

Region 3

Delaware, District of Columbia, Maryland, Pennsylvania, West Virginia, Virginia

Community Reduces Chemical Usage and Energy Costs

Mount Pocono Wastewater Treatment Plant, Pennsylvania

The Mount Pocono Municipal Authority had funded an upgrade to its wastewater treatment plant, but found that the manufacturer could not make the new equipment work properly. The new facility could not achieve the level of nitrification required by its National Pollutant Discharge Elimination System permit. To improve performance, the Authority resorted to using costly powdered activated carbon to enhance treatment.

Through the technical assistance, the plant was brought into compliance, and the Authority saved \$60,000 a year in carbon addition expense and \$4,200 a year in energy savings.

The plant's operator then contacted the local 104(g)(1) technical assistance provider. Together, the operator and trainer optimized plant operation by changing the timing sequence of the sequenced batch reactor. Through these efforts, they brought the plant into compliance and saved the Authority \$60,000 a year in carbon addition expense.

In addition, Pennsylvania's energy audit team, led by a 104(g)(1) technical assistance pro-

vider, identified metering errors at the plant. Correction of these errors and implementation of additional controls resulted in a \$350 per month energy savings for the facility. Moreover, since the metering error occurred during a 15 year period, the Authority is negotiating a significant refund from the electricity supplier.

New Operators' Skills Are Improved

Fairfield Municipal Authority, Pennsylvania

Inexperienced operators were struggling to correct compliance problems at the Fairfield Municipal Authority's wastewater treatment plant. A 104(g)(1) technical assistance provider stepped in to help the new operators bring the plant into compliance by establishing a process control strategy and developing an effective laboratory testing program.



Together, the operators and the technical assistance provider replaced the facility's blowers and air piping, changed the plant flow scheme, and installed wasting and return capabilities. Technical assistance also provided the operators with computer-based training for their licensing test.

“...the training and technical assistance received thus far has indeed been a Godsend to our small community.”

—Vice-Chairman and Secretary/Treasurer
of Fairfield Municipal Authority,
Patricia Smith, 1991

Using Process Control to Avoid Construction

Eastern Armstrong County Sewer Authority, Pennsylvania

Confronted with operational problems and compliance issues, decisions are often reached for plant upgrades without thorough examination of process control methods. Technical assistance under the 104(g)(1) program has been invaluable in helping communities optimize process control, thus avoiding costly construction.



Eastern Armstrong County saved millions of dollars due to 104(g)(1) assistance. To remedy NPDES violations, the County's Sewer Authority planned to spend approximately \$2 million to upgrade the facility. Plans and specifications for the plant expansion were completed.

The facility was brought into compliance within only a few days, and the community saved millions of dollars by avoiding unnecessary plant construction.

A 104(g)(1) technical assistance provider visited the plant before the new construction began. The provider recommended shutting down approximately half of the existing facility to change the hydraulic and solids loadings. As a result of this suggestion, the facility was brought into compliance within only a few days, and the community saved millions of dollars by avoiding the unnecessary plant construction.

Between 1990 and 1997, Pennsylvania assisted 230 facilities. Recognizing the benefits of technical assistance to communities, the Pennsylvania Department of Environment Protection contributes more than three quarters of the funding for outreach. This type of combined state and federal funding offers significant assistance for communities which often have very limited alternative resources. Specialized 104(g)(1) teams offer help with energy conservation, pretreatment, safety, right-to-know, and collection systems.

Planning for Pollution Prevention

Town of Centreville WWTP, Maryland

The 104(g)(1) technical assistance program has gradually moved from crisis intervention toward proactive, preventive approaches to environmental protection. This shift has led to the creation of complementary activities and programs that enable assisted facilities to comply with regulatory requirements.

Maryland's Municipal Wastewater Pollution Prevention (MWPP) Initiative is one such program.

In the early 1990s, the Maryland Department of the Environment (MDE) launched the MWPP initiative with a grant from the U.S. Environmental Protection Agency. In partnership with MDE, the Maryland Center for Environmental Training (MCET) developed a procedure for auditing the physical and financial status of local publicly-owned wastewater treatment systems. The initiative demonstrated that periodic, systematic auditing is a valuable tool that encourages cost-saving pollution prevention strategies.

In Maryland, funding from EPA and the Maryland Department of the Environment provides outreach as part of a statewide strategy to help operators implement biological nutrient removal (BNR) and other emerging nutrient reduction technologies.

Centreville, a small town of 2,100 residents on Maryland's Eastern Shore, was one of the communities that volunteered to participate in the MWPP program. Centreville was struggling with a variety of problems. Historically, staffing was inadequate, and there was a long history of deferred or inadequately



performed maintenance, which had taken a steep toll at the facility. Serious equipment problems and structural concerns left the plant vulnerable to discharge permit violations and expensive fines for non-compliance. In addition, Centreville's operators were required to "work around" a variety of design deficiencies. For instance, if any part of the facility's treatment unit needed to be shut down for repair, the whole plant had to be shut down. Sludge management was a major challenge.

A complete evaluation of the plant identified a variety of problems, all of which pointed to the immediate need for planning to replace the treatment plant within a few years. The assistance provider reported the evaluation findings to the town council, helped the town secure grants and loans for construction, and continued to work with the plant staff to ensure optimized treatment. After extensive consultations and assistance, the town committed funds to replacement of the existing plant and began its construction process. Compliance has improved greatly.

Maryland's 104(g)(1) grantee, the Maryland Center for Environmental Training, cosponsored one of the state's first nutrient removal conferences, demonstrating to communities the benefits of nutrient removal and directing communities to appropriate grant assistance for plant upgrades. The technical assistance provided by MCET focused on low-cost retrofits and technical feasibility studies, as well as plant operational strategies.

