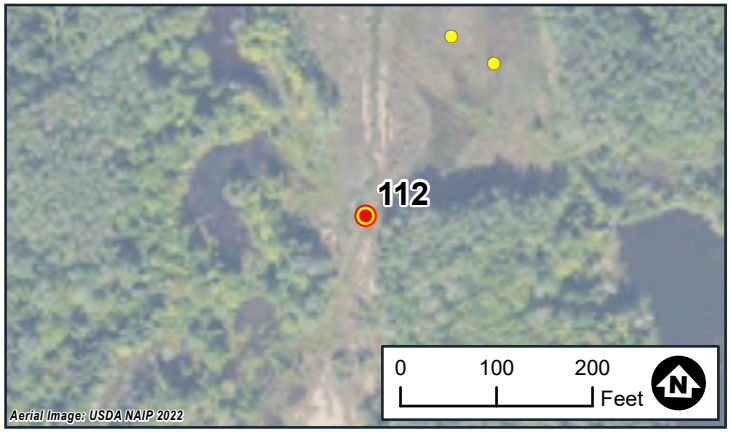
Date: 6/30/2024
Wetland ID:WTL79
Flag No.:79-53
Sample Point ID:N/A

Note: Photo locations are approximate









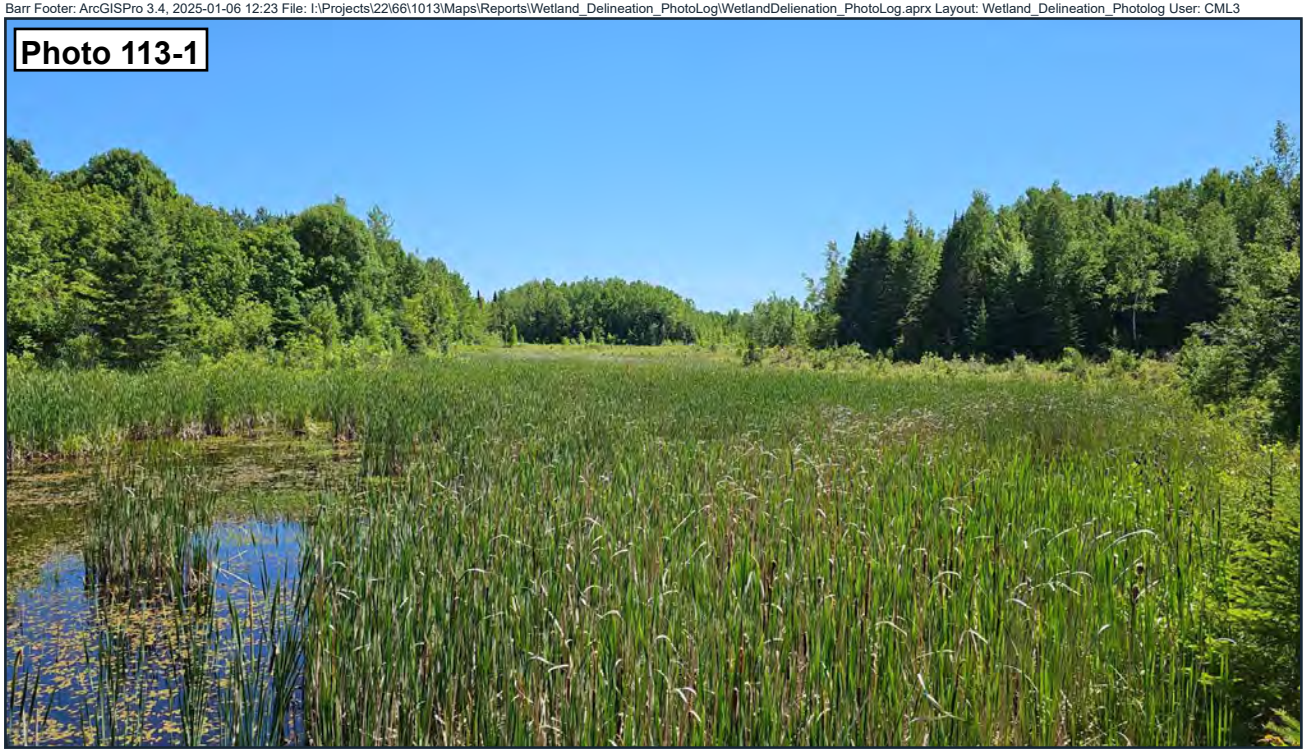
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/30/2024
Wetland ID:WTL79
Flag No.:79-85
Sample Point ID:N/A

Note: Photo locations are approximate

Photo 113-1



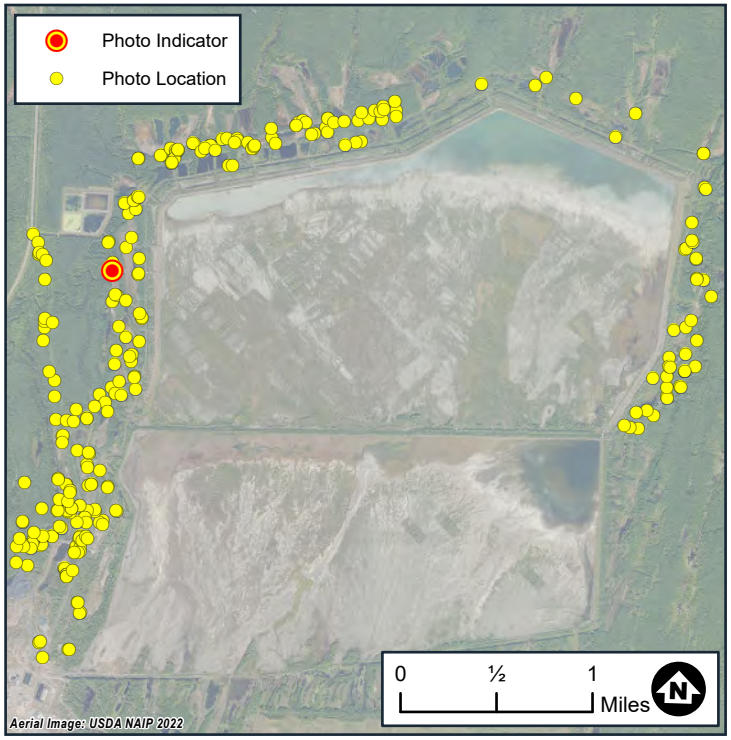
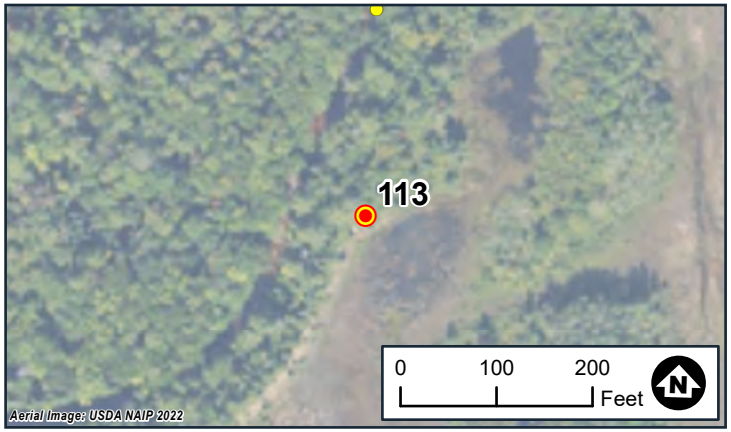


Photo 113-2



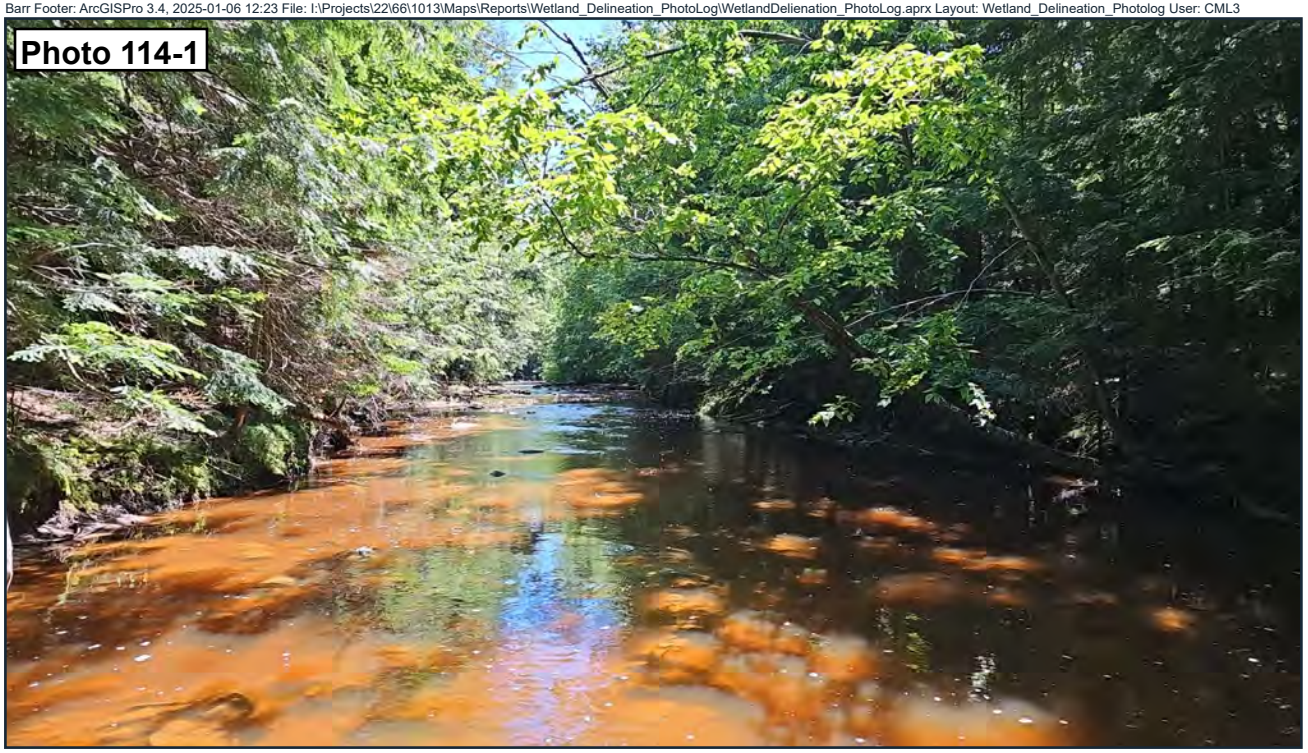


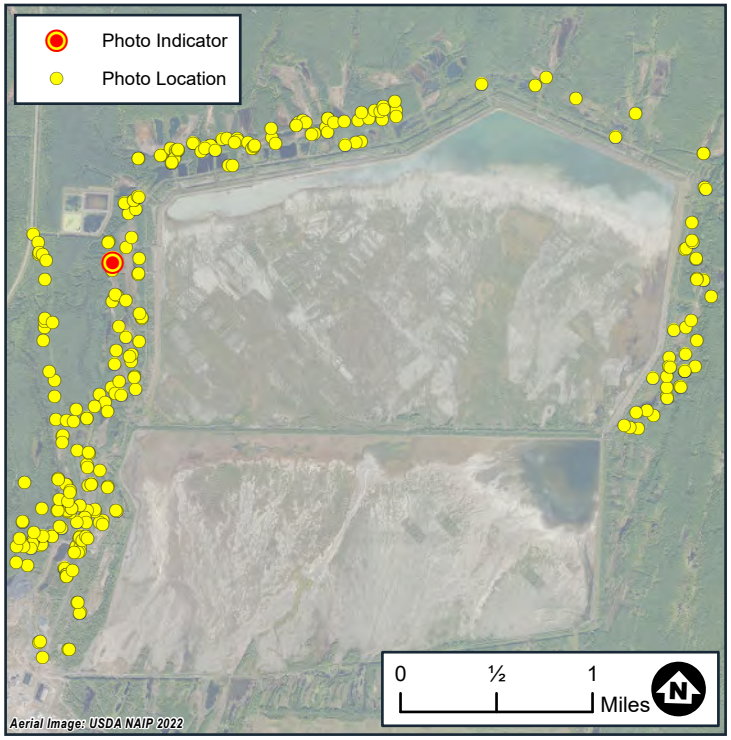
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

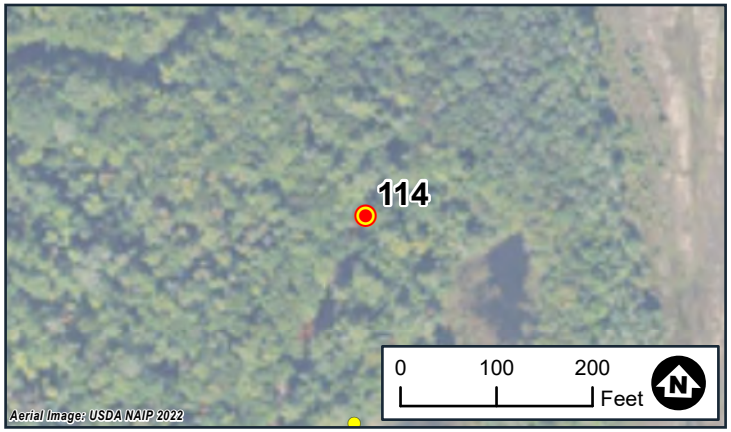
Date: 6/30/2024
Wetland ID:WTL79
Flag No.:79-149
Sample Point ID:N/A

Note: Photo locations are approximate









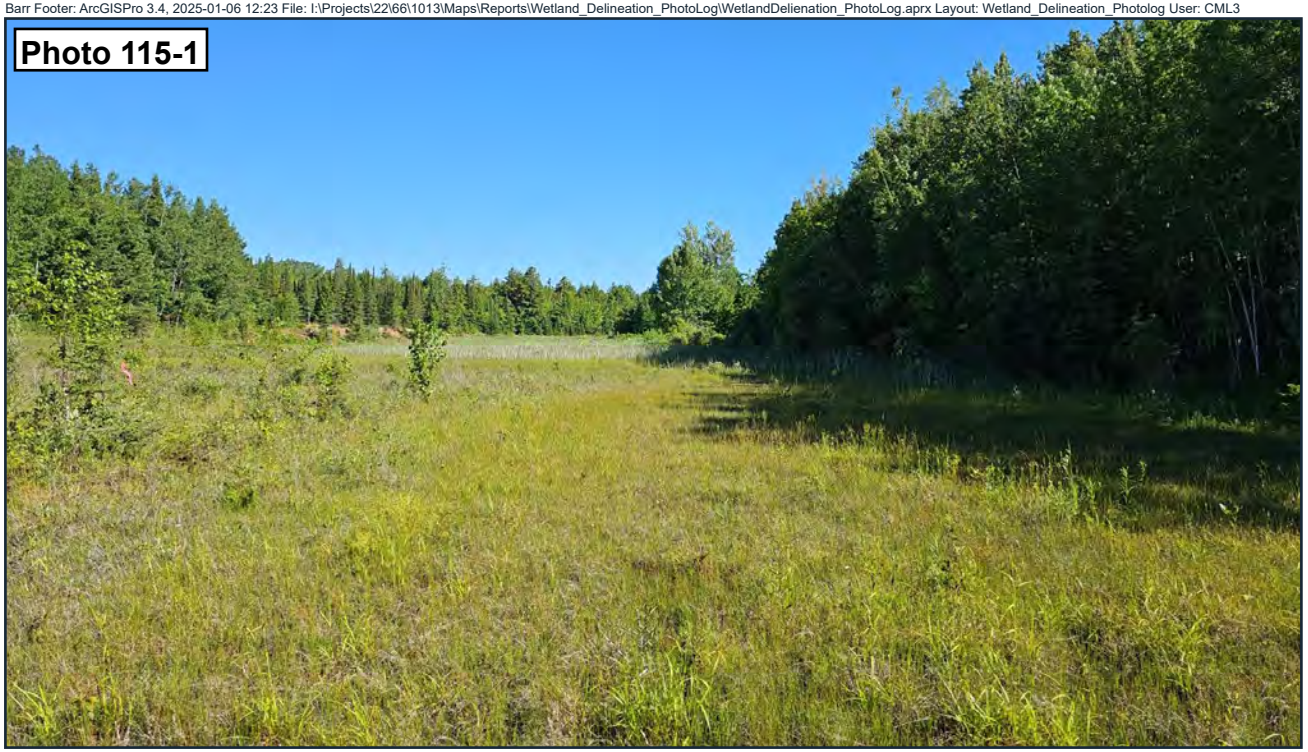
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/30/2024
Wetland ID:WTL79
Flag No.:79-161
Sample Point ID:N/A

Note: Photo locations are approximate

Photo 115-1



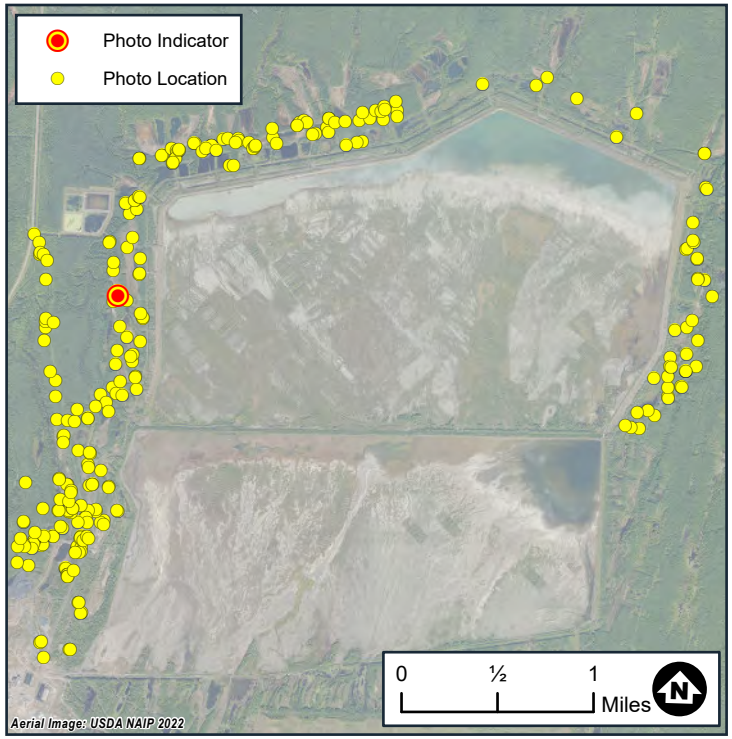
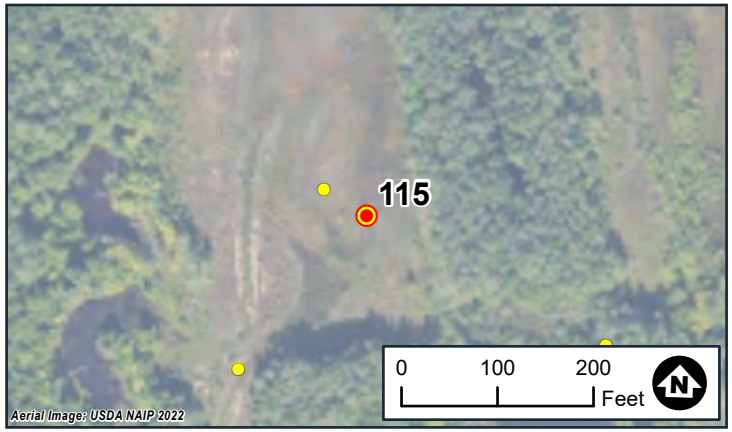


Photo 115-2





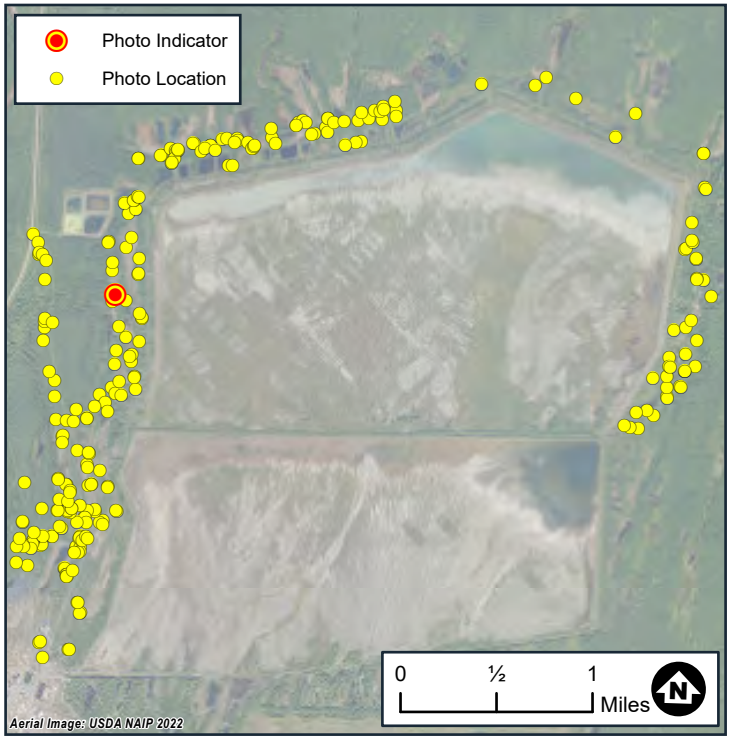
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

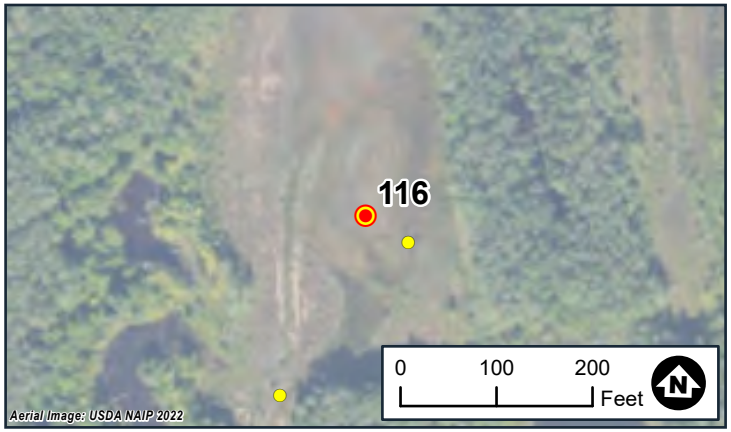
BARR

Date: 7/1/2024
Wetland ID:WTL79
Flag No.:79-230
Sample Point ID:WTL79-DP1-W

Note: Photo locations are approximate







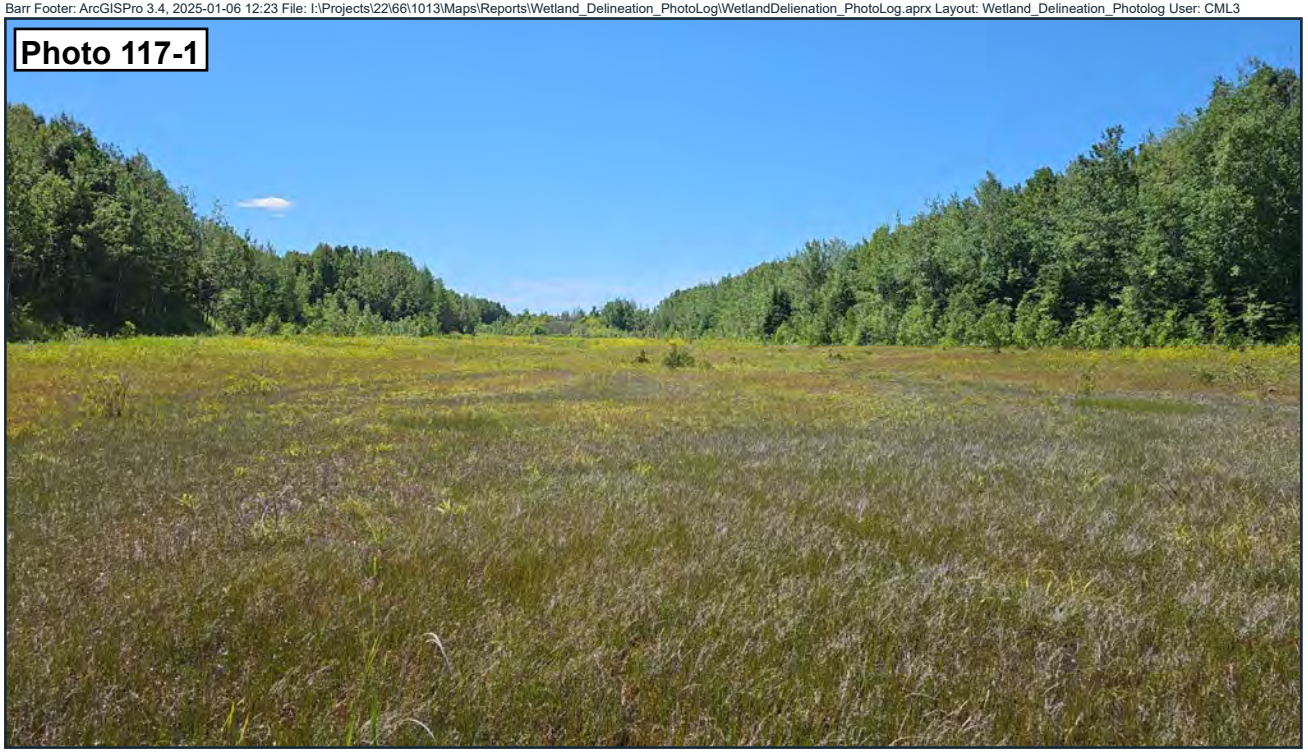
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 7/1/2024
Wetland ID:WTL79
Flag No.:79-130
Sample Point ID:WTL79-DP1-U

Note: Photo locations are approximate

Photo 117-1



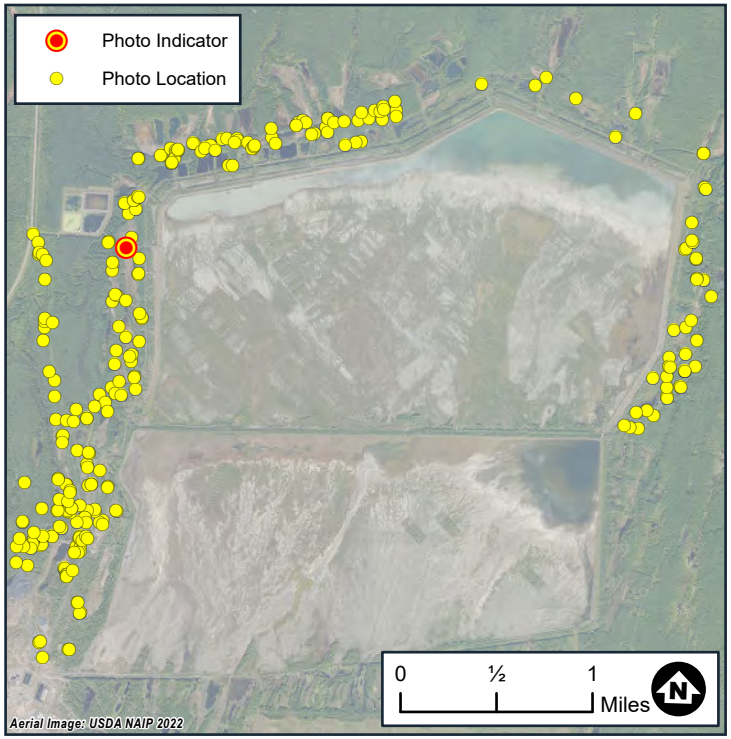
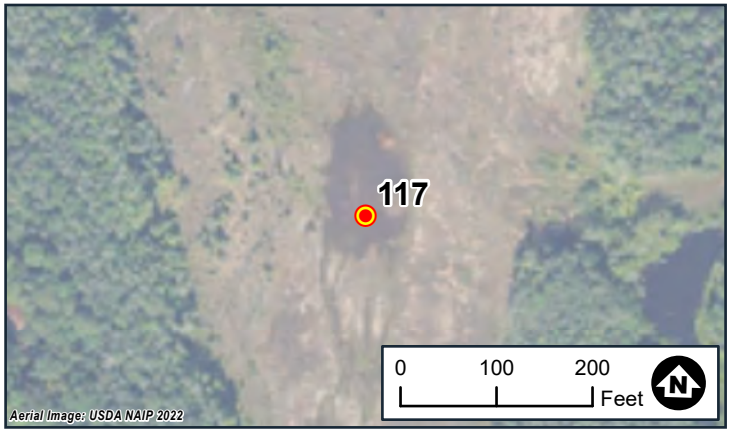


Photo 117-2





Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 7/1/2024
Wetland ID:WTL79
Flag No.:79-317
Sample Point ID:N/A

Note: Photo locations are approximate

Photo 118-1



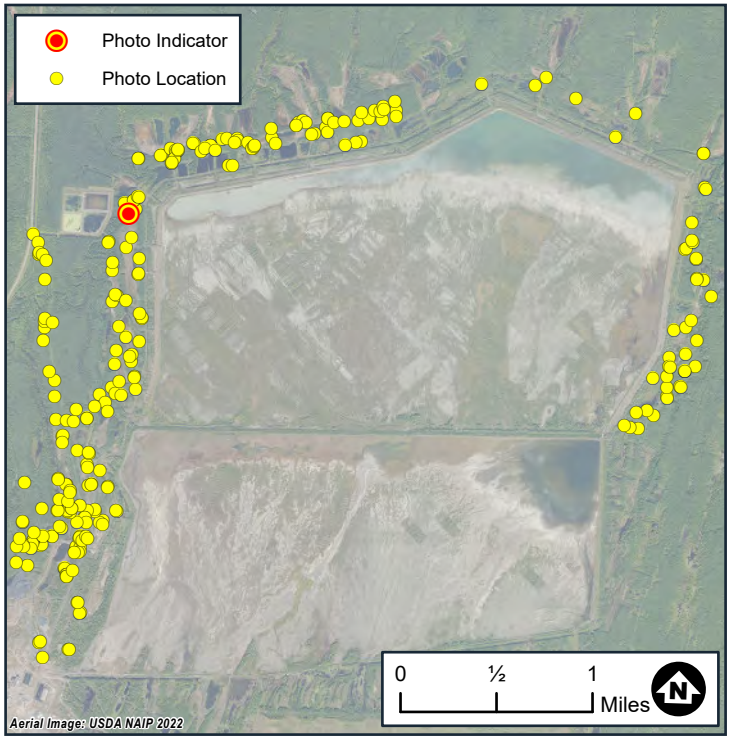
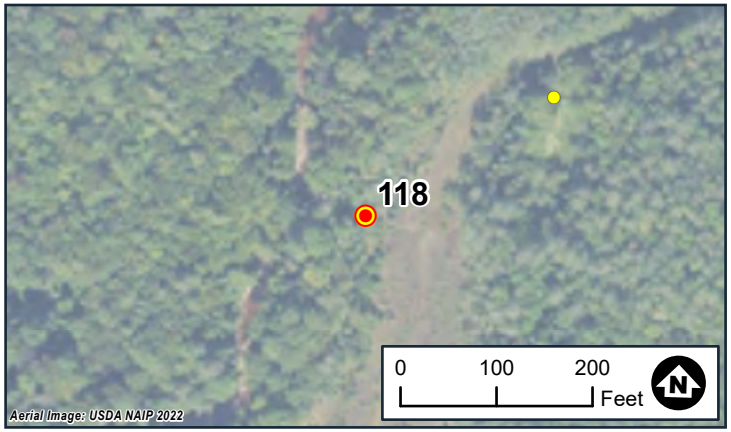


Photo 118-2





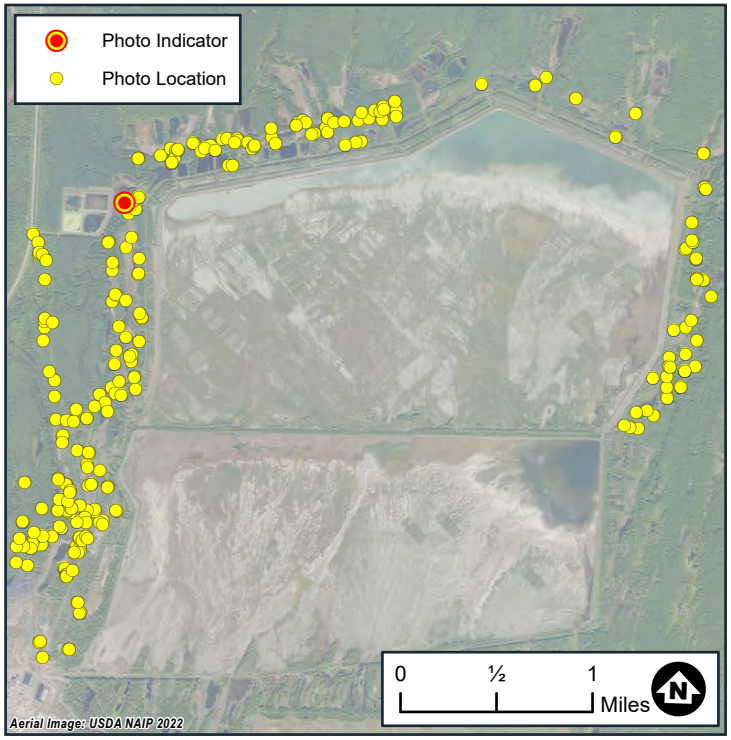
Page 118 of 262
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

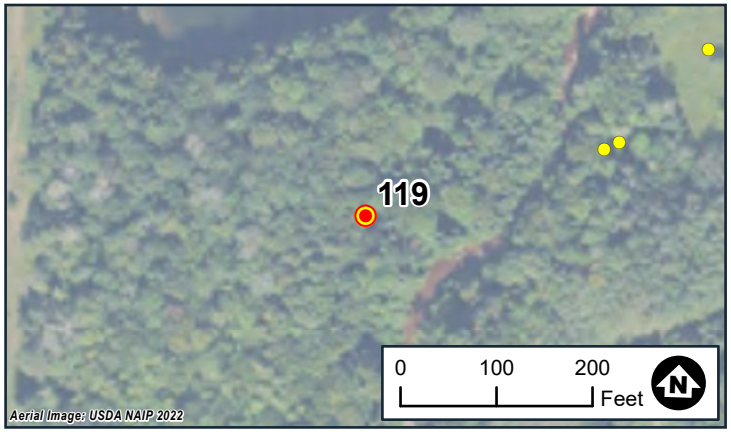
Date: 7/1/2024
Wetland ID:WTL79
Flag No.:79-333
Sample Point ID:N/A

Note: Photo locations are approximate









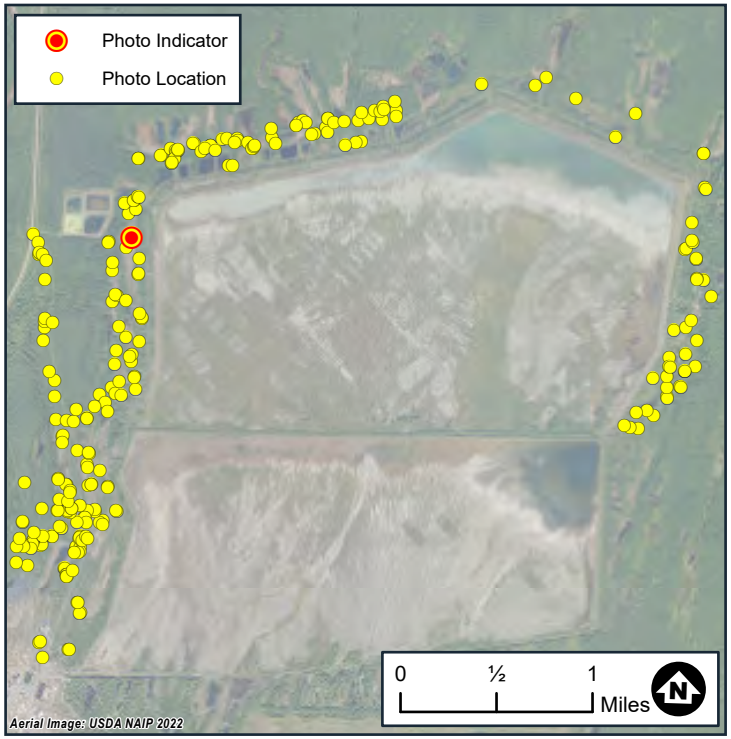
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

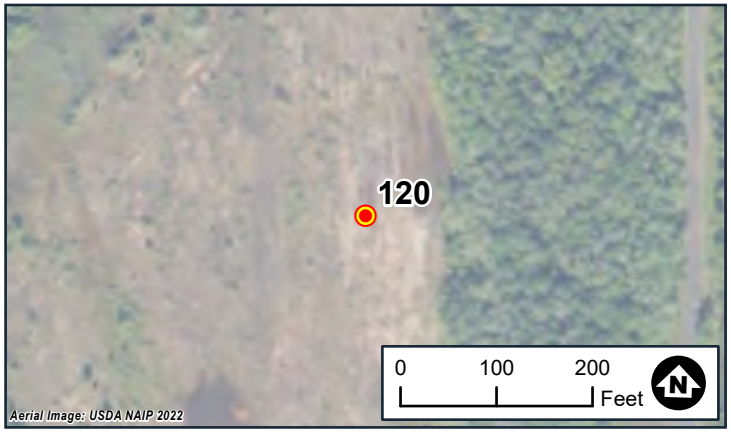
BARR

Date: 7/1/2024
Wetland ID:WTL79
Flag No.:79-367
Sample Point ID:N/A

Note: Photo locations are approximate







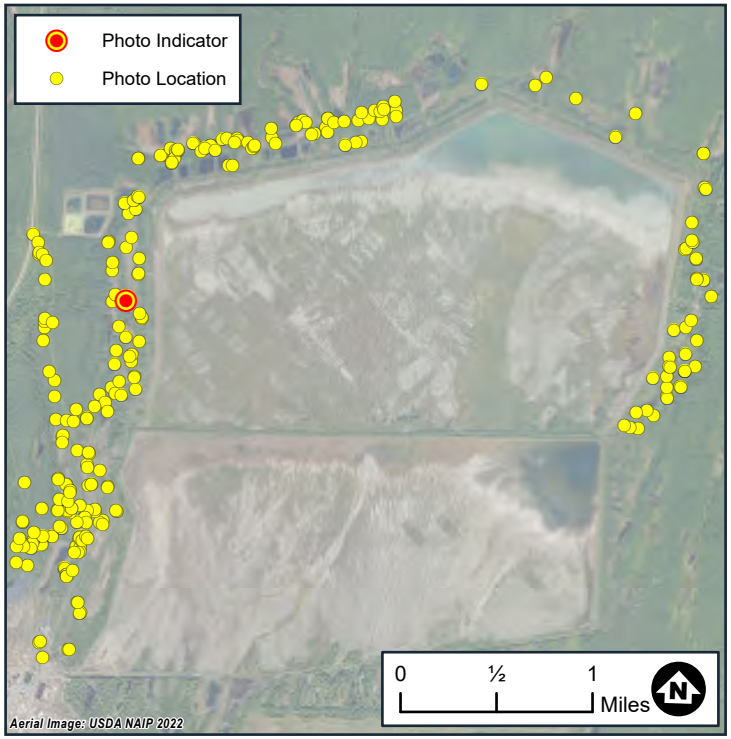
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

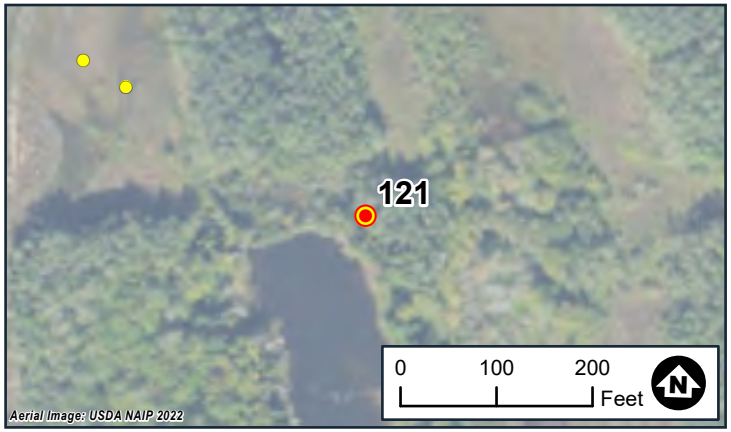
BARR

Date: 7/1/2024
Wetland ID:WTL79
Flag No.:79-430
Sample Point ID:N/A

Note: Photo locations are approximate







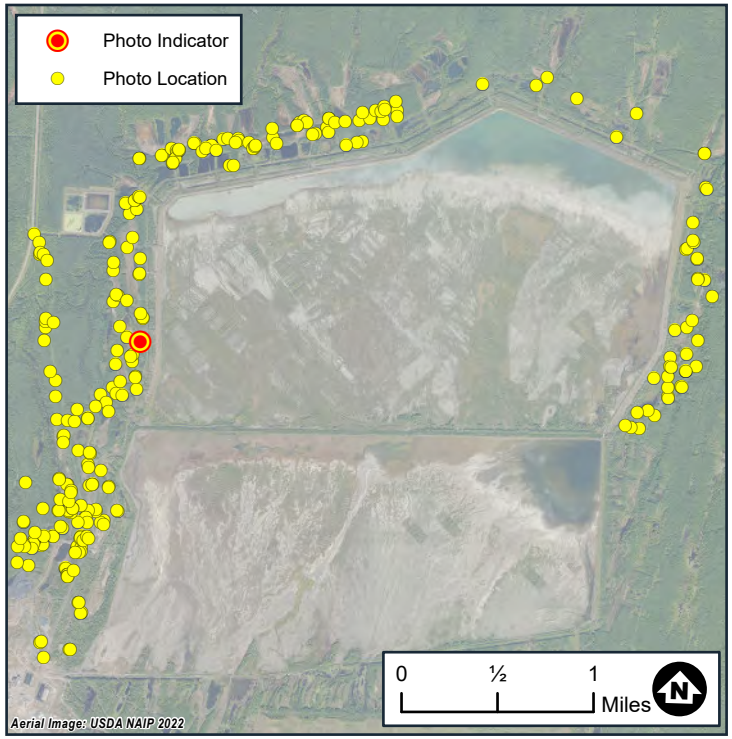
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

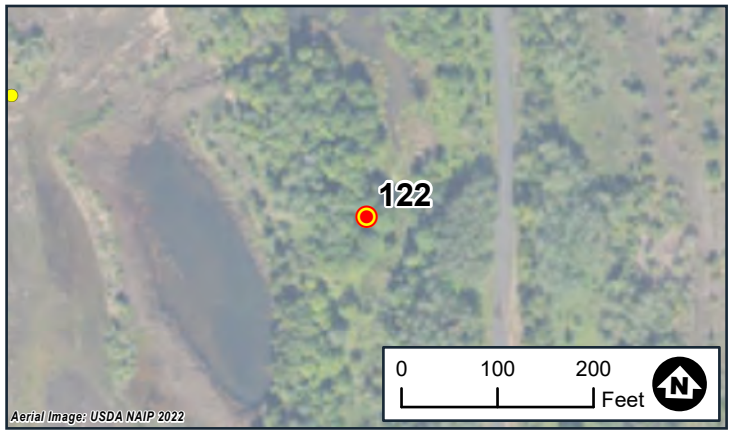
Date: 7/1/2024
Wetland ID:WTL79
Flag No.:79-607
Sample Point ID:N/A

Note: Photo locations are approximate









Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 7/2/2024
Wetland ID:WTL79
Flag No.:79-719
Sample Point ID:N/A

Note: Photo locations are approximate

Photo 123-1



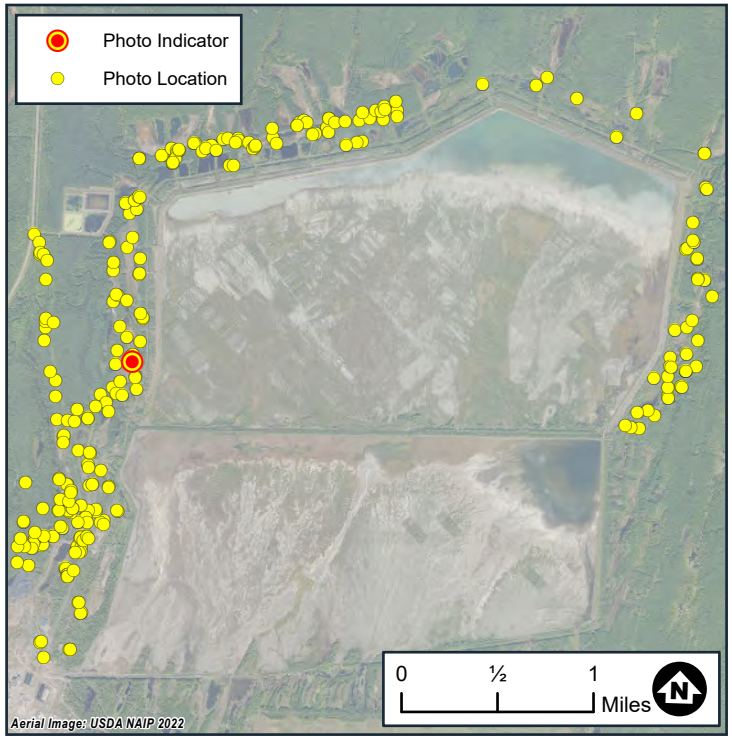
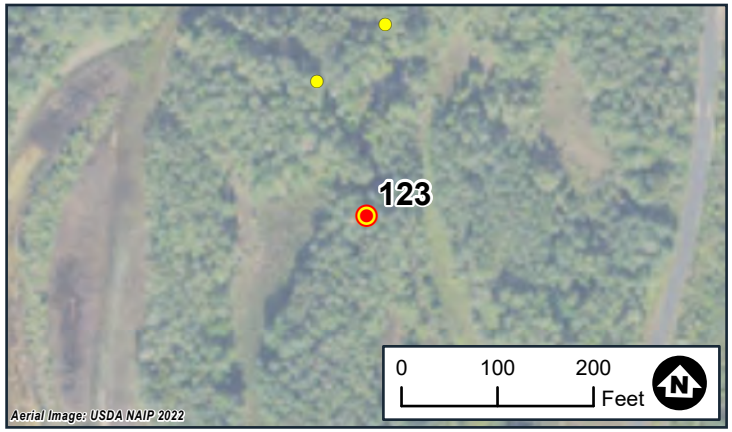


Photo 123-2





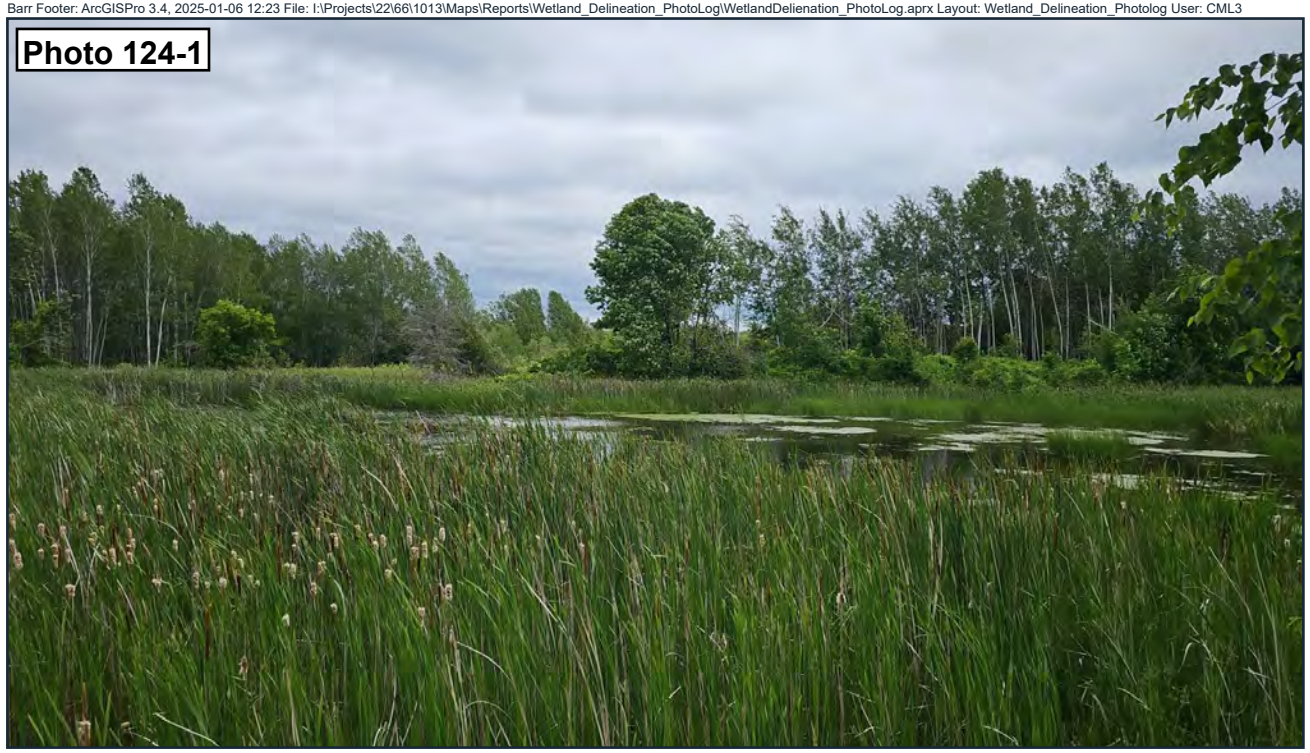
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 7/2/2024
Wetland ID:WTL79
Flag No.:79-854
Sample Point ID:N/A

Note: Photo locations are approximate

Photo 124-1



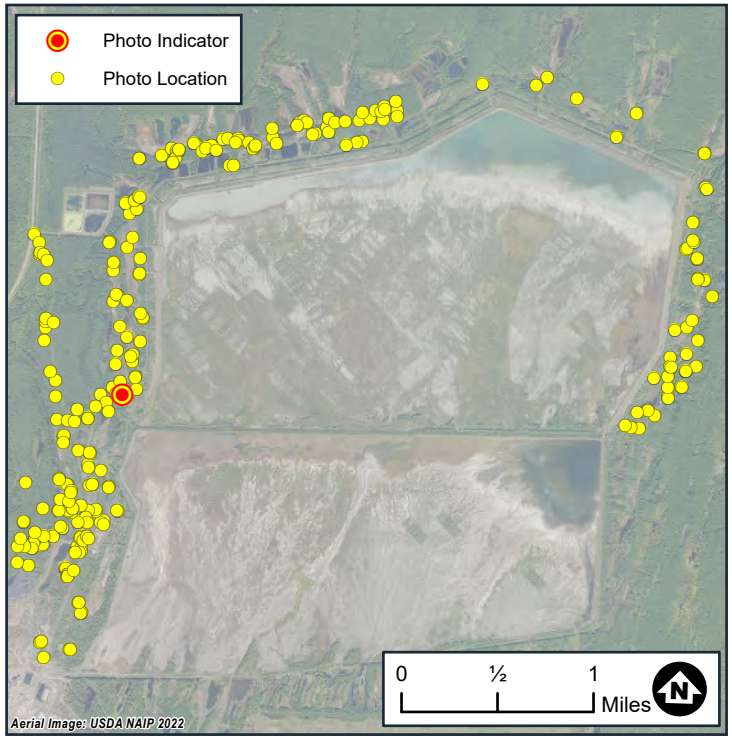
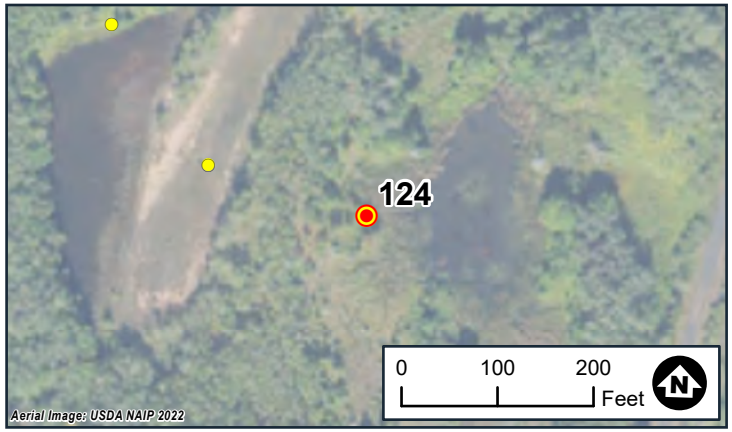


Photo 124-2





Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 7/2/2024
Wetland ID:WTL79
Flag No.:79-1078
Sample Point ID:N/A

Note: Photo locations are approximate

Photo 125-1



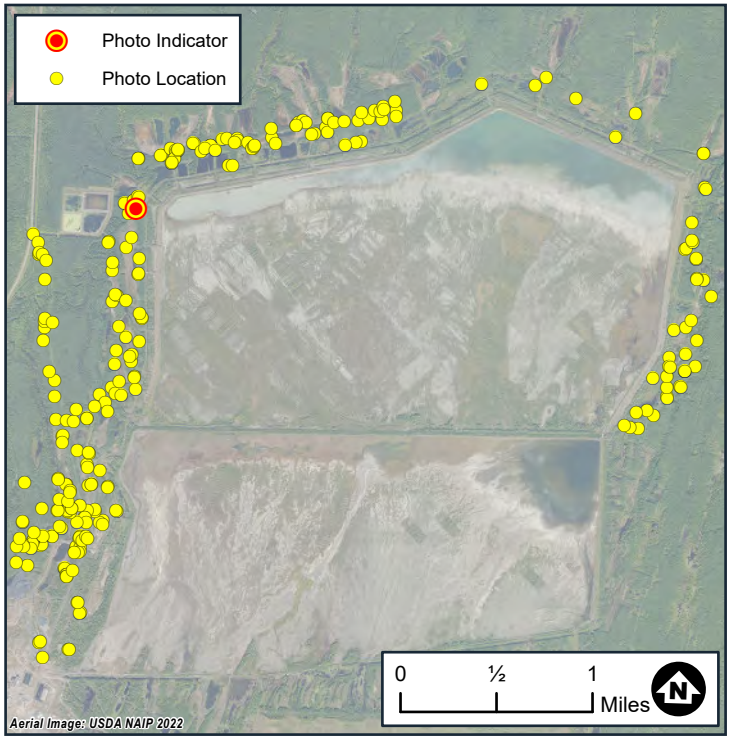
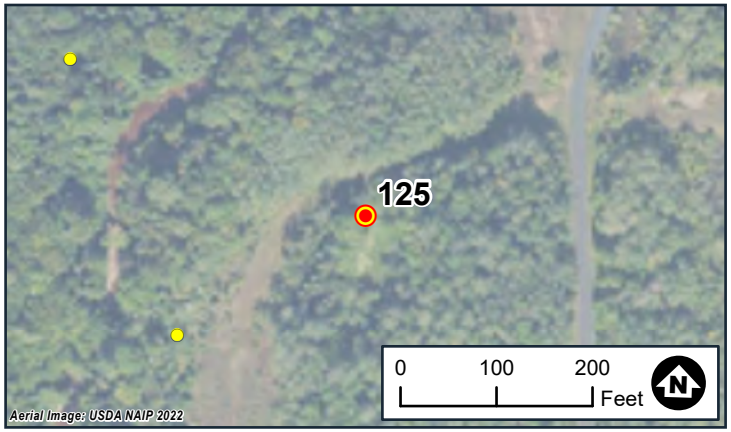


Photo 125-2





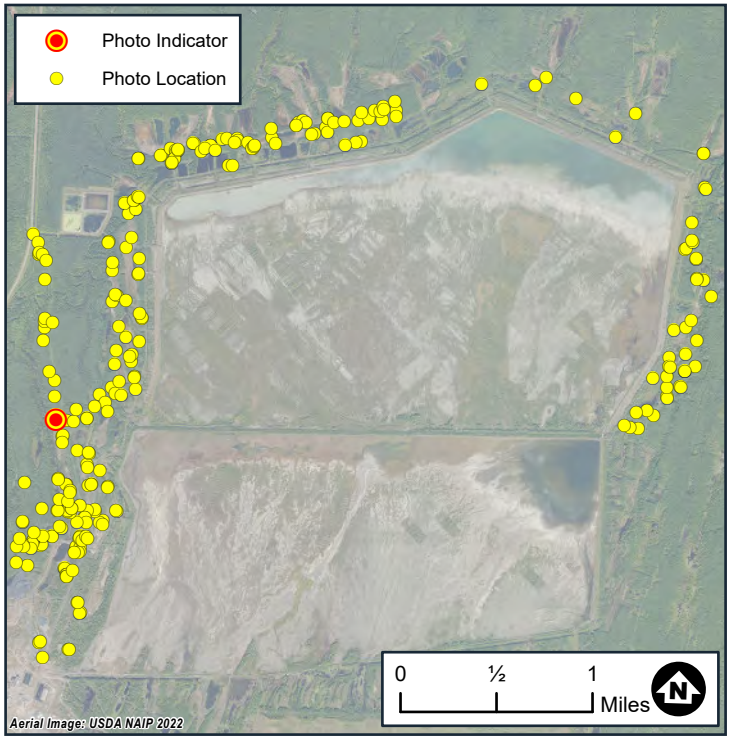
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

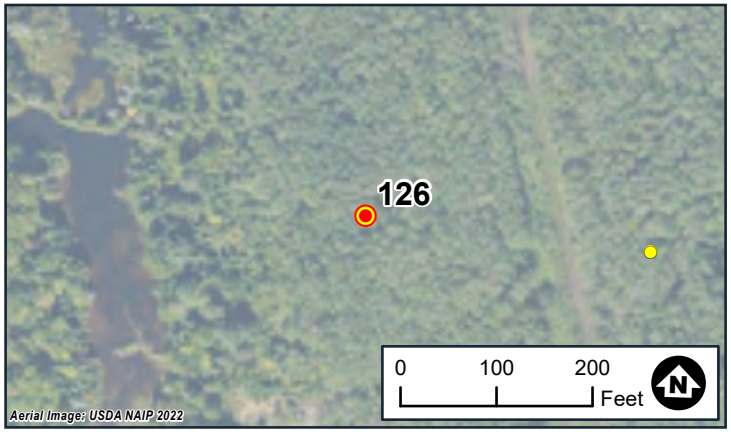
Date: 7/30/2024
Wetland ID:WTL79
Flag No.:79-1211
Sample Point ID:N/A

Note: Photo locations are approximate









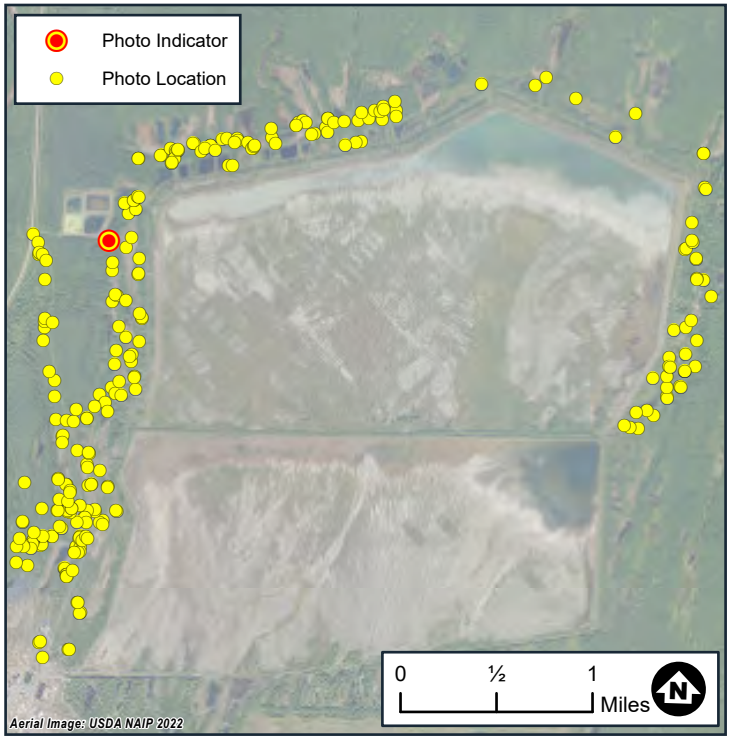
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

