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Greetings from the corner office! Welcome to our inaugural issue of the new Conduit. We hope you are enjoying this fresh and up-to-the-minute format with full-color photographs, a bigger size and even better for our planet’s sustainability – an electronic version (no paper at all!). The Communications Committee has worked hard to update how we communicate with each other and making sure we are staying current with the tools available to us. This new and improved Conduit will afford us more space to present technical issues and papers, as well as reporting on association activities. Take a longer look at this new Conduit and let us know what you think.

While we celebrate the new, we also want to commemorate the old – and VWEA is certainly “old” this year! We will officially mark our 65th anniversary in March. I think it is worth taking a look back at 1947 and compare what the world looked like then versus today. The challenges we are facing today are many: aging infrastructure, increasing regulatory requirements, and a fragile economic environment. Let’s compare that to 1947 shall we? The United States was still recovering from shortages in housing, natural resources, and basic commodities due to World War II. The U.S. and USSR (remember them?) mistrusted each other so much the Cold War began. Jackie Robinson broke the color barrier in Major League Baseball. Ferrari began production of the famed sports car, Hewlett Packard was formed, and the transistor was born. The average wage per year was $2850, a loaf of bread cost 13 cents, and a gallon of gas would set you back 15 cents.

It was into this challenging environment that a core group of professionals from our industry responded to the obvious need around them and formed the organization that would become VWEA. Some of these original board members names you will recognize: Clifford W. Randall (VPI & State University); L. H. (Sonny) Roden, Jr. (City of Richmond); Dr. Ernest M. Jennelle (Dewberry, Nealon & Davis); I. N. Koontz (R. Stuart Royer and Associates); R. V. Davis (State Water Control Board – later DEQ); Royal C. Thayer (Sanitary Engineer). The mission of VWEA, then as now, was to provide for the “advancement of fundamental and practical knowledge” about the water environment. Fast forward 65 tumultuous years that included the Clean Water Act, Pretreatment Regulations, the burning Cuyahoga River, Kepone, Love Canal, tertiary treatment, class A biosolids, TMDLs, stormwater management, and you can begin to appreciate the foresight of these men. Our industry has been at the forefront of providing clean and safe water to the world. VWEA’s mission has changed very little over 65 years – we still want to advance knowledge.

Look for many opportunities to advance your knowledge over the next year – plan to attend one of the many fine educational seminars or workshops put on by VWEA members. The Industrial Waste & Pretreatment Seminar (March 2012) is a great way to kick off the year, and a chance to network with your peers. The Education Seminar (May 2012) is always a good bet to hear about the latest in research. The lab folks also put on a great event, with practical workshops and plenty of the latest in technology showcased by supportive vendors. Throughout the year, look for local events such as Lunch and Learns, Young Professional social events, webinars, and more. I think you will agree that even though VWEA is 65, we have the energy and stamina of an 18-year-old! Here’s to the next 65 years.
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Over the last several months, I have greatly enjoyed meeting and working with many members of VWEA. We are an organization with a wealth of talent and expertise from a diverse group of members. I am excited about the future and look forward to meeting more of you at upcoming conferences and events.

One of my initial tasks has been to assist the Board of Directors with the implementation of the VWEA 2011-2012 Communication Plan. I hope that as a member of the association, you have seen some of the results of the plan. The new Conduit with color photos, more technical articles, and an email delivery option is one of the accomplishments of the plan. Additionally, our website has been revamped and loaded with up-to-date, useful information for members. Please visit it regularly at www.vwea.org.

You should have also started receiving a monthly e-newsletter highlighting upcoming events including educational seminars, workshops and webinars. The e-newsletter also contains committee news and accomplishments, dates of networking events, and other important information from VWEA.

An essential part of the implementation process for the Communication Plan is to confirm we have current contact information for all of our members. We ask if you move, change jobs or have a change in your email address to please take a moment to go online to www.e-wef.org and update your contact information. WEF provides WVEA with all membership data. Updating your information with WEF will make certain that you don’t miss any valuable news and publications. If you need assistance with this, just pick up the phone and call me!

It is my desire and goal to ensure each member receives the most out of their VWEA membership. Please feel free to email me at admin@vwea.org if I can help you in any way.

We are an organization with a wealth of talent and expertise from a diverse group of members. I am excited about the future and look forward to meeting more of you at upcoming conferences and events.

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The Conduit publishes member-supplied content as feature technical articles or columns, project summaries, announcements etc. Publishing an article is a great forum for you to share your wisdom and experiences with fellow members. We are interested in what you have to say, and extend this opportunity to help shape the magazine’s content. This is your magazine – help us tailor it to your needs.

Here are some tips for getting started:

- The author of the article must be clearly identified by name, title, and organization, and both a telephone number and email address must be supplied for contact purposes.
- The subject must be relevant to the Virginia water/wastewater/stormwater industry.
- The article should be submitted electronically via email as a Word document.
- Length of material should be limited to a maximum of 2,000 words.
- Any photographic images to be included with the material must be free and clear of any copyright and be submitted as JPGs or TIFs that are high resolution (300 dpi). Image files should be sent separately with captions, not embedded in the Word document.
- Please submit your article or article proposal to Felicia Glapion, Editor, at fglapion@hazenandsawyer.com.
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WATER INCORPORATED: Package and Field Erected Wastewater Treatment Plants
The Stockholm Junior Water Prize (SJWP) competition is one of the most prestigious science competitions for high school students in the world. Any high school student (grade 9-12) with a water-related science project is eligible to participate in the SJWP. The competition consists of four levels: regional, state, national, and international. Awards are given at each of these levels to recognize the students’ achievements in water-related research.

