2015 VWEA Annual Report

INSIDE

• Too Much Air
• From Rainfall to Results
• 2015 Ingenuity Contest

Our Vision: The Virginia Water Environment Association (VWEA) will preserve and enhance Virginia’s Water Environment, now and for future generations.
Leadership Matters

Hazen and Sawyer is leading the industry in providing integrated reuse solutions for sustainable watershed management. **From regulatory assistance through design and operation,** we have developed solutions for utilizing reclaimed water options to reduce nutrient discharges, piloting indirect potable reuse for groundwater injection, and advancing the safety of direct potable reuse.

If you’re trusted to protect public health or the environment, **we can help.**
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Here’s the TrojanUVSigna™. It’s ideal for those municipalities wanting to upgrade their wastewater disinfection system or convert from chlorine. The system provides high UV output, high electrical efficiency and the lowest lamp count (thanks to TrojanUV Solo Lamp™ Technology). It’s also easy to operate and maintain. Quartz sleeves are automatically cleaned with ActiClean™. Lamp replacements are simple. And if you need to lift a bank from the channel, just activate the Automatic Raising Mechanism.

Learn more at trojanuv.com/signa.
### COVERAGE FEATURE

**2015 Annual Report**

2015 was another banner year for VWEA. The annual report includes information on noteworthy accomplishments, events, and financial information.

### VWEA FEATURES

**Too Much Air**

This article will discuss the effects of over-aeration, ways to better control your aeration systems to save energy and chemicals, and end with a few success stories.

**Service Authority Unveils Modern, Spacious New Lab**

Grubbs Environmental Center also features impressive educational exhibit.

### WEF FEATURES

**2015 Ingenuity Contest**

National Ingenuity Contest champs stun judges with amazing ideas.

**From Rainfall to Results**

A Water Environment Federation report details a new vision for meeting the challenges of stormwater management – and the resulting opportunities.

### DEPARTMENTS & ASSOCIATION NEWS

- President’s Corner
- Lab Practices Committee News
- Stockholm Junior Water Prize
- Government Affairs Committee
- Education Conference
- Student Activities
- WaterJAM 2016

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[**TrojanUV Signa™**](http://www.trojanuv.com/signa) is ideal for those municipalities wanting to upgrade their wastewater disinfection system or convert from chlorine. The system provides high UV output, high electrical efficiency and the lowest lamp count (thanks to TrojanUV Solo Lamp™ Technology). It’s also easy to operate and maintain. Quartz sleeves are automatically cleaned with ActiClean™. Lamp replacements are simple. And if you need to lift a bank from the channel, just activate the Automatic Raising Mechanism. Learn more at trojanuv.com/signa.
Aeromod - Municipal and industrial wastewater treatment, biological nutrient removal (Sekoxy), Clariflo clarifier

Ambio - Photoionisation odor control

Amwell - Bar screens, clarifiers, gears, drives, grit removal, paddle flocculants, rectangular collectors, rotary distributors, Duraflo stainless steel chains, scrub skimmers

Aquionics - Surface aerators, mechanical mixers, decanters, floatables control

BDP Industries - Belt filter presses, screw presses, gravity belt thickeners, drum thickeners

Contiental Blower - Multistage centrifugal blowers

Clarifier Cleanseew - Clarifier degrae control systems

Ebara Pumps - Water and wastewater pumps, submersibles, dry pit submersibles, self primers, grinders, end suction centrifugal, multistage, dewatering, sump, stainless, and axial flow pumps.

Excelsior Blower - Engineered PD blower packages Gardner Denver and Sutordel Blowers

Fibracast - Hollow-fibre sheet membranes, and MBR systems.

Flowmotion Systems - Peristaltic pumps, flow, level, and chemical metering equipment.

Flucysne Corp. - ISAM SBR, jet aeration, Hydro-Gr, tertiary filtration

Jesco America Corp. - Chemical feed systems and metering pumps.

Veolia Water (John Meunier) - Headworks, grit, and CSO/stormwater controls, bar screens, fine screens, spiral screens, drum screens, screenings compactors, Media grit removal, package septic and headworks equipment

Keystone Conveyor - Belt and screw conveyors

Kruger - AnoxKaldnes IFAS and MBR, ANITAmox Annamox deammonification, BOSTYR Biological Aerated Filter, NEOSEP MBR, QASIS high purity oxygen systems, ACTIFLO ballasted clarification, Hydrotech Deoxygen, Drum filter, Odo Watch/Odo Sulf

Lobepro - Rotary lobe pumps

Mixtec North America - Mixers and Flocculators for water and wastewater treatment

PCM - Progressive cavity pumps

Polydyne - Dry and emulsion polymers, Polymer feed systems.

Prime Solutions - Rotary Press, dewatering systems

Pulsair - Mega-Bubble non-aerating mix systems For water storage tanks and Wcter/WW Treatment

PX Pumps - Submersible and dry pit submersible Pumps.

Stamford Scientific - Fine/coarse bubble diffusers, membrane diffusers, ceramic retrofit, fixed or retrievable grids

Tenco Hydro - Dissolved air flotation lamella clarifiers, grease/concentrators, oil/water separators.

Thermal Process Systems - Class A thermophilic biosolids ATAD systems, mesophilic aerobic digestion, sidestream ammonia treatment

Ultraflo - Aluminum geodesic domes and heavy-duty flat covers.

USEMCO - Package water/booster stations & controls, control systems

Wigen - Drinking water treatment (NF/MF/UF/RO) Pressure filters, ion exchange equipment, arsenic removal systems.

Wilo EMU - Water and Wastewater Pumps, Submersible, Drypits, Grinders, Sump, Suction, Split case horizontal.

WTP - Headworks screenings and grit removal

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**Mailing Address:**
PO Box 1596
Glen Allen, VA 23050

**Central/Eastern Virginia:**
Matt Winschel, PE
(804) 545-3115
mwinschel@winenv.com

**Western Virginia:**
Gary Rookstool, PE
(540) 632-0111
gary.rookstool@winenv.com

**Northern/Central Virginia:**
Tripp Waymack
(804) 613-8533
tripp.waymack@winenv.com

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Another Successful Year

“If everyone is moving forward together, then success takes care of itself”

– Henry Ford

As we start 2016, it is important to take a moment and reflect on the many successes of VWEA, our committees, and our membership in 2015. Mr. Ford’s quote is very representative of our organization – we are comprised of lots of folks taking little and big steps in the right direction. As a result, 2015 was another successful year for the Virginia Water Environment Association.

We transitioned to a new Association Management System (AMS) in 2015. Perhaps you’ve noticed our new streamlined website that went live this summer, as it is the most visible component of the transition. Behind the scenes, the new AMS provides a platform for managing memberships, event management, and membership communications. The AMS will be an important tool in rolling out our State Only Membership program 2016. It also eliminates the need for multiple vendors and puts all of our management tools in one location. The estimated savings is over $8000/year. I encourage you to flip over to our 2015 Annual Report, included in this Conduit, to review more of our 2015 successes.