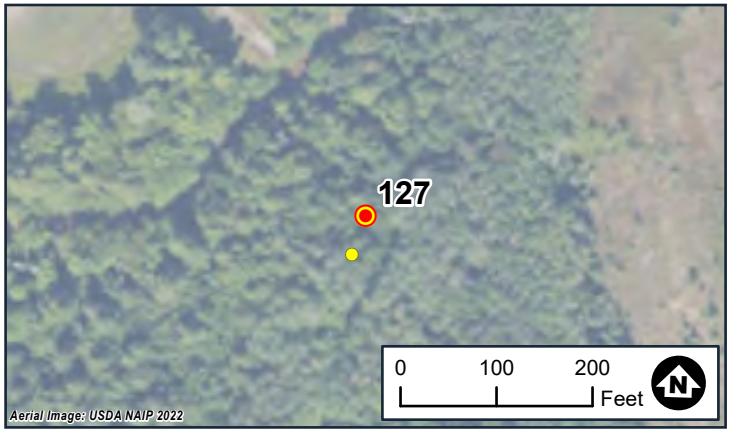
BARR

Date: 6/30/2024
Wetland ID:WTL80
Flag No.:80-1
Sample Point ID:N/A

Note: Photo locations are approximate







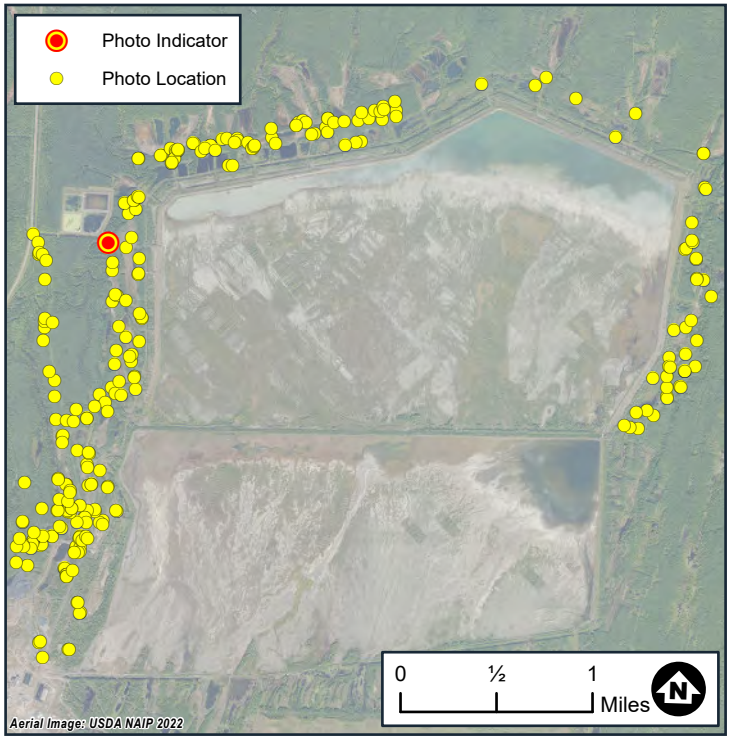
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

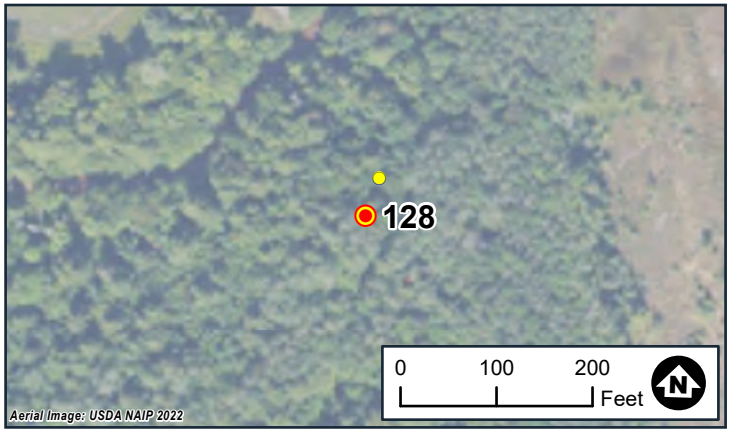
Date: 7/1/2024
Wetland ID:WTL81
Flag No.:81-23
Sample Point ID:WTL81-DP1-W

Note: Photo locations are approximate









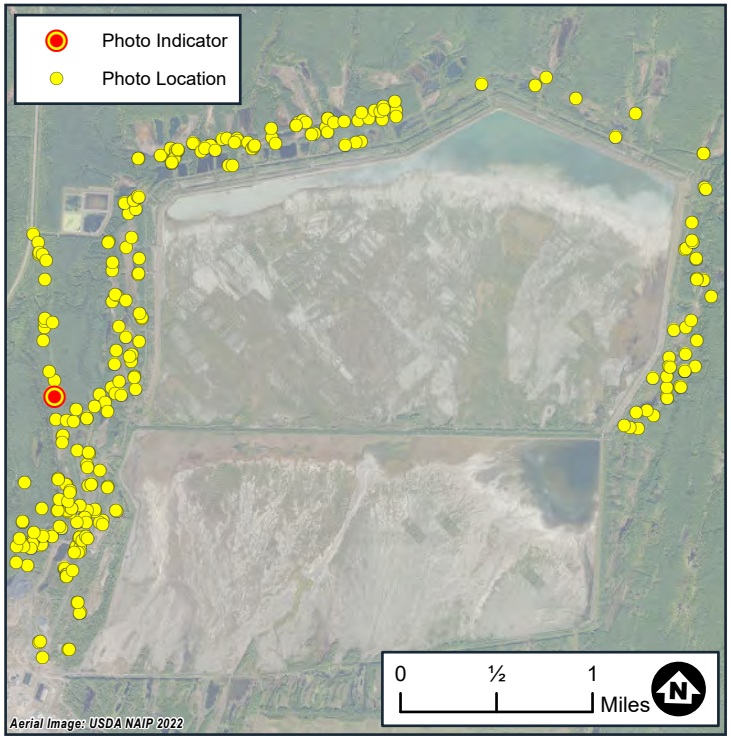
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

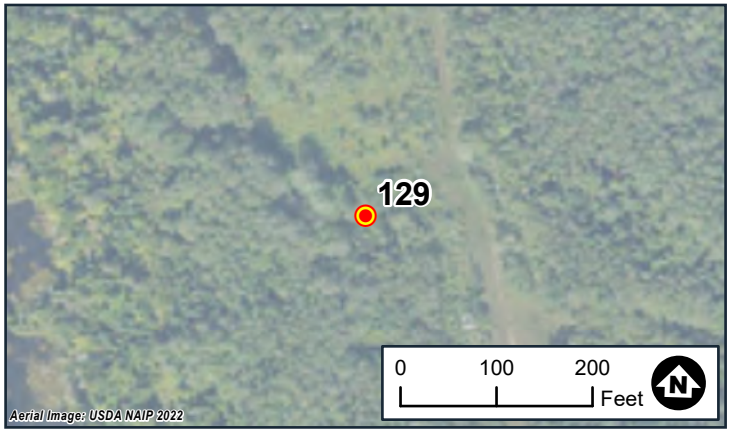
Date: 7/1/2024
Wetland ID:WTL81
Flag No.:81-23
Sample Point ID:WTL81-DP1-U

Note: Photo locations are approximate









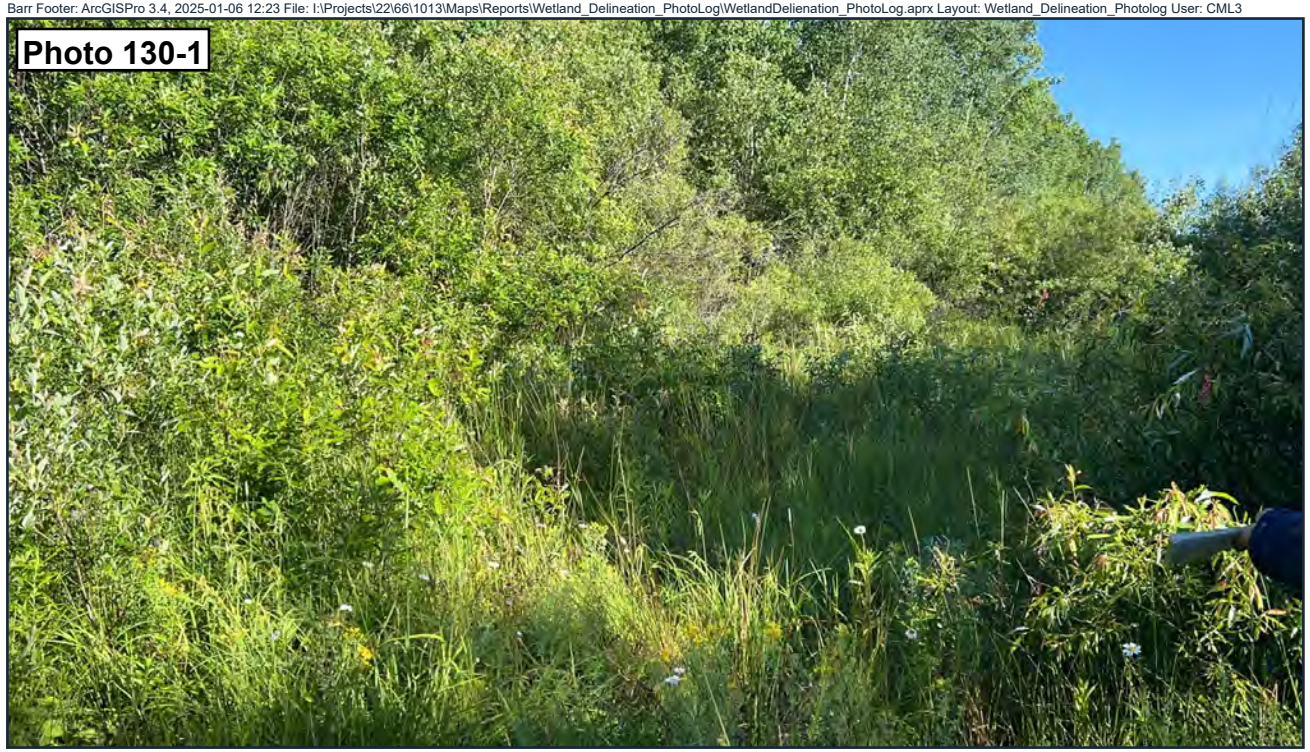
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 6/30/2024
Wetland ID:WTL82
Flag No.:82-12
Sample Point ID:WTL82-DP1-W

Note: Photo locations are approximate

Photo 130-1



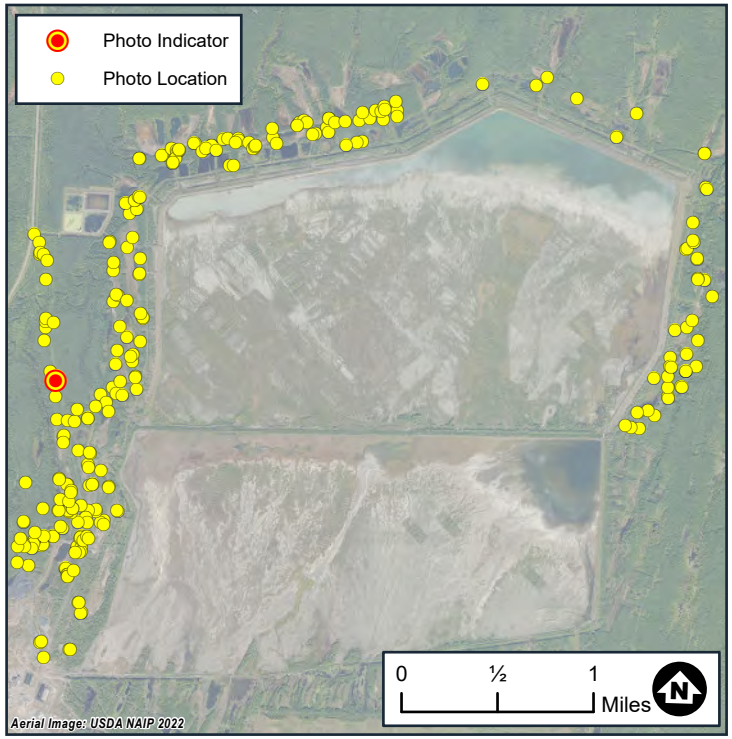
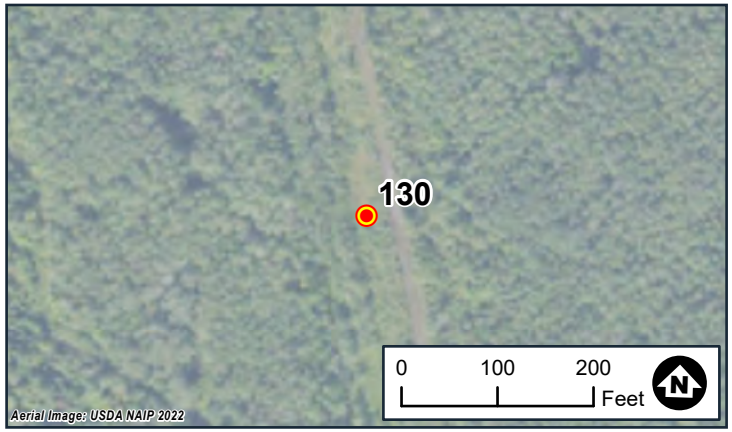


Photo 130-2





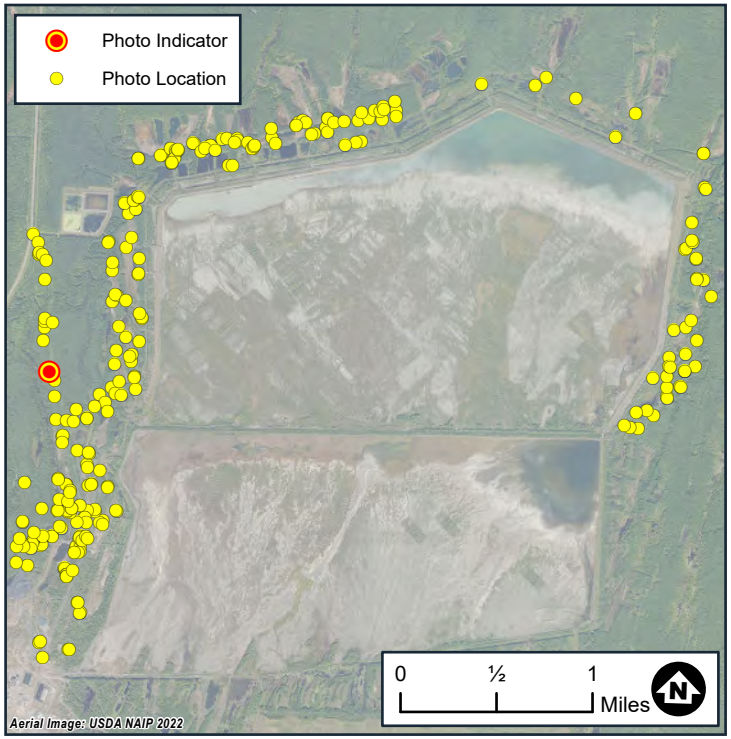
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

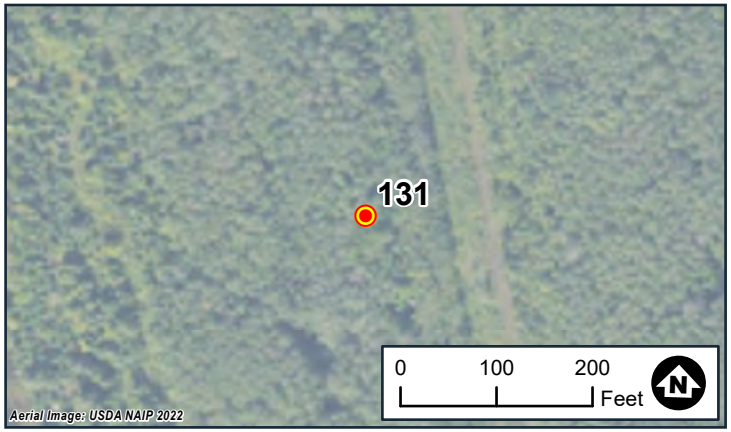
Date: 6/30/2024
Wetland ID:WTL84
Flag No.:84-1
Sample Point ID:N/A

Note: Photo locations are approximate









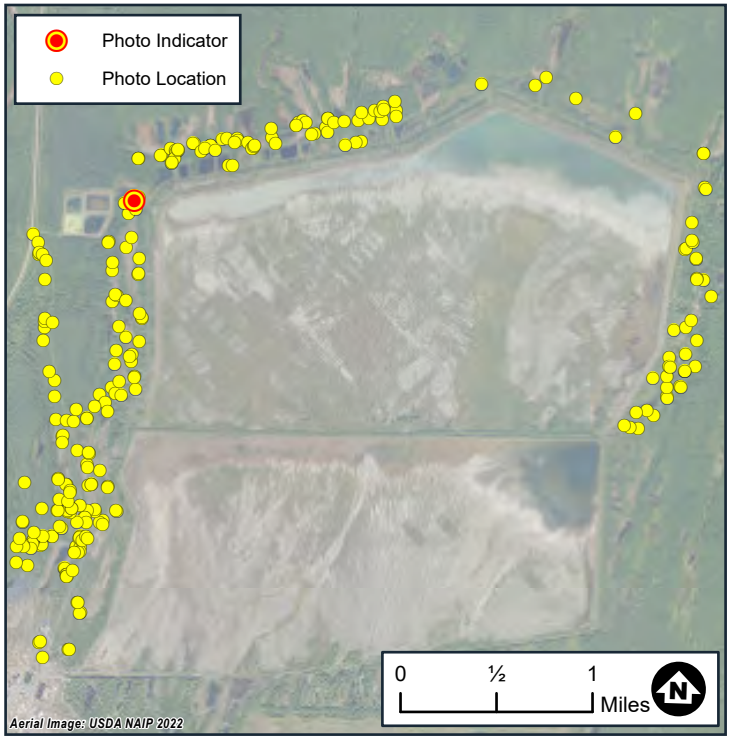
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

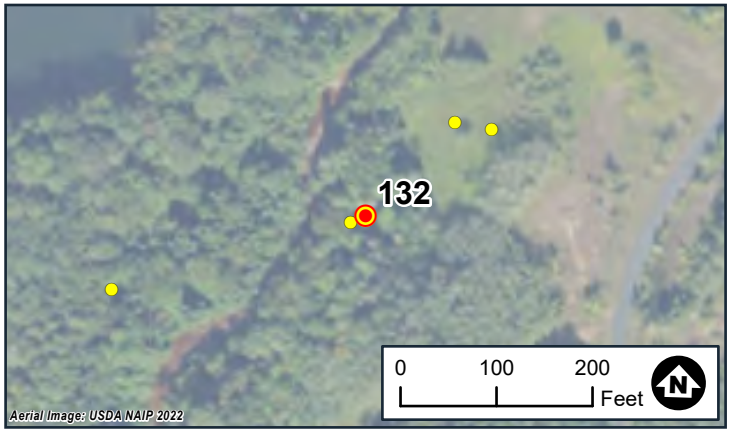
BARR

Date: 6/30/2024
Wetland ID:WTL86
Flag No.:86-7
Sample Point ID:WTL86-DP1-W

Note: Photo locations are approximate







Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 7/30/2024
Wetland ID:WTL87
Flag No.:87-3
Sample Point ID:WTL87-DP1-U

Note: Photo locations are approximate

Photo 133-1



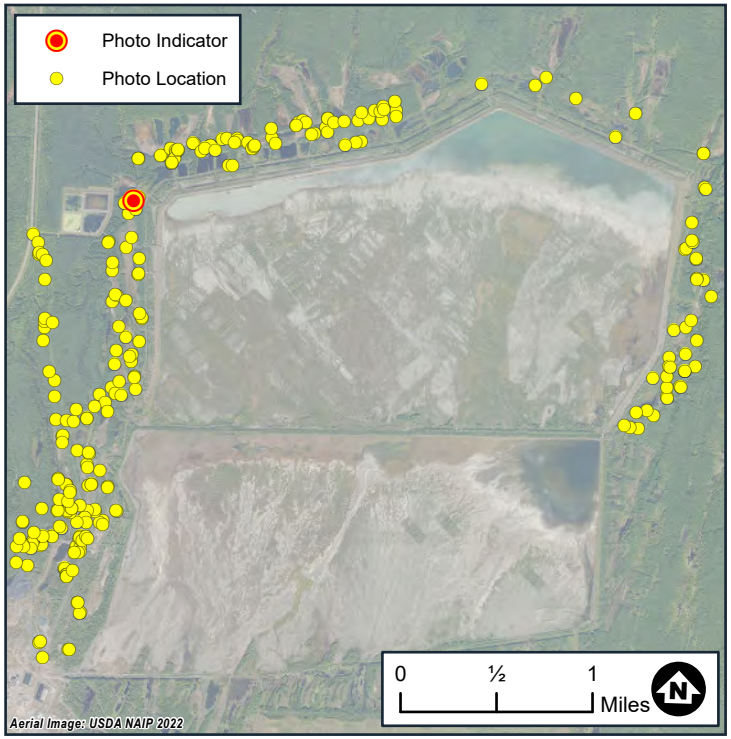
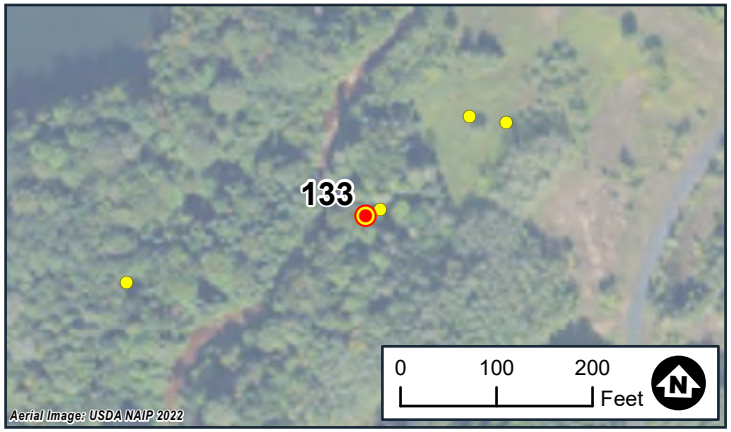


Photo 133-2





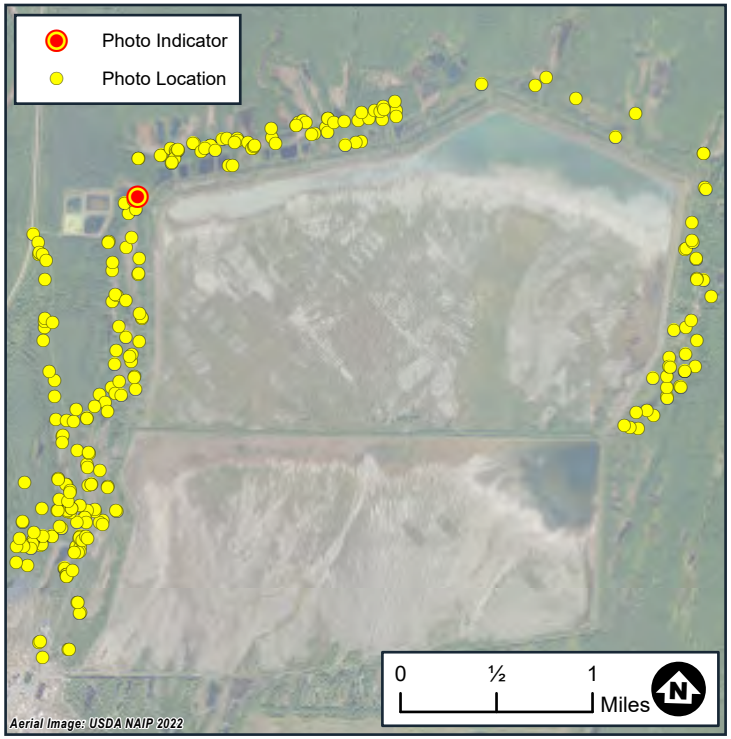
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

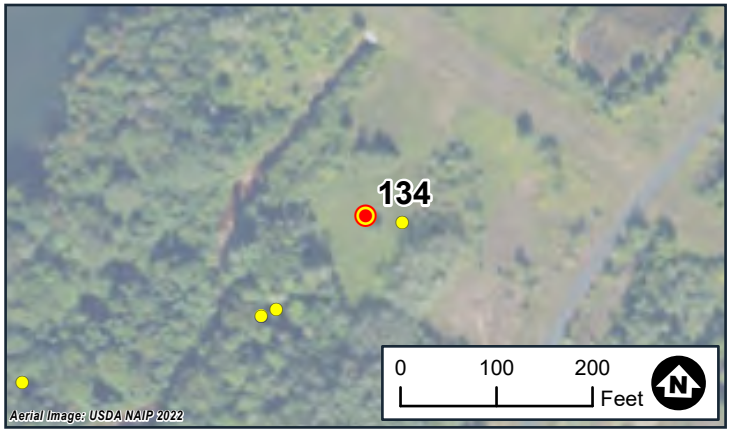
BARR

Date: 7/30/2024
Wetland ID:WTL87
Flag No.:87-3
Sample Point ID:WTL87-DP1-U

Note: Photo locations are approximate







Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 7/30/2024
Wetland ID:WTL89
Flag No.:89-4
Sample Point ID:WTL89-DP1-W

Note: Photo locations are approximate

Photo 135-1



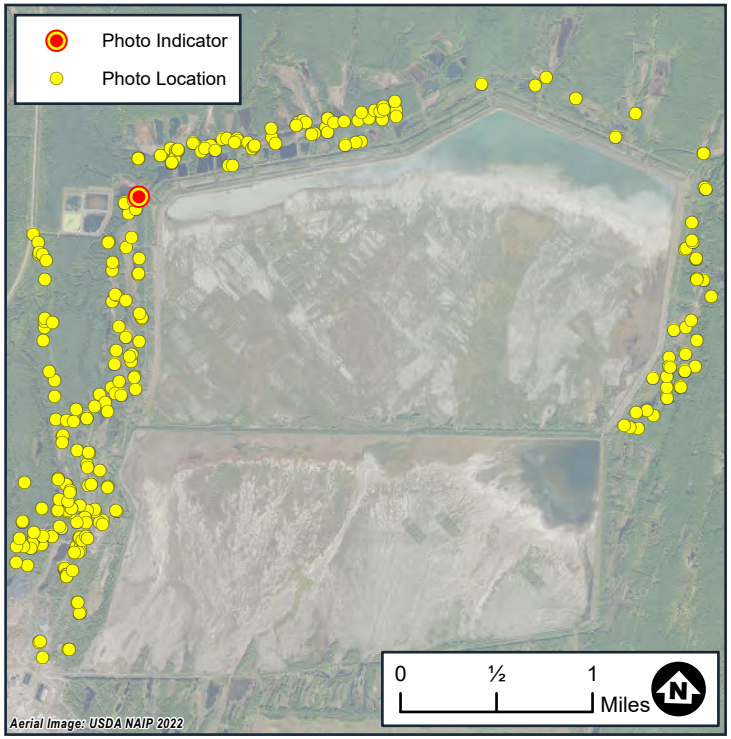
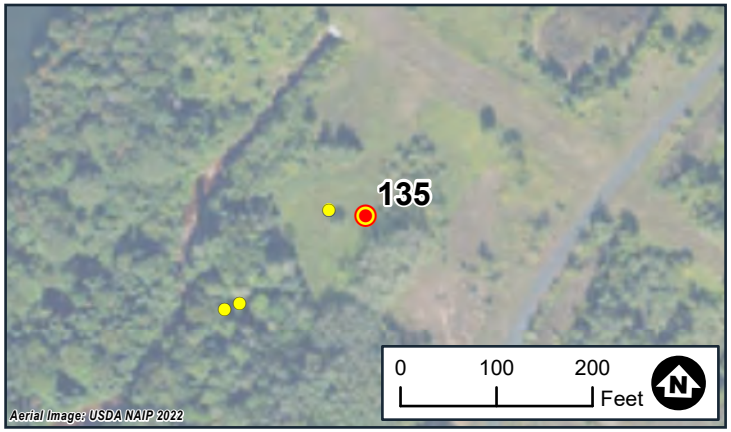


Photo 135-2





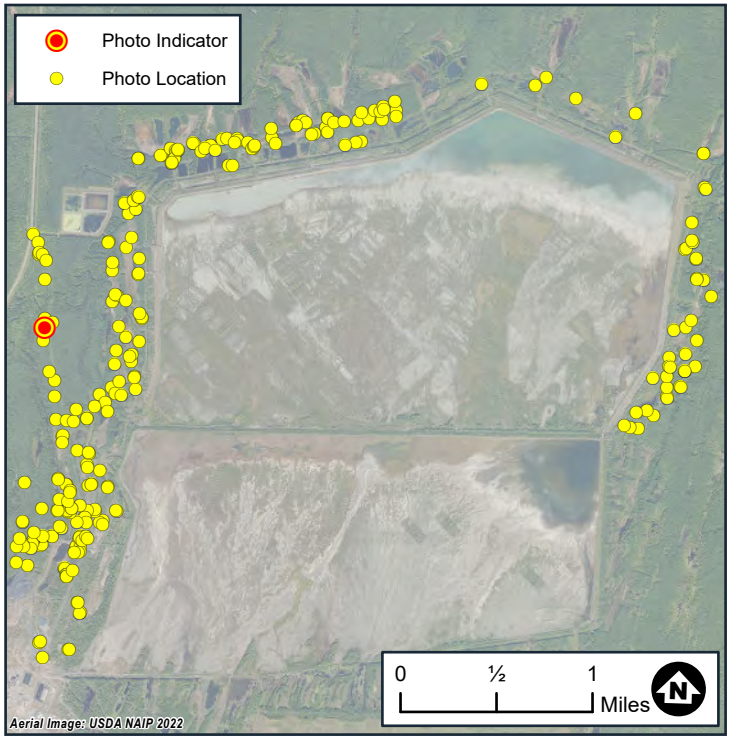
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

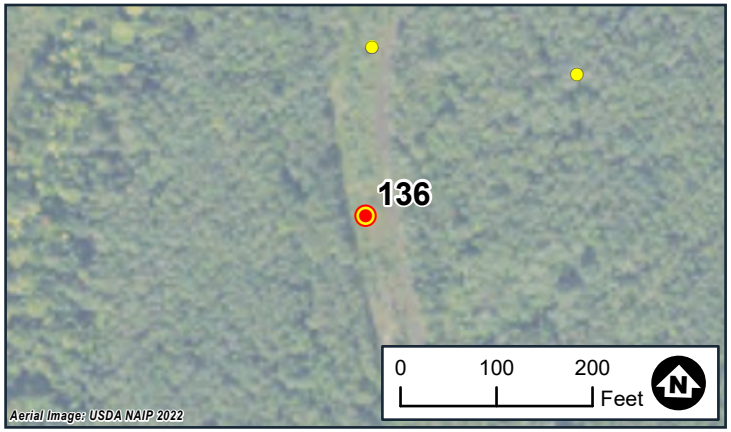
Date: 7/30/2024
Wetland ID:WTL89
Flag No.:89-4
Sample Point ID:WTL89-DP1-U

Note: Photo locations are approximate









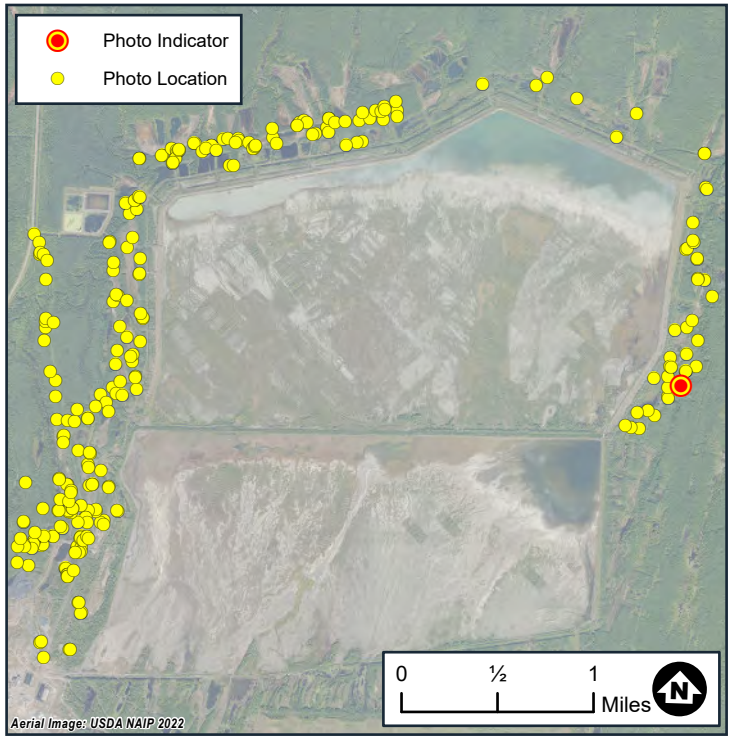
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

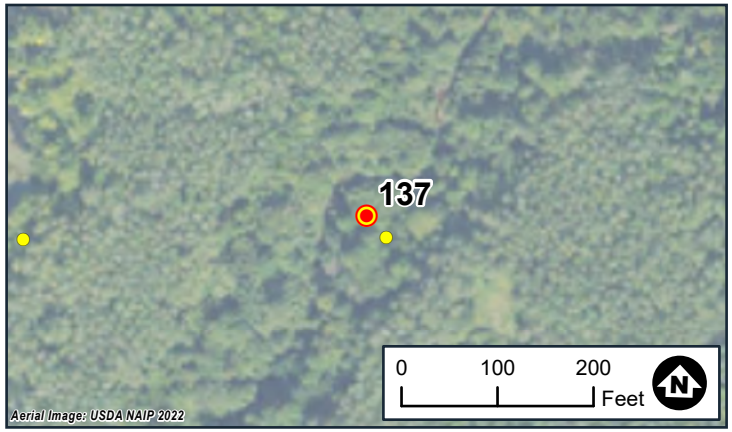
Date: 6/30/2024
Wetland ID:WTL90
Flag No.:90-12
Sample Point ID:WTL90-DP1-W

Note: Photo locations are approximate









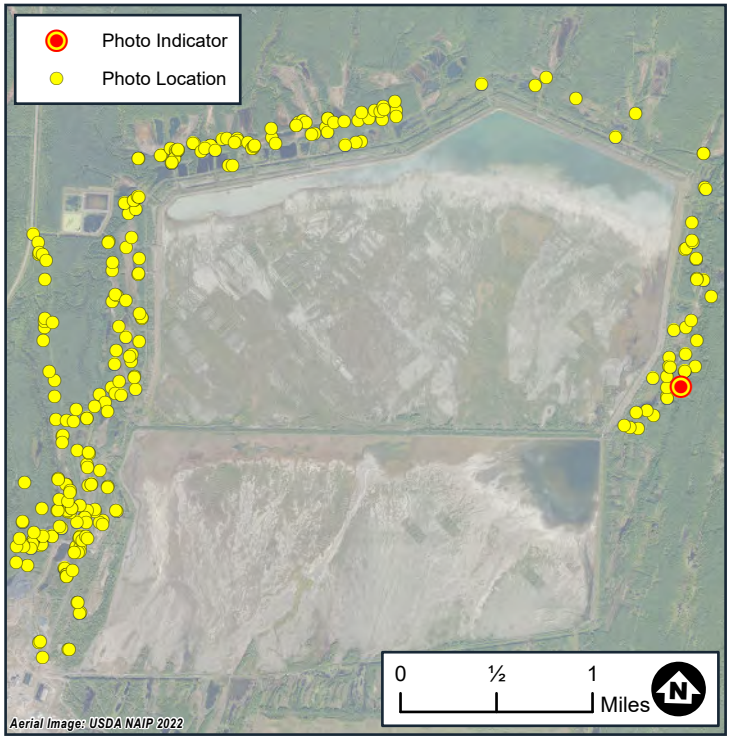
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

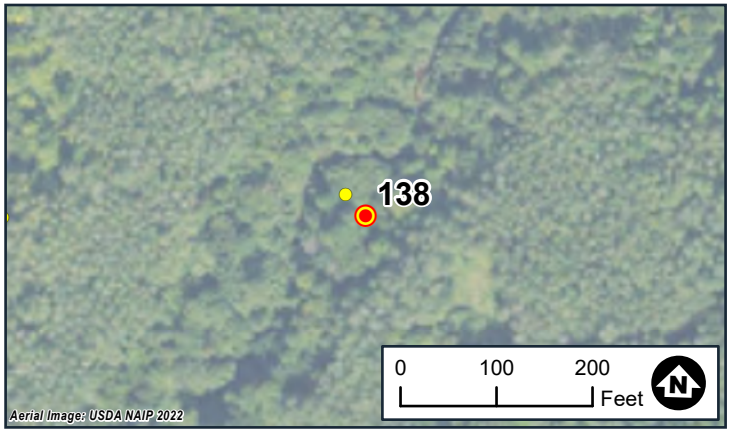
Date: 7/30/2024
Wetland ID:WTL91
Flag No.:91-17
Sample Point ID:WTL91-DP1-W

Note: Photo locations are approximate









Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 7/30/2024
Wetland ID:WTL91
Flag No.:91-18
Sample Point ID:WTL91-DP1-U

Note: Photo locations are approximate

Photo 139-1



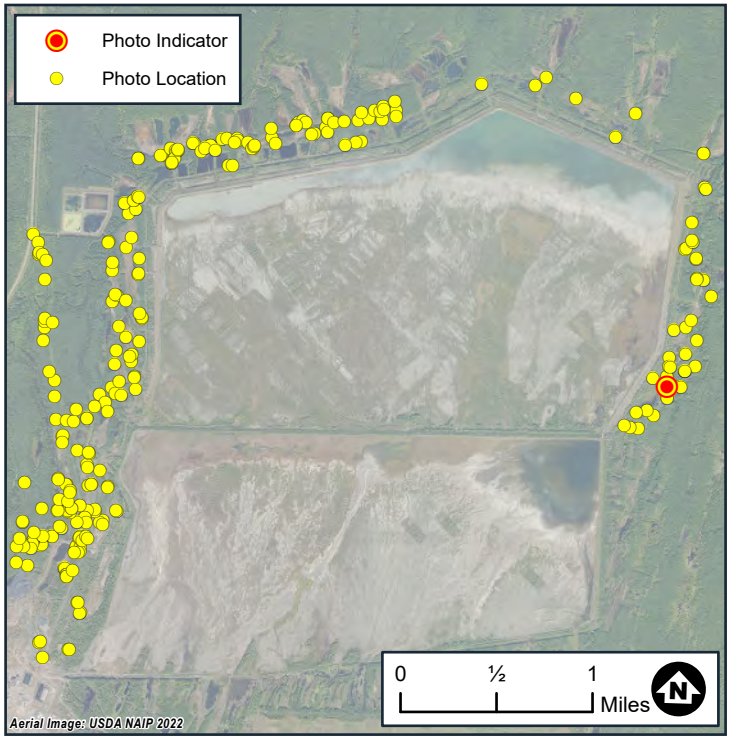
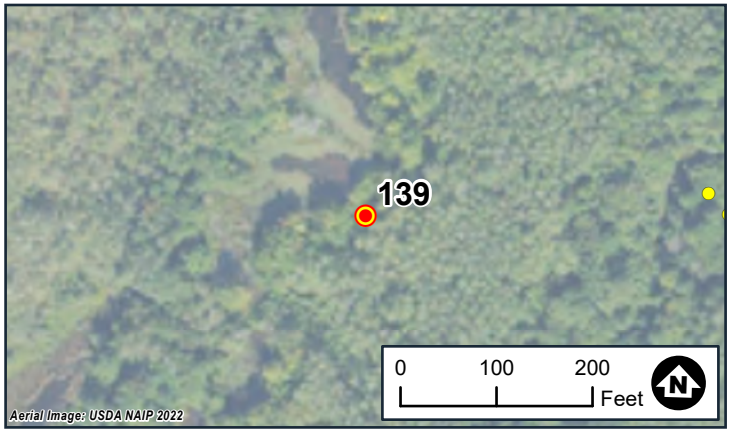


Photo 139-2





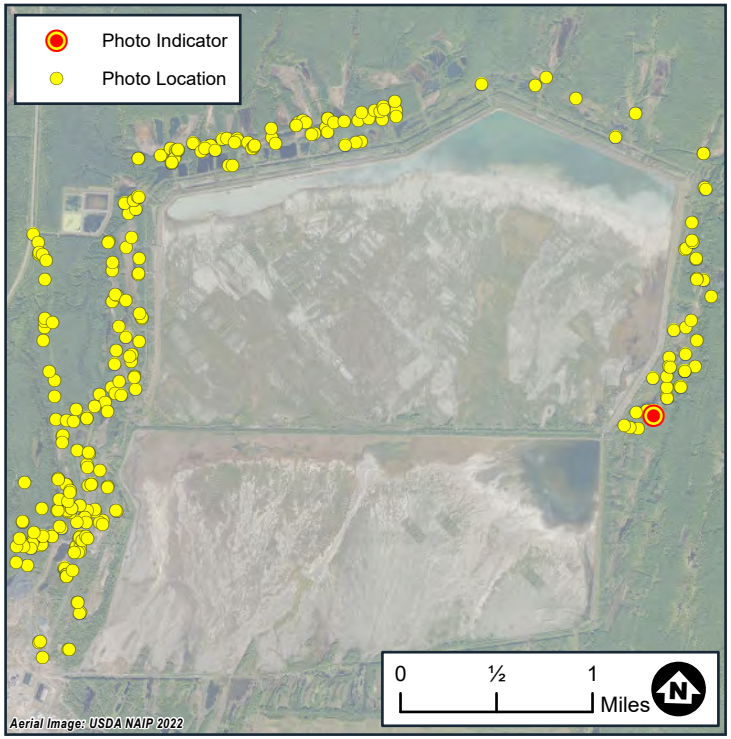
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

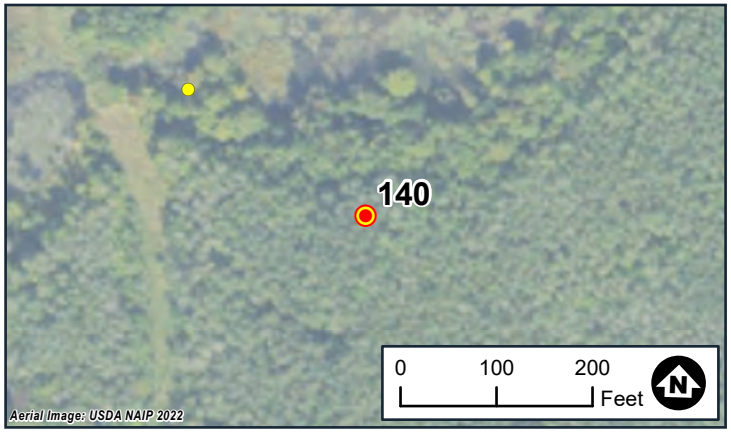
Date: 7/30/2024
Wetland ID:WTL91
Flag No.:91-142
Sample Point ID:N/A

Note: Photo locations are approximate









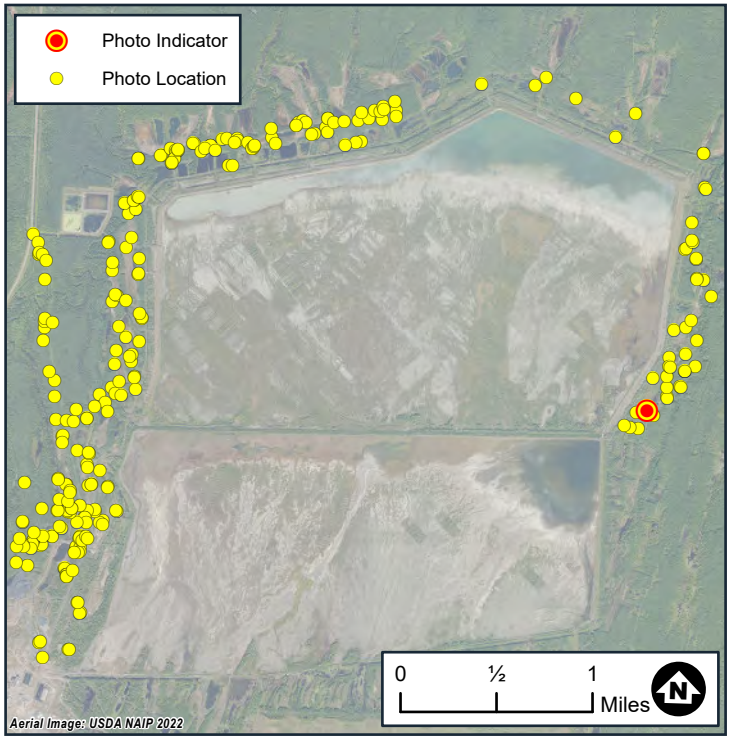
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

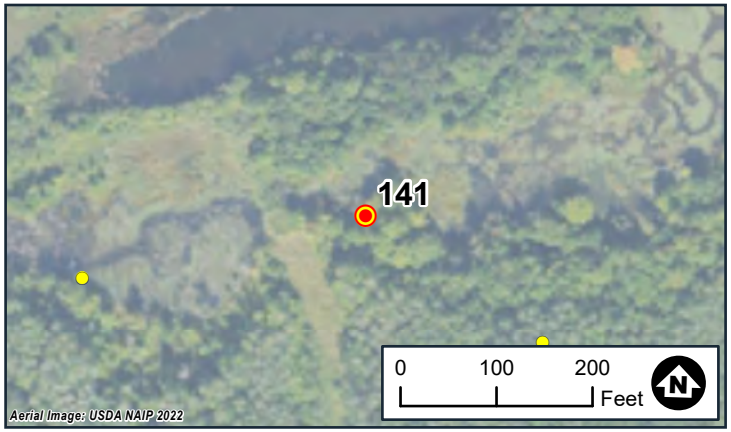
Date: 7/31/2024
Wetland ID:WTL91
Flag No.:91-189
Sample Point ID:WTL91-DP2-W

Note: Photo locations are approximate







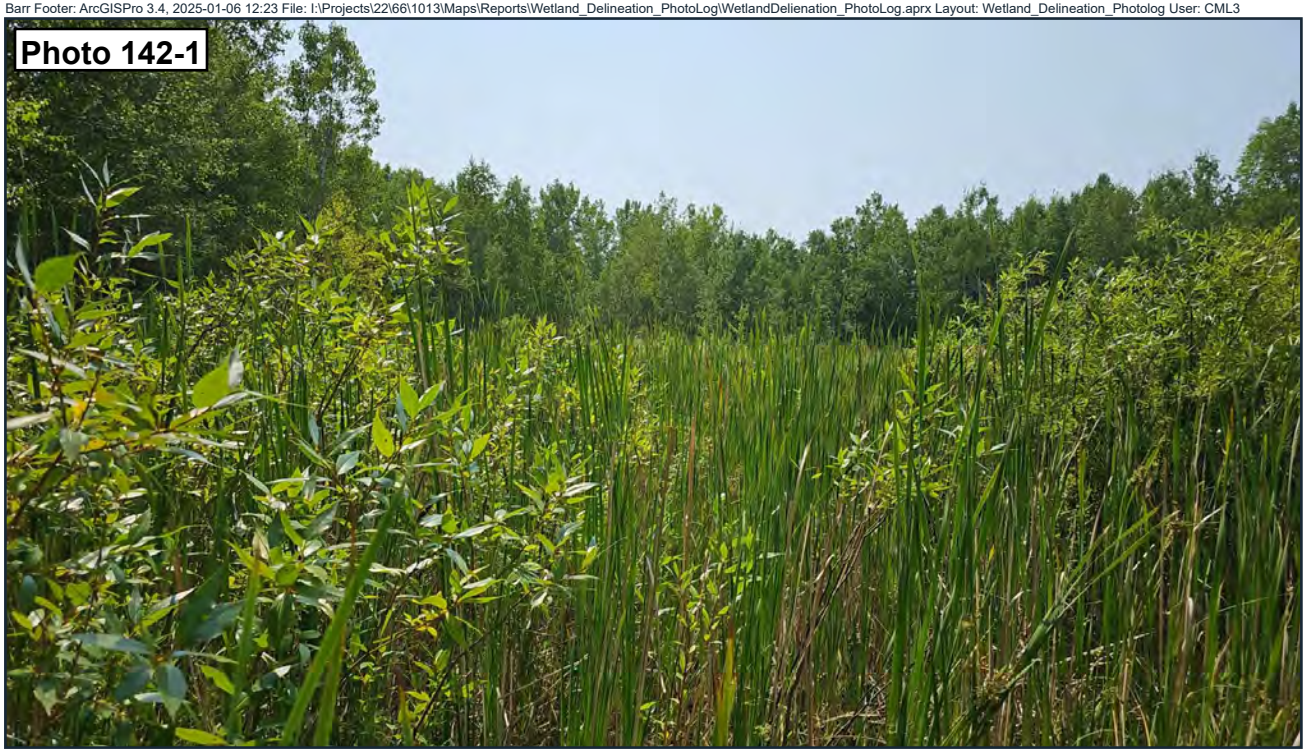


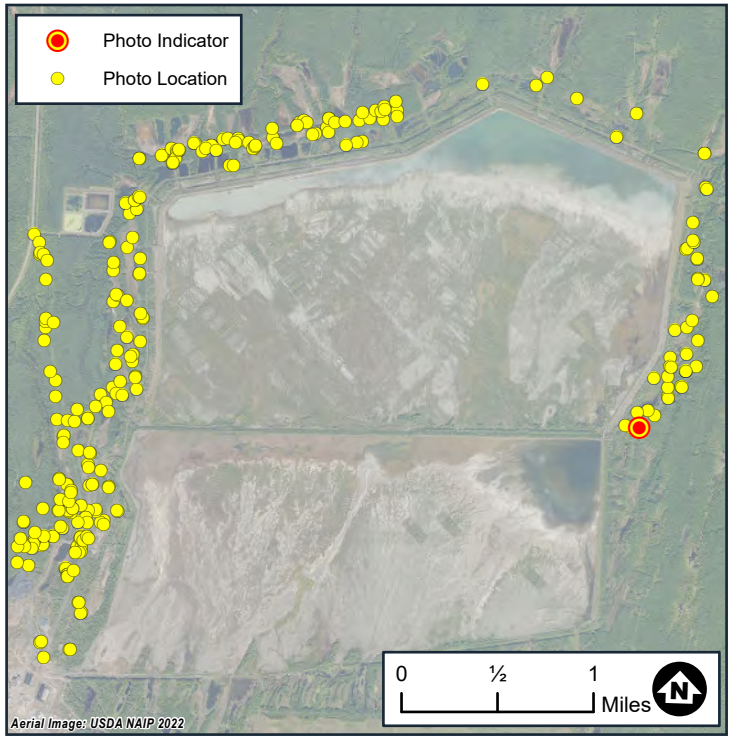
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

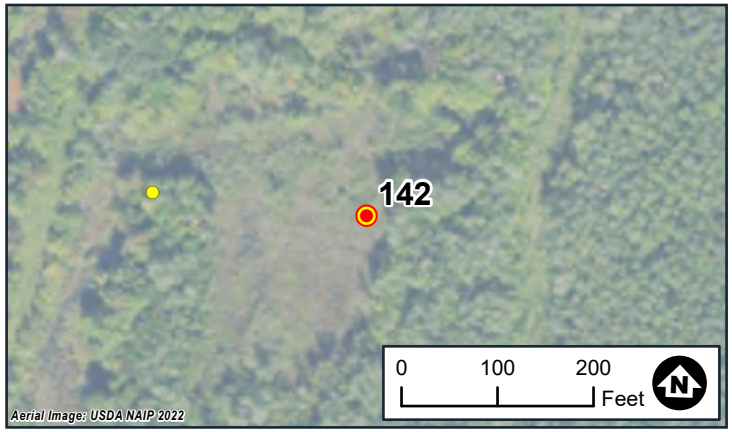
Date: 7/31/2024
Wetland ID:WTL91
Flag No.:91-233
Sample Point ID:WTL91-DP3-W

Note: Photo locations are approximate









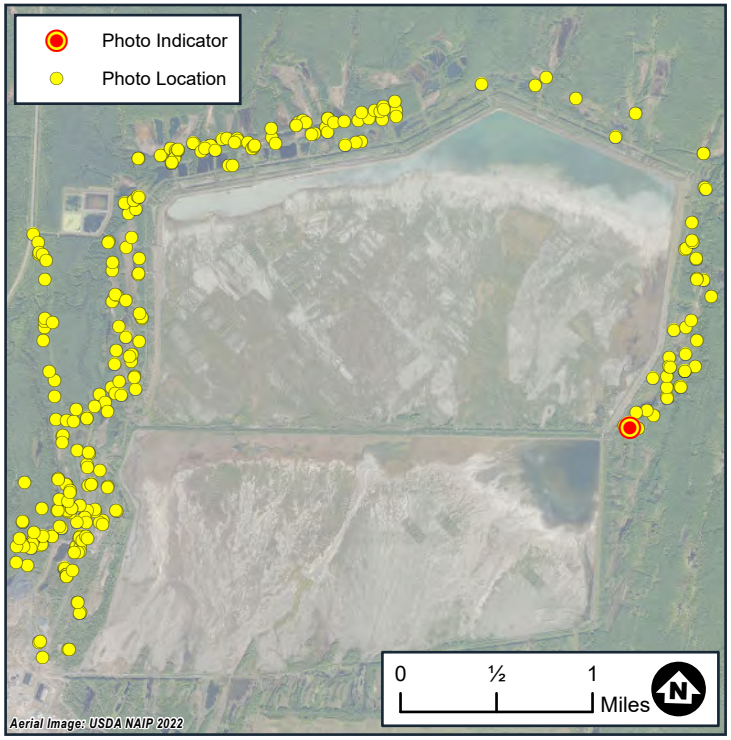
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

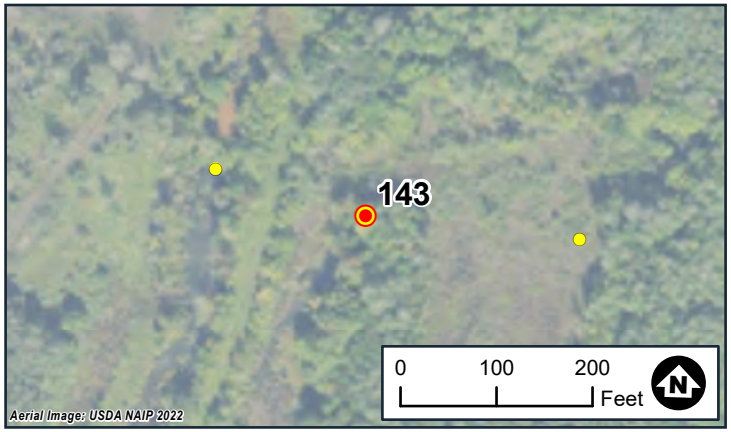
Date: 7/31/2024
Wetland ID:WTL91
Flag No.:91-298
Sample Point ID:WTL91-DP4-W

Note: Photo locations are approximate







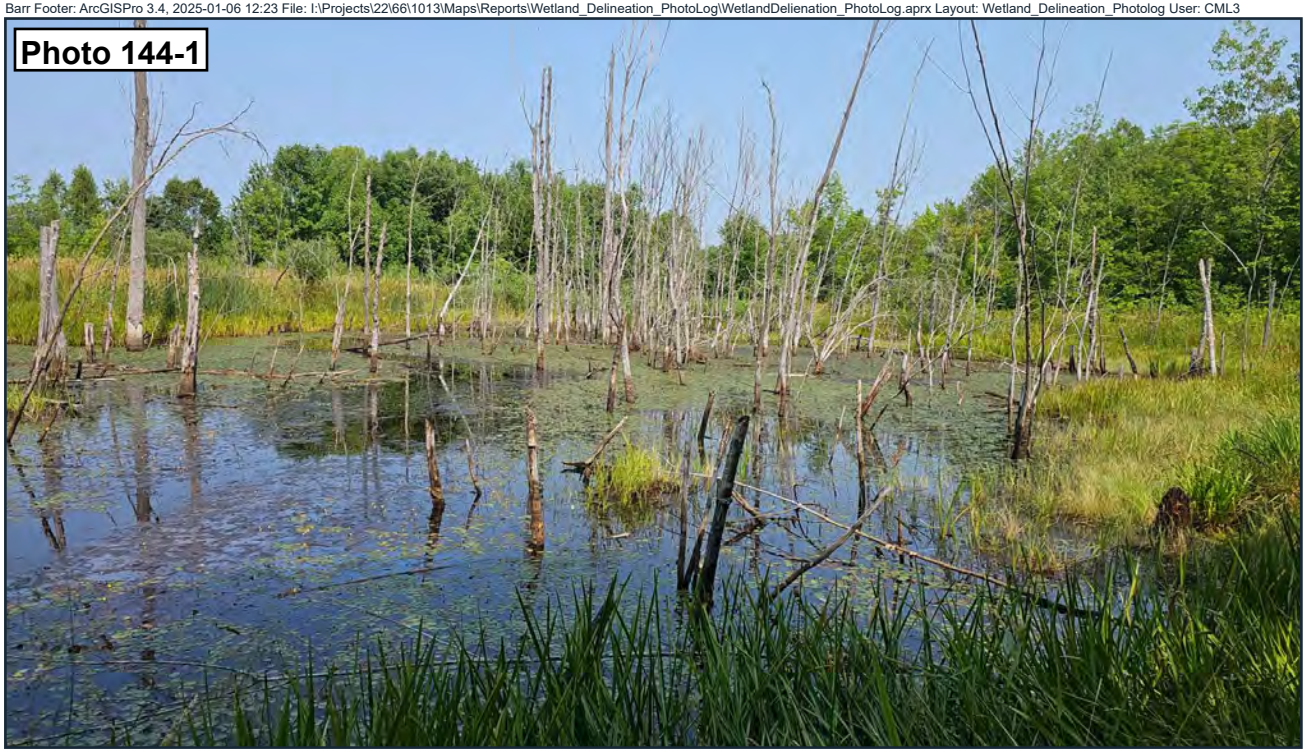


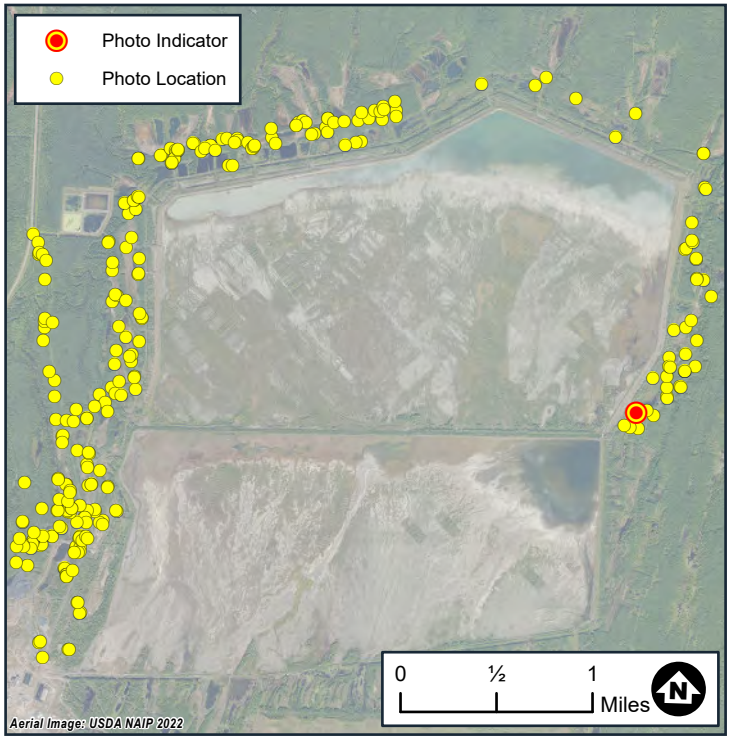
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

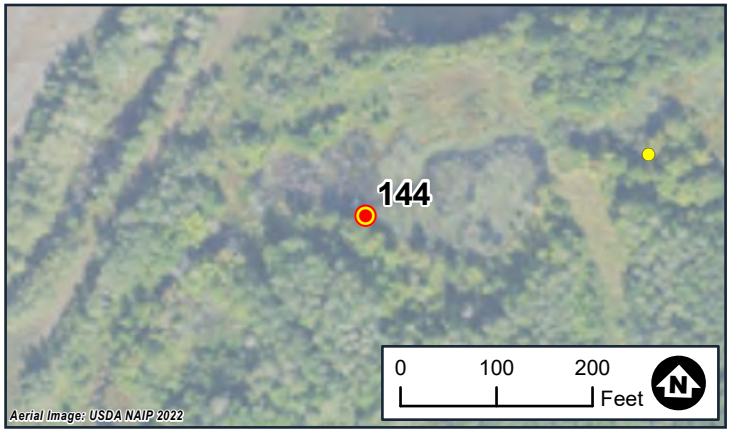
Date: 7/31/2024
Wetland ID:WTL91
Flag No.:91-317
Sample Point ID:N/A

Note: Photo locations are approximate









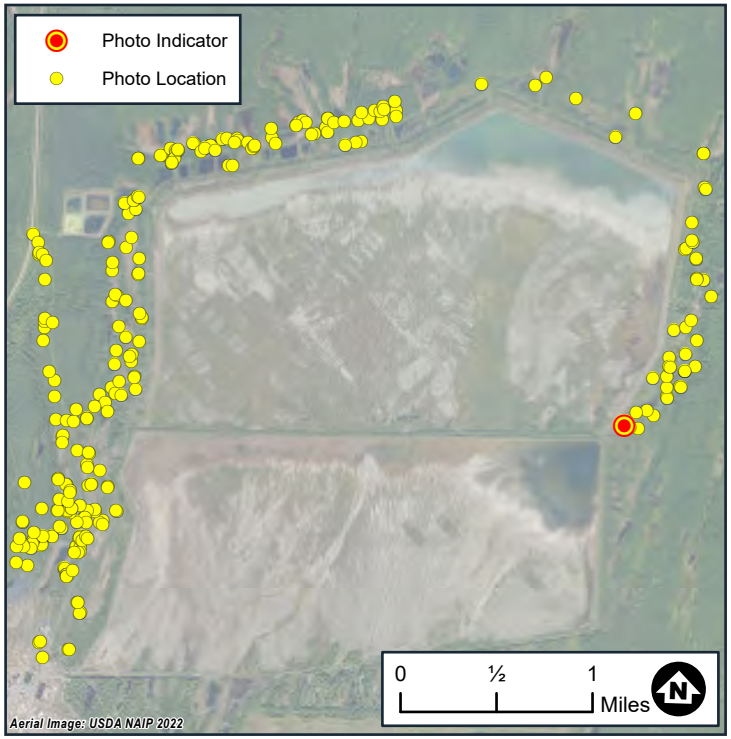
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