VWEA organizes the competition in Virginia. During 2011 VWEA had several people volunteer to serve as judges at six regional high school science fairs, and to review papers submitted for the state competition.

The volunteers can testify that it is very inspiring to volunteer as a judge. The students are very knowledgeable and enthusiastic and they are (in a few years) prospective candidates for the water and wastewater job market. VWEA encourages these students to continue their research and interest in water-related issues by giving away awards. During 2011, VWEA presented monetary awards to the top three projects at each science fair. VWEA also presented the state winner, and his/her teacher, with paid transportation to the national competition, which took place in Chicago, Illinois, on June 23-25.

This year’s winner in the Commonwealth was Darwin Li from Thomas Jefferson High School for Science and Technology. He submitted a paper called “A Novel Remote Sensing-Based Water Quality Monitoring System for the Chesapeake Bay Using Landsat 5 Thematic Mapper.”

The international competition takes place in Stockholm, Sweden, in August each year. The international competition brings together the brightest young scientists from all over the world to encourage their continued interest in water and the environment. In 2011, a student from the U.S. won the international competition. Alison Bick from New Jersey was awarded first prize ($5,000 and a prize sculpture) for developing a low-cost portable method to test water quality using a cell phone.

If you are interested in volunteering as a judge for the 2012 Stockholm Junior Water Prize competition, please contact the author (nina.andgren@uosa.org). Note: Most regional science fairs take place in March 2012 and the papers submitted for the state competition are scheduled to be reviewed at the end of April 2012.

STOCKHOLM JUNIOR WATER PRIZE

By Nina Andgren, SJWP State Organizer

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NASSCO PACP/MACP/LACP COMPLIANT
On October 17 and 18, 2011, 36 teams competed in the 24th Annual Water Environment Federation (WEF) Operations Challenge competition to showcase their skills in front of an international audience at WEFTEC 11 in Los Angeles, CA. The Virginia Water Environment Association (VWEA) sent four teams to represent us at WEFTEC. In Division I the representatives were City of Virginia Beach Terminal Velocity and Team HRSD; in Division II the representatives were Western Virginia Water Authority Blueridge Brawlers and City of Virginia Beach Team Collectors.

In Division I, there were 10 teams competing for the right to be National Champions. Representing VWEA were the teams City of Virginia Beach Terminal Velocity with team members Elijah Smith, Bobby Williams, Paul Cubilla, Donnie Cagle, Jason Truitt, and Stephen Motley; and Team HRSD with team members Wesley Warren, Laura Shields, Eric Washbon, Chuck McMahon, and Tim Scott. Terminal Velocity repeated as the Division I National Champions, by placing first in the Laboratory and Safety Events, second in the Maintenance Event, and third in the Collections Event. Team HRSD moved up to Division I this year as a result of winning Division II in 2010. Team HRSD performed very well placing fourth overall in Division I as a result of placing second in the Collections Event, and third in the Laboratory and Process Control Events.

In Division II, there were 26 teams competing for the title. The VWEA representatives were City of Virginia Beach Team Collectors, with team members Sean Smith, Dennis Smith, John Thomas, Barron McPherson, and Nathan Bly; and Western Virginia Water Authority Blueridge Brawlers with team members Lacy Burnette, Randy Williams, and Tommy Shaver. Team Collectors finished seventh overall in Division II and placed first in the Collections Event. They had the fastest collections event time on the day regardless of divisions. Blueridge Brawlers finished fifth overall in Division II, which is very impressive considering this is a first-year team and their first visit to WEFTEC.

I would like to congratulate all the teams for the outstanding effort and enthusiasm they displayed throughout the competition. This marks the tenth time that a Virginia team has won the Division I National Championship, the most for any state. As a result of their win, Terminal Velocity will get an automatic berth to attend the Operations Challenge at WEFTEC 12 in New Orleans, Louisiana. The win also allows VWEA the opportunity to send a total of three teams to WEFTEC 12.

I would like to extend a special thanks to the following VWEA members who volunteered their time at WEFTEC 11 Operations Challenge and making the event a success for all:

All four VWEA Teams: Western Virginia Water Authority Blueridge Brawlers, Virginia Beach Team Collectors, Virginia Beach Terminal Velocity, and Team HRSD.

Virginia Beach Terminal Velocity performing the Wilo Pump Maintenance Event.

Virginia Beach Team Collectors performing the Laboratory Event.

Team HRSD performing the Collections Event.

Western Virginia Water Authority Blueridge Brawlers performing the Safety Event.
And finally, we would like to extend our appreciation to all of the 2011 sponsors that made the trip to WEFTEC 11 a reality for all the teams.
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The VA AWWA/VWEA Water For People Committee was pleased to once again hold a 5K Fun Run as part of WaterJam 2011. The great turnout of 40 participants and volunteers helped to raise money and awareness to support sustainable water and sanitation projects in developing countries. Starting and finishing at the Neptune statue, the runners were fortunate to have perfect weather conditions for the easy run down the boardwalk. Michael Demko led the men, finishing with a time of 19:40. Following him was Matt Stolte at 20:54. Leading the women was Casey Reed, crossing the finish line in 22:27. Kathryn Barager grabbed the number two slot for the women at 27:18.

Sponsorship from AECOM, Brockenbrough, Brown & Caldwell, Delta Systems, Draper Aden, ECS and Kimley-Horn, along with the runners and volunteers, made this year’s run a tremendous success.

