Buckeye Bulletin

Ohio Water Environment Association | Volume 83:2 | Issue 2 2010

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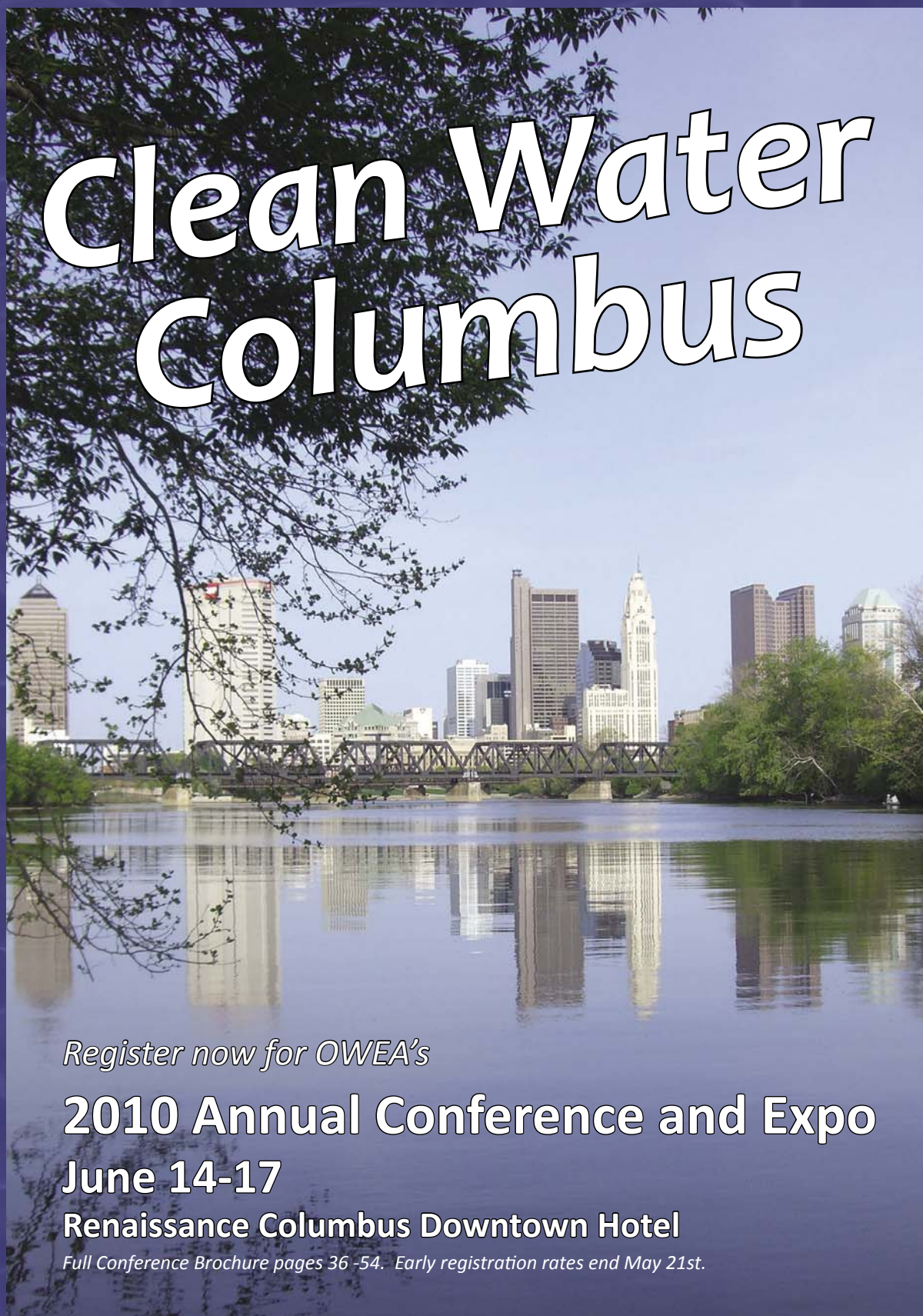

Clean Water Columbus

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2010 Annual Conference and Expo

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Renaissance Columbus Downtown Hotel

Full Conference Brochure pages 36 -54. Early registration rates end May 21st.

