WEF HIGHLIGHTS

Front Page

May 2007, Vol. 44, No. 4

Top Stories

Raising a Glass to New York's Water System

Photo courtesy of the New York Department of Environmental Protection. Click picture for larger image.

New Yorkers claim their pizza and bagels are second to none — and, try as we might — the rest of us will never duplicate them. Robert Adamski, who spent more than 30 years with the city's Department of Environmental Protection (DEP), says he knows why.

It's the water, stupid.

Adamski feels similar affection for the system that supplies New Yorkers with their tap water. Second only to that built by the Romans 2000 years ago (yes, he'll concede at least that much), New York's water system is a major engineering feat — an awe-inspiring work of art and the purveyor of the remarkably good-tasting mountain spring water that flows from the city's taps. Read more.

Veggie Car Promotes Use of Alternative Fuels

Click here for the story

From the President: Online ... and Onward

Mohamed F. Dahab

Last month, the Water Environment Federation (WEF; Alexandria, Va.) launched a new journal entitled *Water Practice*™. The premise of this journal is to capture information from WEF's multitude of conferences and symposia.

This is an online journal, meaning it will not be printed on paper, and will be archived and made available through the Internet. This journal has been in the making for the past 2 years and represents a culmination of effort on the part of the WEF staff and volunteers. Read more.

©2008 Water Environment Federation. All rights reserved.

Front Page

May 2007, Vol. 44, No. 4

More Features

High School Student Turns Wastewater Into Energy
Student's Report on Lead Contamination Wins Annual ITT Award
Talking Water in Japan

News & Events

WEF Releases New TMDL Tool Kit
Authors Sought to Update Wastewater Biology Publications
Call for Abstracts: Membrane Technology 2008
WEF Holds Congressional Briefing on CECs
WERF Seeks Nominations for Paul L. Busch Award

©2008 Water Environment Federation. All rights reserved.

Features
May 2007, Vol. 44, No. 4

Features

Raising a Glass to New York's Water System

New Yorkers claim their pizza and bagels are second to none — and, try as we might — the rest of us will never duplicate them. Robert Adamski, who spent more than 30 years with the city's Department of Environmental Protection (DEP), says he knows why.

It's the water, stupid.

Adamski feels similar affection for the system that supplies New Yorkers with their tap water. Second only to that built by the Romans 2000 years ago (yes, he'll concede at least that much), New York's water system is a major engineering feat — an awe-inspiring work of art and the purveyor of the remarkably good-tasting mountain spring water that flows from the city's taps.

Left photo: Constructed in the early 1900s when materials science was just evolving, the New Croton Dam represents an advance in engineering science. Middle photo: The Catskill System was designed and constructed by the city's own workforce which, at the height of construction, included 17,000 construction workers and 3000 engineers. Right photo: Built during the "Age of Reinforced Concrete" beginning in the 1920s, many of the structures in the New York City water system demonstrate an 'emerging modernism' in design. Images courtesy of the New York Department of Environmental Protection. Click on each image to see a larger version.

It's also now the subject of a new book, *Water-Works: The Architecture and Engineering of the New York City Water Supply* (Monacelli Press, 2006). More than a history of the city's water system, the book explores the system's larger social and environmental ramifications, said author Kevin Bone, an architecture professor at The Cooper Union for the Advancement of Science and Art (New York). It also contains historic drawings, photographs, paintings, and maps of New York's complex water supply system that Bone and his students painstakingly recovered, catalogued, and restored over a 9-year period from the archives of the New York DEP.

Water System Planning 101

The history of New York's water system includes many lessons in big-city water system planning, design, and construction. It's also a story of ordinary men doing extraordinary things.

That story begins in the late 1600s, when early settlers obtained their water from shallow private wells. By the 1730s, the water table had already become polluted by the growing population, and epidemics of cholera, dysentery, and typhoid followed.

As the population grew, so did demand for a regional water supply. By the 1830s, the city decided to impound water from the Croton River, in what is now Westchester County. In 1842 the Old Croton Aqueduct was put into service to carry water from the Old Croton Reservoir to the city. Over the next 60 years the city expanded the Croton system to include 12 dams and 2 aqueducts piping water into the city.

"It may be difficult to grasp by 2007 standards, but the New Croton Dam, for example, is a magnificent masonry

©2008 Water Environment Federation. All rights reserved.

structure," said Bone.

Constructed in the early 1900s when materials science was just evolving, the dam also represents an advance in engineering science, according to Bone. "Rather than trial and error, engineers were, sometimes for the first time, figuring out what dam profiles would perform best. The stone work, the construction difficulties, and the dam's overall aesthetic were unlike anything workers had seen before."

