

When Brew and Poo Mix

Craft Brewery Impact on Wastewater Treatment

Served By

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Menu

Pre-treatment

Craft Brewing

Brew Waste

Regulation

Commonalities

Brewery Case Studies

TexasWET

LEADERSHIP FOR THE WATER ENVIRONMENT IN TEXAS

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CRAFT BREWERY IMPACT ON WASTEWATER TREATMENT



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Water Environment Association of Texas

INSIDE

Rowlett Creek Wastewater Treatment Plant | Asset Management

Issue #5 2018



Pretreatment Program Components

Industrial Waste Survey

Permitting

Inspections

Sampling

Reporting

Data Review / Compliance Evaluations

Enforcement

Craft Brewing in Texas



What is a Craft Brewer?



2013 Craft Brewery Legislation



Growth since 2005



\$5.3 billion dollars to the economy

Economic Impact

- www.brewitmadras.com



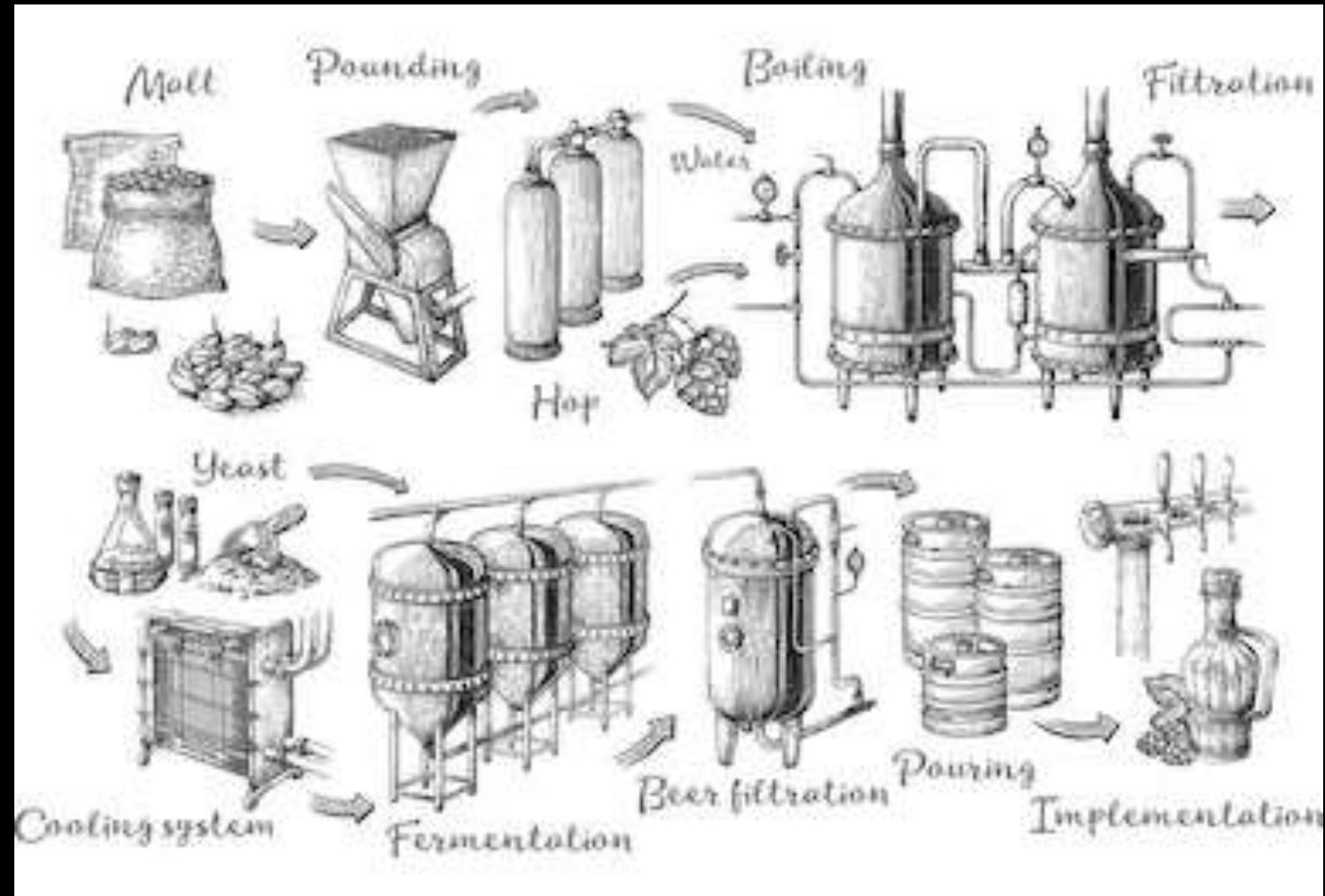
Brewery Wastewater Characteristic

- Batch mode operation
- 1 gallon of beer = 5 gallons of wastewater
- High levels of BOD
 - 2,500-10,000 mg/L
- Low or High pH
- High Temperature
 - >100°F
- Hydrogen sulfide



Brewery Wastewater

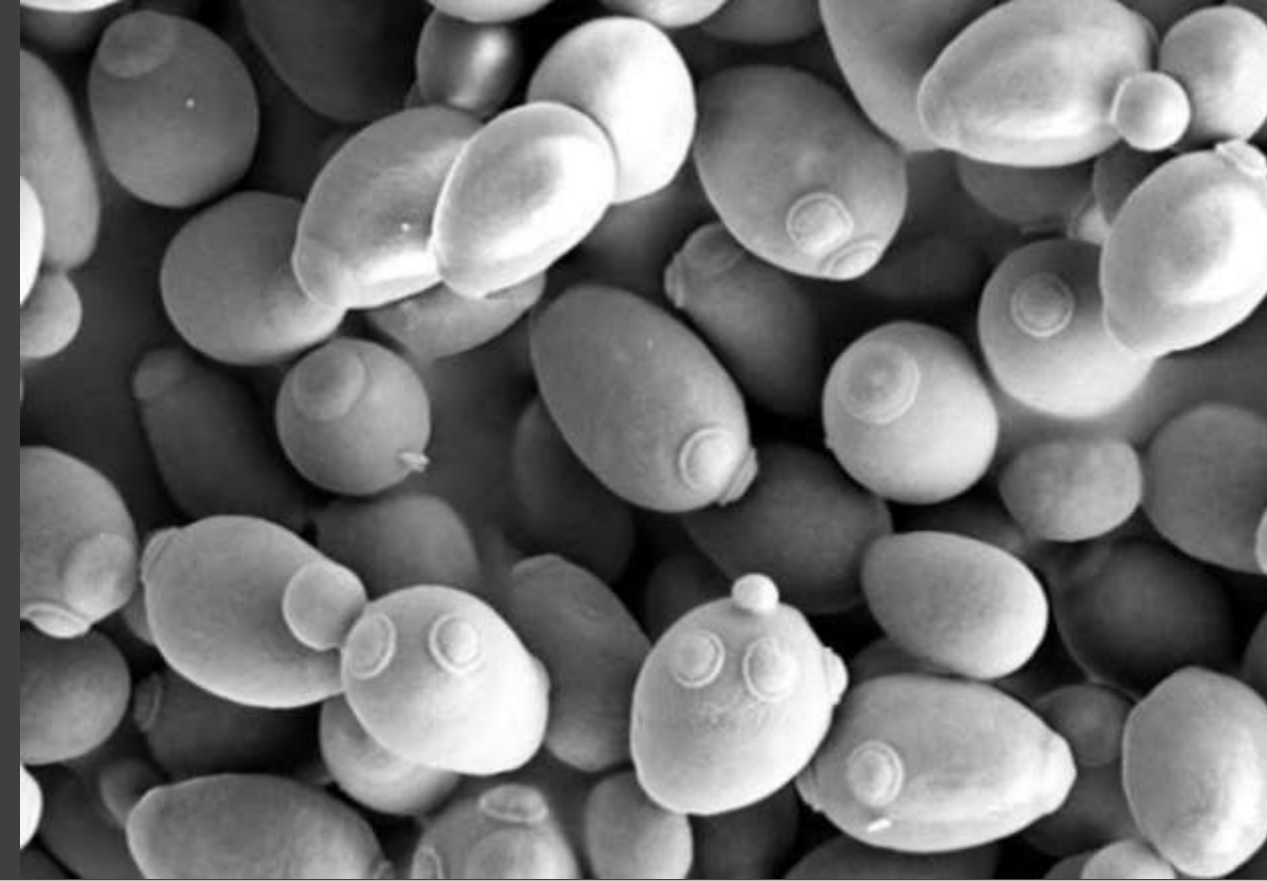
- Wort
- Beer
- Trub
- Propylene glycol
- Label glue
- Defoamer
- Cleaner
- Detergents
- Other Chemicals



