

# **Brewery Wastewater** **Basics-**

**What you need to know**

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# Potential Limiting Factors:

It is common to be regulated for these parameters:

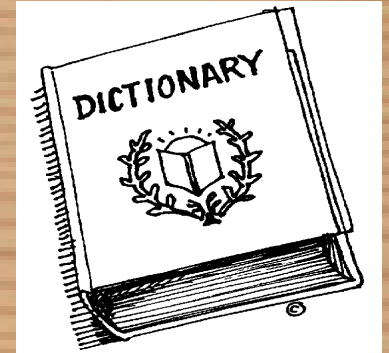
- pH
- BOD (***B**iochemical **O**xygen **D**emand*)
- COD (***C**hemical **O**xygen **D**emand*)
- TSS (***T**otal **S**uspended **S**olids*)

# Potential Limiting Factors

**Less common, but it happens:**

- Nitrogen, measured as
  - TKN (*Total Kjeldahl Nitrogen*)
  - NH<sub>4</sub> (*Ammonia*)
- Phosphorus
- Temperature
- Volume- per second, minute, hour, or day

# A few definitions



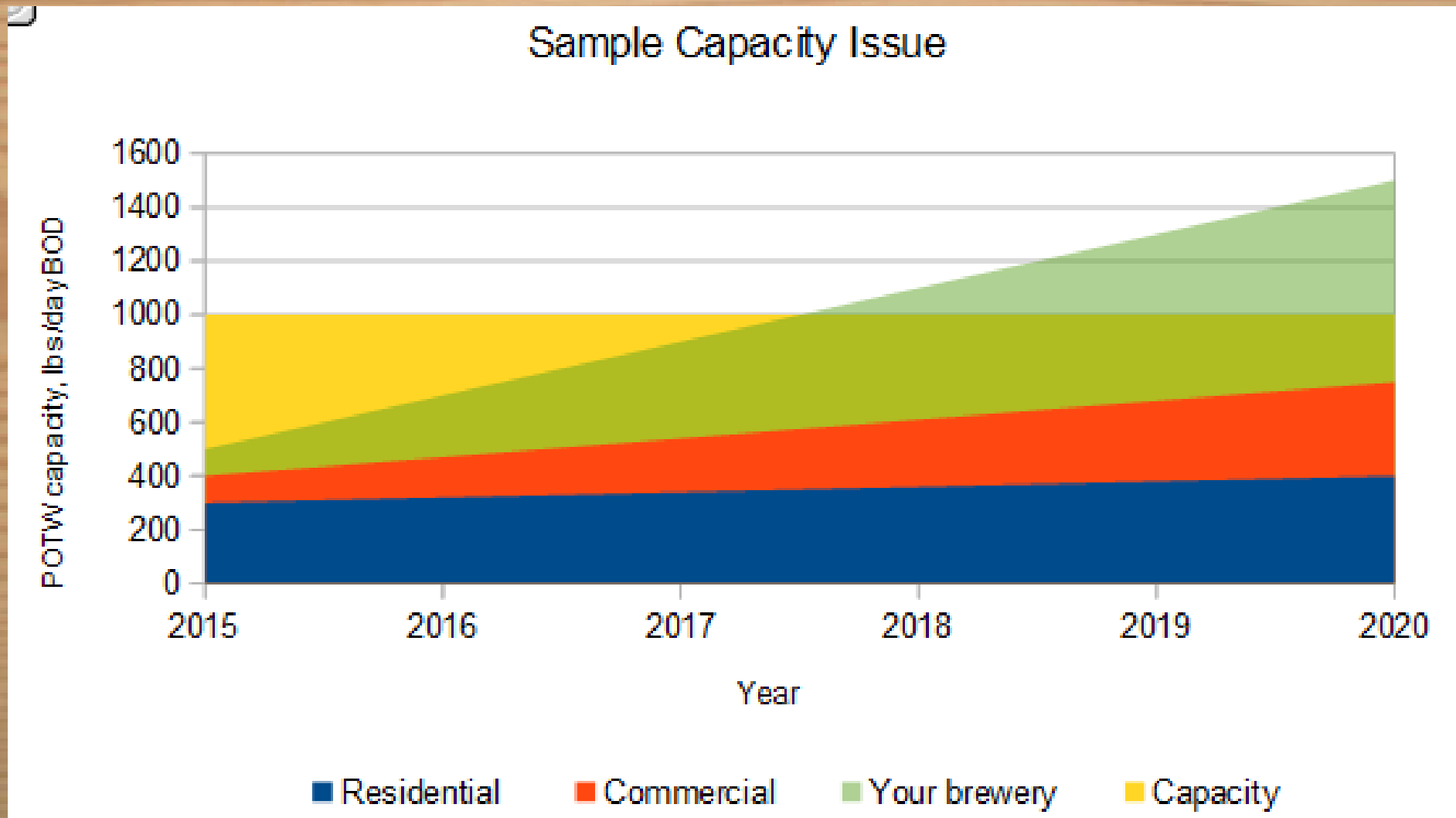
## POTW

- *Publicly Owned Treatment Works*
- *The wastewater treatment plant*

## Load

- *A factor of wastewater concentration and volume*
- *The language of the wastewater treatment plant operator*

# An example of a situation to be aware of:



## Educate yourself:

What is the installed and current capacity of the POTW?

Are there any lift stations between the brewery and the POTW?

Is the sewer main near the brewery gravity or pressure?

## Educate yourself:

How are sewer fees calculated?

Does the City apply surcharges for high BOD wastewaters? Or TSS, Total P, TKN?

- Can sewer charges to be based on actual discharge (via flowmeter) instead of incoming water?
- Or a percentage of incoming water?

## Educate yourself:

What will the testing requirements be?

Is it possible to be regulated for COD instead of BOD?

Does the City have a wastewater lab? Can that lab test our wastewater samples for us?

Is it OK if we do some of our own testing in house?



# Will there be limits?

- Will there be discharge limits?
  - pH, pounds of BOD, COD, or TSS per day
- Will there be any volume limits per day, hour, or minute?
- Are any other capacity constraints seen at this point?

# Take aways:



- Answers to these types of questions vary widely from town to town all across the country.
- There is no one size fits all solution, and town size is independent of these answers.
- Want to minimize headaches? Find a town where a factory closed down. The local POTW is probably over sized and under fed. *I'm only half joking here.*

# Avoiding Pretreatment



- The main concern is economics
  - Which option makes the most sense for your brewery?
    - The least cost (capital & operating)
    - The easiest to operate, and
    - Satisfies discharge requirements.
    - Green considerations are cool, but they have to justify themselves financially.

# Avoiding Pretreatment:

## **Side streaming!**

Collect your high strength material before it hits the floor

- Trub, spent yeast, waste beer

Put it into it's own tank and truck it off site.

- Fertilizer, compost wetting agent

Side streaming works; it's simple, cheap, and buys you time.

# Avoiding Pretreatment

- **Have you exhausted all options?**
  - Equalization
  - Diurnal loading
  - Expansion at local POTW



# On Site Disposal



I get asked all of the time:

*“I'm looking at property for a brewery with no sewer connection. What do I need to know?”*

- Listen to Eppa, you don't want fermentation in a septic tank
- A simple septic system won't work
- Don't plan to irrigate food crops with untreated wastewater...

***Thank you!***

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