The Age of Reinforced Concrete
The Croton System was barely finished when the city's ever-expanding population forced engineers to again search for water. After being turned away elsewhere, the engineers eventually crossed the Hudson River to the Catskill Mountains, where they built two reservoirs to tap into the region's fresh mountain spring water.

The resulting Catskill System, said Bone, hailed the dawning of what he calls "the age of reinforced concrete."

"The structures built in the Catskill System in the 1920s were largely a result of research and testing," he said. "Engineers would begin at the limestone quarries and, from there, develop detailed processes for producing the strongest possible concrete."

While many of the resulting structures were never intended to be seen, photos today demonstrate an "emerging modernism" in design, he said. The Catskill System also includes hundreds of bridges that had to be constructed around the system's reservoirs, many of which are "beautiful, reinforced concrete structures worth a second look," Bone said.

Given the advances in engineering science many of these structures represent, one might think New York had retained the top consulting engineers and construction companies from across the nation for the work. But this was not the case. The entire Catskill System, said Bone, was designed and constructed entirely by the city's own workforce, which at the height of construction included 17,000 construction workers and 3000 engineers.

A Battle Brews
The history of the New York water system is not all about engineering feats and fancy stonework. It is also filled with political battles and lingering bitterness.

"A lot of what New York City has today came at the expense of upstate landholders," said Bone. Once they'd tapped into the Catskill System, New Yorkers were intent on protecting their investment in the watershed and convinced the state to back them in a move to restrict development in the region.

Meanwhile, the demand for water continued to grow.

"Up until the 1930s, all the city's water had originated in New York State," noted Bone. "But now the city was looking west of the Catskills to the Delaware River and water that would cross state lines." Not everyone welcomed the idea.

Water doesn't 'belong' to a place just because it originates there — that was New York City's argument in a 1931 legal case surrounding the Delaware River that eventually went before the U.S. Supreme Court. The Court agreed, and over the next 30 years, The Delaware System was built and placed in service.

Today, half of New York City's water supply comes from four reservoirs of the Delaware River, according to Adamski. The Croton and Catskill systems together account for the other half.

While locals have suffered the financial consequences of the restrictions placed on the affected watersheds, the

©2008 Water Environment Federation. All rights reserved.

ecologically minded argue that the “greater good” has been served. “Thanks to concerted efforts to protect its reservoir system, New York City now has a well-managed water environment and some of the best mountain spring water around,” said Adamski. Because approximately 95% of the total water supply is delivered by gravity, the system is also relatively inexpensive to operate.

The question facing New York City today, said Adamski, is the same one it has faced since the beginning: how to protect water quality while increasing supply for a growing population.

By 2030, the city is projected to add another million people. To be ready, New York DEP is investing huge sums in replacing old water mains and building redundancy into its system. Most notable is City Tunnel #3, a $6 billion project scheduled for completion in 2025 that will provide the city with a critical third connection to its upstate New York water supply.

“New York City solved its problems in the beginning with a grand engineering vision,” said Bone. “The developing world, by contrast, doesn’t today have the opportunities New York City had. When you build a dam in India, millions of people are going to be displaced. There are no sparsely populated watersheds nearby. ”

“If there’s anything the rest of the world can learn from New York,” added Adamski, “it’s the importance of protecting our watersheds. Here in New York, it’s made all the difference.”

— Mary Bufe, WEF Highlights

From the President: Online ... and Onward

Mohamed F. Dahab

Last month, the Water Environment Federation (WEF; Alexandria, Va.) launched a new journal entitled *Water Practice*™. The premise of this journal is to capture information from WEF’s multitude of conferences and symposia.

This is an online journal, meaning it will not be printed on paper, and will be archived and made available through the Internet. This journal has been in the making for the past 2 years and represents a culmination of effort on the part of the WEF staff and volunteers.

The coming year marks the 80th anniversary of WEF’s peer-reviewed publication, *Water Environment Research*® (WER). Looking back over those 80 years, we find that while many of the central tenets of water management — and in particular, wastewater management — have remained intact, the scope of the industry is evolving at a rapid pace. There is a microbial world whose composition is coming into focus; there are industrial compounds whose effects are still being revealed; and there is a complex water environment which is changing at a remarkable pace in response to human activities and a shifting climate. These are the sorts of issues that expand boundaries in water research. They can also cause exceptional stresses to water and wastewater operations and infrastructure. The most important factor to thriving in such a volatile situation is communication, and it is with this premise in mind that WEF is expanding its commitment to peer-reviewed literature by publishing *Water Practice*.

