NEW BELGIUM

- One of North America's largest craft brewers
- Expanding from Ft. Collins, CO to Asheville, NC
- 500,000 barrels of beer per year
- Core value of environmental stewardship

NEW BELGIUM BREWING COMPANY BREAKS CONVENTION BY SELECTING ANAEROBIC MEMBRANE BIOREACTOR TECHNOLOGY

Brewery taps innovative technology for treating wastewater

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Customer Goals:

- Environmental stewardship
- Exceeding treatment requirements
- No disruption to surrounding environment, including neighborhood, light emissions, noise

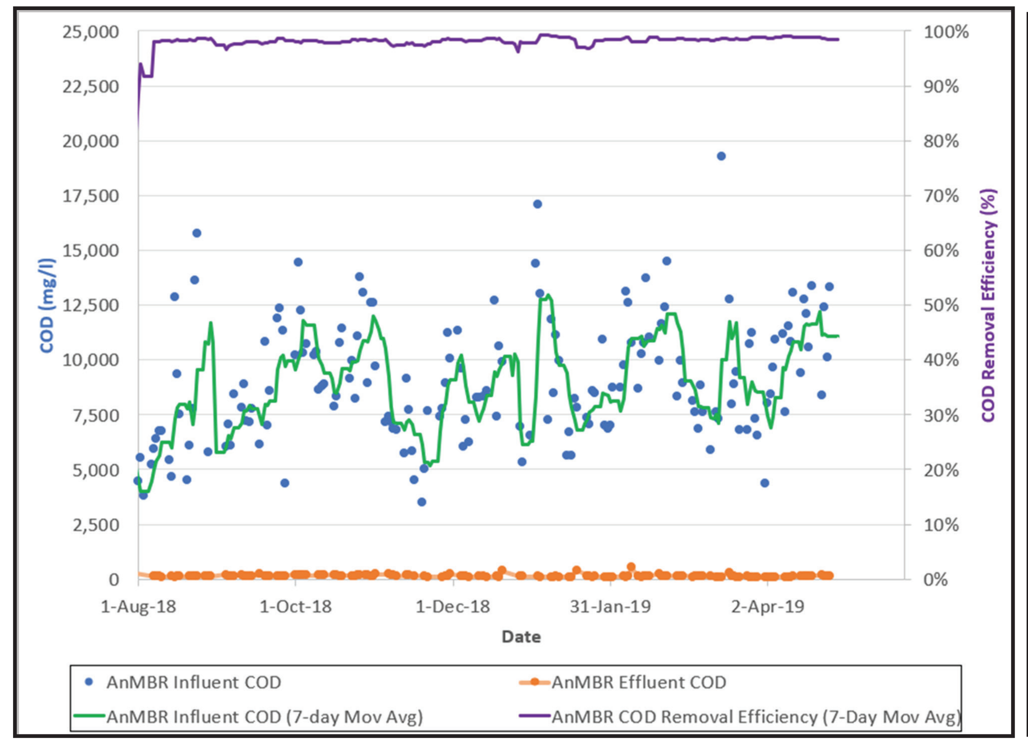
The Brewery's Requirements:

- On-site wastewater treatment plant - phased approach
  - Phase I: EQ tank and pH adjustment
  - Phase II: Biological treatment, reducing organic load to sewer
- Digest spent hops and yeast to increase biogas production, and lower disposal costs
- Turndown capability
  - Regular seasonal variation
- Exceed treatment requirements
  - Not just meet compliance requirements, but align with corporate policies on environmental sustainability and social responsibility

