CHALLENGES OF BREWERY WASTE FOR WASTEWATER PLANTS

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Across the United States, craft brewing continues to grow at an exciting pace for all types of beer lovers. NY State is also seeing a steady growth of new startup breweries. As of the beginning of 2018, there were 400 breweries in NY State. That number is up from 200 in 2018. Municipalities across the state are quick to welcome the new breweries with open arms as they bring with them new jobs, rehab old industrial sites, boost the tax base, and open up new opportunities for tourism. Although all of these advantages are true, there are also some important new challenges for water and wastewater facilities that should be addressed by the engineers, brewery owners, and municipalities together prior to picking the site of the new brewery.

At the beginning of the brewing process, high quality clean water is one of the most important ingredients to the process. For every gallon of beer produced, a brewery can use as much as 10 gallons of water. Roughly half of the water ends up in the final product inside bottles, cans, and kegs, and some is lost to steam and other parts of the process. The remaining 50 percent that enters the facility to assist in the process needs to leave the facility in the form of wastewater. Access to wastewater treatment can be as important as other factors such as roads and available power when looking to open or expand. Many breweries around the nation have used wastewater handling capacity as one of the main deciding factors in where to construct.

Historically, for most breweries, wastewater is an afterthought, something to be dealt with if a problem occurs. However, large breweries such as Lagunitas in Petaluma, California, now spends more than $1 million dollars annually to ship its wastewater to Oakland for treatment because the Petaluma plant is unable to handle the volume and strength of its waste product. Some other large breweries have opted to construct their own treatment facilities at great cost because municipal facilities are unable to deal with the waste stream produced.

So why is wastewater from a brewery so problematic? It mostly has to do with what remains after the beer has been brewed: sugar, yeast, and many forms of protein. None of these are toxic but in high concentrations, it can wreak havoc with the microbes used by sewage treatment plants to break down organic waste. There are no toxins, metals or chemicals leaving a brewery, just food, huge amounts of food for the hungry bugs at the plant. Adding too much of this food to the waste stream can cause overfeeding of the bacteria at the plant. This in turn causes the bugs to suck up all the oxygen in the water and kill the microbes which then allow the waste to pass untreated through the facility and into the receiving stream.

Knowing the challenges that the wastewater facility will face, the municipal engineers along with the brew facility, and most importantly the plant operators, have to meet and discuss what can be done to allow for successful BOD reduction prior to the brewery waste entering the facility. More importantly, this discussion should occur before the brewery is allowed to connect to the wastewater system. There should be a plan put in place to either upgrade a municipal plant or to include pretreatment at the brewery itself.