



Water Reuse in an Industrial Setting

Siemens Water Technologies

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Company Overview

- Siemens Water Technologies
 - Industrial wastewater treatment
 - On-site customer solutions, off-site treatment
 - Hazardous contaminants
 - Committed to efficient, sustainable use/reuse of water



Motivations for Change

- Reduce water usage in Roseville plant
 - Associated cost savings
 - Lessened environmental impact
 - Credibility of treatment solutions
- Project goal to reduce usage by 10-30% through reuse

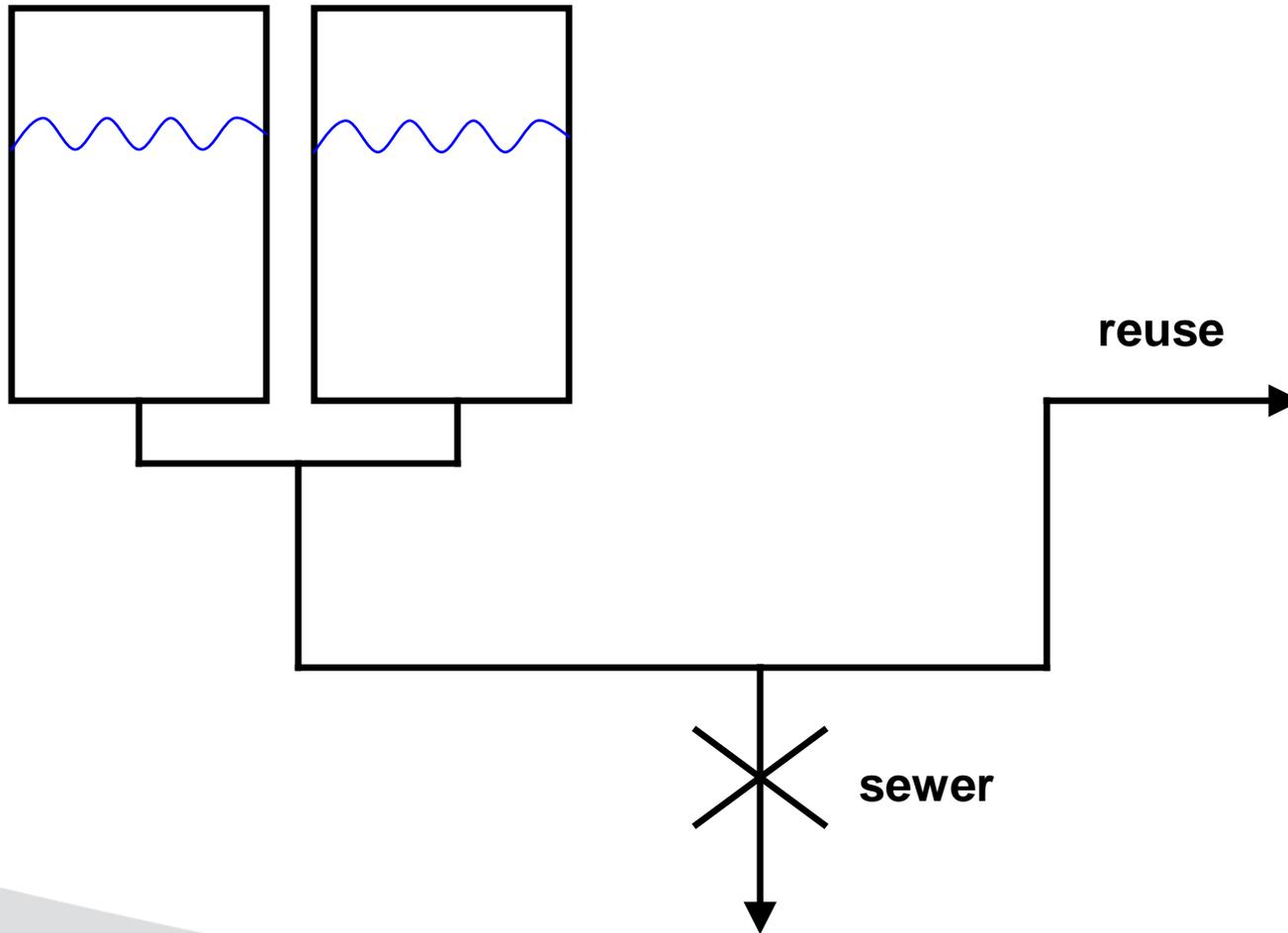
Approach

- Identify sources of reusable water
 - Quality/quantity
 - Ease of collection
- Identify processes to accept reused water
 - Quantity
 - Limits on quality