Each year, WEF sponsors many specialty conferences in addition to WEFTEC®. These conferences encompass biosolids management, utility management, disinfection, collection

©2008 Water Environment Federation. All rights reserved.

systems, nutrient management, water reuse, and more. WEFTEC alone typically covers a wide range of topics related to all of the above on local, national, and global dimensions. Each year, hundreds of research- and practice-oriented papers are presented at these events. Yet, access to this cumulative knowledge has been largely limited to those who attend these conferences or those who might, somehow, avail themselves of the conference proceedings in some form. The principal thrust of this new journal is to capture as much of this new knowledge as possible and as practicable through a quality control process driven by peer review, and make it available to the entire environmental community. In the process, we hope that a product that combines the best environmental engineering and science practice from both the academic and practice-oriented professional communities will emerge and develop.

Cooperation between academic and professional communities will play an essential role in the development of new policies and the implementation of new technologies. Academics always have been comfortable with the notion of publication. A primary role of this new journal is to ensure that engineers, managers, and operators also have a voice in the literature. *Water Practice* should be seen as an incentive for professionals to formalize and share their work with the whole community. In the beginning, the journal will follow the circuit of WEF conferences, independently peer-reviewing and presenting the best work from these influential community symposia. Professionals from around the world, even those who are unable to attend will the conferences, will still be able to track the developments in the water industry.

Academics also will be able to follow the progress “on the ground,” a point not to be overlooked. The real world implementation of an approach developed in the lab is just as important as the original development. Moreover, feedback from operational studies can be useful in refocusing and refining future academic pursuits. Providing the practitioner a greater voice will ensure that both groups will have an easier time responding to one another. However, developing a venue for the practitioner is not to preclude practitioners and academics from publishing alongside one another; both will find themselves at home in this new journal.

The function of any journal is to document and record the field that it takes as its subject. Consequently, a journal is only as successful as the community who produces and reviews it. Despite changing demographics, ongoing input from the water community suggests that there is a clear desire to help promote this project. It is a fortunate time to work in the water industry and there is much work to be done. We introduce *Water Practice* as one instrument to facilitate the larger goal of progress in water science and expect it to serve as a durable, effectual addition to the water environment community.

I invite you to browse *Water Practice*. You will encounter a wealth of knowledge in the first issue of this journal. In the months and years to come, I look forward to this publication being one of the most widely cited publications in the water environment sector.

— Mohamed F. Dahab
2006–2007 WEF President

High School Student Turns Wastewater into Energy

©2008 Water Environment Federation. All rights reserved.

WEF HIGHLIGHTS

Features

May 2007, Vol. 44, No. 4

Ah, high school. Lockers, hall passes, proms, detentions, researching microbial fuel cells. For 16-year-old Sikander Porter-Gill, a sophomore from Gaithersburg High School in Maryland, researching fuel cells is indeed part of his high school routine. And this research is not just an after-school pastime — it earned him a spot at a national science fair, correspondence with a university professor, and the attention of a local wastewater plant.

Sikander Porter-Gill (right), a 16-year-old Maryland high school student, explains his experiment at the Montgomery County (Md.) Science Fair. Photo by Gary Cahn.

"In 8th grade, I was researching alternative fuels, and I came across microbial fuel cells. I was just fascinated that microorganisms could break down organic matter and produce electrons and protons, and those electrons could be captured and used for energy," said Porter-Gill.

Pretty heavy material for a high school student, but then, Porter-Gill's inquisitive and thoughtful mind is par for the course in his family — both of his parents are molecular biologists. His first experiment was in the second grade and involved an investigation into the colors of Kool-Aid, according to his mother, Patricia Porter-Gill. Pipettes — tubes used to hold and transport liquids in laboratory environments — were part of a game he would play with his parents as a child. Science and research were, literally, all around him.

This year, Porter-Gill conducted his experiment, "Improvement of a Single-Chamber Microbial Fuel Cell Utilizing a Novel Concept of a Hydrophobic Coating at the Cathode and the Incorporation of Graphite Granules at the Anode Electrode," and presented it at the Montgomery County (Md.) Science Fair for high school and middle school students. It won first place in the environmental science category. The latest experiment was based upon an earlier experiment he had begun in 2005 that involved building a two-chamber microbial fuel cell.

The microorganisms within wastewater eat the organic matter, Porter-Gill explained. A byproduct of the oxidization, or digestion, of this organic matter is electrons and protons.

The electrons will travel from the bacterium onto an anode electrode … made out of graphite — or carbon — and the protons are released into the wastewater and travel towards the cathode electrode, also made out of graphite, explained Porter-Gill. The electrons that leave the anode move on through a wire that's attached to it. That will create a current, and that wire is attached to the cathode. The protons that are released in the oxidation process, head toward the cathode moving through a membrane called a proton-conducting membrane — [it] allows the protons to pass through, but it won't allow the wastewater to pass through, he said. The electrons, protons and oxygen all meet on a platinum catalyst, forming water.