Continuing our important relationship with Virginia Section of the American Water Works Association (VA AWWA), we held our second joint Leadership Retreat on October 28, 2015 at Williamsburg’s Great Wolf Lodge. The full-day training event drew over 70 participants from both VWEA’s and VA AWWA’s leadership. In addition to sharing budgeting and planning information with committees and membership, this annual event provides both boards valuable feedback on how we are doing and the overall health and direction of our respective organizations. To further this important dialog, our Strategic Planning Committee will be releasing a membership survey in late winter to request additional feedback from our committees. I ask you to take a moment and complete this survey.

Calendar year 2015 was another banner year for our technical and networking events. Our committees hosted five (5) specialty conferences as well as a record-setting WaterJAM, which was recognized as a Virginia Green Event. 2016 promises to be another great year for strong technical events to benefit our membership. Many committees are well under way in planning events, with the kick-off technical event being the Industrial Waste and Pretreatment conference to be held March 7-8 in Charlottesville. This event will be followed by the Stormwater Conference on April 27 (which will also host our annual Student Design Competition for the first time) and the annual Education Conference May 12.

I hope you are as excited about 2016 as I am. To all those who are volunteering on committees to make all of these events happen, thank you for your tireless efforts. If you are not involved in one of these committees but would like to be more involved, please contact me (jmcgettigan@greeley-hansen.com), our Association Manager, Kathy Rabalais (admin@vwea.org), or any other committee member. I continue to be humbled by the opportunity to serve as your President and I look forward to serving you in 2016. As we continue to move forward together, 2016 will be another successful year for VWEA.
Our Mission:

- Share and exchange water quality information and expertise among members, industry professionals, and the public.
- Deliver high-quality educational services and products to water quality professionals and colleagues.
- Promote and advance the water quality industry through effective communication strategies.
- Support the application of sound science.
- Advance the knowledge and understanding of Virginia’s water environment.
What our members are saying

What is the biggest benefit of membership?

“Networking! I’ve established so many great professional relationships through my involvement with VWEA and VA AWWA.”
– Ben Custalow, Greeley and Hansen

“Getting to know people of similar work obligations, learning about the problems and successes across the Commonwealth and establishing lifelong professional friendships.”
– Dave Morris, Newport News

“Development of relationships and building up the profession.”
– Andy Landrum, Whitman, Requardt and Associates

What do you enjoy the most about volunteering with VWEA?

“Meeting other water professionals and working together to provide worthwhile opportunities for education and networking for our members.”
– Lora Reed, HRSD

“The people!”
– Ryan Clark, Kimley Horn & Associates

“The ability to contribute my time, giveback to the water industry, share best practices and network with like-minded professionals.”
– Supriya Murthy, ARCADIS

Members at VWEA events. Make the most out of your membership…get engaged in VWEA in 2016!
2015 Annual Report

2015 Accomplishments

2015 LUNCH & LEARNS, SEMINARS & WEBINARS
7 Lunch & Learns on topics of regional interest
- Hearing Protection Workshop
- Safety & Security Seminar
- Trench and Excavation Safety Seminar*
- Water Reuse Workshop*
- Envision® Sustainability Rating System Webinar
- Construction Management at Risk in Virginia Webinar*
- SSI MACT Training (in partnership with WEF)

NETWORKING AND COMMUNITY SERVICE
VWEA members participated in four service projects in 2015.
VWEA provided 21 networking opportunities in 2015.
Members participated in golf tournaments, facility tours, after hour socials and more.

2015 MEMBERSHIP
- Executive Member
- Life Member
- Professional Member
- PWO Member
- Retired Member
- Student Member
- Young Professional

TOTAL: 1509

2015 SCHOLARSHIPS
- $2,000 - Sonny Roden Memorial Graduate
- $2,000 - Undergraduate
- $2,367 - Wastewater Operator Short School
- $4,000 - Rising Freshman (2 awards)

Total Awarded* = $10,367
Scholarship Fund = $161,591

2015 SPECIALTY CONFERENCES
- IW&P – 137 attendees
- Stormwater – 142 attendees
- Education – 195 attendees
- Operations* – 142 attendees
- Lab Practices* – 199 attendees

Attendance at VWEA education events increased by 14% in 2015!

* Indicates Joint Event with VA AWWA
2015 Accomplishments

2015 DONATIONS/AWARDS
Water For People
Regional Science Fair Awards
Stockholm Junior Water Prize Travel
Stockholm Junior Water Prize Sponsorship
Water Environment Research Foundation
WaterJAM Student Paper Awards
Student Design Competition Awards
Student Design Team Travel to WEFTEC
WaterJAM Wastewater Poster Contest
Ops Challenge Teams Travel to WEFTEC

Total Provided: $23,875.00

WATERJAM
2015 was another record year at the Joint Annual Meeting with VA AWWA:
• **1,489 Attendees**, a new record!
• **144 First-time attendees**
• **190 Exhibit booths** showcasing the latest technology
• **5 Workshops** in conjunction with the conference
• Recognized as a Virginia Green Event

VWEA’s Operations Challenge Celebrated 25 years in 2015
Terminal Velocity Ops Challenge Team retired from competition after five straight National Championships.

YP Poster Contest at WaterJAM

WEFMAX
VWEA hosted a very successful WEFMAX in Virginia Beach in April 2015. Sixty-five WEF Member Association Leaders from across the country gathered to exchange ideas and obtain the latest news from WEF.

Chris Tabor receiving the Arthur Sidney Bedell Award.
2015 Financial Information

2015 REVENUES (unaudited)
- Sponsor Donations 14%
- Ad Sales 2%
- Exhibitor Fees 7%
- Misc Income 2%
- Registration Fees 65%
- Misc

2015 EXPENSES (unaudited)
- Contract Services 28%
- Operating 9%
- Awards, Scholarships and Donations 14%
- Program 42%
- Speaker/Sponsor Expenses 3%
- Misc 4%

Total = $335,717.96

BALANCE SHEET
As of December 28, 2015

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<tr>
<td>TOTAL ASSETS</td>
<td>$572,866.95</td>
</tr>
</tbody>
</table>

| LIABILITIES AND EQUITY        |               |
| Total Liabilities             | $0.00         |
| Equity                        |               |
| Opening Bal Equity            | 75,710.64     |
| Retained Earnings             | 454,948.16    |
| Net Income                    | 42,208.15     |
| Total Equity                  | $572,866.95   |
| TOTAL LIABILITIES AND EQUITY  | $572,866.95   |
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SEMINAR DATE:
Wednesday April 27, 2016 at the Westin Richmond
7:45 a.m.-5:30 p.m.

PRICING:
$130 early/$150 members; $170 early/$190 non-members,
Exhibitors $375 (includes 2 tickets).

