Best Management Practices

1. **PH of discharge** - The Metropolitan Council's Waste Discharge Rules require the pH of wastewater discharges to be between 5.0 and 11.0 (Standard Units) at all times. If the pH of the wastewater is not within these limits, then the Permittee must pretreat the wastewater prior to discharge by pH adjusting the individual waste streams or by collecting all the wastewater in a sufficiently sized tank for the purpose of attenuating and/or adjusting the pH, as necessary, to meet these limits.

2. **Temperature of discharge** - The Waste Discharge Rules prohibit the discharge of wastewater in which the temperature exceeds 150 degrees Fahrenheit (65 degrees Celsius). The Permittee must ensure that the temperature of the wastewater discharged from the brewing and cleaning process is below 150 degrees Fahrenheit. If the temperature is higher than 150 degrees Fahrenheit, the wastewater must be cooled prior to discharge.

3. **Non-contact cooling water** - The Permittee must minimize the amount of non-contact cooling water discharged to the public sewer. Non-contact cooling water used for cooling the wort must be re-circulated and reused in subsequent batches, and/or for cleaning purposes.

4. **High-strength discharge** - The Permittee must minimize high-strength discharges to the public sewer by taking the following actions:

    - limiting the number of bad brews/batches,
    - eliminating the disposal of spent grains to the public sewer by using alternative disposal methods, such as transporting to local farmers for use as feed stock or disposing at a composting facility,
    - minimizing the discharge of hops and trub to the public sewer as much as feasible,
    - minimizing the discharge of spent yeast to the public sewer by reusing the yeast for multiple generations, and/or by using alternate disposal methods, such as composting,
    - minimizing the amount of chemicals used in the cleaning process and reusing chemical rinses wherever possible, and
    - minimizing on-site purging of residual product left in returned kegs, whenever possible.

5. **Process meters** - The Permittee must have a facility water meter, or meters, for determining the incoming process-only water usage in the brewery. This meter must only measure the water used in the brewing process and not include water used for domestic purposes in the brewery or taproom. The brewing process includes brewing and fermentation; cleaning of tanks, floors, kegs, growlers and bottles; and taproom operations such as cleaning surface areas, floors, and glassware.

6. **Bad brews/batches** - The Permittee must limit the number of bad brews/batches discharged to the public sewer whenever possible. The date and quantity of all bad brews/batches discharged to the public sewer must be reported on the annual Industrial Discharge Report.

7. **Water conservation/efficiency** - The Permittee must take appropriate measures to conserve water whenever possible by utilizing water-efficient equipment, such as high-pressure nozzles, and conducting dry clean-up prior to wet clean-up and sanitation.