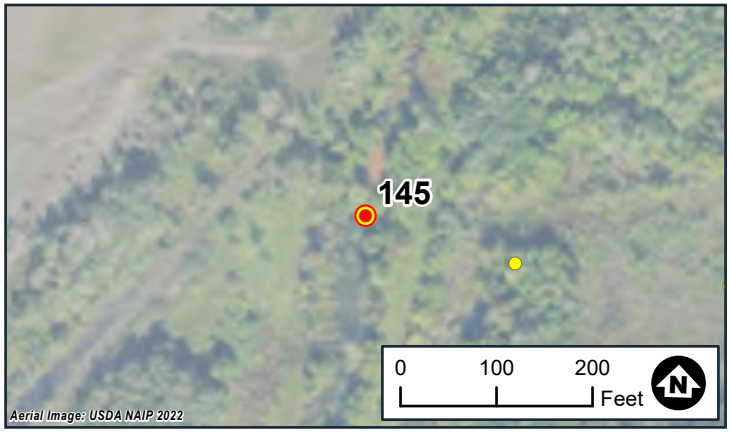
BARR

Date: 7/31/2024
Wetland ID:WTL91
Flag No.:91-373
Sample Point ID:N/A

Note: Photo locations are approximate







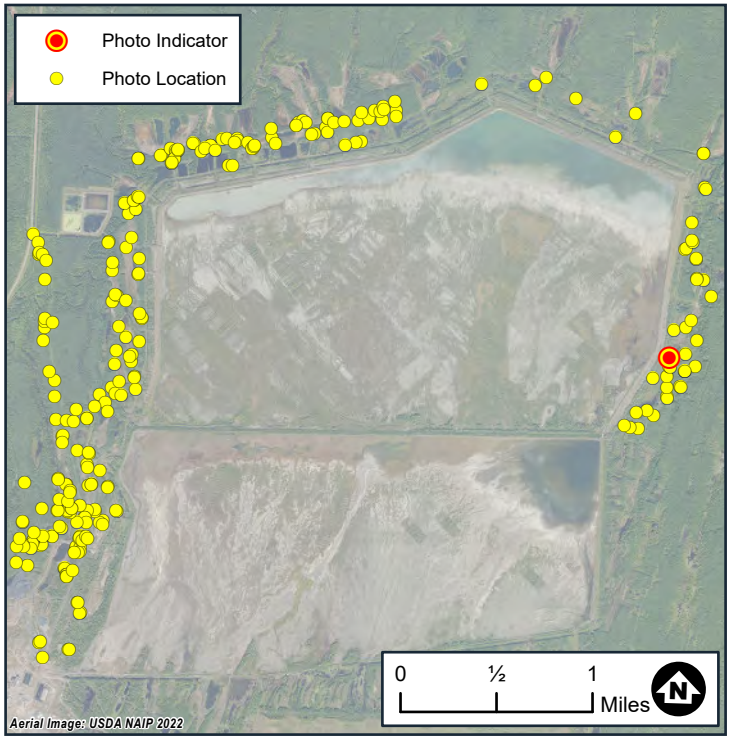
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

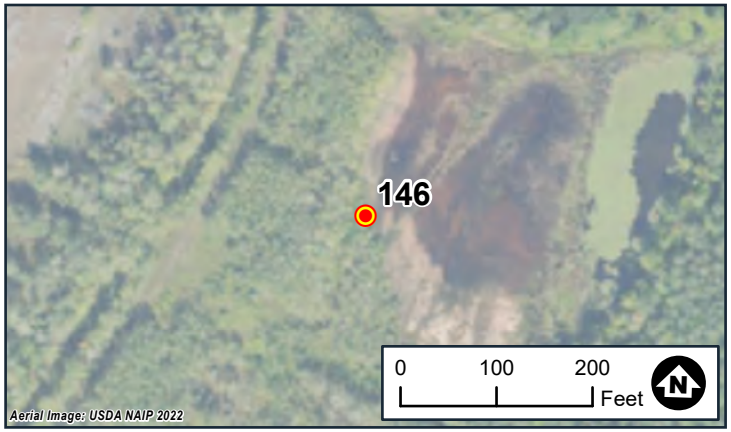
Date: 7/31/2024
Wetland ID:WTL91
Flag No.:91-414
Sample Point ID:N/A

Note: Photo locations are approximate









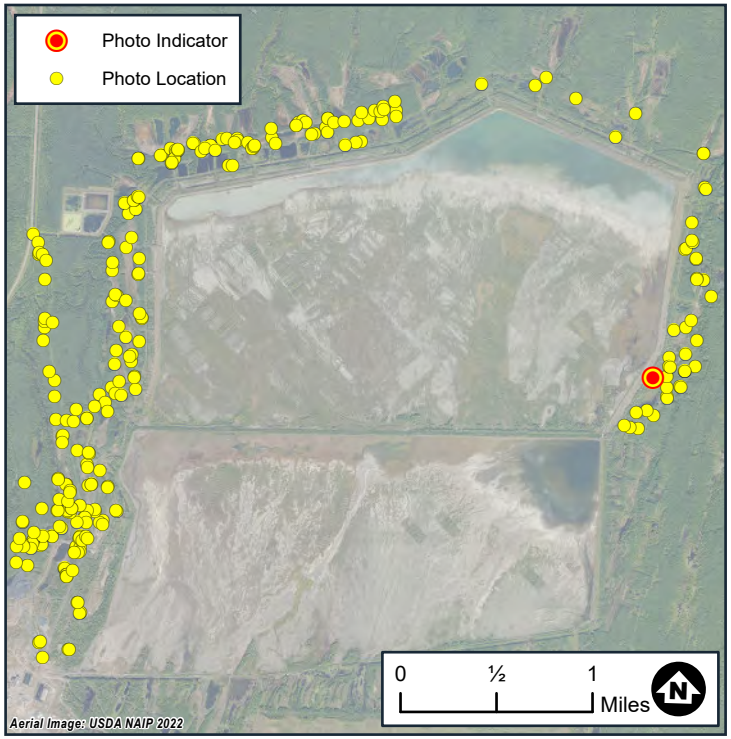
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

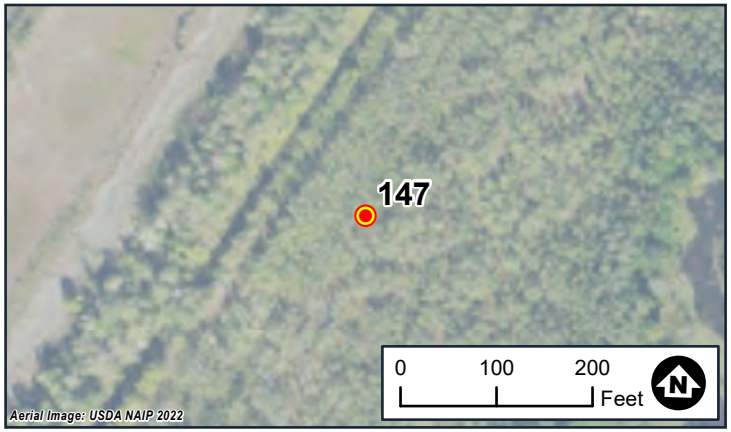
Date: 8/1/2024
Wetland ID:WTL91
Flag No.:91-567
Sample Point ID:N/A

Note: Photo locations are approximate









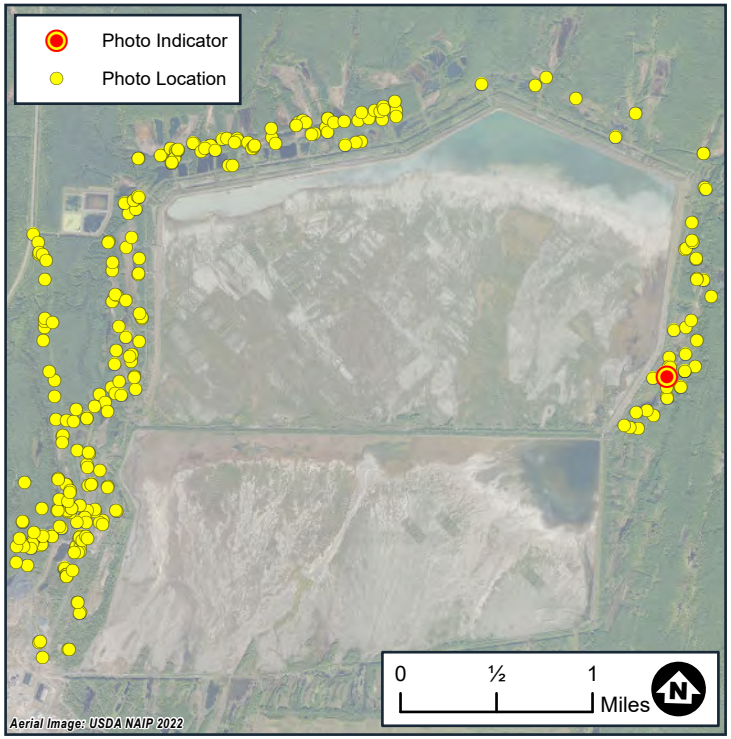
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

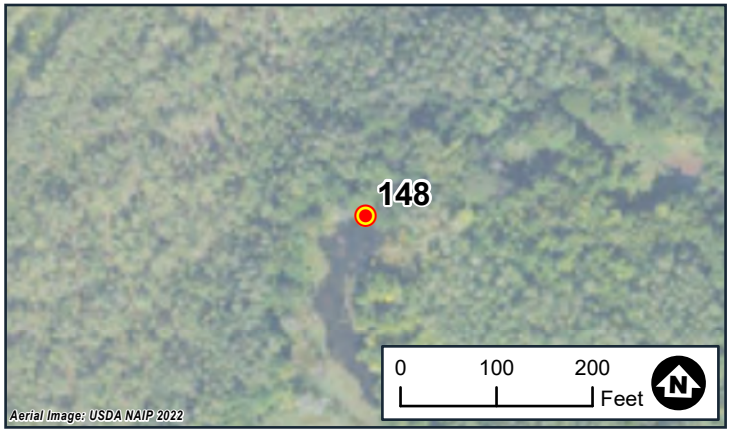
Date: 8/1/2024
Wetland ID:WTL91
Flag No.:91-623
Sample Point ID:N/A

Note: Photo locations are approximate









Page 148 of 262
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 8/1/2024
Wetland ID:WTL91
Flag No.:91-77
Sample Point ID:N/A

Note: Photo locations are approximate

Photo 149-1



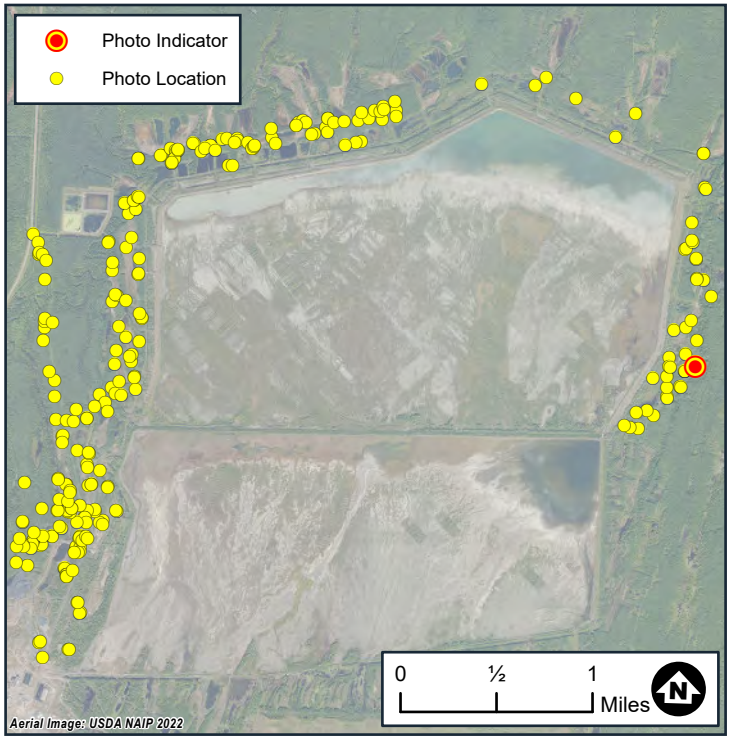
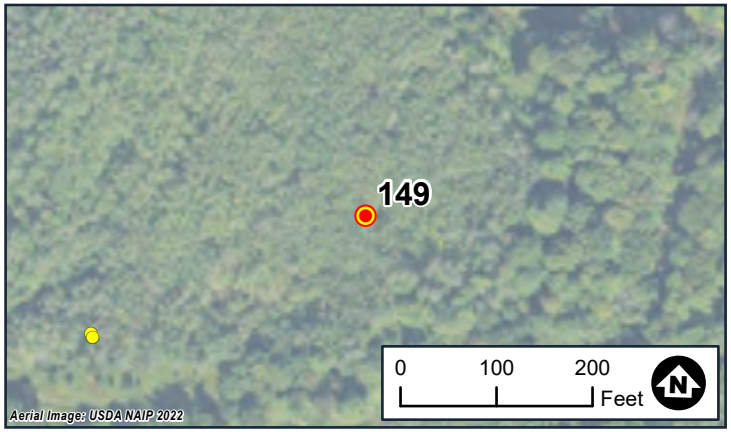


Photo 149-2





Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 8/1/2024
Wetland ID:WTL91
Flag No.:91-794
Sample Point ID:N/A

Note: Photo locations are approximate

Photo 150-1



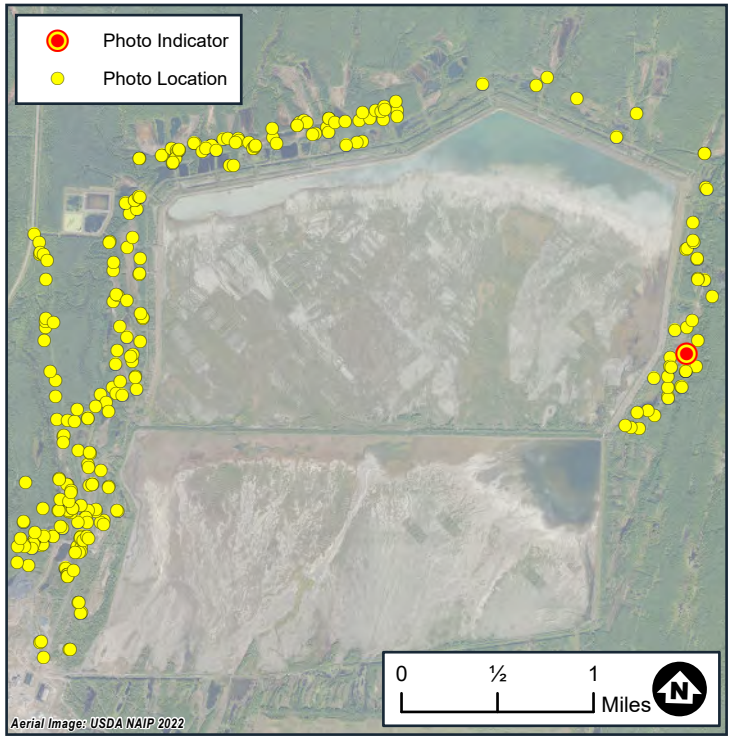
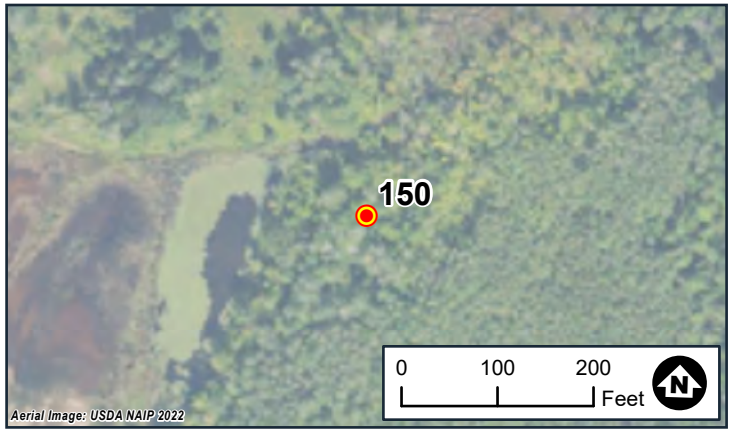


Photo 150-2





Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

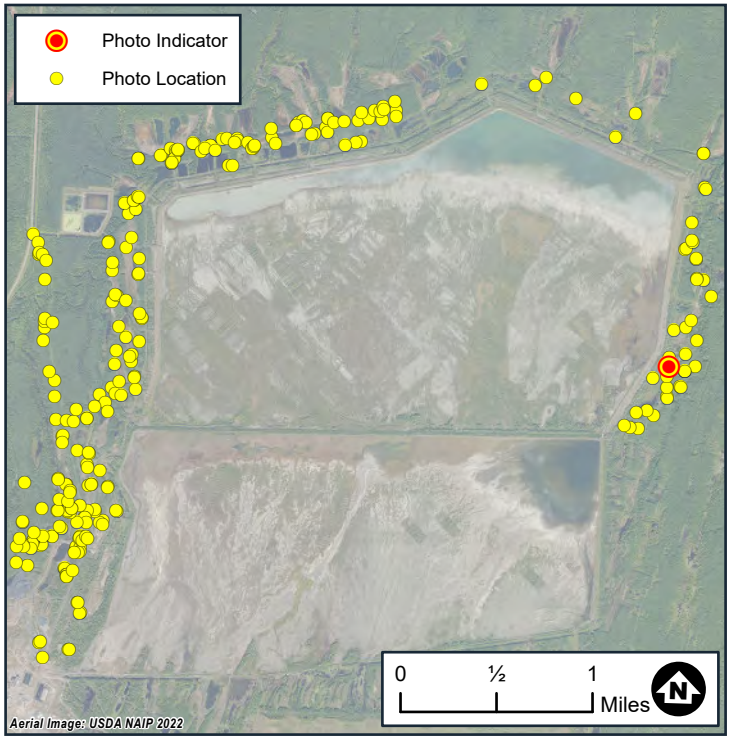
BARR

Date: 8/2/2024
Wetland ID:WTL91
Flag No.:91-914
Sample Point ID:N/A

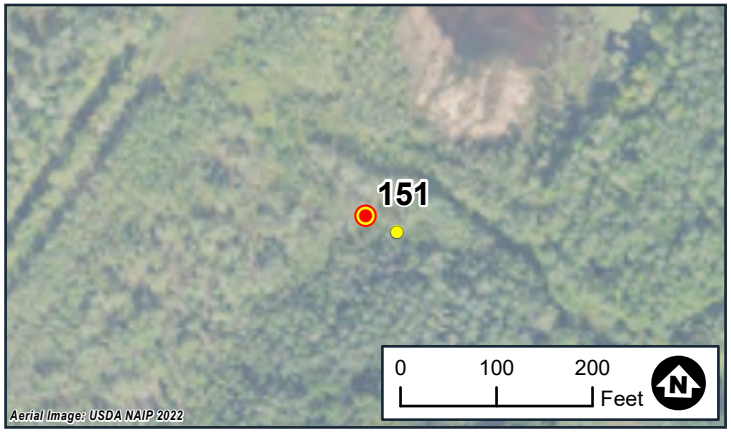
Note: Photo locations are approximate

Barr Footer: ArcGISPro 3.4, 2025-01-06 12:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_PhotoLog\WetlandDelienation_PhotoLog.aprx Layout: Wetland_Delineation_Photolog User: CML3









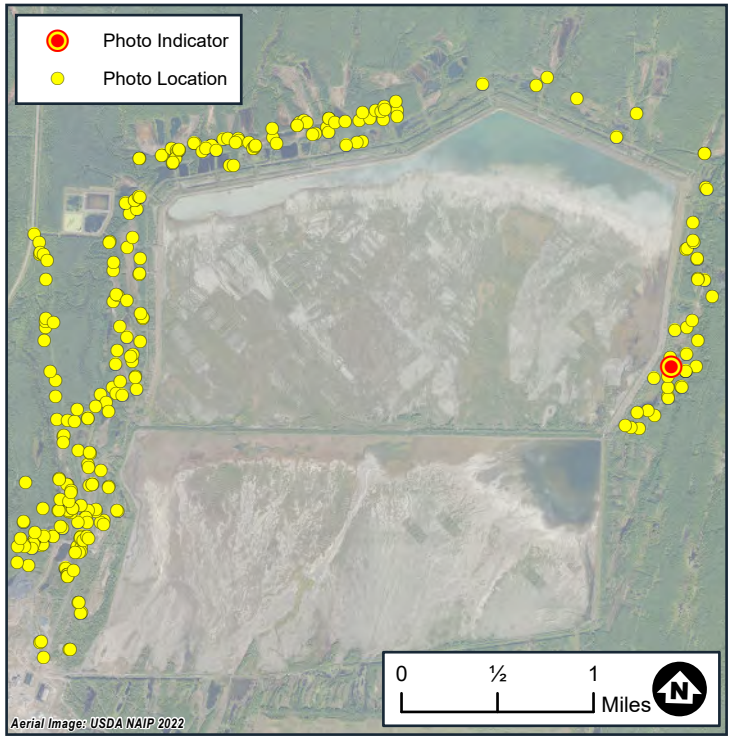
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

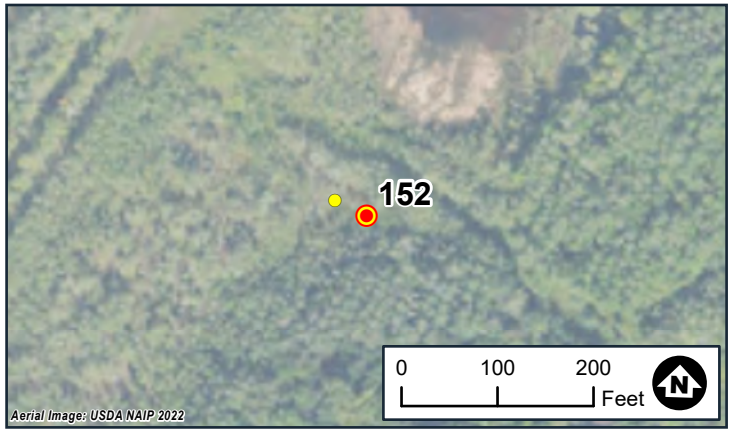
Date: 8/2/2024
Wetland ID:WTL91
Flag No.:91-952
Sample Point ID:WTL91-DP5-W

Note: Photo locations are approximate









Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 8/2/2024
Wetland ID:WTL91
Flag No.:91-952
Sample Point ID:WTL91-DP5-U

Note: Photo locations are approximate

Photo 153-1



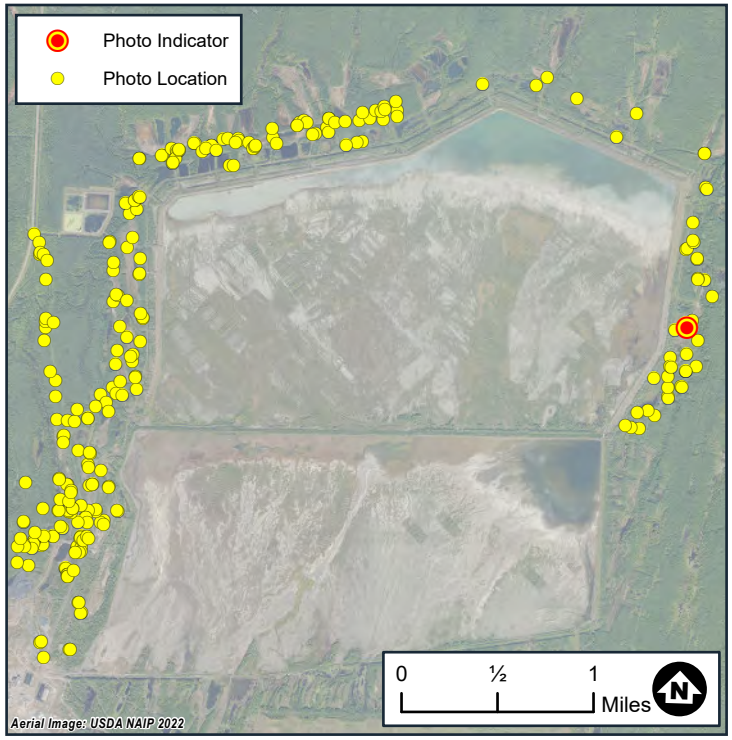
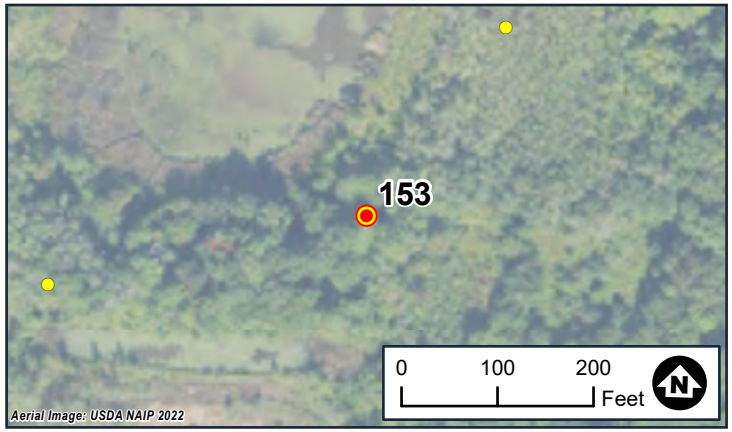


Photo 153-2



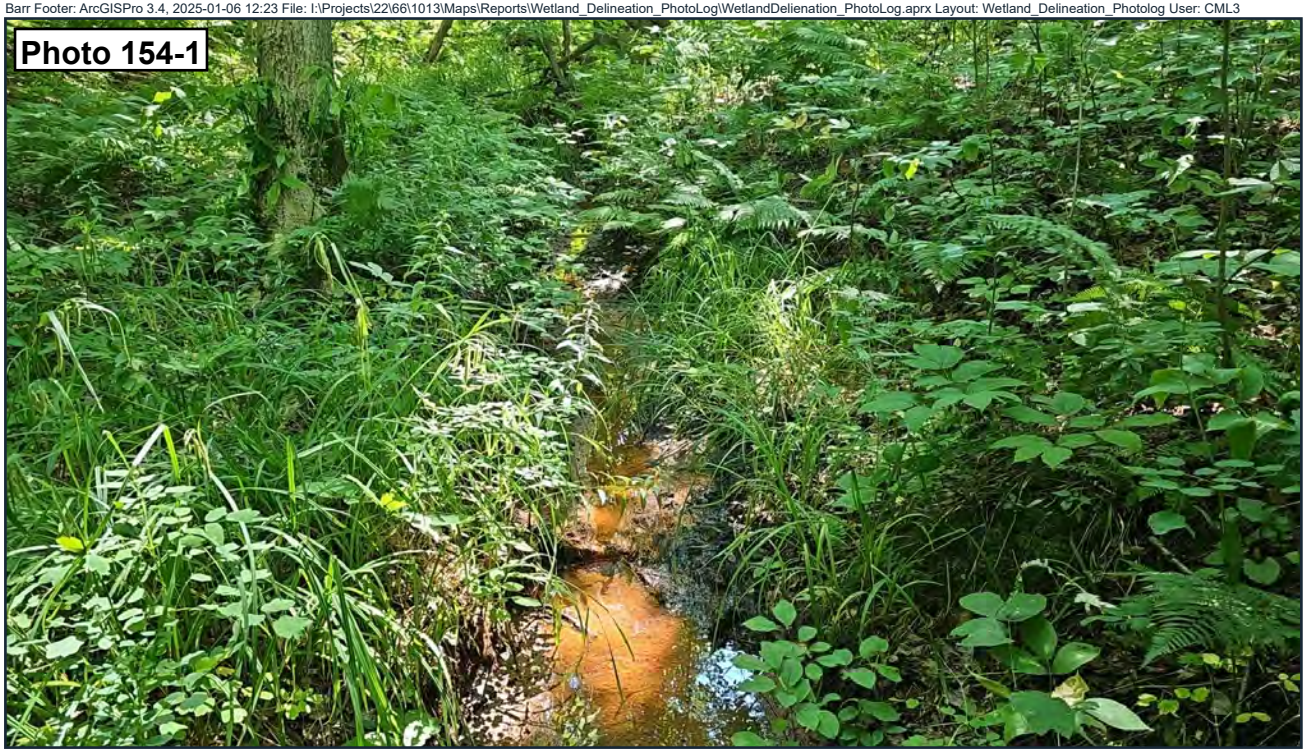


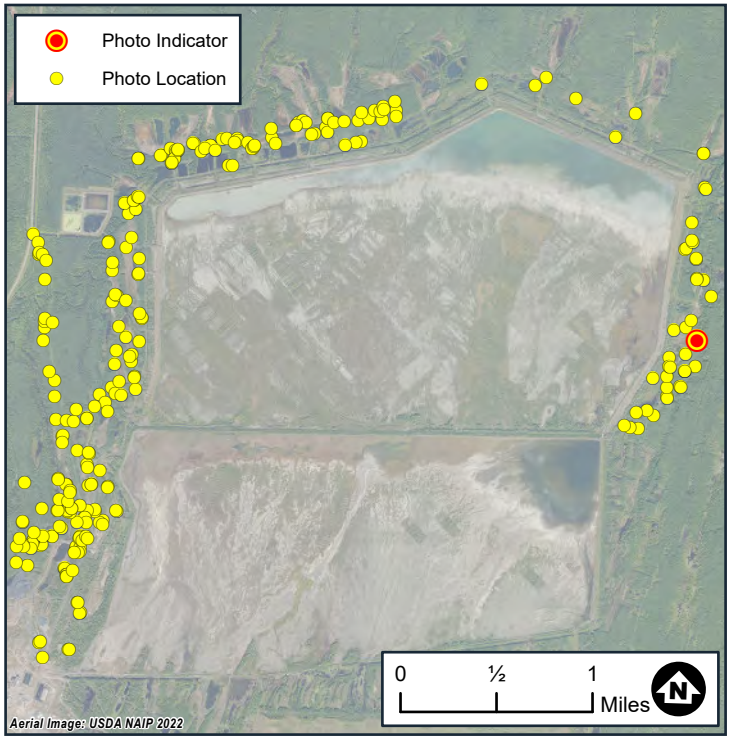
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

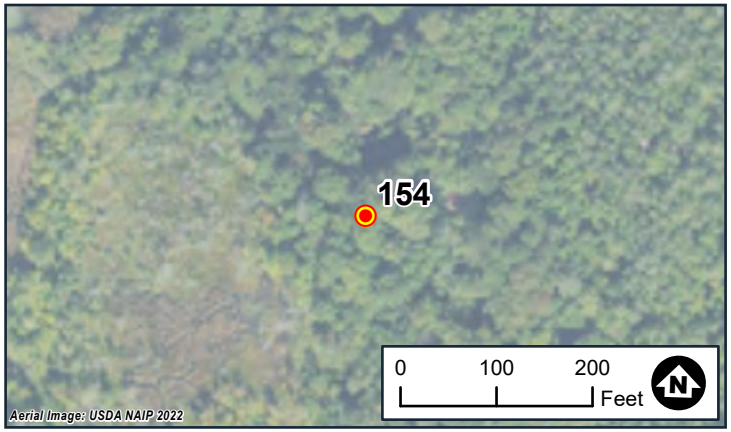
Date: 8/2/2024
Wetland ID:WTL91
Flag No.:91-1051
Sample Point ID:N/A

Note: Photo locations are approximate









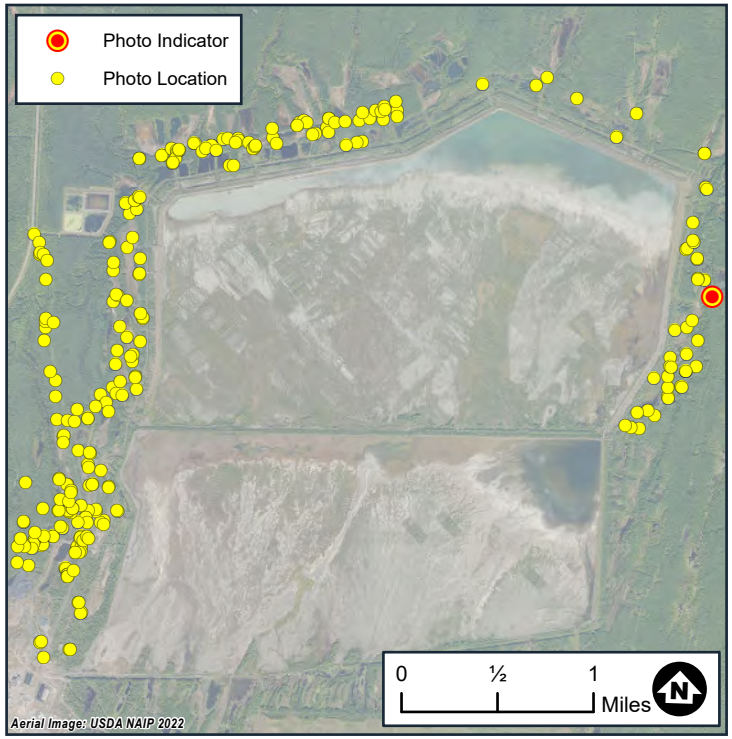
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

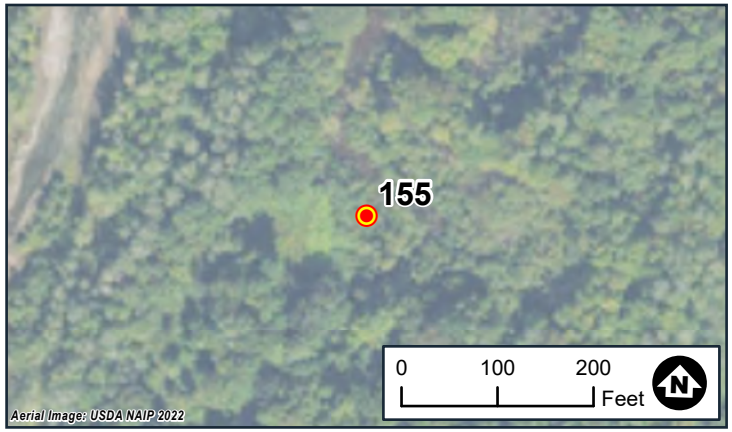
Date: 8/2/2024
Wetland ID:WTL91
Flag No.:91-1216
Sample Point ID:N/A

Note: Photo locations are approximate









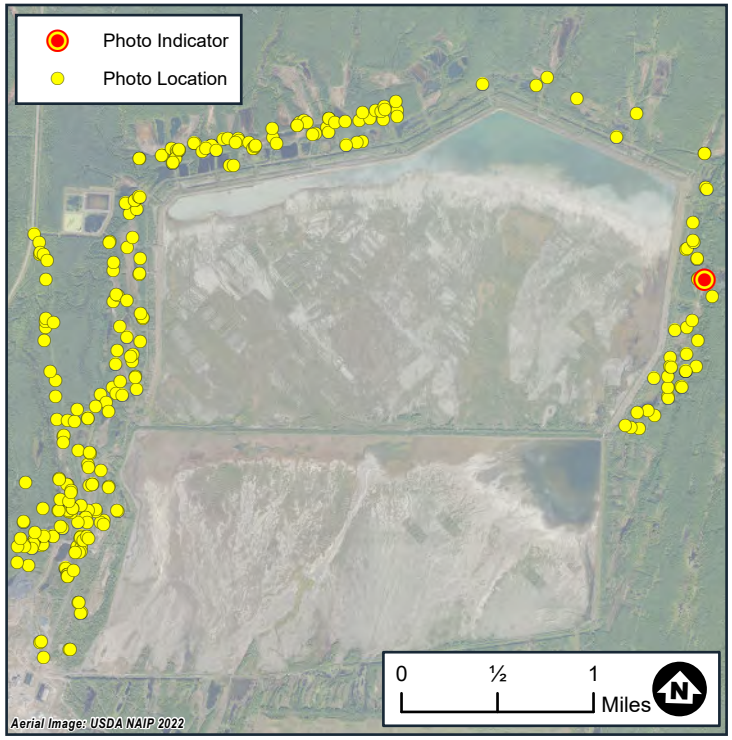
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

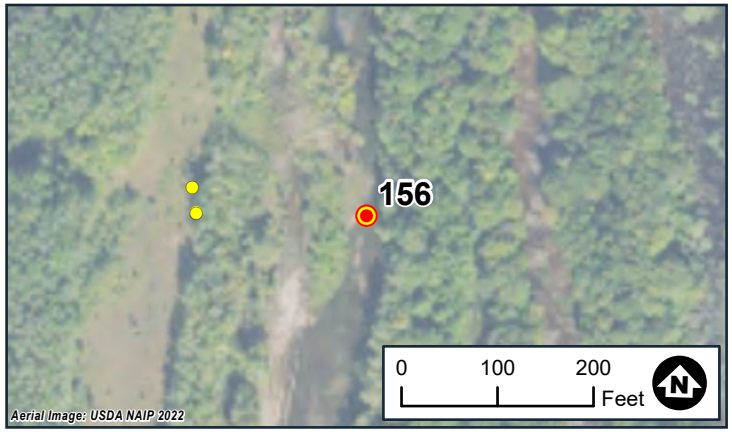
Date: 8/3/2024
Wetland ID:WTL91
Flag No.:91-1308
Sample Point ID:N/A

Note: Photo locations are approximate









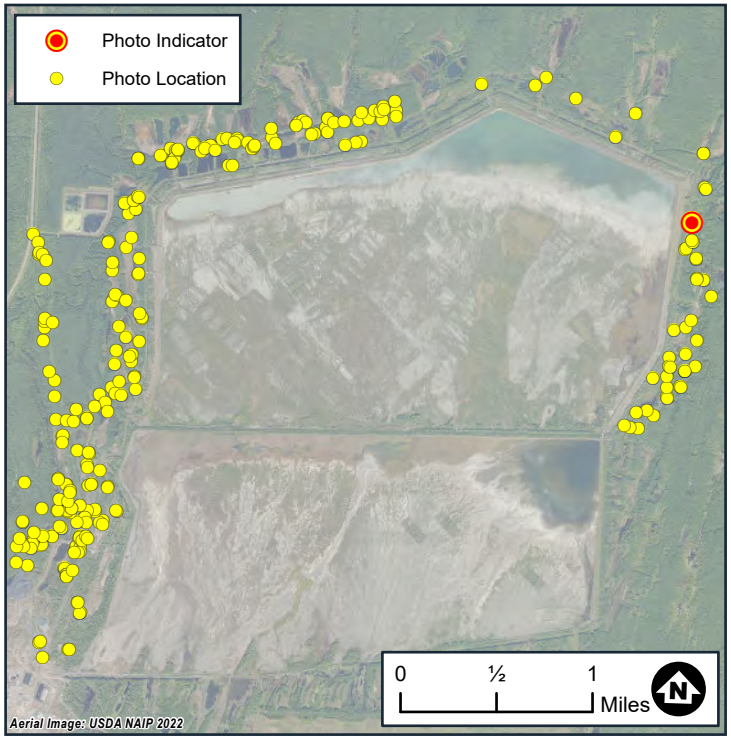
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

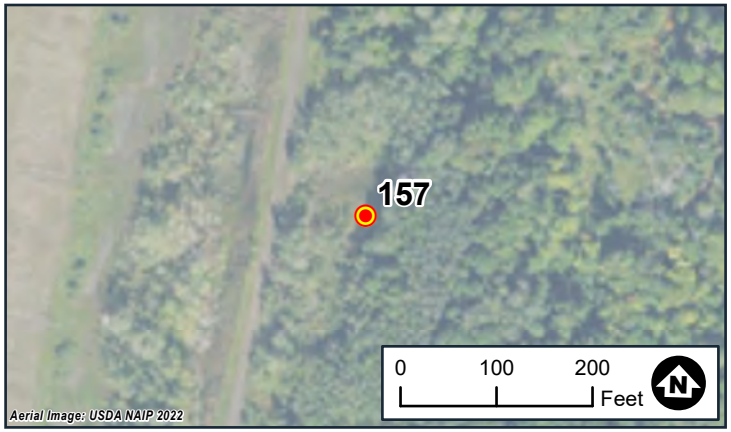
Date: 8/3/2024
Wetland ID:WTL91
Flag No.:91-1350
Sample Point ID:N/A

Note: Photo locations are approximate









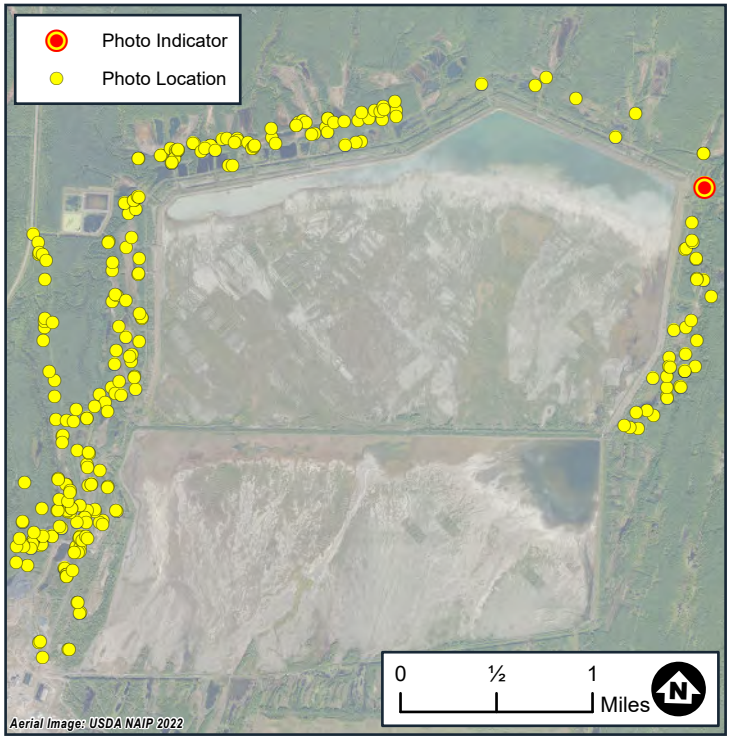
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

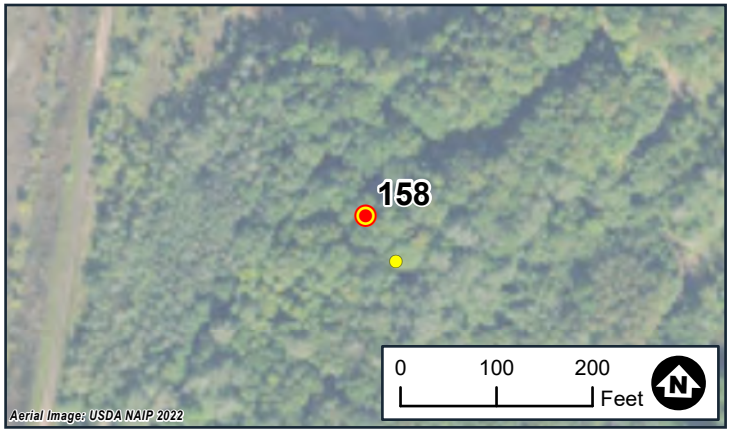
Date: 8/3/2024
Wetland ID:WTL91
Flag No.:91-1714
Sample Point ID:N/A

Note: Photo locations are approximate









Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 8/4/2024
Wetland ID:WTL91
Flag No.:91-1773
Sample Point ID:WTL91-DP6-W

Note: Photo locations are approximate

Photo 159-1



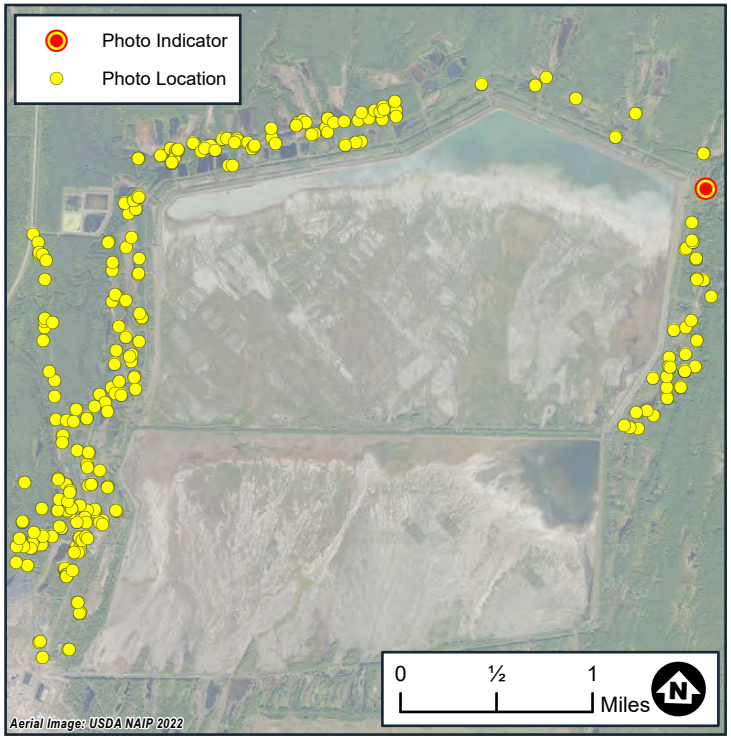
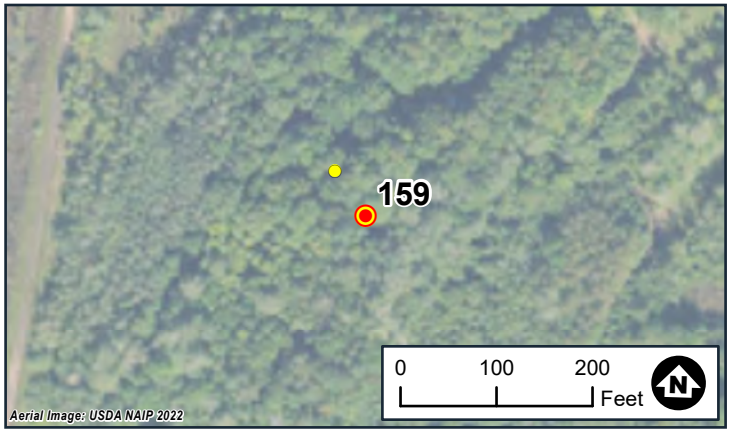


Photo 159-2





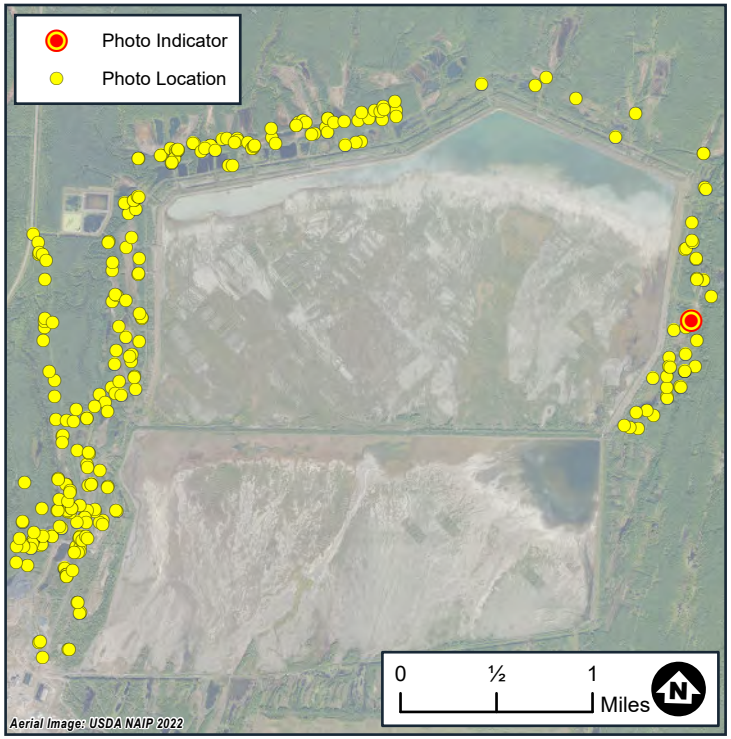
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

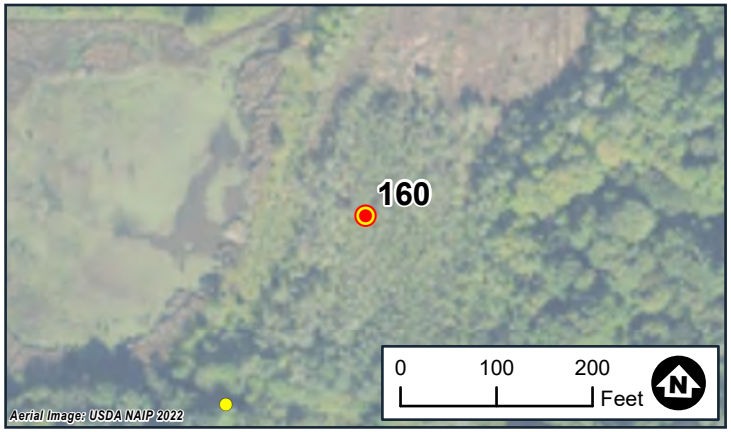
Date: 8/4/2024
Wetland ID:WTL91
Flag No.:91-1773
Sample Point ID:WTL91-DP6-U

Note: Photo locations are approximate







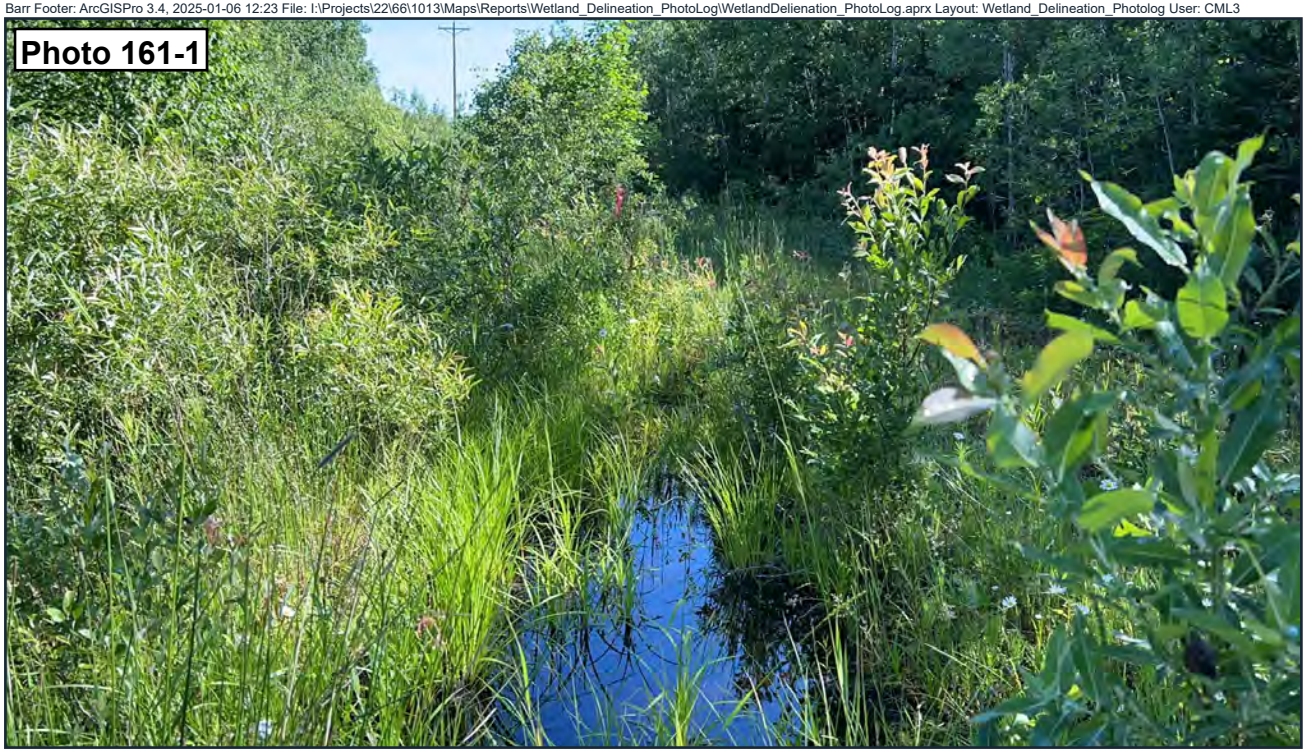


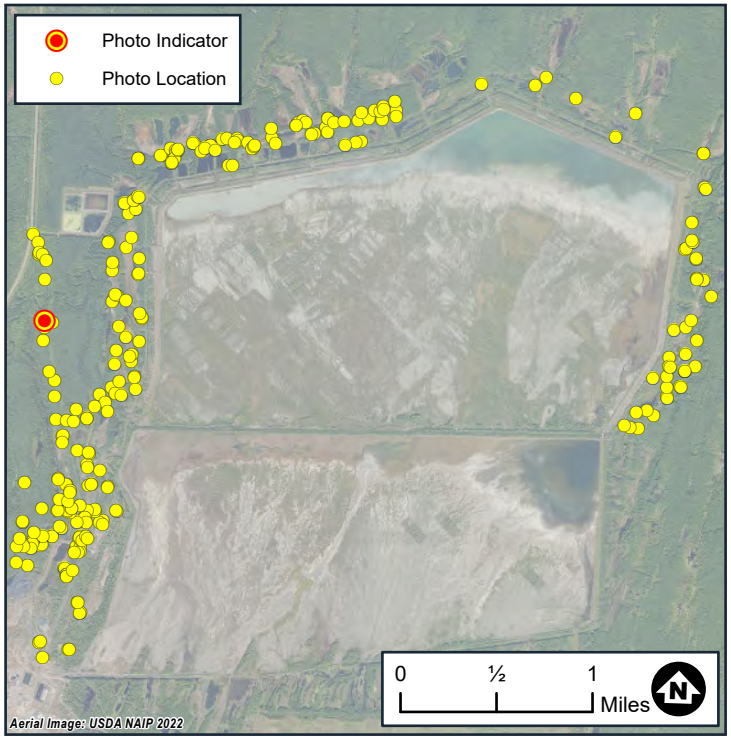
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

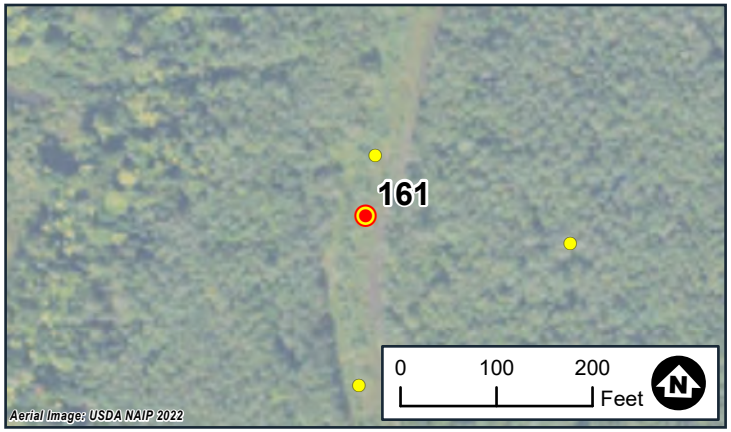
Date: 8/4/2024
Wetland ID:WTL91
Flag No.:91-1947
Sample Point ID:N/A

Note: Photo locations are approximate









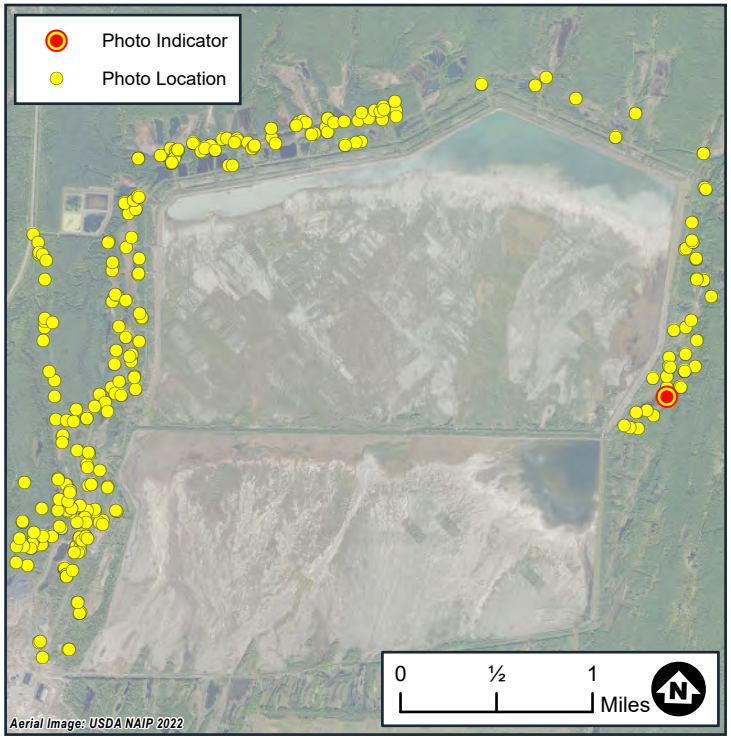
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

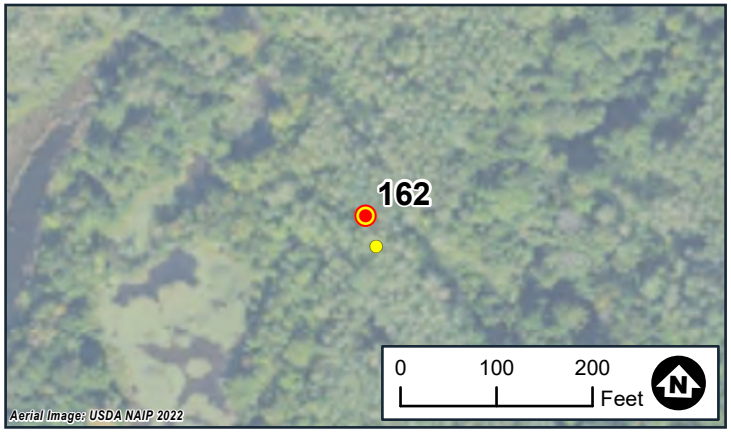
Date: 6/30/2024
Wetland ID:WTL92
Flag No.:92-1
Sample Point ID:N/A

Note: Photo locations are approximate









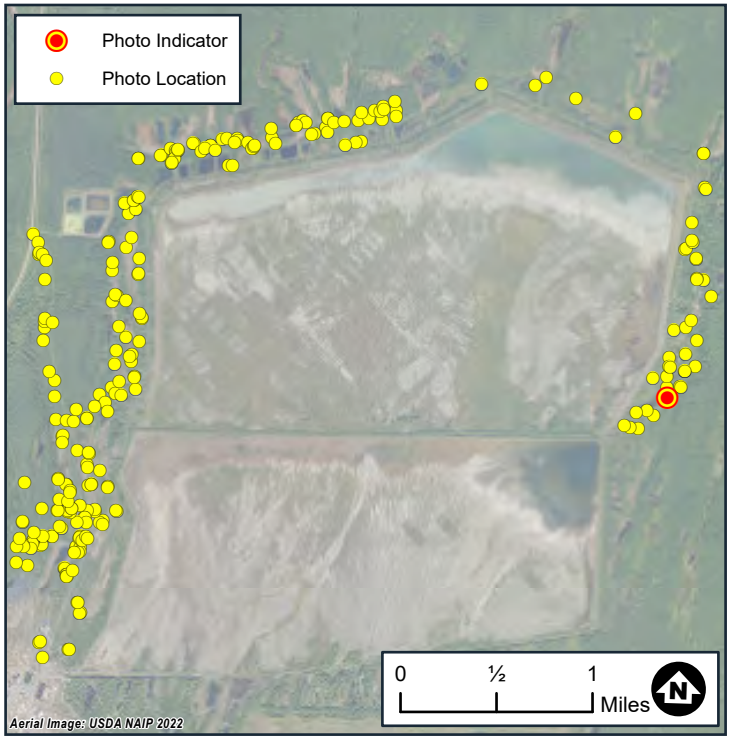
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