SESSIONS FEATURING:
MS4 Program Management-Balancing Funding & Compliance;
TMDL Compliance-Lessons Learned; Public-Private Partnerships; as well as Asset Management & Renewal.

www.vwea.org/event/2016stormwater

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Cary Johnson, water operations mgr., Rochester Public Utilities, Rochester, Minnesota

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Tony Linder, WTP division chief, Dept. of Water Supply, County of Maui, Hawaii

WASTEWATER MIXING/BASINS AND LAGOONS
“We reduced our nitrate levels and lowered our energy costs.”
John Willis, wastewater plant supervisor, Ventura, California

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“Don’t let wipes clog your pumps.”
Curtis Rauch, foreman, Sewer Dept., Cromwell, Connecticut

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“We reduced WTP operating costs caused by algae blooms.”
James A. Brown, water production manager, Newton County, Georgia

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Four inventors received awards from the 2015 Ingenuity Contest at WEFTEC® 2015 in Chicago. This marks the fourth year that the competition has recognized fixes that tackle a persistent problem with nothing more than the materials at hand and a hearty dose of ingenuity.

Captains of the Inspection Squadron
When the City of Casper, Wyo., worried about the condition of the pipes within its water resource recovery facility, the wastewater crew found a floating solution. The crew – Lane Christensen, David Ferguson, Matt Wilhelms, Jared Winzenried, Brody Allen, and James Soller – pieced together some foam-board, a piece of wood, rope, and fasteners to create a raft for its collection system camera. The crew nicknamed the contraption The U.S.S. WWTP.

The crew needed a way to guide the camera through the pipe safely and ensure that it could be recovered at the downstream manhole. To accomplish this, the crew first dropped an inflatable ball attached to several hundred feet of twine into the pipe and tied the twine to the upstream manhole. When the ball made its way to the downstream manhole, the crew retrieved it with a hook. This left a long stretch of twine running the length of the pipe between the manholes.

“Four inventors received awards from the 2015 Ingenuity Contest at WEFTEC® 2015 in Chicago.”
Building a precision cutting tool from salvaged parts enables the Village Creek Water Reclamation Facility (Fort Worth, Texas) to make the custom pieces it needs for repairs. (Credit: Village Creek Water Reclamation Facility)

Jacksonville’s (Ark.) smoke testing display helps customers understand the inspection process. (Credit: Jacksonville Wastewater Utility)

Next, they tied the U.S.S WWTP to the twine at the upstream manhole, gently lowered it into the pipe, and then pulled at a steady rate from the downstream manhole. Upon arrival at the downstream manhole, the U.S.S. WWTP was removed using the long-handled hook.

The video collected from the camera was invaluable. It showed areas of severe corrosion and pipe collapse that must be repaired in the near future.

Valedictorians of the school of hard knocks
During a March 2011 thunderstorm, operators at the Hill Canyon Wastewater Treatment Plant (Thousand Oaks, Calif.) noticed the pipe from secondary clarifiers to emergency retention basins was not flowing fully. After the storm, the crew – Mark Capron, Mike Mantor, and Robert Richardson – determined that nothing but air was blocking the pipe, but it remained less than half full.

They realized that the high point of the base of the 875-mm (36-in.) diameter pipeline was too high. This configuration led to empty space within the headspace of the pipe.

Restoring the pipe’s full 189-m³/d (50-mgd) flow required getting the air out at the high point. Instead of a major construction project to lower the high point of pipe to prevent the air blockage, the crew installed a $500 vacuum pump to the exiting air release valve.

When the pipe is full of air, one vacuum pump requires a full day to remove all the air. After the air is removed, the pumps run less than 100 hours per year in sub-second bursts. The crew also decided to leave the air release valve itself in place to prevent the vacuum pump from pulling in water.

With the air removed, the line regained its full capacity.

Master of the machines
Vikas Bhaskaran, senior skilled trade technician at the Village Creek Water Reclamation Facility (Fort Worth, Texas), builds tools to aid his fellow mechanics. He created a plasma and oxy-acetylene cutting machine using parts salvaged from old traveling bridge filters. The machine cuts metal precisely to enable operators to fabricate metal pieces for custom repairs. Bhaskaran also created a ratchet to help remove and attach the stator from a screw pumps more safely. The ratchet enables a single person to do a task that, before, took five people.
Dean of Public Education
The Jacksonville (Ark.) Wastewater Utility wanted to educate customers about how line inspections work. To achieve this, operators, led by Walton J. Summers II, built a display that includes a replica manhole, lateral, and cleanout cap. Part of the display gives an underground view of the lateral, which is cracked and wrapped with tree roots. Operators can show residents how smoke added to the manhole seeps up out of the grass – green outdoor carpet – and signals the need to televise the line to produce a defect drawing.

Share your ingenious fixes
The WEFTEC Ingenuity Contest will return in 2016 to honor more smart fixes and quick repairs. So, throw together a roughly one-page description of the problem you faced and the fix you found. If your invention or idea can be photographed, snap a picture.

The submission window is open now until May 26, 2016. See the full entry details at www.weftec.org/ingenuity. Author Steve Spicer can be reached at SSpicer@wef.org.

Steve Spicer
Managing Editor of Water Environment & Technology Magazine

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The Laboratory Practice Committee (LPC) had a very successful year in 2015. We hosted the Good Laboratory Practice Conference and Workshops in Charlottesville on July 27-28 and a VWEA/VA AWWA WaterJAM workshop on September 14 at the Virginia Beach Convention Center.

We have already started working on plans for the Good Laboratory Practice Conference and Workshops being held on July 25-26, 2016. We invite members from the water, wastewater, and environmental laboratory community to join the LPC. Meeting dates for 2016 are as follows:

- March 16
- April 13
- June 22
- October 12

Lunch will be provided at the January meeting and will be sponsored by Juliann Poff of Qualtrax. Juliann will also be presenting a software program that can assist labs in tracking QC data to avoid non-conformances.

Meetings start at 10:00 a.m. and end at 12:00 noon, followed by lunch. Meetings are held at the Henrico Water Reclamation Facility (9101 WRVA Road, Henrico, VA 23231). For further information, please contact Pete De Lisle at pfd@coastalbio.com.
The Laboratory Practice Committee hereby invites the submission of abstracts for papers and workshops for the 22nd Annual GLP Conference. The conference will be held in Charlottesville, Virginia on July 25-26, 2016 at the Omni Charlottesville Hotel. The conference is designed to provide the latest information on major issues such as analytical method updates and development, laboratory accreditation, regulatory updates (particularly those impacting laboratory staff and utilities), emerging technologies and analytical instrumentation. This is a great opportunity to present new information related to water and wastewater issues. Workshops will be held on the 25th and technical presentations will be given on the 26th.

