

Optimizing Water Usage at a Commercial Bakery

TreeHouse Foods – Fridley, MN

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Company Background

- Produces private label packaged foods and beverages
- Operate 40 production facilities internationally
- Fridley plant
 - Artisan bread
 - Ready-to-bake frozen cookie dough
 - 180 employees



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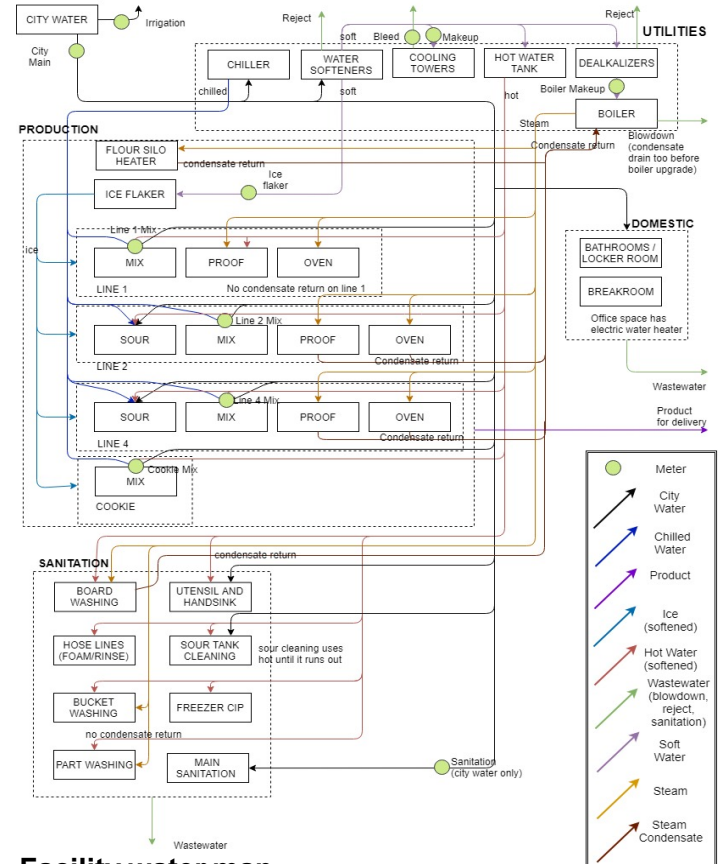
Project Overview

Reason for approaching MnTAP

- 14 million gallons of water in 2018
- 62% of incoming water was used in an unmetered process
- 6% reduction in water intensity by 2020