The VA AWWA/VWEA Water For People Committee would like to thank all of those who participated in the 5K Fun Run, iPad raffle and golf tournament at the 2011 WaterJam Conference in Virginia Beach. Through the participation and support of the attendees, the VA WFP Committee was able to donate $833 from the run, $1700 from the iPad raffle, and $1432 from the golf tournament to Water For People. This year, WFP launched the “Everyone” campaign to bring international development organizations together from the beginning, to plan and facilitate programs that provided every family, every school, and every clinic in an entire region with access to safe drinking water and basic sanitation facilities.

Please visit www.waterforpeople.org for more information.
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Community Service
WATERJAM YP SERVICE PROJECT 2011

The rain didn’t prevent JAM from kicking off on time as volunteers pitched in for the YP Community Service event. Under the direction of staff from Lynnhaven River Now and with support from the City of Virginia Beach, volunteers planted 350 plugs of native tidal grasses to help an ongoing dune stabilization project at the Lynnhaven Inlet Boat Ramp. The group also collected eight bags of trash from the area which had recently dealt with Hurricane Irene. Afterwards, volunteers got a chance to socialize over plenty of local shellfish with a view of the watershed they just helped protect.
ABSTRACT SUBMITTAL INSTRUCTIONS:
Abstracts will be accepted online only via the link to a third party website (Precis) available at either association website: www.vaawwa.org or www.vwea.org

The website will be available for the collection of abstract submissions from November 14, 2011 to January 13, 2012. Submitters are recommended to review the checklist of items required for submission prior to beginning the process. Only online submissions will be accepted. In order to be given separate consideration, student abstracts must be identified at the time of submittal. Priority will be given to papers that qualify for continuing education credits for water and wastewater treatment plant operators.

SUGGESTED TOPICS:
• Water treatment
• Wastewater treatment
• Nutrient removal
• Biosolids/residuals treatment
• Wet weather/stormwater
• Water resources
• Drinking water quality
• Water reclamation and reuse
• Collection systems
• Distribution and operations
• Membrane water treatment
• Security and emergency preparedness
• Laboratory practices
• Safety issues
• Odor control/air quality
• Information technology
• Planning, design and construction
• Alternative project delivery
• Facility operations and maintenance
• Public education and outreach
• Utility management
• Emerging technology (research)
• Sustainability
• Strategic planning
• Regulatory issues
• Asset management

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For the second consecutive year, the scheduled treatment plant tours on the final day of WaterJAM were a hit. During WaterJAM 2011, tours were planned for both water treatment and wastewater treatment facilities to add interest and diversity, and to accommodate more participants.

This year we visited HRSD’s Atlantic Plant wastewater treatment facilities in Virginia Beach and Chesapeake’s Lake Gaston Water Treatment facility in Chesapeake. Interest in both of these tours was strong from the early stage of online registration, with both tours reaching maximum reservations of 15 each before the start of the conference.

After severe thunderstorms rolled through on Wednesday night, the weather on Thursday for the plant tours turned favorable with a sunny and warm afternoon. Each tour departed the Virginia Beach Convention Center around 12:15 p.m. following the conclusion of the final technical presentations. Lunch was served at each facility while an introduction and overview of the respective plant was given during the meal. At the conclusion of the overview, tour groups got their exercise by walking around the plants to learn more about the treatment specifics and to engage in discussion with the plant staff and others involved with leading the tours.

The participants who went on the Atlantic Wastewater Treatment Plant tour got an opportunity to learn about HRSD’s invest-
ment of $176 million between 2006 and 2011 to expand the treatment facility from 36 MGD to 54 MGD capacity, with provisions to go up to 72 MGD. This plant is HRSD’s only treatment plant with an outfall to the Atlantic Ocean. Several of the key improvements to this plant included:

- Replacement of the high purity oxygen system with diffused aeration tanks that use a hybrid blower system.
- Addition of a two-phase acid-gas solids digestion process to stabilize biosolids and generate usable biogas for energy.
- Addition of new gravity belt thickeners.
- Participation in a water reuse project with the neighboring Dam Neck Naval Facility for building heating and cooling.

In addition, a new solids cake storage pad was built to facilitate on-site and local farmland land application. Those involved with the plant tour of this facility include Erwin Bonatz (Plant Manager), Rich Roberts (Plant Superintendent), John Dano (Project Manager), Rhonda Bowen (Recycling Manager), and Bill M’Coy (HDR Engineering).

The participants who went on the Chesapeake Lake Gaston Water Treatment Plant tour had an opportunity to see a state-of-the-art membrane filtration that was designed to treat and deliver up to 13.6 MGD of raw water for future demands. On-site facilities include straining, rapid mix, flocculation, membrane particle removal, manganese removal contactors, free chlorine and chloramines disinfection, finish water storage and pumping, and solids handling. This plant was completed in 2006 after three years of construction at a cost of approximately $66 million. The plant was constructed initially to treat up to 7 MGD of raw water purchased from Norfolk’s excess capacity and will ultimately treat the city’s portion of the raw water from the Lake Gaston Reservoir. Those involved with this plant tour included Craig Maples (Water Resources Administrator) and Doug Groff (Kimley-Horn and Associates, Inc).

WaterJAM 2012 – Back to the Beach!

With winter just around the corner, I know what you are thinking, but your WaterJAM committee is back at it again. We just came off the most exciting, action-packed 2011 WaterJAM in history, and the largest attendance ever at 1193. Our leaders Stacie Metzler and Kim Clements and their team put together a CLASS ACT event. All of the committee chairs, young professional leaders, volunteers, and association leadership should be proud of their success. Our group knows we have some big shoes to fill, but we were coached by the best and our new leaders are ready to get out of the box and exceed your expectations.

Lora Reed and I are backed by an absolutely awesome up-and-coming new group of leaders who are up for the challenge. Our goal this year is to have more depth in our team than ever before, so if you are on the fence about volunteering, please contact Lora or me about your interest. I promise you it will be a rewarding experience associating with this group of leaders in our industry.

