

**GOGEBIC RANGE WATER AUTHORITY
APPLICATION FOR A WATER WITHDRAWAL FROM LAKE SUPERIOR**

**PERMIT DECISION
And
RESPONSE TO PUBLIC COMMENTS**

December 16, 2011

**Michigan Department of Environmental Quality
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EXECUTIVE SUMMARY

GOGEBIC RANGE WATER AUTHORITY APPLICATION FOR A WATER WITHDRAWAL FROM LAKE SUPERIOR

On July 15, 2011 the Department of Environmental Quality (DEQ) received from the Gogebic Range Water Authority (GRWA) a permit application submitted under Section 32723 of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA). The permit application included a request that the DEQ begin the required evaluation and public notice under Part 327, Great Lakes Preservation, of NREPA for a proposed water withdrawal from Lake Superior.

Section 32723(4) of Part 327 requires the DEQ provide for a public comment period of not less than 45 days before a permit application is acted upon. The DEQ invited public comment on the permit application via public notice and website posting on September 12, 2011. A copy of the public notice was transmitted to the GRWA on September 12, 2011 for posting at the entrance to their premises. The public notice posting was to be no later than September 19, 2011. The public notice announced the public comment period and requested comments be submitted to the DEQ by October 27, 2011. There were no public comments received on this permit application.

After considering the information submitted relevant to the factors used in determining the acceptability of a permit application and the comments received, the DEQ determined that the proposed GRWA withdrawal is in compliance with the applicable standards and should be issued.

On December 16, 2011, the DEQ rendered a decision in favor of issuing the permit concluding the GRWA proposed withdrawal would not likely cause an adverse resource impact and that all other factors in rendering a permit decision had been met. This document includes the basis of decision for issuance of a permit to the GRWA for the future withdrawal of 5.5 MGD from Lake Superior.

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I. BACKGROUND

Proposed Withdrawal

The proposed 5.5 million gallons per day (MGD) water withdrawal will be from a Lake Superior water intake. The permit applicant, Gogebic Range Water Authority (GRWA), proposes to use the withdrawn water for a community public water supply system to be owned and operated by the authority. The GRWA intends to provide public water supply system service to Bessemer Township, Wakefield Township, Ironwood Township, and the cities of Bessemer, Wakefield and Ironwood. The proposed withdrawal will be via a Lake Superior intake located approximately 4,000 feet offshore with a shore well and pumping facilities delivering raw water to GRWA treatment facilities located in the northwest quarter of section 12, Ironwood Township, T.49N, R.46W, Gogebic County, Michigan. The maximum proposed withdrawal of 5.5 MGD, corresponds to a pumping rate of approximately 3,820 gallons per minute (gpm).

Public water supply is a use that the DEQ estimates to be 10 percent consumptive. While 90 percent of the water will remain in the Lake Superior watershed, the consumptive use estimate places the loss from the Great Lakes hydrologic system at 0.55 MGD.

II. STATUTORY STANDARD

A person who proposes to develop withdrawal capacity of 2 MGD or more from the waters of the state to supply a common distribution system, is required to obtain a water withdrawal permit prior to making the withdrawal (MCL 324.32723[1]).

Application Submittal

A person proposing a withdrawal from the waters of the state is required to apply for a permit by submitting an application for the withdrawal to the DEQ containing the following information (MCL 324.32723[2]):

- Capacity of equipment used to make the withdrawal,
- Location of the withdrawal,
- Withdrawal source,
- Amount and rate of withdrawal,
- Intended maximum monthly and annual volumes and rates, if different from the capacity of equipment used to make the withdrawal,
- Relevant information related to seasonal use,
- Description of how the water will be used and location, amount and rate of return flow,
- Any other information the person would like the DEQ to consider.

The application is required to include an evaluation of existing hydrological and hydrogeological conditions and a detailed description of proposed preventative measures where relevant. In addition, the applicant is required to submit an application fee in the amount of \$2000.00

Administrative Requirements

MCL 324.32723 requires the department determine whether a permit application is administratively complete. The DEQ has 30 days to make this determination, unless the applicant is notified of deficiencies in the application requiring additional information. Once an application is determined to be administratively complete, the DEQ is required to provide a public comment period of not less than 45 days and render a decision on the permit application within 120 days from the completeness determination.