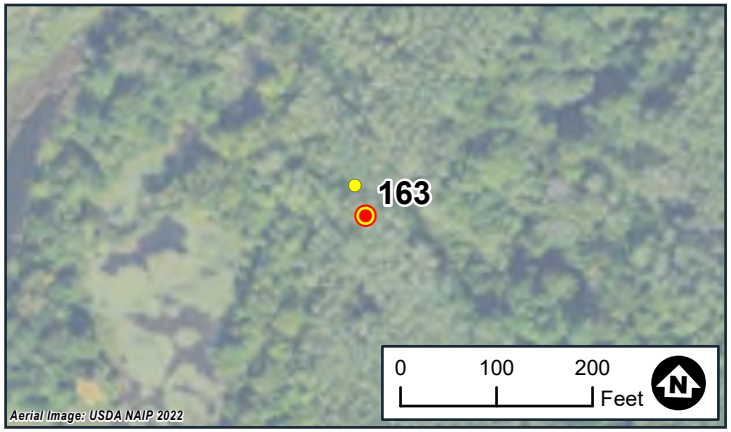
BARR

Date: 7/30/2024
Wetland ID:WTL93
Flag No.:93-3
Sample Point ID:WTL93-DP1-W

Note: Photo locations are approximate







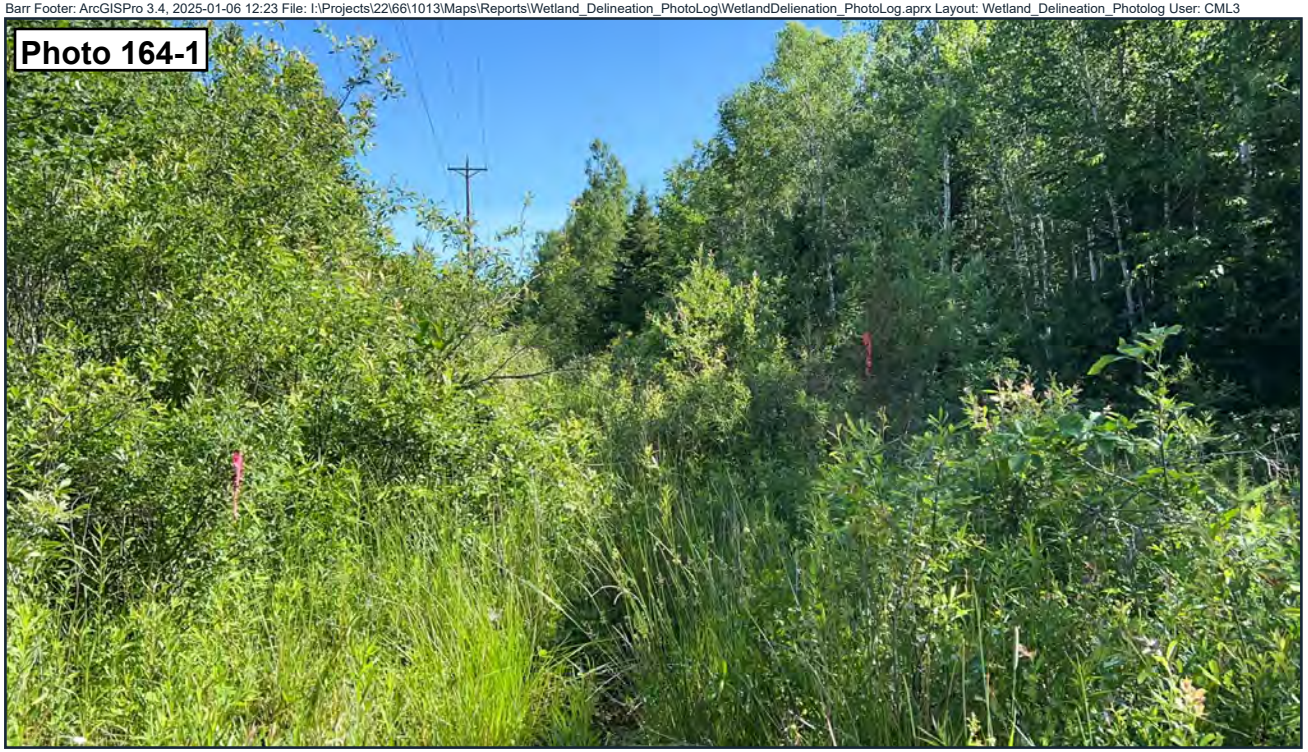
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 7/30/2024
Wetland ID:WTL93
Flag No.:93-3
Sample Point ID:WTL93-DP1-U

Note: Photo locations are approximate

Photo 164-1



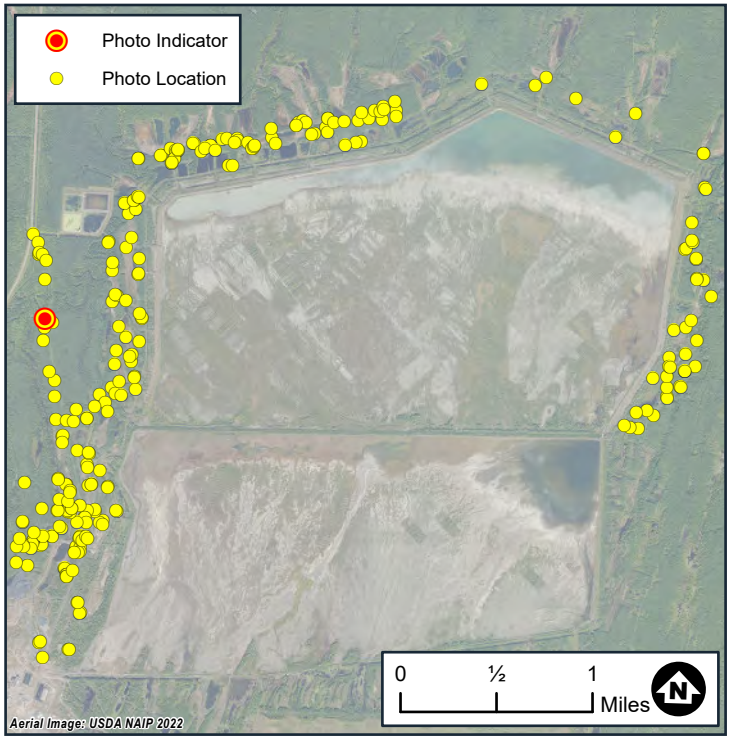
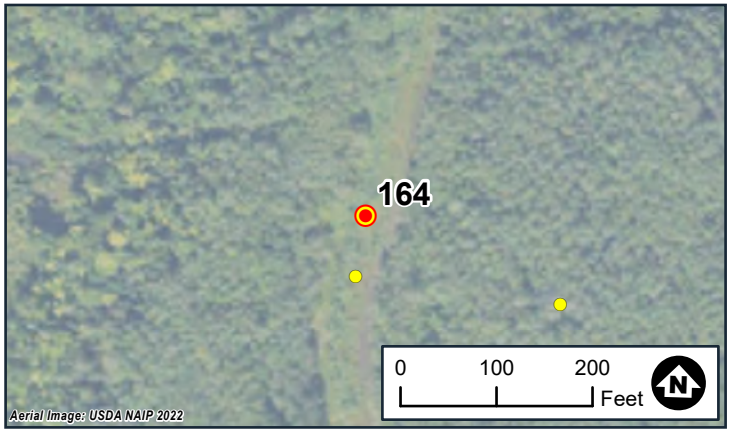


Photo 164-2





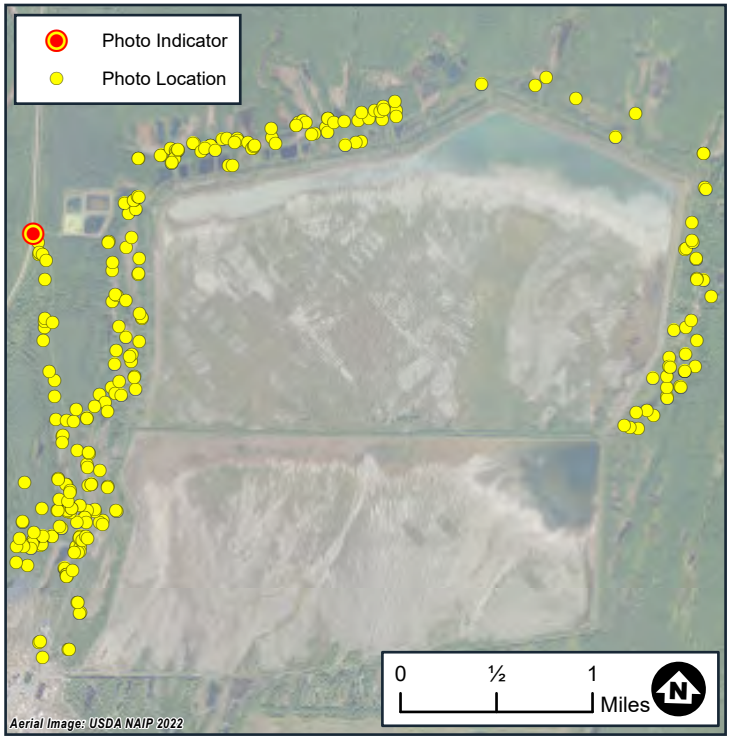
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

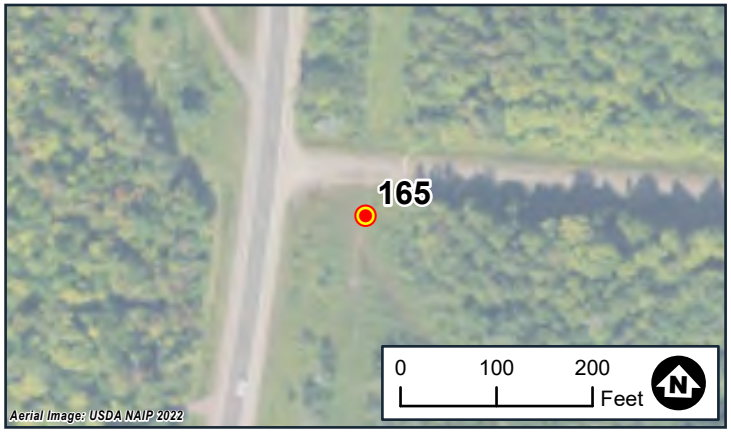
BARR

Date: 6/30/2024
Wetland ID:WTL94
Flag No.:94-1
Sample Point ID:N/A

Note: Photo locations are approximate







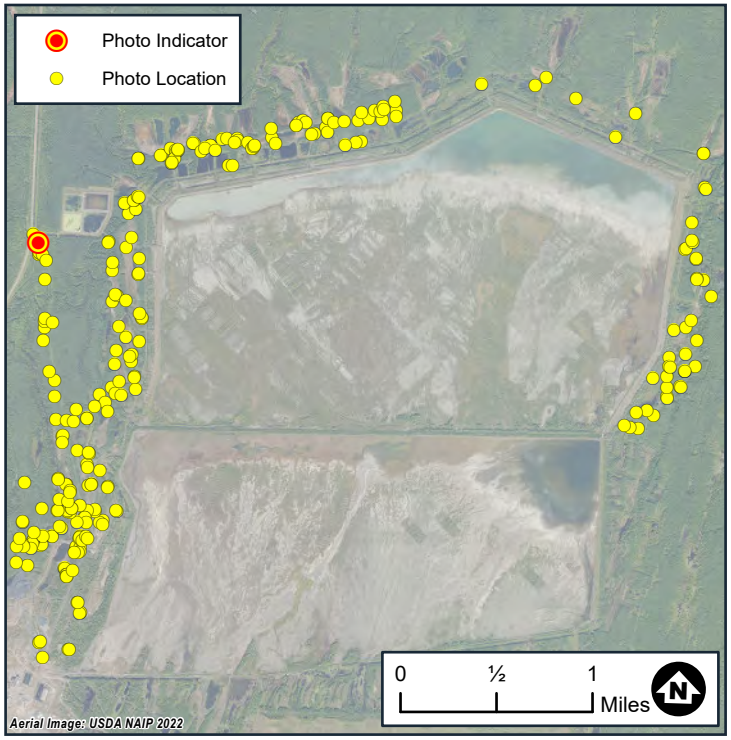
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

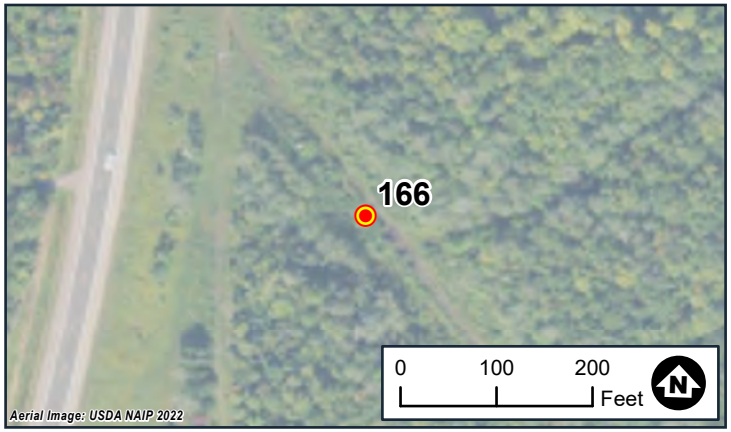
Date: 7/1/2024
Wetland ID:WTL98
Flag No.:98-2
Sample Point ID:N/A

Note: Photo locations are approximate









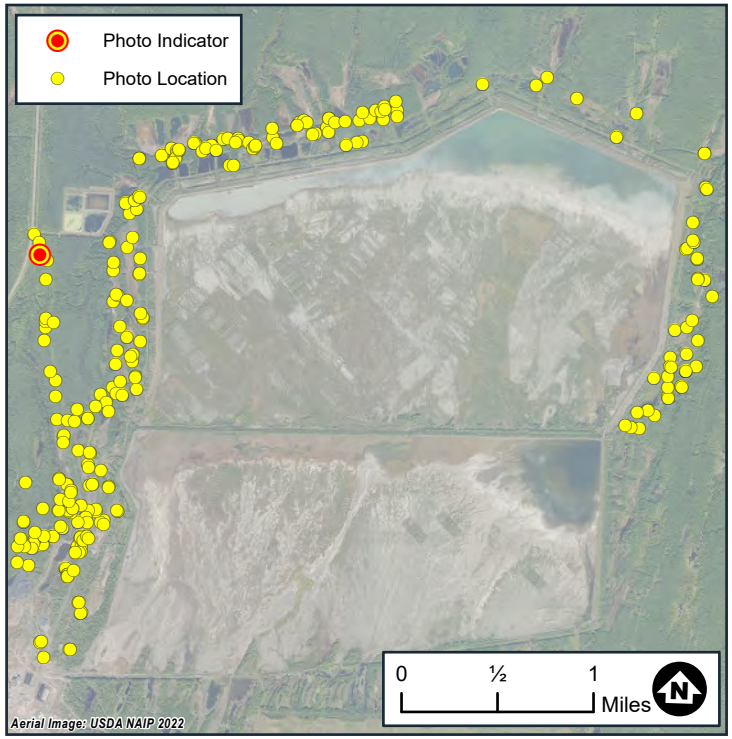
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

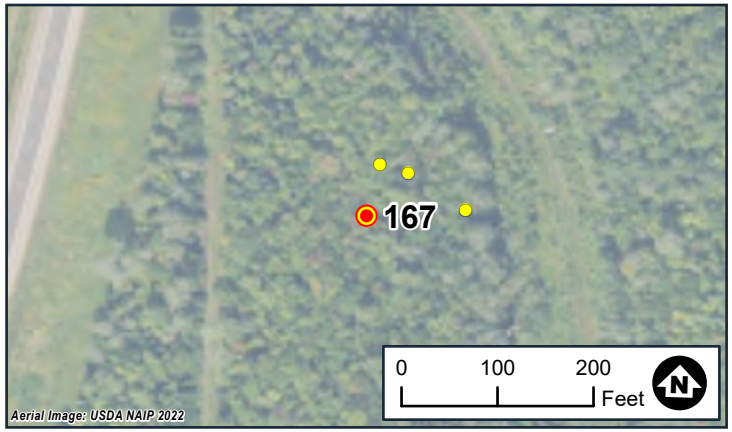
Date: 7/1/2024
Wetland ID:WTL100
Flag No.:100-1
Sample Point ID:N/A

Note: Photo locations are approximate









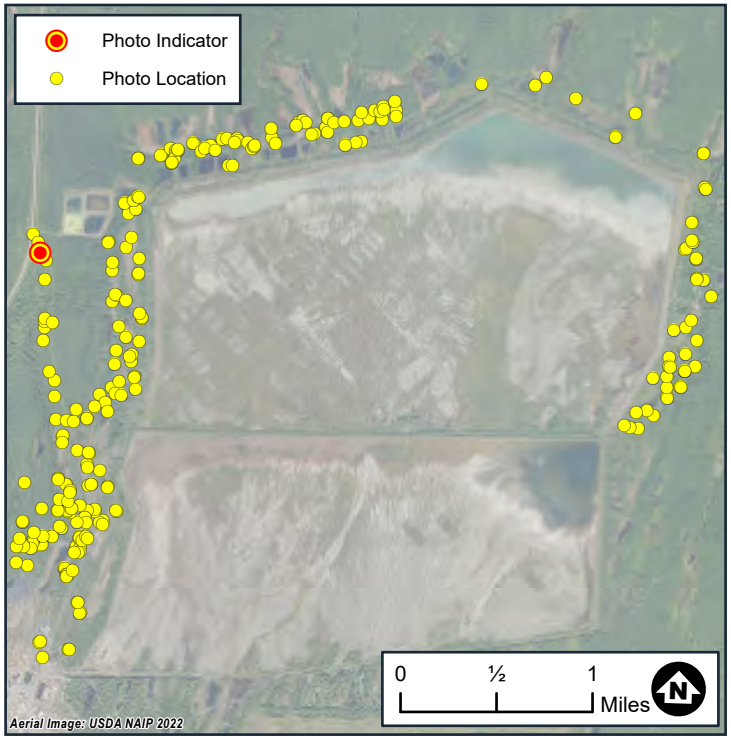
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

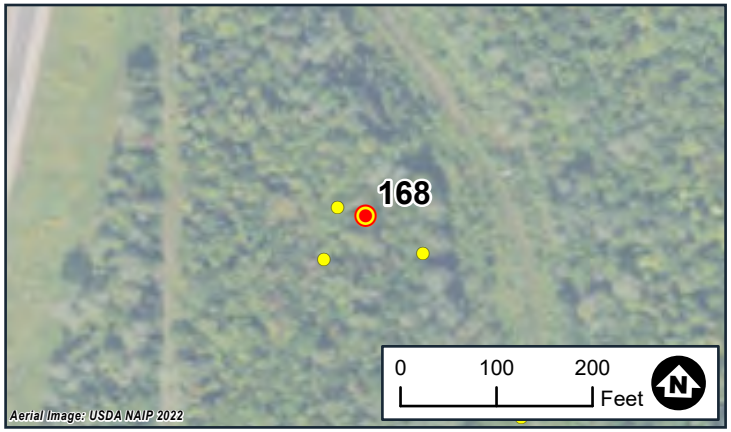
BARR

Date: 7/1/2024
Wetland ID:WTL102
Flag No.:102-2
Sample Point ID:N/A

Note: Photo locations are approximate







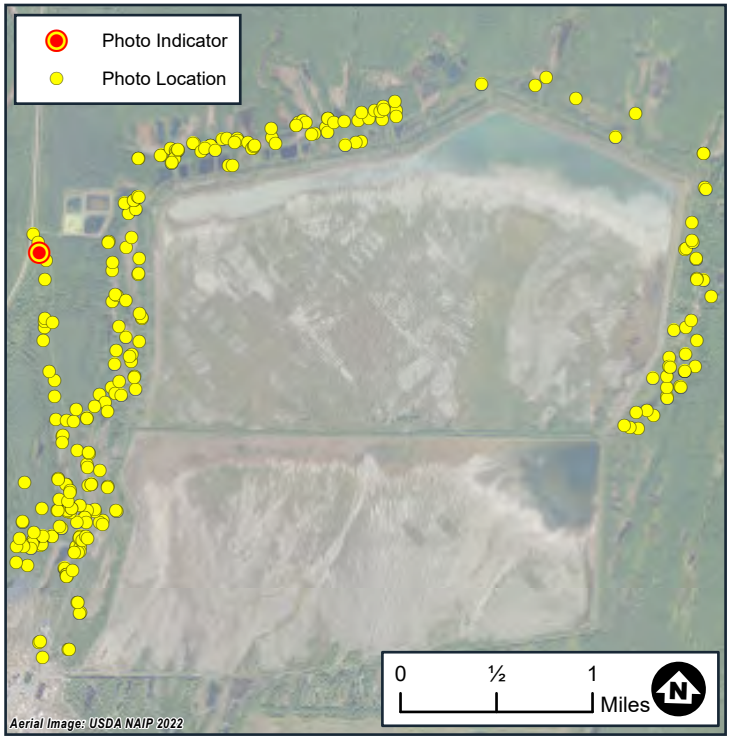
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

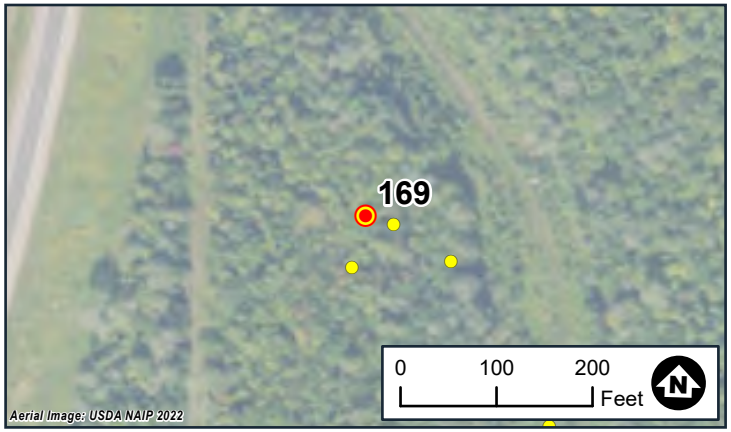
BARR

Date: 7/1/2024
Wetland ID:WTL104
Flag No.:104-2
Sample Point ID:N/A

Note: Photo locations are approximate







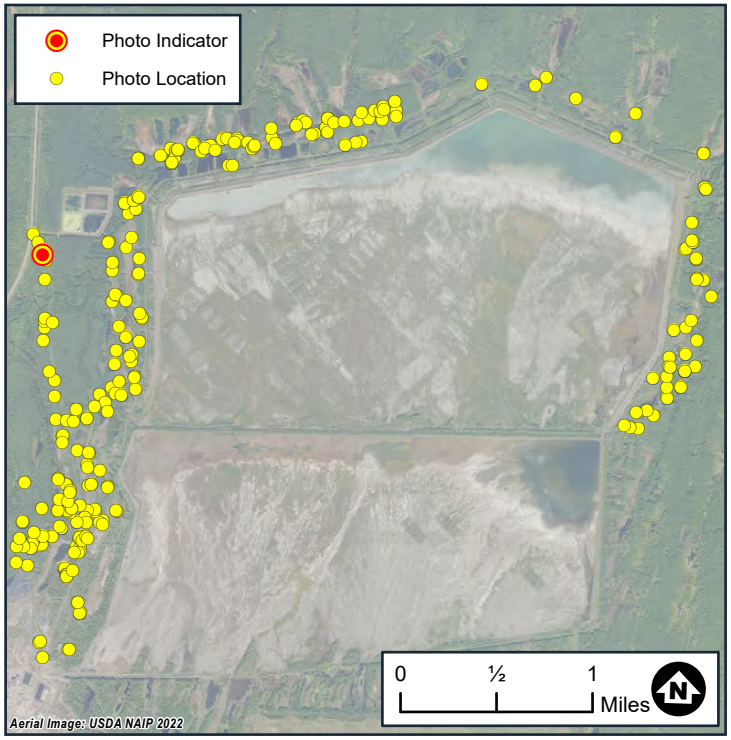
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

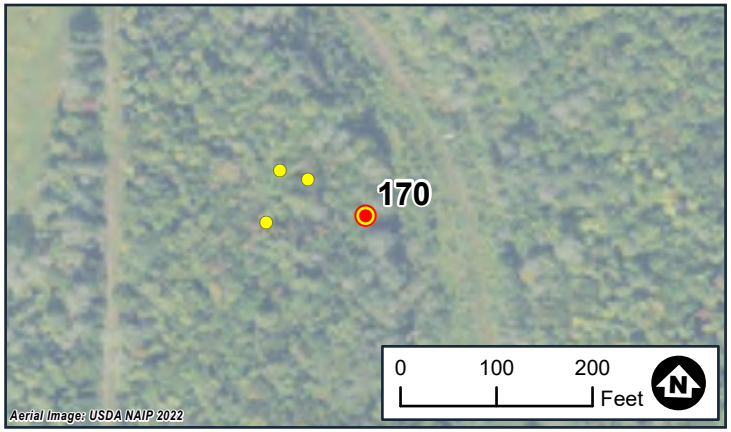
Date: 7/1/2024
Wetland ID:WTL104
Flag No.:104-2
Sample Point ID:WTL104-DP-2

Note: Photo locations are approximate









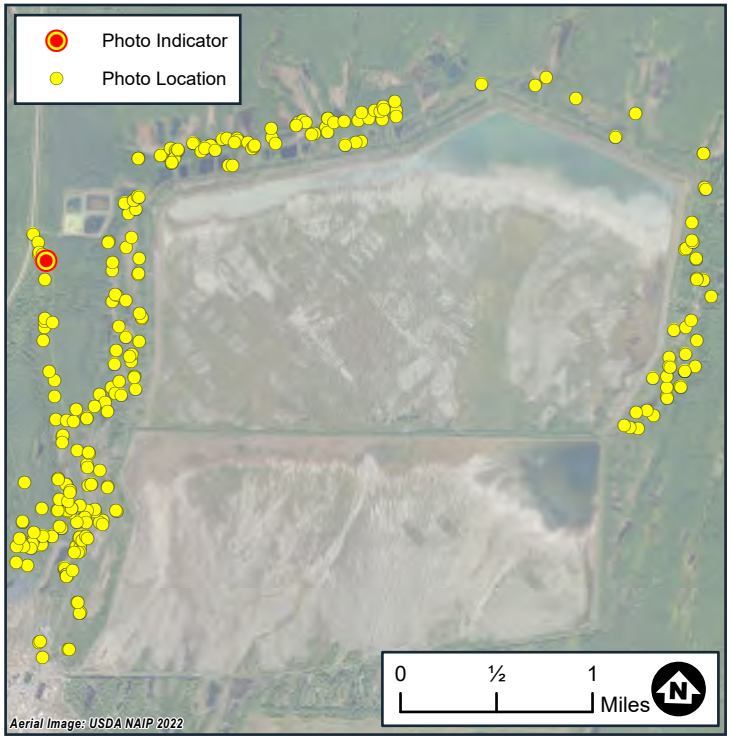
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

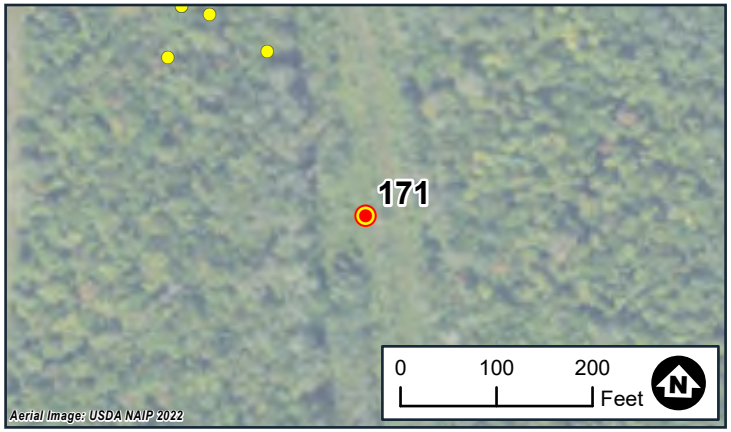
BARR

Date: 7/1/2024
Wetland ID:WTL106
Flag No.:106-1
Sample Point ID:N/A

Note: Photo locations are approximate







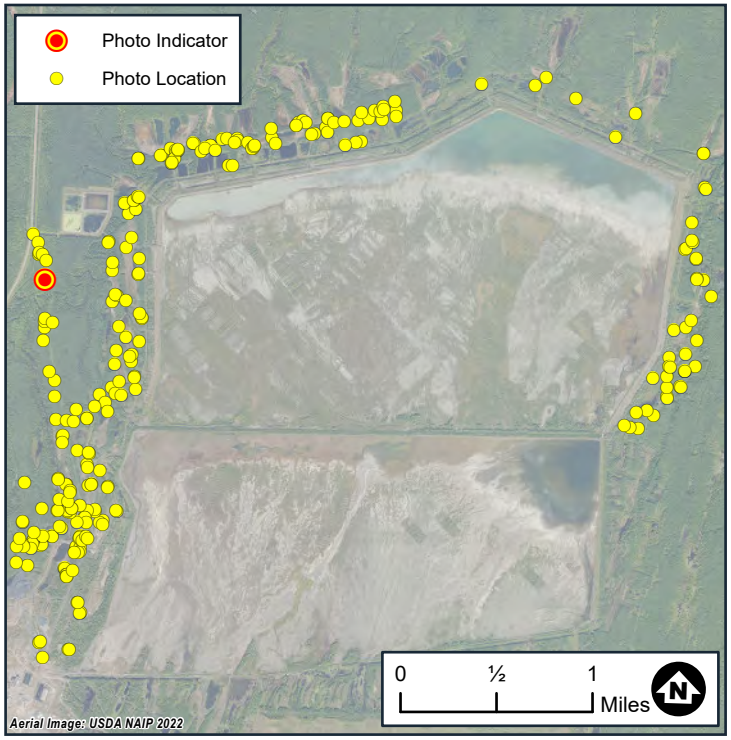
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

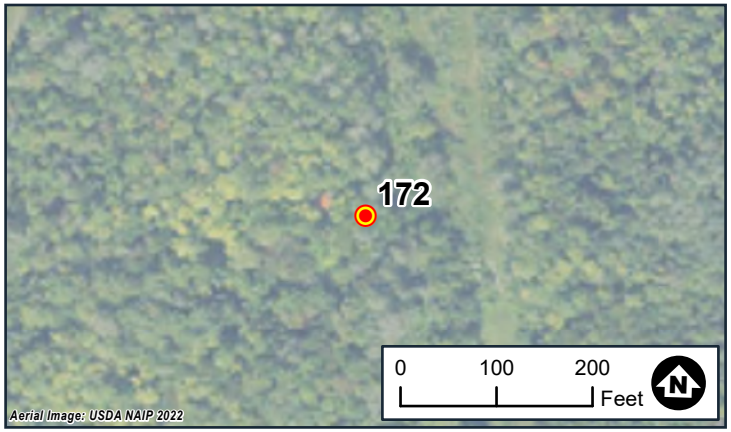
Date: 7/1/2024
Wetland ID:WTL108
Flag No.:108-1
Sample Point ID:N/A

Note: Photo locations are approximate









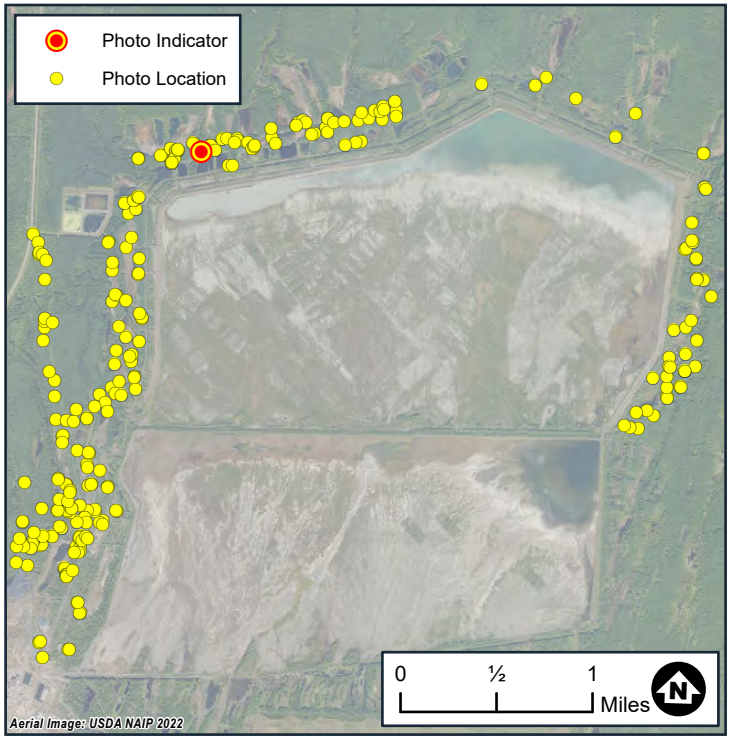
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

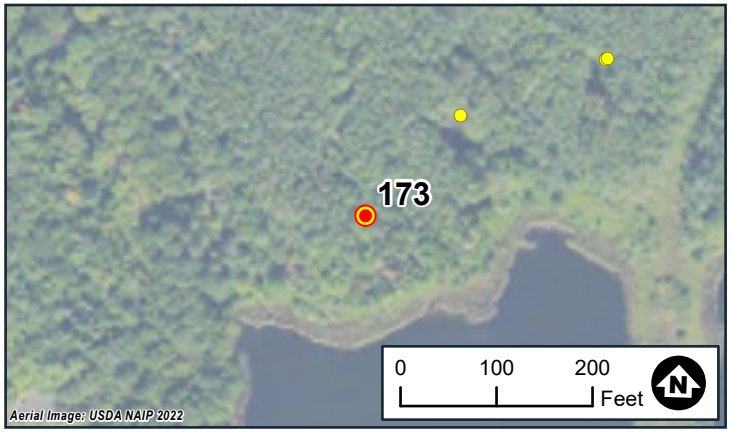
Date: 7/1/2024
Wetland ID:WTL112
Flag No.:112-2
Sample Point ID:N/A

Note: Photo locations are approximate









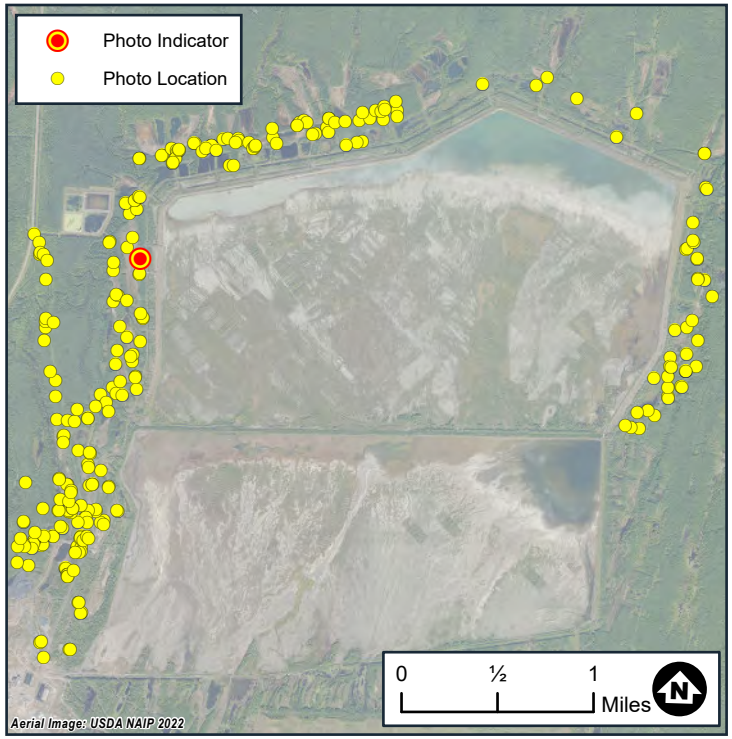
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

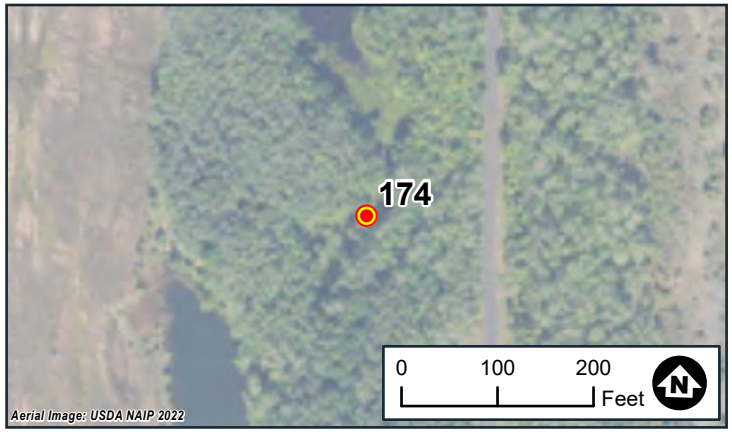
Date: 7/31/2024
Wetland ID:WTL116
Flag No.:116-172
Sample Point ID:N/A

Note: Photo locations are approximate







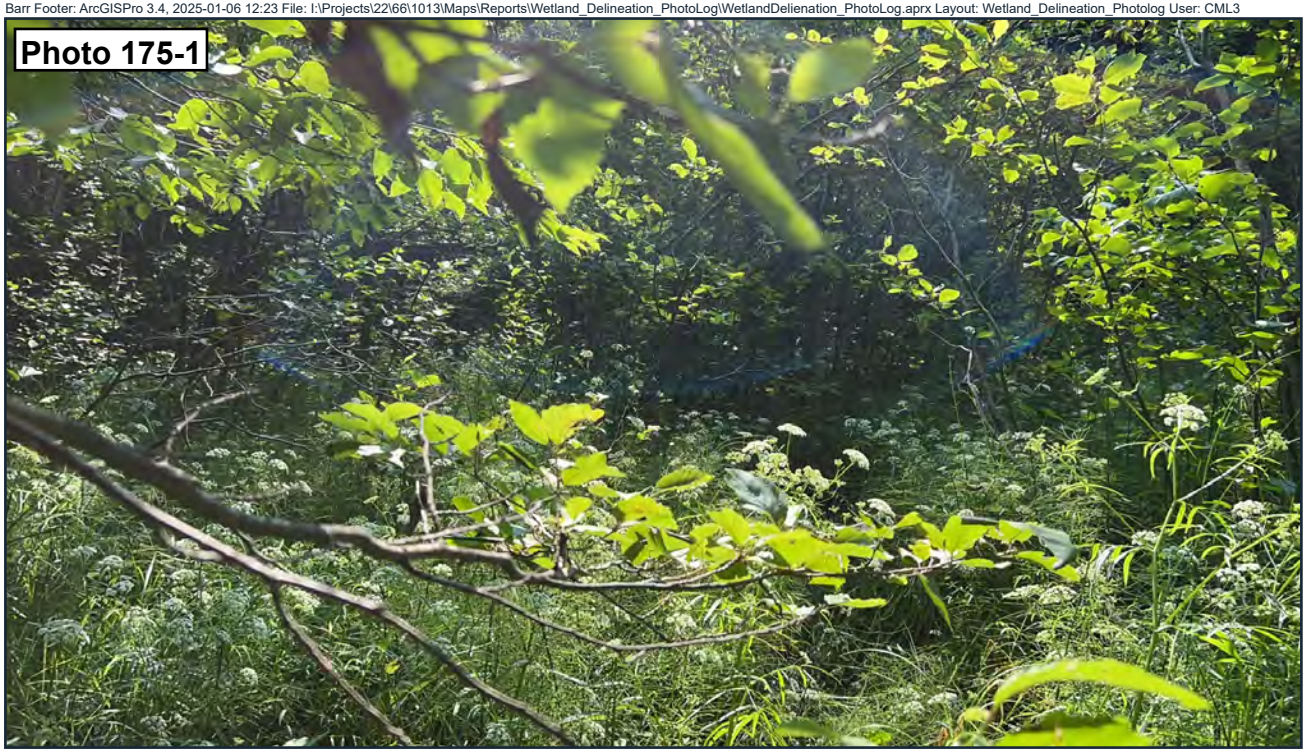


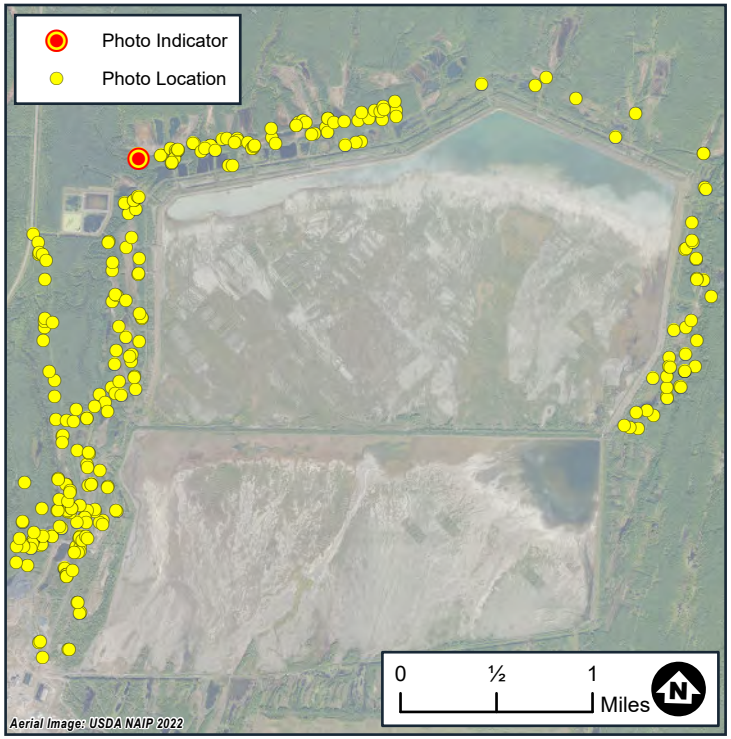
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

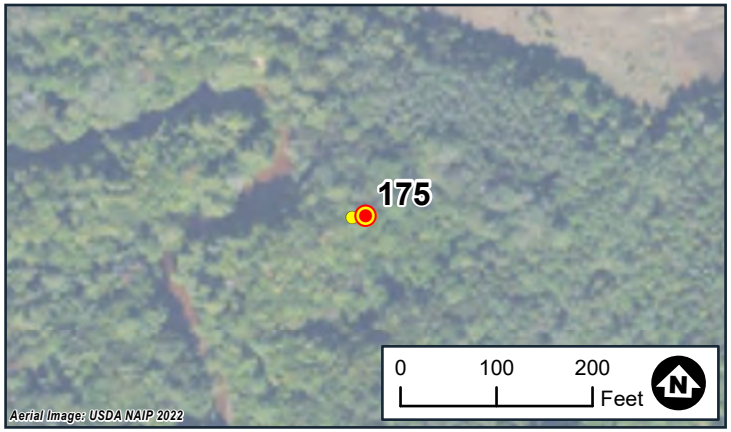
Date: 7/2/2024
Wetland ID:WTL120
Flag No.:120-57
Sample Point ID:N/A

Note: Photo locations are approximate









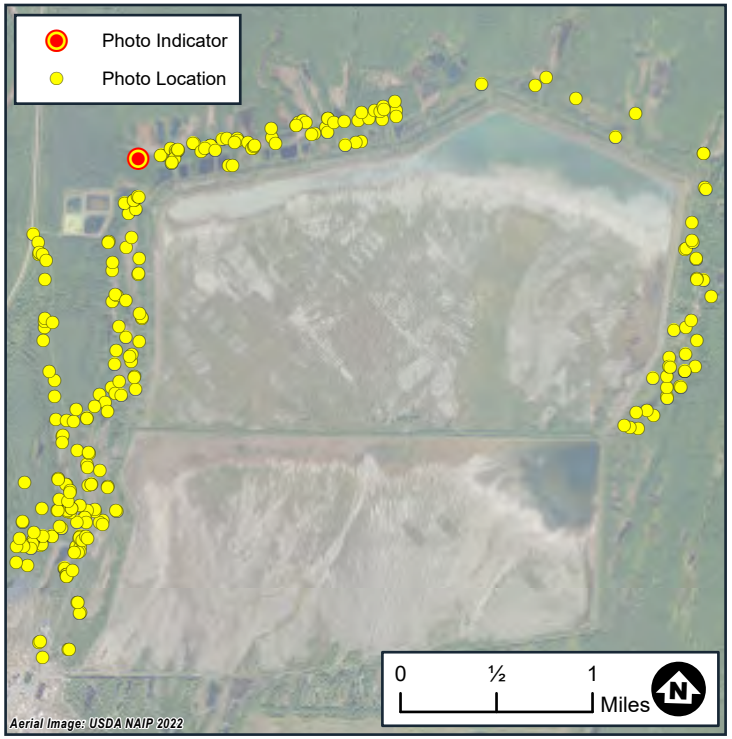
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

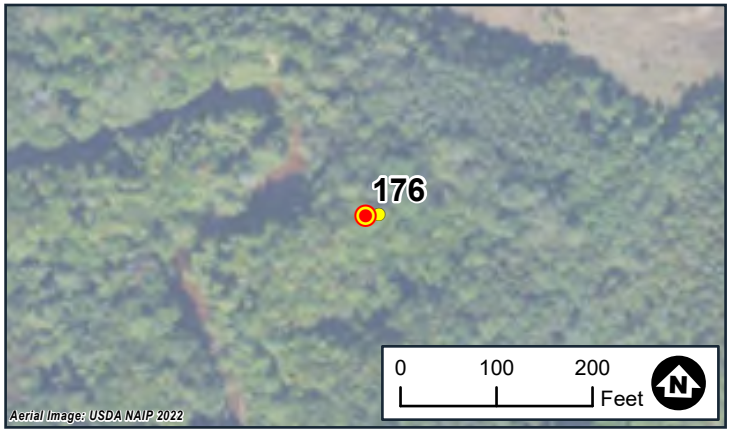
BARR

Date: 7/30/2024
Wetland ID:WTL120
Flag No.:120-44
Sample Point ID:WTL120-DP1-W

Note: Photo locations are approximate







Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 7/30/2024
Wetland ID:WTL120
Flag No.:120-44
Sample Point ID:WTL120-DP1-U

Note: Photo locations are approximate

Photo 177-1



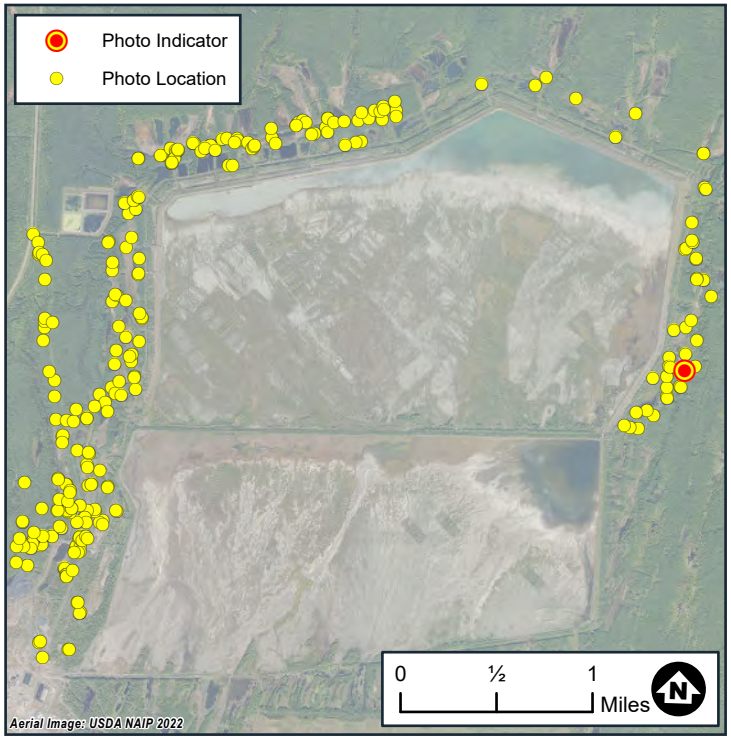
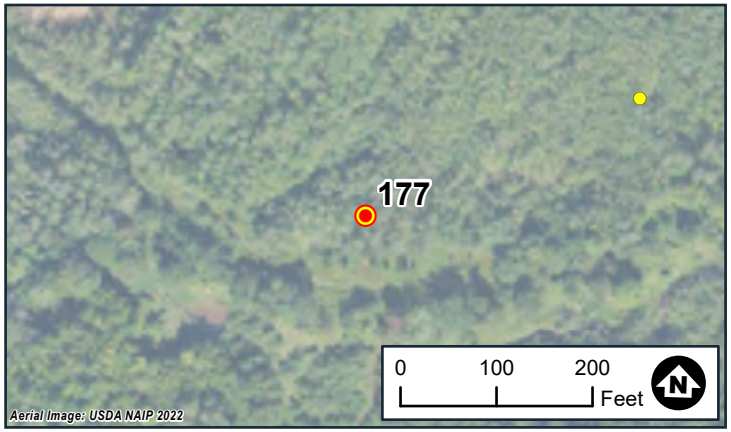


Photo 177-2





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Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 8/2/2024
Wetland ID:WTL121
Flag No.:121-10
Sample Point ID:WTL121-DP1-W

Note: Photo locations are approximate

Photo 178-1



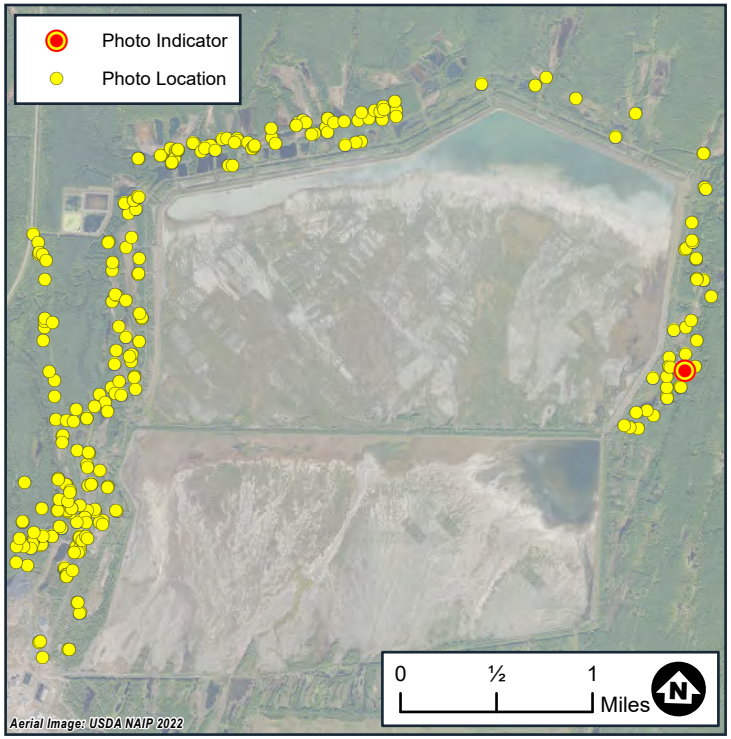
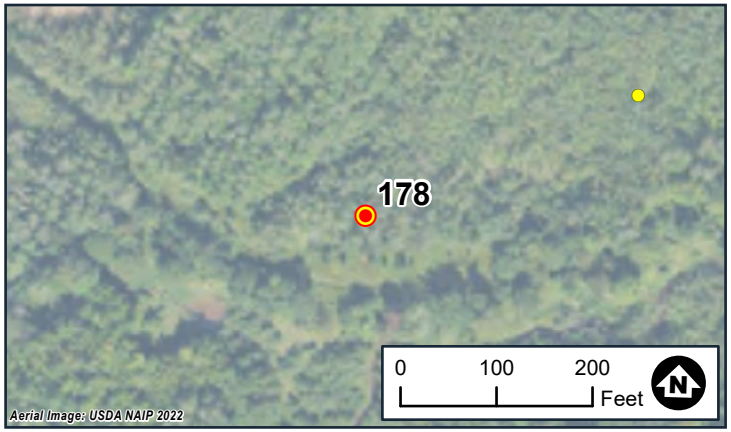


Photo 178-2





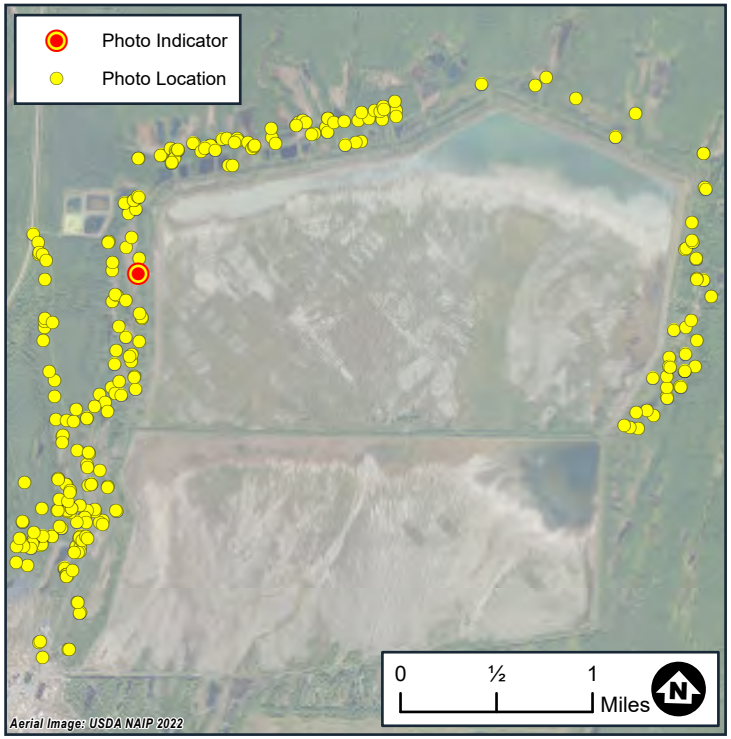
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

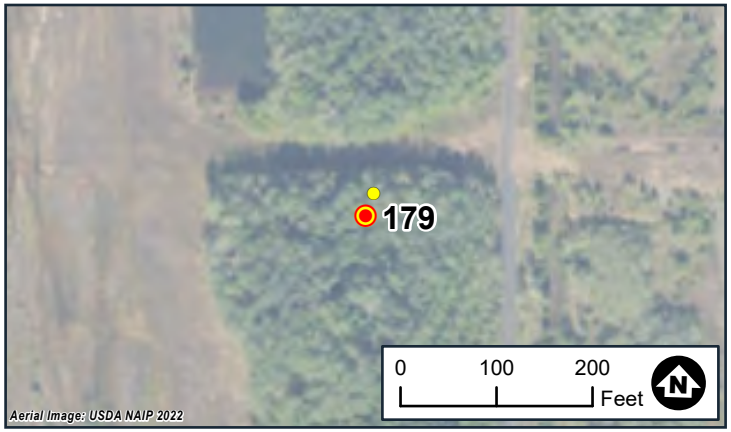
BARR

Date: 8/2/2024
Wetland ID:WTL121
Flag No.:121-10
Sample Point ID:WTL121-DP1-U

Note: Photo locations are approximate







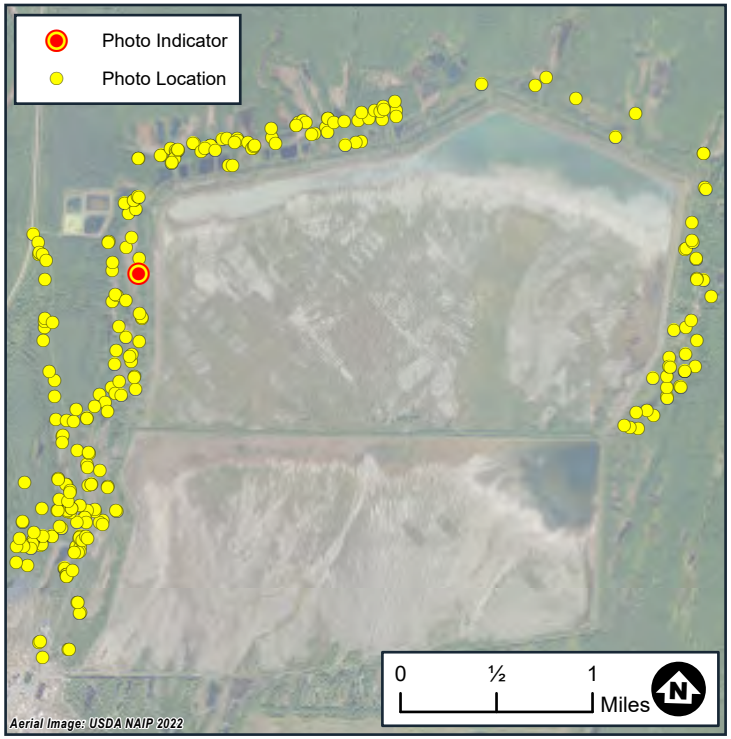
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

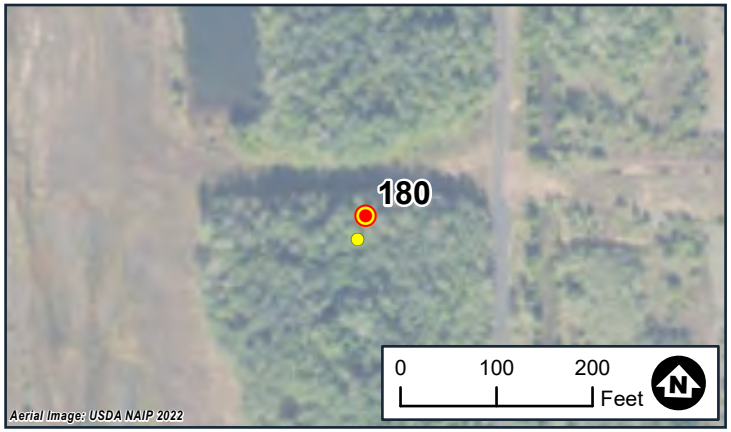
BARR

Date: 7/2/2024
Wetland ID:WTL122
Flag No.:122-2
Sample Point ID:WTL122-DP1-W

Note: Photo locations are approximate







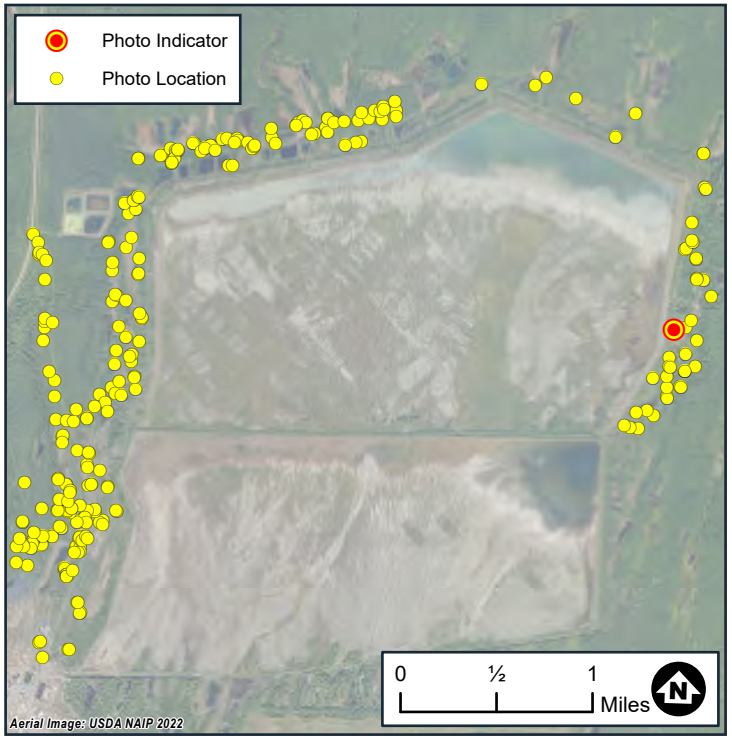
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 7/2/2024
Wetland ID:WTL122
Flag No.:122-2
Sample Point ID:WTL122-DP2-U

Note: Photo locations are approximate







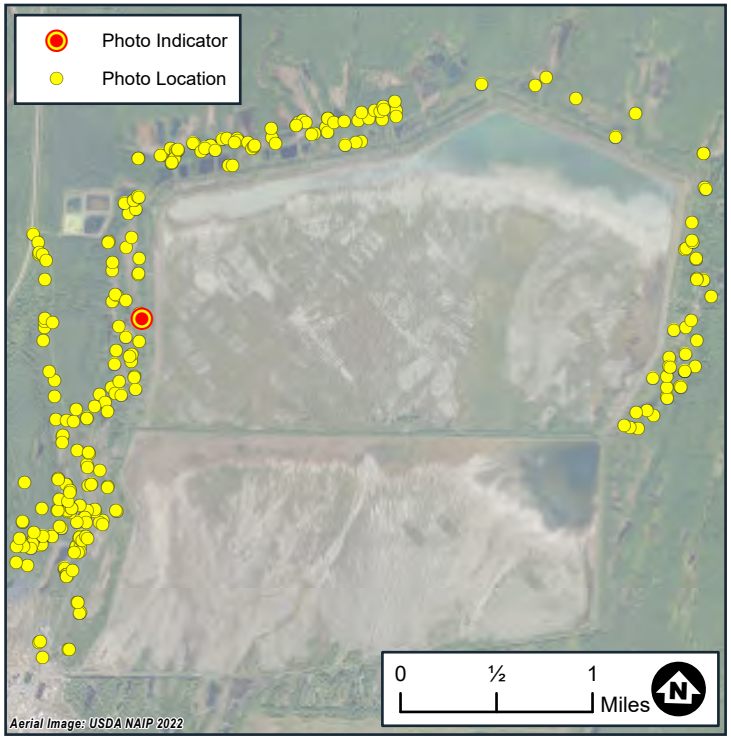
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

