



Wisconsin  
**Resources Protection**  
Council



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## **Legislators Urged to Preserve Mining Moratorium Law Study Reveals Flambeau Mine Deeply Flawed**

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Madison--The Sierra Club and Wisconsin Resources Protection Council today released an open letter and a policy briefing paper urging Wisconsin legislators to preserve Wisconsin's common sense "Prove It First" Mining Moratorium Law. 50 organizations to date, including Midwest Environmental Advocates, Trout Unlimited, the River Alliance of Wisconsin, the Mining Impact Coalition of Wisconsin, Clean Wisconsin, the Wisconsin League of Conservation Voters, the League of Women Voters, the Alliance for the Great Lakes and many more statewide, regional and national groups such as the Natural Resources Defense Council are joined together in opposition to efforts announced by state Senator Tiffany to repeal this landmark law.

The Mining Moratorium ("Prove It First") briefing includes this background information:

- To this day, the mining industry has yet to offer a single example of a successfully operated and closed mine in metallic sulfide minerals.
- The Flambeau mine violated the Clean Water Act, has ongoing water contamination issues and cannot be an example to satisfy the Moratorium law.
- The history including the votes of current legislators and elected officials who voted for the Moratorium in 1997. The list includes Governor Walker.

The organizations also released the summary of ongoing research revealing new details about water contamination from the Flambeau mine. Robert E. Moran, Ph.D. - a Geochemist and Hydrogeologist with 45 years of domestic and international experience with mining and water quality issues in both the public and private sectors - has reviewed the development of the mine including permitting efforts, the short operating period and years of monitoring.

Dr. Moran was asked to review public documents related to the Flambeau mine to help determine the state of public resources - ground and surface waters - impacted by the mine during and after mining. The summary released today includes important new findings:

- Ground and surface water quality is being and has been degraded at the Flambeau mine site—despite years of industry public relations statements touting the success of the Flambeau mining operation.

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- The Flambeau mine is an example of a deeply flawed permitting and government oversight process. The opposite of a clean mining operation, groundwater quality data shows contaminants that greatly exceed baseline data and water quality and aquatic life criteria.
- The Flambeau mining and remediation practices are not a sustainable, long-term solution. The mining company may have satisfied state oversight and disclosure requirements, but site ground waters are contaminated and treatment would be extremely costly.

Dr. Moran's summary can be found at: [www.sierraclub.org/wisconsin/issues/mining](http://www.sierraclub.org/wisconsin/issues/mining) It will be followed soon by a report that includes full documentation of the conclusions reached in his research. The summary is being released ahead of the full report to counter the ongoing false claims that the Flambeau mine safely mined in metallic sulfide ore without causing contamination of public waters. [A one-page summary of critical points of information from the report follows on page 3.](#)

From 1994-97, a large network of state and regional organizations including environmental and conservation groups, Wisconsin tribes, unions, churches and other citizen groups joined together to oppose the Crandon mine proposal and pass the Mining Moratorium law with overwhelming public support and signed by Governor Thompson in 1998. The network's efforts successfully educated the public on the dangers of mining in metallic sulfide minerals.

The documents released today ([letter to legislators](#), [briefing paper](#) on Wisconsin's Mining Moratorium Law and Dr. Moran's [summary](#) of issues with the Flambeau mine) can be found at: [www.sierraclub.org/wisconsin](http://www.sierraclub.org/wisconsin) and at: [www.wrpc.net/](http://www.wrpc.net/)

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*The Wisconsin Resources Protection Council (WRPC) is a statewide, environmental membership organization founded in 1982 to help counter the lack of information about the effects of large-scale metallic sulfide mining on our state's precious water supplies, on the tourism and dairy industries, and upon the many Native American communities that are located near potential mine sites.*

*Founded in 1892 by John Muir, the Sierra Club is America's oldest, largest and most influential grassroots environmental organization. The Sierra Club's mission is to explore, enjoy, and protect the wild places of the earth; to practice and promote the responsible use of the earth's ecosystems and resources; to educate and enlist humanity to protect and restore the quality of the natural and human environment; and to use all lawful means to carry out those objectives. The Sierra Club – John Muir Chapter is made up of 15,000 members and supporters working to promote clean energy and protect water resources in Wisconsin.*

*Robert Moran, Ph.D. has 45 years of domestic and international experience in conducting and managing water quality, geochemical and hydrogeologic work. He has worked with private investors, industrial clients, tribal and citizen groups, non-governmental organizations, law firms, and governmental agencies at all levels. Examples of his work, his professional qualifications and more are at: <http://remwater.org>*

*Deer Tail Press ([DeerTailPress.wordpress.com](http://DeerTailPress.wordpress.com)) is a small publishing house founded in 2006 by the late Roscoe Churchill of Ladysmith, Wisconsin and Laura Gauger of Duluth, Minnesota. Its primary mission is to provide the public and government officials with fact-based information on Wisconsin's Flambeau Mine – the economics of the project, legal considerations, and most importantly, the environmental track record of the mine.*

