Cortland, NY Anaerobic Digestion Improvements
From Antiquated to Updated and Ready for Yogurt

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27 October 2017
Cortland, NY WWTP

• Serves Cortland, Homer, McGraw and a portion of Cortlandville
• Funding through state revolving loan fund CWSRF, with an additional $2 million grant for a digester and CHP
• They had to upgrade to meet Chesapeake Bay nutrient requirements
The Phases of Change

- **Phase 1:** Solids Handling Deficiencies
- **Phase 2:** Installing SBR and replacing the antiquated SCADA system
- **Phase 3:** Digesters and CHP
Wooing Industry

- Historically lost thousands of manufacturing jobs
- Needed new development
- Offered a renovation opportunity for the WWTP
Yogurt Necessitates Change

• Acidic whey needed disposal.
• Existing system couldn’t handle the additional load plus future growth.
• A quick and forward-thinking solution was needed.
• This all happened during Phase 3.
Old Milk is Bad Milk

- Old steel fixed & floating covers (36’ diameter)
- Gas mixing system (red compressor house)
- 75-year-old digester complex
Tight Quarters

- Spiral Heat Exchangers upstairs
- Pumps downstairs
- Digester building was very crowded with existing piping and equipment.
Mixing Improvements

• Could not add mixing equipment to digester building.
• Needed something aggressive that would minimize foaming.
• Internal and External Mechanical Draft Tube mixers were selected.
• Reliable Operation 10+ years expected before rebuild, 5-year guarantee.
Draft Tube Mechanical Digester Mixers
New Digester Covers & Gas Storage

- 36’ dia. Dual Membrane Gasholder provided more gas storage
- (2) 36’ dia. Stainless Steel Fixed Covers
Working Through Design While Purchasing

- The plant, engineer, agent and equipment supplier went through design, purchasing and installation quickly so the plant could start receiving whey.
Where there’s a will there’s a Whey

- Heat exchanger for the liquid whey holding tank
- Glass-lined to prevent milkstone buildup
- Tank is mixed and whey is fed to digester at ~95 degrees F.
- Heat Exchanger Installation Challenges
Quality on a Deadline

- Stainless steel fixed covers to work with the timeline
  - No blast or paint
  - Reduced welding
  - Avoiding inspection and repainting

- DuoSphere™ instead of floating steel gasholder cover
  - Quick install (weeks vs. months)
  - More gas storage (~100% more)
  - No annular gap (fully gastight)
From Cows to Lightbulbs

- Next phase will add CHP
- Larger than previously planned due to high-strength waste.
- Project will provide significant savings.
Creating New Jobs and Great yogurt

- Goal is to put the city in a competitive economic position to attract more jobs
- The facility is now able to treat 9 MGD more sustainably.
Thank You & Questions

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