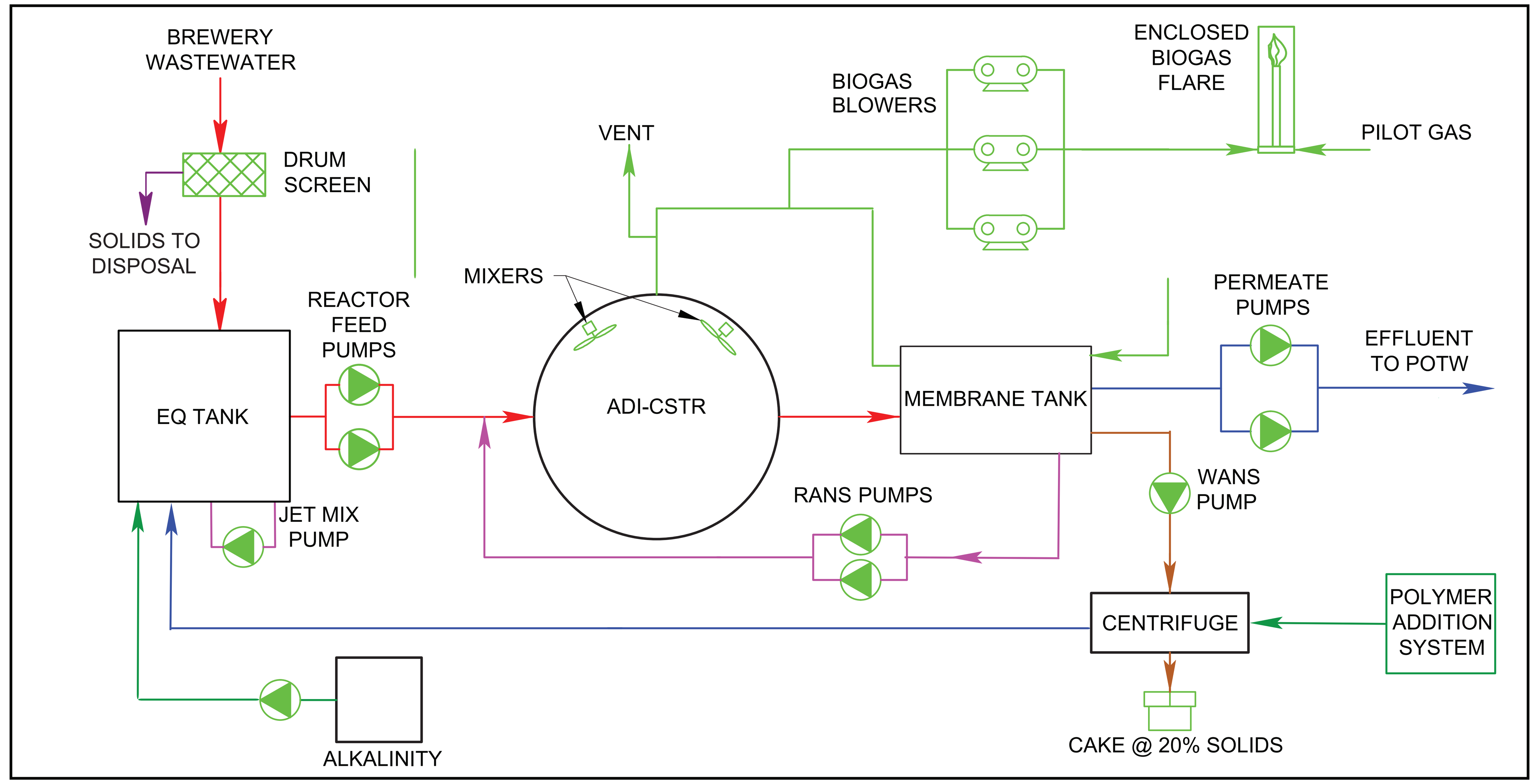
The Solution:

Evoqua's ADI Systems Anaerobic Membrane Bioreactor (AnMBR) Technology

- Combines anaerobic digestion and membrane filtration in a single treatment stage
- Best suited to treat wastewater containing high concentrations of BOD/COD and TSS
- Treats entire organic load from brewery including solids
- Achieves very low BOD, zero TSS in effluent



Parameter	Raw Combined Brewery WW	Design ADI® AnMBR Effluent	MSD Discharge Limits
Flow, avg (gpd)	117,250	117,250	---
Flow, peak (gpd)	142,150	142,150	---
COD, avg (mg/l)	9,700	< 250	---
COD load, avg (lb/d)	13,200	---	---
COD, peak (mg/l)	13,200	< 300	---
COD load, peak (lb/d)	18,000	---	---
BOD, avg (mg/l)	7,000	< 60	< 230
BOD load, avg (lb/d)	9,400	---	---
BOD, peak (mg/l)	9,400	< 100	< 230
BOD load, peak (lb/d)	12,800	---	---
TSS, avg (mg/l)	2,100	< 5	< 230
TSS load, avg (lb/d)	2,900	---	---
TSS, peak (mg/l)	2,700	< 5	< 230
TSS load, peak (lb/d)	3,600	---	---
FOG (mg/l)	87	< 20	< 125
pH	5.6	6.6 – 7.5	6.0 – 10.5
Temperature (°C)	18 – 26	30 – 37	< 50



The Results:

- No hauling raw solids
- COD effluent average - 150mg/l - (98.3% removal)
- BOD effluent average - 20mg/l - (99.5% removal)
- TSS effluent average - 2mg/l - (99.0% removal)
- No surcharges - effluent quality exceeds all permit limits
- Consistent treatment efficiency
- Best quality anaerobic effluent
- Single stage process
- Simplified operations
- **Overcomes challenges in high-rate system**
  - No upstream solids separation
  - No requirement of granular sludge
  - No biomass washout
- **Small footprint and little noise, odor and light emissions**

New Belgium Brewing adhered to their core values on environmental stewardship