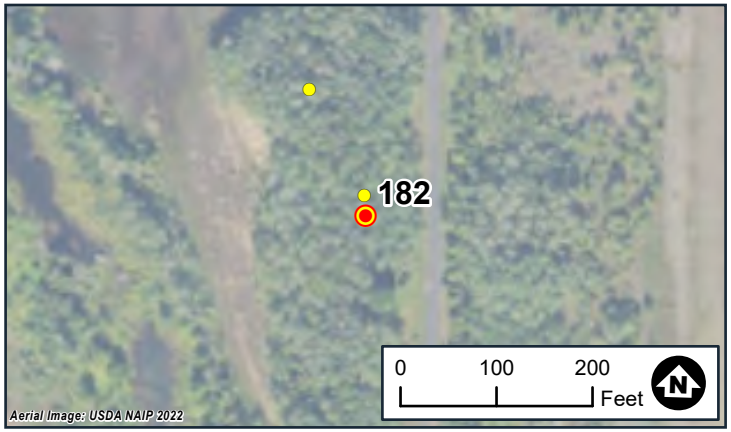
BARR

Date: 8/2/2024
Wetland ID:WTL123
Flag No.:123-1
Sample Point ID:N/A

Note: Photo locations are approximate







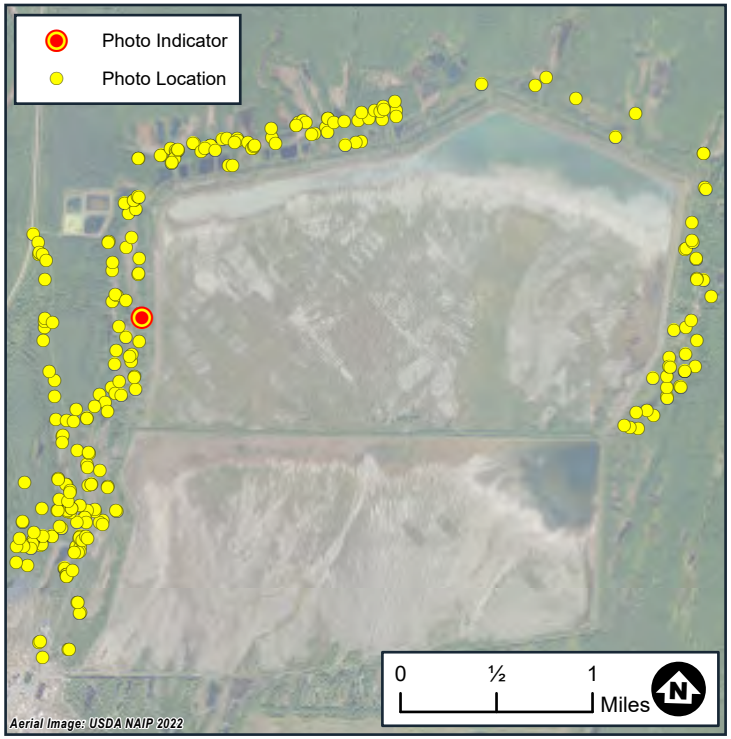
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

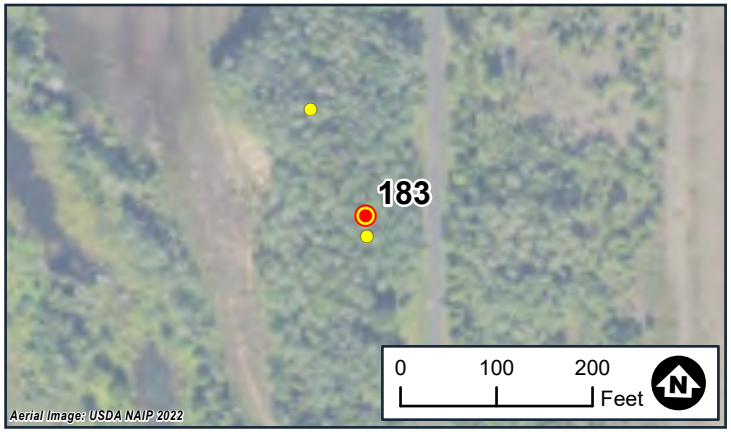
BARR

Date: 7/2/2024
Wetland ID:WTL124
Flag No.:124-4
Sample Point ID:WTL124-DP1-W

Note: Photo locations are approximate







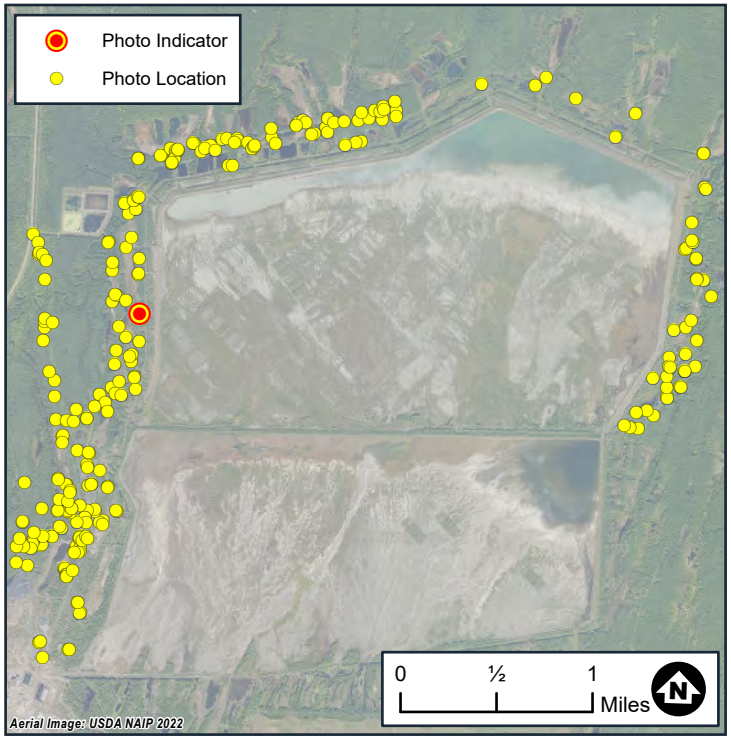
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

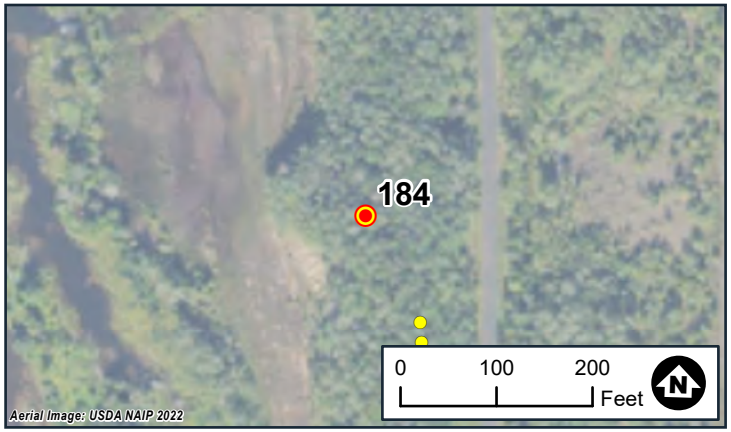
Date: 7/2/2024
Wetland ID:WTL124
Flag No.:124-4
Sample Point ID:WTL124-DP2-U

Note: Photo locations are approximate









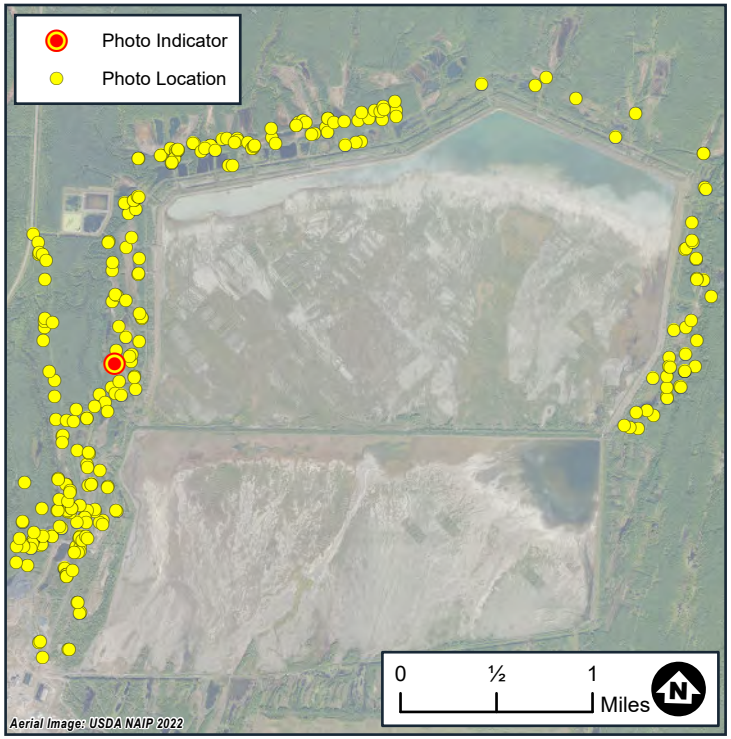
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

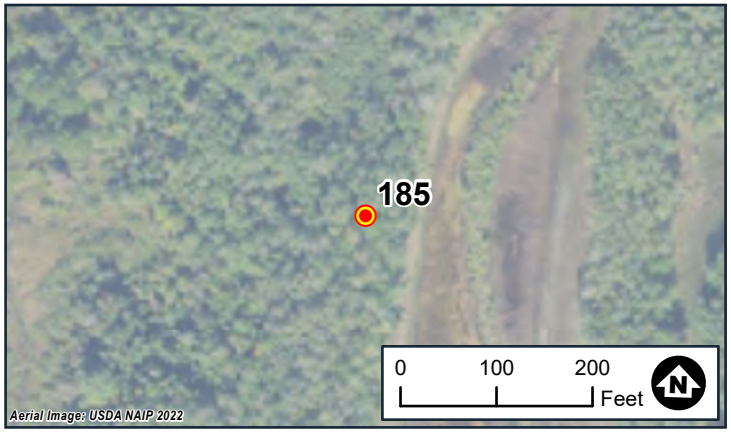
Date: 7/2/2024
Wetland ID:WTL126
Flag No.:126-2
Sample Point ID:N/A

Note: Photo locations are approximate









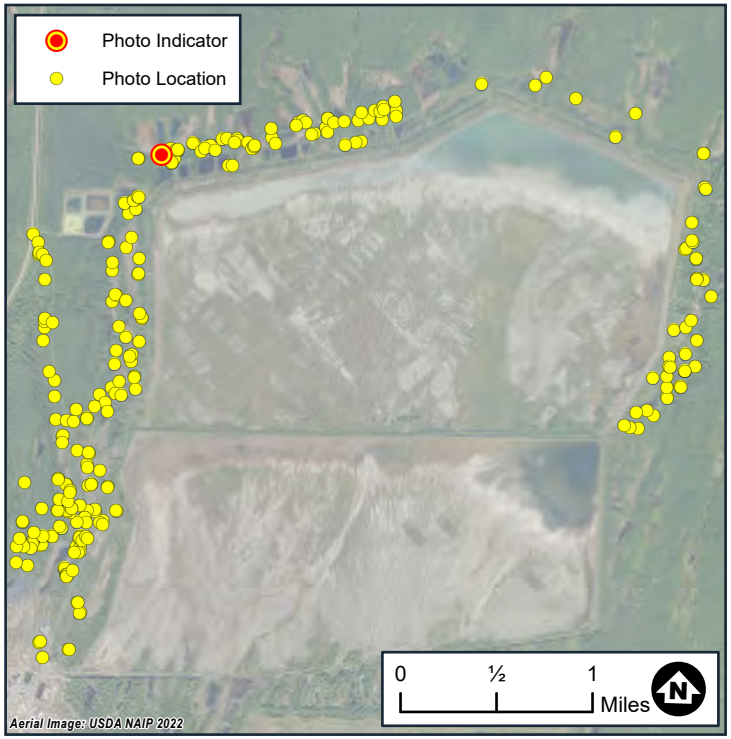
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

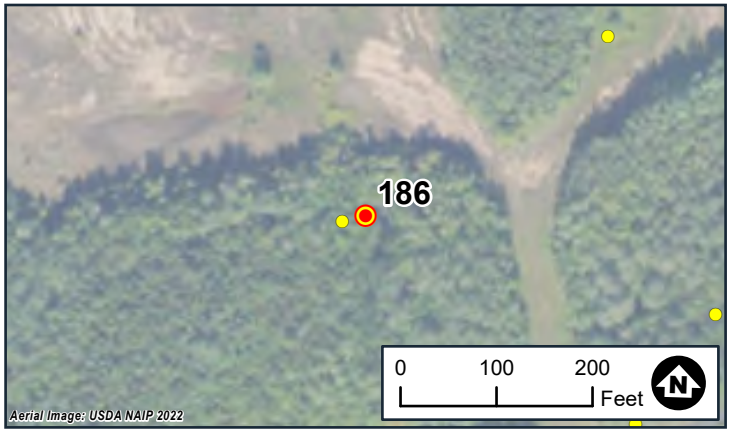
BARR

Date: 7/2/2024
Wetland ID:WTL128
Flag No.:128-1
Sample Point ID:N/A

Note: Photo locations are approximate







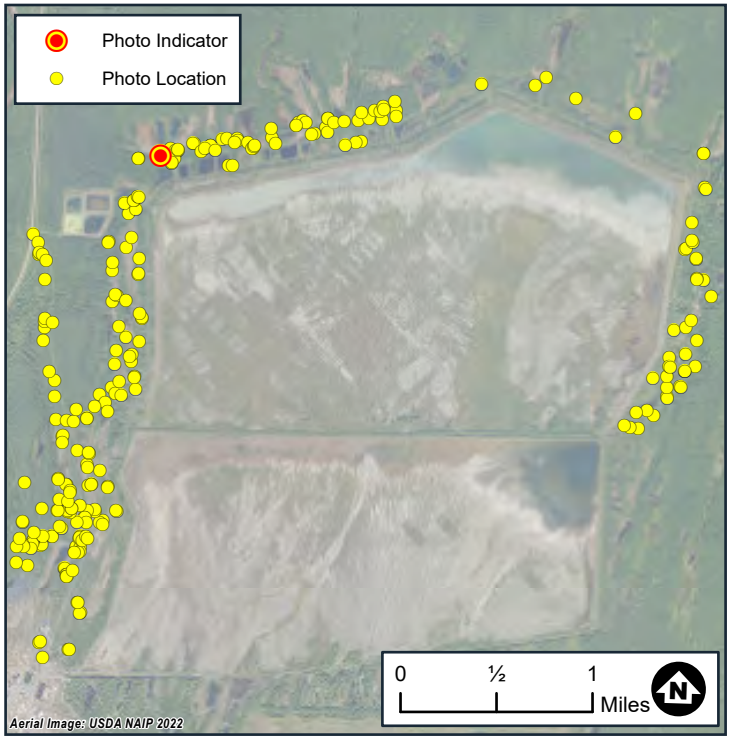
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

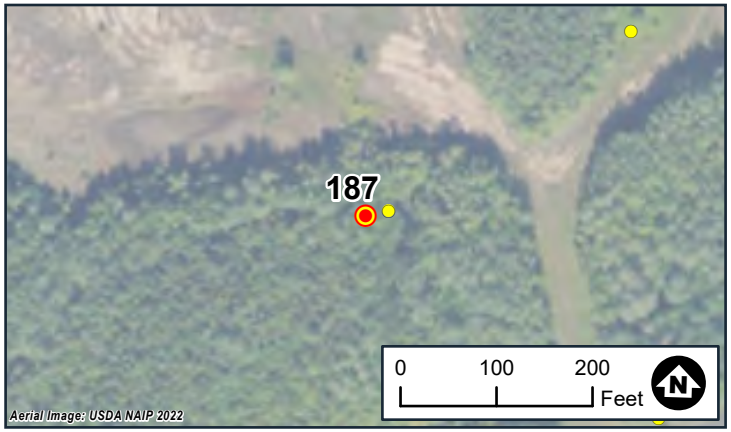
BARR

Date: 7/30/2024
Wetland ID:WTL128
Flag No.:128-20
Sample Point ID:WTL128-DP1-W

Note: Photo locations are approximate







Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 7/30/2024
Wetland ID:WTL128
Flag No.:128-20
Sample Point ID:WTL128-DP1-U

Note: Photo locations are approximate

Photo 188-1



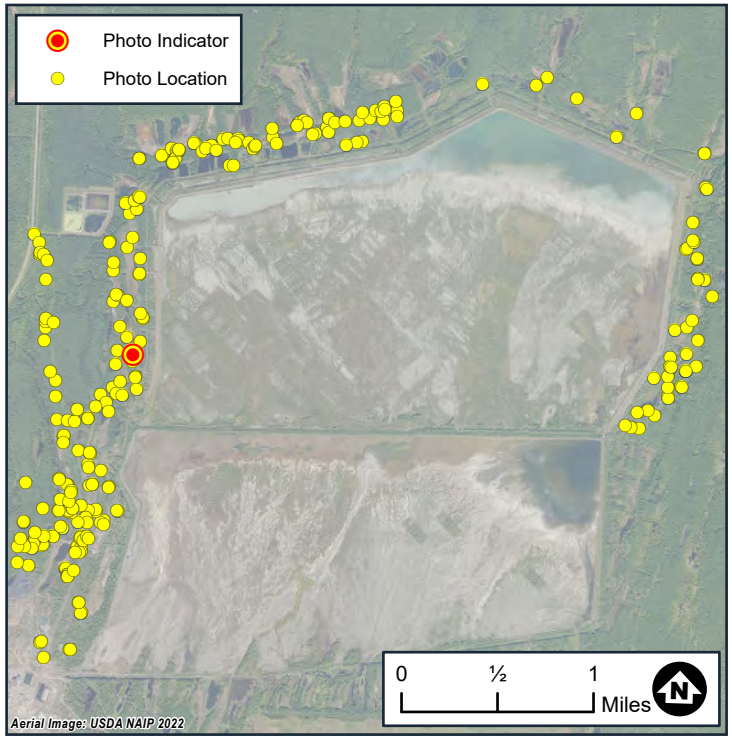
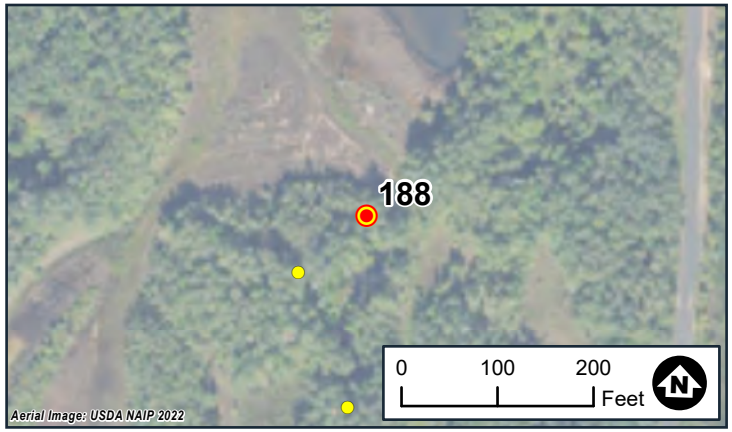


Photo 188-2





Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 7/2/2024
Wetland ID:WTL130
Flag No.:130-8
Sample Point ID:N/A

Note: Photo locations are approximate

Photo 189-1



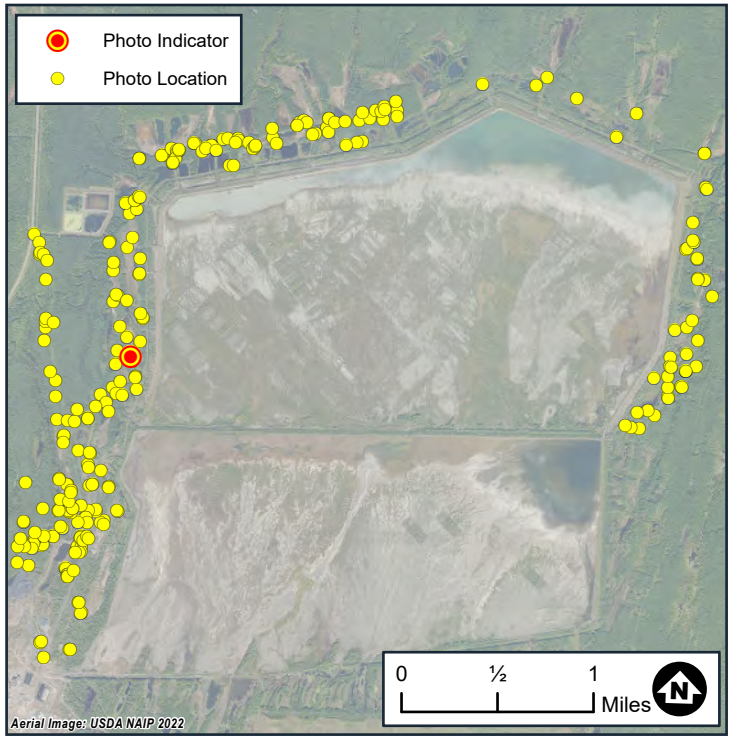
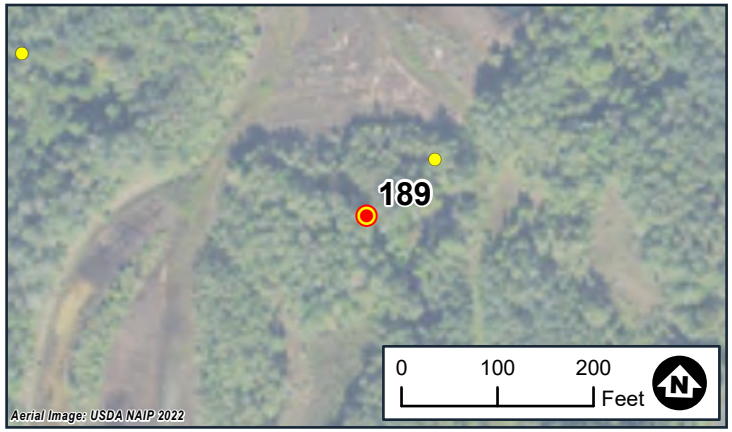


Photo 189-2





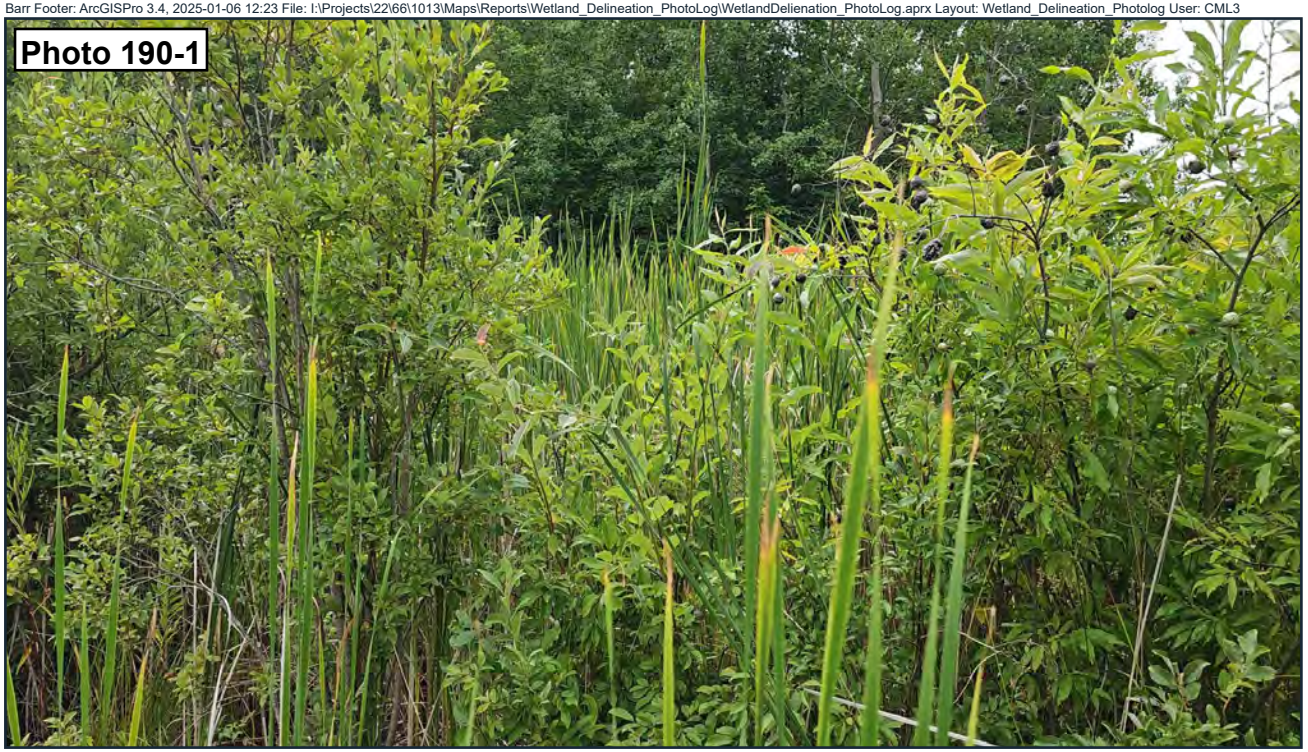
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 7/2/2024
Wetland ID:WTL132
Flag No.:132-10
Sample Point ID:N/A

Note: Photo locations are approximate

Photo 190-1



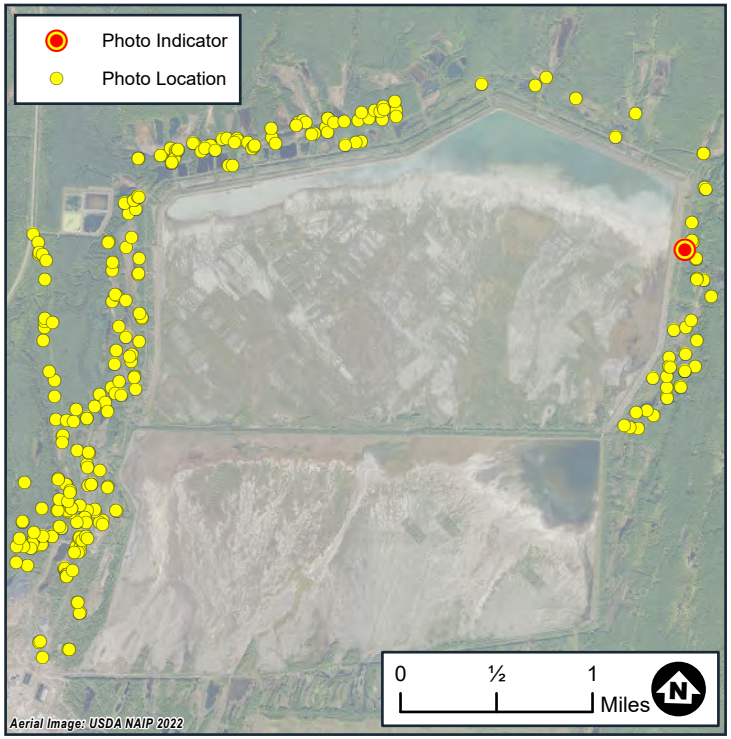
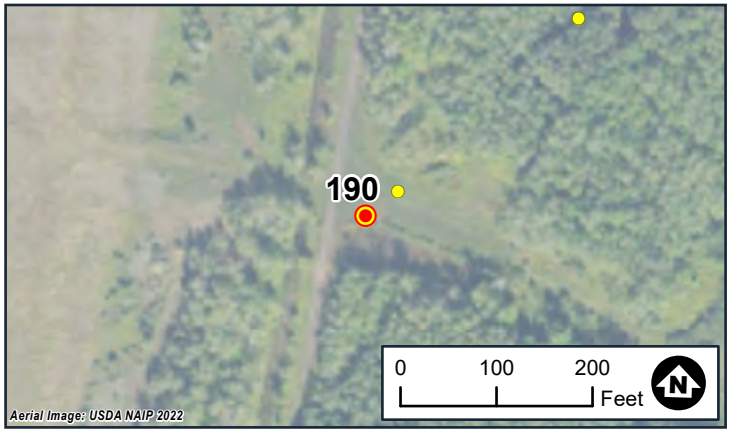


Photo 190-2





Page 190 of 262
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 8/4/2024
Wetland ID:WTL133
Flag No.:133-2
Sample Point ID:WTL133-DP1-W

Note: Photo locations are approximate

Photo 191-1



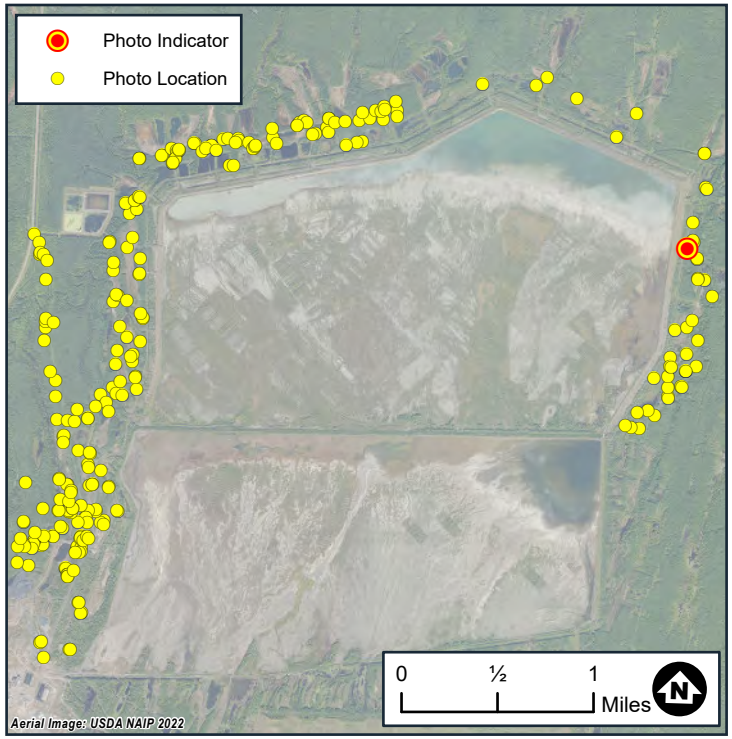
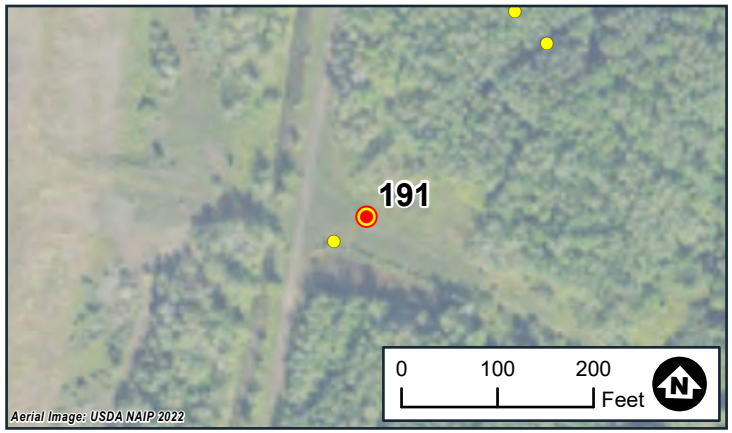


Photo 191-2





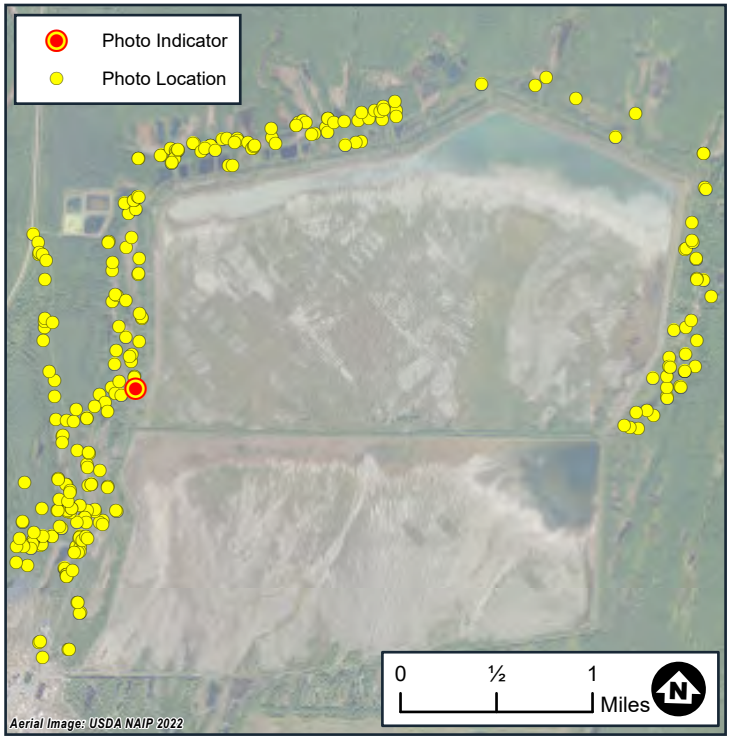
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

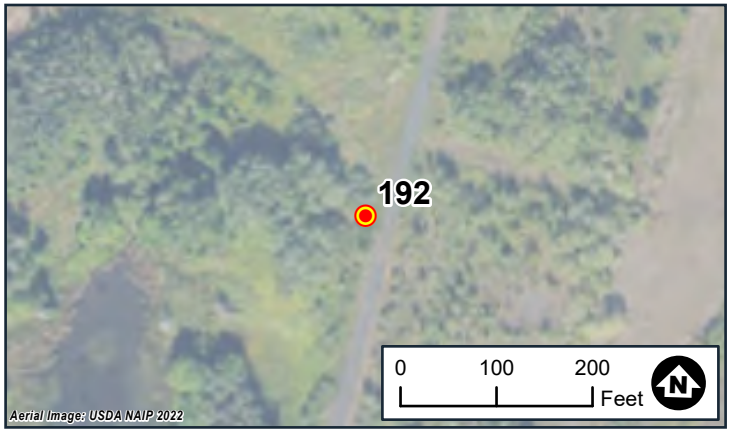
BARR

Date: 8/4/2024
Wetland ID:WTL133
Flag No.:133-2
Sample Point ID:WTL133-DP1-U

Note: Photo locations are approximate







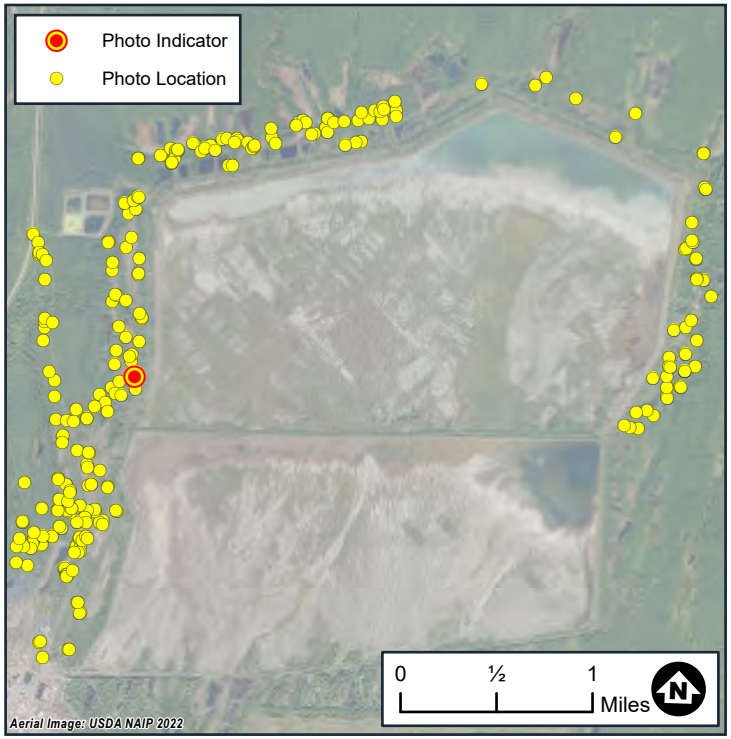
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

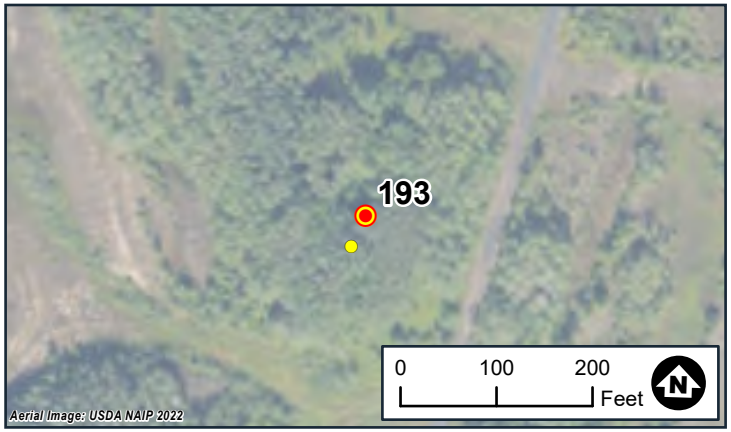
BARR

Date: 7/2/2024
Wetland ID:WTL134
Flag No.:134-14
Sample Point ID:N/A

Note: Photo locations are approximate







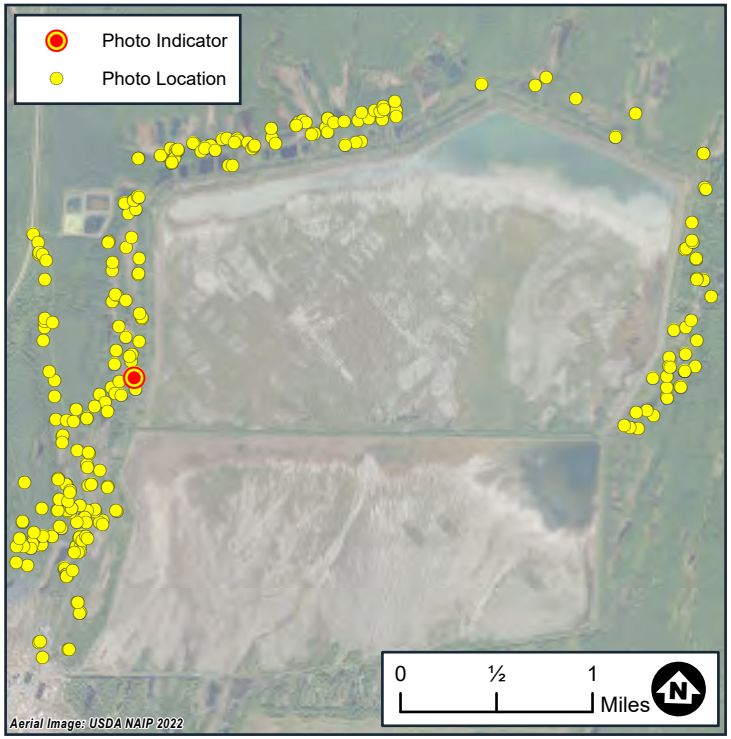
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

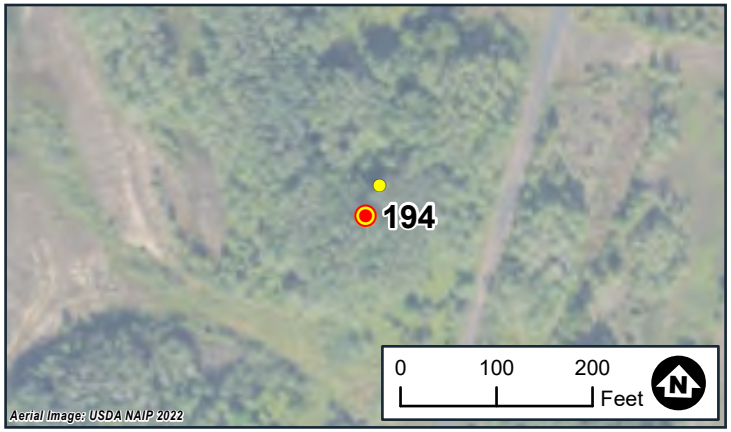
BARR

Date: 7/2/2024
Wetland ID:WTL134
Flag No.:134-11
Sample Point ID:WTL134-DP-1

Note: Photo locations are approximate







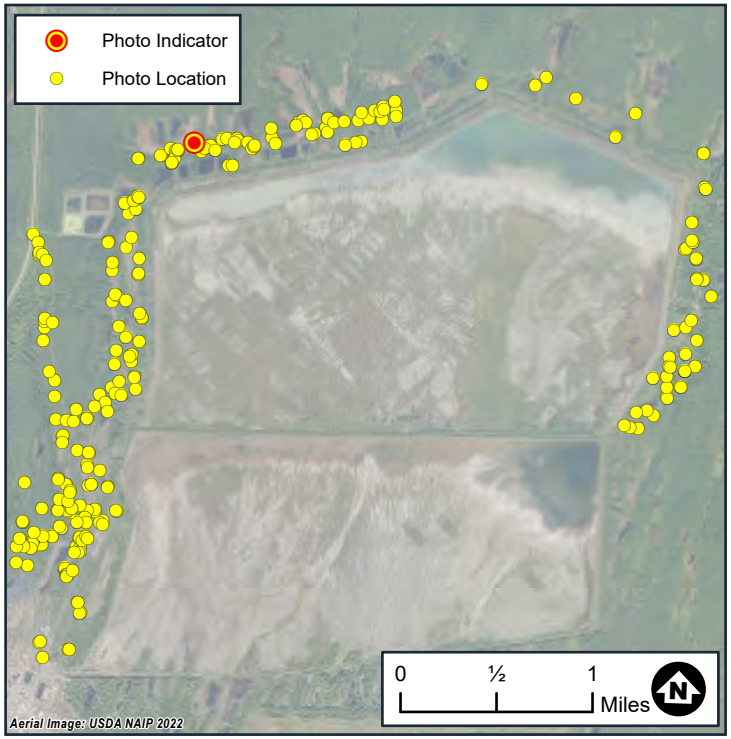
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

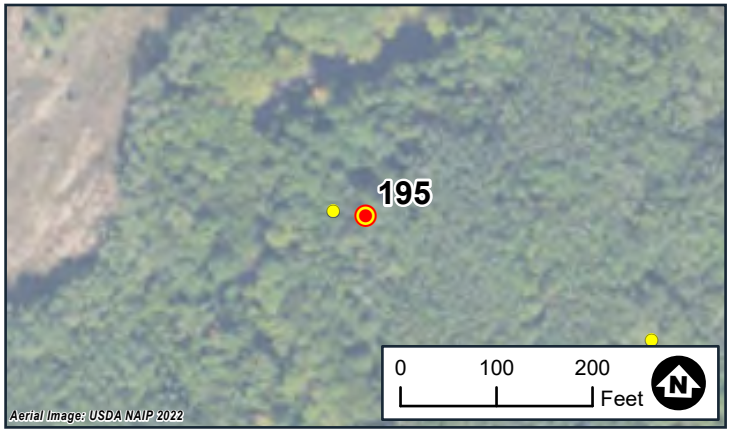
BARR

Date: 7/2/2024
Wetland ID:WTL134
Flag No.:134-11
Sample Point ID:WTL134-DP2-UPL

Note: Photo locations are approximate







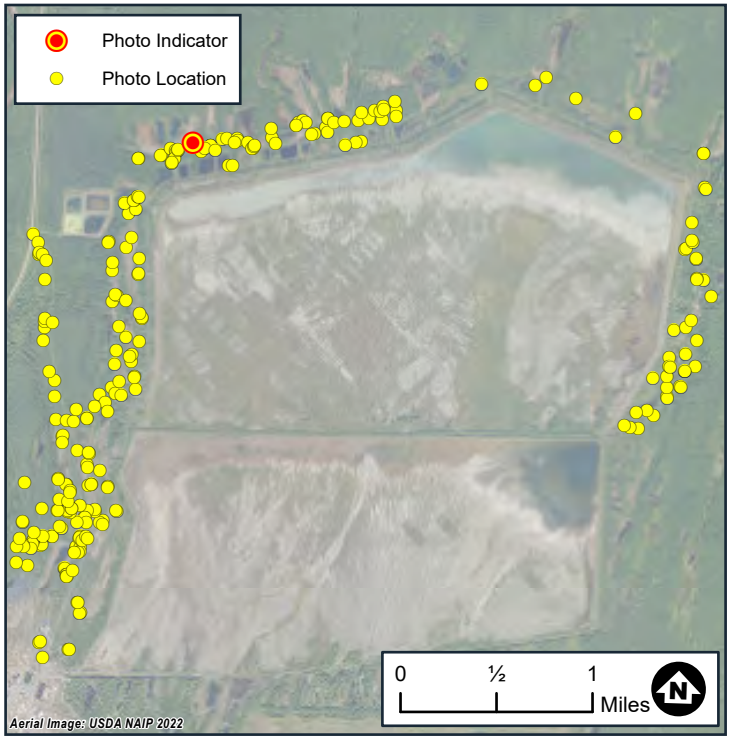
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

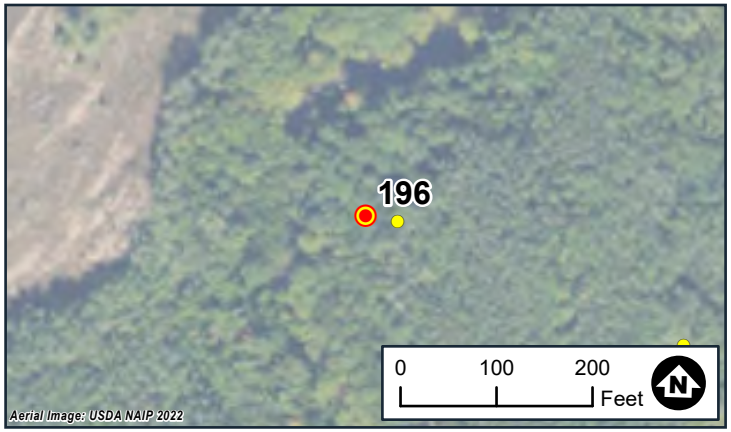
BARR

Date: 7/31/2024
Wetland ID:WTL134
Flag No.:134-1
Sample Point ID:WTL134-DP1-W

Note: Photo locations are approximate







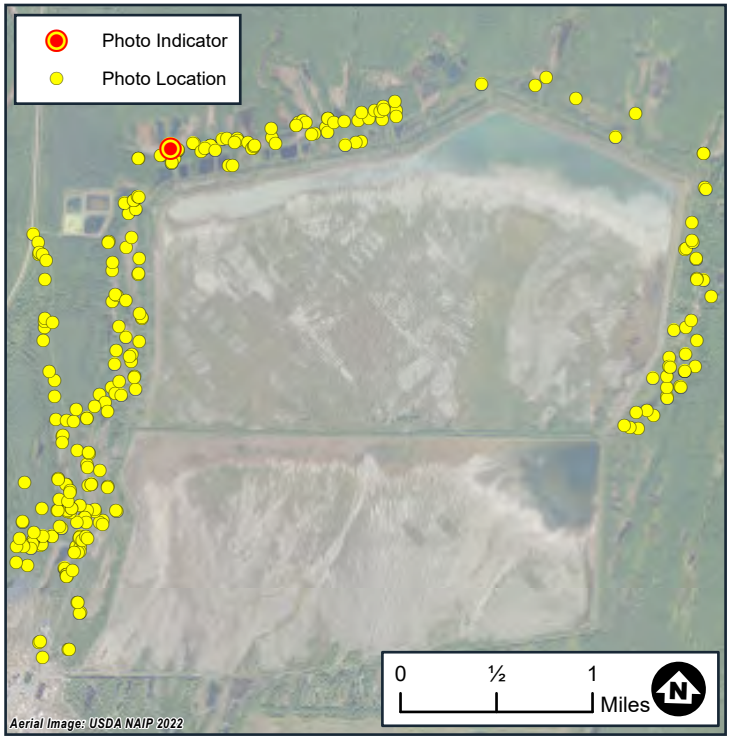
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

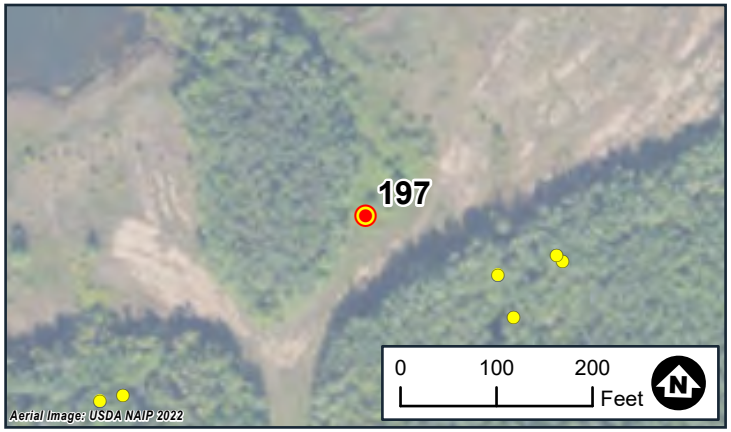
BARR

Date: 7/31/2024
Wetland ID:WTL134
Flag No.:134-1
Sample Point ID:WTL134-DP1-U

Note: Photo locations are approximate







Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 7/31/2024
Wetland ID:WTL138
Flag No.:138-1
Sample Point ID:N/A

Note: Photo locations are approximate

Photo 198-1



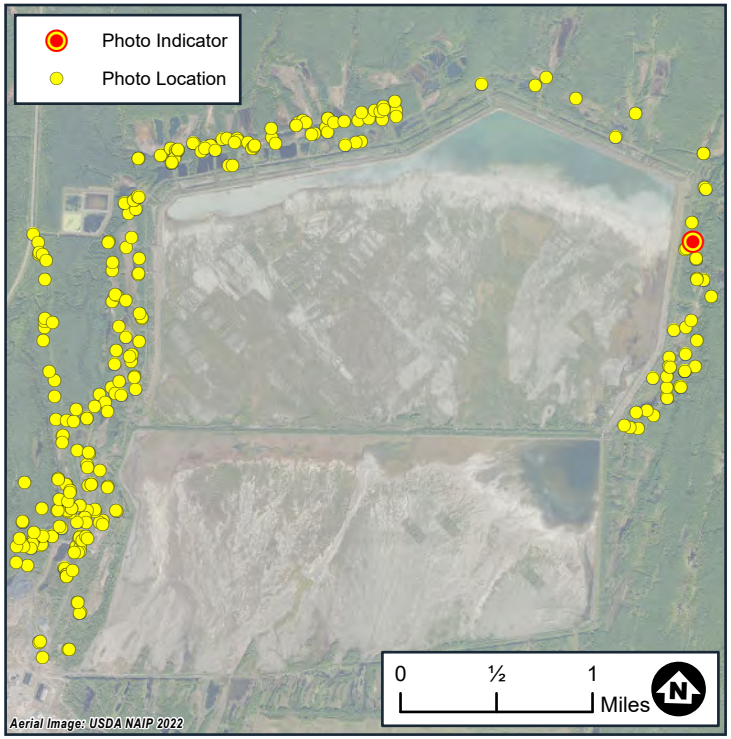
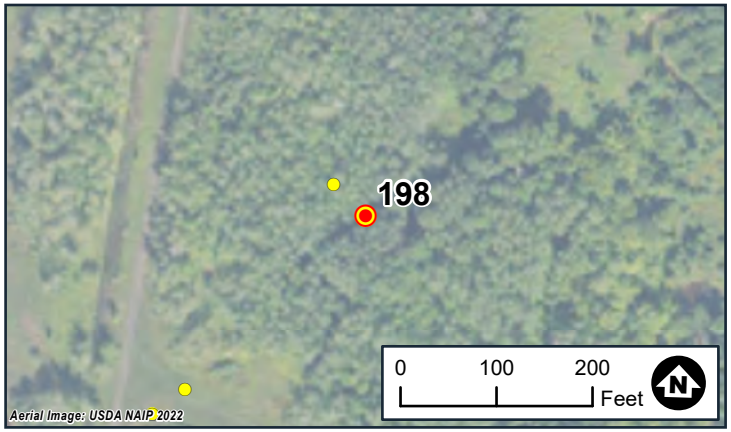


Photo 198-2





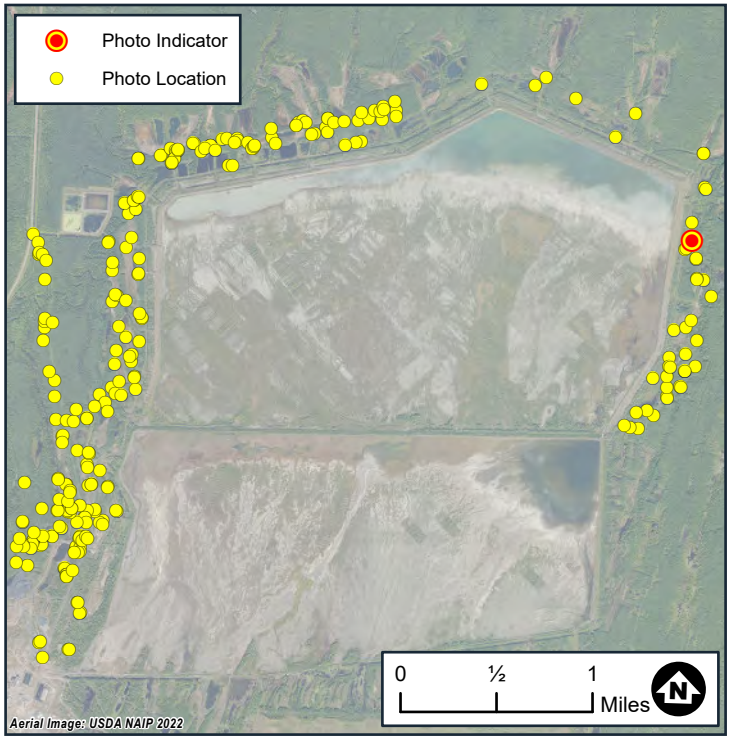
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

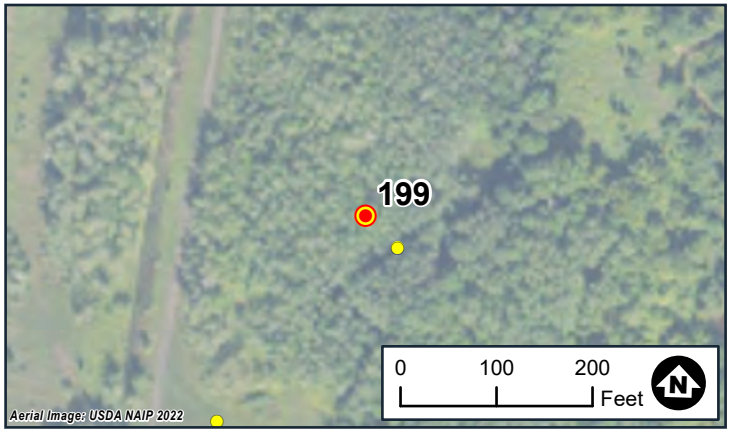
Date: 8/4/2024
Wetland ID:WTL139
Flag No.:139-6
Sample Point ID:WTL139-DP1-W

Note: Photo locations are approximate









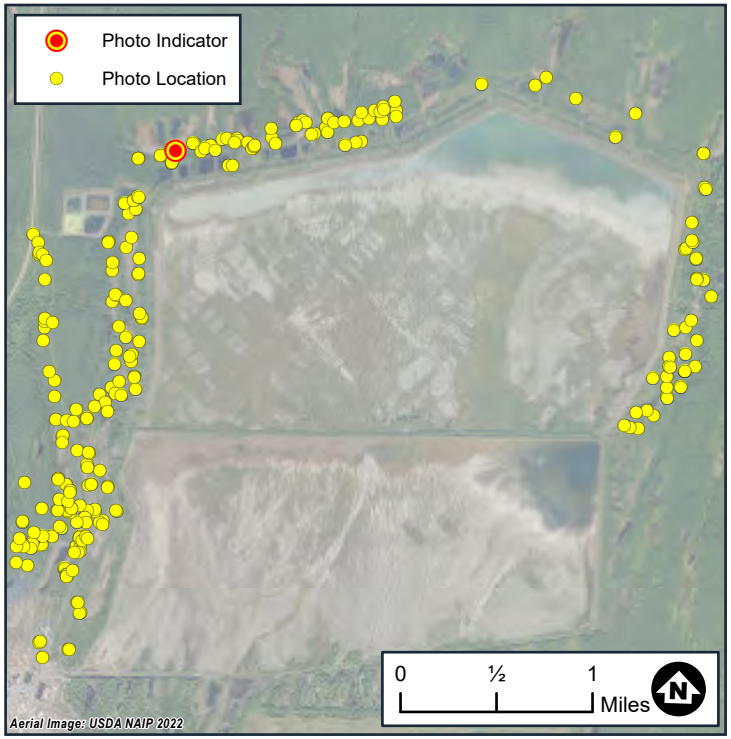
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

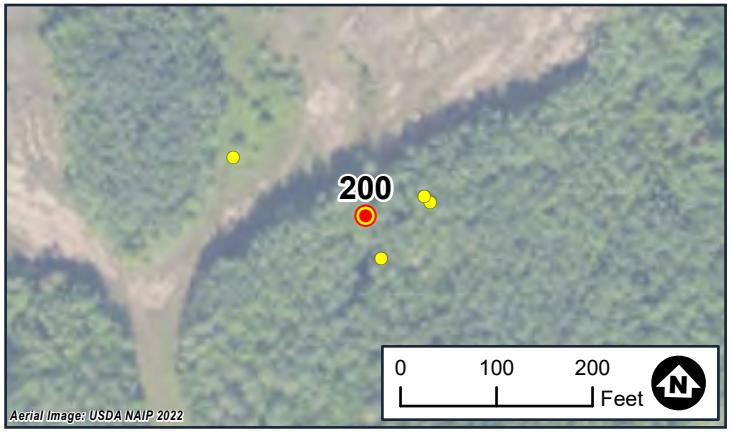
BARR

Date: 8/4/2024
Wetland ID:WTL139
Flag No.:139-6
Sample Point ID:WTL139-DP1-U

Note: Photo locations are approximate







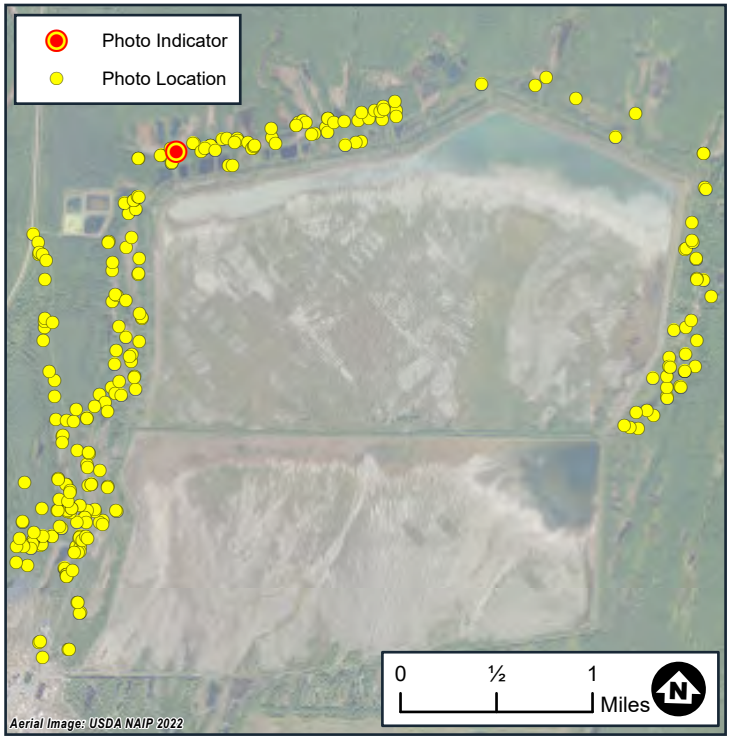
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

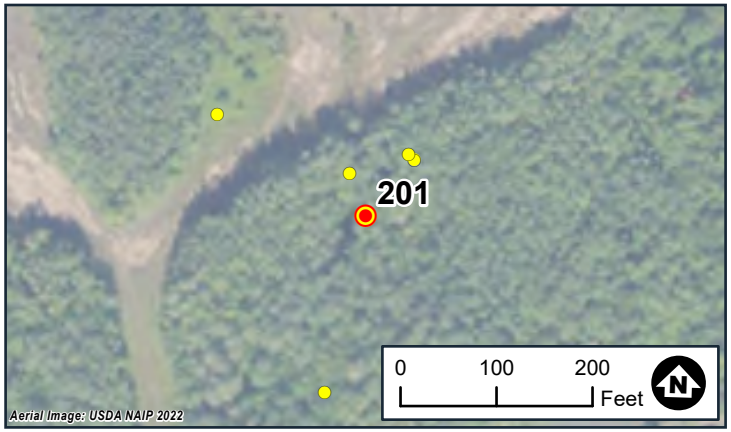
BARR

Date: 7/31/2024
Wetland ID:WTL142
Flag No.:142-2
Sample Point ID:WTL142-DP1-W

Note: Photo locations are approximate







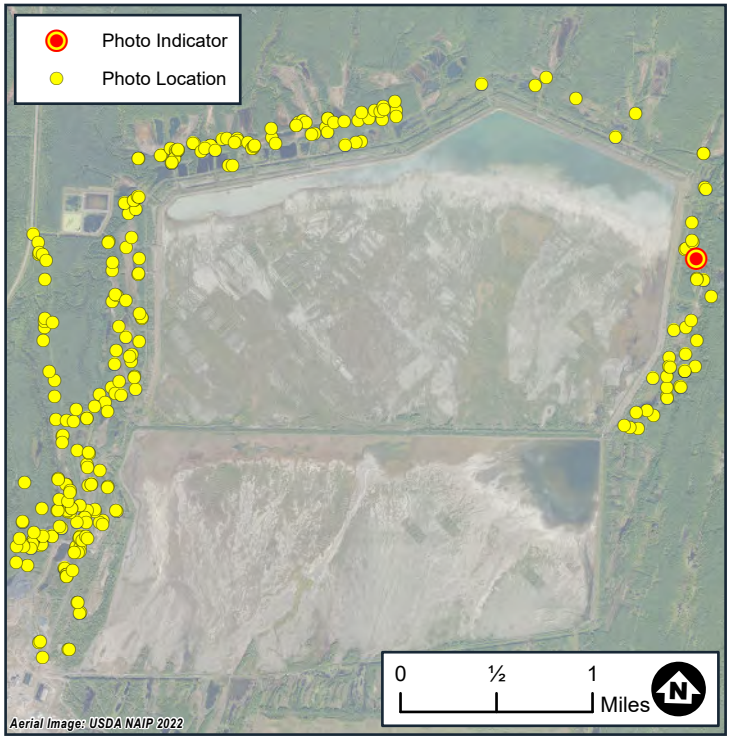
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

