

US EPA ARCHIVE DOCUMENT



Tennessee Water and Wastewater Energy Efficiency Partnership

Bob Freeman & Brendan Held

EPA Region 4

Overview

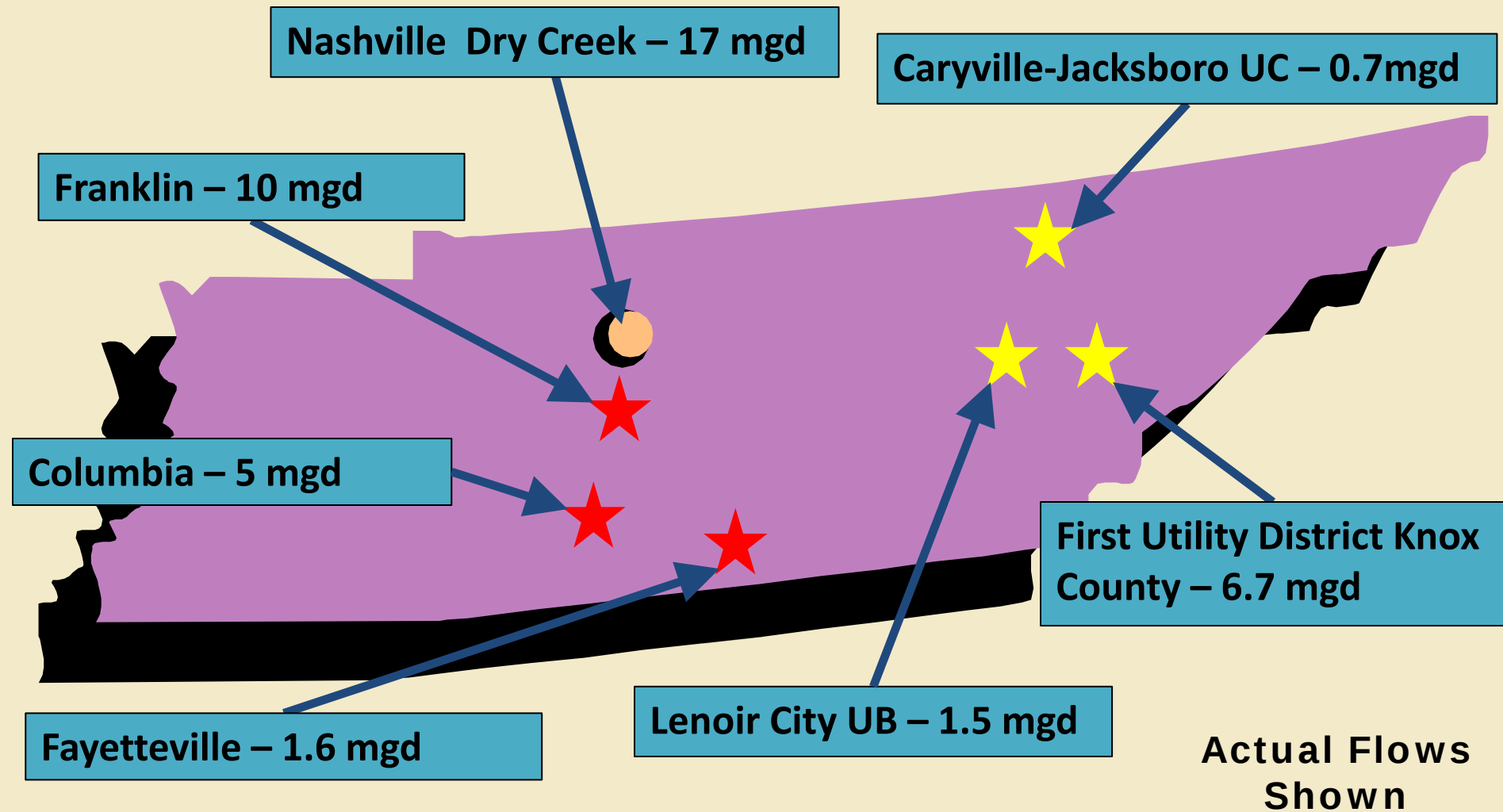
- Introduction
- Background
 - Tennessee Water and Wastewater Energy Efficiency Partnership (TWWEEP)
 - TWWEEP structure – the team and its work process
 - Summary of total results to-date
- Individual examples
 - Fayetteville
 - Columbia
 - Franklin
- Lessons Learned
- Next Steps