We encourage you to submit an abstract and participate in discussions that are important to the advancement of our laboratory professionals. Conference topics may include but are not limited to the following:

- Natural water monitoring
- Environmental research
- Treatment plant monitoring
- Drinking water distribution
- Bacteriological techniques
- Drinking water disinfection
- Laboratory accreditation
- Laboratory management
- Security issues
- Water and wastewater analytical methods
- LIMS, laboratory software applications
- Laboratory practices
- Laboratory ethics
- QA/QC issues
- Regulatory issues
- Emerging instrumental technology
- Analytical instrument troubleshooting
- Nutrient screening methods

**ABSTRACT AND PAPER SUBMISSIONS FOR TECHNICAL PRESENTATION:**
Submit a 300-word or less abstract that lists the title, author(s), affiliation, phone number, and email address. Morning session presentations are 40 minutes. Afternoon technical session presentations are 25 minutes with followed by a five-minute Q&A period.

**WORKSHOP PROPOSAL SUBMISSION:**
Submit a one-page workshop outline that includes information on the subject matter and name(s), affiliation, email address, and phone number of workshop instructors. Workshops are three-hour sessions.

**SUBMISSION DEADLINE FOR PRESENTATIONS AND WORKSHOPS IS JUNE 1, 2016.**

Please submit your technical presentations and workshop proposals to or for further information contact: Alicia Connelly Lab Manager, Newport News Shipbuilding Alicia.A.Connelly@hii-nns.com
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Stockholm Junior Water Prize 2016

For many years Stockholm Junior Water Prize (SJWP) has congregated the nation’s most imaginative young minds for an outstanding competition in water-related science projects. A high school student (grade 9-12) with a science project aimed at enhancing the quality of life through the improvement of water quality, water resource management, or water and watershed treatment is qualified to participate in SJWP.

Every year from February to April, Virginia Water Environment Association (VWEA) volunteers serve as judges for SJWP at regional high school science fairs all over the Commonwealth. The two top students receive monetary awards and are highly encouraged to continue their research.

Please contact the SJWP State Organizer Nina Andgren (nina.andgren@uosa.org or 703-227-0259) if you (or someone you know) are interested in judging at any of these fairs.

We are looking for volunteers to serve as judges at the upcoming science fairs listed below.

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<thead>
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<th>DATE</th>
<th>CITY</th>
<th>NAME OF FAIR</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
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<td>March 12</td>
<td>Arlington</td>
<td>Northern Virginia Science and Engineering Fair</td>
<td>Wakefield High School</td>
</tr>
<tr>
<td>March 5</td>
<td>Radford</td>
<td>Blue Ridge Highlands Regional Science Fair</td>
<td>Radford University - Peters Gym</td>
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<tr>
<td>March</td>
<td>Lynchburg</td>
<td>Central Virginia Regional Science Fair</td>
<td>Merritt Hall, Central Virginia Community College</td>
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<td>March</td>
<td>Harrisonburg</td>
<td>Shenandoah Valley Regional Science Fair</td>
<td>James Madison University</td>
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<tr>
<td>March 22, 23, or 24</td>
<td>Charlottesville</td>
<td>Virginia Piedmont Regional Science Fair</td>
<td>UVA John Paul Jones Arena</td>
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<tr>
<td>March 12</td>
<td>Fairfax</td>
<td>Fairfax County Area Regional Science and Engineering Fair</td>
<td>Robinson Secondary School</td>
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<tr>
<td>March 12</td>
<td>Manassas</td>
<td>Prince William-Manassas Regional Science Fair</td>
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<td>Norfolk</td>
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<td>February/March</td>
<td>Roanoke</td>
<td>Western Virginia Regional Science Fair</td>
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<td>Richmond</td>
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LUNCH & LEARN

Topic: “Alternative Onsite Wastewater Systems: The Sustainable Option”
Speaker: Marcia Degen, Ph.D., P.E.
Location: New River Valley Business Center
Radford, VA
Date/Time: March 17, 2016, 11 a.m. - 2 p.m.
CPEs: 2.0 Contact Hours

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Wastewater treatment plant operators are saving energy, using fewer chemicals, and gaining better control of their activated sludge process by optimizing their aeration systems, including aerobic digestion.

This article will discuss the effects of over-aeration, ways to better control your aeration systems to save energy and chemicals, and end with a few success stories.

The aeration zones in the activated sludge process are one of the most critical processes in a wastewater treatment plant (WWTP). For purposes of this discussion, the term “activated sludge” is the biological components of the WWTP including secondary treatment and nitrogen and phosphorus removal. These zones create an environment full of dissolved oxygen that promotes growth of certain organisms that break down the organics (secondary treatment) and ammonia (nitrification). The oxygen is needed for these organisms to breathe and reproduce, just like us humans.

The question is: is it possible to over-aerate your activated sludge process? There are many operators and wastewater professionals that would say, “No. The more the better!” This is a conservative and very common answer. But the real answer is: “yes,” in many cases you can provide more oxygen than truly needed.

**TOO MUCH IS NOT GOOD**
Over-aeration is wasteful from an energy efficiency standpoint and it can negatively affect process performance.

Energy is one of the highest costs at a WWTP and aeration is usually the number one energy consumer. That being said, this is a great area to achieve energy and cost savings with the customers and the local communities benefitting.

Most WWTPs operate their aeration zones and aerobic digesters at 1-3 mg/l dissolved oxygen (DO). Anything over 3 mg/l may be a waste of DO and energy. One may think that aerating at 1 or 2 mg/l over the DO set point is not much of a waste. Actually, the energy (horsepower) required for that incremental change in DO is significant.

Over-aeration can also cause operational problems. Operators love a mixed liquor that settles well. The mixed liquor settles well when the microorganisms (bugs) in the aeration tank excrete a sticky film around their cells as their food gets depleted. The aeration system keeps the bugs in suspension, allows them to collide with each other, and ultimately stick together, like Velcro®, forming a floc. The floc exhibits a snowball effect and, by the time it reaches the secondary clarifier, it’s denser than water and settles. Over-aeration can break apart this floc, which should be

**“Minimum acceptable DO (dissolved oxygen) concentration should range between 2 and 3 mg/l (for nitrification). Nitrification appears to be inhibited when the oxygen concentration is lower than 1 mg/l.”**

Operation of Municipal Wastewater Treatment Plants, WEF MOP 11, p507
The Conduit – Winter 2016

Modified Ludzack-Ettinger Process

Myth: “The bugs need air 24/7.” This is one of the common misconceptions regarding how much air is needed. Here are a few quick points that contradict the above myth.

- DO may not deplete immediately after the air is shut off. This will depend on the time of day (organic loading), temperature, and type of diffusers. It may take a half hour or more for the DO to be reduced to zero.

- Oxygen can be found in three main forms in a WWTP: dissolved oxygen (O₂), nitrite/nitrate ions (NO₂⁻, NO₃⁻), and sulfate ions (SO₄²⁻). After you shut the air off and the DO (free oxygen) gets close to zero, there still may be plenty of chemically bound oxygen (i.e., NO₃⁻) available for BOD removal (denitrification).