Goals

- Help plant understand water usage
- Identify water reduction opportunities

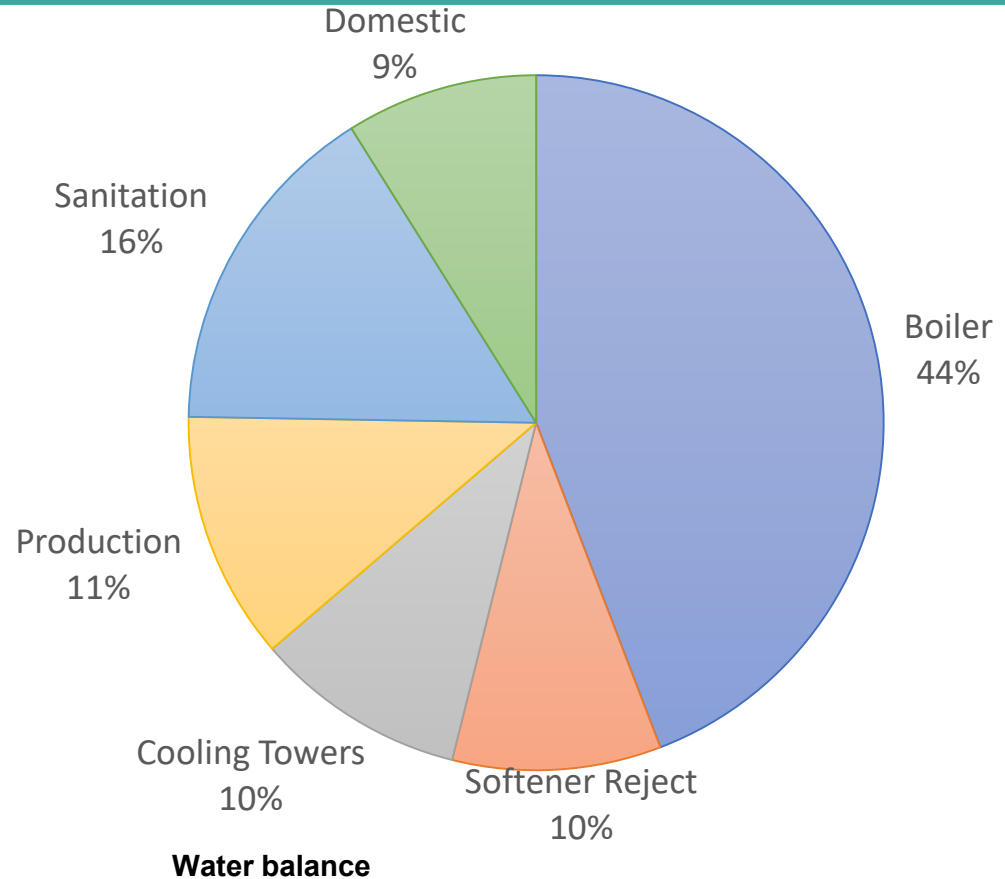


Facility water map

Approach

Gathering information on the floor

- Watching sanitation
- Tracing water lines
- Estimating usages
- Logging water meter readings



Primary Recommendation

Condensate Return Systems on Line 1 Oven and Proof Box

- **Annual Utility Savings: \$3600**

- 450,000 gallons of water
- 300 decatherms
- 4,300 lbs. of salt

- **Installation Cost: \$8200**

- **Payback: 2.3 years**

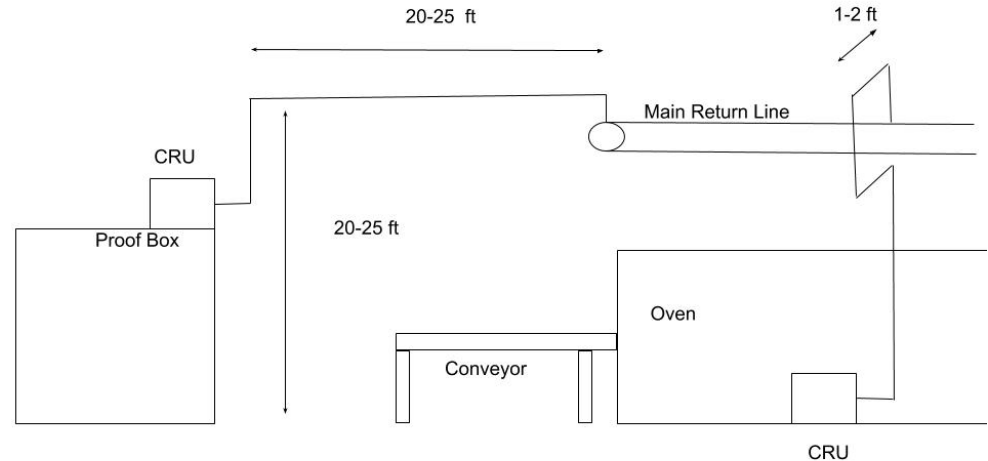


Diagram of condensate return systems (CRU)

Solutions

| Recommendation | Annual reduction | Total cost | Annual savings | Payback period | Status |
|---------------------------------------|---------------------------------------|------------|----------------|----------------|--------------|
| Condensate Return Systems on Line 1 | 450,000 gal water 300 decatherms | \$8200 | \$3600 | 2.3 years | Recommended |
| Faucet Aerators | 40,000 gal water | \$80 | \$200 | 5 months | Implementing |
| Water Softener Regeneration Frequency | 363,000 gal water 35,000 lbs. salt | \$13,000 | \$3800 | 3.4 years | Implementing |
| Tunnel Washer Maintenance | 270,000 gal water 375 decatherms | \$2,400 | \$3,600 | 8 months | Implementing |
| Freezer CIP leak | 50,000 gal water 30 decatherms | \$0 | \$600 | -none- | Recommended |
| Outgoing Water Meter | -none- | \$64,000 | \$15,000 | 4.3 years | Recommended |
| TOTAL | 1,200,000 gal water 700 decatherms | \$88,000 | \$27,000 | | |

Personal Benefits

Valuable career experience

- Working in a manufacturing environment
- Learning about thermodynamic processes
- Navigating the workplace
- Tasting different types of loaves



Sour tanks