Calling All Breweries: Is Your Wastewater In Order?

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The U.S. Department of Justice and the U.S. Environmental Protection Agency announced last month that they settled with D.G. Yuengling and Son Inc., owner of two large-scale breweries near Pottsville, Pennsylvania, for 141 alleged Clean Water Act violations occurring between 2008 and 2015. The settlement reportedly includes a $2.8 million penalty, plus approximately $7 million in promised improvements, including:

- Designing and implementing an environmental management system (EMS) focused on CWA compliance for both breweries;
- A series of environmental audits and inspections by third-party consultants;
- Installing a comprehensive pretreatment system at the “old brewery;”
- Improving the pretreatment system at the “new brewery;”

- Developing and implementing a communication and notification plan to promptly notify the Greater Pottsville Area Sewer Authority (GPASA) of any significant changes to the wastewater;

- Hiring two certified wastewater treatment operators; and

- Implementing a process to identify, investigate and respond to future CWA violations.

The charges? That the two breweries failed to comply with industrial user permit limits on wastewater discharges that went to the local publicly owned treatment works (POTWs) (i.e., a municipal wastewater collection and treatment system). More specifically, the charges state that the brewery wastewater exceeded the discharge limits for biochemical oxygen demand (BOD), phosphorous, zinc and pH.

Perhaps the enforcement hammer fell harder for Yuengling, because this was not their first CWA enforcement action. Back in 2003, Yuengling settled with the EPA via a consent decree for 20 alleged violations which occurred in 2000 for its "new brewery," including allegations of exceedances for copper, lead, nickel, zinc and pH. That consent decree required Yuengling to pay an $110,000 penalty and to install the pretreatment system. Under the most recent enforcement action, Yuengling now must improve the new brewery pretreatment system. As for the old brewery, Yuengling was quick to announce that an $8 million "state-of-the-art" wastewater pretreatment system was installed and operating since March 2016.

With over 4,000 breweries nationwide according to the Brewers Association, we beer enthusiasts are loving it. However, not all the POTWs are loving the influx of brewery wastewater into their collection and treatment systems. While beer is almost 95 percent water by composition, traditionally, the average water use ratio for a brewery is about 7:1, or seven gallons of water are consumed for each gallon of beer produced. The other six gallons are lost to evaporation or are literally "going down the drain."

And while large breweries can sometimes reduce the ratio of water used to beer produced, it's often difficult for smaller breweries to decrease this ratio significantly. For the Yuengling breweries, their discharge exceeds 290,000 gallons a day and flows from the breweries to the POTW. After being mixed with other wastewater and treated, it is discharged under the POTW's national pollution discharge elimination system (NPDES) permit into the Schuylkill River, which provides drinking water to 1.5 million people.

While brewery wastewater is not generally "toxic" or "hazardous," as those terms are traditionally defined, it can contain low levels of some metals or other substances designed to kill bacteria (known as "biocides"), depending on what cleaners and other materials the brewery uses. Metals and biocides can be problematic for POTWs. Potentially more costly, brewery wastewater also typically has concentrations of certain biodegradable materials at levels much higher than typical "domestic" and commercial wastewater.

In short, brewery wastewater can be very "high-strength" with material that is "food" for the POTW's aquatic organisms that treat the wastewater. This high-strength wastewater can be more costly for the POTW to treat and can increase the quantity of sludge needing disposal. To prevent this, the EPA established and enforces national standards for industrial wastewater discharged to a POTW. Termed the "General Pretreatment Regulations for Existing and New Sources of Pollution" (40 CFR Part 403), these regulations require the POTW to establish local wastewater control programs that

protect their collection and treatment facilities.

Among other limitations, these programs prohibit industries from discharging wastewater that is not fully treatable by the POTW and thus could "pass through" or "interfere" with the POTW's treatment, including its chosen method of sludge disposal and/or its ability to comply with its NPDES permit. Additional regulations applicable to the POTW may also lead to the POTW imposing more stringent wastewater discharge limits, including the EPA Part 503 biosolids rule and, potentially, water-body specific water quality standards and total maximum daily load requirements (see CWA Section 303(d)) and Safe Drinking Water Act limits (42 USC §§ 300f to 300j-26), based on where the water ultimately discharges to.

Without pretreatment, brewery wastewater may exceed these discharge limits for some parameters such as pH, trace-heavy metals and phosphorus. It can also trigger high treatment fees or "significant user" surcharges due to high levels of BOD and total suspended solids (TSS) and, perhaps, even nutrients such as phosphorus or nitrogen. The justification for these additional charges is that an industrial discharger is allegedly responsible for a greater share of the POTW's cost for construction and maintenance of the public collection and treatment systems, when compared to residential dischargers, and thus they are expected to pay their "fare share."

This is often represented as a "capacity charge" calculated as "equivalent dwelling units" (EDUs) that represent the property's "share" in comparison to the typical volume and strength of the wastewater generated by a single-family residence, which equals "1 EDU." The number of EDUs may be furthered multiplied by a "strength factor," which is usually some formula contained in the local sewer use code or implementing rules where high-volume and/or high-strength wastewater is surcharged based on its facility-specific BOD and TSS quantities. This strength factor is then multiplied by the property's flow, which may be the incoming or outgoing flow, depending on the meter placement. Additional "connection charges" or "capacity charges" may also be assessed when the discharger is first connected to the POTW system.

Even if a facility is paying these increased charges and the POTW is able to handle the brewery waste-stream and not exceed its own NPDES permit discharge limitations, that does not prevent the POTW, the state environmental agency, or the federal EPA — as in the case of the Yuengling settlement — from commencing enforcement actions to assure that the wastewater stream complies with the discharge limitations contained in the permit or contract issued to the brewery. Often assessed per violation and per day, potential penalties can quickly rise to millions of dollars. Additionally, if the enforcer can show that the wastewater actually caused "pass-through" or "interference" with, or otherwise disrupted the operations at the POTW, or caused the POTW to violate its NPDES permit, these potential penalties get all the more drastic.

To mitigate this risk, every brewery needs to evaluate what is going down the drain. If the discharge is to the local municipal sewer system, then it needs to determine if the brewery must obtain a significant industrial user wastewater permit (or whether it can qualify as a commercial user or nonsignificant industrial user). If it is put under formal permit or contract, then it must evaluate whether its untreated wastewater can consistently comply with those requirements or if onsite pretreatment is required.

Is the brewery's wastewater within the limits for the metals, biocides and pH and below the surcharge levels for solids, BOD and other constituents? If no, then a pretreatment system to remove or change the composition of pollutants in the wastewater is likely needed. In this case, can the pretreatment be limited to pH adjustment and/or solids removal,

or is a more comprehensive system required? If yes, should that treatment system be aerobic, anaerobic or one of the newer, “biology-free” solutions? Alternatively, are there water conservation or pollution mitigation measures that can be put into place? An experienced environmental lawyer can oversee the hiring of an environmental consultant and/or laboratory to conduct wastewater testing under the cloak of attorney-client privilege.

Using those results, the environmental attorney can help navigate the local POTW rules and federal discharge limits to determine what is necessary for compliance and then support those findings with an assessment of potential fines for noncompliance to help convince the operations staff to take appropriate action. If enforcement is already initiated, an environmental lawyer should be involved in the settlement negotiations.

The “take away” message is, no matter how small the microbrewery, there is a real risk for significant fines for those who don’t plan ahead to assure that the wastewater is properly permitted and within discharge limits. Given the increased EPA focus on food and beverage manufacturers and the great publicity that the rise of microbrew is getting nationwide, the window for proactive action is closing.

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