The DEQ received the original permit application from the GRWA on July 15, 2011. In reviewing the GRWA application for completeness DEQ staff noted that specific locations for the return of water had not been identified. The information was requested on August 3, 2011 and provided via e-mail on August 4, 2011. Upon receipt of said information it was concluded the

information necessary to the Part 327 permit requirements had been provided. The DEQ sent a letter to the GRWA dated August 18, 2011 notifying them of the completeness of the application package and the DEQ's intent to proceed with the public notice and public comment period.

The DEQ invited public comment on the permit application via public notice and website posting on September 12, 2011. The GRWA was provided a copy of the public notice for posting at the entrance to their premises. The notice announced the 45-day public comment period and requested that comments be submitted to the DEQ by October 27, 2011.

The consumptive use estimate of 0.55 MGD does not exceed the 5 MGD threshold established in the Great Lakes – St. Lawrence River Basin Water Resources Compact, Article 4 Water Management and Regulation for proposals requiring prior notice and consultation with the other Great Lakes states and provinces. Accordingly, Michigan provided no notification to the states and provinces that are party to the Great Lakes – St. Lawrence River Basin Water Resources Compact.

Conditions Required for Issuance of a Permit

The DEQ is required to issue a permit for a water withdrawal if all of the following conditions are met (MCL 324.32723[6]):

- All water withdrawn, less any consumptive use, is returned to the source watershed;
- The withdrawal is implemented to insure there is no individual or cumulative adverse resource impact (ARI) based upon an evaluation of available information by the DEQ;
- The withdrawal will be implemented in compliance with all applicable local, state, and federal laws, as well as legally binding regional interstate and international agreements;
- The proposed use is reasonable;
- The permit applicant certifies compliance with the environmentally sound and economically feasible water conservation measures (ESEFWCM) applicable to the water use sector; and
- The proposed withdrawal does not violate public or private rights and limitations imposed by Michigan water law or other common law duties.

Parallel requirements for approval are spelled out in Section 4.11, Decision Making Standard, of the Compact. Section 4.11(5) of the Compact provides greater specificity on reasonable use conditions and requires the parties to consider efficient use of the water; efficient use of existing water supplies; the balance between economic and social development and environmental protection as they relate to other planned withdrawals and uses sharing the same source; supply potential of the water source; the degree and duration of likely adverse impacts and the restoration of hydrologic conditions.

III. DECISION MAKING PROCESS

Consumptive Use Considerations

The consumptive use calculation was based upon a consumptive use coefficient of 10 percent. The DEQ relied primarily upon the United State Geological Survey publication "Consumptive Water-Use Coefficients for the Great Lakes Basin and Climatically Similar Areas," Scientific Investigation Report 2007-5197. There is a relatively narrow range of consumptive use coefficients for public water supplies in comparison with many other types of uses. It is generally conceded the range for public water supplies is 10 to 15 percent as identified in Table 3-1, Consumptive-use coefficient used by Great Lakes jurisdictions, by water use category of the report. Upon review of the aforementioned report, the DEQ ultimately decided that 10 percent was the best estimate of consumptive use. This is the published value for the public water supply sector in Table 3-2, Total water use by category for the Great Lakes Basin, by year, from the Great Lakes Commission annual reports, 1998-2002. Based upon the 10

percent coefficient for consumptive use, the proposed withdrawal is projected to have a consumptive use of 0.55 MGD.

Adverse Resource Impacts

Section 32721(1) of Part 327 prohibits a person from making a "...new or increased large quantity withdrawal from the waters of the state that causes an adverse resource impact." Section 32701(1)(a)(vii) defines an adverse resource impact (ARI) for a surface water body as "decreasing the level of a lake or pond with a surface area of 5 acres or more through a direct withdrawal from the lake or pond in a manner that would impair or destroy the lake or pond or the uses made of the lake or pond, including the ability of the lake or pond to support characteristic fish populations, or such that the ability of the lake or pond to support characteristic fish populations is functionally impaired." For flowing streams and rivers an ARI is defined as decreasing the flow by part of the index flow such that the ability of the stream to support the characteristic fish population is functionally impaired.

