

The Back Forty Mine

Almost everything encountered in modern society from houses, cars, roads, computers to make-up and pencils has some component that must be mined. “If it can’t be grown it has to be mined” is a familiar saying and it is no exaggeration to say that the modern world would not be able to function without mined minerals. The U.S. has more than 100,000 active mines providing metals such as iron, copper, gold, silver, molybdenum, lead, zinc, and non-metals such as phosphate, coal, aggregates (Daniels, 2014). These mines produced an estimated \$82.2 billion of raw materials in 2018, a 3% increase from \$79.7 billion in 2017 (LaMore, 2020). However, mining has serious immediate and long-term impacts on the environment and communities in which they are located and often presents a difficult challenge to local planners who must balance the social and environmental costs with the economic benefits. This paper examines the Back Forty mine project, a proposed gold mine on the border of Michigan’s Upper Peninsula and Wisconsin. It describes a conflict over the project between the local community on one side and the mining company on the other. The case is instructive for environmental planners working in a resource rich region.

Background

The proposed Back Forty Mine would be a 750-foot-deep open-pit covering 83 acres, with one edge within 50 yards of the Menominee River, [Figure 1](#). The Menominee River is 116 miles long and is the border between Michigan and Wisconsin. It drains 4,000 square miles of the region, the largest watershed in the Upper Peninsula, [Figure 2](#). (Doremus & Slattery, 2019). The project is being pursued by Toronto-based Aquila Resources; a junior mining company

formed in 2004 specifically to take the Back Forty project public (Back Forty Film, 2019). The Preliminary Economic Assessment (PEA) plan consists of open pit mining from Year 1 to Year 5 followed by an underground operation initiated in Year 5 and extending to Year 11. An additional year will process remaining stockpiles for a total of 12 years of operation (Bradfield et al, 2020). The company estimates there will be approximately 240 permanent, direct jobs with annual payroll of \$9.5 million and annual taxes to federal, state, and local governments of \$20 million (Back Forty Mine, n.d.).

The Back Forty Mine is a sulfide mine which produces acid drainage. “Acid drainage occurs in places where rock and soil contain high levels of iron sulfides (pyrites) that break down into water- soluble sulfuric acid. This acid contaminates drinking wells, kills fish in streams, pollutes soils, and stunts vegetative growth” (Daniels, 2014). Additionally, the location of the mine is poised to destroy important cultural resources belonging to the Menominee Indian Tribe of Wisconsin. The site is the ancestral home of the Menominee and is essential to their identity (Gedicks, 2018). Opposition to the project is intense. 14 local governments, 8 tribal governments, and thousands of individuals voiced disapproval of the project via public resolutions, letters to lawmakers, and protests (Doremus & Slattery, 2019; WRD, 2018, p. 17).

Permits

All mines need to acquire several permits to operate. Aquila Resources needed four foundational permits: Mining, Air Quality, Water Discharge, and Wetland. Michigan Department of Environmental Quality (MDEQ) issued three of the four permits but Aquila ran into trouble with the wetlands permit. In its April 30, 2018 Findings of Fact and Conclusions of Law report, the Water Resources Division (WRD) of MDEQ found fault with Aquila’s plans to

minimize the impact on wetlands and informed Aquila that there were serious issues in the permit application and denied it (WRD, 2018). Shortly afterwards, the U.S. Environment Protection Agency (EPA) formally objected to Aquila's wetland permit citing that the company had not demonstrated that public waters would be protected from pollution. Michigan is one of only two states that have been delegated authority to issue wetland permits under the federal Clean Water Act, but the EPA has the authority to object to a permit if it doesn't comply with the Clean Water Act and federal regulations, and MDEQ cannot issue the permit unless the objections are resolved (Srubas, 2018). The EPA gave MDEQ 90 days to address its concerns. If Aquila failed to resolve the concerns, the U.S. Army Corps of Engineers could assume responsibility for the wetland permit, taking it away from the state (Gedicks, 2018). Two months later, following a meeting with Aquila officials with "supplemental information" being presented, the EPA reversed its decision and announced that several earlier objections had been resolved and any remaining ones could be addressed through MDEQ's inclusion of specific conditions in a final permit. And so, on June 4, 2018, against the WRD's analysis and recommendation, the MDEQ director issued the wetland permit with 29 pages of special conditions that must be met before it takes effect (Doremus & Slattery, n.d.; Matheny, 2019). Mine opponents were furious and argued that a permit with so many special conditions should simply have been denied. The fight was not over yet.

