Managing Water Use Through Assessment and Conservation

Bill Gill
Smithfield Foods

The Key

- What You Don't Measure, You Can't Manage

More Importantly…

- What You Don't Manage, You Can't Change

Smithfield's Opportunity

- 4 Independent Operating Companies
- 50 + Sites
- Over 7 Billion Gallons Total Annual Usage
- Food Safety
- Contract Sanitation
- A Variety of Circumstances and Costs

The Program

- Water is Important
- Need a Team
- Facility Level Goal
- Data Tracking
- Continuous Improvement
- Compare, Contrast, Transfer, Recognize

Smithfield's Program

- ISO Certified EMS at the Facility Level
- Water as a Significant Aspect
- Continuous Improvement
- Web-based Metrics Software
- Facility Level Target
- WBCSD Global Water Tool
- GEMI Local Water Tool
- Scorecard to Compare, Contrast, Transfer, Recognize

Assess & Prioritize

- WBCSD Global Water Tool (http://www.wbcsd.org/work-program/sector-projects/water/global-water-tool.aspx)
  - Use Long/Lat to indentify regions where water availability may become an issue.
  - Provides a Short List
- GEMI Local Water Tool (http://www.gemi.org/localwatertool/)
  - Assign Importance and Risk to Prioritize
  - Develop Action Plans

The True Value (Cost) of Water

- City Water Rate or Pumping Cost
- Disinfection/Treatment
- Heat It Up/Cool It Down
- High Pressure Pumping
- Pump it Out
- Treat It
- Pay the City

The (perhaps not so) Obvious

- Temperature-based Flow Control for Equipment
- Cooling Tower Recycle
- Reuse of Cooling Water
- Brine Recycling
- Leaks
- Turn It Off

A Bit Out of the Box

- Pressure Regulation
- Final Effluent Reuse
- Report in Dollars
- Alternative Sources
- Use Existing Heat and Cold

Actual Stuff

- Feedmill utilized spring water that was flooding basement as boiler feed water. Cut water use by 90% (700k gallons and $60k per year)

- Found abandoned cooling tower at closed plant. Piped to bank of hydraulic units on single pass and saved 1 MG per year.

More Actual Stuff

- Set up holding tank for leftover pickle during clean up. Saved 300,000 gallons of pickle and $140k per year.

- Used a closed loop glycol system to replace single pass cooling water, saving 2.4 million gallons per year.

A Couple More

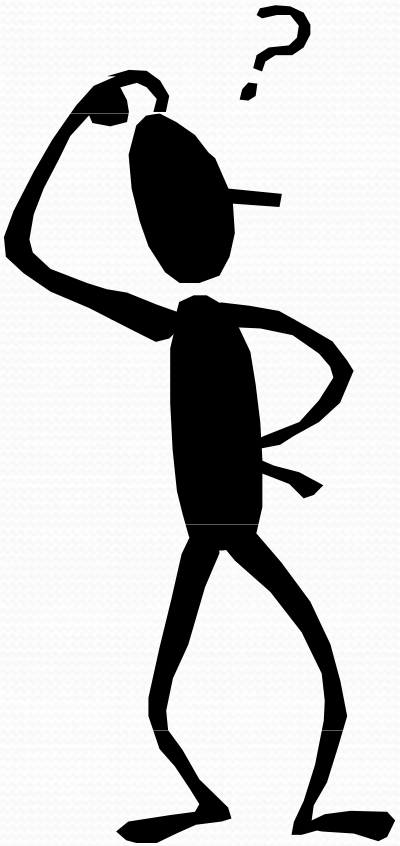
- Added pressure regulator at point of entry saving 73 MG and $219k per year.

- Recycled refrigeration cooling water back into plant (uninsulated) for reuse as equipment cooling water saving 12.5 MG and $160k.

On a Somewhat Larger Scale

- NC plant w/ up to 4 MGD GW withdrawal
- Permit limited on withdrawals and discharge
- Essentially using the available supply even with conservation and reuse in place
- Partnered w/ local Authority to build 4.4 mgd regional surface water treatment plant
- Increases cost, but assures supply going fwd

Takeaways

- Have a Program
- Form a Team
- Assess and Prioritize
- Set a Goal
- Communicate Results
- Manage for Change

Questions