## Critical Points Extracted from:

### SUMMARY - Flambeau Mine: Water Contamination and Selective “Alternative Facts”

Robert E. Moran, Ph.D. / [remwater.org](http://remwater.org) / April 11, 2017

- “Flambeau ground and surface water quality is being and has been degraded—despite years of industry public relations statements touting the success of the FMC operation. Rio Tinto said in a 2013 public relations (PR) release regarding the Flambeau Mine: “Testing shows conclusively that ground water quality surrounding the site is as good as it was before mining.” In efforts to encourage development of the other metal-sulfide deposits in northern Wisconsin and the Great Lakes region, the industry approach has been to simply repeat this false statement over and over, assuming that repetition will make it believed. **Unfortunately, the FMC data show otherwise.**”
- “FMC wells within the backfilled pit have median dissolved concentrations as high as the following (2014-16): Copper = 503 µg/L; Iron = 14,000 µg/L; Manganese = 33,500 µg/L; Zinc = 1200 µg/L; Arsenic = 23 µg/L; Sulfate = 1600 mg/L; Alkalinity = 610 mg/L; Hardness = 2150 mg/L; Total Dissolved Solids = 3110 mg/L; Specific Conductance = 3180 µS. **These values greatly exceed baseline data and relevant water quality standards and aquatic life criteria.** FMCs “baseline” ground water data report that uranium was detected in between 64 to 100% of their samples, yet **uranium was not included in the routine monitoring.**”
- “These ground waters are also being contaminated with numerous minor / trace constituents (e.g. aluminum, arsenic, chromium, lead, nickel, uranium, etc.) as a result of FMC operations. Drawing reliable, **quantitative** conclusions about these constituents is difficult as **FMC has been allowed to characterize the water quality using data that are not representative of the actual, chemically-unstable ground waters.**”
- “FMC and their contractors supplied all of the data and interpretations used to compile the permit-related reports and subsequent Annual Reports. Such an approach obviously reflects FMC’s interests, but is likely quite different from financially-independent, public-interest science. **In short, the Flambeau Mine is the poster child for a severely-flawed permitting and oversight process, that has likely generated long-term public liabilities.**”
- “FMC has failed to define either the actual flow pathways for ground waters exiting the backfilled pit, or to define the ground water-surface water interactions.”
- “Contaminated discharges from the southeast corner of the FMC site have resulted in ... [a tributary of the Flambeau River] being added to the Environmental Protection Agency (EPA) impaired waters list for exceedances of acute aquatic toxicity criteria for copper and zinc. Since 1998, FMC has instituted six different work plans to address this soil and water contamination issue. As of fall 2016, copper levels in the Flambeau River tributary still exceed the acute toxicity criterion [despite passive water treatment], and FMC has not secured a mine reclamation Certificate of Completion (COC) for this portion of the mine site.”
- “Backfilled waste rock was mixed with limestone to minimize the formation of acid and release of trace constituents into the pit waters. However, the rise in pH due to the addition of limestone (or especially lime) can also generate conditions that increase the water concentrations of those trace elements that form mobile species **at elevated pHs, such as aluminum, arsenic, antimony, chromium, manganese, nickel, selenium, molybdenum, uranium, zinc, etc.**”
- “Wastes from the FMC operation will remain onsite **forever**. While limestone was added to the waste rock as it was backfilled into the pit, the ability of the limestone to neutralize the formation of acid waters is limited and finite. After the limestone has reacted with the waste rock, its neutralizing action will cease and the **pit waters are likely to become increasingly acidic and the concentrations of potentially-toxic contaminants are likely to increase.** The deeper pit well waters already show evidence of increased degradation of water quality, in roughly 20 years, post-closure. **It is reasonable to conclude that the Flambeau ground and surface water quality will further degrade in the coming decades if current site maintenance practices continue.**”
- “The narrative “predictions” made by FMC’s main Wisconsin consultant in the various permit-related and Annual Reports appear to be largely naïve geochemically and hydrogeologically. It is doubtful that these statements represented the opinions of FMCs technical experts. Such statements are most useful for obtaining permits, less so for generating quantitatively-reliable predictions.”
- “I know of no metal-sulfide mines anywhere in the world that have met the criteria of Wisconsin’s 1998 moratorium on issuance of permits for mining of sulfide ore bodies without degrading the original water quality, long-term.”
- “**Obviously the mining and remediation practices employed at Flambeau do not represent a sustainable, long-term solution.** While FMC may have satisfied State oversight and disclosure requirements, the site ground waters are contaminated, and **these waters would require expensive, active water treatment to be made suitable for most foreseeable uses. Historically, most such costs are paid by the taxpayers.**”