New Plant Start-Up Challenges Operators

City of Frederick WWTP, Maryland

When the City of Frederick upgraded its trickling filter system to a new secondary treatment plant, two 104(g)(1) technical assistance providers trained the staff and helped optimize operations. The trainers assisted the operators in starting up the three activated sludge process trains, which included an oxidation ditch and an intra-channel clarifier.

Once all three trains were successfully operating and producing an acceptable effluent, efforts shifted to development of a comprehensive process control test program for the operations staff to follow. During this process, excessive growth of filamentous bacteria became a serious problem. The trainers assisted the staff in implementing a chlorination system, using multiple addition points in each ditch to control the filamentous growth. The combination of the process control monitoring program and filamentous control strategy enabled the staff to achieve compliance with all parameters of the NPDES permit.

This 104(g)(1) assistance eliminated the need for a \$500,000 modification/replacement grant, which the City thought would be needed to construct additional facilities and which would have been requested from EPA under a federal grant program for failed innovative technologies.

Implementing Compliance Strategies and Improvements

Millsboro WWTP, Delaware

In the mid-1990s, the Millsboro Wastewater Treatment Plant was struggling with significant compliance issues and lack of funding for needed improvements.

Technical assistance provider Lenny Gold began helping the Millsboro operators implement an effective process control testing program. In addition, he worked with the operators to convince the town managers to construct lab facilities and to purchase needed equipment.

“Over the past 25 years, we have seen significant improvements in our nation's water quality. Much of this improvement can be attributed to better wastewater treatment facilities. This award publicly recognizes the outstanding job that Millsboro is doing to protect our rivers and streams.”

—W. Michael McCabe, EPA Mid-Atlantic Regional Administrator

After just one year of assistance, the Millsboro WWTP was in compliance with its discharge permits. The Town of Millsboro WWTP was selected for EPA's Annual Operations and Maintenance Excellence Award in 1999.

Addressing Serious Compliance Problems in a Very Small Community

Central Boaz WWTP, West Virginia

The Central Boaz Wastewater Treatment Plant, serving a community of 1,100 people, was in major disrepair and out of compliance when 104(g)(1) trainers first began assessing the plant and its problems.

The trainers spearheaded an energetic process control teaching effort, to improve plant operations. A sludge management program was implemented, and the operator received personalized tutoring to pass West Virginia's certification exam.

The revitalized plant was brought back into compliance after an 18 month period during which 58 violations were reported. The performance turnaround, in combination with outstanding management involvement, won the Central Boaz Public Service District the EPA's Most Improved Plant Award in 1996.

In FY98, the West Virginia Environmental Training Center, which has a full-time staff of only two, delivered on-site technical assistance and over 50 workshops and seminars to 1,000 water quality professionals using volunteer instructors.



The South Branch Potomac River, near Petersburg, West Virginia, is one of the east's great trout streams.

Protecting a Sensitive Trout Stream

Meadow Bridge WWTP, West Virginia

Meadow Bridge is a small community south-east of Charleston, West Virginia, in the Appalachian Mountains. The wastewater treatment plant in Meadow Bridge discharges into a sensitive trout stream area. This was of special concern since the facility was having difficulty complying with its discharge permit.

The 104(g)(1) assistance saved Meadow Bridge \$4,000 in equipment costs, in addition to approximately \$6,000 annually in lab fees.

A 104(g)(1) technical assistance provider from the West Virginia Environmental Training Center trained the operators in process control testing, plant maintenance, lab certification, and quality control. To rebuild the facility's sludge beds, the technical assistance provider suggested using economical spent water filter media. The timely 104(g)(1) assistance saved Meadow Bridge \$4,000 in equipment costs, in addition to approximately \$6,000 annually in lab fees.

Region 3 Contacts

Environmental Protection Agency

James Kern
EPA Region 3 Coordinator
Mail Code 3WP23
Water Management Division
1650 Arch Street
Philadelphia, PA 19106
(215) 814-5788
kern.jim@epa.gov
<http://www.epa.gov/region3>

Delaware

Jerry Williams
Delaware Technical and Community College
Corporate and Community Programs
P.O. Box 610
Georgetown, DE 19947
(302) 856-5776
Fax: (302) 856-5779
jwilliams@outland.dtcc.edu
<http://www.dtcc.edu>

District of Columbia

Not currently participating in the 104(g)(1) program

Maryland

Karen Brandt
Maryland Center for Environmental Training
College of Southern Maryland
P.O. Box 910, 8730 Mitchell Road
La Plata, MD 20646
(301) 934-7500
Fax: (301) 934-7685
kbrandt@mcet.org
<http://www.mcet.org>

Pennsylvania

Thomas J. Brown
Pennsylvania Department of Environmental
Protection
Bureau of Water Supply Management
P.O. Box 625
RD#3, Wilmore Road
Ebensburg, PA 15931
(814) 472-1900
Fax: (814) 472-1898
brown.thomas@dep.state.pa.us
<http://www.dep.state.pa.us>

Virginia

Wayne Staples
Virginia Department of Environmental
Quality
P.O. Box 10009
Richmond, VA 23240-0009
(804) 698-4106
Fax: (804) 698-4032
dwstaples@dep.state.va.us
<http://www.deq.state.va.us>

West Virginia

Richard Weigand
West Virginia Environmental Training Center
Cedar Lakes
Ripley, WV 25271
(304) 372-7878
Fax: (304) 372-7887
rweigand@citynet.net