Trust Responsibility

As mentioned above, Michigan is one of only two states with delegated authority to issue wetland permits under the Clean Water Act (Daniels, 2014, p 491). This leaves the permit process entirely up to the state, barring EPA objections, which at this point were none. The

Menominee Nation has criticized the lack of federal involvement in the Back Forty approval process as a violation of the federal government's trust and responsibility to the tribe. When Native Nations entered into treaties with the U.S. government, they gave up land in exchange for promises that the government would honor the treaties and its 'duty of protection' toward the tribes. This obligation is known as the 'trust responsibility' (Gedicks, 2018). The 'trust responsibility' is a legal principle that the Supreme Court noted in *United States v. Mitchell* (1983) as "the undisputed existence of a general trust relationship between the United States and the Indian people." This relationship is one of the most significant and motivating concepts in federal Indian law (Administration for Native Americans, 2014). Aquila claims it conducted its own archaeological survey and won't encroach on cultural sites, but the Menominee say Aquila did not consult them and is in violation of the United Nations Declaration on the Rights of Indigenous Peoples that requires all extractive resource projects to obtain the free, prior and informed consent of indigenous peoples (Gedicks, 2018). If permitting rested with the federal agencies, then they would be required to conduct official consultation with the tribe on the project. It was necessary to get the federal government involved.

The Runaround

As part of its legal strategy, the tribe chose to contest the 1984 decision by the U.S. EPA that gave Michigan the authority to administer the wetland permit. Decisions regarding the Menominee River affect more than just the state of Michigan and many changes have taken place since the 1984 decision. The tribe also protested that the EPA imposed conditions on the wetland permit granted to Aquila by Michigan but then withdrew the objections, allowing the permit to stand, calling EPA's actions 'arbitrary, capricious and contrary to law.' The tribe sued

the EPA and the U.S. Army Corps of Engineers for failure to respond to its objections (Srubas, 2020). A three-judge panel in the 7th U.S. Circuit Court of Appeals dismissed the lawsuit on grounds that it didn't challenge any final action taken by either agency. However, the court was not happy with the federal agencies, pointing out bluntly that they had given the tribe the runaround. Judges stated that both agencies could have and should have made it clear to the tribe that it could have sought relief instead by filing a federal 553(e) petition for changes in the rule. "We are at a loss to understand why the EPA and the Army Corps did not inform the tribe of this route," the appeals court wrote. In his opinion, Judge Scudder said the tribe "ran into a legal labyrinth and regulatory misdirection" as it sought to protect its cultural heritage. Judge Hamilton highlighted a problem with delegation of permitting authority to states in his concurring opinion, "as uses of particular stretches of waterway may change, so may the legality of a federal delegation of authority to a state...as applied to the Menominee River near the proposed Back Forty mine, there is a substantial issue whether the original delegation in 1984 remains valid as a matter of federal law." (Kaeding, 2020; Paukner, 2020). Back to Michigan goes the fight.

Tailings

Aquila has in hand the four foundational State permits required however, the company also needs a Dam Safety Permit required to build the proposed Tailings Management Facility (TMF) and Contact Water Basin (dam and pond). It is the final State permit required to commence construction and operations (Aquila Resources, 2020). Tailings are the huge volumes of non-economic rock that is left after ore has been mined and milled. In a sulfide-rich ore body such as the Back Forty, when the material is exposed to air and water, a chemical

