A Fluid History of Wisconsin Breweries

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Series,The Taproom

The Taproom is a monthly series that explores the rich history of all things beer. It is curated by **Pavla Šimková**.

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During my research for **Land of Amber Waters: The History of Brewing in Minnesota**, a retired employee of the Theo. Hamm Brewing Co. in St. Paul told me: “Beer is 97 percent water, and the other three percent is none of your damn business.” Of course, he knew that I understood the importance of the other ingredients, and I joked with him that in the case of Hamm’s beer it was more like 98 percent water. But water is important to brewing beyond being an ingredient. During the nearly two centuries of commercial brewing in Wisconsin, water was critical to how brewers selected a location, advertised their beer, and interacted with government agencies.

Beer is a product that has depended on its locality in a way few other goods can claim. Its place-based nature has been a part of its mystique: no traveler is excited by finding a laundry detergent he or she can’t buy at home, but many go great lengths to try a new beer. On a more material level, until recently, the characteristics of the local water were a critical component of a beer’s flavor and often helped define beer styles. The waters of Dublin, Burton-on-Trent, Pilsen, Munich, and Milwaukee all contributed to the styles made famous by their brewers. The minerals present in the water both provide flavor and accentuate the taste of other ingredients. The brewers of Waukesha and West Bend, Wisconsin, advertised the mineral content of their beers and made bold claims for their health-giving properties. The biggest difficulty that new multi-plant brewing companies had to overcome in the mid-twentieth century was to make beer brewed at

different plants taste the same. The success of their chemists allowed Schlitz, Pabst, Miller, and others to make beer of remarkable consistency.

Wisconsin's pioneer brewers, mostly German immigrants intending to brew lager, sought to locate their breweries near a spring that would provide water of sufficient quantity and purity. The earliest known reference to water for brewing in Wisconsin was in an 1843 advertisement announcing the sale of William Miller's brewery in Milwaukee, which touted "a never-failing stream of soft water which is introduced into the top of the brewery." John Roethinger of Janesville advertised in 1872 that "... his Ale and Beer are made from Pure Spring Water! and not from the water of the Rock River—the natural sewer of filth from a great extent of the country." Insinuations that his rivals were using tainted water were countered by a later article that described the process by which John Buob collected water from a distant spring and shipped it to his brewery by boat. Buob was not the only brewer who brought water from a distance—when Joseph Schlitz of Milwaukee built a new brewery in the late 1860s, he invested in a sophisticated piping system to bring water from a spring several blocks away.

One brewery that used river water successfully was the Nemadji Brewery in Superior. The iron-impregnated waters of its namesake river yielded qualities that drinkers in the 1860s considered as "health-giving" as the then-popular patent medicines. However, many brewers depended on wells to provide pure brewing water. Some brewers pointed to the depth of their wells as proof they ran a modern brewery. Rudolph Heger's City Brewery in Jefferson claimed that the reason their beer won a prize for purity at the St. Louis World's Fair in 1904 was that the water was "obtained from a well six hundred and seventy feet deep cut out of St. Peter's [sic] sandstone." Not all local water, however, was suitable for brewing—a well dug in the 1850s by the Binz brothers in Sheboygan produced water with a high iron content, and the beer made from it had to be dumped.

As cities developed modern infrastructure, many brewers found it convenient to use city water. Several Milwaukee breweries were using city water as early as the 1870s; at the time they were charged at a rate per barrel of beer produced. Relying on city water made the brewers and city administrators both dependent on and at odds with each other. When legal beer production was revived in 1933, it was estimated that this would increase revenue for Milwaukee's water department by $50,000 per year. But an increase in water rates also meant added expenses for a brewery, and threatened to put them at a competitive disadvantage. As recently as 2010, MillerCoors protested a change in Milwaukee's rate structure, which would have increased their water bill (which was $1.2

million in 2009) by nearly 50 percent, and threatened to shift production to other breweries around the country. When cities began to fluoridate their water supplies during the 1950s, breweries needed to examine the effects of the changed chemistry on the brewing process. Roles were even reversed in a few cases, with breweries providing water for the city. The first public water in Jefferson was provided by Rudolph Heger's City Brewery. In Bangor, the city owned the mains, but the Hussa Brewing Co. owned the wells and pumps and collected the revenue.

Brewing is a water-intensive industry beyond the water that finds its way into the beer. Water is used in mashing and sparging, to rinse bottles and kegs, to clean brewing equipment and, in many breweries, to heat the brewing and mashing vessels. For many years, water was also used to carry off waste from the brewing process (and still is, though to a more limited degree). The disposal of wastewater, therefore, was sometimes more noticeable to the surrounding community.

An early report of neighborhood concerns came in 1866, when residents of Milwaukee's First Ward petitioned the city council to act on "an alleged nuisance from the refuse water at Stolz's brewery." (While possibly unconnected, it is suggestive that Stolz's business was the target of an arson attack a few months later.) In 1879, the Milwaukee City Health Commissioner requested several brewers to appear before a meeting and answer questions about river pollution. Emil Schandein of Phillip Best Brewing Co. (later Pabst) reassured the Commissioner that no chemicals were discharged into the river, only barrel, tub, and floor washings—which could also change the chemistry of the river but this was less obvious. In 1891, pollution of the Menomonee River resulted in all three of the Wauwatosa area brewers—Miller, Gettelman, and Falk, Jung & Borchert—being investigated and asked to clean up their operations. By 1894, Gettelman remained one of the few businesses on the river that had not yet installed a sewage plant.

Brewers in smaller cities created similar problems. In December 1870, Madison's *Wisconsin State Journal* reported: "Some residents of the First Ward complain bitterly of a nuisance caused by the emptying into the street of the cesspool of Maus' brewery, at the corner of State and Gilman streets. Were it not for the extreme cold, they say, the stench would be intolerable." Brewery-caused pollution was not limited to the nineteenth century. To avoid paying taxes, in 1948 the Denmark Brewing Co. in Denmark, Wisconsin, illegally dumped between 30,000 and 40,000 gallons of beer into the Noshota River. The pollution poisoned hundreds of thousands of fish including freshly stocked trout, and the river was cloudy for about four miles toward Lake Michigan. But by this time, the federal

government was acting through the Water Pollution Control Act, and state and local governments were increasing regulation. More breweries were being asked or required to treat their own wastewater but this was an expense that few small breweries could afford. It was estimated that a brewery with a capacity of 100,000 barrels per year would require treatment facilities that would normally serve a community of 6,000 persons. Those breweries that depended on municipal sewer systems were subject to rate increases, and at least one small brewery, the Berlin Brewing Co. in Berlin, Wisconsin, closed in part because rising sewer rates cut into their already thin profit margin. Then again, sewer fees were sometimes an important source of revenue for cities, and when a brewery closed they were deprived of these funds.

Realizing the importance of clean water to their business, modern breweries are now making special efforts to reduce the volume of water used. In addition to using less water in the first place, brewers are designing their plants to reuse water from bottle rinsing, heating, and other purposes. Instead of focusing on finding a source of brewing water like their pioneer predecessors did, they focus on its disposal. Very few brewers today promote their beer on the basis of its pure water. The city water they rely upon does not evoke refreshment or purity as did the cascades that enticed early brewers.