Another myth: the mixed liquor suspended solids (MLSS) will not re-suspend if the aeration system is shut down. All scenarios are case specific, but there are many facilities that are able to re-suspend the solids even if the air has been off for an hour or so. TIP: In general, the required DO for solids processing is 0.5 mg/l in the floc and 2.0 mg/l in the mixed liquor.

Can something be done at my plant? Can this help me save energy, money, and protect the environment?

Many operators enjoy challenging themselves to find new and better ways to do things at their WWTP. They take pride in their creative solutions. If this sounds like YOU, fine-tuning your aeration process may be another opportunity for you to make process improvements and save money.

Aeration design and control can get very complex, but it can also be done in a low tech, energy efficient manner. Let’s start with the basics.

MONITOR YOUR DO

Probably the easiest way to monitor DO is with a basic handheld DO meter with a data logging function. Set the probe in the mixed liquor for as long as the data logger will collect data (one reading per half hour, 48 readings per day as a starting point). Plot the DO for a week or so on a chart. If the DO is over or under your ideal set point, reprogram the controls to increase or decrease aeration, or even turn off the aeration at a high DO set point for a certain amount of time. Remember: where you put the probe in the aeration tank matters. Think about the ideal set point for the location you are measuring to get the desired treatment. Also, feel free to contact your consulting engineer and ask them what your target DO set points should be.

If you nitrify why not denitrify?
What kind of question is this? Why would I want to do more work?

The short answer is that adding a denitrification step may save the treatment plant money on energy and chemicals and provide an added benefit to the environment.

The nitrification process consumes a lot of energy through aeration and also consumes alkalinity.

What’s needed to nitrify?
- a. DO Range > 2 mg/l
- b. Oxidation Reduction Potential (ORP) Range +100mv to +350mv
- c. Approximately 4.57 pounds of oxygen consumed per pound of ammonia nitrified.
- d. Approximately 7.14 pounds of alkalinity consumed per pound of ammonia nitrified.
- e. Time

On the other hand, denitrification occurs under anoxic conditions. By decreasing the DO, nitrate is further reduced to nitrogen gas.

Important points regarding denitrification:
- a. DO Range < 0.2 mg/l
- b. ORP Range +50mv to -50mv
- c. Approximately 2.86 pounds of oxygen is released per pound of nitrate denitrified
- d. Approximately 3.57 pounds of alkalinity is released per pound of nitrate denitrified

Denitrification is often just thought of as a method to decrease effluent nitrogen levels, but it’s also a great way to gain back some of the oxygen and alkalinity consumed in the nitrification process.

SUCCESS STORIES

As stated earlier, many operators enjoy challenging themselves to find new and better ways to do things at their WWTP. Here are a few real-life examples.
The operator of the Hamilton Township WWTP, in Ludlow, PA went to an energy efficiency training conducted by the U.S. Environmental Protection Agency, Region 3 (EPA) and Pennsylvania Department of Environmental Protection (PADEP). He applied information shared during the course.

This WWTP is a 0.07 mgd activated sludge process with ammonia removal. The operator chose to work on reducing his DO from 6-9 mg/l to 2 mg/l. The first thing he did was cut back the blower run time of the two 15 horsepower (hp) blowers from 24 hours per day to 12 hours per day by alternating the two blowers ON and OFF. Over time he realized that he could cut the blower ON time down to around nine hours per day while still maintaining compliance with discharge limitations.

The 2013 electric bill dropped almost 40% from approximately $13,000/year to approximately $8,000/year.

Exeter Township Authority

A second success story comes from the Exeter Township Authority in Exeter, PA. The Exeter WWTP is a 7.1 mgd activated sludge process with ammonia removal. The operations’ manager attended the same energy efficiency course conducted by EPA and PADEP. Being a larger WWTP than Hamilton Township, the aeration system was a bit more complex. The operations manager knew that during the warm, summer months the aeration tank detention time was more than enough to achieve compliance (remove ammonia). He knew that if he was able to denitrify in the front end of the aeration tank, by closing some air supply valves, he would bring back alkalinity, reducing chemical costs, save energy, and money.

The aeration system consisted of a multi-stage centrifugal blower with an automated inlet valve that was controlled by the header pressure. By closing the aeration drop leg ball valves to about 90% (to allow some air for mixing) in the first third of the tank, a successful anoxic zone was created. Closing off one-third of the diffusers raises the air header pressure thereby automatically closing the blower inlet valve somewhat to keep the header pressure constant. A partially closed inlet valve allows less air than if it was 100% open, reducing the load or energy required by the blower.

EPA and PADEP put a power logger on the blower during the cold season (100% aerated tank) and warm season (~66% aerated, ~34% anoxic tank) to record the actual savings. The horsepower, or energy use, was cut almost in half. The WWTP saved approximately $5,000 per month from the
Exeter realized that this was an opportunity for further savings so they contacted their electrical engineers and are currently investing $100,000 to upgrade their aeration system and controls to automated DO control and “Most Open Valve” control technology.

**Borough of Pottstown**

The Borough of Pottstown WWTP is a 12.85 mgd activated sludge process with ammonia removal. The borough has been making investments in energy efficiency for several years.

In 2008 the borough replaced the aerobic digester coarse bubble diffusers with fine bubble diffusers (from 660 diffusers to 440 diffusers). By cutting the need for two 250 horsepower blowers in half, they saved approximately $72,000/year; with a payback of approximately four months.

In 2010, new positive displacement blowers with new variable frequency drive (VFD) controls were installed in the aerobic digester. The new blowers were much more efficient and could supply the necessary air at a lower horsepower. Due to the additional aeration capacity, the WWTP has been able to increase the hauled in waste acceptance and increase their revenue. The savings realized is approximately $36,000/year.

The Borough also installed a new utility water system that is controlled by a VFD saving them approximately $12,000/year and installed capacitors on major equipment saving them an additional $12,000/year.

The most recent investment that proved to save a tremendous amount of electricity and chemicals was a $200 timer for the activated sludge blower. The WWTP electrician wired the timer and set the ON cycle for four hours and the OFF cycle for four hours, reducing the energy used by half. This allowed for the creation of an anoxic environment and denitrification to occur.

The WWTP significantly cut the energy use (saving approximately $10,000/year), lime and soda ash addition for pH and alkalinity adjustment is not needed (saving approximately $50,000/year), and, to top it off, the mixed liquor settling characteristics improved. The benefits from this simple project will keep paying back for years.

**DON’T FORGET ABOUT THE AEROBIC DIGESTERS**

The main function of aerobic digestion is to reduce the amount of solids (bugs) to be disposed. Aerobic digesters also act as a sludge holding tank. To reduce the solids in the digester, the operator must treat it similarly to the mainstream activated sludge process:
maintain approximately 1-2 mg/l DO and the proper pH and alkalinity. Just like the activated sludge process the bugs in the aerobic digester prefer a certain environment to thrive.

