



# BioChem Award

- Governor's Award for Environmental Excellence: Technology Innovation

## UNIVERSITY AREA JOINT AUTHORITY

### ENVIRONMENTAL BENEFITS:

- 837,000-kwh annual electricity consumption reduction

### FINANCIAL BENEFITS:

- \$19,800 annual energy savings

### *BioGuide: Just What the Doctor Ordered*

At University Area Joint Authority, a municipal wastewater collection and treatment facility in Centre County, an innovative new technology is keeping sewage-munching bacteria happy and healthy and improving the efficiency of wastewater treatment.

The BioGuide Wastewater Control Technology is an online, real-time process monitoring and control system helping the authority optimize its treatment efficiency by gauging the health of bacteria in activated sludge. Armed with the guidance of technology developers at BioChem Technology Inc. and a \$250,000 grant from DEP, the authority implemented a full-scale application of BioGuide at its facility.

Using this new technology, treatment plant operators can access real-time data on the biological treatment process 24 hours a day. Operators can get immediate feedback on the health and treatment efficiency of the microorganism populations in the plant.

Ultimately, BioGuide facilitates proactive plant management, helping operators detect toxic slug loads or treatment deficiencies before they become problems or permit violations.

By optimizing air delivery to the treatment units, BioGuide reduces electricity demand for the aeration blower by 30 percent—a reduction of 837,000 kwh annually at a cost savings of \$19,800.

BioGuide also is helping the authority plan for the implementation of biological nitrogen removal. By optimizing the treatment capacity, the authority will reduce its capital construction expenditures by more than \$230,000 when it retrofits the existing 6 million gallon-per-day plant to achieve biological nitrogen removal. Preliminary results indicate BioGuide technology could help the authority remove more than 182,000 pounds of nitrogen from the Chesapeake Bay watershed annually.

UNIVERSITY AREA JOINT AUTHORITY  
1576 Spring Valley Road  
State College, PA 16801

CONTACT:  
David Smith  
(814) 238-5361  
(814) 238-1531 (fax)  
dasuaja@lazerlink.com

## TECHNOLOGY INNOVATION

*"The use of this technology has allowed our design engineers to reduce projected tank capacity by 29 percent. This capacity optimization reduces raw materials needed to construct the facility upgrades."*

David A. Smith  
Assistant Executive Director



2000 GOVERNOR'S AWARD FOR ENVIRONMENTAL EXCELLENCE

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TECHNOLOGY, INC.