

Water Conservation G&K Services

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Minnesota Technical Assistance Program



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Company Overview

- Industrial laundry



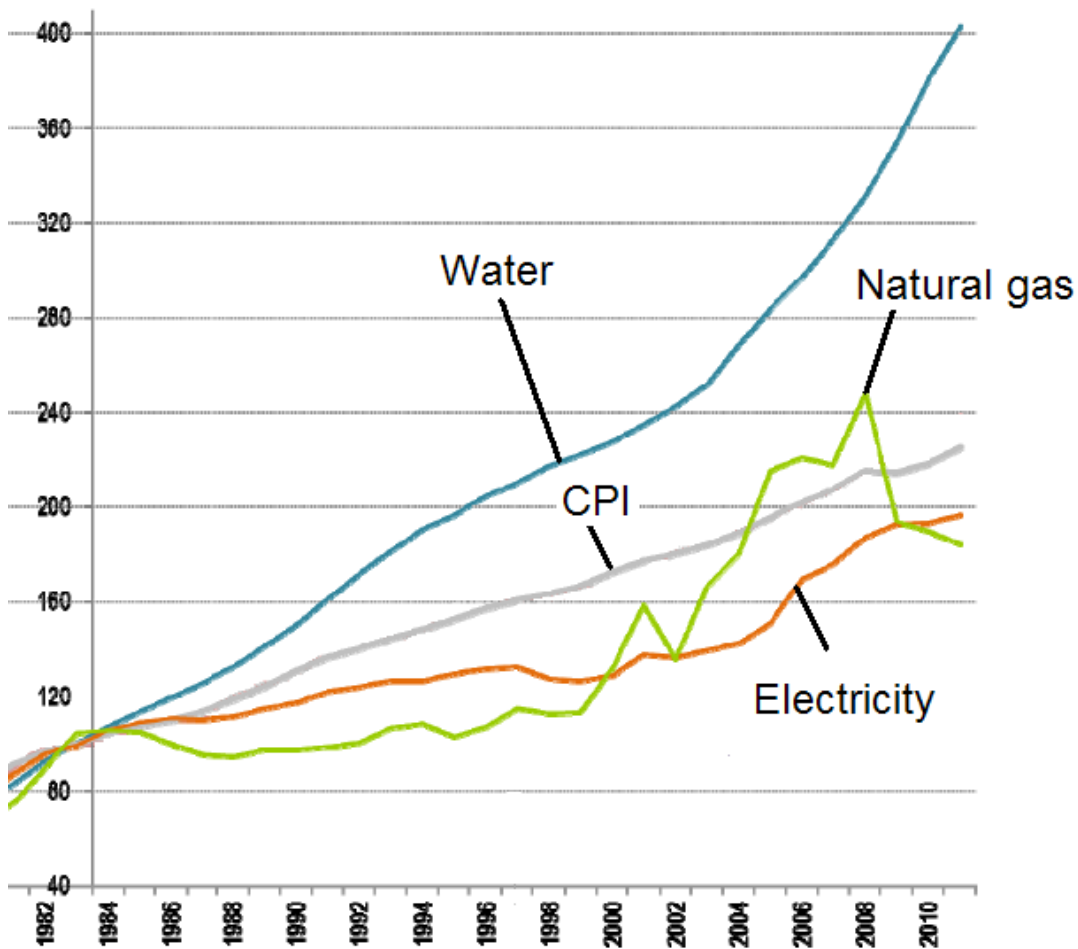
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Motivations for Change

Trends in Consumer Prices (CPI) for Utilities

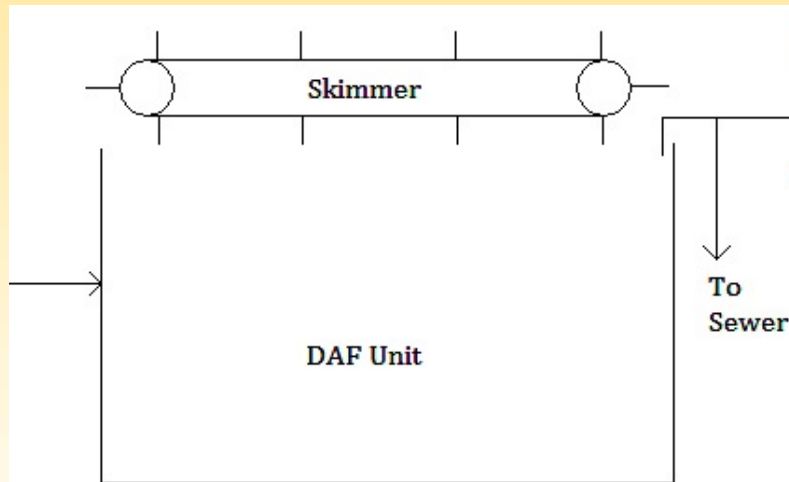


Reasons for MnTAP Assistance

- Find a water recycling solution
 - Recycle 50% of wastewater
 - Has high return on investment
 - Implement at other locations easily
- Identify energy saving possibilities
 - Conduct compressed air study
 - Conduct steam trap audit