Porter-Gill was able to secure samples of wastewater from the Washington Suburban Sanitary Commission's (WSSC) Seneca wastewater plant in Germantown, Md. Sam Amad, Seneca/Damascus/Hyattstown superintendent

©2008 Water Environment Federation. All rights reserved.

for WSSC said the commission “has always been very supportive of scientific research and mentoring to science students in Prince Georges and Montgomery counties.”

Amad said the plant has supplied the student with 1-L wastewater samples as needed since 2005, when Porter-Gill first began experimenting with wastewater. “Since then we’ve been supporting him, providing him with samples, and running analysis on these samples for him.”

The plant analyzed samples for volatiles and solids to see if any digestion occurred, Amad explained. The samples also were examined for ammonia, phosphorus, and other chemicals. “Primarily he’s interested in the volatile content of the sample because part of the digestion or oxidation process is the reduction of volatiles and the release of electrons that would indicate there is energy release in the experiment,” Amad said.

In February, Porter-Gill had the opportunity to present his findings to some of the staff at Seneca.

“They were very excited that they helped me,” Porter-Gill said of the plant staff. “One of the other reasons I used wastewater is because you could clean up the wastewater and also produce power, which could be used to power a plant. It’s very expensive to power a wastewater treatment plant,” the student explained, adding that an average-sized plant needs about $1 million just for energy.

At Pennsylvania State University (University Park), Kappe Professor of Environmental Engineering Bruce Logan has been researching microbial fuel cells for years. In 2004, Logan was awarded the Paul L. Bishop award from the Water Environment Research Foundation (Alexandria, Va.) for his work on microbial fuel cells.

Logan said in March that such research is entering “a really great period.” Along with fellow researchers, Logan recently published two papers in *Environmental Science & Technology*, “which we think provide the critical knowledge of how to scale up these sorts of systems for real applications,” he said.

Porter-Gill, who contacted Logan originally in 2005 to discuss his experiment, was lauded as conducting work at an “advanced level,” Logan said. “He’s really come to understand it and grasp what’s going on and come up with some good ideas.”

In both of his experiments, Porter-Gill was particularly concerned with the membrane’s results. While conducting his first experiment, using a two-chamber microbial fuel cell, Porter-Gill said that he wanted to find an alternative to the commonly-used membrane, the Nafion-117.

“Most scientists use the Nafion-117 membrane, but it’s very expensive, and I wanted to find a better membrane that is less expensive and produces more power,” Porter-Gill explained. He found the IC-450 — about $0.10/cm^2 whereas the Nafion-117 was $1/cm^2.

“I found the IC-450 produced higher voltage readings, and so that was one of my major findings last year,” he said. “That was very exciting, and Dr. Logan was very excited about that, too.”

In his latest experiment using the single-chamber microbial fuel cell, however, he tested the membrane again but got the opposite results. “I found that the Nafion worked the best in the single chamber, not the IC-450, so that was kind of shocking.”

Another aspect of Porter-Gill’s experiment involved testing hydrophobic coatings.

©2008 Water Environment Federation. All rights reserved.

"As the microbial fuel cell operates, there's evaporation because the cathode is exposed directly to the air," he explained. "And since it's exposed directly to the air, the water or whatever liquid your substrates and microorganisms are in, that liquid will evaporate. When that happens, that circuit is broken. So what you want to do is find a hydrophobic coating that prevents or at least slows down that evaporation rate."

Next stop for Porter-Gill? The Intel International Science and Engineering Fair this month in Albuquerque, N.M. Porter-Gill won his spot at the fair for his first place win in the environmental sciences category at the Montgomery Area Science Fair for middle school and high school students. This is his second trip to the Intel Fair.

"We need to find an alternative fuel before our fossil fuels are depleted," Porter-Gill said.

— Meghan H. Oliver, WEF Highlights

Veggie Car Promotes Use of Alternative Fuels

Eric Spargimino with his 'Veggie Car' at the 2007 New York Water Environment Association's annual conference.

The Manhattan College (Riverdale, N.Y.) Veggie Car Project started as an independent study course for my fellow graduate student, Graham Sharkey, and I in the spring of 2006. To start, Graham and I raised nearly $7000 to purchase the car and equipment necessary for the conversion. Only a diesel-powered car would accept such a conversion. Over the past 18 months, the Veggie Car project has evolved from a conceptual idea to a fully functional 1974 Mercedes-Benz 240D that runs on used vegetable oil. The car has been taken all over the New York, Connecticut, and New Jersey region to promote environmental issues and the environmental engineering profession. Although the car does not represent necessarily new or groundbreaking technology, I have been able to use the car as a tool to increase awareness about growing environmental concerns and the use of alternative fuels.