Aerobic digesters often accumulate a large amount of nitrate. As the bugs consume each other (endogenous respiration) there is a release of nitrogen compounds. These nitrogen compounds are oxidized, nitrate is formed and acid is released (alkalinity consumed). This represents another opportunity for ON/OFF aeration to reduce the nitrate and maintain alkalinity levels.

Halstead Great Bend Joint Sewer Authority, Great Bend, PA
Halstead Great Bend Joint Sewer Authority (HGBJSA) recently upgraded from a conventional secondary WWTP to a 4 Stage Bardenpho process with chemical phosphorus removal and denitrification filters. HGBJMA received technical assistance from the PADEP and the EPA Region 3 operator outreach teams.

The EPA team suggested the operator test the digester decant for nitrate-nitrogen (NO₃-N) during the summer of 2014. The NO₃-N levels were over 80 mg/l. The team then suggested the operator experiment with ON/OFF aeration as opposed to 24hr/day. The operator set the blowers to run 2hr ON and 2hr OFF. This successful project reduced the level of NO₃-N discharged back into the main process from 82.6 mg/l NO₃-N to 0.18mg/l NO₃-N, and saved a significant amount of energy (approximately 54,000 kilowatt hours/yr, a savings of $4,300/yr).

The benefits are a reduction in concentrated nitrate in the supernatant, the addition of alkalinity back into the system, and energy savings.

MONITOR THE CHANGES YOU MAKE
With any change to the process you always want to involve your staff, the regulatory agency, and your consulting engineer. Remember to make small, incremental changes and wait for the results.

It’s important to collect data including DO concentrations, Oxidation Reduction Potential (ORP) readings, and alkalinity concentrations to be sure you’re on track. When aiming for low to no DO in anoxic zones, low DO filaments could begin to thrive, slowing down the settling process. Changes require frequent monitoring and attention.

CHAMPION ENERGY SAVINGS AS AN INVESTMENT IN THE FUTURE
If you’re thinking of a project that will save money on energy and/or chemicals, discuss it with management. One way to amplify the savings from operational energy
efficiency changes is to invest the savings into other energy efficiency projects at the plant. EPA published a guidebook titled *Ensuring a Sustainable Future: An Energy Management Guidebook for Wastewater and Water Utilities* that may help with planning and implementing energy and cost saving project(s). This guidebook was developed by facility operators and engineers for facility operators and engineers. Implementation of the energy management approach described in the guidebook has proven results.

The guidebook discusses the importance of a champion to lead the projects/program, the importance of communication and buy-in up and down the chain of command, and the adherence to a “plan-do-check-act” approach of creating a plan, implementing the plan, checking if it’s working, and making adjustments based on lessons learned, data collected, and results achieved.

Projects that help utilities save costs could result in the longer-term benefit of helping to stabilize sewer rates and increase the time between rate increases.

### ESTIMATE YOUR POTENTIAL SAVINGS

How do you get a rough idea of what you’ll save by reducing the amount of time a piece of equipment is operating? First get a copy of your electric bill. Look at your kilowatt hours (kWh) or consumption charge. Next, get the horsepower and efficiency rating off of the motor nameplate. Decide how many hours you plan to reduce the motor run time (per day, month, year, etc.). Lastly, it’s helpful to get an idea of how loaded the motor is. A way to get a rough idea is by comparing an amperes reading (using a handheld multimeter) with the full load amperes (FLA) from the motor nameplate. If you’re not able to take an amperes reading from the motor you can use 50-75% of the FLA (50% is safest).

Then plug the numbers in this equation:

\[ S = HP \times \frac{0.746 \text{ KW}}{HP} \times \frac{\% \text{ Load}}{\% \text{ Efficiency}} \times \text{hrs reduced} \times \% \text{ Load} \]

Load and efficiencies may change throughout the day.

### DON'T DELAY!

Although decreasing aeration to improve performance may seem unconventional or counterintuitive, these success stories are great examples of the possibilities and opportunities of what can be achieved. The benefits of implementing energy and chemical saving projects sooner rather than later are numerous. The decision to implement these projects is a decision to save money, protect environmental resources, and benefit the communities you serve.

Please feel free to contact EPA Region 3 Energy/Optimization Team.

**Walter Higgins**  
Phone: 215-814-5476  
higgins.walter@epa.gov

**Jim Kern, PE**  
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Stormwater is currently the only growing source of water pollution in many watersheds across the country, and it is a rising challenge for communities around the world. In 1970, 85% of U.S. water quality impairments were associated with point-source pollution. The remaining 15% came from nonpoint sources such as agriculture and urban stormwater. Today, after significant advancements in wastewater treatment, these values have flipped – 85% of impairments now stem from nonpoint and urban stormwater discharges. The U.S. Environmental Protection Agency’s (EPA) first administrator, William Ruckelshaus, alluded to these facts in a 2010 Wall Street Journal opinion article in which he called stormwater runoff “the water quality issue of the day.”

Rainfall to results: The future of stormwater, a comprehensive report by the Water Environment Federation (WEF; Alexandria, Va.) Stormwater Institute, presents a vision for the future in which all stormwater is transformed from a pollutant source to a resource.

The report is a product of a meeting of stormwater professionals convened by WEF in July at The Johnson Foundation at Wingspread (Racine, Wisc.). The report was released at WEFTEC 2015 in Chicago to coincide with the launch of the WEF Stormwater Institute, a new center of excellence and innovation created to address stormwater challenges.

Vision for the future of stormwater
In the vision presented in the report, stormwater is managed through an optimized mix of green, gray, and natural infrastructure, and pollutant source control is pursued as a complement to infrastructure solutions. In this vision, stormwater infrastructure is fully funded and managed by a dedicated utility with a comprehensive asset management program. Additionally, stormwater management is adaptive based on new science, experiences, technical innovations, and responsive regulations. Stormwater management is part of doing business and part of community resiliency and quality of life. As such, the community values and understands the many benefits of stormwater infrastructure.

The report identifies six key objectives and a set of concrete actions intended to achieve this vision and improve the future of stormwater in the United States.
1. Work at a watershed scale
All communities will have integrated, watershed-scale assessments of their water resources needs and challenges to better align stormwater management efforts with larger watershed priorities. This means long-range planning across jurisdictions within watersheds. Planning and decision-making will account for the many benefits of stormwater controls, which go beyond water quality improvements to increased property values, expanded public education, improved air quality, and more.

2. Transform stormwater governance
The second objective is to transform stormwater governance so that regulations are integrated and adaptive. Regulations will stimulate stormwater control innovation and improve performance by focusing on program outcomes. By exploring ways to emphasize stormwater program outcomes in permits and design and maintenance requirements, the sector can develop permitting frameworks that, for the first time, embrace the long-term nature and potential cost efficiencies of solving stormwater challenges.

3. Support innovation and best practices
Evaluating stormwater programs can provide a wealth of information. By sharing these experiences, the sector can ensure up-to-date best practices are available, advance the necessary tools and methods to support ongoing improvements in stormwater management, and increase the ability to analyze and value stormwater management on a multi-benefit basis.