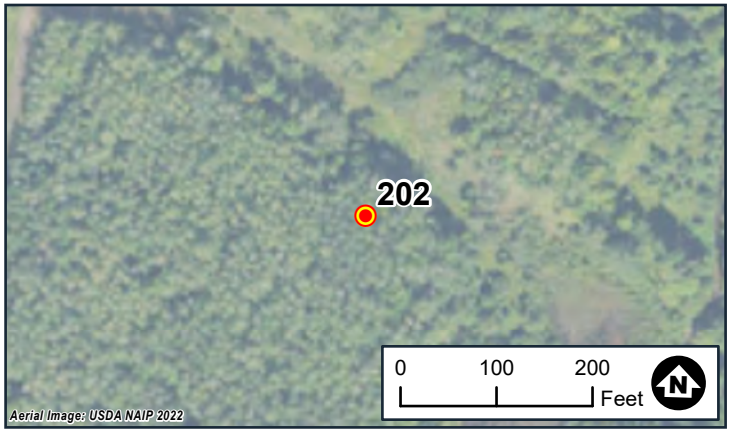
Date: 7/31/2024
Wetland ID:WTL142
Flag No.:142-2
Sample Point ID:WTL142-DP1-U

Note: Photo locations are approximate









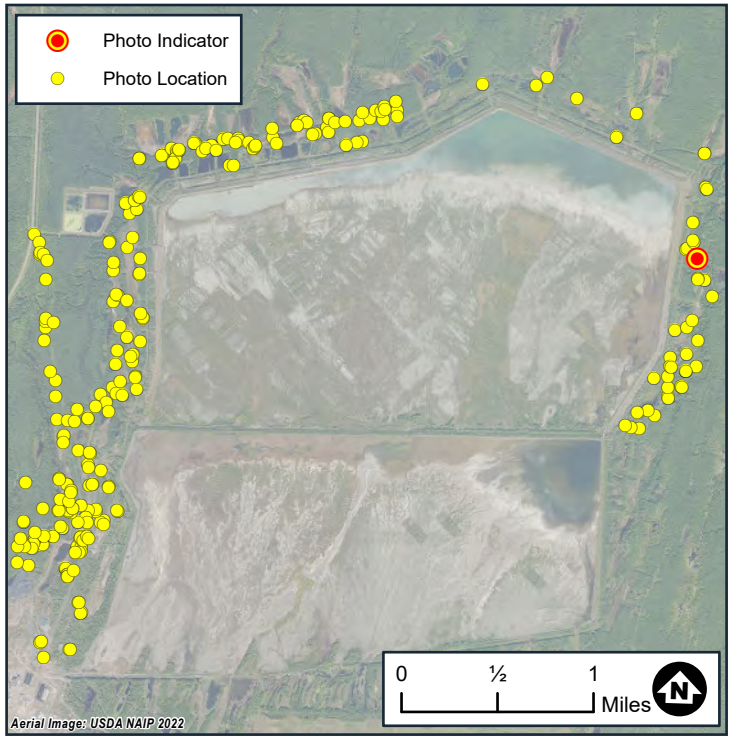
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

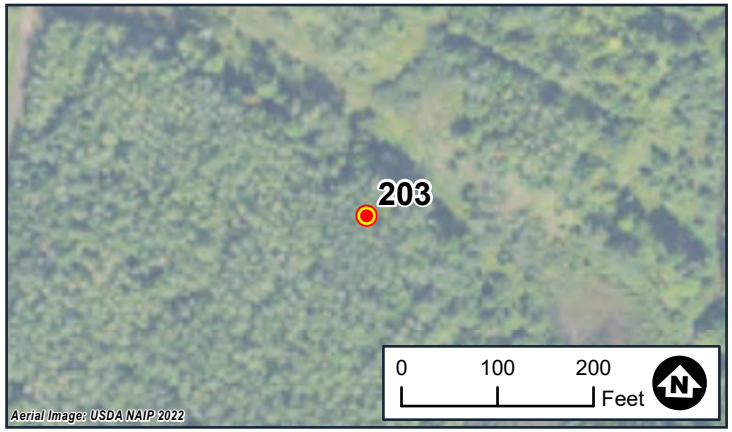
Date: 8/4/2024
Wetland ID:WTL143
Flag No.:143-1
Sample Point ID:WTL143-DP1-W

Note: Photo locations are approximate









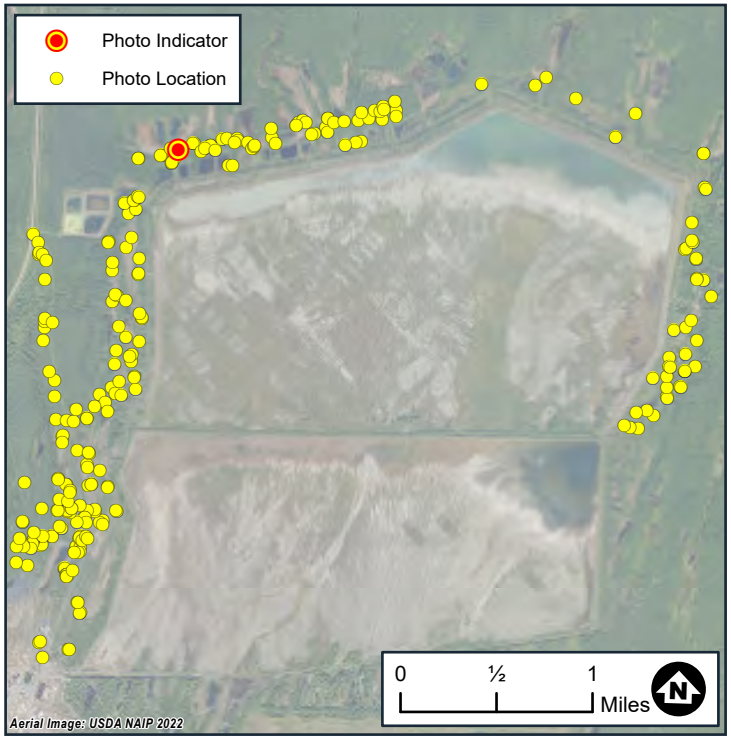
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

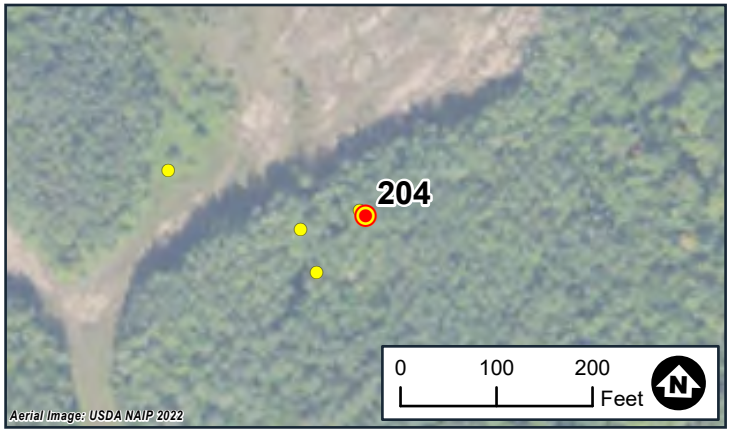
BARR

Date: 8/4/2024
Wetland ID:WTL143
Flag No.:143-1
Sample Point ID:WTL143-DP1-U

Note: Photo locations are approximate







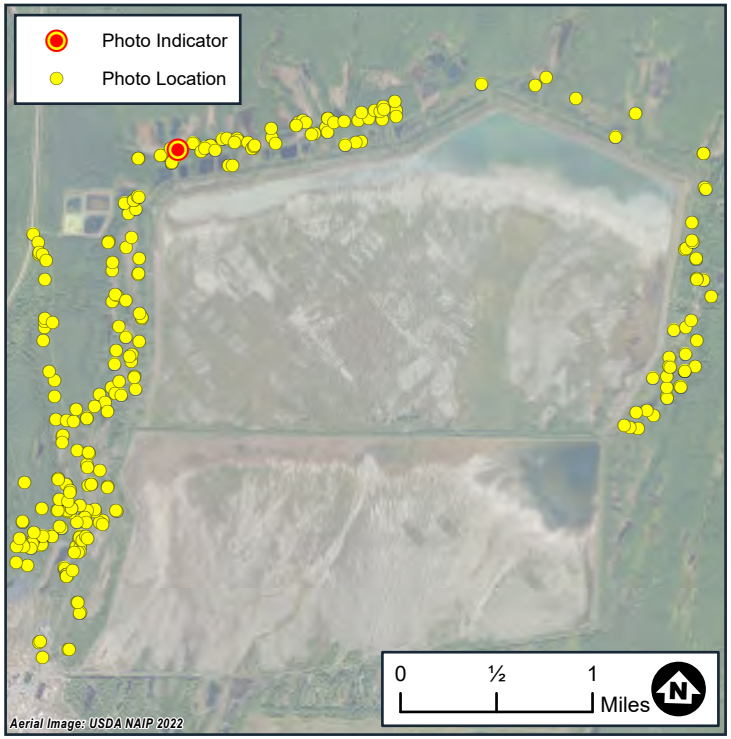
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

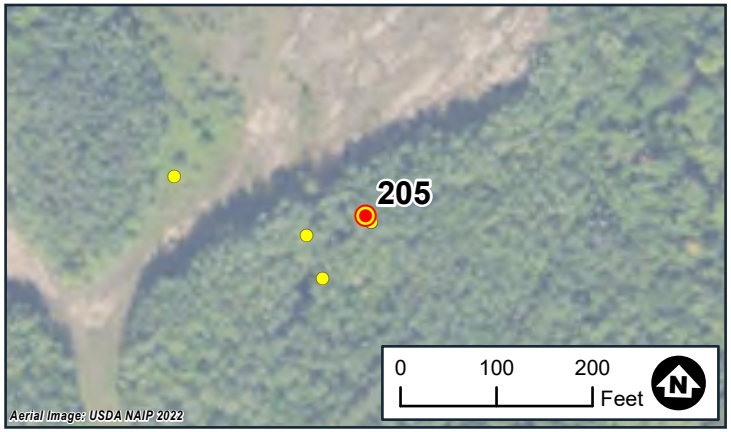
BARR

Date: 7/31/2024
Wetland ID:WTL144
Flag No.:144-19
Sample Point ID:WTL144-DP1-W

Note: Photo locations are approximate







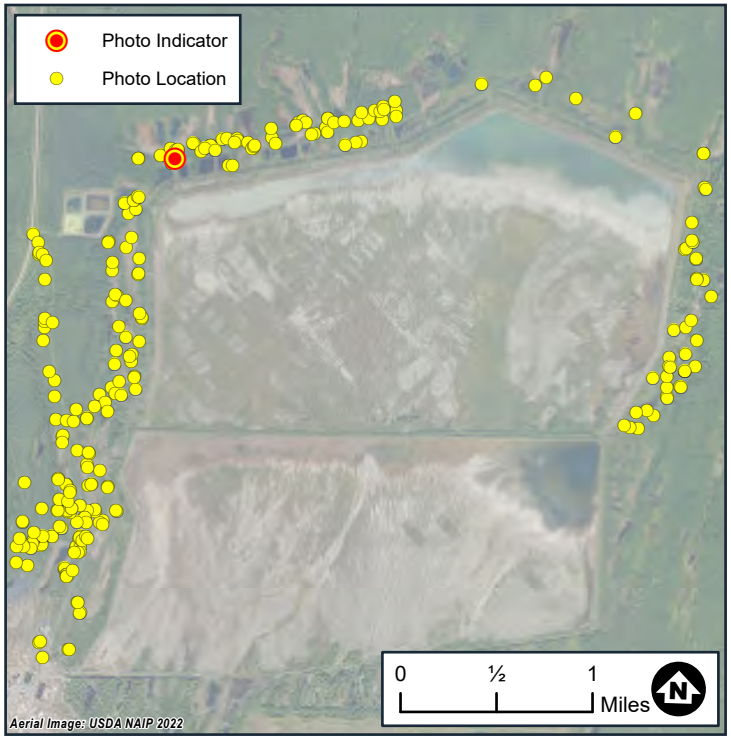
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

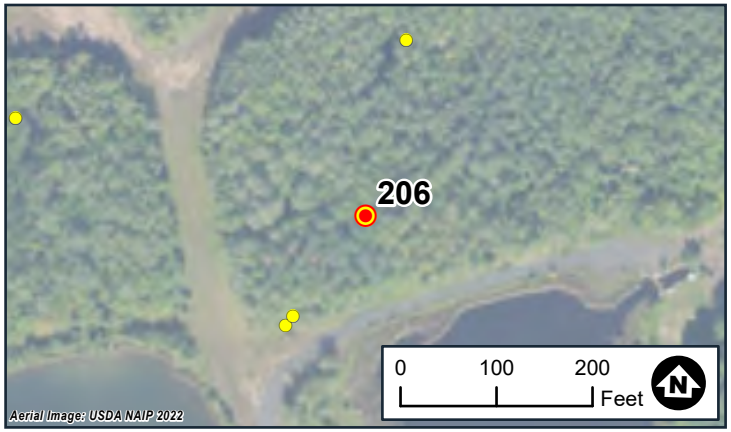
BARR

Date: 7/31/2024
Wetland ID:WTL144
Flag No.:144-19
Sample Point ID:WTL144-DP2-U

Note: Photo locations are approximate







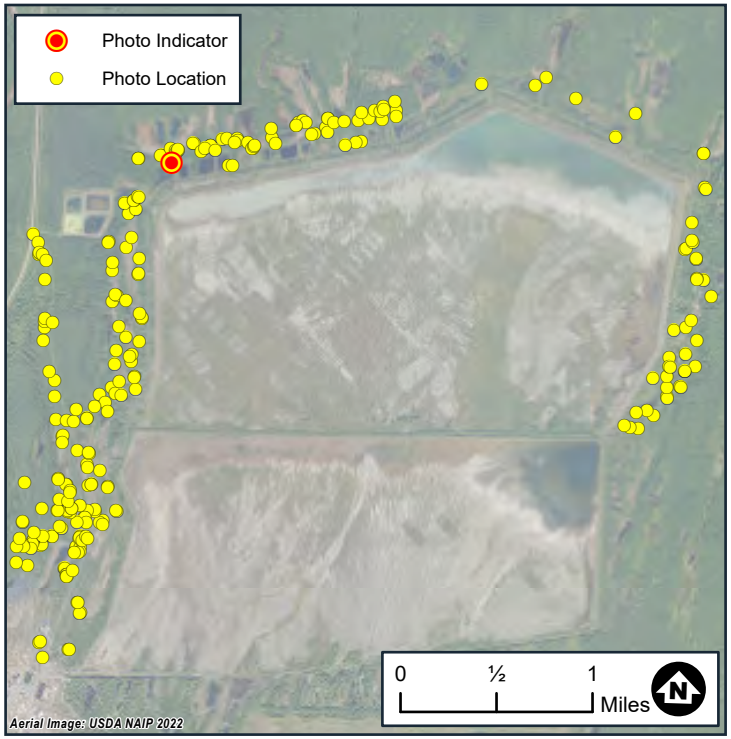
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

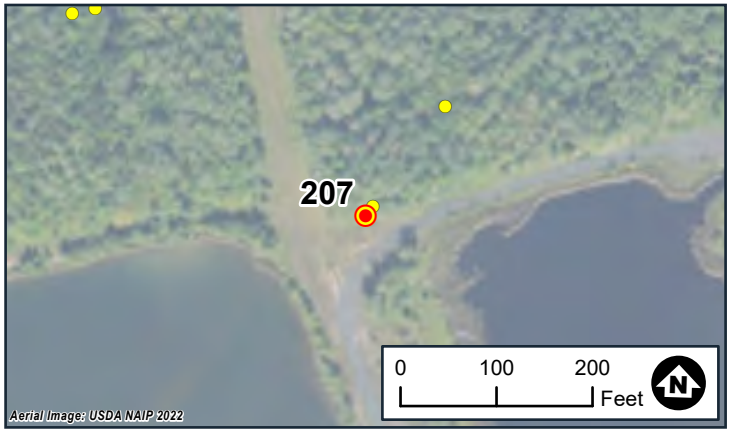
BARR

Date: 7/31/2024
Wetland ID:WTL146
Flag No.:146-8
Sample Point ID:N/A

Note: Photo locations are approximate







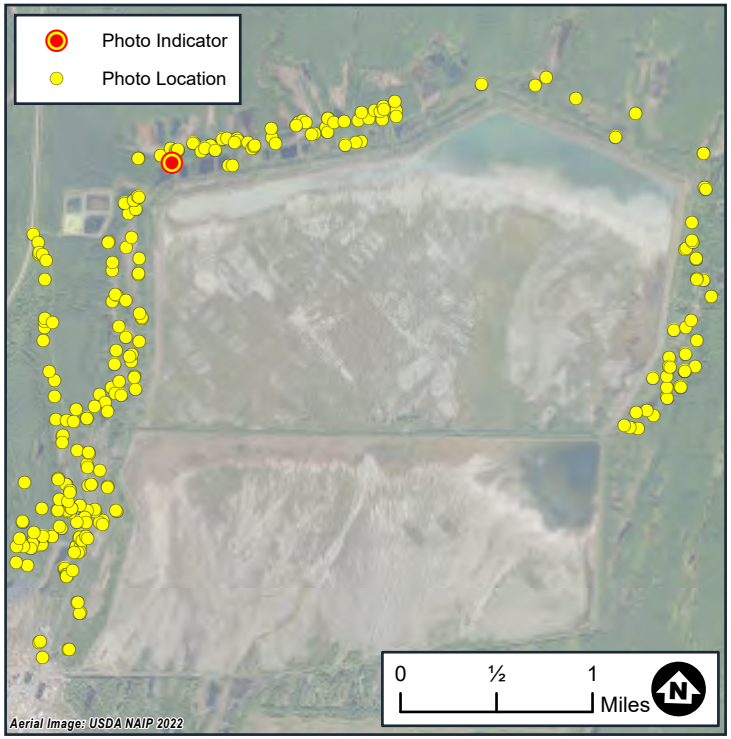
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

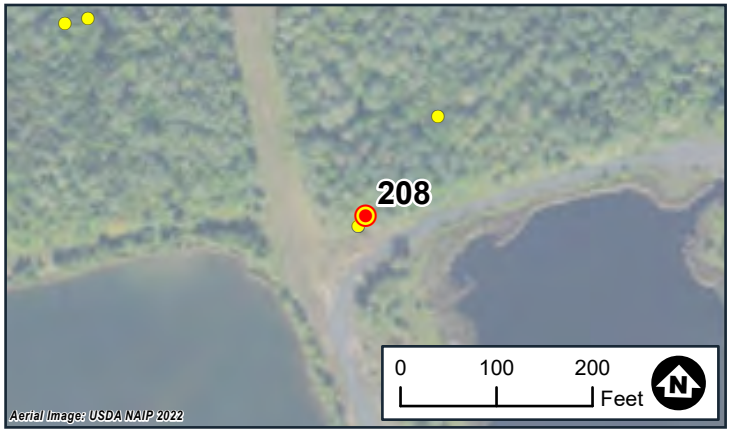
BARR

Date: 8/1/2024
Wetland ID:WTL148
Flag No.:148-6
Sample Point ID:WTL148-DP1-W

Note: Photo locations are approximate







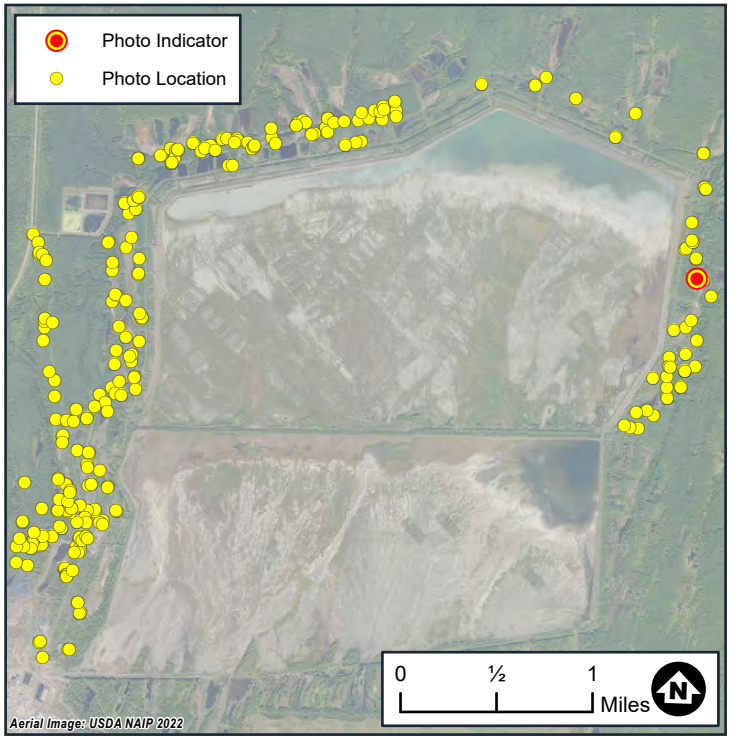
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

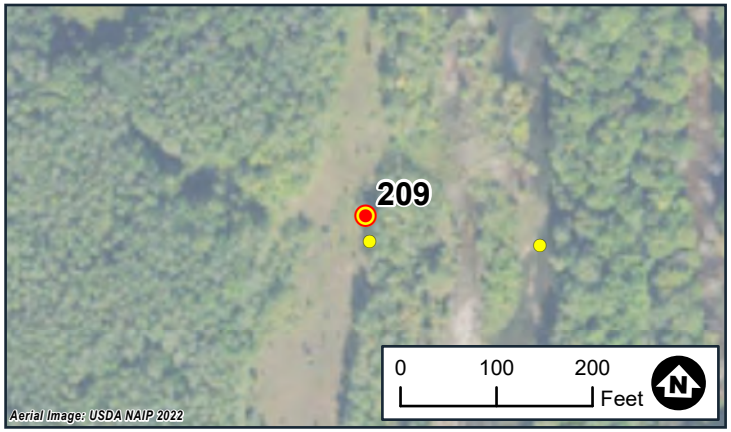
Date: 8/1/2024
Wetland ID:WTL148
Flag No.:148-6
Sample Point ID:WTL148-DP1-U

Note: Photo locations are approximate









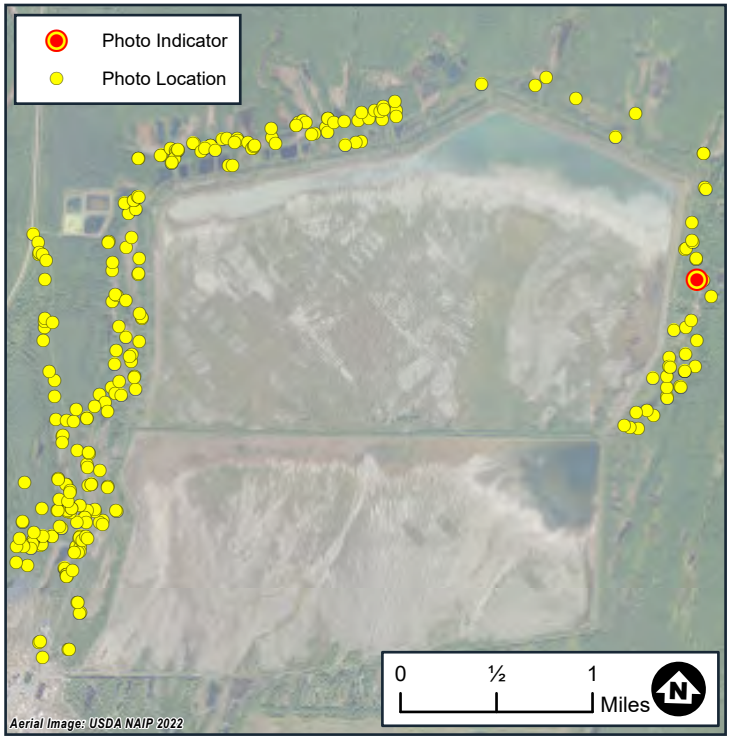
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

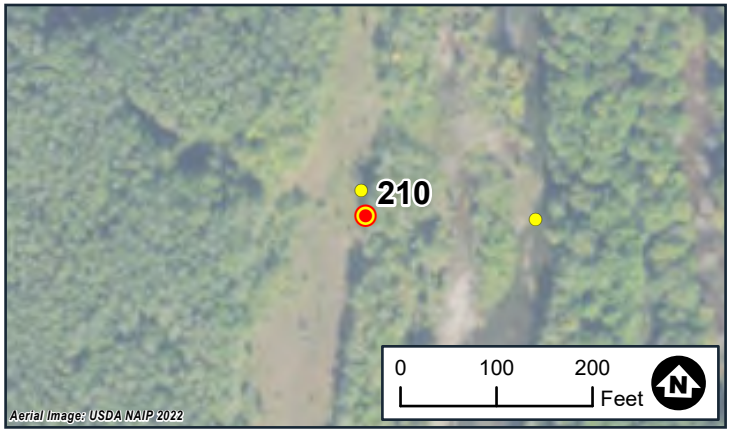
BARR

Date: 8/4/2024
Wetland ID:WTL151
Flag No.:151-2
Sample Point ID:WTL151-DP1-W

Note: Photo locations are approximate







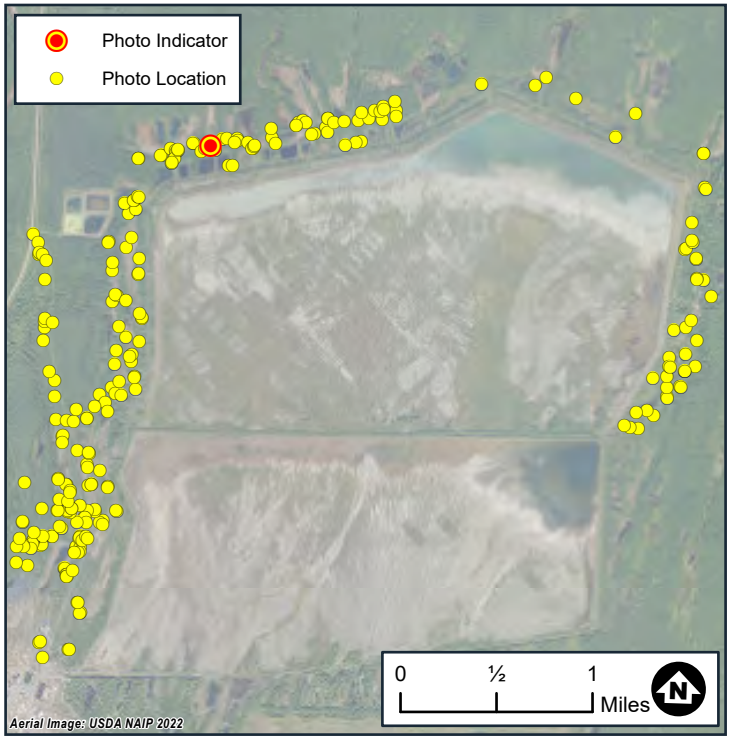
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

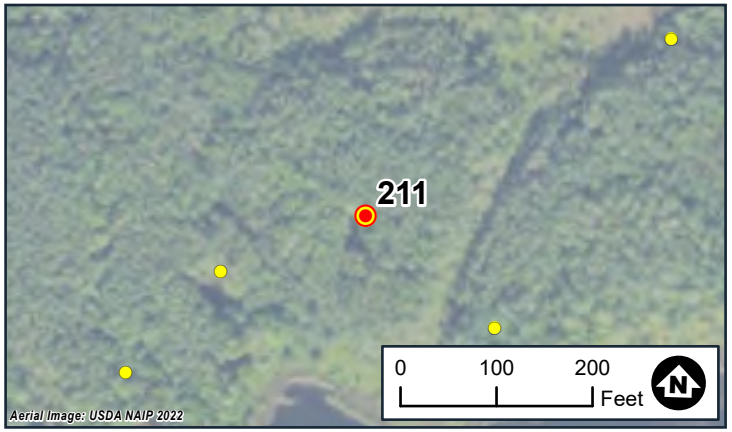
BARR

Date: 8/4/2024
Wetland ID:WTL151
Flag No.:151-2
Sample Point ID:WTL151-DP1-U

Note: Photo locations are approximate







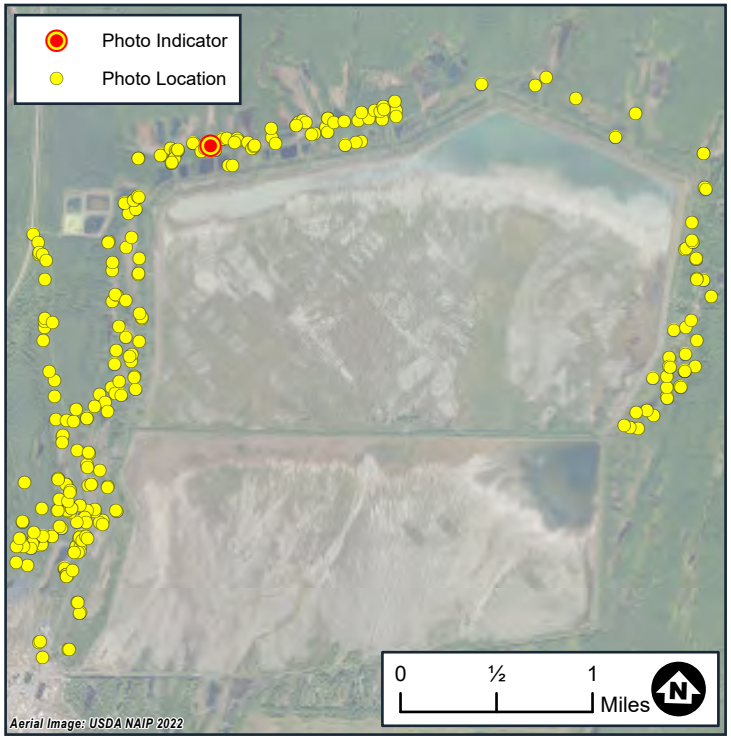
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

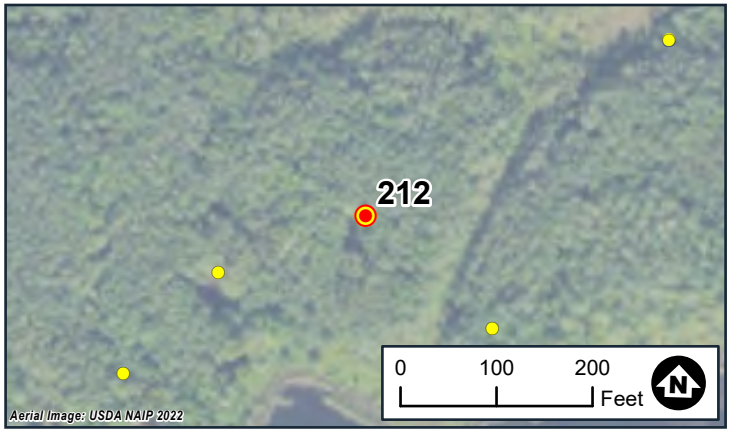
BARR

Date: 8/1/2024
Wetland ID:WTL152
Flag No.:152-1
Sample Point ID:WTL152-DP1-W

Note: Photo locations are approximate







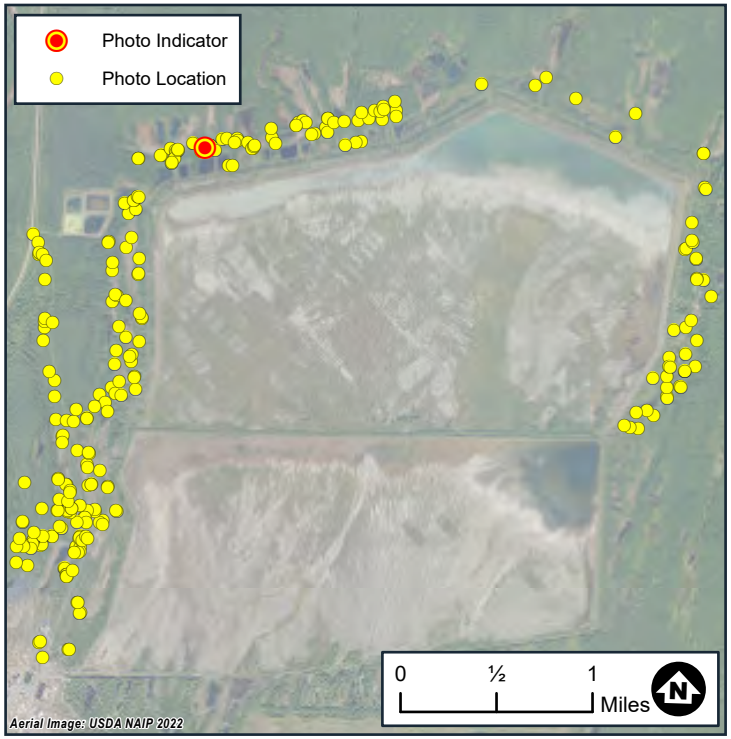
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

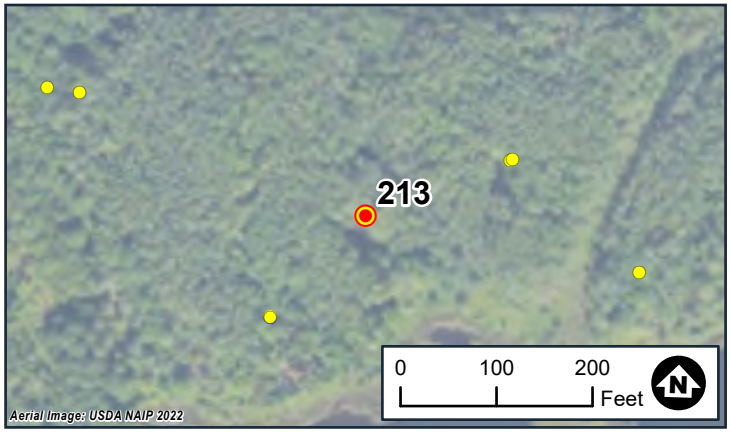
BARR

Date: 8/1/2024
Wetland ID:WTL152
Flag No.:152-1
Sample Point ID:WTL152-DP1-U

Note: Photo locations are approximate







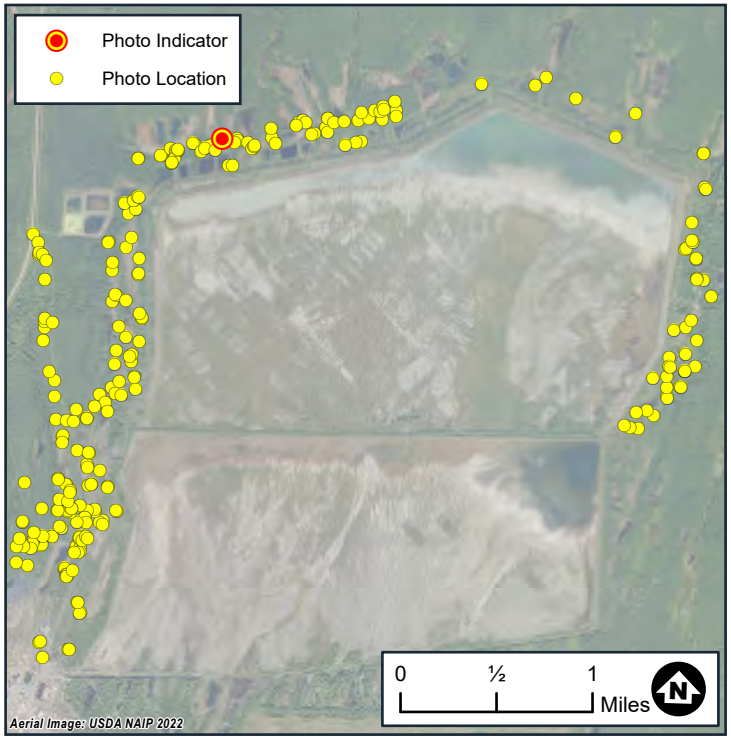
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

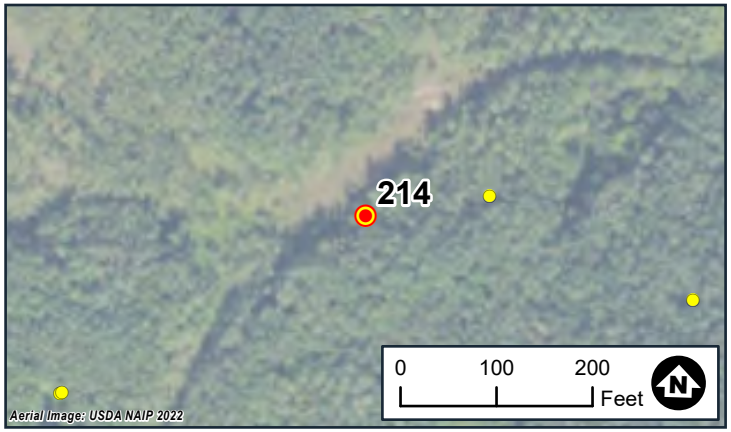
BARR

Date: 8/1/2024
Wetland ID:WTL154
Flag No.:154-1
Sample Point ID:N/A

Note: Photo locations are approximate







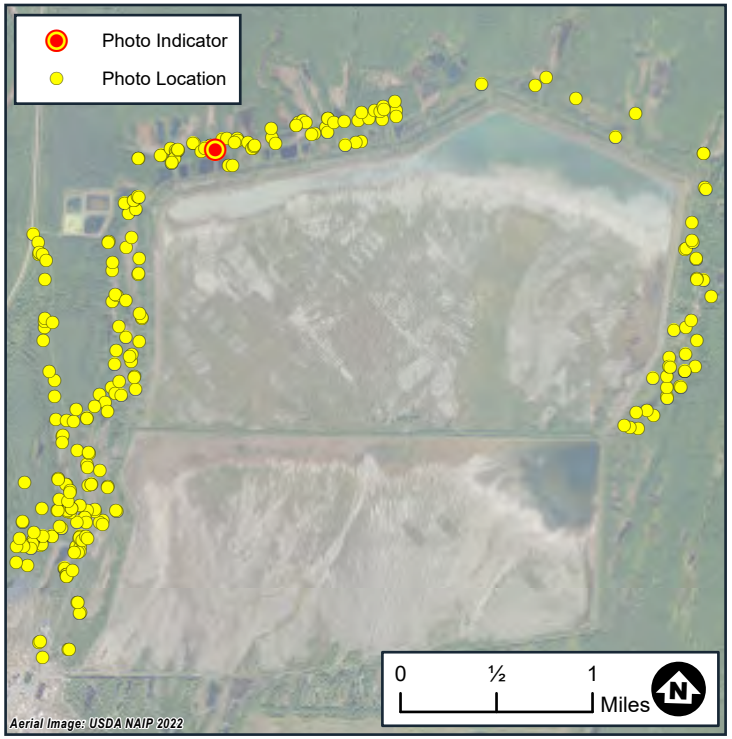
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

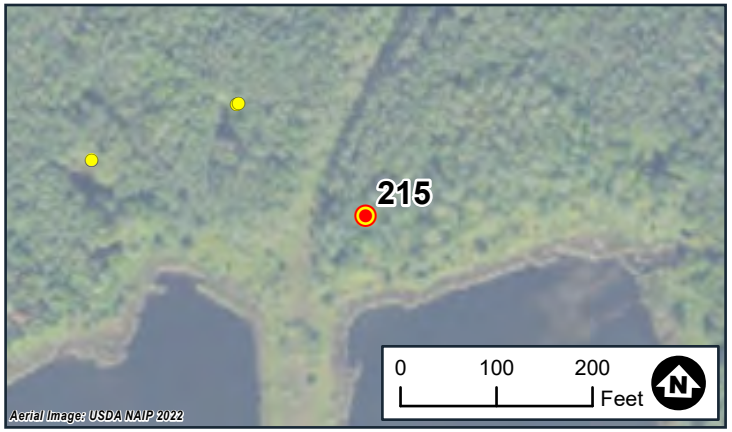
BARR

Date: 8/1/2024
Wetland ID:WTL158
Flag No.:158-3
Sample Point ID:N/A

Note: Photo locations are approximate







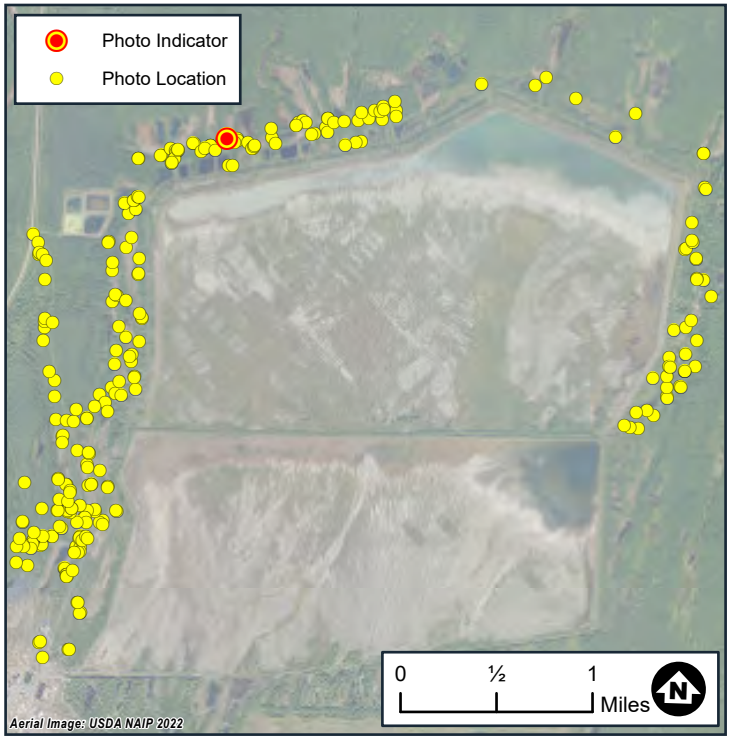
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

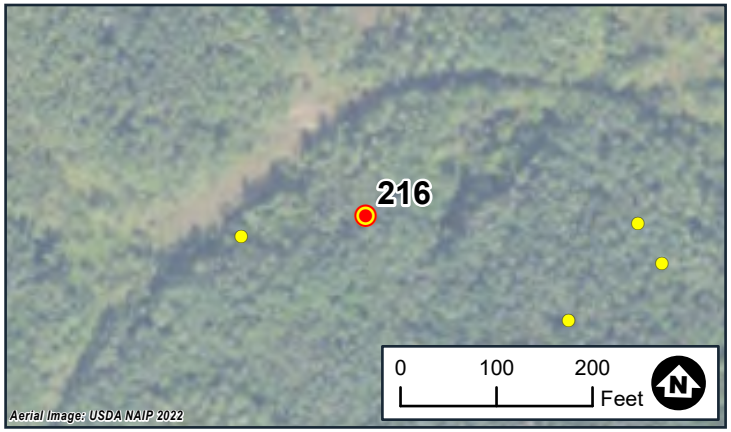
BARR

Date: 8/1/2024
Wetland ID:WTL160
Flag No.:160-1
Sample Point ID:N/A

Note: Photo locations are approximate







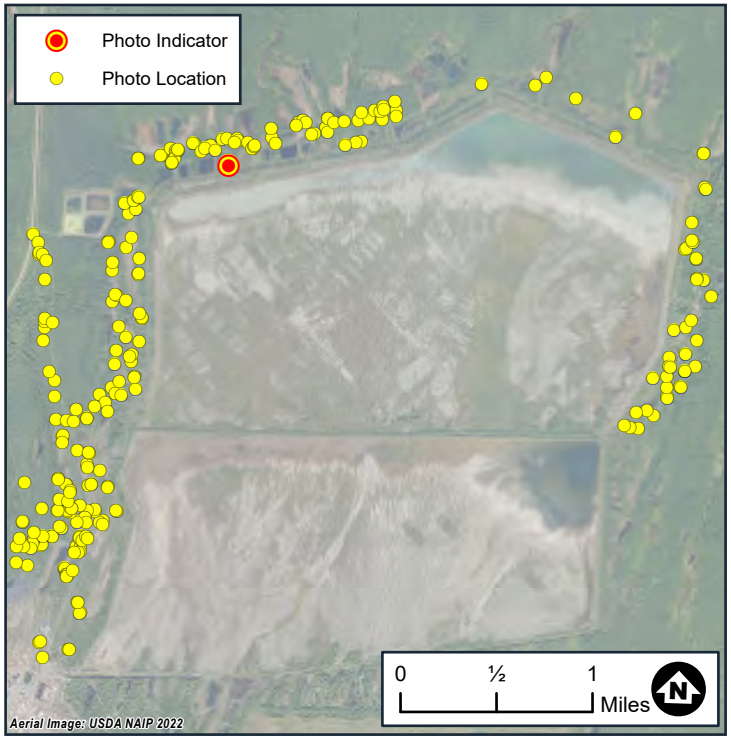
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

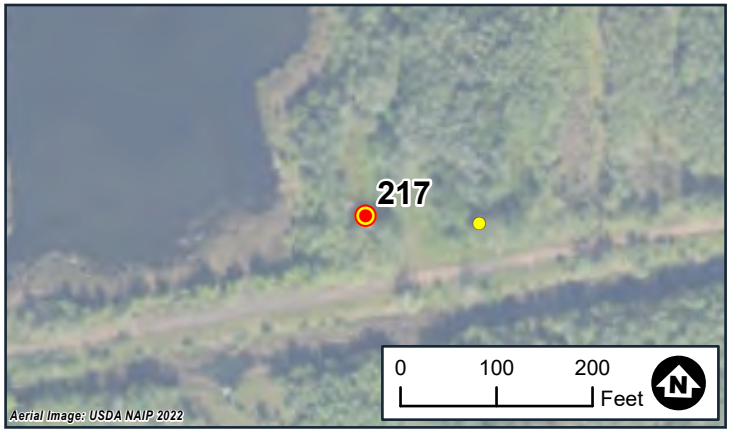
BARR

Date: 8/1/2024
Wetland ID:WTL162
Flag No.:162-1
Sample Point ID:N/A

Note: Photo locations are approximate







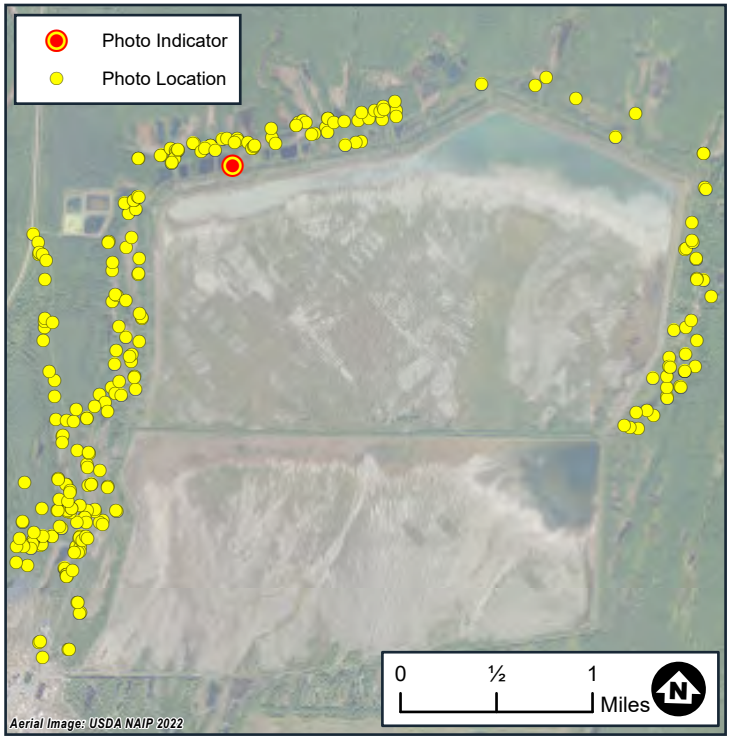
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

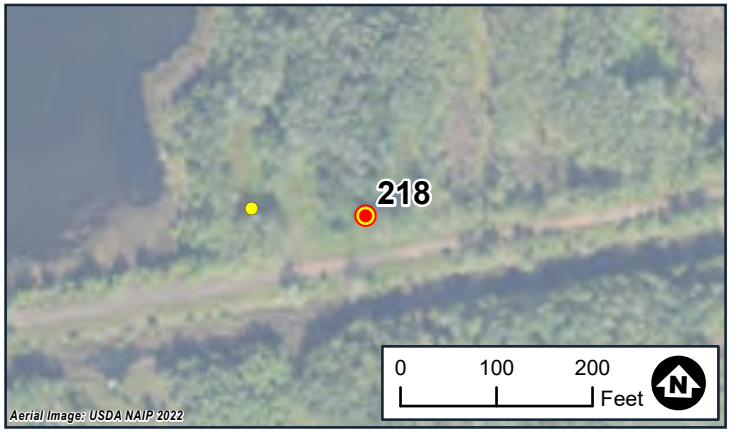
BARR

Date: 8/1/2024
Wetland ID:WTL172
Flag No.:172-1
Sample Point ID:N/A

Note: Photo locations are approximate







Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 8/1/2024
Wetland ID:WTL174
Flag No.:174-1
Sample Point ID:N/A

Note: Photo locations are approximate

Photo 219-1



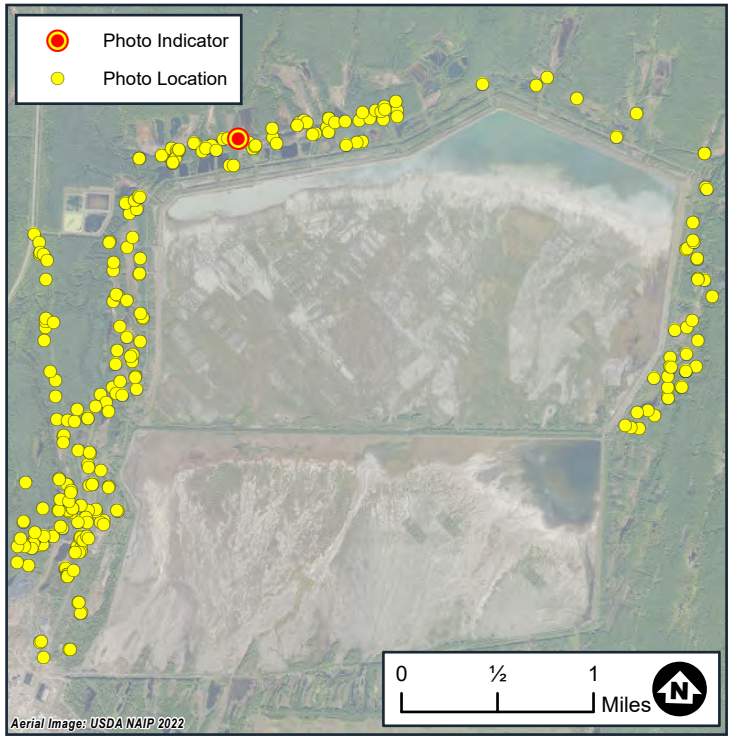
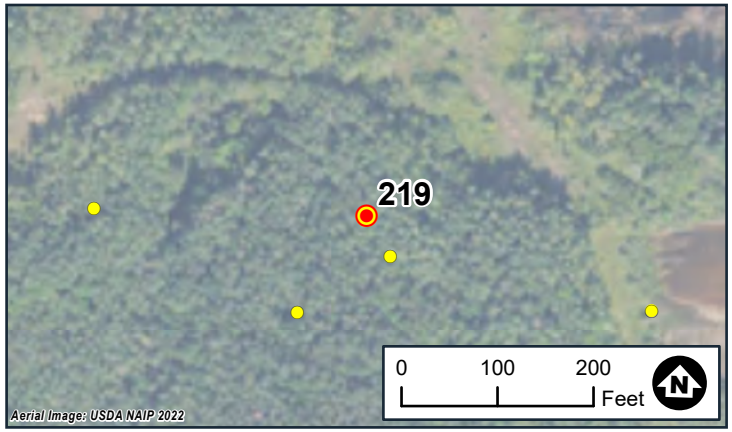


Photo 219-2





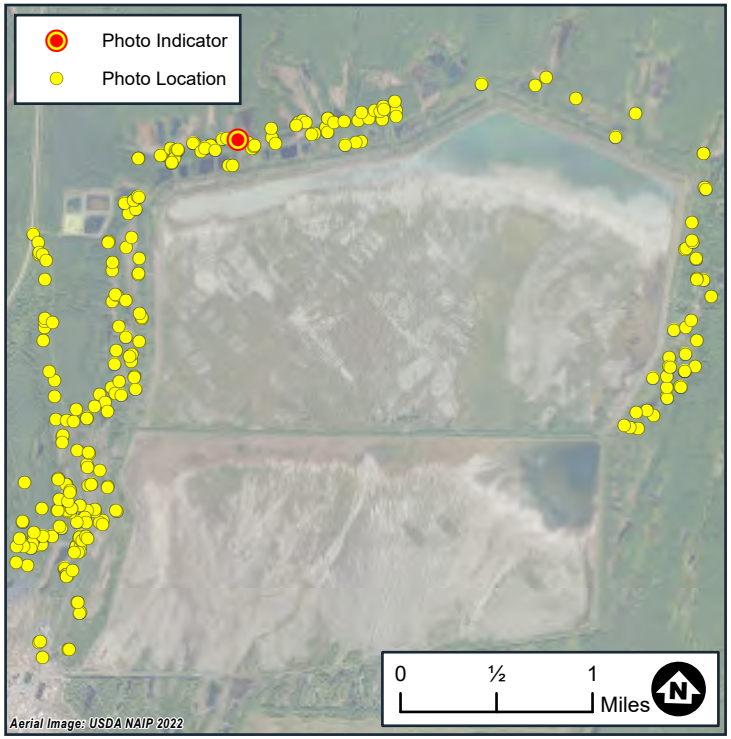
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

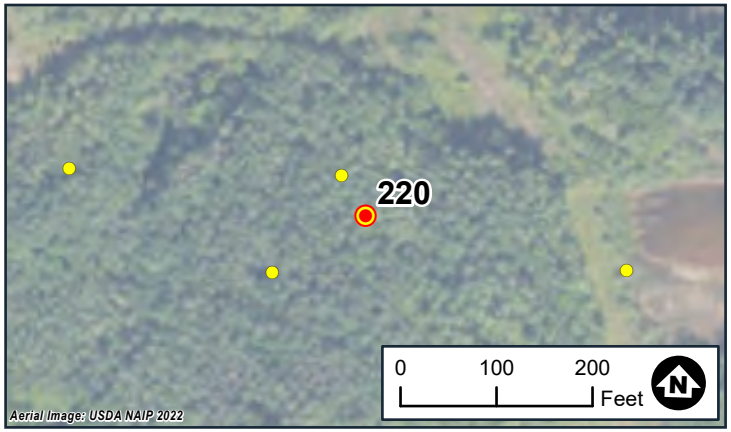
BARR

Date: 8/2/2024
Wetland ID:WTL180
Flag No.:180-69
Sample Point ID:WTL180-DP1-W

Note: Photo locations are approximate







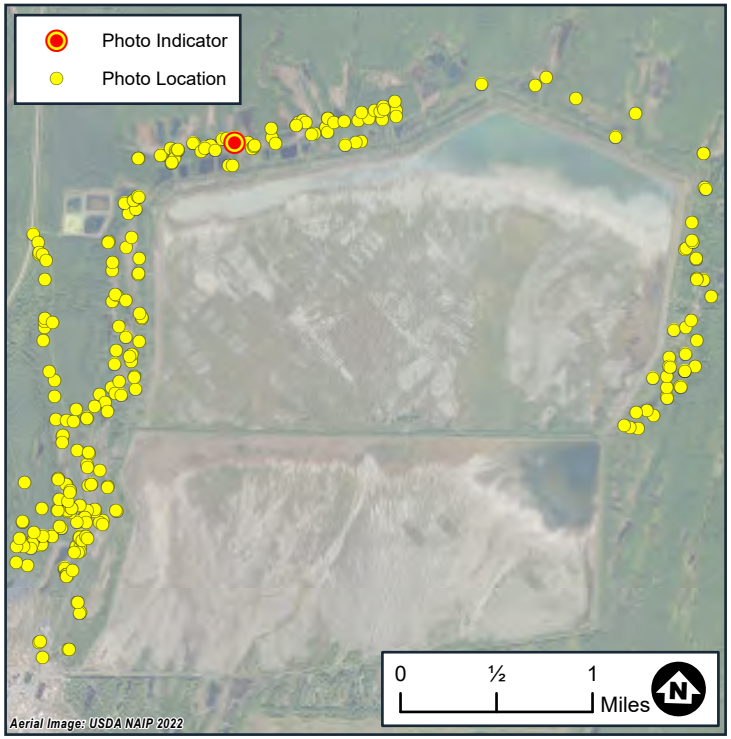
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

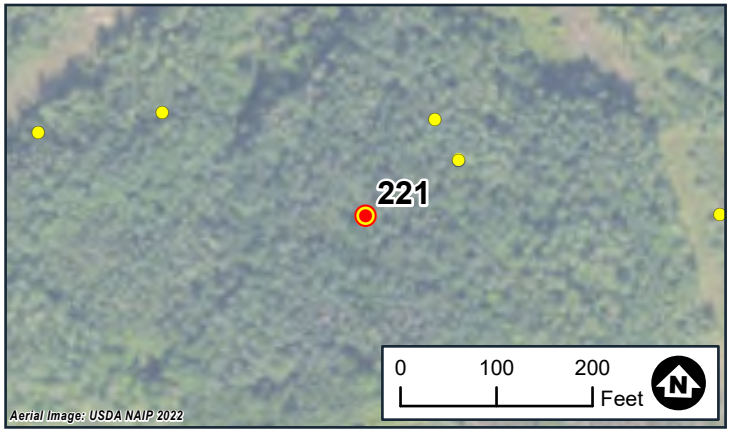
BARR

Date: 8/2/2024
Wetland ID:WTL180
Flag No.:180-69
Sample Point ID:WTL180-DP1-U

Note: Photo locations are approximate







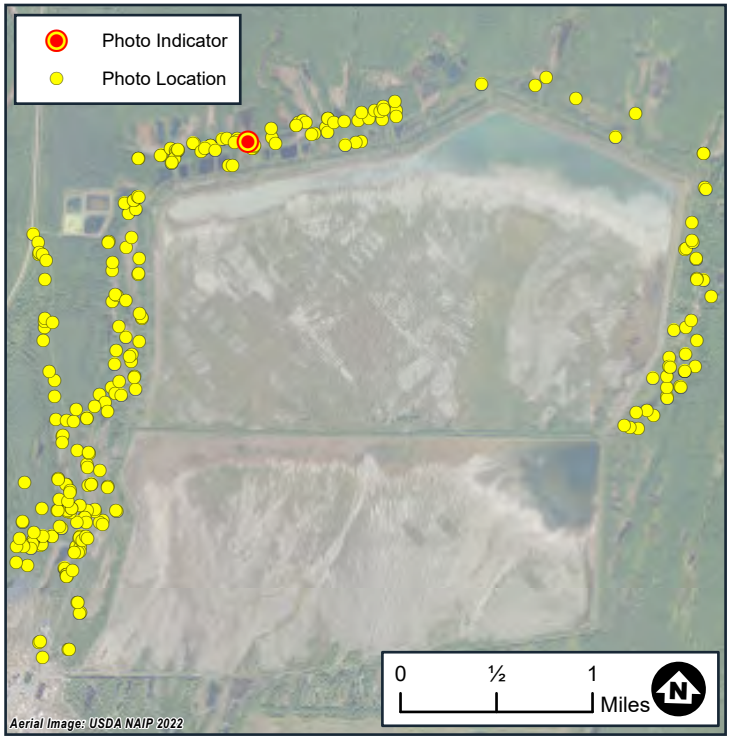
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