reaction creates sulfuric acid which leads to acid mine drainage (Vaughan, 2020). How tailings are handled can have a long-term impact on ecosystem sustainability as many recent catastrophic tailings dam failures demonstrate, such as in Brumadinho, Brazil in 2019 (Gedicks, 2020; Morrill 2020). The safest tailings facility is the one that is not built but barring that, according to Metso, the most viable and long-term solution for tailings handling is a dewatering process called dry filtering or dry stacking. This method reduces seepage rates, space used, and leaves the tailings in a dense and stable arrangement eliminating the long-term liability that ponds leave after mining is finished (2019). However, this process is costly, much too costly for junior mining companies such as Aquila. Thus, Aquila's TMF proposal is a traditional dam-pond arrangement of the type that are experiencing failures with increasing frequency and severity (Morrill, 2020). Aquila's original Dam Safety permit was rejected by Michigan's Department of Environment, Great Lakes, and Energy (EGLE), formerly known as MDEQ, as incomplete and, to date, its current application is yet to be approved. Gedicks says "Any review of Aquila's proposed tailings dam must confront the issue of whether current industry standards adequately protect communities and ecosystems" (2020). An international group of scientists, community groups and environmental organizations from 24 countries has just published a set of guidelines for the safer storage of mine waste in tailings dams. Among the top recommendations is that tailings facilities must be built and managed only with community consent, respecting the human rights and the rights of Indigenous Peoples, and adopting the best available technologies and practices (Morrill, 2020, p. 20).

Furthermore, dam safety has become a greater concern in Michigan since the dam collapses in Midland, MI in May 2020 following heavy rainfalls. The Edenville and Sanford Dams

that failed were water-retention dams made of concrete and steel. In contrast, the dam design proposed for the Back Forty tailings dam would be made of waste rock and soil. The Coalition to SAVE the Menominee River posed the question to EGLE's dam safety expert "If the more stable water-retention dams were unable to withstand a 500-year flood event, how could Aquila's far less stable Back Forty tailings dam possibly withstand a similar challenge?" and requested "In light of the recent dam failures and the well-documented threat of failure for the Back Forty tailings dam in an area of heavy rainfall, we are asking EGLE to exercise your authority to prohibit the upstream dam construction design for the proposed Back Forty tailings dam. If EGLE fails to prohibit a dam design that has already been banned in Brazil, Chile, Peru and Ecuador as an inherently risky technology, the communities downstream from the Back Forty's tailings dam can only interpret this decision as placing Aquila's corporate profits over public health, safety and clean drinking water." EGLE has not responded to the Coalition's letter. Neither Aquila nor EGLE have obtained the consent of either the Menominee Tribe or local citizens for the proposed Back Forty tailings dam. The lack of community consent for the tailings dam reinforces the perception among its opponents that this project lacks a social license to operate (Gedicks, 2020).

Social License to Operate and CSR

Many politicians and bureaucrats involved in the Back Forty project dismiss the widespread opposition. According to them, if Aquila meets the conditions of the permit requirements, it will be granted permission to mine. This black and white view is at odds with the growing realization within the international mining industry that community support for a mining project, or a social license to operate, is as important, if not more so, than a regulatory

license. A social license to operate is an intangible consent given by local stakeholders, a set of demands and expectations for how a business should operate (Gedicks, 2018). The social license to operate is part of a company's Corporate Social Responsibility (CSR) strategy.

Commonly, CSR is regarded as a voluntary approach however, companies are finding that it is becoming less and less voluntary (Wilburn, 2011). In recent World Economic Forums, politicians have told corporate leaders that they must have collective as well as company goals that focus on sustainability. Sustainability is another subset of CSR and refers to how well a company ensures its long-term viability based on its environmental, social, and economic performance. No longer is CSR important purely for public relations. Money used to fight legal battles and media attacks is significant lost profit. According to mining risk analysts, the fourth greatest risk to mining investors comes from ignoring community voices (Gedicks, 2018). Mining projects that generate protests and civil unrest are bad for business.

A top executive at Newmont Mining explained that Newmont has moved its managers from a concern with only operational issues to the social license to operate. "Today the manager must be able to interact with the community and generate the consent of the people in order to move the operation forward in a stable environment". Another executive explained that if a company has a social license it is afforded the privilege of operating with minimal formalized restrictions because the industry has maintained public trust by doing what is right. This public trust means that society believes the activities of the industry are consistent with social expectations and the values of the community (Wilburn, 2011). Understanding CSR and the social license to operate is particularly important to the planning profession. Maintaining

public confidence is critical for effective planning and giving deference to local, indigenous knowledge is important for building this credibility (APA, 2019, p. 10).