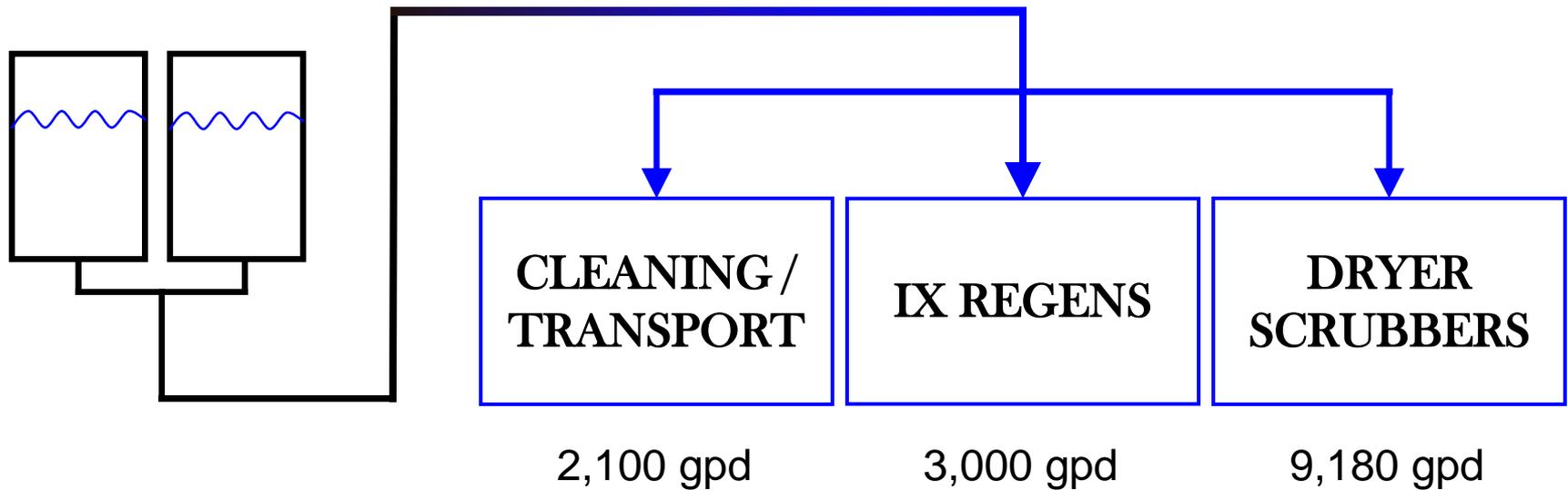
Water Source: CWS

- Used to collect and treat various waters for discharge
- Effluent has:
 - High water purity (trace metals)
 - High volume (10,000 gpd)
- System includes holding tanks and discharge pump

Water Source: CWS



Reuse Potential



Reuse Area 1: Cleaning/Transport Tasks

- Floor rinsing
- Resin transfer
- Truck rinsing
- Currently city/soft water used
- No need for high purity water

Savings (per year):