Inside this Issue

On the Front Cover

The view of downtown Columbus from Confluence Park, the confluence of the Olentangy and Scioto Rivers. Photo by Judi Henrich.

Contact Hour Information:

All OWEA training is submitted for contact hour approval.

Check out OWEA's website *ohiowea.org* for a complete listing of OWEA approved training.

Article Deadlines: 1st day of January, April, July, and October

Publication Dates:

Spring, Summer, Fall, and Winter

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The Buckeye Bulletin is published 4 times per year by the Ohio Water Environment Association. Individual subscriptions included with association membership.

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The *Buckeye Bulletin (BB)* is the official publication of the Ohio Water Environment Association, Inc., a not-for-profit corporation founded in 1926, dedicated to the improvement of water quality in Ohio and the continuing education of water professionals. It is one of the top five member associations of the Water Environment Federation.

The ideas, opinions, concepts, and procedures expressed in this publication are those of the individual authors and not necessarily those of the Ohio Water Environment Association, its officers, general membership, or staff.

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2010 Calendar of Events

May 2010
6 Executive Committee Meeting (Cleveland)
6-7 Ohio WEFMAX in Cleveland
7 NWOWEA Operator Education Day
13 Collections System Workshop
18 Ohio Operations Challenge
18 Ohio Hands-on Operator Training Day
19 NWOWEA Section Meeting
20 SWOWEA Section Meeting
27 NESOWEA Section Meeting
27 SEOWEA Section Meeting

June 2010
3 SWOWEA Plant Operations Seminar
14 2010 Golf Outing at Foxfire Golf club
14 Executive Committee Meeting
15-17 2010 OWEA Annual Conference

July 2010
15 SW Lab Analyst Committee Meeting
16 NEOWEA Bio-Masster's Golf Outing

August 2010
6 NWOWEA Spouse and Friends Day

September 2010
1-2 Plant Operations/Lab Analysis Workshop
16 SWOWEA Section Meeting

October 2010
21 SWOWEA Operator Education Day
21 SW Lab Analyst Committee Meeting

November 2010
18 SWOWEA O&M Seminar/Section Meeting

December 2010
9 Biosolids Workshop

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Executive Committee Meeting Dates

May 6, 2010 - Cleveland Hyatt at the Arcade

June 14, 2010 - The Columbus Renaissance

Check the OWEA website for meeting details.

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President's Message

Mark Livengood
OWEA President

This is my last opportunity to write a message for the Buckeye Bulletin as your President. If you ask those who have served as President, one comment often stated by each is "the year has gone by quickly". The Executive Committee (EC) meets approximately once every 9 weeks and keeps in touch and plans via email and phone calls. While the EC votes on required actions, there is a lot of work that must occur away from Columbus. My year as President has seen numerous positive actions occur for OWEA. Included in these were settling in and utilizing OWEA's new offices in Grandview Heights, very close to the Ohio State campus. The larger-sized, multi-room office allows for better work-flow for Judi Henrich, our Executive Administrator, and provides conference space for committee meetings. Four student interns have gained real world experience at the OWEA office during fall, winter, and spring terms, and OWEA has been accepted as a Federal Work-Study employer by OSU for the 2010-2011 academic year. With several workshops and the Annual Conference coming up, the office will be a busy place.

Other positive actions have included the expansion of the volunteer Technical Review Group (TRG). Approximately 80 persons have signed up to review important draft rules and regulations and offer comments. Every comment is reviewed for appropriateness and then all are consolidated into a single comment white paper. Recent reviews were on the USEPA Nutrient Guidance and Ohio EPA Rules on Permit Applicaitons. Dale Kocarek and Dianne Sumego are to be commended for their work on this cause.

At the 2009 Annual Conference, I outlined three key areas of which I wanted OWEA to move forward and improve on. These were:

1. Expand OWEA's outreach and training through additional use of webinars and improved workshops;
2. Provide a courtesy copy of the Buckeye Bulletin to each Ohio state legislator; and
3. Move toward providing a web-based contact hour tracking system.

I would like to update everyone on the status of each of these, and then detail my new goal for OWEA.