4. Manage assets and resources
The next objective is to achieve stormwater systems that are maintained through robust asset management programs and supported by innovative information technology. Inadequate attention to operations and maintenance (O&M) and a lack of effective planning for repair and replacement are the biggest current weaknesses of stormwater management. Key to improving maintenance and developing a robust asset management program is developing a well-trained, multidisciplinary workforce. Also important is integrating O&M into project planning so that projects are properly designed and installed for easier operations, repair, and timely replacement.

5. Close the funding gap
Many of the opportunities to improve the stormwater sector invariably require
financial resources. Communities can start by better understanding their funding needs and looking to reduce the costs of stormwater management. However, sustainable stormwater management requires a dedicated funding source. Education and understanding by elected officials are important, as they play a significant role in supporting the investments needed to meet stormwater objectives. Additionally, there are opportunities to access untapped sources of capital and innovative financing mechanisms.

6. Engage the community
The stormwater sector must improve its ability to engage various audiences and encourage information sharing between public officials. With increased communication and collaboration, communities can better value the role of stormwater management in providing clean and safe water, reducing flood risks, and making neighborhoods more resilient to the effects of climate change.

Better ways to address stormwater challenges
The actions and objectives outlined in Rainfall to results: The future of stormwater are meant to help communities tackle stormwater issues caused by urbanization, aging infrastructure, and climate change while overcoming regulatory hurdles. Beyond achieving a healthier water environment, stormwater management presents an opportunity to make communities more vibrant, livable, and resilient.

This report marks the beginning of an ongoing dialogue. It is a call to action for communities, companies, governments, and organizations to work together to move from rainfall to results. To read more about current challenges and future opportunities in stormwater, download Rainfall to results: The future of stormwater at http://wefstormwaterinstitute.org/rainfall-to-results/.

Heather Harris is the chair of both the Stormwater Committee of the Water Environment Federation (WEF; Alexandria, Va.) and the Water Environment Association of Texas Stormwater Committee. She serves as the Central Texas operations lead for the Austin office of CH2M (Englewood, Colo.), where her focus includes stormwater management and stream restoration.

Chris French is WEF’s director of stormwater programs and is guiding WEF’s newly launched Stormwater Institute through member, stakeholder, and practitioner engagement. Chris can be reached at CFrench@wef.org.

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Last fall, the Service Authority (SA) opened the Durward E. Grubbs, Jr. Environmental Center in Woodbridge, Virginia. Construction of the Environmental Center was driven by the need to modernize and upgrade the SA’s existing lab, which was built four decades ago on the campus of the H.L. Mooney Advanced Water Reclamation Facility (AWRF). Since its inception in 1983, the Service Authority has more than tripled its customer base to more than 88,000 residential and commercial accounts.

“The former laboratory space did not meet the needs of the growing population in Prince William County and the complexity of our treatment system,” said Service Authority General Manager Dean Dickey. “We have to look out for the health, safety and welfare of our customers and make sure we can do that in a highly responsive way.”

The $12 million Grubbs Environmental Center is a shining example of the SA’s commitment to excellence and features 6,200 square feet of commercial laboratory space and an impressive educational exhibit. With separate rooms for a variety of testing, and individual workspaces perfect for data calculation and input, the SA’s lab staff is able to best serve their customers and provide additional commercial lab services to other clients.

The Prince William County Service Authority wants to be the best water and wastewater utility in the Washington D.C. metro area. One of the ways the Service Authority is making this happen is by investing in the health and welfare of its customers and the environment.
Laboratory Specialist Amanda Godfrey said simply having a separate washroom allows for better workflow.

“The washroom has two dishwashers, which allows us to wash dishes faster and consequently give us more testing time for additional customers,” Godfrey said.

The Service Authority is the only utility in Northern Virginia with a nationally certified lab for commercial wastewater testing and has the capability to analyze everything from *E. coli* and coliform to Total Phosphorus and Biochemical Oxygen Demand. The lab also performs extensive drinking water testing.

Laboratory staff will soon begin in-house testing of AWRF’s wastewater sludge for 12 metals. They will also start testing the SA’s drinking water for HAAS, a testing service previously outsourced to Fairfax Water.

“Running HAAS tests will save us $3,000 a month and gives us the ability to run samples for other utilities,” said Regulatory Affairs Officer John DeRosa. “We want to be a one-stop shop for all disinfection byproduct testing.”

In FY 2015, the laboratory made $130,000 in testing revenue and is looking to double that amount in the next year.

Another highlight of the Grubbs Environmental Center is a public educational exhibit that details the life cycle of treated water and the important role the Mooney AWRF plays in keeping the watershed healthy. The Mooney AWRF discharges cleaned wastewater into Neabsco Creek, which is a tributary of the Potomac River and part of the Chesapeake Bay Watershed.

According to Community Relations and Outreach Manager Marlo Watson, the exhibits informative and dynamic displays educate visitors on the crucial role of the SA in regards to the health of the public and environment. Scheduled tours of the Grubbs Environmental Center are available for school and community groups. Individuals may also tour the exhibit during the week without a reservation.

“The Grubbs Environmental Center provides an excellent opportunity for children and adults to learn all about the trip water takes from source to tap and back again.”

Nina Andgren of the Upper Occoquan Service Authority and Roger Silverio of the Noman M. Cole Jr. Pollution Control Plant in Fairfax County take a tour of the newly constructed Durward E. Grubbs Jr. Environmental Center in Woodbridge last fall. The facility features a 6,200-square-foot laboratory and an educational exhibit. Photo credit: Kipp Hanley
example of the Service Authority’s long-term commitment to protecting the environment while reducing energy costs. With energy-efficient lighting, recycled construction materials and the usage of effluent for non-potable purposes, the Service Authority hopes to attain Leadership in Energy and Environmental Design (LEED) certification from the U.S. Green Building Council.

The Grubbs Environmental Center was named in honor of the late Durward E. Grubbs, Jr., a founding member of the Service Authority’s Board of Directors. Grubbs spent 27 years on the Board, serving as chairman on multiple occasions. Current Service Authority Board Chairman Joyce Eagles called him “larger than life” and a huge proponent of both the new lab and education center.

“He really wanted to involve the community and educate the youth of this community as much as possible,” Eagles said. “He saw this center as a good vehicle to do that.”

“This beautiful new facility was named after a very special man, a man whose leadership helped shape what the Prince William County Service Authority is today,” said Dickey. ☺

Photo credit: Helmuth Humphrey.

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John Kennedy of the Department of Environmental Quality (DEQ) Office of Ecology reported on the Triennial Review (TR) during the Government Affairs Session held on September 16, 2015 at WaterJAM. At that time he indicated the TR package would be presented to the State Water Control Board (SWCB) at a future meeting and then submitted to the Administration and EPA for final review. The TR was expected to include new, much more restrictive ammonia standards, new human health criteria for eight toxic compounds and changes to criteria for four metals. However, recent developments indicate that several of the criteria may be more appropriately addressed through a separate rule making.