Some of our sub-committees include:

- Local Arrangements
- Young Members
- Programs
- Guest Program
- Exhibits
- Plant Tours
- Golf Tournament
- Joint Board Dinner
- Silent Auction

We look forward to serving our membership this year and making you all proud in 2012!

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HDR pairs proactive leadership with practical risk-management and condition assessment methods to help you achieve your goals. With 80 years of wastewater system experience, HDR offers the unparalleled expertise to manage all project aspects—from planning, financial, and design through construction.
In 1982, the Virginia Soil and Water Conservation Board established the Virginia Dam Safety Act of the Code of Virginia Dam Impounding Structure Regulations (Dam Safety Regulations). In essence, the Act “… ensures that impounding structures in the Commonwealth are properly and safely constructed, maintained and operated.” Since the 1980s, dam safety regulations have been largely untouched, except in 2001, when the Virginia Acts of Assembly broadened the definition of a regulated “impounding structure” to include smaller dams that were previously unregulated. This change significantly increased the number of regulated dams in Virginia.

In 2008 and 2010, Virginia’s Dam Safety Regulations were again revised to further advance the safety and welfare protection of the public and their property from the impact of dam failures. The key elements of the latest regulations revised the dam hazard potential classification system, modified spillway design requirements, established dam break inundation zone mapping and expanded emergency action and preparedness plans. The hazard potential classification system required that each dam be classified based on potential loss of human life or property damage if it were to fail. This classification is unrelated to the physical condition of the dam or its probability of failure. Safety standards become increasingly more stringent as the potential for adverse impact increases. The proposed regulations also track federal standards more closely in an effort to improve public safety.

In addition to the increased safety measurements, it should also be noted that the latest regulations provided additional environmental benefits. Many of these impounding structures are constructed as retention devices for silt and other materials. By ensuring their safe operation and maintenance, these pollutants are prevented from being released into downstream bodies of water and environments; thus improving water quality.

In 2010, Hurt & Proffitt (H&P) performed a dam breach and inundation study for the Hone Quarry Dam, which was classified as a High Hazard Dam. Originally designed for flood control in 1965, the impoundment is a 94-foot tall earth embankment dam. It is located on Hone Quarry Run, a tributary to the North River, in Rockingham County, Virginia near the Town of Bridgewater. The study determined that the dam had insufficient spillway capacity to meet the new Virginia Dam Safety Regulations. The study also concluded that numerous farms and a portion of the Town of Bridgewater would be flooded if the Hone Quarry Dam were to fail. H&P was retained by the Virginia Department of Conservation and Recreation, Division of Design and Construction to develop design alternatives and recommend the most effective rehabilitation.

Before H&P could develop an appropriate capacity upgrade rehabilitation design, the condition of existing dam structures needed to be assessed. Specifically, the interior of the riser, the transition section and conduit barrel through the dam needed to be inspected. Throughout the United States, there are tens of thousands of conduits through embankment dams that are aging and deteriorating. Many of these conduits were poorly constructed and are not frequently inspected, if at all. Deteriorating conduits pose an increasingly greater risk for developing defects that can lead to embankment dam failure.

H&P hired Hydromax USA (HUSA) to perform closed circuit television (CCTV) inspection services within Hone Quarry Dam conduit structures. The conduit barrel was
a 480-foot long, 36-inch diameter reinforced concrete pipe (RCP). The riser was a 40-foot tall, 72-inch x 48-inch rectangular structure. The most practical inspection technology was a remotely operated vehicle (ROV) CCTV crawler, but there were some obvious logistical challenges. Due to the location of the dam, a portable system was required. Since debris and sediment in the structure was unknown, a larger ROV tractor was the best assurance against getting stuck in the pipe. Downstream access through the barrel was restrictive due excessive overgrowth and the steep embankment. The best access was through the riser structure, but it was 20 feet offshore, so a boat was necessary; however, since the area was considered environmentally sensitive, a battery-powered motor was required. Any generator used to operate equipment needed its own fuel containment system. To top it all off, field work was performed in June, which is peak rattlesnake season in the Virginia Appalachia.

HUSA performed the CCTV inspection in accordance with the National Association of Sewer Service Companies (NASSCO) Pipeline Assessment Certification Program (PACP). The PACP protocol provides a mechanism for providing reliable quantitative descriptions of pipe conditions, including ratings based on total defects, as well as ratings based on defect severity. For the Hone Quarry inspection, there were no severe defects that required rehabilitation immediately or for the foreseeable future. However, there were some moderate defects associated with visible surface aggregate in numerous locations, as well as some minor surface cracks. Overall, the riser and barrel conduit are in good structural and operating condition, especially considering the over 45-year age of the structures. H&P is currently designing the rehabilitation plan in order to increase the dam’s spillway capacity and bring the dam into compliance with the new Dam Safety Regulations. H&P will also oversee construction of any rehabilitation.

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FIGURE 1: Hone Quarry Dam in Rockingham County
FIGURE 2: Location of Hone Quarry Dam
FIGURE 3: Hoisting inspection equipment onto riser structure
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Planning for the 2012 IWP Workshop and Seminar is nearly complete. The theme for the workshop is **Water Reuse – What Flows Around Comes Around**. The event will be held March 5 and 6, 2012, at the DoubleTree hotel in Charlottesville and will open with a welcome from the current VWEA President, Grace LeRose.