- 525,000 gallons water
- Sewered CWS: \$1,480
- Purchased water: \$1,476

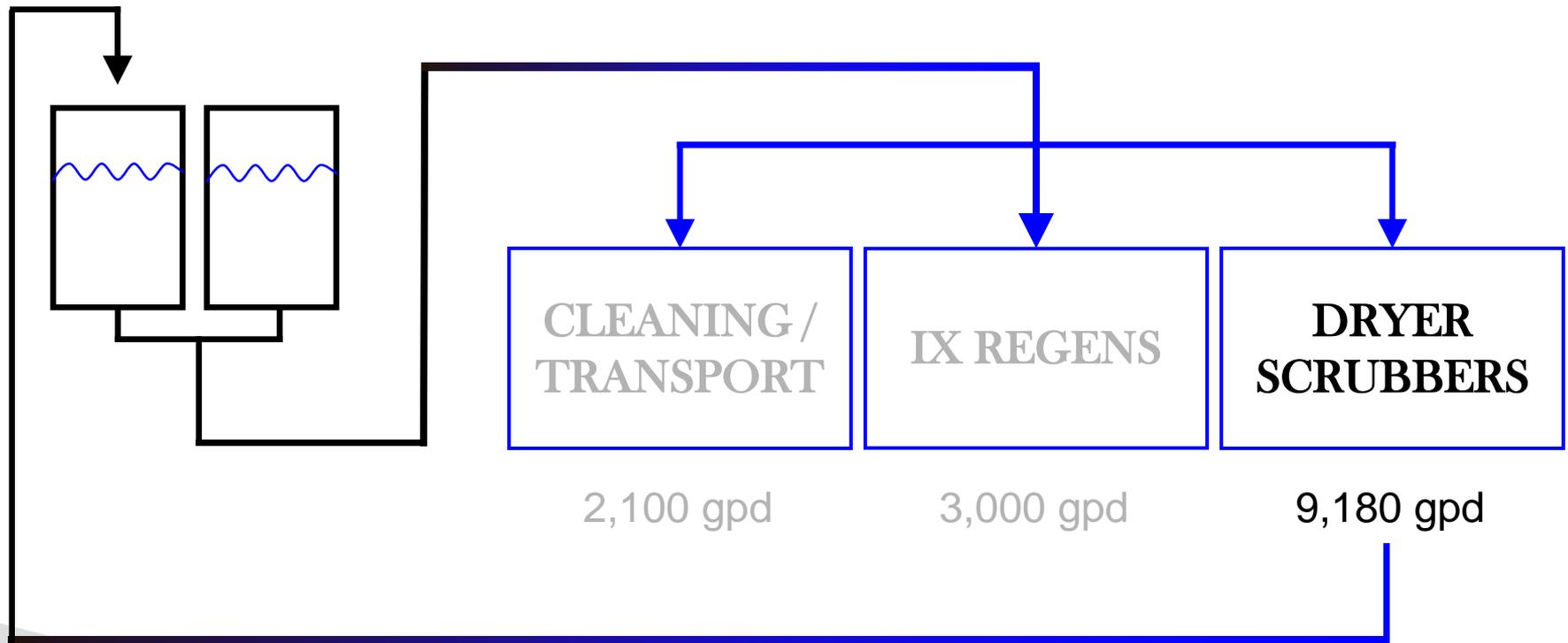
Reuse Area 2: IX Regenerations

- Remove metals from spent resins
- First step is backwash
 - Removes debris and loosens the bed
 - Lower limits on water purity

Savings (per year):

- 750,000 gallons water
- Sewered CWS: \$2,115
- Purchased water: \$2,107

Reuse Potential



Reuse Area 3: Dryer Scrubbers

- Evaporates water from waste sludge
- Scrubber removes particulates from effluent gas
- City water at 3 gpm

3 dryers = 2,295,000 gallons
per year = 19% of plant usage



Reuse Area 3: Dryer Scrubbers

- Closed loop with CWS water
 - Collect effluent and return to holding tanks
 - Negligible accumulation of heat/particulates

Annual Savings:

- Sewered water: \$6,472
- Purchased water: \$5,990
- Treatment: \$22,950

Successful Process Changes

- Currently installing first section
 - Includes IX regeneration backwashes, some cleaning/transport processes
 - Est. completion time: 1 month
 - Total water savings: 1,000,000 gallons
 - Total cost savings: \$5,630
 - Payback period: 6 months

Personal Benefits

- Excellent learning experience
- Directly impacted facility
- Networking





QUESTIONS?