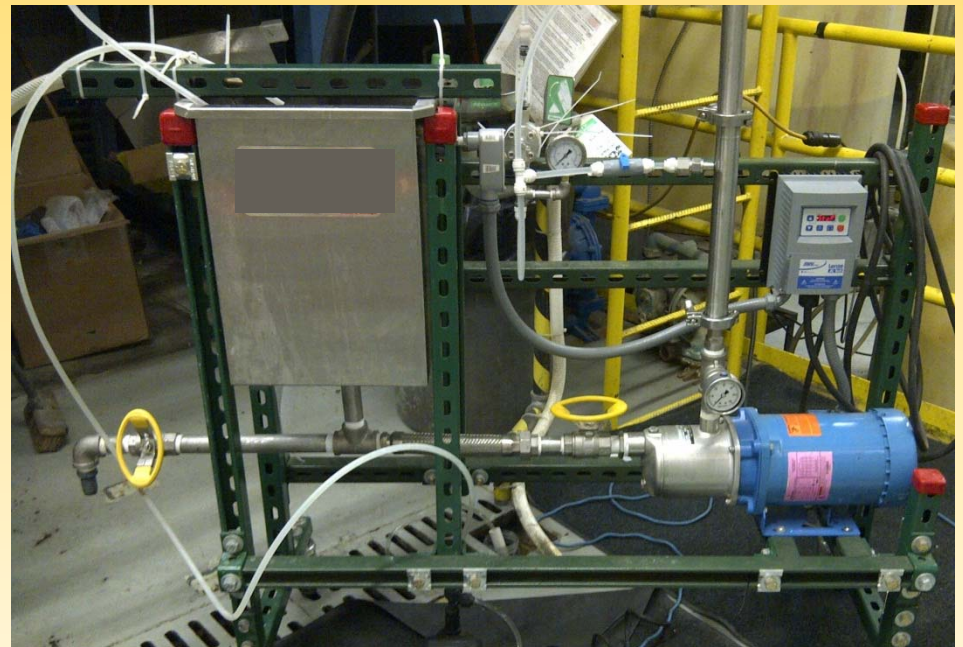
Approach

- Learn about current system
- Conduct chemical study
- Research water treatment

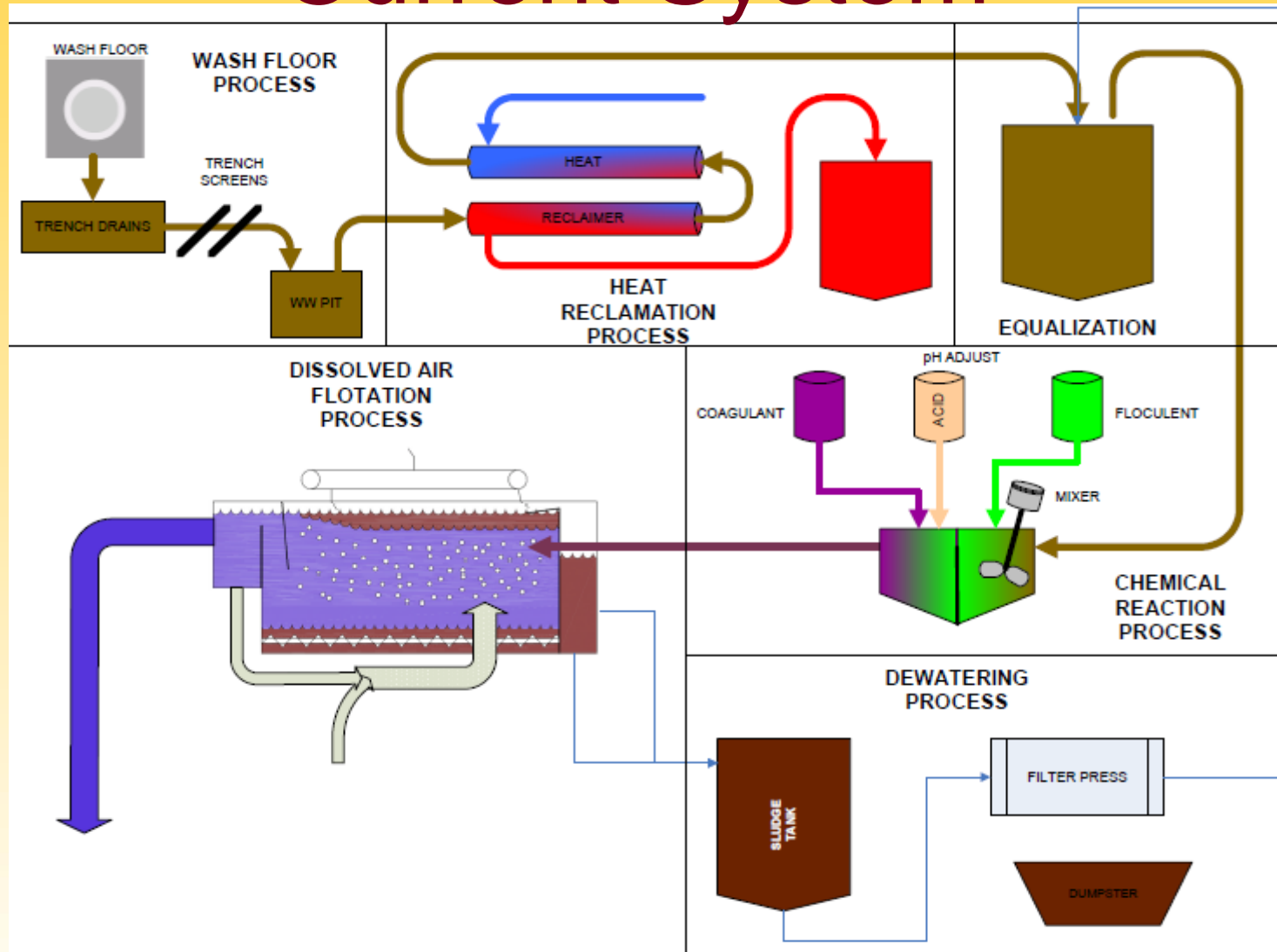


Approach

- Contact and work with vendors
- Complete pilot testing
- Make recommendations



Current System

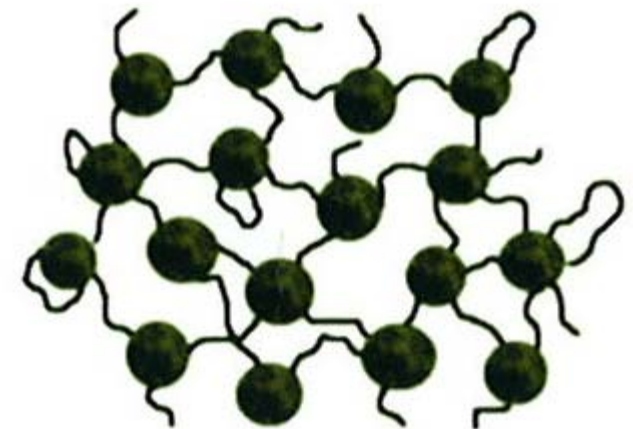


Water Recycle System

- Objective:
 - Recycle 50% wastewater
 - Implement after existing treatment (DAF)
 - Payback in less than 2 years

Water Recycle System

- Problem:



FLOCCULATION
(polymeric flocculant)

Water Recycle System

- Solution:
 - Oxidization system
 - Ultrafiltration
 - Holding tank

Compressed Air

- Background:
 - Use compressed air system
 - Know leaks exist
 - Unable to allocate resources to fix/upgrade

Compressed Air

- Solution:
 - Sign up for compressed air audit
 - Fix 75% of leaks to qualify for rebate from Xcel Energy
 - Evaluate upgrading air compressor

Steam Traps

- Located throughout the plant process
- Leaks can be expensive
- No leaks found presently
- Database for leak costs

Process Changes

Recommendation	Environmental Savings	Initial Cost	Annual Savings	Payback Period
Post DAF ultrafiltration system	17,000,000 gallons water annually	\$500,000	\$81,000-\$118,000	4-6 years
Compressed air leak audit and fix 75% of leaks	29,806 kWh	~\$1,000	\$2,660	5 months
Turn off small air compressor	22,316 kWh	\$0	\$1,982	Immediate

Personal Benefits

- Became knowledgeable about laundry wastewater and effective treatment
- Improved communication skills
- Understood more about steam traps and compressed air systems
- Was hired



Questions?