Speakers for the workshop have been lined up from the US EPA Washington HQ, the DEQ Central Office, from industries demonstrating success with water reuse and recycling, and from the consulting workforce. Topics will include the following:

- Overview of Water Reuse Opportunities
- Updates on the DEQ Water Reclamation and Reuse Programs
- Water Reuse Experience at HRSD
- Water Reuse Case Study
- Strategies for Zero Discharge
- Advances in Water Reuse at Car Washes

The seminar topics will cover a variety of **Regulatory and Technical Developments in Industrial Waste Management**. Specific speaker topics so far include the following:

- EPA Update on Water Reuse Strategies
- DEQ Programs Update
- Upcoming Water Regulatory Challenges; Key Considerations
- Managing and Treating Landfill Leachate as Industrial Waste
- Surviving Post-Implementation of a Designated Aquatic Life Use TMDL
- PCB River Study and What’s Next
- Water Reuse Success at a Large Industrial Facility – Volvo Trucks North America
- Combining Industrial and Municipal Stormwater Inspections in Chesterfield County

An Exhibitor Registration Packet is available via email while links to registration for the workshop, seminar and hotel rooms are available on the WEA website.

For more information please contact James H. Johnston, PE at: JJohnston@scsengineers.com.
The VWEA-VA AWWA Joint Laboratory Practices Committee (LPC) is proud to once again present the 18th Annual Good Laboratory Practices Conference this year. It will be held at the Omni in Charlottesville on August 6-7, 2012. This event will consist of several half-day workshops on August 6 and a technical program with vendor exhibit on August 7.

This is an excellent opportunity to meet and network with fellow professionals from all over Virginia, and earn CPEs for wastewater and water operators and CECs. The LPC also plans to again present a workshop at this year’s WaterJAM in September. Information regarding these worthwhile events, as well as contact information, will be posted on the VWEA and VA AWWA websites. So mark your calendars, and be on the lookout for more information to come.

The LPC membership is represented by a variety of municipal wastewater and drinking water laboratories, commercial laboratories, as well as regulatory agencies and laboratory vendors. Meetings are held throughout the year to discuss such interesting topics as laboratory issues, changing methodologies, regulatory concerns, and quality assurance requirements.

The LPC meetings for 2012 are scheduled as follows: January 18, March 14, April 18, June 13, September 19, and November 14. Meetings are held at the Henrico Water Reclamation Facility with subcommittee meetings starting at 10:00 a.m. and the full committee meeting at 11:00 a.m. There is a short technical presentation with lunch provided. We encourage everyone interested to join and participate, and take advantage of the wealth of knowledge and experience that is there.
Attention to all those in commercial, industrial, or municipal laboratories! Are you fortunate enough to have a lab analyst who shows outstanding initiative, dedication, conscientiousness and superior work quality? Then why not acknowledge your exceptional performer with a nomination for the Lab Analyst Excellence Award?

Any individual who is employed in a laboratory facility, has direct responsibility for in-house or field-testing of water or wastewater activities and has not previously won the award, is eligible. Candidates do NOT have to be a member of the Water Environment Federation at the time of nomination. To nominate someone, fill out an award nomination form and complete a one- to two-page application narrative highlighting the nominee’s accomplishments (only one nominee accepted per laboratory).

When filling out the narrative, refer only to the “nominee” (no names or titles). Do not include references to the name of your workplace either. You should stress the candidate’s innovation in laboratory or field-measurement techniques, consistency in testing, observance of safe work practices, and demonstration of problem-solving abilities. A commitment to professional development by maintaining active membership in professional associations or through continuing education is also worth noting.

The Virginia WVEA-AAWWA Laboratory Practices Committee members review nominations and submit ballots on their choice. The chair of the Lab Practices Committee will notify the award winner and nominator by a congratulatory letter. The awardee will be honored with a plaque presented at the next VWEA Annual Meeting. In addition, he or she will receive the following:

• A complimentary one-year membership to the VWEA.
• Registration for the VWEA LPC/VA-AWWA Good Laboratory Practices Technical Conference held in Charlottesville.
• A one-day complimentary registration to JAM for attendance and acceptance of the award at the VWEA Award Banquet.
• A $50.00 VISA gift card.

The deadline for nomination packages is February 17, 2012. For more information or to obtain a nomination form, please contact:

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Aerial Lift SAFETY

By Phil Lefevre, Safety Specialist, Norfolk Utilities

In the workplace, there is often a need to conduct elevated work. This work may vary from changing a light bulb to inspecting an exhaust fan. Safe access to elevated areas can be provided by an assortment of aerial lifts. Some types of aerial lifts include: boom lifts, scissor lifts, telescopic rough terrain forklifts, industrial forklifts, vertical towers, articulating boom platforms and mobile scaffolds. Typical manufacturers are JLG, Genie, Skytrak, Lull, Skyjack, Yale, Caterpillar, Clarklift and Terex. Utilities don’t generally own this equipment, but rent or lease instead.

Any person using the types of lifts described above needs to be trained in their use prior to operating the equipment. The operator’s manual must be available and read. The loading diagrams should be understood. The training should meet OSHA requirements (see Aerial Lifts – 1926.453) and any other requirements that your utility, or the manufacturer, has put in place. Training documentation needs to be up to date and available for inspection upon request. Periodic inspections also need to be documented and available for review. Using a personnel basket attached to the tines on a forklift can be considered an aerial lifting device. Make sure you read the forklift operator’s manual, OSHA forklift guidance, and any information you received when you purchased the forklift accessories.