The TWWEEP Program

The Team: Tennessee Water & Wastewater Energy Efficiency Partnership



TN Utility Partners





Columbia WWTP



1st Utility Dist. Knox Co. - DW



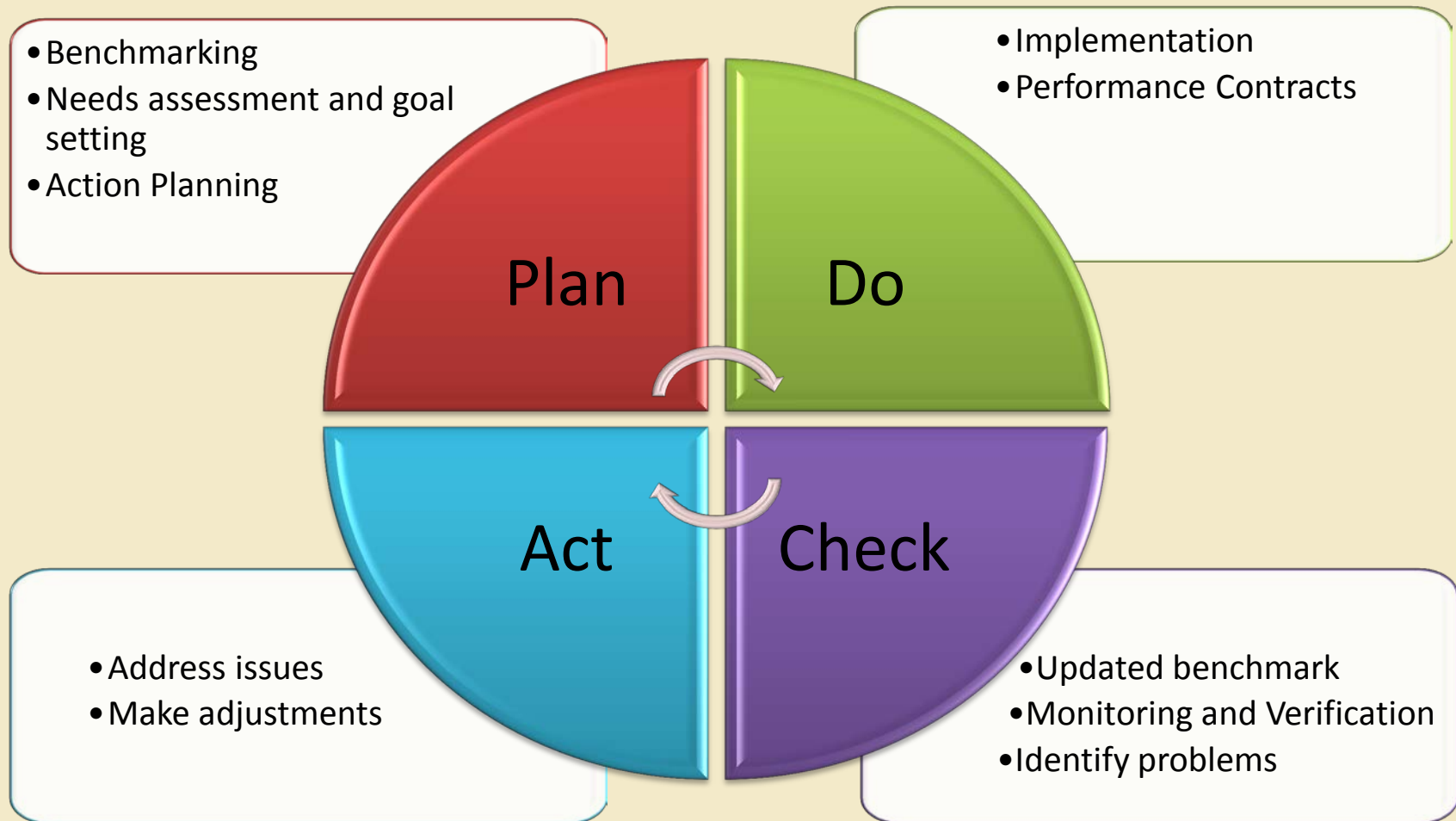
Nashville Dry Creek WWTP



Lenoir City UD WWTP



The Approach



Results To-Date

- Average Energy Savings – over 18%
- **Measured** Annual Savings (September 2013)
 - Over 5,000,000 kWh
 - Over \$400,000/year savings
 - Over 4800 tons/year CO2 Reduction
- **Additional Savings** of 1.5-2.0 million kWh is projected

