



## **Fermented Beverage Best Management Practices**

### **Introduction**

Breweries, wineries, and other fermented beverage manufacturers can generate wastewater that contains higher concentrations of organic matter than typical domestic wastewater. This wastewater has a greater potential of impacting the Publicly Owned Treatment Works (POTW) and is more costly to treat. To reduce pollutants discharged to the sanitary sewer and minimize the costs associated with treating this wastewater, Best Management Practices (BMP) have been developed for fermented beverage manufacturers.

BMPs are activities, prohibitions of practices, maintenance and operating procedures, and other management practices that prevent or reduce the discharge of pollutants to the POTW. BMPs are enforceable practices used to implement the Prohibitive Discharge Standards listed in the Fort Collins Municipal Code (Code), see Sections 26-332 and 26-344.

Facilities that generate process wastewater must, at a minimum, maintain compliance with the City of Fort Collins Prohibitive Discharge Standards codified in Section 26-332 of Code. Each section below describes what limitations or requirements your business is responsible for meeting and how to comply.

### **Solids Management**

It is prohibited to discharge solid or viscous substances which could cause an obstruction to flow in the sewers or could in any way interfere with the treatment process. Waste must be no larger than ¼ inch in any dimension and be carried freely in suspension under normal conditions in the sanitary sewer. Code Sections 26-332 (2) and (3).

*The following are tips for maintaining compliance with solids prohibitions:*

- Install screens, filters, or baskets on all floor drains and trenches to capture solids.
- Prevent grains, hops, and spent yeast from entering the sewer.
- Collect solids from all filters, mash tuns, whirlpools, and kettles by settling, straining, screening, or filtering them to prevent them from entering the sanitary sewer.
- Control solids at the source; do not let the solids hit the ground, sweep up and collect spills, and avoid rinsing them down the drain.
- Train employees in solids management practices.

To properly dispose of solids, collect the spent solids (yeast, grain, and hops) and consider options for beneficial reuse. Seek opportunities to turn your solids and high strength waste into compost, fertilizer, animal feed, energy, or another authorized beneficial reuse.

## pH Control

Generally, fermented beverages and their waste products are acidic. However, cleaning practices can cause extreme high and low spikes in pH.

It is prohibited to discharge wastewater with a pH less than 5.0 or greater than 11.0 or have any other corrosive property capable of causing damage or hazard to structures, equipment and/or personnel of the utility. Code Section 26-332 (10).

*The following are tips for maintaining compliance with pH limitations:*

- Install totes, tanks, or containers to adjust the pH of individual waste streams.
- Install a sufficiently sized tank to collect process wastewater from all facility operations for the purpose of self-neutralization and if necessary to adjust the pH to meet discharge limits.
- For small batches with slight excursions above 11, mild acids such as acetic acid (i.e. vinegar) or citric acid can be used to neutralize wastewater.
- For small batches with slight excursions below 5, mild alkaline solutions such as calcium carbonate (lime) can be used to neutralize the wastewater.
- Stronger acidic or alkaline neutralization chemicals may be needed based on the pH of the effluent and the volume of the wastewater to be neutralized.
- Provide a mechanical mixer in the wastewater tank to promote self-neutralizing of low and high pH wastewater. Adequate mixing is essential when using neutralizing chemicals.
- Reuse and recycle chemicals wherever possible through automated approaches (i.e. clean-in-place)
- Train employees in effluent pH management practices.

## Chemical Storage and Spill Prevention

It is prohibited to discharge any substance in a quantity that may cause worker health and safety problems, interference with the wastewater collection system, create any hazard or toxic effect in the receiving waters, or exceed limitations for toxic pollutants. Code Section 26-332.

Facilities shall utilize secondary containment for chemical solutions, including cleaning, sterilization, neutralization chemicals, and waste materials to prevent the entry of these materials into the sanitary sewer in case of accidental spills. In addition, the following practices shall be implemented:

- Store chemical solutions in low traffic areas, away from forklifts and other production activities to decrease the chance of accidental spills.
- Segregate and securely store non-compatible chemicals (for example acids and bases) in separate containment areas to prevent mixing of incompatible or reactive materials.

- Maintain and inspect all process solution tanks on a regular basis and repair any leaks promptly.
- Label all chemical solution storage containers.
- Develop a Spill Response Plan and train employees to follow the Plan. Post the Spill Response Plan and the contact information for spill notification in a prominent place. The Plan should at a minimum:
  - Describe where chemicals are stored, how liquids are stored and handled to prevent and isolate spills, and chemical transfer protocols that minimize spills.
  - Describe how staff will respond to a spill, including immediate notifications to emergency responders and the City of Fort Collins Water Reclamation Department (with contact information below).
    - M-F 8 am to 5 pm – Industrial Pretreatment – 970-221-6900
    - After 5pm and on weekends – Utilities after hours – 970-221-6700
  - Describe staff training required to respond to spills safely and effectively.
  - Update the Plan as your processes change.

## Records

Any records used to show compliance with the above BMPs shall be retained, see Code Section 26-319 (h). Records may be kept in electronic or paper format and must be easily accessible for inspection, and shall be retained for a minimum of five years.

Keep the following records to document your facility's compliance with requirements:

- Maintain records that document off-site waste removal. Records shall include waste stream, volume, date, and method of disposal of accumulated wastes.
- Maintain records of all effluent sample results collected to determine compliance with the Fort Collins pH limitations.

## Have questions or want more information?

Reach out to Industrial Pretreatment Staff at [industrialpretreatment@fcgov.com](mailto:industrialpretreatment@fcgov.com) or visit our website at <https://www.fcgov.com/utilities/what-we-do/wastewater/treating-wastewater/industrial-pretreatment>