When using aerial lifts the following requirements must be followed:

- Conduct a pre-start inspection of the equipment prior to use each day. (Note: The user shall be responsible for ensuring that this has occurred.)
- Check operations like verifying that the emergency controls and safety gear are operational.
- Perform a physical inspection of the lift to verify that there are no loose parts that require adjustment before usage begins.
- Inspect lift platform railing and toe board.
- Ensure all warning placards on the machine are legible and that all personnel are familiar with the operator’s manual.
- Ensure malfunctioning lifts are tagged “OUT OF SERVICE“ and the supervisor is promptly notified. (The equipment shall not be operated until it is repaired per the manufacturer’s recommendations.)
- Ensure the controls are plainly marked as to their function.
- Wear appropriate PFAS equipment: a harness and positioning lanyard. All employees working at a height of six feet or more above ground or lower level must use a form of fall protection.
- Use equipment only on level stable ground.
- Do not load platforms/baskets in excess of the design working load. (The weight of personnel should also be factored into this consideration.)
- Use aerial lifts for lifting personnel and small hand tools. The use of aerial lifts in lieu of a crane is prohibited.
Always be aware of electrical hazards near the work area and in your path of travel. Employ an equipment spotter when working in close proximity of power lines. You must know the safe distances from power sources.

Never override any safety features (hydraulic, mechanical or electrical).

When using an aerial lift, personnel shall:

- Not walk under a boom to gain access to the platform.
- Place signs and barricades below the equipment to warn passersby of the hazard of falling objects.
- Not tie the platform off to any structure for any reason.
- Stand on the platform floor. Standing or sitting on the railing is prohibited.
- Always look in the direction that the machine is moving.
- Do not rest the boom or basket on a steel structure of any kind.
- Wear safety harnesses and tie-off to the manufacturer’s provided anchorage point within the platform.
- Never attempt to move an aerial lift while the boom/platform is elevated.
- Never move the lift truck when someone is standing in the boom.
- Ensure that a 10 lb. fire extinguisher is available at all times.
- Erect barricading or use a flag person when operating in high-traffic areas.

These are minimum requirements.
Please have your utility’s precautionary measures developed and in place before using this type of equipment.

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REQUIRED: Bachelor’s Degree in sanitary, environmental, or civil engineering and 10 years of progressively responsible experience in the operation of wastewater and/or water production facilities including considerable experience in a managerial capacity OR equivalent combination of education and experience.

PREFERRED: Possession of a Class I Wastewater and Water Operator’s License as issued by the Virginia Department of Commerce. Professional Engineer certification.

TO APPLY: See www.leesburgva.gov or request an application from the HR Department at 703-737-7177. Resumes may be submitted as supplemental information only. Applications must be submitted by 5:00pm on Friday, January 27, 2012. Mail application to Nancy Fixx, Human Resources Director, Confidential, Town of Leesburg, 25 W. Market Street, Leesburg, VA 20176. EOE/ADA
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Imagine the result
The Virginia Utility Management Committee, which addresses management issues for both the Virginia AWWA and VWEA sections, recently created a blog space to share ideas and information related to utility asset management in Virginia among committee members or other interested parties. The site, titled Virginia UMC Asset Management, is set up as a discussion group within the social networking site LinkedIn. So far, the site has been used to share links to articles about asset management case studies in Virginia and to inform members of upcoming events, such as asset management workshops. Anyone is welcome to view the postings on the website. However, if you would like to join the discussion, or add postings and comments to the site, you must become a part of the LinkedIn network (which is free to join). In addition, if you would like to receive email notifications when new items are posted to the site you can elect to become a part of the Virginia UMC Asset Management group by clicking on the “Join Group” link located on the Virginia UMC Asset Management group website.

The website can be accessed in two ways:

1. through the following URL: http://www.linkedin.com/groups/Virginia-UMC-Asset-Management-3711323?trk=myg_ugrp_ovr

If you have an interest in asset management and would like to join the dialogue, you are invited to check out this site. The UMC may form additional discussion spaces for other topics, based on the response to this asset management site. If you have questions about this site or have feedback you want to share, feel free to contact Bruce Husselbee, chairman of the Virginia UMC, at BHUSSELBEE@HRSD.COM, Matt Stolte, who has spearheaded the UMC’s efforts on asset management, at mstolte@blacksburg.gov, or Mike Matichich, UMC committee member who helped set up the LinkedIn group, at mike.matichich@ch2m.com.
As you may have seen in recent email notes, VWEA has formed a Stormwater Committee, chaired by Lisa Jeffrey, PE of Brown and Caldwell. The committee’s mission is to provide VWEA membership education about stormwater issues, regulations, and a forum for the exchange of knowledge and experience among stormwater professionals from throughout the Commonwealth.

The committee will be coordinating educational seminars and lunch workshops related to technical and regulatory stormwater issues, both at the local and federal level. During December, the committee will be evaluating options for workshops, seminars, and lunch and learn sessions. These educational sessions and meetings will provide opportunities for the exchange of current information, compliance strategies, and for professional networking.

Those interested in being a part of this planning effort should contact Lisa Jeffrey at ljeffrey@brwncald.com.
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STUDENT WATER CHALLENGE

The Eighth Annual Student Water Challenge was organized on Wednesday, Sept. 28, at WaterJAM 2011. This year we had two teams compete to solve a problem about meeting future water demand with a choice between two alternatives. The teams were given the problem in the morning on the day of the competition and had approximately six hours to put together their response and present it to a panel of judges. Thank you so much to the judges who volunteered their time at JAM to support the students. They are:

- Dean Perry with Chesapeake Public Utilities
- Daniel Horne with VDH and Past Chair of VA AWWA
- Paul Delphos with Black and Veatch
- Matt Stolte with Town of Blacksburg
- Jongmin Kim with Infilco Degremont Inc.
- Scott Dewhirst with Newport News Waterworks
- James Pimblett with Malcolm Pirnie

It was a very close competition and the judges kept going back and forth to decide the final winner. Old Dominion University (ODU) received the first place award, which included a cash award of $1200, plaque, and a travelling trophy. Virginia Tech (VT) received second place award, which included a cash award of $500 and a plaque. Congratulations to both the teams.