Approaches to Regulating Breweries

- Local ordinances
 - Protect Workers
 - Protect Infrastructure
 - Protect Plant Processes
 - Surcharges
 - Regulate Slug Discharges
 - Require pH Control
 - Require Temperature Control
- Permitting
 - Require BOD Pretreatment
 - Require Best Management Practice (BMP)





Commonalities



Commonalities



Commonalities



Commonalities

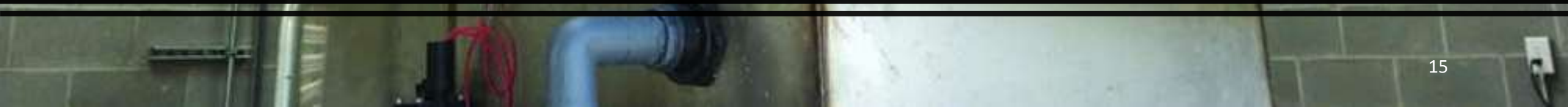
Real Ale Brewing Co.

- Built in 1996 - City of Blanco
- Real Ale Wastewater
 - BOD 6,000 mg/L
 - TSS 750 mg/L
- Real Ale's Pretreatment
 - Lift stations, screening and dewatering equipment, pH balancing and an aerated lagoon.
 - Reduces BOD
 - Surcharge above 200 mg/L





0.5 mm Wedgewire Waterfall Filter





Volumetric Dry Bacteria Feeder - Bacillus and Pseudomonas

Two-stage Lagoon System



Flume to Regulate Uniform Discharge



US vs. D.G. Yuengling and Sons Inc.

IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF PENNSYLVANIA

UNITED STATES OF AMERICA
Plaintiff,
v. Civil Action No. _____
D.G. YUENGLING AND SON, INC.
Defendant.

CONSENT DECREE

FILED
HARRISBURG, PA
JUN 23 2016
VE

- 141 violations between 2008 and 2015
- \$2.8 million penalty
- \$7 million to upgrade their facilities
- Required to build a wastewater pretreatment system
- Pretreatment permit requirement
 - BOD
 - Phosphorus
 - Zinc
 - pH


REMEMBER

**Pretreat
RESPONSIBLY**



Brewing with Recycled Water

- Pure Water Brewing Alliance
 - Utilities
 - Brewers
 - Engineering firms
 - Technology companies involved in brewing beer with recycled water



Deja Brew

Questions? Cheers!

- Craft Beer Factoids:
 - The craft brewing industry was legalized in Texas in 1993.
 - Saint Arnold Brewing Company is the oldest craft brewery in Texas, established in 1994.
 - Spoetzl Brewery (Shiner) is the oldest independent brewery in Texas, established in 1909.
 - The Houston craft brewery Karbach Brewing Company was acquired by Anheuser-Busch Inc in 2016.
 - Anheuser-Busch claims 45% share of the U.S. beer market as of 2016.
 - The DFW craft brewery Revolver Brewing was acquired by MillerCoors in 2016.