Individual Examples

Fayetteville - WWTP



Fayetteville - Orbal Oxidation Ditch

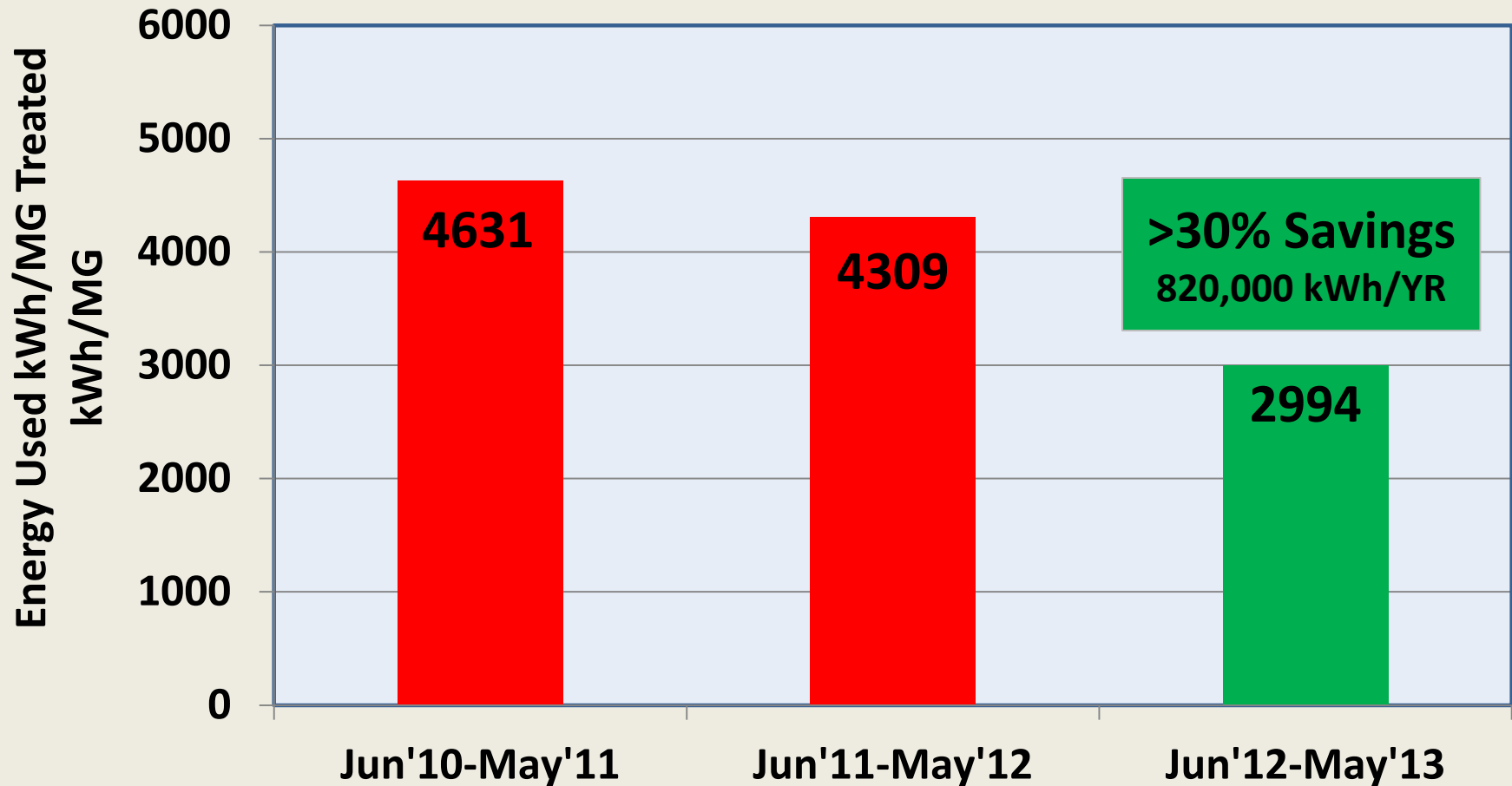


Fayetteville – Aerobic Digesters



Fayetteville – Measured Energy Savings

Fayetteville Yearly Energy Use/MG Treated



Columbia - WWTP



Columbia - WWTP



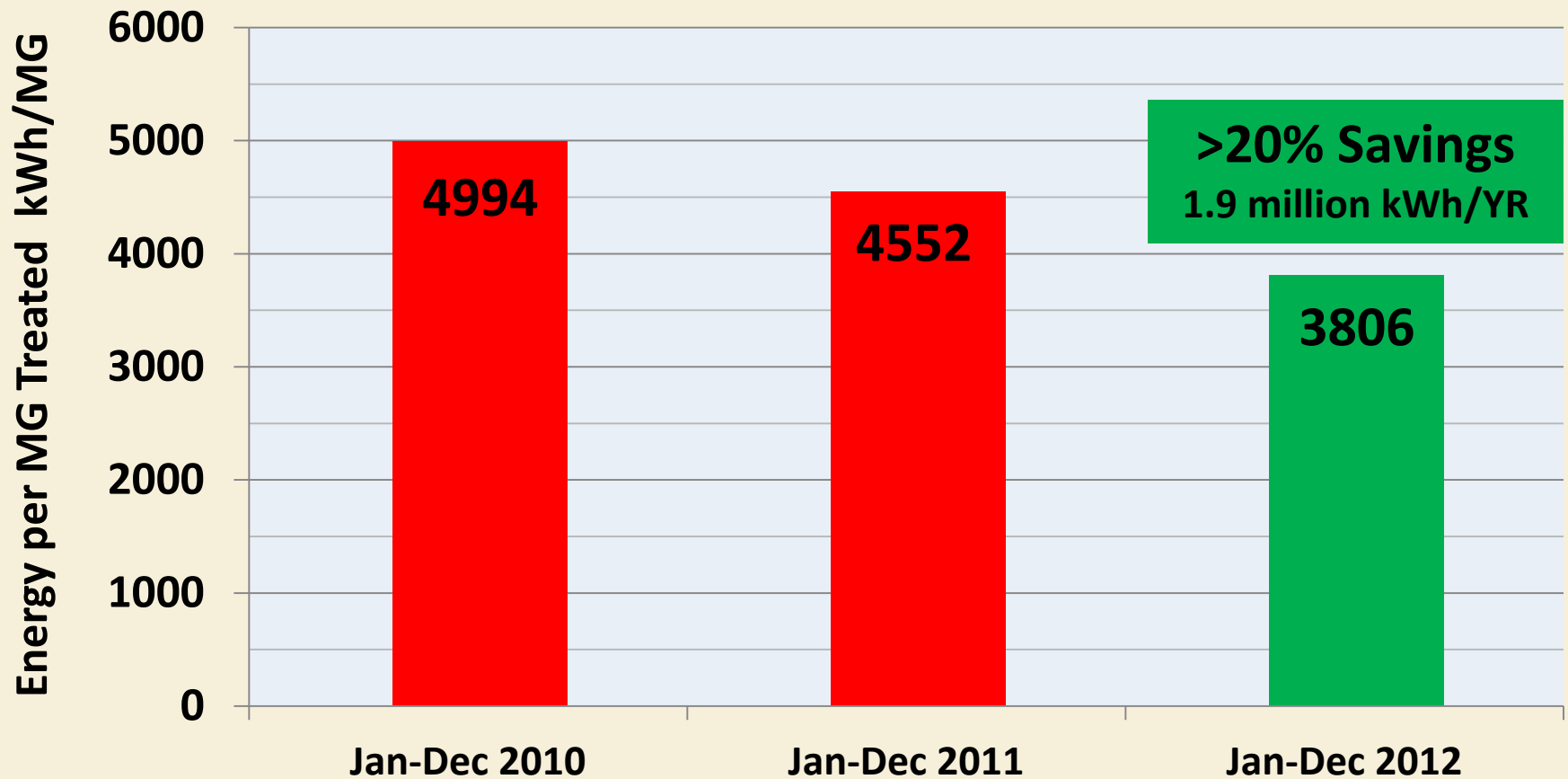
Nitrification Tower

Aeration Tanks



Columbia - Measured Energy Savings

Columbia Yearly Energy Use / MG Treated



Franklin - WWTP



Franklin - WWTP

Anoxic Zone



Solar
Array

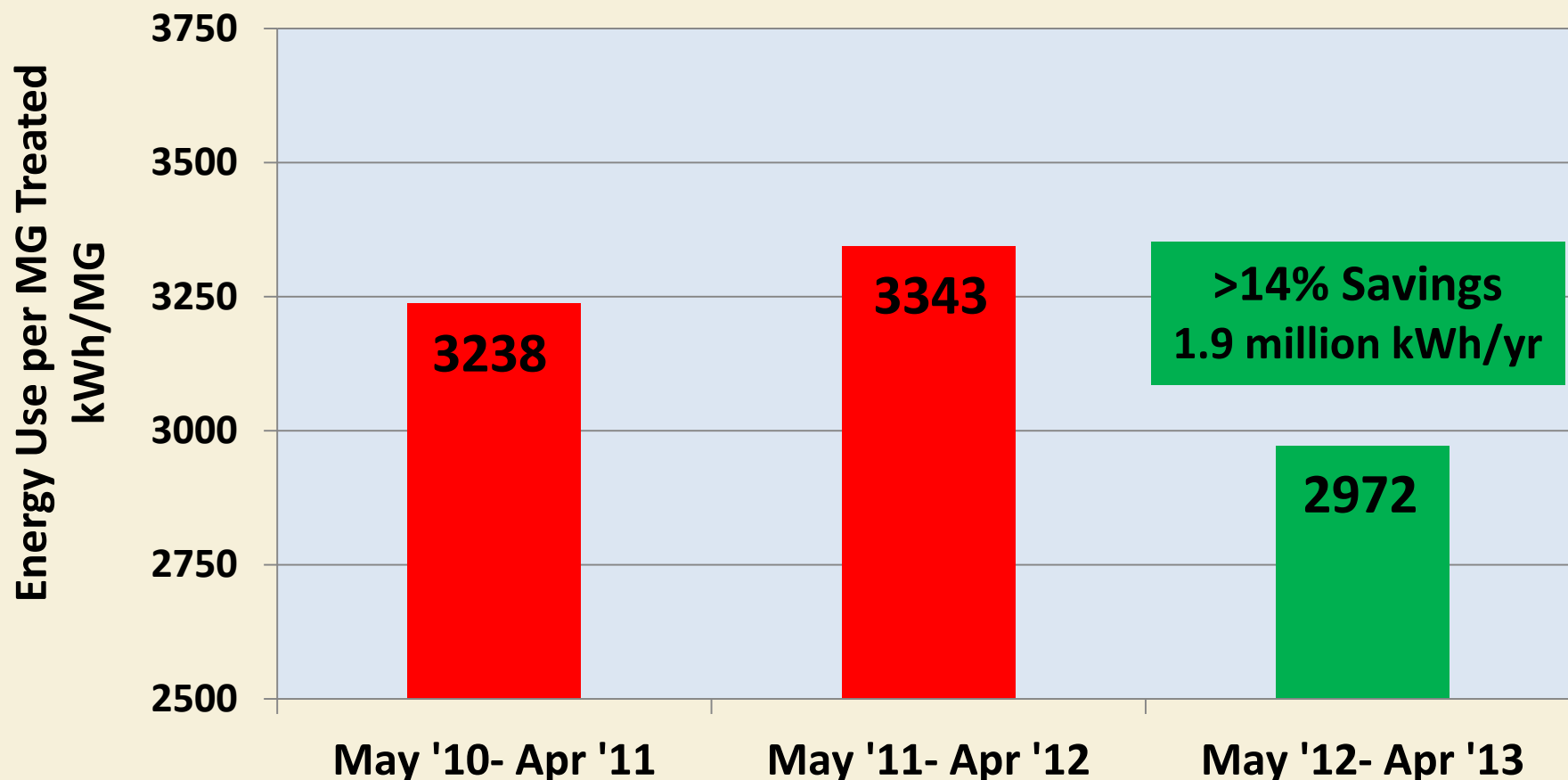


Denitrification Filter



Franklin – Measured Energy Savings

Franklin Yearly Energy Use/MG Treated



Lessons Learned

- Any size plant can find savings
- Minimal investment can produce big results – does not necessarily require expensive upgrades
- Savings beget savings – using savings \$ for upgrades motivates staff to find more
- Team approach works best – operations and governance share responsibility for effective energy management

Next Steps

- Region 4 continues to support activity in this area
 - TN is set to implement a second round with 8-10 utilities in 2014
 - AL is in the planning stages for a similar program
 - United South and Eastern Tribes are developing capacity to support their member utilities
 - GA Environmental Financing Authority is highly interested in funding energy-related construction through SRF

Next Steps

- What if there is not a program in your area?
 - Start small
 - Energy Use Assessment Tool
 - Power company may be willing to support an assessment
 - SRF financing
 - Contact us

Energy Management Training

- What? Free two-day energy management training course
 - ▶ Optimizing operations to save energy
 - ▶ Equipment upgrade/improvements
 - ▶ Techniques, Tools, Case Studies
- Where? EPA Office in Atlanta, and on the web
- When? January 7 & 8, 2014
- Who? Dr. Larry Moore, Univ. of Memphis

For information, contact Bob or Brendan

Contact Information

Bob Freeman

Freeman.Bob@epa.gov

Brendan Held

Held.Brendan@epa.gov

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