On the webinar and workshop front, OWEA tested a webinar broadcast in 2009 to confirm technical equipment, internet connections, and program use. The timing and critical need for additional webinars have not developed. OWEA maintains the ability to quickly respond and provide such service if the need arises. As to workshops, I am happy to report that our fall 2009 and 2010 (so far) workshops have been warmly received with record attendance and outstanding subject matter and speakers. Most recently, each attendee of the Government Affairs received a two minute quick survey via email to receive feedback on the quality of the speakers, topics, meeting location, and OWEA services. Everyone is welcome to provide constructive criticism of our workshops and conference.

Starting with the November 2009 Buckeye Bulletin, a courtesy copy is being delivered to the Ohio State House mail room for delivery to each state senator and representative. A follow-up letter was sent to each legislator's office asking them to look over the Bulletin and contact OWEA with any questions. There is talk about potential state budget issues for the budget starting on July 1, 2011. The need for fund utility asset improvements will not diminish in the coming years. The resources of OWEA remain available to provide quick and technically accurate information to legislators should they request it.

Lastly, the goal of starting toward using a web-based contact hour tracking program has not moved forward enough. Some research has been done on possible providers, and I envision more work on this goal during the summer/fall of 2010.

My 3-year Challenge

On March 25, while attending a joint Northeast/Southeast Section meeting in Dover (185 attendees by the way—great meeting), I proclaimed an aggressive three-year goal of having OWEA recognized as the preferred and best-valued wastewater-topic centered training organization in Ohio. To accomplish this, dedication of OWEA state and section leadership and committee members will be needed. OWEA will need to enhance more local and regional training opportunities (Sections, webinars, hands-on workshops will be needed). To better track attendees and contact hours, a firm commitment to enacting a streamlined tracking program/service will be needed. Additional work load in the office will more than likely mean the need to hire a skilled part-time employee to support workshop and training schedules. We will further enhance our positive working relationships with WEF, Water Environment Research Foundation (WERF), Ohio River Sanitary Commission (ORSANCO), USEPA, Ohio EPA, ODNR, Lake Erie area educational providers, as well as design consultants, equipment manufacturers, and representatives.

New regulations to further limit nitrogen discharges are being considered. The ability to detect more micropollutants at lower detection limits (personal care products, prescription drugs, other organic compounds) may lead to new water quality standards and permit limits. The need to use less energy and use energy more wisely is more critical than ever. Maintaining an active and learning workforce, transferring the current knowledge base to new workers, and keeping sewer and water rates at affordable levels are other current and future issues that will need to be solved. OWEA will have to be part of the resolve to address these and other items.

When I took office in June 2009, the count stood at 2041—days since Ohio State had lost to "the team up north". As of May 1, "the count" has increased to 2352 days. The Buckeyes are constantly striving to improve on the basic skills to enhance their chances for further success. OWEA members must now move

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THE OHIO MIXER IS BACK!

Due to popular demand
the **Ohio Mixer is back for WEFTEC.10**
in New Orleans.

Save the Date!
Sunday night, October 3rd.

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President's Article continued

forward to enhance what we have provided each other over the past 84 years—a close group of friends and colleagues that share common goals of working together, having fun, and improving our water environment. It has been my honor and pleasure serving as President. I look forward to working with Dale and the rest of the Executive Committee and section leaders in the coming years as OWEA improves. I invite everyone to be part of our success story.

Mark Livengood
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WEF DELEGATE REPORT

Steve Morrison, Sr.WEF Delegate

Phil Anderson, Jr.WEF Delegate

When you read this report, Spring will be in full swing and everyone will be making their plans to attend the OWEA Annual Conference in Columbus on June 15-17. Conference co-chairs Cindy Jacobsen and Mike Frommer are busy finalizing plans to make this year's conference our best ever. This edition of the Buckeye Bulletin will have many details about the conference.

Our last several reports have touched upon the many benefits of being a WEF/OWEA member. In addition to being able to meet new friends, network and socialize with fellow professionals, and discuss mutual work related challenges, OWEA/WEF provide numerous training and professional development opportunities for you as a member. As a member, you have access to local training in each of the four OWEA Sections. These Section meetings generally occur 4-5 times per year. OWEA has at least four Specialty Workshops each year located in the Columbus area, not including the Annual Conference. In addition to OWEA, WEF provides access to a variety of training opportunities throughout the year. WEF also provides training materials and manuals at reduced prices to its members. You can see that being a member of WEF/OWEA provide a wide variety of training opportunities.