Carlin Trend

Clearly the Back Forty mine has yet to obtain a social license to operate and one might think, what community would ever grant one for a giant hole in the ground? We tend to only hear about mining when something bad happens but when done properly, mining can be an asset to both corporation and community. An example of this is Nevada's Carlin Trend. If Nevada were a country, it would rank fourth in annual world gold production. And most of Nevada's gold has come, and is still coming, from a 5-mile-wide, 40-mile-long strip of land called the Carlin Trend that is the world's third-richest gold-mining district of all time. In the spring of 1961, near the town of Carlin, 23 miles west of Elko, two geologists headed into the hills each morning. "Folks in Carlin all knew the geologists were searching for gold, and that made the old timers smile because they had futilely searched those same hills for gold themselves" (Voynick, 2020), a first hint of community acceptance based on the history of the area.

The geologists succeeded in discovering microscopic gold in sedimentary formations. The sedimentary occurrences were surprising because, at the time, gold had only been mined from vein-type deposits in igneous rock. The Carlin Trend is a low grade but massive ore body. In 1974 gold became a free-market commodity and it became economical to mine. "With everything now in place—large deposits of ore ready to be mined, high gold prices, inexpensive mining and recovery methods, and a state eager to support a mining industry—Nevada's gold boom was underway" (Voynick, 2020). Today the state's gold mining industry has 27 active

mines that provide 15,000 direct mining jobs with an average annual income of \$80,000.

Nevada's gold-mining boom is now into its 35th year, the longest in the nation's history. Mining in the Carlin Trend is expected to continue for about 20 more years (Voynick, 2020). There is definitely anti-mine activity in Nevada too and conservation groups such as Center for Biological Diversity, Great Water Basin Resource Watch, and Sierra Club are extremely important for checks and balances but overall, the general community is supportive of the mining.

Conclusion

Mining will continue to be key to providing the necessary materials needed for the immense demands of growing renewable energy and the tech industry. Planners must evaluate each mine individually based on many factors, among them environmental impacts, economic impacts, and perhaps most importantly social impacts. In the case of the Back Forty, based on my research, it fails in all three categories. The location of the mine, a mere 150 feet from a major river, the TMF proposal, and that it would be operated by an inexperienced, junior mining company is just asking for disaster. The economic benefits of 240 jobs at \$39,500 annual salary and a 2.75% tax rate for a short 7-12-year lifespan is not overwhelming (Back Forty Mine, n.d.). Finally, no one wants the mine, it completely lacks a social license to operate. Most of the local publicly elected government bodies, tribal governments, and citizens have been fighting to halt this project for over a decade now. The only support it has is from out-of-community stakeholders looking to make some quick money and politicians that seem to be in cahoots with this industry. Not all mines are bad but this one seems to be. There's plenty of gold in the Carlin Trend, no need to dig up our wetlands.



Figure 1: Aerial view of proposed Back Forty Mine (Doremus & Slattery, 2019) [\[back\]](#)



Figure 2: Menominee River watershed and Back Forty location marked with X (Doremus & Slattery, 2019) [\[back\]](#)

Bibliography

Administration for Native Americans. (2014, Mar 19). American Indians and Alaska Natives - The Trust Responsibility. Retrieved from <https://www.acf.hhs.gov/ana/resource/american-indians-and-alaska-natives-the-trust-responsibility>

American Planning Association (APA). (2019, Apr). *Planning for Equity Policy Guide*. Planning.org.

Aquila Resources. (2020, Nov 17). Aquila Resources Submits Dam Safety Permit Application for Its Back Forty Project. *Business Wire*. Retrieved from <https://www.businesswire.com/news/home/20201117005506/en/>

Back Forty Mine. (n.d.). *Economic Impact*. Retrieved Nov 22, 2020 from <http://backfortymine.com/community/#impact>

Bradfield et al. (2020, Sept 16). Preliminary Economic Assessment of the Back Forty Project, Menominee County, Michigan, USA for Aquila Resources Inc. NI 43-101 & 43-101F1 Technical Report. Retrieved from <https://aquilaresources.com/wp-content/uploads/2020/09/Aquila-Back-Forty-PEA-by-PE-Sep-16-2020.pdf>

Daniels, T. L., & American Planning Association. (2014). *The environmental planning handbook for sustainable communities and regions*. Routledge.

