



Resource Conservation at Ball Corporation

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Driven to DiscoverSM

Company Background

- Founded in Buffalo, New York in 1880
- Originally started as the Wooden Jacket Company
- 100+ international locations and hires 18000 employ
- The St Paul facility hires approximately 200 employees
- Main Product: Beverage Cans



Project Overview

- Improve water tracking and optimize water consumption.
- Current usage 26 million gallons annually.
- Annual water cost is \$250, 000.
- Ball Corporation has sustainable business objectives.



Findings

- Wastewater reuse possibilities in the plant
 - 38-40 GPM discharge before project commenced
 - 12 GPM tap water was being added to perform treatment
 - Replacing tap water with treated wastewater results in a >30% savings
- Washrooms were not equipped with aerators
- Opportunity to increase efficiency of compressed air use



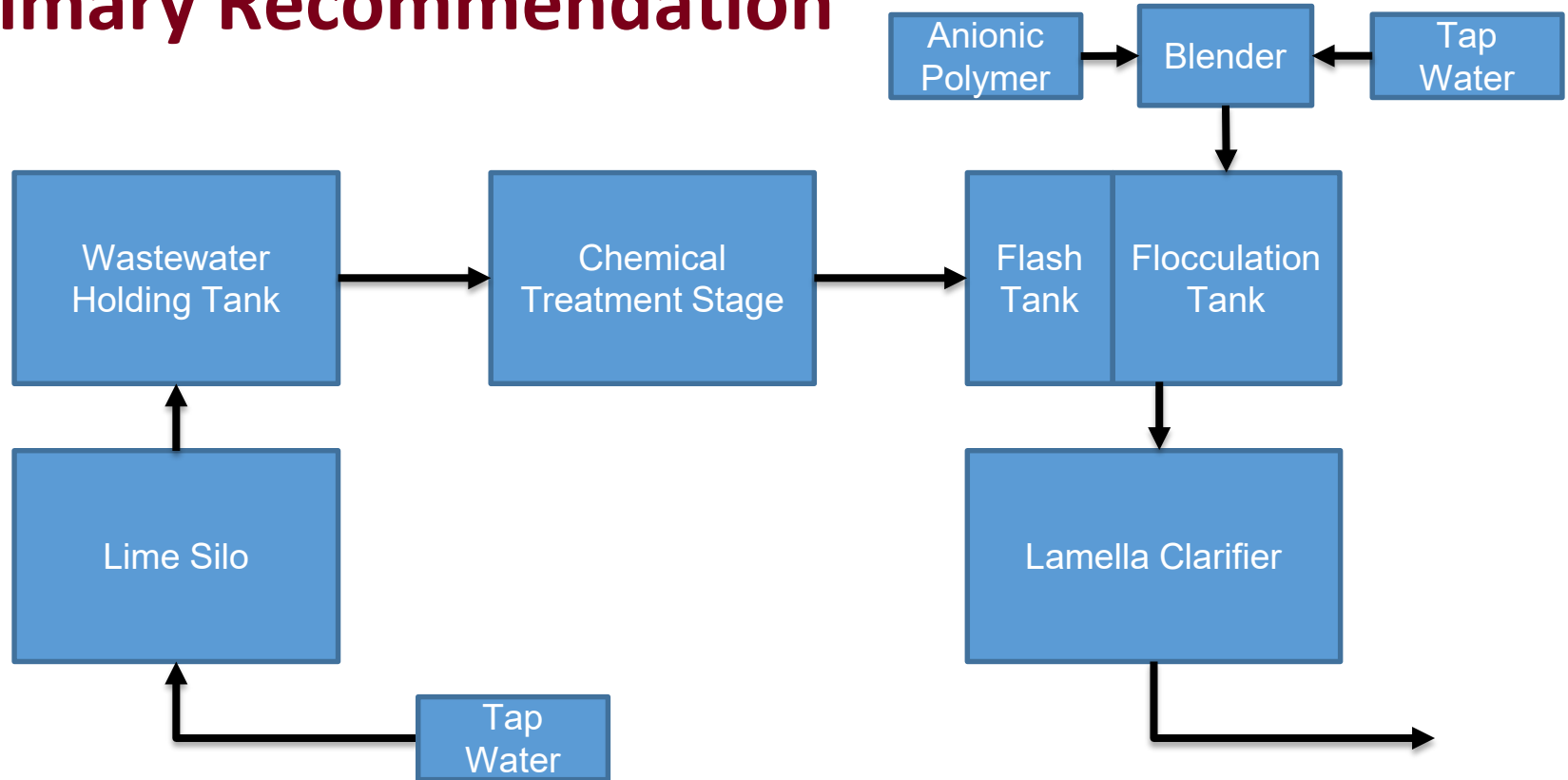
Primary Recommendation

Reuse wastewater in wastewater treatment system

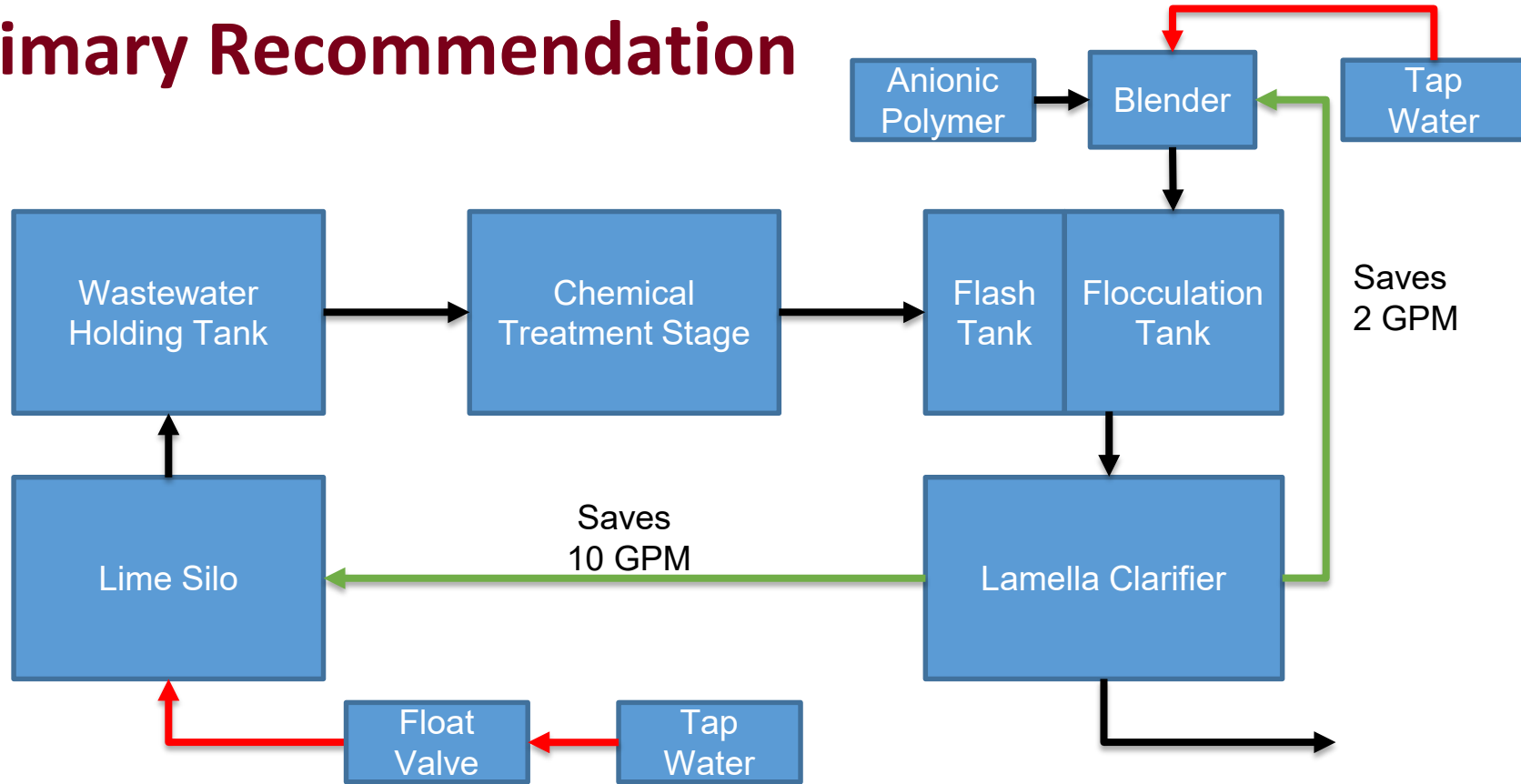
- Waste reduced (per year): 6,000,000 gallons of water
- Implementation cost: \$2100
- Cost savings (per year): \$55,000
- Payback period: 14 days



Primary Recommendation



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- Water usage
 - June 2019: 9.0 gallons/ M cans
 - July 2019: 7.4 gallons/ M cans
 - 18% reduction
- Water quality
 - All tested parameters such as oil & grease and heavy metals well under permissible limits



Summary of Recommendations

Recommendation	Annual reduction	Total cost	Estimated Annual savings	Payback period	Status
Reuse Water in Lime Silo	4,700,000 gallons of water	\$1000	\$44,200	10 days	Implemented
Reuse Water in Polymer Delivery	1,000,000 gallons of water	\$1,100	\$9,900	1.5 months	Implemented
Adding Tap Aerators	33,000 gallons of water	\$57	\$330	10 days	Implemented
Replacing compressed air line with blower	4,700,000 kWh	\$750	\$350,000	3 hours	Implemented
Overall Savings			\$400,000		

Experience

- **Worked in cross-departmental teams**
- **Contributed meaningfully to the society**
- **Applied theoretical concepts in practical life**