Once the car was converted, a cheap source of waste vegetable oil had to be found. Just like many wastewater treatment plants, restaurants pay to have their fats, oils, and grease removed. With this in mind, I negotiated with the food services department at Manhattan College to pay me a small fee to remove their waste vegetable oil (WVO).The payment has been used to supplement some of the costs to maintain the car and conduct experiments on its efficiency. The oil is stored in a 55-gal (208-L) drum and is then filtered to remove large particles. Once filtered, the WVO is ready for use in the car.

To date, the Veggie Car has been driven more than 1000 mi (1609 km) on WVO. As the car has been used to promote environmental engineering and science, it has been analyzed and tested to determine how truly environmentally friendly the car is compared to a diesel run car. Every mile has been meticulously logged and the quality of the WVO exhaust has been tested and compared to that of diesel and different formulations of bio-diesel.

©2008 Water Environment Federation. All rights reserved.

Out of the factory, the un-modified Mercedes 240 D gets 33 mi/gal (53 km/L) on diesel. Running on WVO, the car now gets 34 mi/gal (55 km/L). The system that was installed in the car enables it to be run on either WVO or diesel simply by operating a switch on the dashboard. The only observable difference between running on WVO and diesel is a slight odor of French fries coming from the exhaust. Preliminary emissions testing showed that the WVO produced cleaner emissions than the diesel.

While doing research and testing with the WVO, I started making my own biodiesel, using the waste vegetable oil as his primary ingredient. Biodiesel does not require any conversion, and it can be used as fuel in any diesel engine. The biodiesel was comprised of WVO and methanol; however the methanol isn't free like the oil. The final cost for the biodiesel is estimated at $0.80/gal. Significantly better than $2 to $3 per gallon for petroleum-based diesel.

Emissions testing was done on the diesel, biodiesel, and WVO. The WVO results showed less carbon monoxide, sulfur oxides, nitrogen oxides, and particulate matter (PM) than diesel. Biodiesel results showed less PM and carbon monoxide than diesel, but the nitrogen oxide concentration from biodiesel was about 16% higher in these results. WVO is cheaper per gallon than diesel fuel and modified WVO and produces less harmful emissions.

In February the car was displayed at the annual New York Water Environment Association conference at the Marriott Marquis in New York City's Time Square alongside a poster describing the project and its test results. Conference-goers from every area of the environmental engineering industry stopped by to read about the car and discuss the project.

At the University Forum for student papers from the New York region, the Veggie Car presentation was awarded first place. There was not an empty seat to hear about the project. Throughout the 3-day conference many people inquired about their companies becoming sponsors.

The next goal is to raise approximately $7000 so the car can be driven from New York City to San Diego for the Water Environment Federation's (WEF; Alexandria, Va.) annual conference, WEFTEC®.07, in October. The money will cover further research, necessary improvements and maintenance to the car, and the expenses necessary to get to San Diego. I am currently in collaboration with WEF to get the car inside WEFTEC and present all my research.

Technology like this could be in the future for the generators that power many wastewater treatment plants around the country, potentially saving operators money on fuel and producing less harmful emissions. There are other technologies out there that may be more efficient — this is just one possibility that hopefully opens people's eyes to the growing need for alternative fuels. This whole project was made possible by the many sponsors I acquired, and it will continue to advance with the continued support of companies and people like them.

— Eric Spargimino, with advisor Dr. Robert Sharp

Student's Report on Lead Contamination Wins Annual ITT Award

Laura Mirviss of Potomac, Md., was announced as the winner of the ITT Award for Excellence in Student Water Journalism (IAESWJ) for her article, "Lead Astray: MCPS Failed to Enact Lead Plan." The award is given annually by ITT Corporation (White Plains, N.Y) to recognize aspiring journalists reporting on water-related environmental issues. The competition, according to an ITT news release, was designed to raise awareness and encourage exploration of global water challenges.

©2008 Water Environment Federation. All rights reserved.

Features

May 2007, Vol. 44, No. 4

Mirviss, a junior at Montgomery Blair High School (Silver Spring, Md.), wrote the story after an investigation into the public school system's failure to address lead contamination in her school's water supply. The article was originally published in the February issue of the Montgomery Blair High School newspaper, *Silver Chips*. In 2004, her high school, the largest in the Washington D.C., metropolitan area, was found to have 237 water sources with lead levels that exceeded the EPA mandated limit of 20 parts per billion (ppb). Through her reporting, she found that none of the protocol requirements within the 2004 remediation plan had been met at her school.