Doremus, Mark, Slattery, Karen. (2019, Feb 10). More Precious Than Gold [Video]. *Back Forty Film*. Retrieved from <https://www.facebook.com/247949162355359/videos/2328434763842156/>

Doremus, Mark, Slattery, Karen. (n.d.). Back Forty Film website. Retrieved from <http://www.back40film.com>

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Gedicks, A. (2018). Wisconsin's 'Standing Rock': the proposed Back Forty mine. *Race & Class*, 60(2), 106–113. <https://doi.org/10.1177/0306396818797269>

Gedicks, A. (2020, Jul 26). Proposed Mine Faces Mounting Troubles. *Urban Milwaukee*. Retrieved from <https://urbanmilwaukee.com/2020/07/26/proposed-mine-faces-mounting-troubles/>

Metso. (2019, Jul 19). How to handle mine tailings safely and sustainably. *Mining [Dot] Com*. Retrieved from <https://www.mining.com/how-to-handle-mine-tailings-safely-and-sustainably/>

Morrill, J., et al. (2020). *Safety First: Guidelines for Responsible Mine Tailings Management*. Earthworks and MiningWatch Canada.

Kaeding, D. (2020, Jan 28). Menominee Tribe Loses Appeal on Back Forty Mine Lawsuit. *Wisconsin Public Radio*. Retrieved from <https://www.wpr.org/menominee-tribe-loses-appeal-back-forty-mine-lawsuit>

LaMore, R. (2020, Nov 10). *Environmental Planning - Session 20 Lecture PowerPoint*. MSU.

Matheny, K. (2019, Aug 14). Huge 'back forty' mine won approval despite regulators' concerns. *Green Bay Press Gazette*. Retrieved from <http://ezproxy.msu.edu/login?url=https://www-proquest-com.proxy2.cl.msu.edu/docview/2272634796?accountid=12598>

Paukner, M. (2020). Menominee tribe loses appeal over back forty mine permit. *Wisconsin Law Journal*. Retrieved from <http://ezproxy.msu.edu/login?url=https://www-proquest-com.proxy1.cl.msu.edu/docview/2349989038?accountid=12598>

Sam Hetherington, UP433 Fall 2020

Srubas, P. (2018, Mar 20). EPA objects to back forty mine wetland permit. *Green Bay Press Gazette*. Retrieved from <http://ezproxy.msu.edu/login?url=https://www-proquest-com.proxy1.cl.msu.edu/docview/2015425383?accountid=12598>

Srubas, P. (2020, Feb 01). Menominee tribe loses back forty mine decision; fight continues. *Green Bay Press Gazette*. Retrieved from <http://ezproxy.msu.edu/login?url=https://www-proquest-com.proxy1.cl.msu.edu/docview/2350474233?accountid=12598>

Vaughan, D., (2020). Minerals: Sulfides. *Science Direct*. Retrieved from <https://www.sciencedirect.com/topics/agricultural-and-biological-sciences/sulfide-minerals>

Voynick, S. (2020, Nov 12). Nevada's Carlin Trend. *Rock & Gem*. Retrieved from <https://www.rockngem.com/nevadas-carlin-trend/>

Water Resources Division (WRD) of the Michigan Department of Environmental Quality. (2018, April 30). *Finding of Fact and Conclusion of Law*. Retrieved from https://drive.google.com/file/d/1INvqITC_LwiuYxs1bzA3aqV7Ms2lobRM/view.

Wilburn, Kathleen & Wilburn, Ralph. (2011). Achieving social license to operate using stakeholder theory. *J. Int. Bus. Ethics*. 4. 3-16. Retrieved from https://www.researchgate.net/publication/284663470_Achieving_social_license_to_operate_using_stakeholder_theory