Enhancing Energy Efficiency Efforts

by

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Aqua America

- Publicly traded on NYSE: WTR
- Water and Wastewater Operations in 10-states serving 3-million people

Aqua PA

- Serves ~1.4 million people in 30 counties across the state
- 11 Surface WTPs and over 70 Wells
- Total Delivered Water: 100-150 MGD
Energy Efficiency Enhancements

- Inside the Numbers
- Use of premium Efficiency Pump and Motors & Variable Frequency Drives
- Solar Powered Mixers
- Solar Fields for Power Generation
“Power” is ~40% of Aqua PA’s annual operating budget which in 2012 is ~$10M.

Higher power costs track well with pump sizes and even more so with sendout pump discharge pressures.
- Pickering West: 54% @ 250 psi.
- Bristol: 15% @ 92 psi.
Pickering Water Treatment Plant
Schuylkill River Pump Station

- In 2010 replaced old pumps with premium higher efficiency pumps and motors with VFDs.
- Split East and West pumping zones to eliminate valve throttling.
- Calculated decrease in electrical usage of ~2M kW-hr/year or about $160,000 savings in operational costs.
Solar powered mixers are being used to help improve water quality by:

1.) Mixing water in potable water storage tanks; and

2.) Mixing water in raw water reservoirs (photo) to help reduce algae and improve overall water quality.
Solar Fields

- 2009 Installed 1 MW @ Ingram’s Mill WTP in West Chester, PA
- 2011 Installed 1.8 MW @ Pickering WTP Complex in Phoenixville, PA
- 2011 Installed 340 kW @ Phillipsburg Facility in Phillipsburg, NJ
- 2011 Installed 100 kW @ Sicklerville Facility in Sicklerville, NJ
Side-by-Side Look at the Numbers

• Ingram’s Mill
  – Electric Bill: ~$300,000
  – Total Cost: $6M
    • PEDA Grant: $1M
  – Solar Field:
    • Satisfies ~30% energy demand
    • 4.5 acres
    • 4,400 panels
    • 2011 energy bill: ~$200,000

• Pickering
  – Electric Bill: ~$3.1M
  – Total Cost: $7.5M
    • CFA Grant: $1.5M
  – Solar Field
    • Satisfies ~8% energy demand
    • 6.5 acres
    • 7,600 panels
    • 2012 energy bill: ~$2.85M (e)
Thank you