"Testing the water is only the first step. Resolving problems that arise from these tests is crucial," said Steve Loranger, chairman, president and chief executive officer of ITT.

In January, the District of Columbia Water and Sewage Authority (WASA) issued its most recent report on lead levels in area drinking supplies, noting that 90% of the samples had lead levels of 12 ppb or less, a level below U.S. Environment Protection Agency's (EPA) action level of 15 ppb. These regular reports are the proactive result of WASA discovering drinking supplies that tested above the federal limit for lead contamination. The results demonstrate that some action has been taken to improve drinking water quality in Washington.

Mirviss' article stood out for its timeliness, use of research and sources, and strong execution, according to ITT. Her piece was selected from a pool of articles submitted nationwide by a judging panel of top environmental, science, and water journalists and industry leaders. Judges included Dennis Dimick, executive editor of *National Geographic*; Michael Lemonick, senior writer for *Time* magazine; Melissa Jackson, editor of *Water Environment & Technology*; Miguel Llanos, environmental and conservation reporter for MSNBC.com; Dick Johns, director of the Quill and Scroll Society; and Ivan Oransky, deputy editor of *The Scientist*.

The ITT Award for Excellence in Student Water Journalism recognizes a high school student for outstanding reporting — in either print or broadcast media — on a water-related environmental issue. The award is administered in partnership with the Quill and Scroll Society (Iowa City, Iowa), an international organization founded in 1926 by a group of high school advisers for the purpose of encouraging and recognizing individual student achievement in journalism and scholastic publication. The Quill and Scroll Society has granted charters to more than 14,000 high schools in all 50 states and 44 other countries.

As part of the award, Mirviss and her faculty advisor will receive an expense-paid trip to Stockholm, Sweden, to attend and report from the 2007 Stockholm Water Symposium, which is part of the annual World Water Week, Aug. 11–17. Upon publication of an article resulting from her experience at World Water Week, Mirviss will be awarded a $1,000 scholarship from ITT.

Visit ITT for more information on the ITT Award for Excellence in Student Water Journalism.

Talking Water in Japan

強固な協力関係構築へ
アジア市場等で意見交換

WEF President-Elect Adam Zabinski (left) and his meeting with delegates from the Japan Sewage Works Association made the news in a Japanese newspaper. Click image for larger photo.

©2008 Water Environment Federation. All rights reserved.

WEF HIGHLIGHTS

Features

May 2007, Vol. 44, No. 4

A delegation of Water Environment Federation (WEF; Alexandria, Va.) officials: WEF President-Elect Adam Zabinski, WEF Executive Director, Bill Bertera, and director of International Programs, Ken Maynard, flew to Tokyo to meet with members of the Japan Sewage Works Association (JSWA) Feb. 14-16, 2007. Founded in 1964, JSWA works to promote programs for sound sewage systems and improving water quality.

WEF's long-standing history with JSWA has helped to maintain a solid, long-term relationship that is imperative to conducting business in Japan. Under the leadership of past WEF president, Dale Jacobson and the continuing efforts of Bill Bertera and staff, there has been steady communication between the organizations, resulting in many productive opportunities to work with the JSWA.

With Japanese press and photographers present, discussions began with Tojuki Annaka, director general of JSWA, and Takashi Etou, director general of the Sewerage and Wastewater Management Department in the Ministry of Land, Infrastructure, and Transport. The meeting covered a wide range of topics, including suggestions and inquiries regarding WEF's standards and practices; revision of the mutual partnering agreement; a means to foster more Japanese papers for selection and presentation at WEFTEC®; and WEF's role in coordinating water efforts in Asia.

Conference Scheduling

WEF's partnering agreement with JSWA and the European Water Association requires joint production of a specialty water conference every 3 years. The next conference, slated for 2008, is "Joint Sustainable Water Management in Response to 21st Century," to be held in Germany in conjunction with IFAT Munich. JSWA leadership wishes to shorten the time between conferences and asked for WEF's support for changing the time frame from 3 to 2 years. WEF leadership is looking into revising the agreement, a step that would be more consistent with WEF's Global Policy.

Japanese Technical Papers at WEFTEC

JSWA leadership discussed its review process for submitting papers for WEFTEC and expressed concern that they get proper consideration, as attendance is often predicated by paper selection and translation may be an issue. Review processes and schedules were discussed, as were additional opportunities for participation.

WEF's Role in East Asia

JSWA leadership requested that WEF take the lead in pulling together efforts in the Asian community, specifically China and Korea, as Japan has historically been sensitive to taking a leadership role in these regions. Follow up with WEF's Board will be needed to decide whether WEF should commit to such a leadership position, and, if so, how to go about it.