TEAM ODU:
Jen Otis, Kevin Smith, Laarni Cooper, Becky Holgate and Roberto Campos.

TEAM VT:
Abhinav Gupta, Pallavi Bishnoi, Sudhir Pathak and Nashita Naureen.

Special thanks go to Jessica Hou, Rob Martz, and Priyanka Mohandoss of the Student Activities Committee for their help in organizing this competition.

BEST PAPER AWARDS

The Student Activities Committee judges all the papers presented by students at WaterJAM, and presents Best Paper Awards to two wastewater-themed papers and two water-themed papers. A special thanks to Rob Martz and Farah Foster for sitting in and scoring the papers. This year, we attended several good paper presentations and we are proud to award the following:

WATER
For his presentation "Effectiveness of Free Chlorine Burns for Controlling Biological Regrowth in Chloraminated Distribution Systems," Erik Rosenfeldt received the AWWA Best Student Paper Award (Water) which included a cash prize of $750.

WASTEWATER
For his presentation "Evaluation of Nitrification Inhibition Using Sequencing Batch reactors and Biowin Modeling and the Use of Aqueous Fire Fighting Foam to Inhibit Denitrification," Daniel Hingley from Virginia Tech received first place of the VWEA Best Student Paper Award (Wastewater) which included a cash prize of $500.

For his presentation "Characterization and Performance of Multi-Phaseled Anaerobic Digestion for Minimization of Issues Associated with the production of Siloxanes and Hydrogen Sulfide,” Evan C. Bowles from Virginia Tech received second place of the VWEA Best Student Paper Award (Wastewater) which included a cash prize of $250.
VWEA Sonny Roden Scholarship
Mr. Pusker Regmi from Old Dominion University was selected as the 2011 first place awardee of the Sonny Roden Scholarship. He was presented a scholarship check of $1500 at the Awards Banquet during VWEA/VA AWWA WaterJAM.

In addition, Mr. Benyamin Marks from George Mason University was selected as the 2011 second place awardee, and was presented with a scholarship check for $750. And for third place, Mr. John Petrie from Virginia Tech received a scholarship check for $250.

The Student Activities Committee sincerely thanks the judges on the review panel for their time:
- Rachael Lumpkin, Chesterfield County
- Rob Martz, Hampton Roads Sanitation District
- Dan Villhauer, Dewberry and Davis
- Stephanie Spalding, Malcolm Pirnie/ARCADIS
- Jennifer Whitaker, Rivanna Water and Sewer Authority
- Priyanka Mohandoss, CDM

VA AWWA Operators’ Scholarship
This year, we did not receive any applications for this scholarship. However, Dr. Gregory Boardman from Virginia Tech helped us identify operators who needed financial support to attend Virginia Tech Water Short School. The committee sponsored the following operators for the short school:
- Drew Bibb, Blacksburg/Christiansburg/VPI Water Authority
- Beauregard Mabe, City of Virginia Beach
- Toni Randolph, Western Virginia Water Authority

This year’s Operators Scholarship money included a contribution of $500 from Craig Kelman & Associates (the gracious publishers of the VA AWWA Tap into Virginia and now VWEA’s The Conduit).

Thank you all for your participation, and we hope to see you again at next year’s WaterJAM 2012 in Virginia Beach! We hope that next year we get even more applicants, students, and universities involved in the challenges!
The Work for Water (W4W) Committee was formed in 2010 to enhance the visibility and image of a career in the water/wastewater industry. We help Virginia water and wastewater utilities work together to ensure a continuous supply of qualified people to join the ranks of our staff. We’re holding a series of workshops around the state to help raise awareness of these efforts among utility human resource staff and utility management.

Building on the success of our May, 2011 workshop in northern Virginia, we held our latest workshop in central Virginia on November 9, 2011. The Hanover County Public Utilities Department hosted the workshop at their James T. Bruce Center in Mechanicsville. Representatives from eight water/wastewater utilities, several consulting firms, the Virginia Department of Health, the Virginia Employment Commission and a community college attended.

Bob Canova, W4W Committee Chair, kicked off the workshop with a discussion of the committee and the numerous employment and education resources in Virginia that can be tapped for potential hires. He also reviewed the W4W tabletop exhibit, which is available from the committee to VWEA and VA AWWA members to use at local school career days.

Our second speaker, M. Talmadge Harris, Regional Business & Economic Development Specialist for the Virginia Employment Commission (VEC), discussed the VEC programs and demonstrated the VEC interactive employment website. Potential
Talmadge Harris describes the VEC interactive employment website.

employees can list their availability online so employers may seek candidates for available positions. Alternatively, potential employers may list their openings on the site free of charge (see https://www.vawc.virginia.gov). The W4W Committee encourages utilities to use the VEC website to post open positions and recommends that employers use the word “water” in the titles of their job postings in order to foster more efficient searches by applicants.

Following a networking break, Karen L. Ebert, MPA, Training Coordinator for Newport News Waterworks, discussed the Hampton Roads Public Works Academy. The Academy is a joint program of its numerous utility members and their educational institution partners. Founded in the late 1990s, the Academy provides a cadet program and employee training in addition to providing for member networking. The cadet program provides training and intern opportunities for high school juniors and seniors. It exposes them to the utility industry, teaches them needed work skills and promotes a good work ethic. Some cadets have gone on to become valued employees of member utilities. The Academy provides shared training opportunities for existing utility employees allowing, for example, for costly out-of-town training to be brought to the local area at considerable cost savings for training budgets. For more information on this program please see www.hrpwa.org.