In response to concerns from members through their member associations, WEF has just recently created an Association Leadership Center. This organizational change consolidates Member Associations and individual member services under one group. This group will be under the leadership of Phyllis Ross and will be a one-stop shop for all questions and needs. Good Job WEF!

If you have comments or questions, let us know.

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WHAT WE CAN LEARN FROM HAITI

by Dale E. Kocarek, P.E., BCEE - OWEA President-Elect

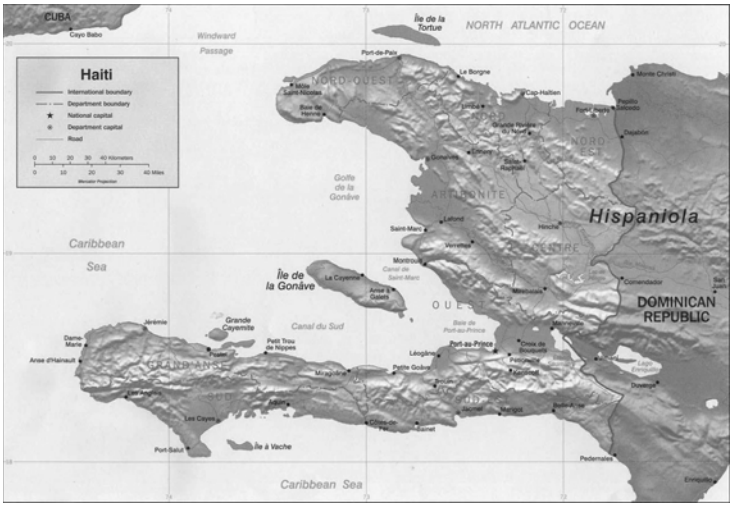
Root of the Tragedy

On January 12, 2010 an earthquake of magnitude 7.2 rocked the small island nation of Haiti, causing catastrophic damage and devastation. The earthquake resulted in 230,000 dead and much of the capital city of Port Au Prince in ruins. Those who are homeless are in need of food, shelter, and medical attention. Fortunately, rescue teams, fresh with memories of Hurricane Katrina were dispatched quickly and have served effectively and heroically.

Despite the success of the rescue teams, it became soon apparent that despite best efforts, reports of inadequate public sanitation became a growing concern, in part due to the poor existing situation before the earthquake. There were fears that growing unsanitary conditions would give way to civil unrest, pestilence and disease, ultimately sinking the hopes of survivors into further despair.

As we began to learn more about this tragedy, several things began to emerge. The first was the size of the earthquake itself. While 7.2 is certainly no small event, it does not begin to compare with the largest events of last century, which included the recent earthquake in Chili at 8.8 on the Richter scale, and the 2006 earthquake at magnitude 9.0 near Sumatra on December 26, 2004, which apparently was powerful enough to "wobble" Earth on its axis. In contrast, the 8.8 magnitude earthquake in Chili was 800 times more powerful that the one in Haiti, yet fewer than 500 perished in Chili.

It was also reported that the level of damage to buildings in Port Au Prince Haiti was exacerbated by poor building standards and a high population density. In recalling my own knowledge of Haiti, it is apparent to me that one of the root causes of this catastrophe was the repressive political regimes of Francois (Papa Doc) Duvalier and his son and successor Jean-Claude (Baby Doc) Duvalier, who reigned in Haiti as quasi dictators between 1957 and 1986. Francois Duvalier was trained as a physician in the 1930s (hence his nickname) and led Haiti until his death in 1971. Then, his son was in power until a political coup relieved him from power in 1986. It was during that the late 1970s to 1986 that the United States began to publically show distain of Duvalier as an example of self indulgent exploitation of his own people.



Despite a modest effort to address problems of public sanitation in the 1960s, the World Health Organization and UNICEF reported in 2006 that Haiti's coverage levels in urban and rural areas are the lowest in the hemisphere for both water supply and sanitation. Sewer systems and wastewater treatment are nonexistent in many areas, and that those in responsible charge of regional "sewer planning boards" were reported to have not met in years.

