



Alcohol and fermentation best management practices summary

Within the city of Calgary there are over 50 operating alcohol and fermentation facilities. This includes home brewers, micro-breweries, cideries, distilleries and kombucha producers. Studies have shown that it can take anywhere from 4 to over 10 L of fresh water to produce 1 L of fermented product. In the City of Calgary water usage of these individual customers can vary significantly (from 15 m³/month to over 24,000 m³/month). Regardless of size in operation, the principles behind reducing contaminant loading remains the same.

To reduce their environmental impact businesses can take the following steps:

- Reduce the amount of solids in your wastewater by installing filters and screening devices where possible and use sparging bags to help remove solids. Retained solids likely have value as fertilizer or animal feed.
- Check the condition of sumps and floor drains weekly, and clean and maintain them on a regular basis.
- Identify high strength wastewater sources and separate them from the main waste stream. If feasible, treat this material onsite or transfer it to an approved treatment facility.
- Optimize your packaging process to reduce the amount of product lost due to spillage and overfilling.
- Minimize the amount of chemicals used and explore more environmentally friendly cleaning options.
- Correct high/low pH issues. One option is to install an equalization/neutralization tank to allow for the adjustment of pH prior to wastewater release.
- Implement a sampling/monitoring program to help better understand the characteristics of your wastewater and learn how to improve your operations.

Advanced pre-treatment options

Typical concentrations of Biochemical Oxygen Demand (BOD) and Total Suspended Solids (TSS) are shown in the table below. To bring concentrations within bylaw limits, advanced pre-treatment may be required. Some proven technologies include membrane filtration, aerobic digestion, electrochemical methods or activated carbon treatment.

Parameter	Bylaw Limit	*Typical Industry Average
BOD (mg/L)	300	8,500
TSS (mg/L)	300	1,600

Reducing water usage

- Install water metering devices at different points in the process to create awareness of water usage.
- Install clean-in-place (CIP) technologies where possible to reduce both water and chemical usage.
- Perform dry clean-up procedures prior to wet clean up.
- Install water-efficient equipment where possible and set water saving goals for your business.

The City of Calgary wastewater bylaw 14M2010 requires:

- Wastewater to fall within a pH range of 5.5 to 10 and have a temperature lower than 75°C.
- Biochemical Oxygen Demand (BOD) and Total Suspended Solids (TSS) concentrations must be less than 300 mg/L. If greater, surcharge fees may apply.
- Records of pre-treatment system cleaning and maintenance must be kept onsite for a minimum of two years.

Employee Training and Education

It is important to ensure that staff are trained to:

- Clean up spills immediately and prevent any material from entering floor drains.
- Use a mop and broom to clean floors instead of flushing them with water.
- Ensure tanks are not overfilled to reduce spillage.
- Call **311** if spilled material has the potential to enter a floor drain.

For more information or to request the full version of the *Alcohol and Fermentation Best Management Practices* document please contact 311.