Following the formal presentations, Kathi Mestayer, W4W Committee Member, led an open discussion on recruiting for our industry. Workshop participants actively engaged in numerous discussions on topics of common interest, going well beyond our intended workshop end time.

To learn more:
Visit www.wwea.org. Hover over “Committees,” scroll to “Work for Water” and click on “Work for Water Past News/Events.” Here you will find links to the May 2011 and November 2011 workshop presentations. We hope to add this to the VA AWWA site soon.

WR&A, a Top 150 Engineering News Record firm, has specialized in the planning, design, and construction management of water and wastewater projects since 1915.
The debate of whether to allow the use of biologicals at source to deal with FOG (fats, oils, and grease) rages on. It does so in large part, because of an inadequate understanding of both the biochemistry involved as well as the statutes around it. A little knowledge is a dangerous thing and developing effective FOG statutes requires more than just a little dangerous knowledge.

First let’s understand what we mean by biologicals. For FOG pretreatment, these are typically divided into two main categories: enzymes and bacteria. Enzymes are not a live “biological” per se, in fact they are typically a protein generated by live organisms and act as a catalyst for other reactions. For instance when we chew food, our saliva contains enzymes that break down the food for easier digestion. For FOG control, lipase, the enzyme of choice, breaks down fat molecules into their smaller components of glycerol and fatty acid for consumption by bacteria. Used alone, however, enzymes only do half the job. Because they are not live organisms, they don’t actually consume FOG – they simply break it down or emulsify it. Emulsification is when the fat that goes into the drains is converted into tiny little droplets that essentially become one with the water that carries it away. What this means in food service is that grease traps that rely on the separation of fat from water become ineffective as the emulsified fat passes straight through the trap and into the city sewers where dilution allows the fat to recombine. As far as municipal operations are concerned this is not the best solution as FOG producers simply pass the problem along to them.

Bacteria, in contrast, are living organisms. Bacteria secrete their own enzymes to break down the fat molecule into bite size pieces, and the bacteria then complete the job by consuming the glycerol and fatty acids leaving behind mainly water and minute amounts of CO2. Don’t worry about the CO2 though, because amounts are negligible compared to the impact of pumping out the drains and sewers, disposal and processing of the effluent, periodic overflows into storm drains and disposal of fat into landfill.
But not all strains of bacteria are created equal. Bacteria can be broken down into spore formers and non-spore formers. Spore formers protect themselves in harsh environments by surrounding themselves with a protective outer layer or spore. If conditions become uncomfortable, such as high or low pH, high temperature, turbulence, etc. the spore comes on and the bacteria hunkers down and weathers out the storm. The downside is that in its spore state, this bacteria doesn’t consume but becomes dormant until conditions become more civilized. Spore formers are the bacteria of choice in digestion ponds at waste water treatment facilities where conditions are pH balanced, with average temperatures and little turbulence.

In a dynamic system such as a kitchen or food service establishment, however, conditions are unfavorable throughout the day. Discharges from sinks, dishwashers and floor drains tend to be caustic, hot, surfactant laden water with significant turbulence as the water runs through the pipes. Once the spore is formed, it can take up to 36 hours before the bacteria becomes active again and until then, no fat is being consumed and many of the bacteria are simply washed away with little effect other than adding to the biomass that already exists within the sewer system. As a result, spore forming bacterial systems are often dosed at night. Without any actual water flow through the drains, however, spore formers can’t move very far and are slow to colonize before being washed away again by the next day’s activities.

Non-spore formers, as the name would suggest, don’t form spores. They tend to be harder and are active within a larger range of environments and unless frozen or dead, they exist in a perpetually active state. What this means is that as soon as they are introduced into a drain or sewer system, they go to work right away, consuming many times their volume in FOG. They too, will die and add to the biomass, but not before converting significantly more FOG into water. As a result, for dynamic systems as typically found in food service environments and even municipal sewer systems, non spore forming bacteria are most effective.

Another area of confusion is that of the statutes themselves. Many jurisdictions state that no additives may be introduced to the grease trap or may be used in order to pass grease through the grease trap. This makes perfect sense, in that a grease trap is supposed to trap grease and prevent it from entering into the sewer system. An enzyme, as an emulsifying agent does exactly that – moves the FOG through the grease trap and beyond. Adding bacteria to a grease trap is not helpful in that the trap is a very poor environment for bugs to colonize or be effective. Instead, they simply add to the biomass. Where bacteria are useful, is in keeping the drain lines clean leading up to and away from the grease trap. Without proper maintenance, a grease trap will allow FOG to pass through at the best of times and bacteria go a long way to mitigating the impact of FOG that moves past the grease trap.

Unfortunately, many inspectors and regulators read the restriction to mean that the use of any biological in the drain system is 100% forbidden, which is very rarely the case. Disallowing all biologicals because some applications are harmful is like disallowing all vehicles on public roads in order to reduce traffic accidents. The severity of the impact of FOG on public infrastructure and funds, demands that municipalities explore every proven means available to combat this silent demon. As with any effective solution, we simply have to use the right tool for the job and to do that we must educate ourselves as to what tools there are and how they work.

“...As with any effective solution, we simply have to use the right tool for the job and to do that we must educate ourselves as to what tools there are and how they work.”
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<td>Biological Monitoring, Inc.</td>
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<td>Brown and Caldwell</td>
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<td>757-873-8850</td>
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Manufacturers’ Representative for Engineered Instrumentation, Process Equipment, and Pumping Systems, serving Maryland, Virginia, Pennsylvania, Delaware, New Jersey, and the District of Columbia for over 30 years