"JSWA is an efficiently functioning operation and has historically demonstrated interest in addressing global water issues," commented WEF President-Elect Adam Zabinski. "Working with this association and others that have shown such commitment is integral to the success of WEF's global program, and we should focus on those elements necessary to keep these relationships growing."

©2008 Water Environment Federation. All rights reserved.

Features
May 2007, Vol. 44, No. 4

— Adam Zabinski
WEF President-Elect

©2008 Water Environment Federation. All rights reserved.

News & Events
May 2007, Vol. 44, No. 4

News & Events

Water Environment Federation Releases New TMDL Tool Kit

In March, the Water Environment Federation (WEF; Alexandria, Va.) released a new tool kit for third-party Total Daily Maximum Loads (TMDLs). Developed under a cooperative agreement with U.S. Environmental Protection Agency, the Tool Kit is the final document in a series of outreach products developed by WEF's Third-Party TMDL Development Task Force to educate stakeholders and encourage greater third-party participation in TMDL development.

"There are several reasons why different groups are interested in doing third party TMDLs," said Libby Ford, member of WEF's Third Party TMDL Task Force. "Aside from the fact that permitting agencies simply don't have the time or the resources to do all these TMDLs in a timely manner, local players may have strong opinions on the project and may be more likely to develop TMDLs and allocations that are more workable in the short- and long-term."

A third-party TMDL involves an organization or group other than the lead water quality agency assuming responsibility for developing the TMDL document and supporting analysis. Often very familiar with local watershed issues, these groups — including watershed groups, local government, and landowners — can provide valuable insight into the TMDL process and help leverage state funds and the resources and expertise of other agencies and non-governmental organizations.

Third-party involvement in TMDL decisions may improve the level of stakeholder support, increase the likelihood of effective implementation of pollutant controls, and increase the degree of public understanding of TMDLs and water quality protection issues, according to a WEF news release.

"WEF hopes that the Tool Kit will encourage both state agencies and third parties to consider this innovative approach as a way to hasten the development and implementation of TMDLs across the country," said Task Force Chair Dick Schwer.

Intended for watershed management groups, industries, municipalities, utilities, local and state environmental regulators, planning agencies, universities, and other potential stakeholders, the Tool Kit is available for download. Printed copies can be obtained at no charge by requesting Stock Code P07001 from WEF Customer Service at (800) 666-0206 or pubs@wef.org.

Authors Sought to Update 'Wastewater Biology' Publications

The Water Environment Federation's (WEF; Alexandria, Va.) Technical Practice Committee is looking for individuals willing to serve as authors in its effort to update the Special Publications, *Wastewater Biology: The Life Processes and Wastewater Biology: The Habitats*, which were originally published in 1994 and 2001, respectively.

The effort to update these publications is being led by Christine de Barbadillo of Black & Veatch (Kansas City, Mo.). The two existing Special Publications will be combined into one comprehensive and practical guide for operations and technical staff who are involved in the biological aspects of wastewater treatment. To help ensure that these manuals are updated with the latest information and maintain a practical focus, authors with a strong background in either biology, wastewater treatment plant operations, or wastewater treatment process design are needed for the following chapters:

©2008 Water Environment Federation. All rights reserved.

News & Events
May 2007, Vol. 44, No. 4

1. Introduction
2. Enzymes
3. Nutrients
4. Heterotrophic and Autotrophic Bacteria
5. Phosphorus-Accumulating Organisms
6. Volatile Acids and Methanogenic Bacteria
7. Metabolic Processes
8. Heavy Metals
9. Organic Compounds
10. Bioaugmentation
11. Microbial Ecology
12. Activated Sludge Floc
13. Fixed-Growth Processes
14. Wastewater Stabilization Lagoons
15. Wetlands
16. Composting

Authors will be responsible for preparing detailed chapter outlines according to the proposed audience, purpose, and scope of the publication. Authors also will be responsible for preparing chapters for the publication and addressing or incorporating all technical review comments received. The publication development process outlined in the Technical Practice Committee Procedures Manual must be followed by all authors, and all deadlines must be met to ensure that the publication is developed on a 20-month schedule.

Those interested in participating as an author and who are able to work closely with other WEF volunteers, the Task Force Chair, and WEF staff, and who can dedicate their expertise and time to ensuring that a high-quality publication is developed according to the publication development schedule, should e-mail Lorna Ernst with a brief resume to lernst@wef.org, or fax it to (703) 836-1794. Please indicate your chapter of interest. Questions regarding the publication development procedures or the role of the author also may be e-mailed to lernst@wef.org.