A comparison of the water lost from the Great Lakes Basin as a result of the proposed withdrawal to the water availability from the surface water body from which the withdrawal originates is one means of assessing the likelihood of an ARI. As noted previously, the proposed withdrawal of 5.5 MGD corresponds to a daily consumptive use of 0.55 MGD, 7.353×10^4 cubic feet per day (ft^3/day), or 2.684×10^7 cubic feet per year (ft^3/year). The area of Lake Superior is 31,700 square miles, or 8.837×10^{11} ft^2 . The consumptive use losses from a one year withdrawal of 5.5 MGD without any recharge to Lake Superior would result in a projected decline in water level of 0.00003037 feet (0.0003644 inches or 0.0009257 centimeters). Accordingly, the DEQ concludes the impact of the proposed 5.5 MGD withdrawal on lake levels and the corresponding impact to the characteristic fish population would be insufficient to result in an ARI as defined in Part 327.

Applicable Local, State and Federal Laws

To be approved, a withdrawal must be in compliance with all applicable local, state, and federal laws as well as legally binding interstate and international agreements, including the Boundary Waters Treaty of 1909. Section 32726 governing local ordinances, specifically prohibits a local unit of government from enacting, or enforcing an ordinance that regulates a large quantity withdrawal. The information contained within the permit application indicates the withdrawal would be implemented in compliance with applicable state and federal laws and applicable international agreements. The Boundary Waters Treaty of 1909 was agreed to by the U.S. and Canada to provide a mechanism for the resolution of disputes over waters bordering the two countries and to insure the waters of the Great Lakes remain navigable. The proposed withdrawal and intake structure is in compliance with the Boundary Waters Treaty of 1909.

Reasonable Use

Part 327 requires that a proposed use be reasonable. As noted above the specific criteria for consideration are the efficient use of the water and the efficient use of existing water supplies; a consideration of the balance between economic development, social development and environmental protection, the supply potential of the source; the degree and duration of likely adverse impacts and the restoration of hydrologic conditions. These considerations are consistent with Michigan's test for determining reasonable use as set forth in Michigan Citizen for Water Conservation V. Nestle Waters of North America, Inc. [Michigan Citizens for Water Conservation v Nestlé Waters N America Inc, 269 Mich App 25; 709 NW2d 174 (2005)]. The considerations are addressed as follows:

Efficient Use of the Water: This requirement is tied to the user's commitment to Environmentally Sound and Economically Feasible Water Conservation Measures (ESEFWCM). In the application process the GRWA identified the ESEFWCM applicable to the public water supply

sector of which they are willing to certify compliance. ESEFWCM that GRWA has indicated they will certify compliance include programs for metering of water use, meter calibration, meter replacement system audits and water loss audits, leak detection and repair, full cost pricing, the promotion of efficient fixtures and appliances, and water reuse and recycling by the GRWAs larger water users. The programs for ESEFWCM will be supported through the public dissemination of water supply and distribution information, conservation program updates through public education and the use of land use planning to promote efficient use of resources.

Efficient Use of Existing Water Supplies: The language of the Compact specifies efficient use as a consideration when an increased withdrawal is proposed. The Compact language is intended to assure that water from a source is being efficiently used by a large quantity user before they are granted approval for an increased withdrawal. Current sources for the GRWA member communities include the Chicago Well mine on the northwest side of the city of Wakefield and the North Bessemer Well Field located just north of the city of Bessemer. Both are being operated at near capacity. Numerous attempts at seeking additional capacity through ground water development have not panned out due to insufficient well capacities, treatment needs or transmission main distances and associated costs. Emergency connections are in place between the city of Ironwood and the GRWA member communities. However, the lack of sufficient capacity, potential influence of surface water, and the cost of service are significant constraints that the proposed Lake Superior withdrawal will eliminate.

Balance between Economic Development Social Development and Environmental Protection: Reasonableness of a water use as it relates to the balance between economic development, social development and environmental protection is an important consideration in the acceptability of a proposed withdrawal.

Acting on behalf of the GRWA, C2AE outlined a few benefits to the pursuit of the water withdrawal authorization. Primary among the benefits was the ability of GRWA to provide a reliable water source and system to the member communities. A reliable water system directly encourages economic development and benefits the public. C2AE notes the proposed water intake would have a number of direct social benefits. The benefits include enhanced reliability of the water supply for all customers, the elimination of water supply deficiencies in parts of the GRWA service area and provisions in capacity to meet current and potential future demands. With development of the new withdrawal the GRWA is hopeful the member communities will maintain the existing well sources greatly enhancing the reliability of the system in emergencies. Lastly, the system will allow the GRWA to provide safe and reliable drinking water in addition to fire protection of all member and adjacent non-member communities. And, given the net effect of the withdrawal on the water resources as described above, the economic and social benefits to the area would be obtained without a perceptible impact on the environment.

