



The City of Wooster, Ohio

Water Resource Recovery Facility

Through Public Private Partnership

- HQ: Cleveland, OH
- Over \$150M in Executed Projects
- 13 Operational Digesters (OH, NY, MA)
- Capacity to annually manage 700,000 tons of organic waste
- Municipal, Industrial & Agricultural ADs
- Mature US Supply Chain

Anaerobic Digestion Technology Leader



Full Suite of Services

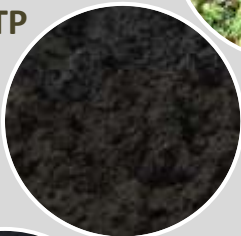


Waste Management

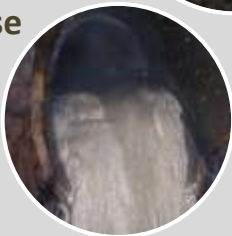
Foodwaste



WWTP
Biosolids



Fats, Oil &
Grease



Nutrients



Natural fertilizer and
animal bedding

Renewable Energy

Electricity



Compressed
Natural Gas



Heating &
Cooling



- Treatment plants are facing capital, technical, and regulatory challenges.
- Federal funding to address these challenges has decreased 90% since the 1980's.¹
- Wastewater is rich in natural resources – water, nutrients and energy
- Treatment plants consume 3% of the total US energy demand.
- Biosolids have the potential to produce 12% of the US electric demand!¹

quasar partnered with the City of Wooster (Ohio) to turn their Water Pollution Control Plant into a Water Resource Recovery Facility.

1. Source: NACWA, WERF, and WEF [The Water Resources Utility of the Future](#) pages 25 and 14



The Challenges

Regulatory Issues:

- EPA Compliance
- Discharge Limits
- Sewer Capacity Restrictions

Process Issues:

- Solids Handling
- Antiquated Digesters
- Insufficient Biogas Production

Disposal Issues:

- Land Application Restrictions
- Nutrient Value Verification
- Value Proposition for Farmers



Water Pollution Control Plant Prior to quasar Project

Projects can involve a Feasibility Study which at a minimum includes:

- Identify additional regional organics
- Evaluate energy potential
- Effluent management
- Location/ Logistics
- Engineering package



Challenges:

- Old Facility
- Existing Footprint
- Plant Operations Maintained

Scope of Work:

- Retrofit three 1960s Digesters
- Construct Biomass Tank
- Building for Belt Thickener
- Solids Receiving Station
- Install 1100 kW Generator



Public-Private Partnership

Public-Private Partnership can be the new direction for municipal projects. **But what does it really mean once the bid process is over?**

In Wooster PARTNERSHIP means collaboration;

- Treatment plant continued operating during construction,
- Detailed daily communication between entities
- Integration of operations
- Retrofit completed; no change order invoices to City
- Relationship continues long after the initial project was completed.



Project Results

- ✓ Address OEPA Findings & Orders
- ✓ Run the WPCP on renewable energy
- ✓ Manage the City's biosolids at a reduced rate
- ✓ Reduce overall operating expenses
- ✓ Increase WPCP capacity
- ✓ Contribute to local economic development



