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Bad River Watershed Association provides comments to DNR regarding Gogebic Taconite LLC Pre-application for mining

The Bad River Watershed Association is a non-profit organization serving the community by involving citizens in assessing, maintaining and improving the integrity of the Bad River watershed for future generations. Our membership includes citizens who reside, work or recreate in the region addressed in Gogebic Taconite's pre-application notice.

We remain strong advocates for the protection of the water and the communities supported within the watershed by a healthy vibrant ecosystem. We strive to promote community-wide responsible management and use of public and private lands and waters. Our strengths are in developing a knowledge base necessary for deeper understanding of the regional ecosystems and the effects of human activity on those systems. And we serve as a pro-active community forum for education, coordination and decision making affecting the resources of the watershed.

Because of our commitment to the preservation of a healthy watershed, and our commitment to the citizens who depend on safe waters and enjoy the pristine condition of our region, we ask the Department of Natural Resources that the utmost care be taken when considering the environmental impacts of such a large project. The following are specific questions and concerns that must be addressed in order to make an educated decision about how such a project can take place while meeting the environmental requirements needed to avoid undue harm to citizens and the ecosystem.

First, a complete and thorough survey and mapping of headwater streams and wetlands must be conducted. The wetlands and headwaters in the proposed mine site feed the Tyler Forks River and Ballou Creek which will certainly be impacted by any changes that occur upstream. Headwater streams are important; they are the source of the nation's fresh water and are major components of watersheds. Headwater streams are intimately connected to groundwater and subsurface flows, contribute an average 70% of the water volume found in larger streams, and account for 49-57% of the stream miles within the Bad River Watershed.

Headwater streams provide key ecological services. They dampen the effects of floods on downstream ecosystems and trap excess sediments, nutrients, and contaminants. Headwaters are essential for cold water species such as trout. During the droughts and heat waves of 2012, Wisconsin DNR reported

increased movement of trout into headwater reaches. Headwater streams are vulnerable. They are often overlooked on maps and in management and development plans. We cannot begin to assess what those impacts will be without complete and thorough maps of what is present.

Greater mapping must occur of the soil types to understand their current role within the ecosystem. As noted in the pre-application notice, over 48% of the soils in area affected are hydric (wet) or partially hydric and over 49% of the soils are unknown. With the rolling topography that is found in the Penokee Hills, many depressions and small slopes can contain hydric soils that may not be identified on generalized soil surveys.

BRWA completed basic temperature and macroinvertebrate (aquatic insect) monitoring on several waters in the area of interest during 2011 and 2012. These results are available in the DNR SWIMS database. Our efforts have continued in 2013 and results will be available early next year. BRWA's work is limited in scope compared to the number of waters that would be affected by the proposed project; additional studies are crucial to informed decision making.

Additional temperature and macroinvertebrate monitoring are crucial to document the condition of these waters and to model how their removal may affect the overall health of the watershed and Lake Superior. Surveys of the fish communities using these waters are also necessary to better understand the importance of these headwater streams.

Several of the waters in this area are designated as Outstanding or Exceptional Resource Waters that provide excellent recreational opportunities, support valuable fisheries and wildlife habitat, and offer high quality water that is not significantly impacted by human activities. These designations are intended to meet federal Clean Water Act obligations, requiring Wisconsin to adopt an "antidegradation" policy that is designed to prevent any lowering of water quality. How will the potential degradation from excess sediment be prevented, especially once the wetlands in the headwaters have been filled with tailings?

Information on groundwater elevations is sparse, as noted in Gogebic Taconite LLC's pre-application notice. The pre-application also acknowledges that the groundwater is not found in simple layers of select rock, but rather in fracture and joint systems, as well as at the interface between the soils and the bedrock. Clearly this makes for a complex groundwater system that cannot even begin to be understood using surface water elevations as the pre-application suggests. Detailed hydrological maps must be developed and groundwater depths must be mapped. Models must be developed to estimate the size of the water pumping cone of depression around the mine pit and the effect this will have on surrounding private wells and surface waters, including lakes and rivers. How many aquifers will be breached by the potential mine? What effects will accrue to each aquifer? Do the aquifers have unique water chemistries? Some private wells in the area are known to be saline. What will the effect of saline water be when it comes into contact with the overburden rock? How far will the effects of groundwater disturbance extend? How long does it take for groundwater (of various strata) to travel downstream? The questions surrounding our understanding of the groundwater of the entire region are perhaps the most significant.

The Bad River Watershed Association believes much more information is essential in order to assess the potential effects of this mining operation, and careful consideration must be given to development in this environmentally sensitive area. The potential for catastrophic impact to the integrity of wetlands, the quality and quantity of water, and the diverse communities living within the watershed is very apparent. We trust that the Department of Natural Resources will faithfully execute its duty to the citizens of the State of Wisconsin to safeguard and protect our precious water resources.

The Bad River Watershed Association is headquartered in Ashland, Wis. Founded in 2002, BRWA works to promote a healthy relationship between the people and natural communities of the Bad River watershed. More information about the Bad River Watershed Association is available at www.badriverwatershed.org.

We encourage Wisconsin citizens will take an active role in communicating their opinion on matters that affect our waters.

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