Call for Abstracts: Membrane Technology 2008

The Water Environment Federation (WEF; Alexandria, Va.) specialty conference Membrane Technology 2008 will cover the latest research in the design and operation of membrane treatment systems for municipal and industrial wastewater treatment plants. The conference will take place Feb 3–6, 2008, in Atlanta. Abstracts are being solicited for various topics including research, operational, and design issues.

Membrane systems have long been operated in wastewater applications for effluent filtration. However, recent equipment developments, more stringent effluent limits, and market economics have led to membranes becoming more of a mainstream treatment technology. Membranes are being used to achieve very high quality effluent for sensitive receiving waters, for various water reuse applications, as a space-saving technology, and for on-site treatment. This conference will bring together environmental professionals to discuss and debate the current and emerging issues for membrane technology and applications in wastewater treatment, including membrane bioreactors, scavenger/scalping facilities, and water reuse via technologies such as low-pressure membranes, nanofiltration/reverse osmosis, and microfiltration/ultrafiltration. It will examine current research, design, and operational issues associated with these applications and technologies, and will provide valuable information for

©2008 Water Environment Federation. All rights reserved.

researchers, regulators, designers, technology developers, municipal agencies, industrial professionals, and others seeking to understand the full picture of the latest developments and practical experiences on this important topic.

For additional information and abstract submittal information, locate the Membranes 2008 Conference under Conferences & Training/Specialty Conferences. If you experience difficulties, contact the WEF conferences department at membranes2008@wef.org.

WEF Holds Congressional Briefing on Compounds of Emerging Concern

The Water Environment Federation (WEF; Alexandria, Va.) and the U.S. Geological Survey (USGS) co-sponsored a congressional briefing titled "Compounds of Emerging Concern: An Evolving Water Quality Issue." The March briefing was intended to inform the public and policy-makers about compounds of emerging concern (CECs) — currently known as compounds of potential concern (CPCs) but referred to at the briefing as CECs — the wide array of substances that offer improvements in industry, agriculture, medical treatment, and common household conveniences but may adversely impact the environment.

WEF, in cooperation with USGS, has organized regular national briefings on water quality since the first series in 1999. The briefings are intended to share important nationwide findings with congressional staff members and other interested parties.
Speakers included Orange County (California) Sanitation District Senior Scientist Jeff Armstrong, Dana Kolpin from the USGS Toxic Substances Hydrology Program, and Ed Ohanian from EPA's Office of Science and Technology. Rebecca West, WEF vice president and director of technical services for Spartanburg Sanitary Sewer District (S.C.), moderated the event. CEC issues, such as the sources, means of transport, occurrence in the water environment, links between exposure levels and ecological effects, and the need for more research and public education, were highlighted by the panel. More than 60 attendees were present.

To access copies of these presentations on the WEF Web site, click here.

—Maya Buchanan, WEF Highlights

WERF Seeks Nominations for Seventh Annual Paul L. Busch Award

The Water Environment Research Foundation's (WERF; Alexandria, Va.) Endowment for Innovation in Applied Water Quality Research is accepting nominations through June 1 for the 2007 Paul L. Busch Award. The award, which carries with it a $100,000 research grant, is presented each year to an individual or team performing scientific research or engineering work that breaks new ground to deliver products of vital importance to the water environment.

As one of the largest awards in the water quality industry, the Paul L. Busch Award enables researchers and engineers on the verge of making significant breakthroughs to continue their work, deliver products essential to the preservation of the environment, and share their knowledge with the next generation of water quality researchers.

The WERF Endowment was created to honor Paul L. Busch, a leader in the water quality community who challenged engineers and scientists to devise new technologies and solutions for addressing ongoing water quality issues.

©2008 Water Environment Federation. All rights reserved.

Unlike traditional grants, all award monies go directly to the researchers, freeing them of any overhead obligations to their university or employer, as well as stipulations regarding use. This significantly increases the spending power of the award and allows researchers to put funding where they need it most.

Since 2000, the Endowment has awarded $600,000 to further research on such groundbreaking issues as the fate of commercial nanomaterials, energy creation through microbial fuel cells, and biosensors in complex environments such as wastewater treatment plants.

Utilities, universities, environmental firms, and others conducting water quality research or engineering work are encouraged to apply. Applicants may self-nominate or be nominated by a third party.

Applications must be received by June 1. All submissions should be sent to the Water Environment Research Foundation, Paul L. Busch Award, 635 Slaters Lane, Suite 300, Alexandria, VA, 22314. More information on the Paul L. Busch Award can be found online.

©2008 Water Environment Federation. All rights reserved.