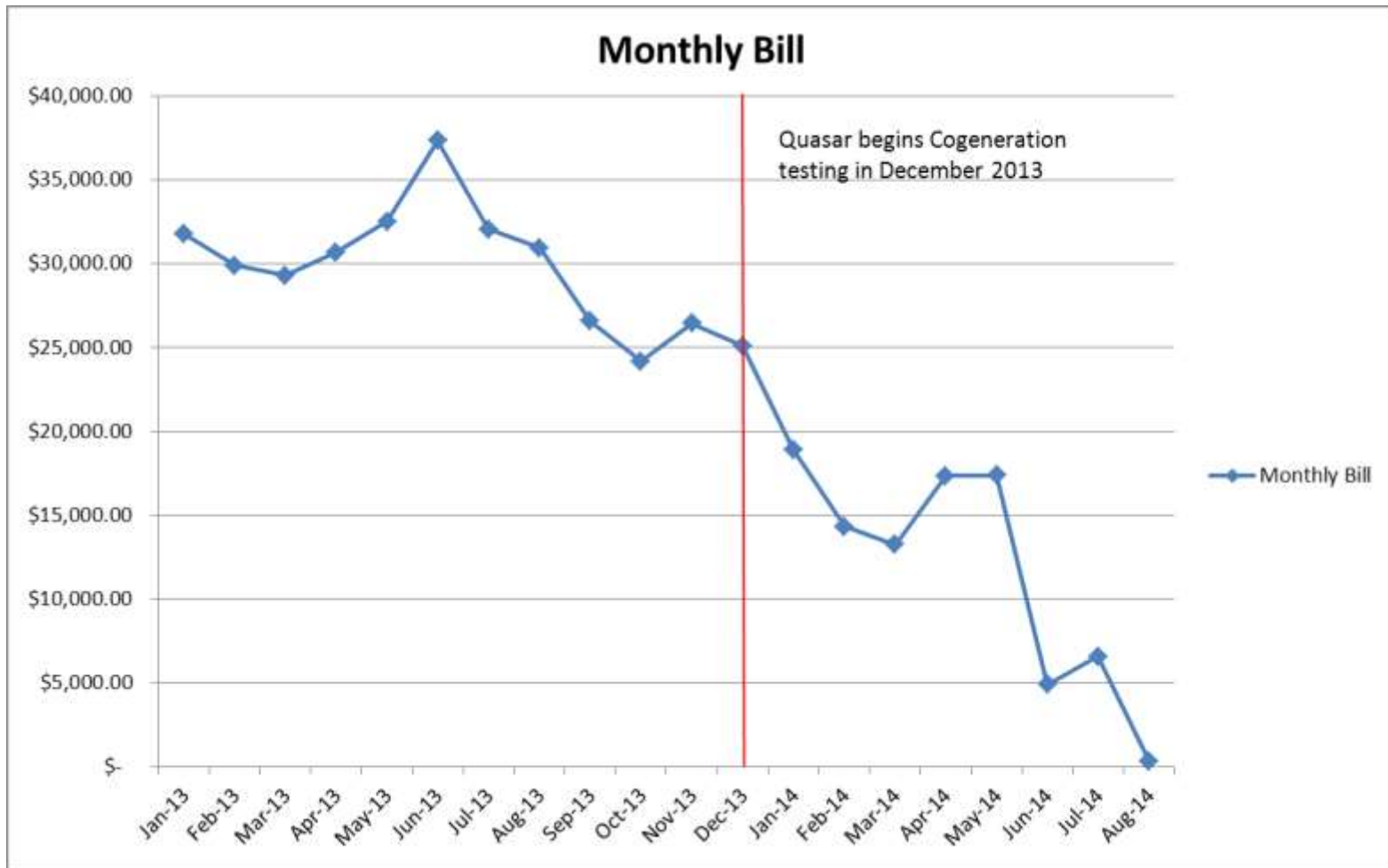
Future Innovation



quasar is listed as an approved Renewable Fuel Producer under the EPA's Renewable Fuels Standard 2 (RFS2) Program. quasar generates RINs from renewable fuel sold for transportation at the Columbus and Zanesville digesters. The fueling stations are open to the public Monday through Saturday. Wooster is next!

How Quickly did the City benefit?

Monthly Electric Bill City of Wooster (Ohio)



Next Steps



- Interconnection between WRRF and Water Treatment Plant to take advantage of excess power generation and utilize 2.2 MW backup generator
- Future CNG Fueling Station
- Conversion of Utility vehicle fleet and eventually City vehicles



Private/Public partnership;

- * reduced costs by over \$300,000 per year,
- * attracted new businesses to the region,
- * achieved Ohio EPA compliance,
- * and expanded the facility's capacity.

Public/Private partnership is a real solution for municipal treatment plants.

Questions & Contact Information



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