New Hampshire Department of Environmental Services State Pretreatment Update

2018 New England Pretreatment Coordinators Workshop

UMASS – Lowell Conference Center

Program Basics

- NH is not a delegated state for the NPDES permit or pretreatment program.
- 13 local POTWs in NH have approved pretreatment programs, acting as the Control Authority (CA) for 40 CFR Part 403 implementation.
- EPA Region 1 is the Approval Authority for the entire state, and the CA for the other 41 non-approved POTWs.
- A legislative committee formed under 2017 Senate Bill 121 has recommended that DES and a special advisory group provide a final report by November 2019 on NPDES delegation.

Program Basics

- State rules (Env-Wq 305) only provide for DES to authorize a local POTW to issue a permit (control mechanism) to an industrial user – no permit is issued directly by DES.
- Authorization to permit is granted by approval of an Indirect Discharge Request (IDR), submitted by the industrial user through the local POTW.

Industrial Permitting Activity

- In the last twelve months, 28 IDR approvals have been issued by DES.
- These approvals were for 19 new discharges and 9 modifications to existing discharges.

Industrial Permitting Activity

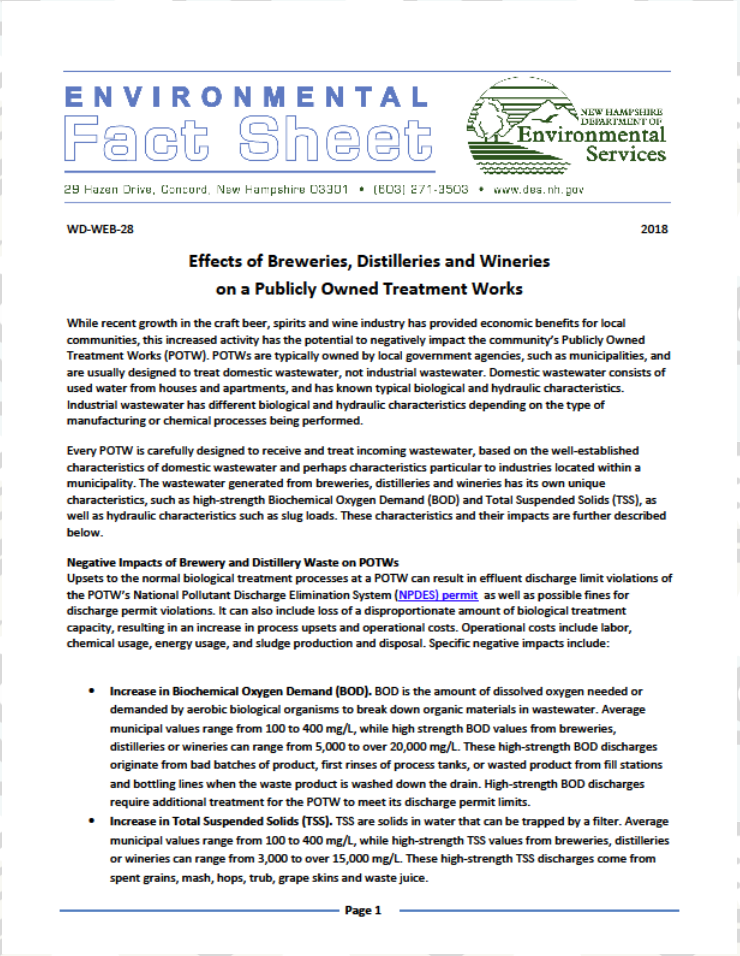
- A second major pharmaceutical industry expansion proposed at Lonza Biologics in Portsmouth.
- Millipore in Jaffrey is building an advanced pretreatment system for BOD/TSS to comply with a Consent Decree with EPA.
- Anheuser-Busch in Merrimack is installing an Oberlin belt filter press to remove perlite from their wastewater.

Industrial Permitting Activity

- Several new micro-breweries around the state.
- Woodstock Inn Brewery in Woodstock and Finestkind/Smuttynose Brewery in Hampton will be installing advanced pretreatment to reduce BOD/TSS impact on the local POTWs.

Pretreatment Regulatory Activity

- DES has developed a Fact Sheet to assist municipalities in dealing with wastewater discharges from breweries, distilleries and wineries.



ENVIRONMENTAL Fact Sheet

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

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WD-WEB-28 2018

Effects of Breweries, Distilleries and Wineries on a Publicly Owned Treatment Works

While recent growth in the craft beer, spirits and wine industry has provided economic benefits for local communities, this increased activity has the potential to negatively impact the community's Publicly Owned Treatment Works (POTW). POTWs are typically owned by local government agencies, such as municipalities, and are usually designed to treat domestic wastewater, not industrial wastewater. Domestic wastewater consists of used water from houses and apartments, and has known typical biological and hydraulic characteristics. Industrial wastewater has different biological and hydraulic characteristics depending on the type of manufacturing or chemical processes being performed.

Every POTW is carefully designed to receive and treat incoming wastewater, based on the well-established characteristics of domestic wastewater and perhaps characteristics particular to industries located within a municipality. The wastewater generated from breweries, distilleries and wineries has its own unique characteristics, such as high-strength Biochemical Oxygen Demand (BOD) and Total Suspended Solids (TSS), as well as hydraulic characteristics such as slug loads. These characteristics and their impacts are further described below.

Negative Impacts of Brewery and Distillery Waste on POTWs

Upsets to the normal biological treatment processes at a POTW can result in effluent discharge limit violations of the POTW's National Pollutant Discharge Elimination System (NPDES) permit as well as possible fines for discharge permit violations. It can also include loss of a disproportionate amount of biological treatment capacity, resulting in an increase in process upsets and operational costs. Operational costs include labor, chemical usage, energy usage, and sludge production and disposal. Specific negative impacts include:

- **Increase in Biochemical Oxygen Demand (BOD).** BOD is the amount of dissolved oxygen needed or demanded by aerobic biological organisms to break down organic materials in wastewater. Average municipal values range from 100 to 400 mg/L, while high strength BOD values from breweries, distilleries or wineries can range from 5,000 to over 20,000 mg/L. These high-strength BOD discharges originate from bad batches of product, first rinses of process tanks, or wasted product from fill stations and bottling lines when the waste product is washed down the drain. High-strength BOD discharges require additional treatment for the POTW to meet its discharge permit limits.
- **Increase in Total Suspended Solids (TSS).** TSS are solids in water that can be trapped by a filter. Average municipal values range from 100 to 400 mg/L, while high-strength TSS values from breweries, distilleries or wineries can range from 3,000 to over 15,000 mg/L. These high-strength TSS discharges come from spent grains, mash, hops, trub, grape skins and waste juice.

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https://www.des.nh.gov/organization/commissioner/pip/factsheets/wwt/documents/web-28.pdf

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