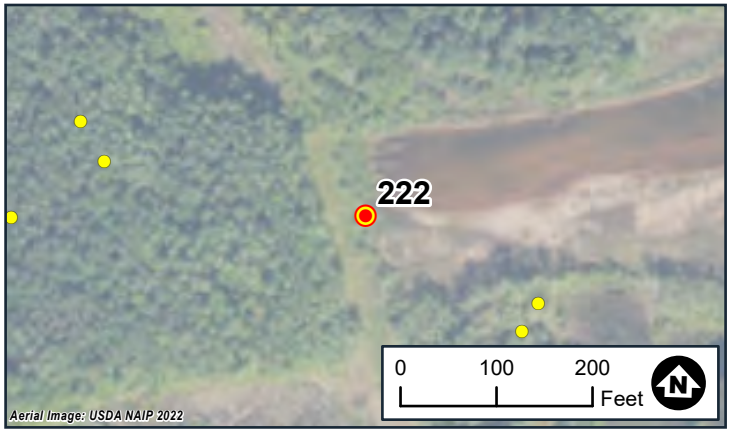
BARR

Date: 8/2/2024
Wetland ID:WTL180
Flag No.:182-1
Sample Point ID:N/A

Note: Photo locations are approximate







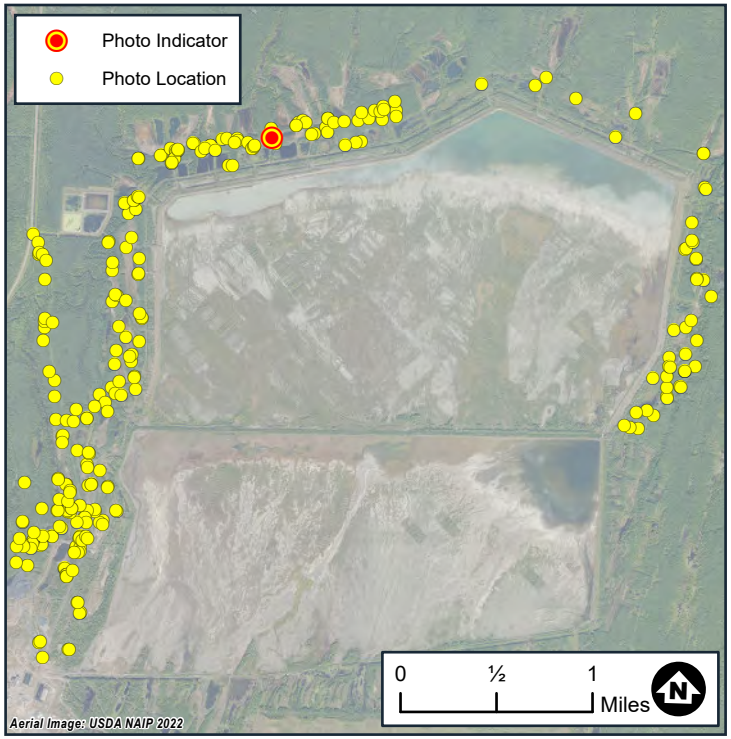
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

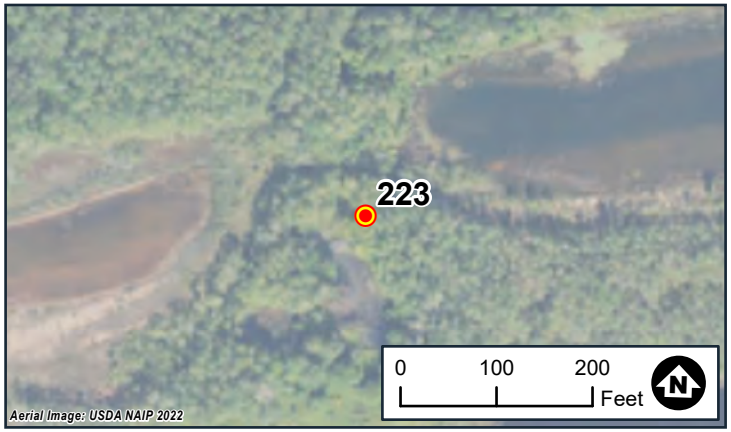
Date: 8/2/2024
Wetland ID:WTL184
Flag No.:184-1
Sample Point ID:N/A

Note: Photo locations are approximate









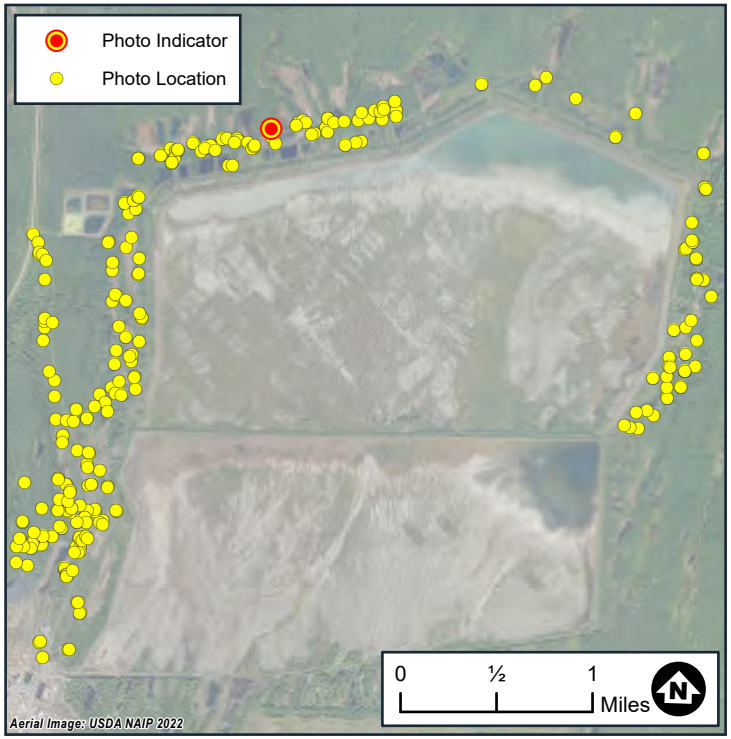
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

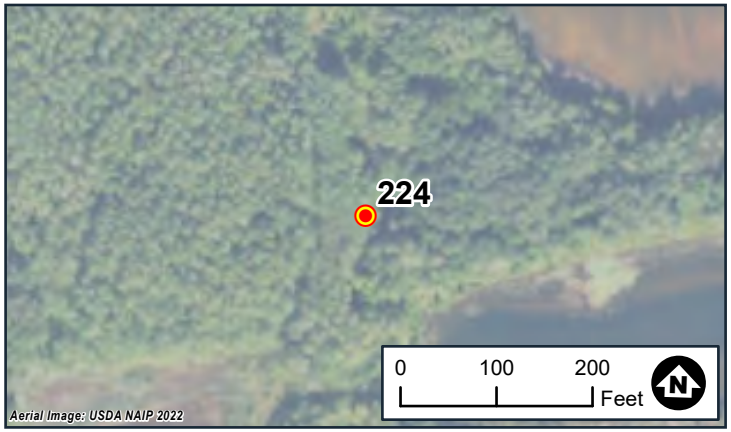
BARR

Date: 8/2/2024
Wetland ID:WTL188
Flag No.:188-1
Sample Point ID:N/A

Note: Photo locations are approximate







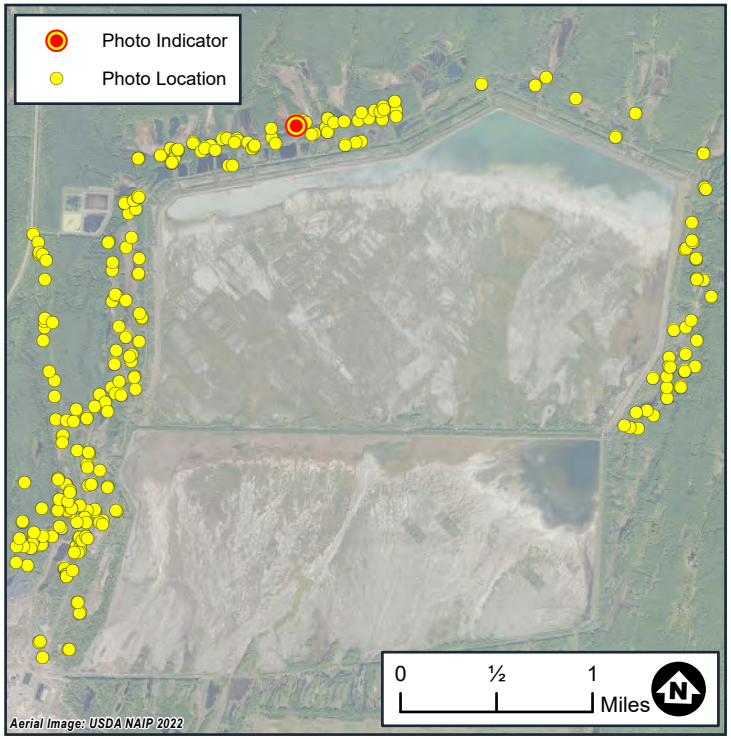
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

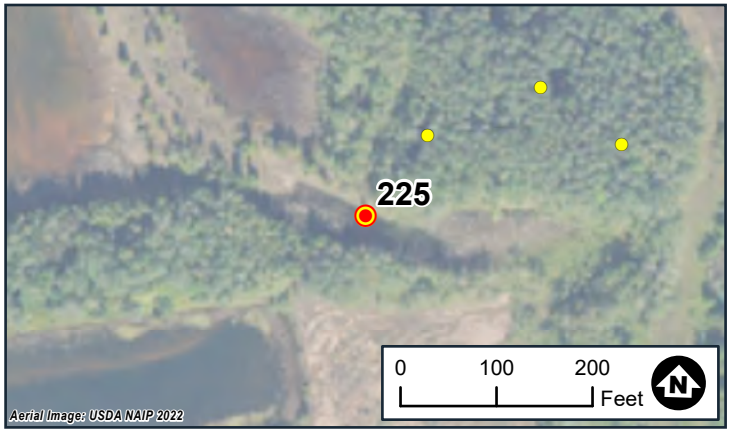
Date: 8/2/2024
Wetland ID:WTL190
Flag No.:190-1
Sample Point ID:N/A

Note: Photo locations are approximate









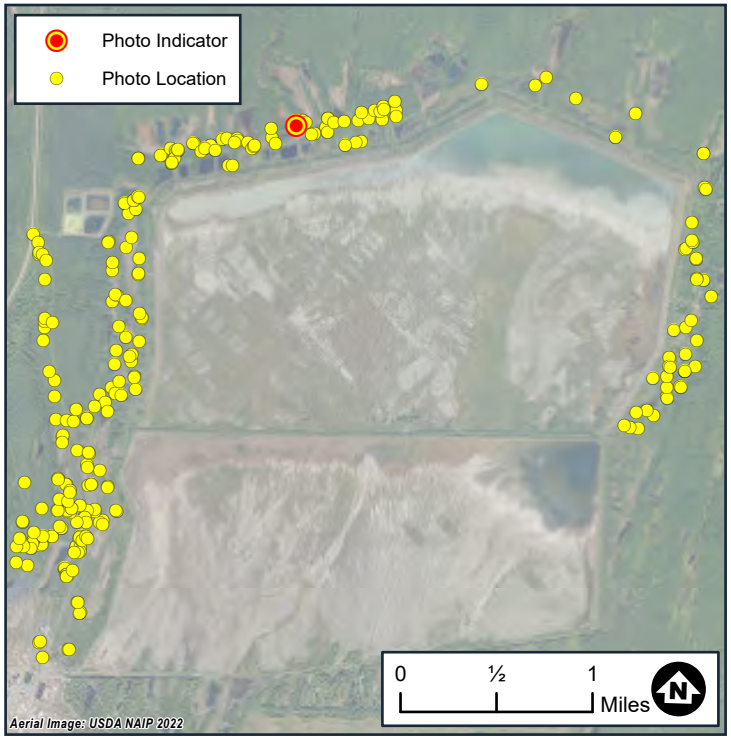
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

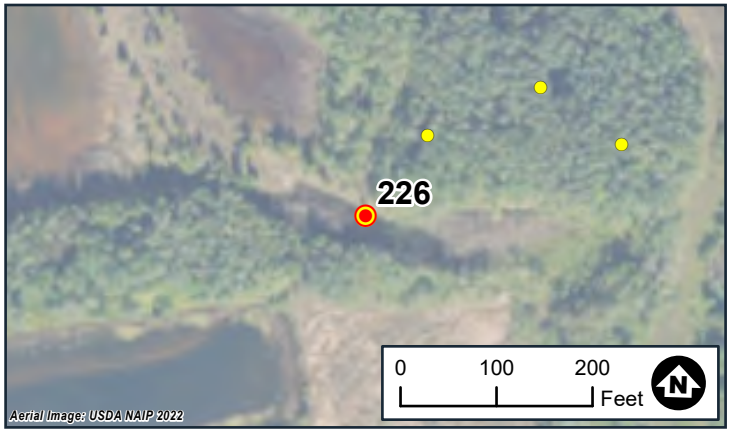
BARR

Date: 8/2/2024
Wetland ID:WTL190
Flag No.:190-52
Sample Point ID:N/A

Note: Photo locations are approximate







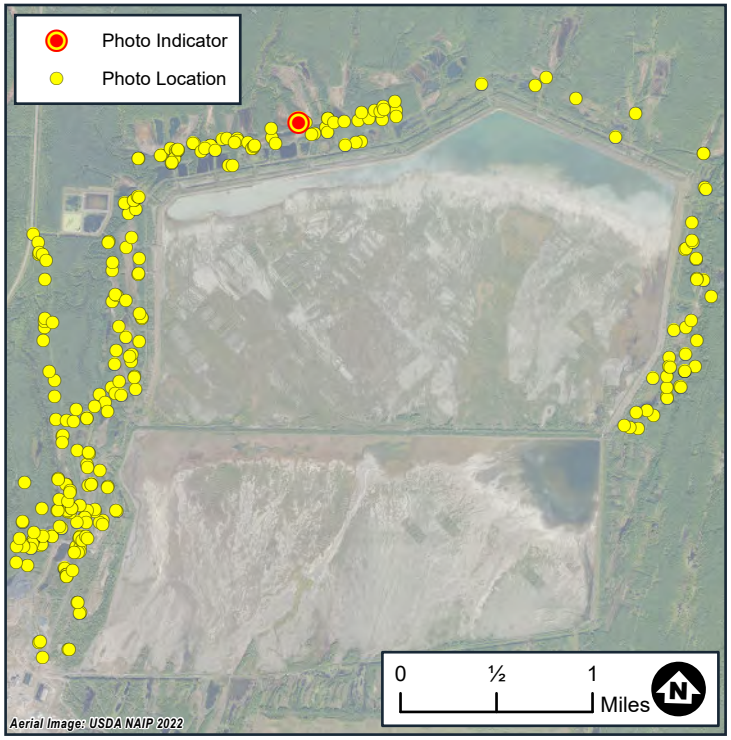
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

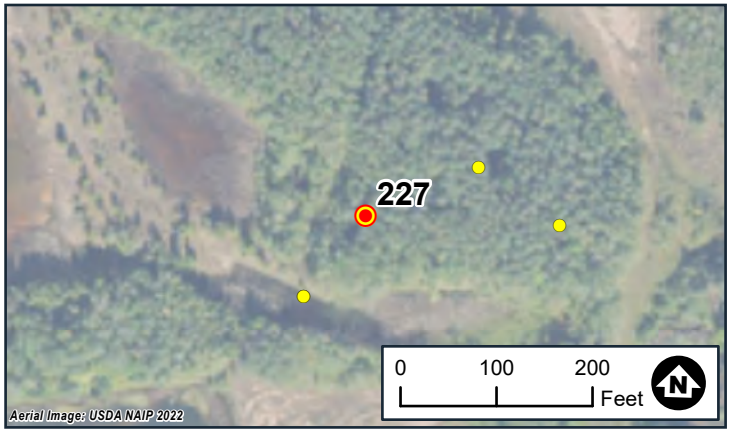
Date: 8/2/2024
Wetland ID:WTL190
Flag No.:190-52
Sample Point ID:N/A

Note: Photo locations are approximate









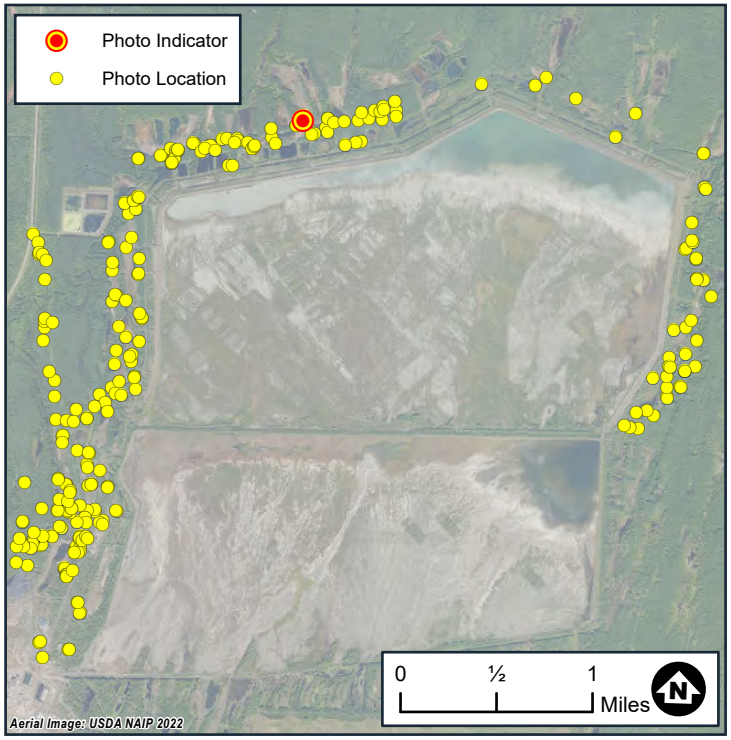
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

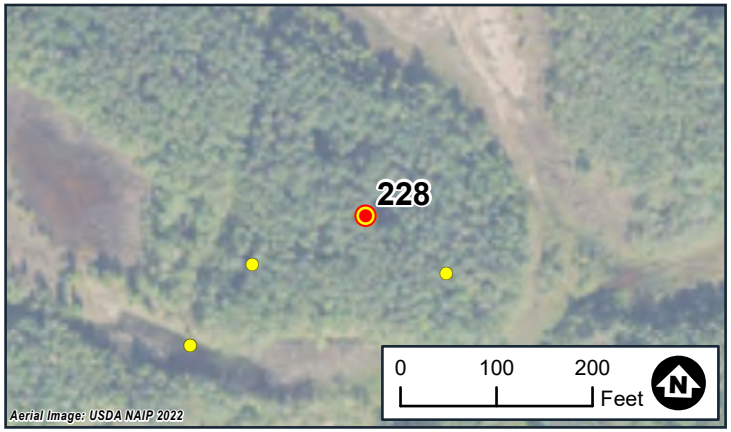
Date: 8/2/2024
Wetland ID:WTL192
Flag No.:192-4
Sample Point ID:N/A

Note: Photo locations are approximate









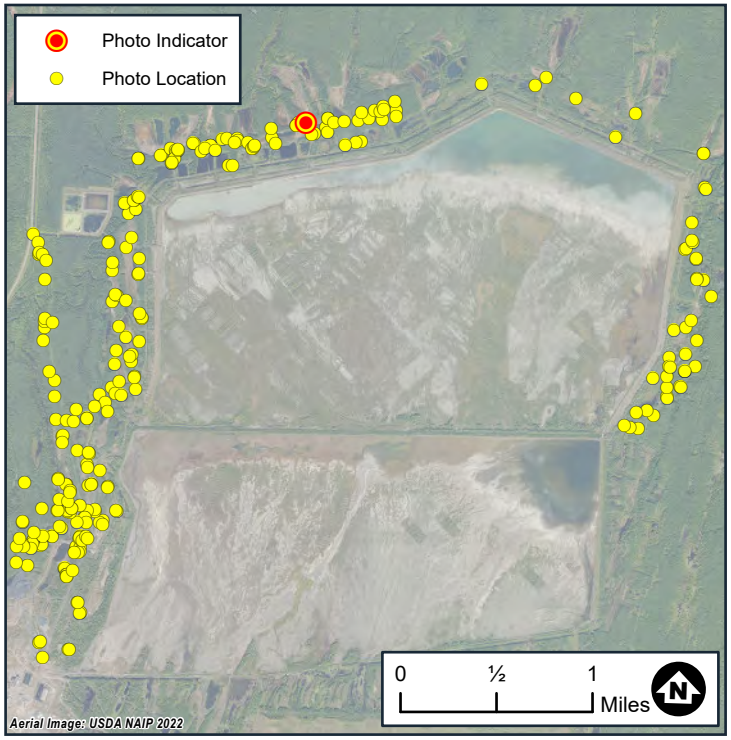
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

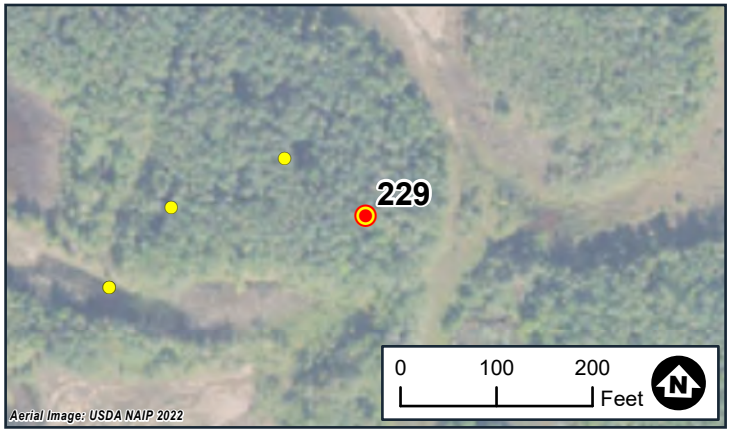
Date: 8/2/2024
Wetland ID:WTL194
Flag No.:194-1
Sample Point ID:N/A

Note: Photo locations are approximate









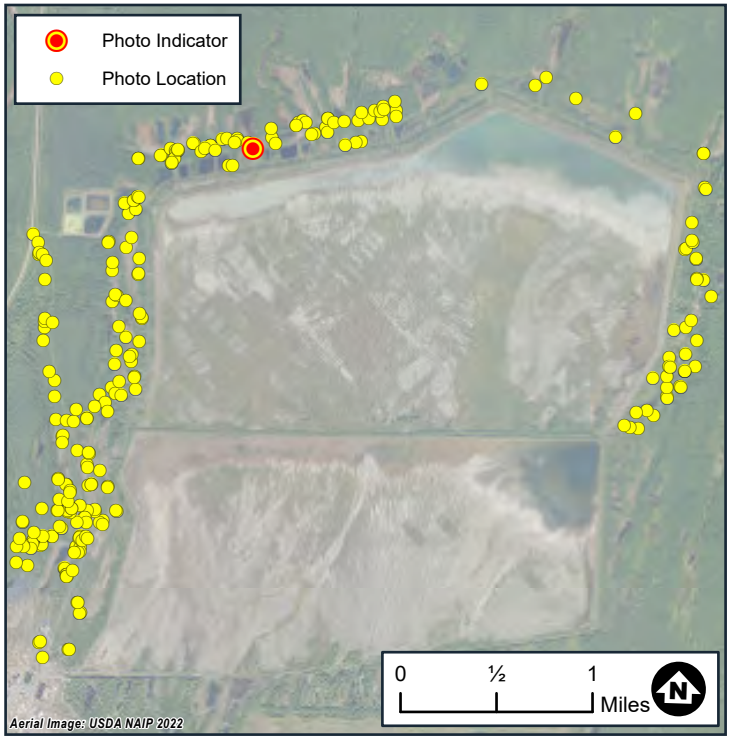
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

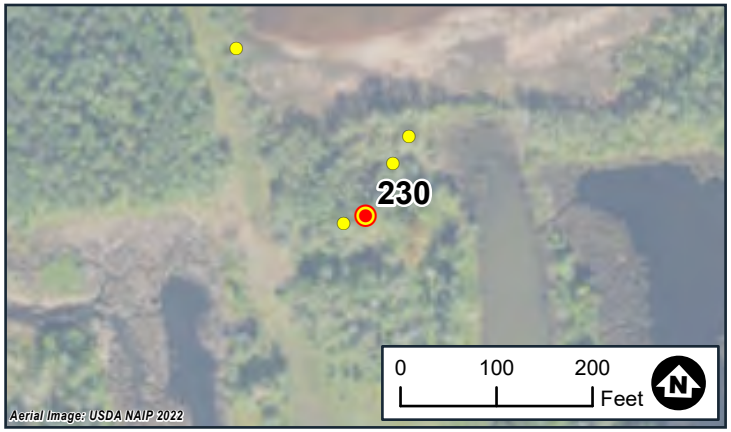
BARR

Date: 8/2/2024
Wetland ID:WTL196
Flag No.:196-1
Sample Point ID:N/A

Note: Photo locations are approximate







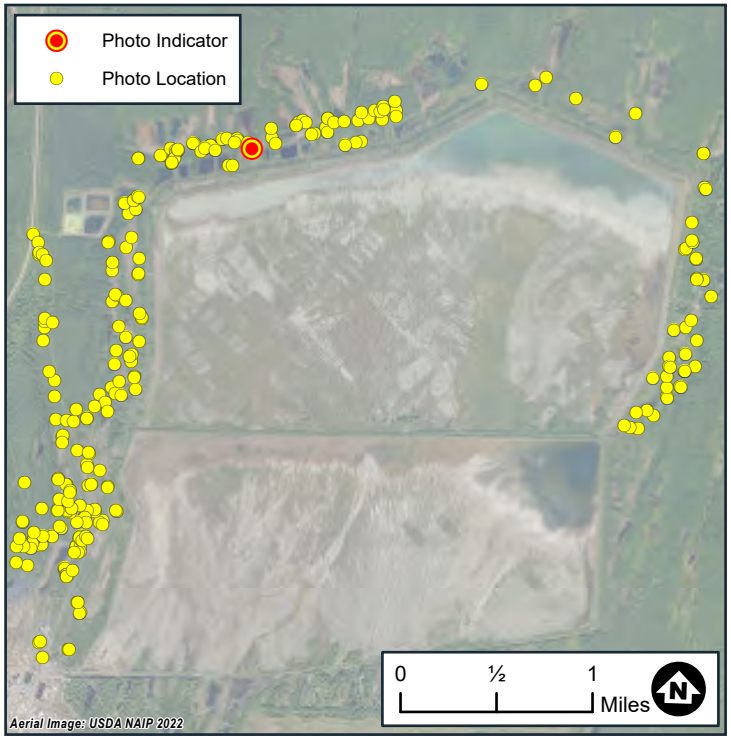
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

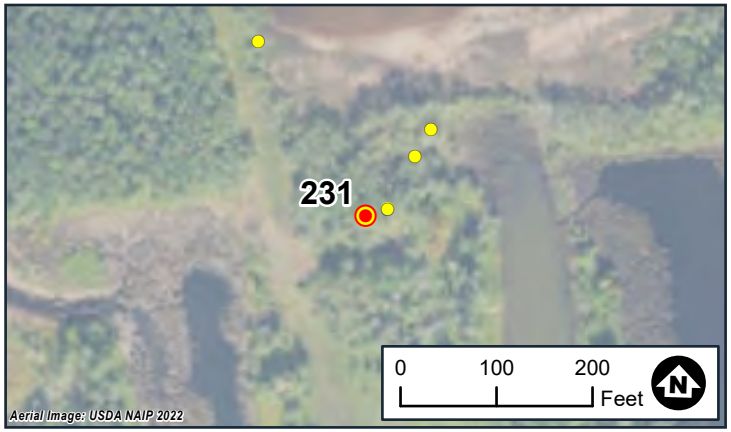
BARR

Date: 8/3/2024
Wetland ID:WTL198
Flag No.:198-36
Sample Point ID:WTL198-DP1-W

Note: Photo locations are approximate







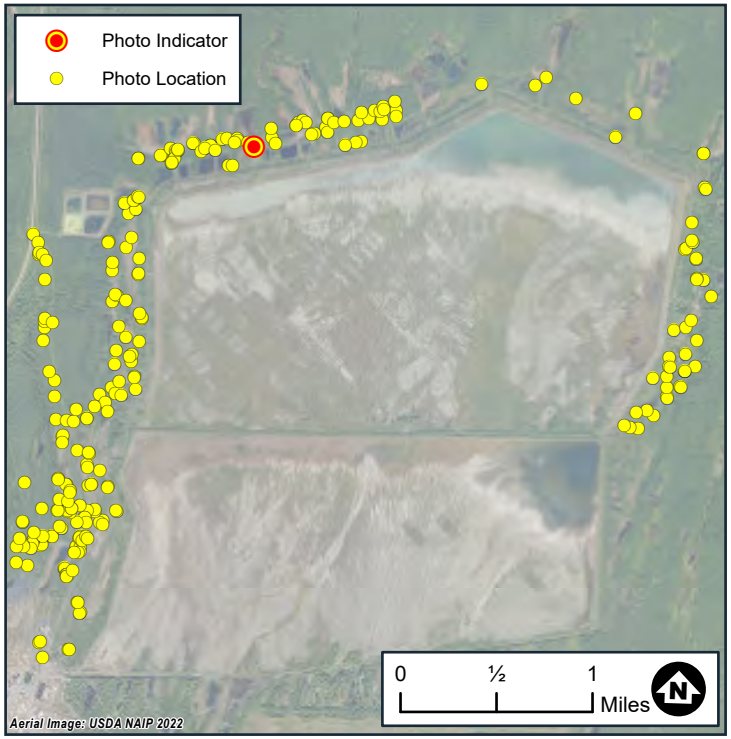
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

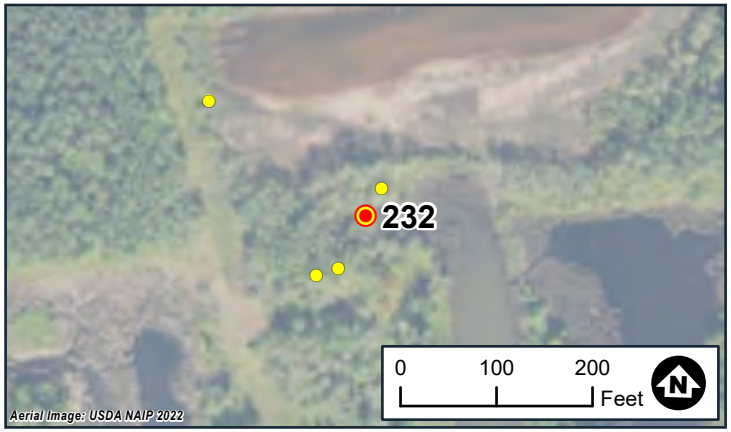
BARR

Date: 8/3/2024
Wetland ID:WTL198
Flag No.:198-36
Sample Point ID:WTL198-DP1-U

Note: Photo locations are approximate







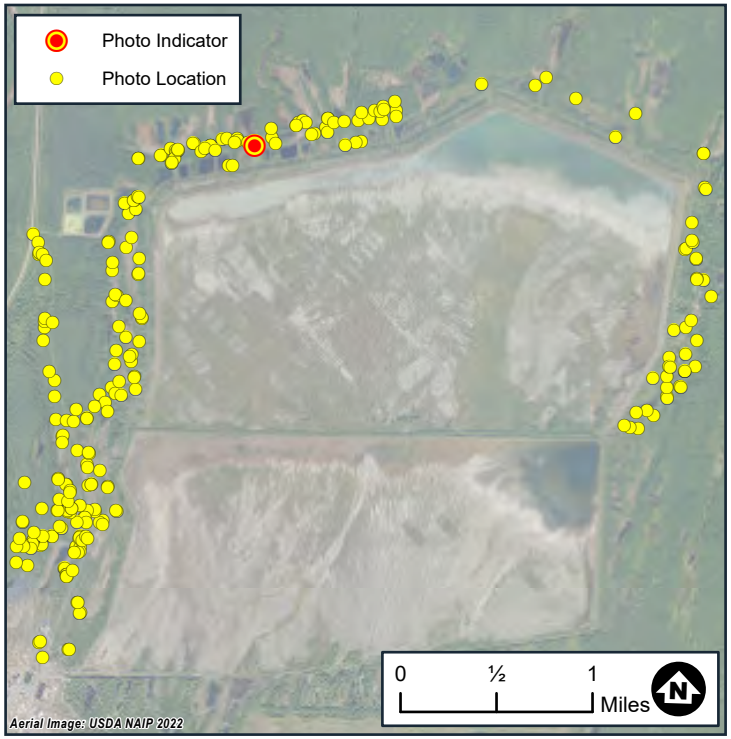
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

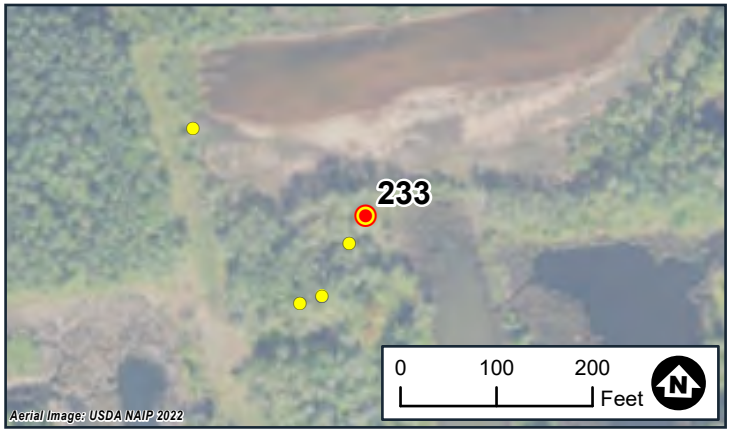
BARR

Date: 8/3/2024
Wetland ID:WTL198
Flag No.:198-4
Sample Point ID:WTL198-DP2-W

Note: Photo locations are approximate







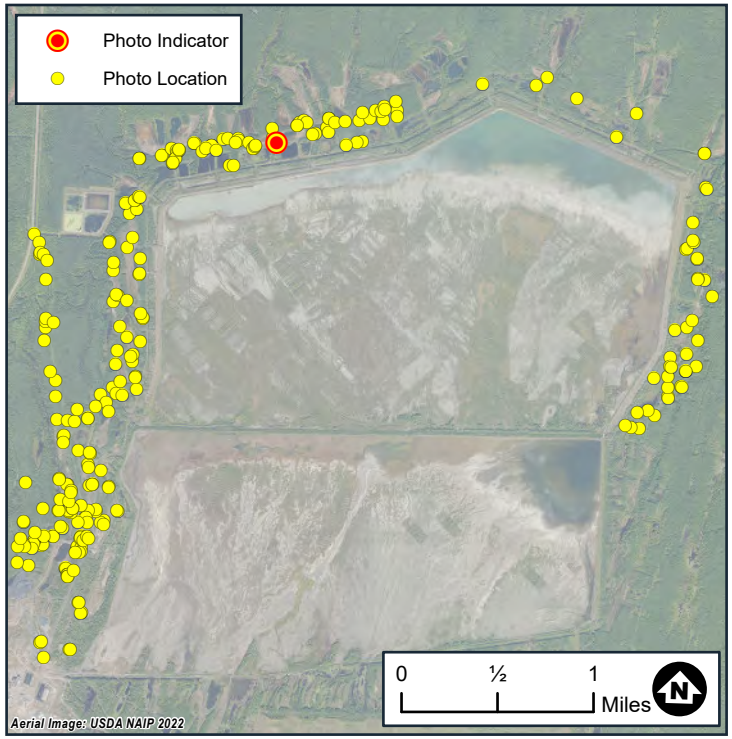
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

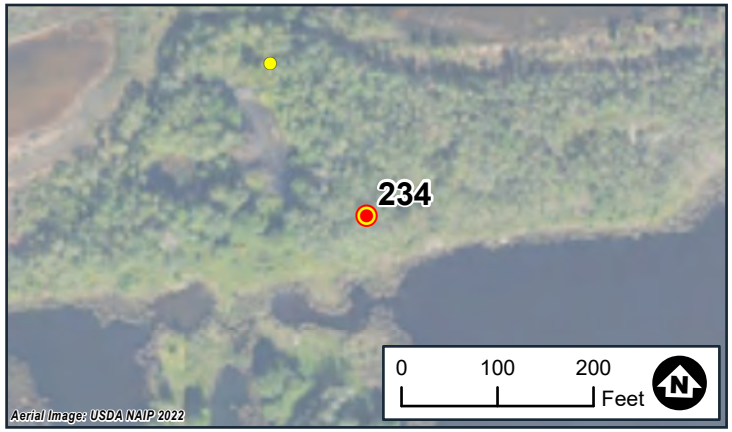
Date: 8/3/2024
Wetland ID:WTL198
Flag No.:198-4
Sample Point ID:WTL198-DP2-U

Note: Photo locations are approximate









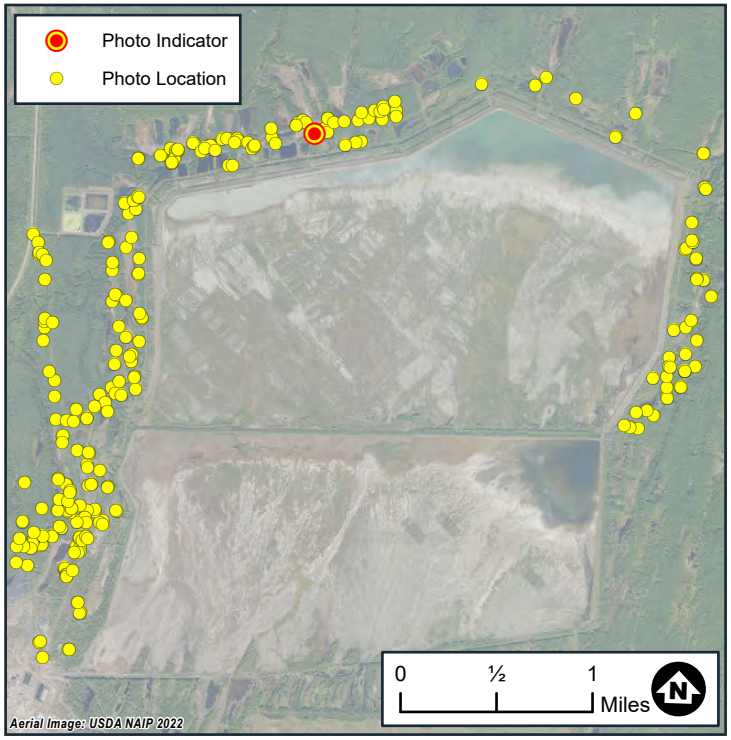
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

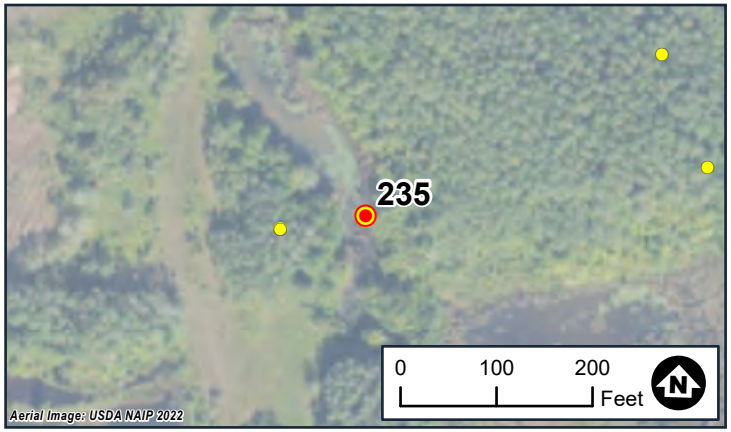
Date: 8/3/2024
Wetland ID:WTL200
Flag No.:200-6
Sample Point ID:N/A

Note: Photo locations are approximate









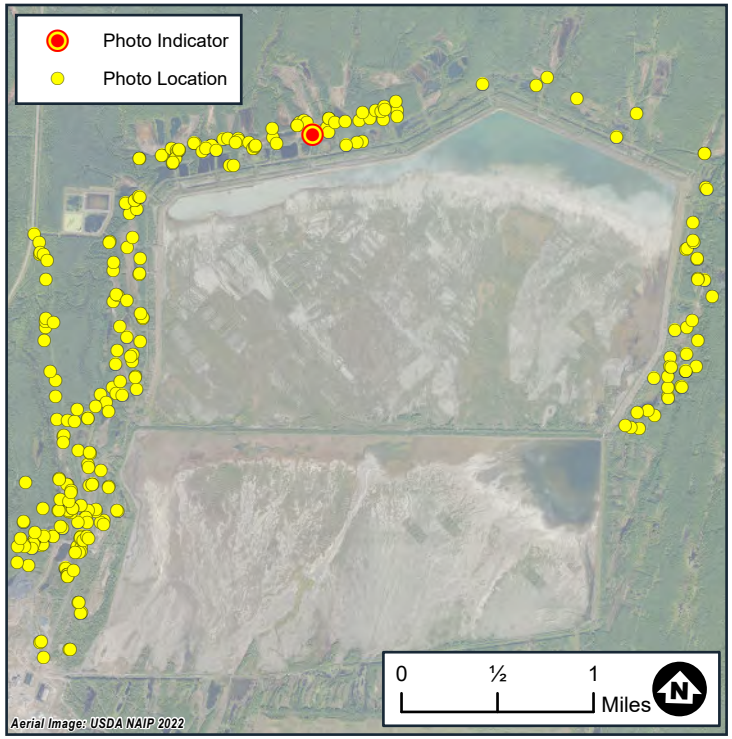
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

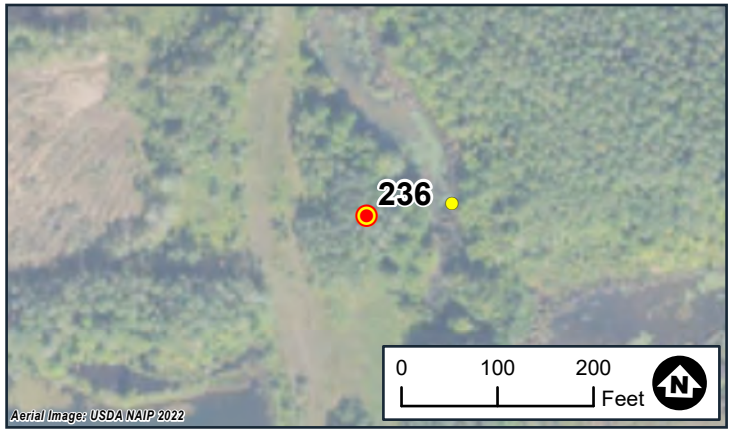
Date: 8/3/2024
Wetland ID:WTL202
Flag No.:202-38
Sample Point ID:N/A

Note: Photo locations are approximate









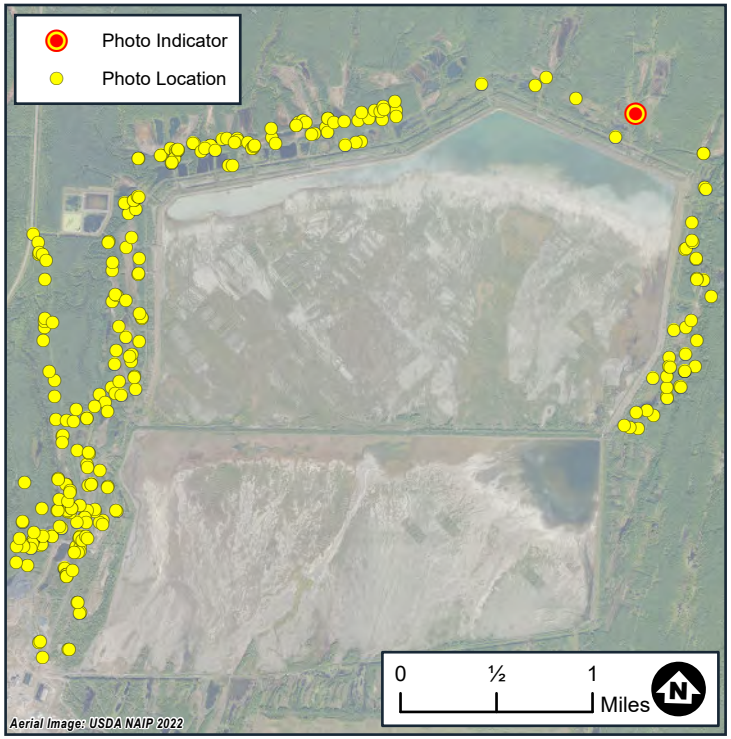
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

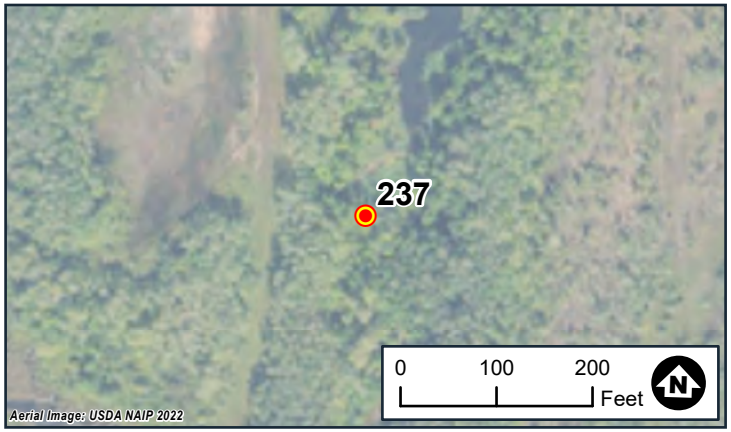
Date: 8/3/2024
Wetland ID:WTL202
Flag No.:202-38
Sample Point ID:N/A

Note: Photo locations are approximate









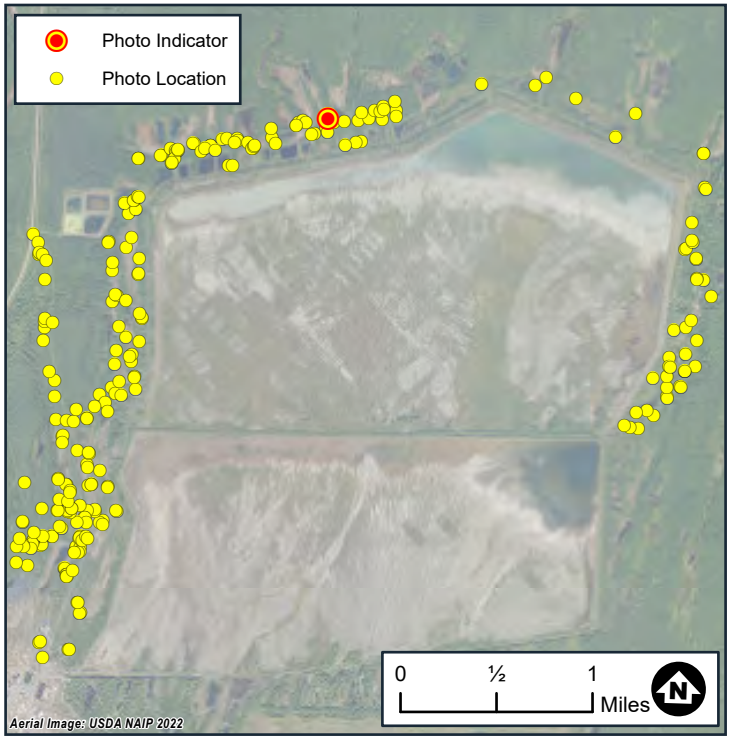
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

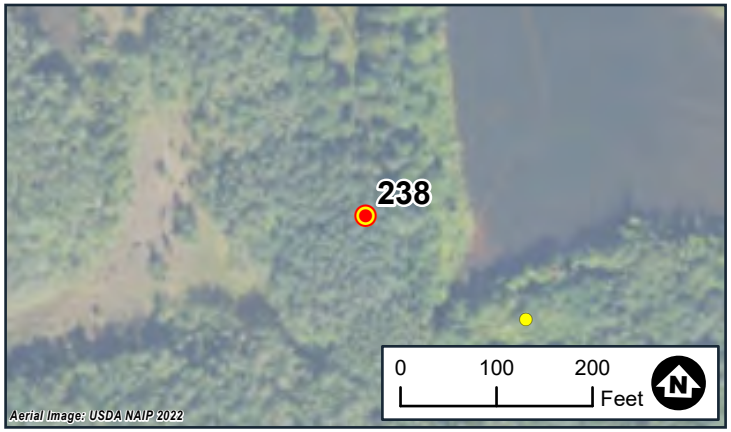
BARR

Date: 8/5/2024
Wetland ID:WTL205
Flag No.:205-193
Sample Point ID:N/A

Note: Photo locations are approximate







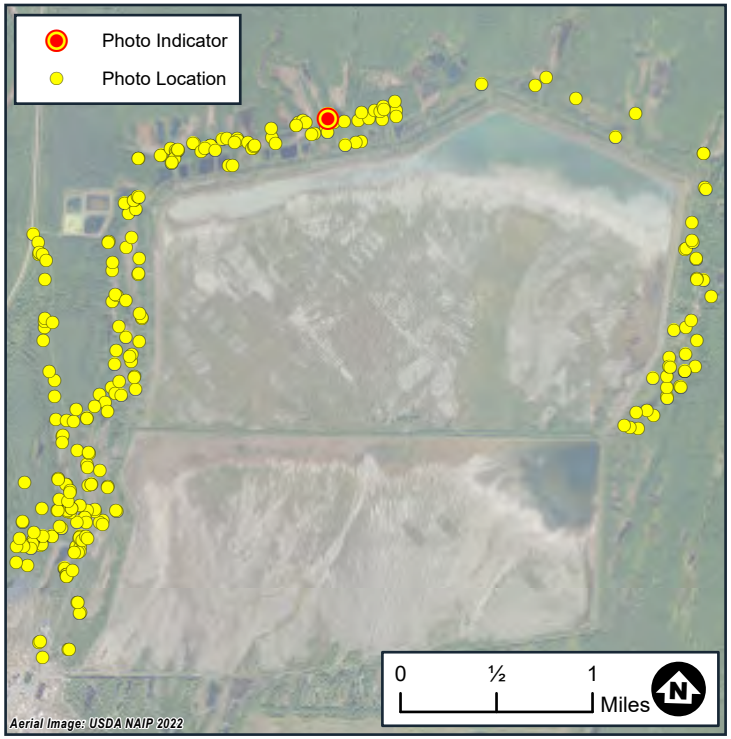
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

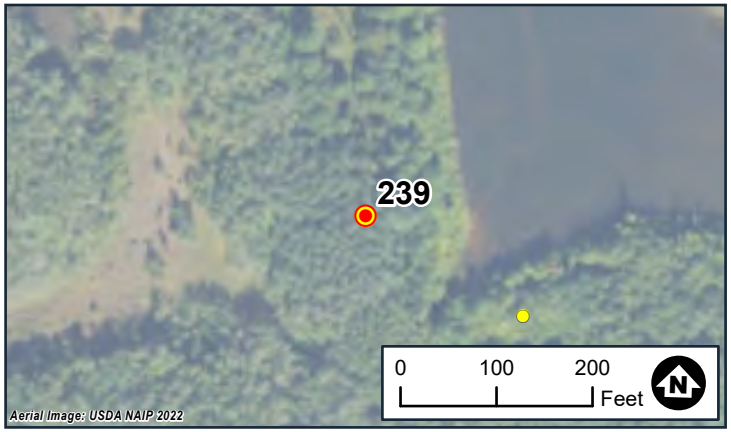
BARR

Date: 8/3/2024
Wetland ID:WTL206
Flag No.:206-12
Sample Point ID:WTL206-DP1-W

Note: Photo locations are approximate







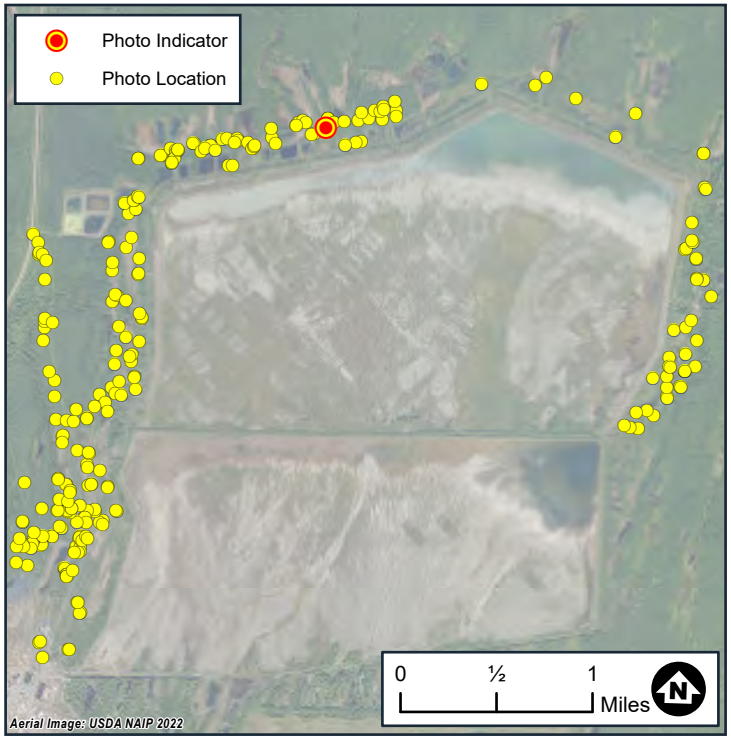
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

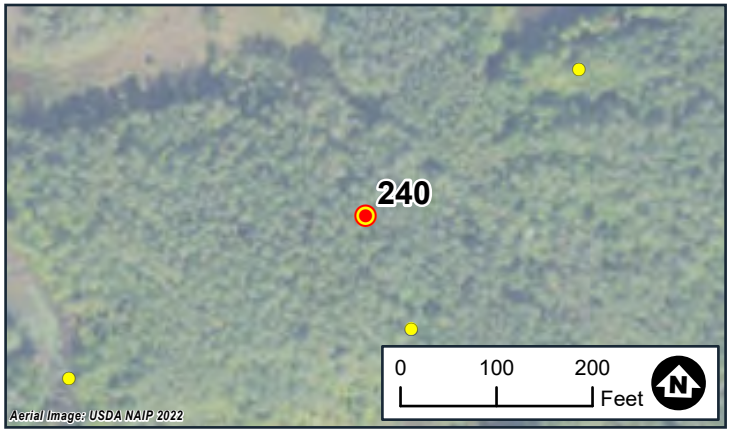
BARR

Date: 8/3/2024
Wetland ID:WTL206
Flag No.:206-12
Sample Point ID:WTL206-DP1-U

Note: Photo locations are approximate







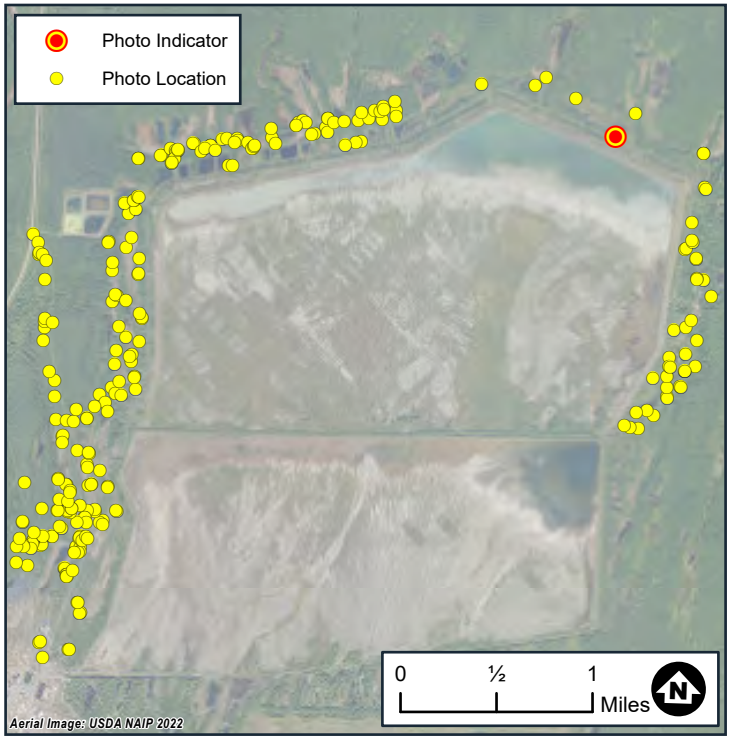
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

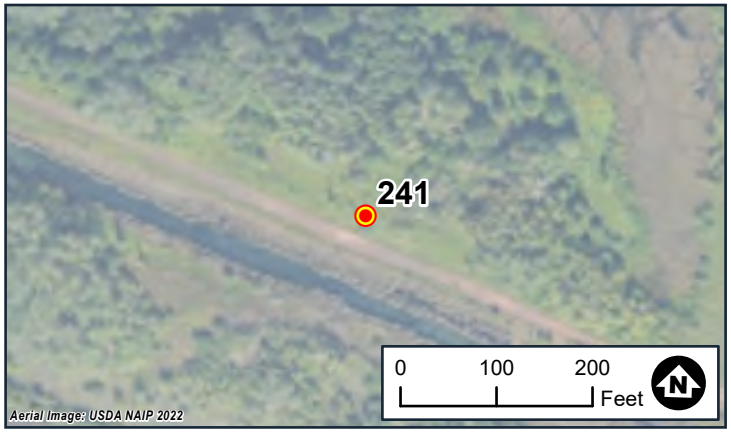
BARR

Date: 8/3/2024
Wetland ID:WTL208
Flag No.:208-9
Sample Point ID:N/A

Note: Photo locations are approximate







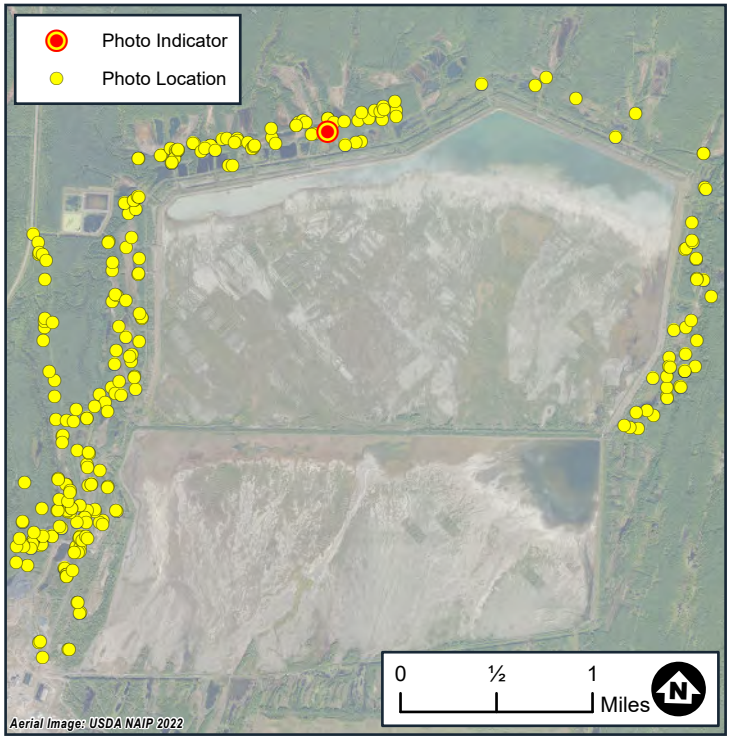
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

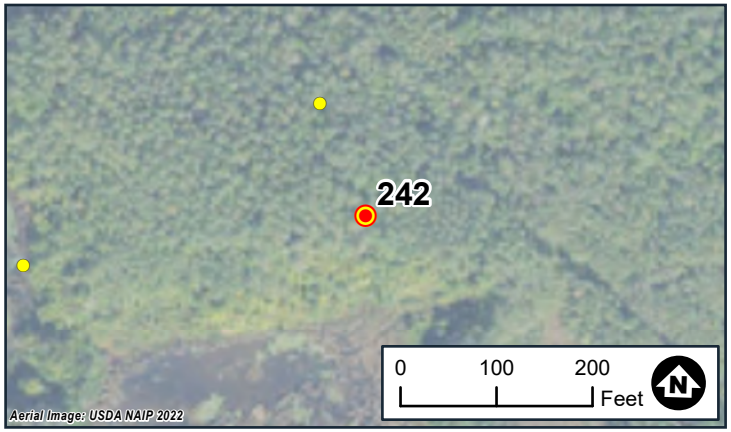
Date: 8/6/2024
Wetland ID:WTL209
Flag No.:209-23
Sample Point ID:N/A

Note: Photo locations are approximate









Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 8/3/2024
Wetland ID:WTL210
Flag No.:210-6
Sample Point ID:N/A

Note: Photo locations are approximate

Photo 243-1



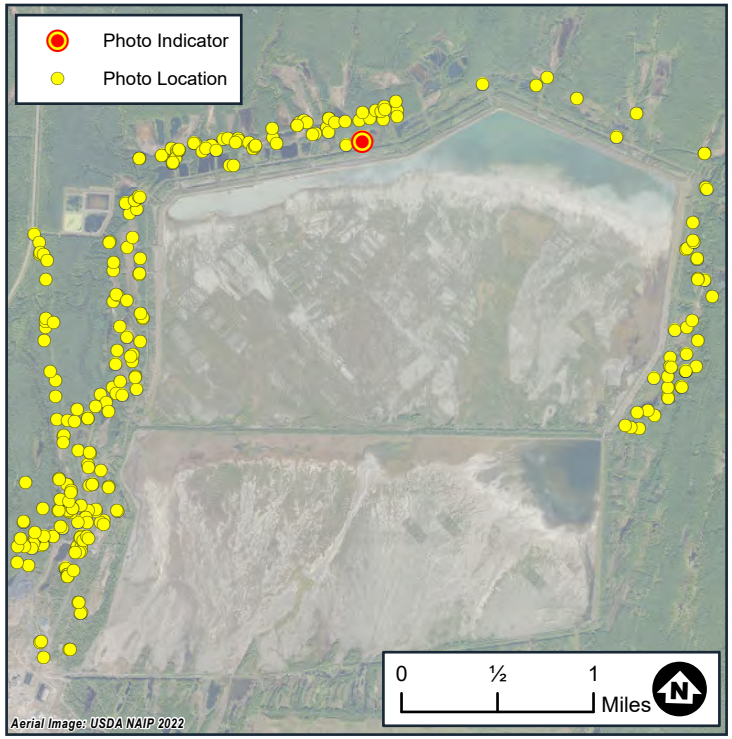
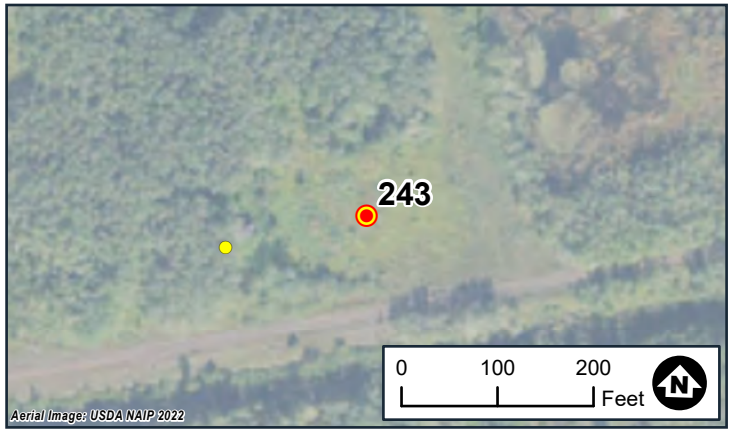