**AMMONIA STANDARDS**

The new EPA ammonia standard (completed in 2012) was based on the inclusion of toxicity data for FW mussels in the family Unionidae. DEQ expected that the new criteria would be approximately one half of current values. During the public comment period, DEQ received substantial testimony regarding the impact and cost of the new ammonia criteria. According to the feedback, small facilities, and those on low flow streams, would feel the greatest impact. Furthermore, even advanced BNR facilities achieving excellent TN removal could face compliance problems with the weekly permit limits (particularly during inclement weather). In addition, some calculations showed that algae-induced pH swings in receiving waters could drive permit limits even lower. Questions were also raised regarding implementation procedures and compliance schedules. In light of the public comments, DEQ was strongly urged to extract the ammonia criteria from the current TR package and undertake a more extensive effort to address these important issues through a separate rule-making.

**HUMAN HEALTH CRITERIA**

On June 29, 2015 EPA finalized human health criteria for ninety-four parameters including the eight that were included in the publicly commented on TR package. DEQ is likely to recommend that the SWCB defer action on the eight parameters until all of the new criteria can be evaluated.

**METAL CRITERIA, CADMIUM**

In November 2015 EPA issued new draft aquatic life criteria for cadmium in freshwater and saltwater. The new criteria are slightly less stringent than those in the current Virginia TR. As with the human health criteria, this is another issue where the SWCB will have to decide whether to hold off in adopting essentially outdated criteria or working with the EPA once the EPA’s new recommendations are finalized.

The Public and Government Affairs Committee will continue to provide information on the TR as it become available. Stay tuned.
As engineers, utility managers, and operators, much of what we do day-to-day and year-to-year is manage risk – be it permit compliance risk, public health risk, financial risk, risk resulting from equipment failure, risk of an environmental impact, risk of climate change and severe weather, threats to our infrastructure, and other operational and organizational risks. Therefore, we are excited to bring you this year’s Education Conference focusing upon Managing Risk through Process and Organizational Innovation to be held on May 11-12, 2016 in Richmond.

Topics will include an in-depth look at Treatment Process Risk Mitigation, Asset Management, and System Resilience and Emergency Preparedness as it relates to utilities throughout Virginia.

Our in-depth program includes a keynote address on how climate change and severe weather events are impacting the way we view and manage risk. Our session on asset management features presentations from three utilities that have implemented enterprise asset management (EAM) systems followed by a panel discussion.

Fairfax County will share its risk-based approach for prioritizing repairs and improvements to all 3,400 miles of its sanitary sewer system. Threats to our critical infrastructure and emergency response will be discussed by representatives of the Department of Homeland Security and DC Water’s Emergency Management Team.

UOSA will show us how it has embraced predictive and proactive maintenance to reduce process risk. Learn why the very technologies and strategies that have served us faithfully in the past will not be adequate for tomorrow’s needs. These are just a few of the nearly 20 presentations that will be available.

Regional utilities, operators, consultants, academics, and students will all benefit from this program which provides continuing educational credits as well as many networking opportunities. We are equally excited for the Conference to be conducted at a new venue this year, the Hilton Short Pump, where superior service and an outstanding setting combine for a truly spectacular space – one where many exhibitors will be featured to showcase their innovative products and technologies.

Mark your calendars and we will see you there!
To reach wastewater professionals through The Conduit magazine and its targeted readership, contact Dave at your earliest convenience to discuss your company’s promotional plans for 2016.

Dave Gill, Marketing Manager
Toll Free: 866-985-9791
E-mail: david@kelman.ca
The VWEA/VA AWWA Student Activities Committee (SAC) held our second annual Model Water Tower Challenge on November 7, 2015. Fifteen teams from area middle schools competed in the event held at ODU’s Webb Center.

Team projects were judged on Structural Efficiency, Hydraulic Efficiency, Cost Efficiency, and Design Ingenuity. Awards were given for First Place – $300, Second Place – $200, and Third Place – $100.

A special thank-you to the event judges and volunteers, including members of the following groups:
- Student Activities Committee
- Work for Water
- ODU Civil and Environmental Engineering Alumni Chapter
- ODU student body
- The SAC couldn’t have executed the event without your support.

FIRST PLACE:
Starbucks Tower
(Ghent Montessori – Norfolk)

SECOND PLACE:
KFC Tower
(Trinity Lutheran – Newport News)

THIRD PLACE:
Goldfish Tower
(Ghent Montessori – Norfolk)

HONORABLE MENTION:
Flower Tower
(Trinity Diamond – Chesapeake)
It’s hard to believe that 2015 is behind us and the VWEA and VA AWWA JAM Committee is back in full swing working toward WaterJAM 2016 in Virginia Beach. We are going to build off of the momentum from 2015 where we saw record-breaking attendance of 1,492 participants in Virginia Beach. Special thanks go to Michael Demko and Stephanie Spalding and the rest of the WaterJAM Committee for all of their hard work. All of the committee chairs, young professional leaders, volunteers, and association leadership should be proud of their success. We are looking to build on the success of 2015 to have another record-breaking year in 2016!

We are excited to be chairing WaterJAM 2016 and continue to focus on our mission to:
Plan and implement a sustainable comprehensive conference that brings together technical excellence and innovation while supporting networking opportunities at an exceptional value to all attendees.

This year the theme One Water was selected to represent drinking water, wastewater, and stormwater; we are all linked together as One Water.

The JAM Committee has already been hard at work planning for 2016. The Call for Abstracts closed January 8, and the many excellent abstracts are currently being reviewed for slating into what will be the best Technical Program yet!

We have had several people approach us to get involved with WaterJAM and have already placed those people in much needed positions. If you are interested in joining this talented group of Virginia water and wastewater professionals, please don’t hesitate to contact us. We’d love to have you, and we promise that you’ll have a great experience! Some of our subcommittees that may interest you include:
• Technical Program
• Local Arrangements
• Exhibits
• Marketing/Communications
• Young Professionals
• Water For People

We look forward to serving our membership this year and look forward to an exciting and prosperous 2016!

Best regards,
Stewart Lassiter
WaterJAM Co-Chair
slassiter@suffolkva.us
757-514-7019

Phill Yi
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<td><strong>SALSNES</strong></td>
<td>Solids Separation for Municipal, Commercial and Industrial Wastewater</td>
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<td><strong>SEVERN TRENT</strong></td>
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<td><strong>SIEMENS TURBLEX</strong></td>
<td>Single-Stage High-Speed Centrifugal Blowers &amp; Aeration Control Systems</td>
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<td><strong>TROJAN UV</strong></td>
<td>UV Disinfection and UV-Oxidation Systems for Municipal Water and Wastewater</td>
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<td>Demon BNR Process, IFAS/MMBR &amp; DAF Systems</td>
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