Supply Potential: Supply potential consideration requires the DEQ look at the impact of the withdrawal on the quantity, quality, reliability, and safe yield of hydrologically interconnected water sources. The proposed withdrawal does not present any known or anticipated threat to the quantity or quality of Lake Superior as a water source. Also, the proposed withdrawal would have no impact on the reliability or the safe yield of the source as it relates to others using Lake Superior as a water source.

Degree and Duration of Likely Adverse Impacts: The DEQ concluded the proposed withdrawal would not cause a significant decline in water level and is therefore will not cause an ARI.

Restoration of Hydrologic Conditions: The water withdrawn by the GRWA, less consumptive use, would all be returned to the source watershed via treated wastewater discharges to the Montreal, Black, and Presque Isle rivers. The consumptive losses for water uses inside the Great Lakes Basin are considered reasonable. The impact of the proposed withdrawal does not warrant a need for restoration of hydrologic conditions.

Conservation Measures

For permit applications received on or after January 1, 2009, the applicant must self-certify that they are in compliance with Conservation Measures. More specifically they must certify that they are in compliance with the Conservation Measures developed by the applicable water user's sector or developed for the water use associated with that specific withdrawal (MCL 324.32723[6(e)]).

The GRWA has certified that they will when operating a new facility and handling their own water supply distribution comply with the accepted practices as developed and submitted to the DEQ for the public water supply sector by the Michigan Section of the American Water Works Association (MSAWWA). GRWA has certified to compliance with programs for metering of water use, meter calibration, meter replacement system audits and water loss audits, leak detection and repair and full cost pricing. While not currently having direct control over building code issues GRWA has pledged to promote the use of water efficient fixtures and appliances, efficient use of water in heating and cooling systems, and land use planning that takes into consideration water as a natural resource. Water reuse and recycling will be promoted for the GRWA's larger water users. The conservation programs will be supported through public dissemination of water supply and distribution information. The GRWA annually publishes and distributes a Water Quality Report to all users via direct mail. Notification on special issues is included with billing. Newspaper notifications are used for ordinance changes, project initiations and special events. They are committed to implementing use restrictions when deemed necessary, full cost pricing and conservation pricing.

Public or Private Rights, Limitations and Common Law

The issuance of a permit on the proposed withdrawal must not violate public or private rights or interfere with limitations imposed on the use of the resource by Michigan water law or other common law decisions. Specifically, the DEQ must ascertain if the issuance of the permit would interfere with the principle that certain natural resources, which in this case is Lake Superior, are preserved for public use, and that the state is required to maintain the resource for the public's reasonable use. The issuance of a permit for the proposed withdrawal would not interfere with the public's access to Lake Superior, the public interest in Lake Superior as a natural resource, or maintenance of Lake Superior for drinking and recreational purposes.

VI. PUBLIC PARTICIPATION PROCESS

The DEQ invited public comment on the permit application via public notice and website posting. The public notice and posting on the DEQ internet website occurred on September 12, 2011. The web posting included the permit application packet for the proposed withdrawal and the public notice announcement. The public notice announced the 45 day public comment period and requested comments be submitted to the DEQ by October 27, 2011.

There were no comments received regarding the proposed withdrawal by the GRWA.

V. SUMMARY OF DEQ POSITION

The DEQ has determined the application for the GRWA proposed withdrawal of water from Lake Superior was submitted in accordance with the permit requirements of Part 327. Further, the proposed withdrawal is not likely to cause an ARI and, as proposed, meets the intent of the decision making standards of the Compact. The DEQ based this determination on a review of the submitted information and data pertinent to the factors used in making a decision on a permit application.

The authorized withdrawal capacity is 5.5 million gallons per day (maximum withdrawal in any single day). The DEQ will assure that capacity is not exceeded in the issuance of the required

Michigan Safe Drinking Water Act construction permits (1976 P.A. 399, as amended). In addition, the DEQ will require as a condition of this Part 327 authorization that the GRWA public water supply system having certified as to future compliance, when up and operating independently demonstrates a commitment to the water conservation and water use efficiency programs consistent with the public water supply guidelines accepted by the state under Part 327 and posted on the DEQ website.