Photo 243-2





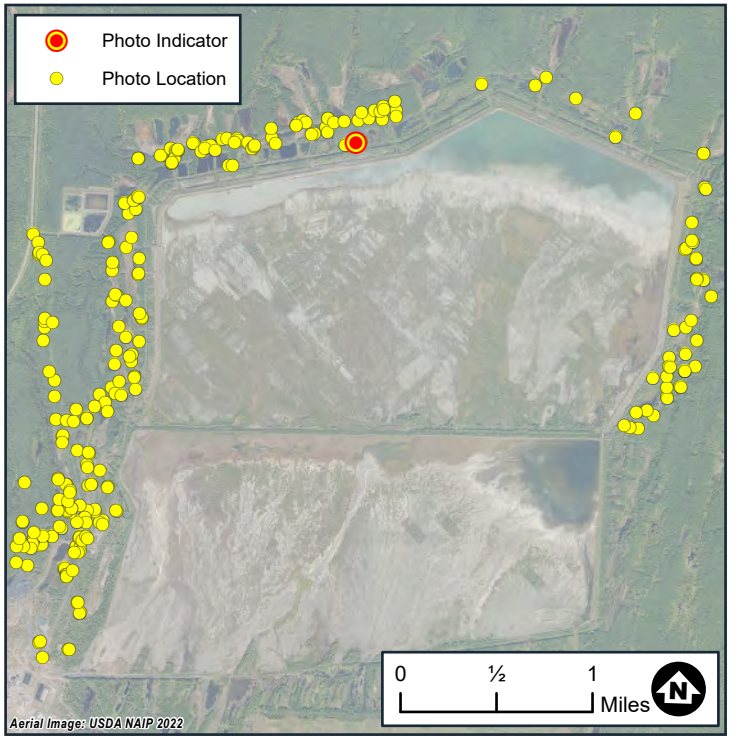
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

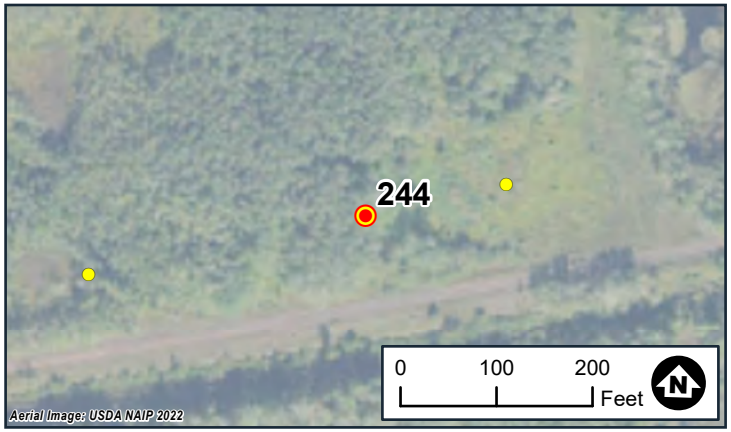
Date: 8/4/2024
Wetland ID:WTL214
Flag No.:214-1
Sample Point ID:N/A

Note: Photo locations are approximate









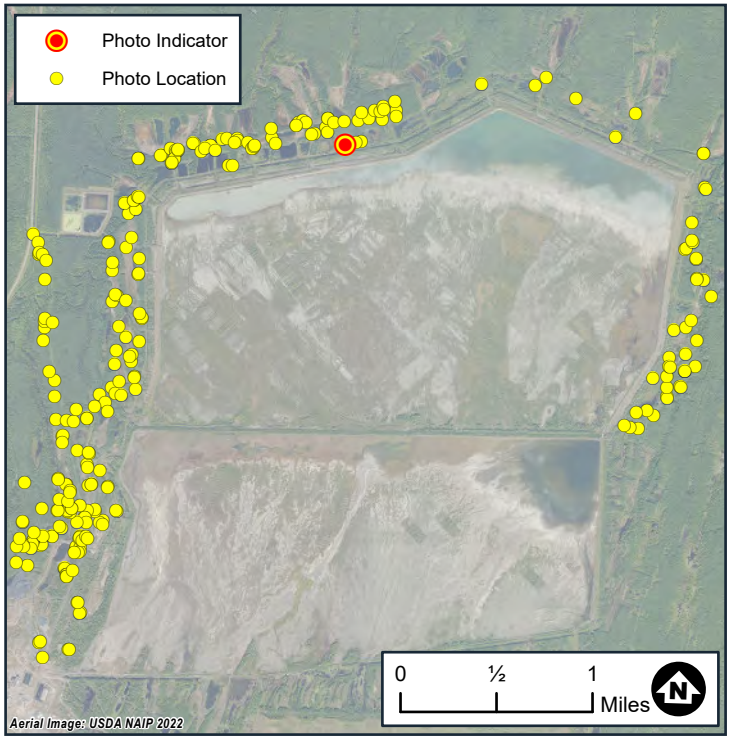
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

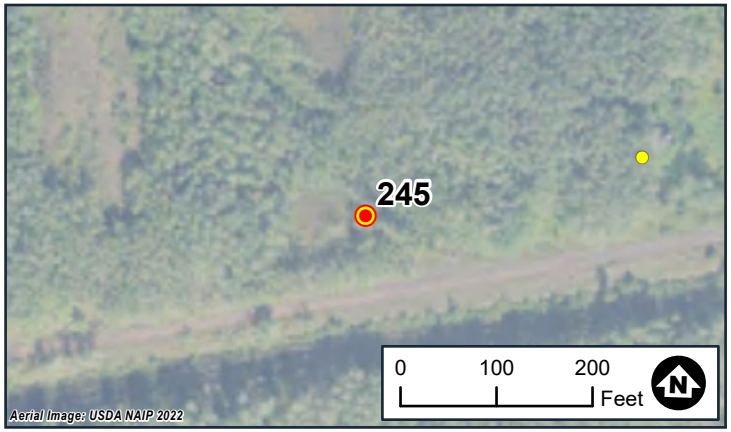
Date: 8/4/2024
Wetland ID:WTL216
Flag No.:216-7
Sample Point ID:N/A

Note: Photo locations are approximate









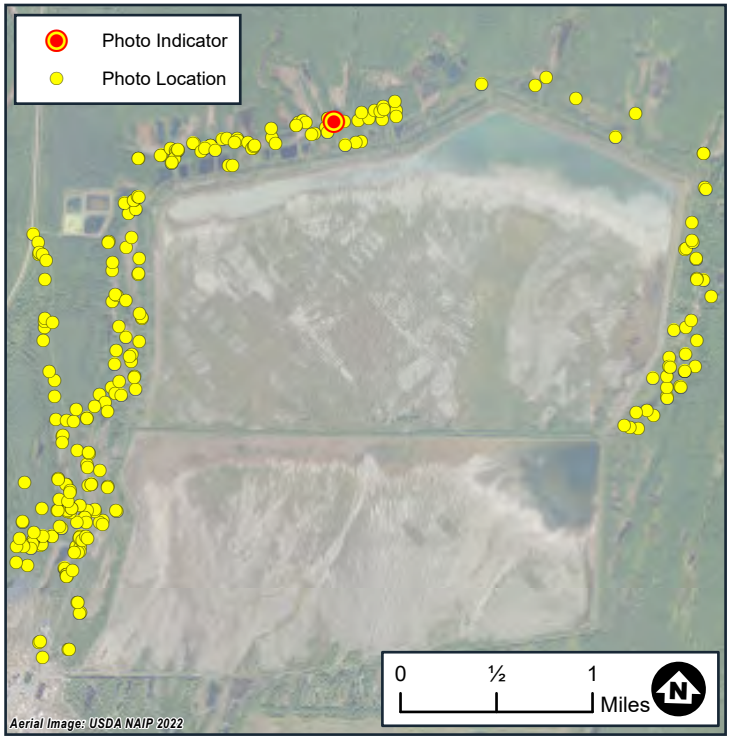
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

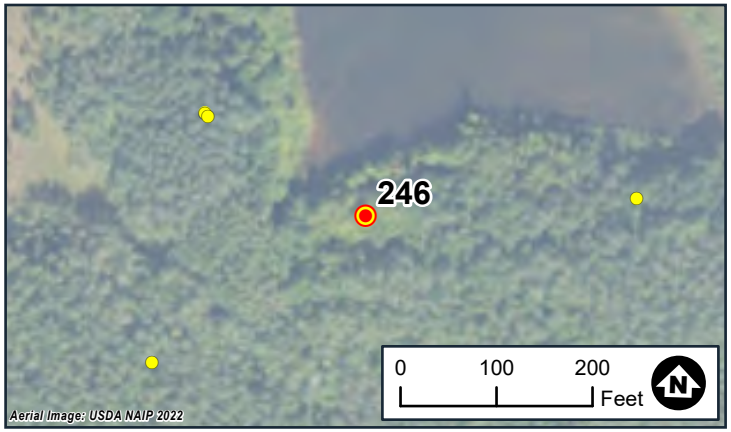
BARR

Date: 8/4/2024
Wetland ID:WTL218
Flag No.:218-7
Sample Point ID:N/A

Note: Photo locations are approximate







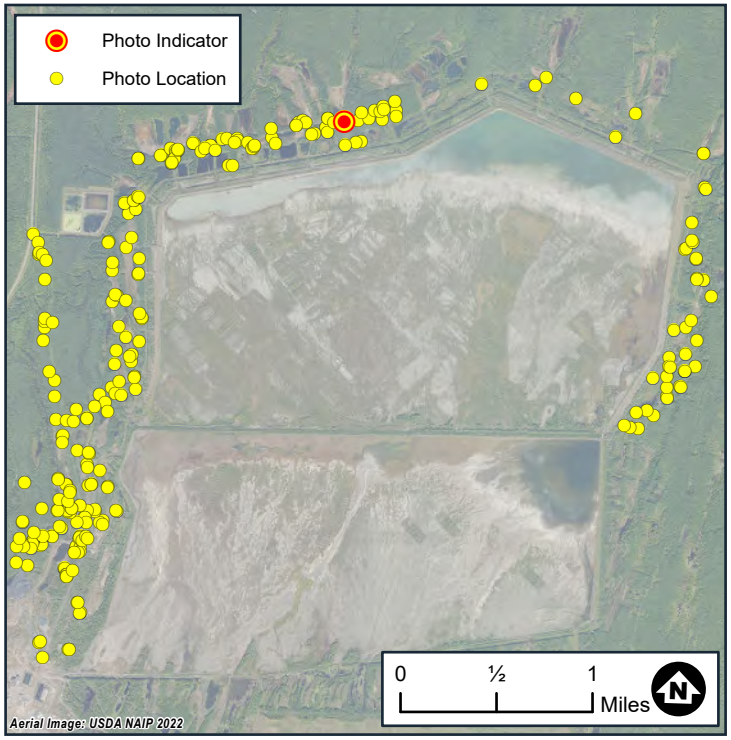
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

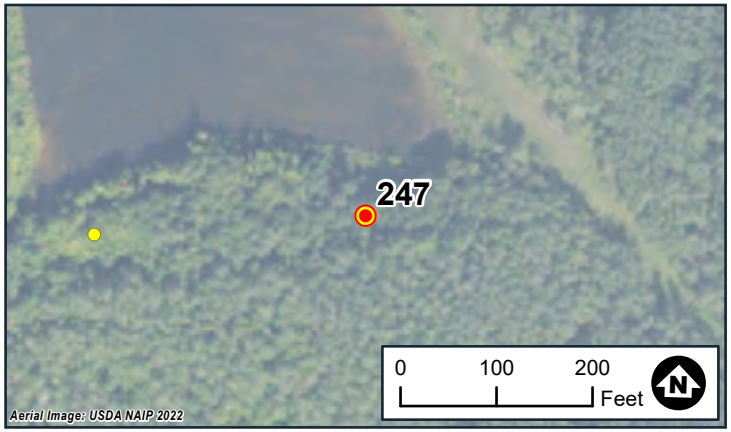
Date: 8/4/2024
Wetland ID:WTL220
Flag No.:220-4
Sample Point ID:N/A

Note: Photo locations are approximate









Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 8/4/2024
Wetland ID:WTL222
Flag No.:222-1
Sample Point ID:N/A

Note: Photo locations are approximate

Photo 248-1



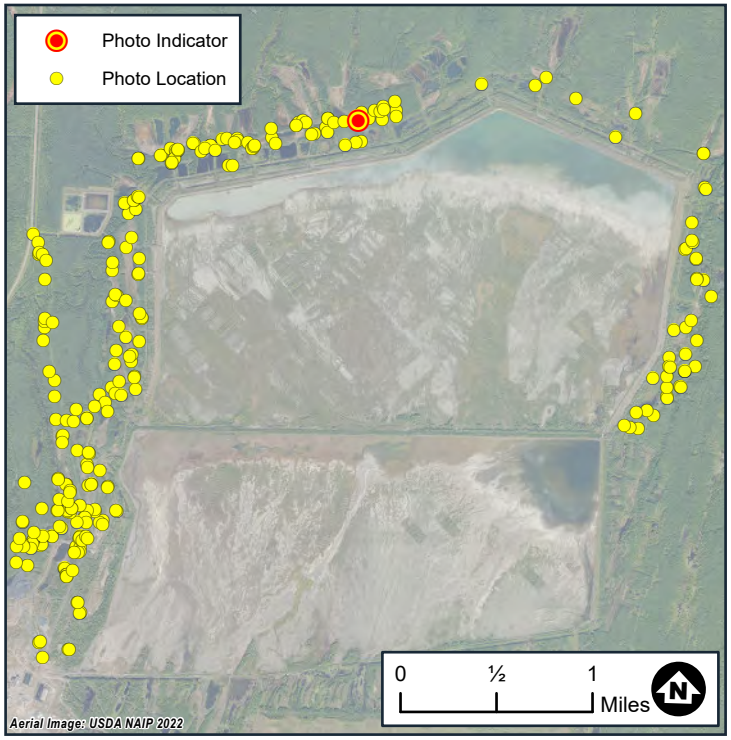
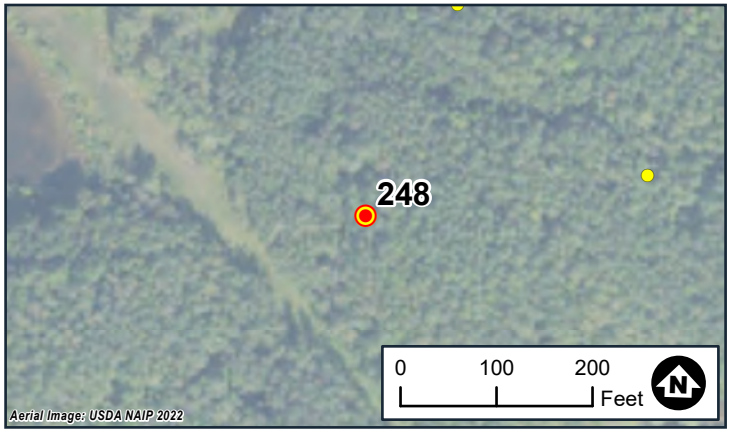


Photo 248-2





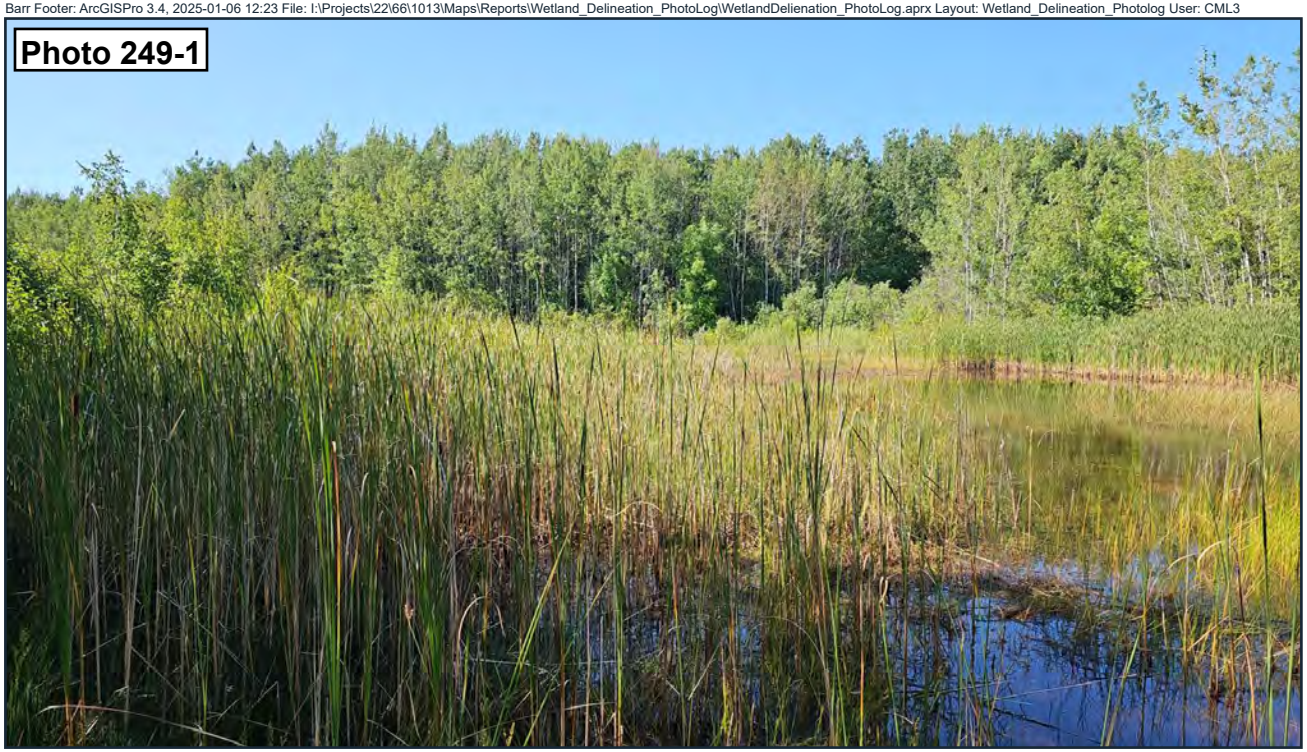
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 8/4/2024
Wetland ID:WTL232
Flag No.:232-12
Sample Point ID:N/A

Note: Photo locations are approximate

Photo 249-1



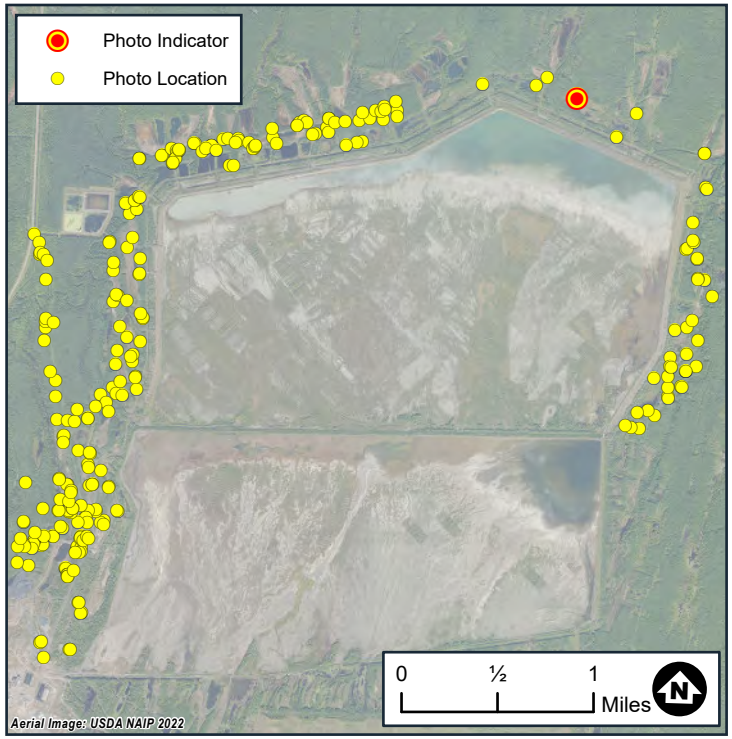
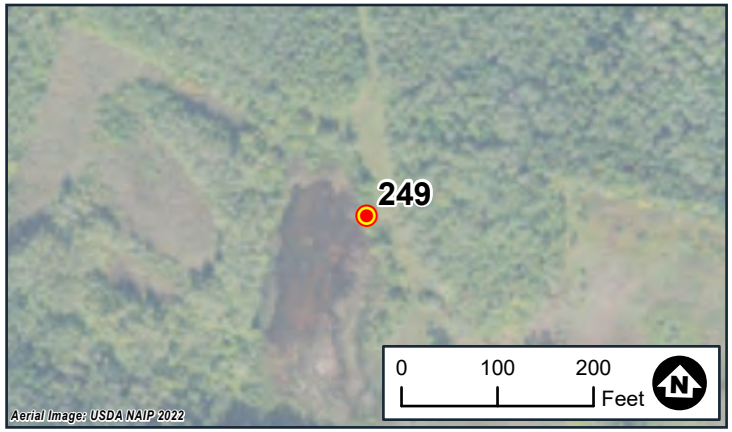


Photo 249-2





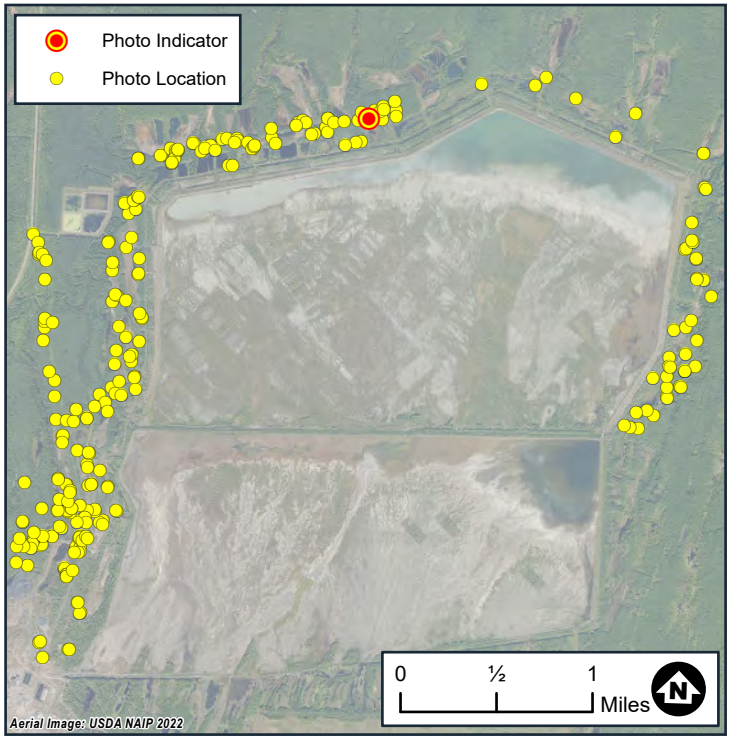
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

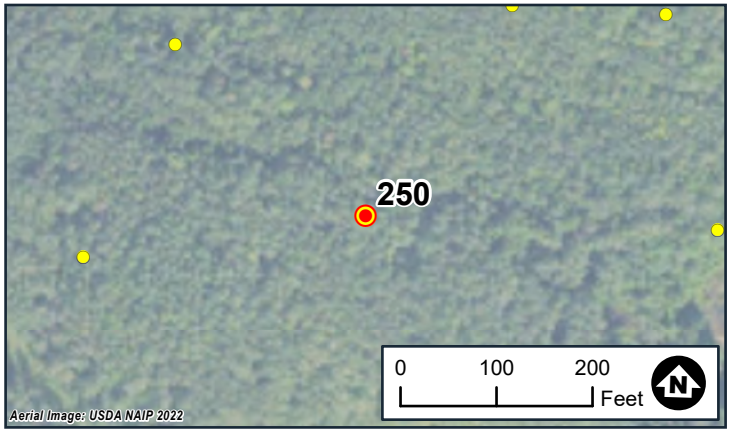
Date: 8/6/2024
Wetland ID:WTL233
Flag No.:233-2
Sample Point ID:N/A

Note: Photo locations are approximate









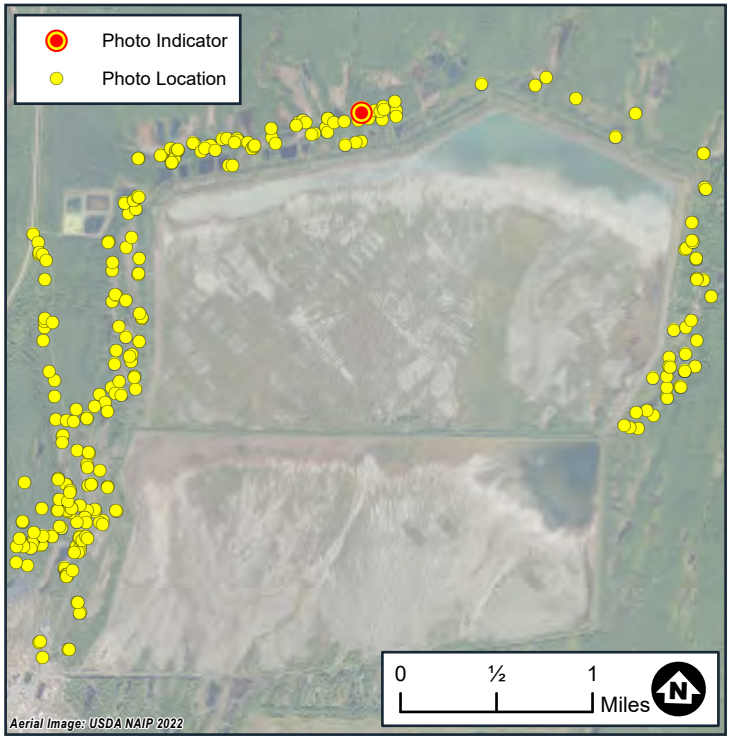
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

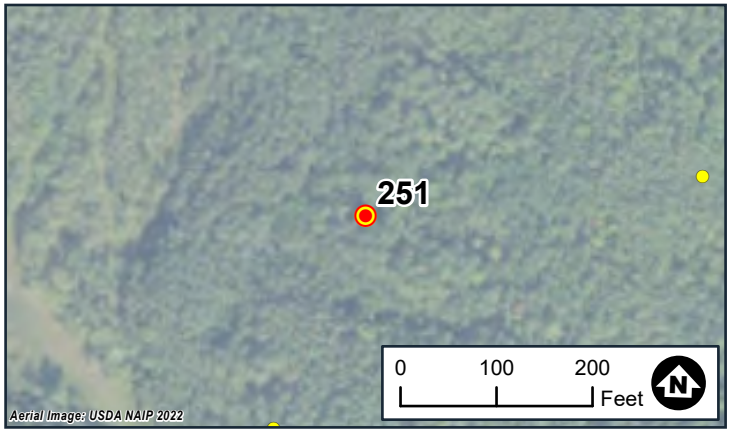
BARR

Date: 8/4/2024
Wetland ID:WTL234
Flag No.:234-31
Sample Point ID:N/A

Note: Photo locations are approximate







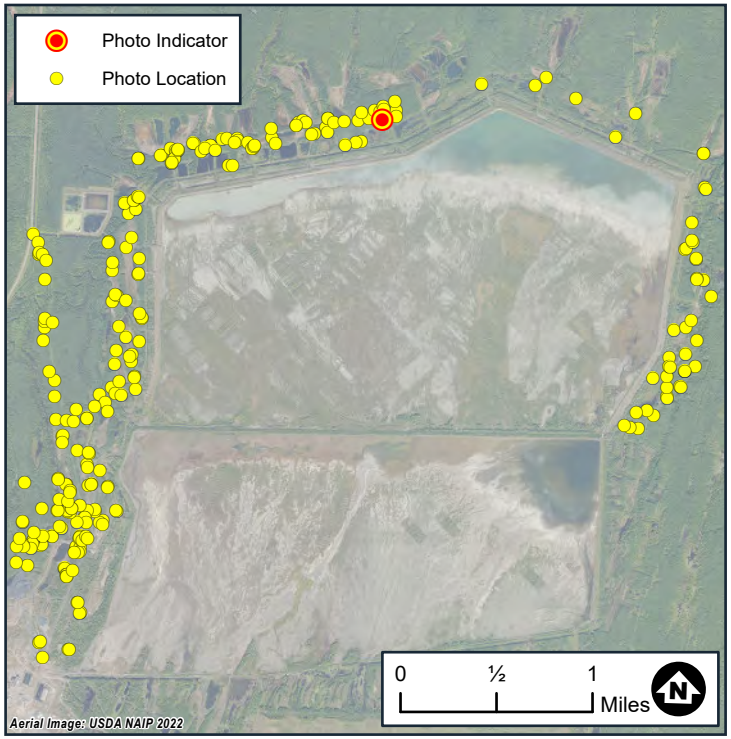
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

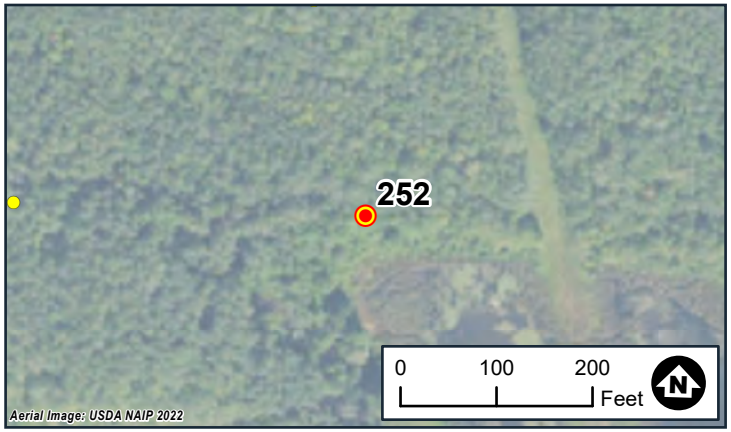
Date: 8/4/2024
Wetland ID:WTL236
Flag No.:236-17
Sample Point ID:N/A

Note: Photo locations are approximate









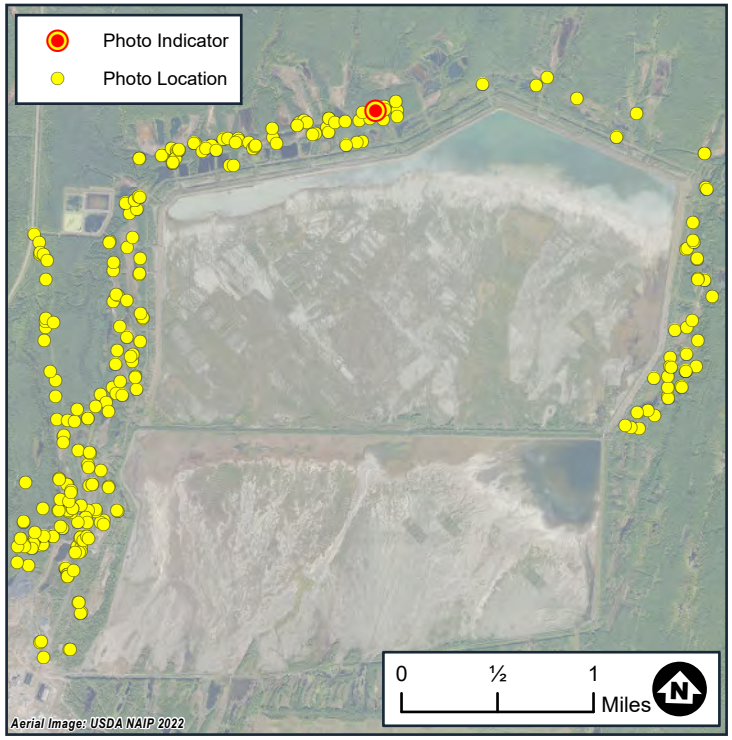
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

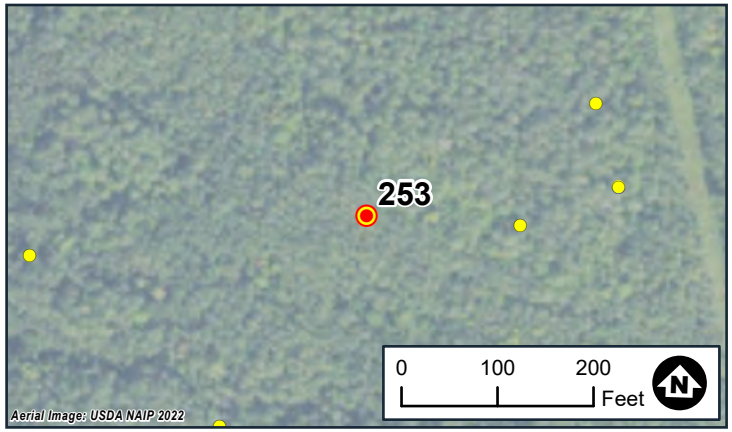
Date: 8/5/2024
Wetland ID:WTL238
Flag No.:238-14
Sample Point ID:N/A

Note: Photo locations are approximate









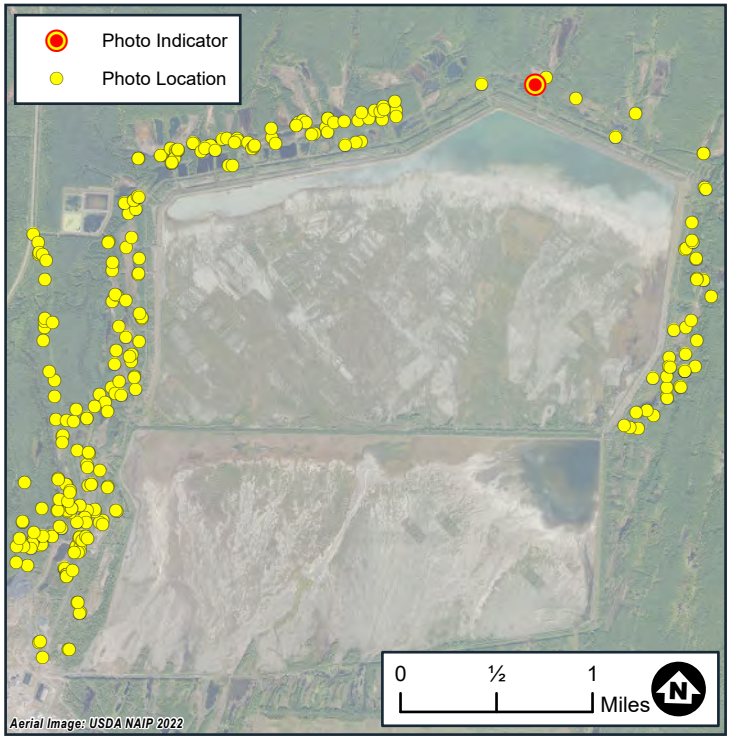
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

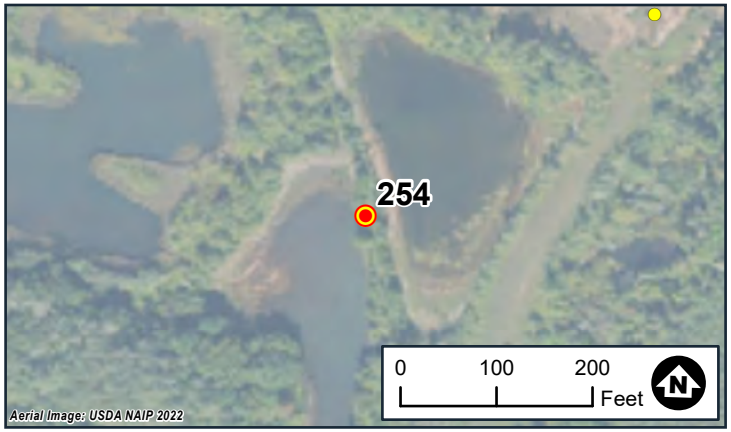
Date: 8/5/2024
Wetland ID:WTL240
Flag No.:240-54
Sample Point ID:N/A

Note: Photo locations are approximate









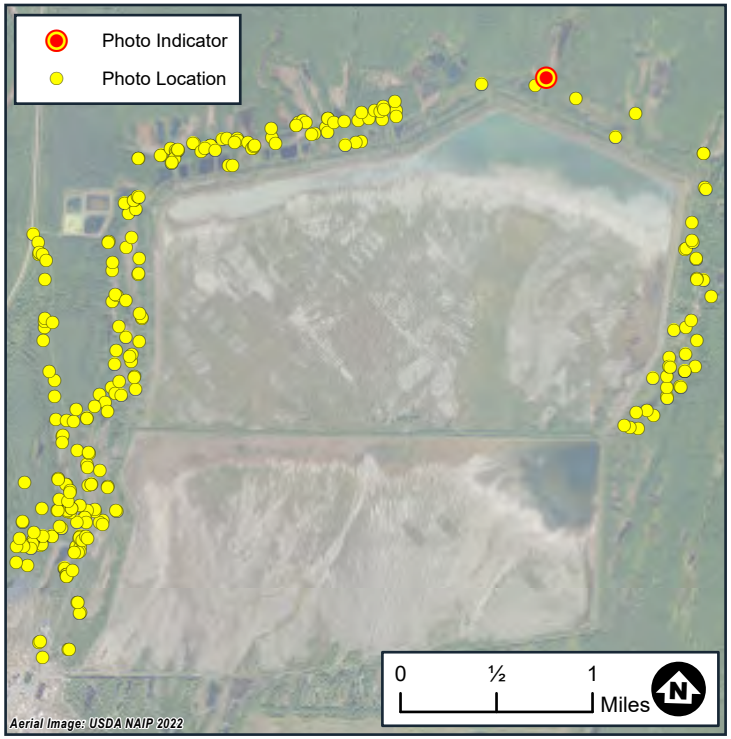
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

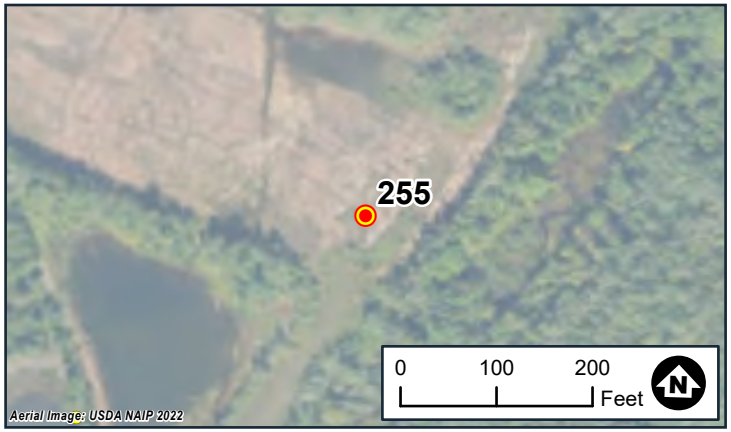
BARR

Date: 8/6/2024
Wetland ID:WTL241
Flag No.:241-70
Sample Point ID:N/A

Note: Photo locations are approximate







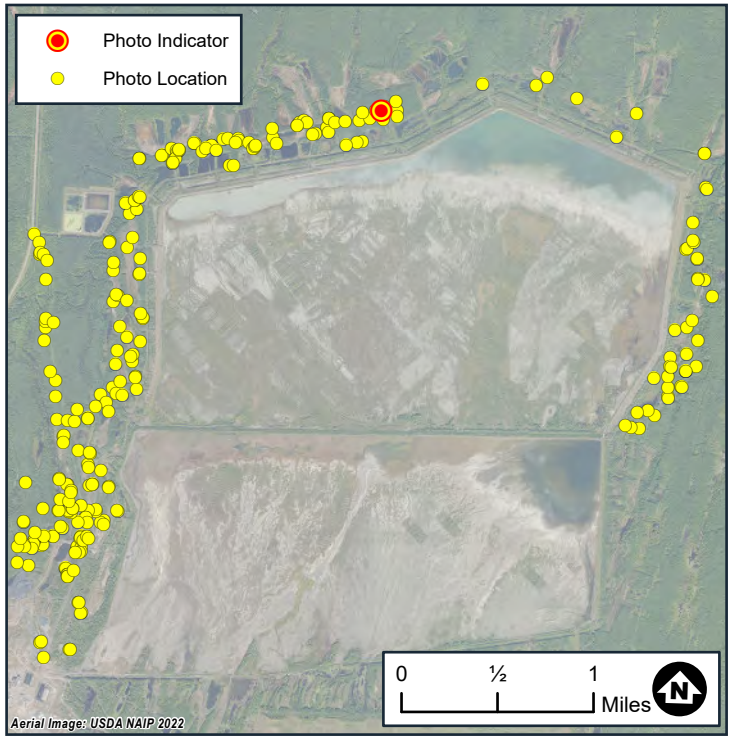
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

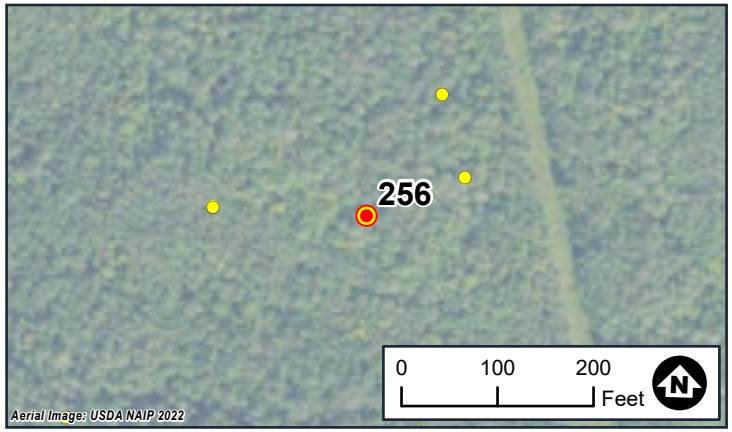
Date: 8/6/2024
Wetland ID:WTL241
Flag No.:241-176
Sample Point ID:N/A

Note: Photo locations are approximate









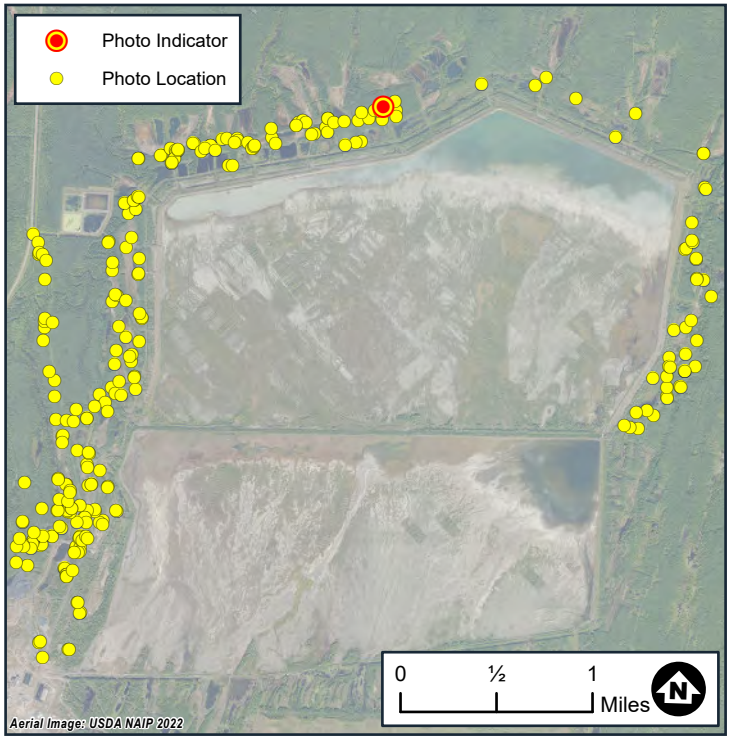
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

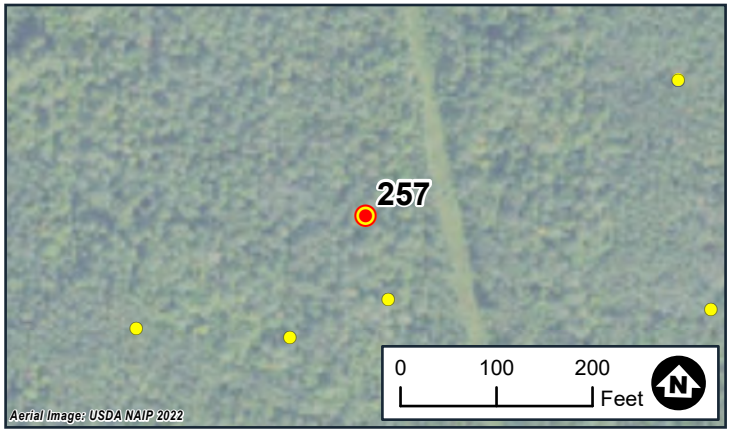
Date: 8/5/2024
Wetland ID:WTL242
Flag No.:242-4
Sample Point ID:N/A

Note: Photo locations are approximate









Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 8/5/2024
Wetland ID:WTL244
Flag No.:244-4
Sample Point ID:N/A

Note: Photo locations are approximate

Barr Footer: ArcGISPro 3.4, 2025-01-06 12:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_PhotoLog\WetlandDelienation_PhotoLog.aprx Layout: Wetland_Delineation_Photolog User: CML3

Photo 258-1



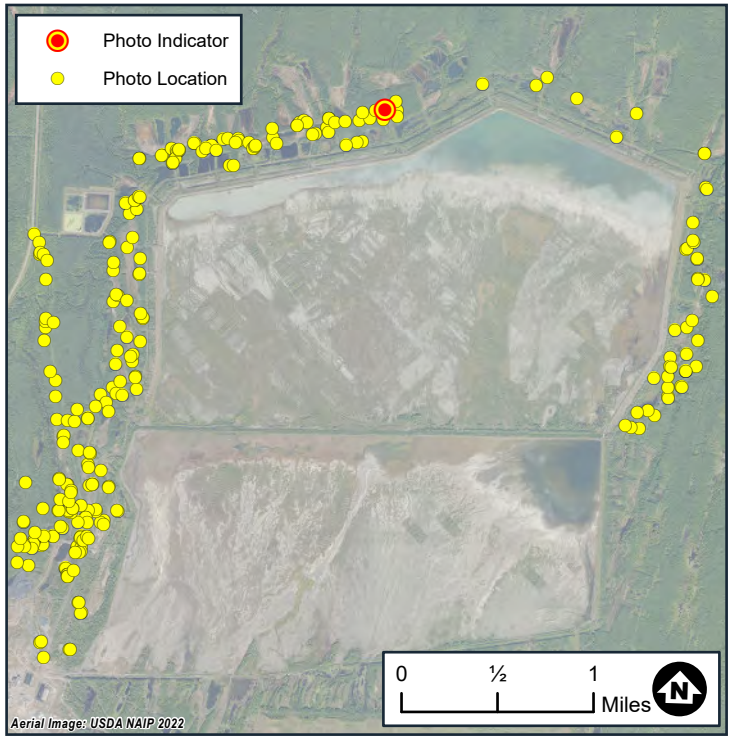
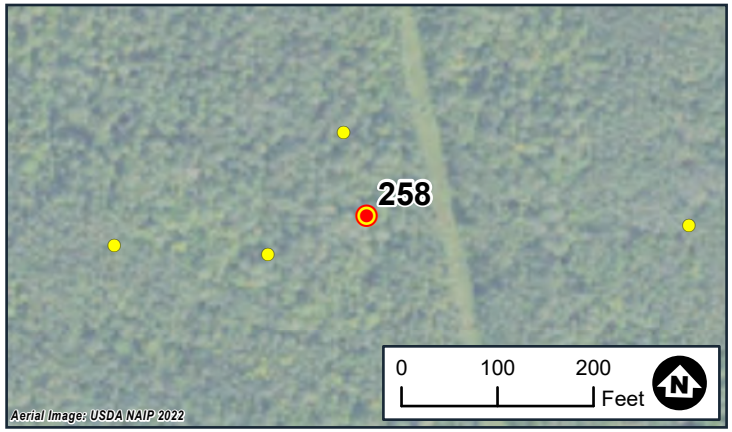


Photo 258-2





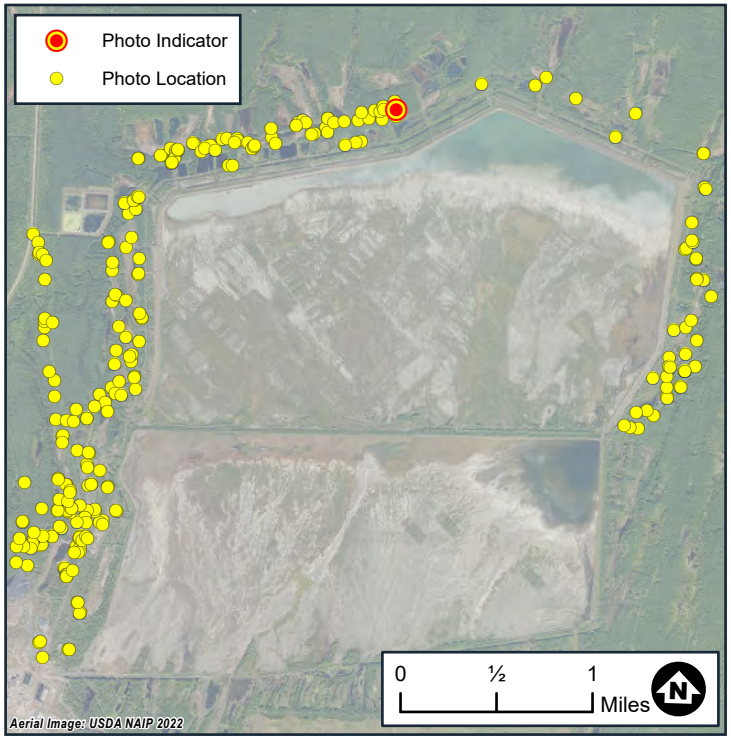
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

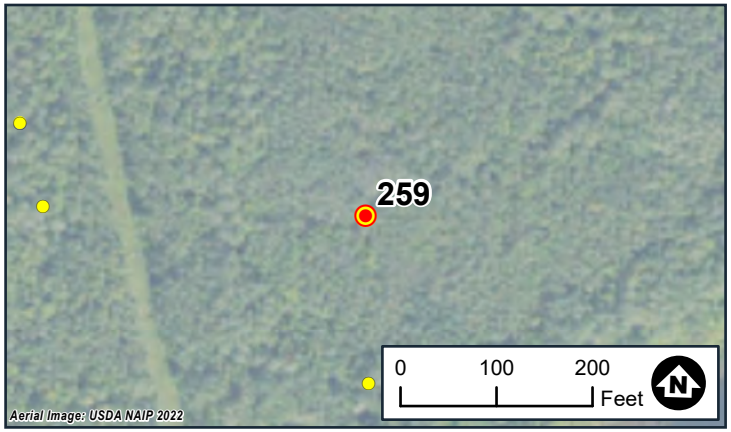
Date: 8/5/2024
Wetland ID:WTL246
Flag No.:246-30
Sample Point ID:N/A

Note: Photo locations are approximate









Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

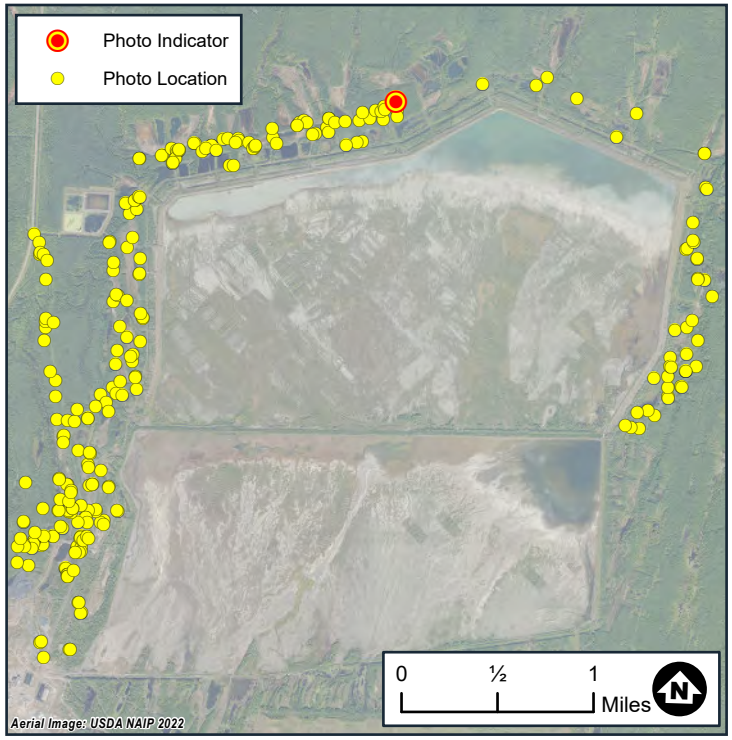
BARR

Date: 8/5/2024
Wetland ID:WTL248
Flag No.:248-17
Sample Point ID:N/A

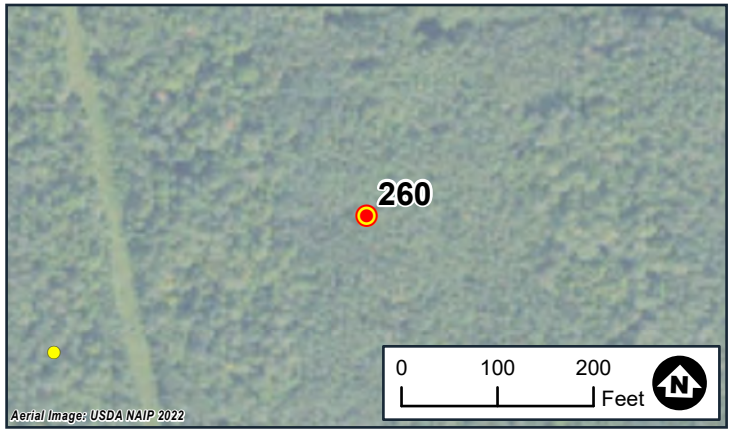
Note: Photo locations are approximate

Barr Footer: ArcGISPro 3.4, 2025-01-06 12:23 File: I:\Projects\22\66\1013\Maps\Reports\Wetland_Delineation_PhotoLog\WetlandDelienation_PhotoLog.aprx Layout: Wetland_Delineation_Photolog User: CML3









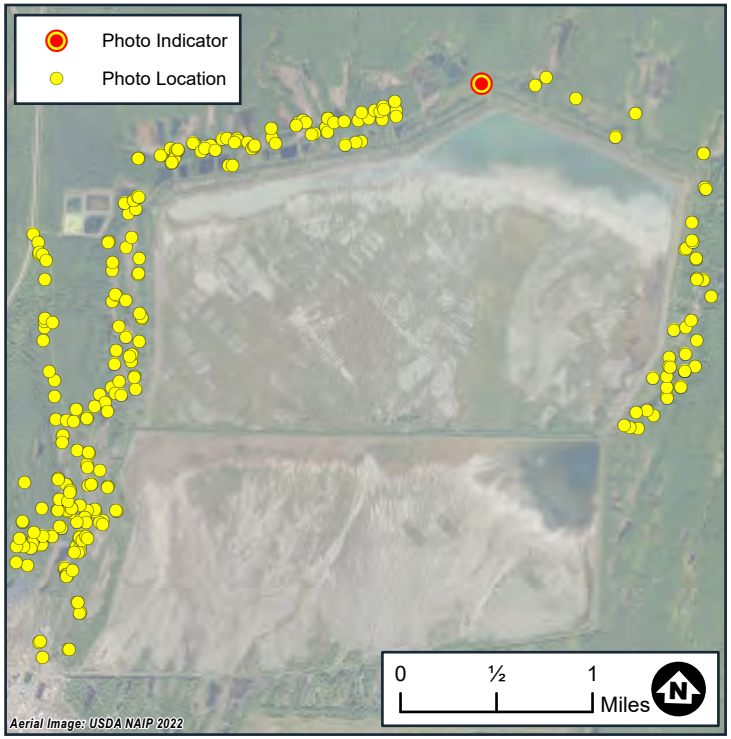
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

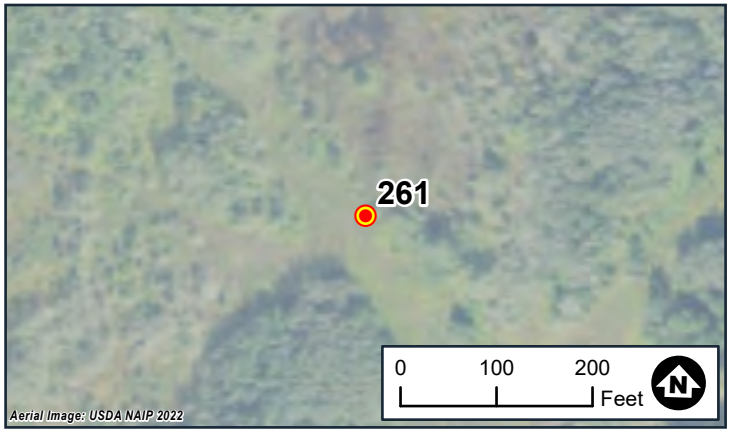
BARR

Date: 8/5/2024
Wetland ID:WTL250
Flag No.:250-1
Sample Point ID:N/A

Note: Photo locations are approximate







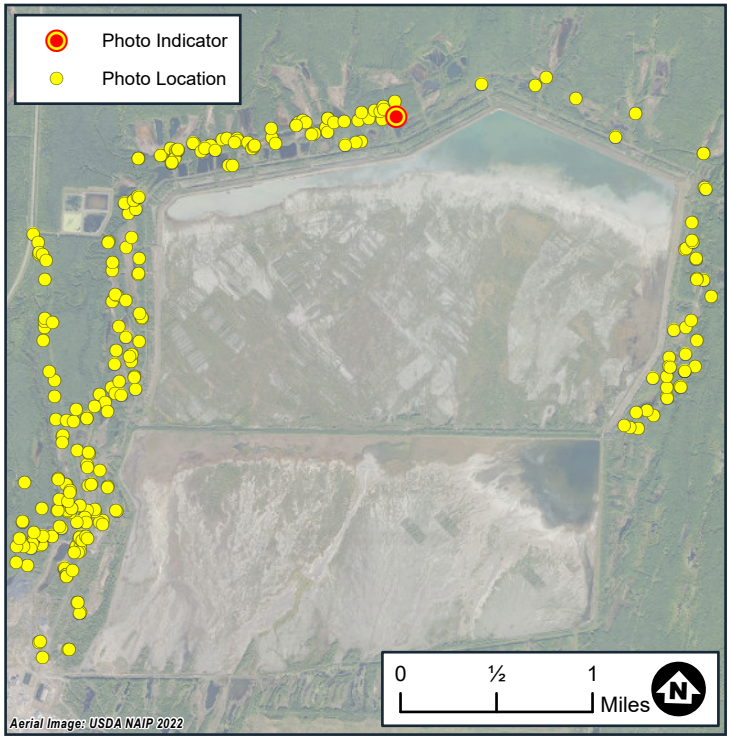
Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

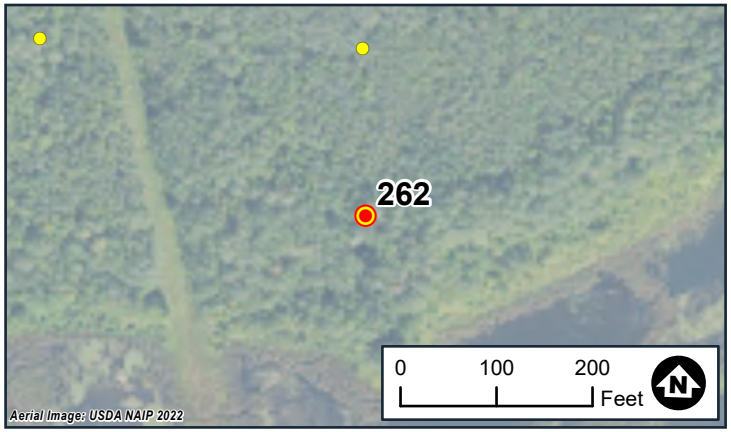
Date: 8/6/2024
Wetland ID:WTL251
Flag No.:251-42
Sample Point ID:N/A

Note: Photo locations are approximate









Wetland Delineation
Photo Locations
White Pine North
White Pine Copper, LLC
Carp Lake Township
Ontonagon County, MI

BARR

Date: 8/5/2024
Wetland ID:WTL252
Flag No.:252-1
Sample Point ID:N/A

Note: Photo locations are approximate