To show how little has changed since the 1980s, my former coworker, Trygve Hoff, served briefly in the Peace Corps in Haiti in 2006, until political unrest and the potential for imminent danger made it necessary for him to be evacuated by the Peace Corps only a few months after beginning his service, yet again proving that the island nation lacked a stable and effective government. In discussing his experiences, I recall Trygve saying that he was impacted by the immense poverty of the Haitian people, who sought sustenance by cutting down forests for charcoal. Of all practices, deforestation in the production of charcoal is one of the very worst. It is a serious threat to natural processes that cleanse carbon dioxide from the atmosphere and in return, provide the air that we breathe. This practice underscores the immense desperation and poverty of the Haitian people.

Ultimately, one is prompted to ask the question, why did Haiti end up in this position and what can we learn from this?

Infrastructure as a Symbol of an Evolved Society

I believe that one possible answer to this question lies with the public recognition that functional and strong infrastructure plays in the development of a healthy and prosperous society. Ancient Rome and Greece understood this. Both empires were replete with engineering marvels and classical architecture including the world's first intercepting sewer (the Clocia Maxima in Rome), viaducts to supply Rome with fresh drinking water from the Pyrenees Mountains, and many splendid buildings – some of which remnants exist to this day. In contrast, the Haiti tragedy underscores the fundamental importance that good building codes and the need for food, shelter, medical attention, clean drinking water and sanitation are a symbol of an evolving and compassionate society.

As we all know, the United States took significant steps during the twentieth century to provide great improvements to public health through improvements in public sanitation, beginning with advancements in public drinking water treatment and distribution in the early 20th Century to the advent of penicillin in 1942. On a personal note, I am proud to have participated in one of the greatest public works programs in the history of the United States—that is the USEPA funded Construction, which helped bring secondary treatment to many small and mid-sized communities in the United States and funded countless improvements to sewerage systems in cities both large and small for a period of nearly 20 years.

From the standpoint of public policy, I have been asking myself the question as to why the health care debate is dominating our news, when it is only one part of the equation to human health and economic well being. While many believe that the ARRA program

fell far short of expectation, the one thing that I liked was the message in "selling the program" to the public that investment in infrastructure can catalyze a chain reaction of many positive things beginning with lower cost of utilities for customers and increased job opportunities through planning, design, and construction of public works and providing strong infrastructure, which can attract business.

Lessons from the Construction Grants Program

As a matter of history, the USEPA Construction Grants program provided financial impact to communities for nearly 20 years for the construction and upgrade of treatment plants and sanitary sewer systems. From the standpoint of funding, the program was split into two timeframes – prior to October 1, 1984 (FFY 1984 and before), and after October 1, 1984 (FFY 1985 and after). During the first period, which ended on October 1, 1984, federal funding participation was 75% for eligible and allowable costs. During the second period, it was dropped to 55%. I worked for this program during the "heyday" of the program in the 1980s. Looking back, I found that the best use of public money did not come from the earlier time period with 75% funding, but the latter period, which provided only 55% funding. Projects in the later period were more reasonable in scope and achieved greater overall value per dollar spent.

Unfortunately, there is no USEPA Construction Grants program today. In Ohio, this program was replaced by the Water Pollution Control Loan Fund (WPCLF). Despite the plethora of benefits that it provides, the WPCLF remains a loan program and not a grants program. Based on my own experiences, I feel that the WPCLF is ideally suited for middle size cities and bigger, where tap/connection fees are available to help pay costs of debt retirement. Unfortunately, many communities in Ohio are small cities that are experiencing little or no growth, and are too big for the "small community programs" such as USDA Rural Development. Nevertheless, they too are expected to keep up with new regulations and maintain their systems in good working order.

A New Era Deserves a New Approach

Over the years, I have wondered if going from an active and viable grants program to a "no grants/low interest loan" program was too drastic of a move. While I believe that local communities should shoulder the brunt of responsibility for funding improvements to maintain their systems, continually asking communities to pay for improvements to meet new criteria is much to ask.

Several years ago after a brief conversation with the Ohio EPA Director, I surmised that the "ideal" funding scenario would involve most funding by the WPCLF program with a supplement of a "mini" grant to pay for 25%-35% of costs. While this level of funding would be below the 55% available from the old Construction Grants program, I have always felt that even a modest incentive would go a long way to ease the financial burden faced by local users as they struggle to pay the cost for new requirements, which in the future will include nutrient criteria. To a large extent, the ARRA program was effective in promoting this message through its blend of forgiveness loans (e.g. grants), and zero percent interest loans in an effective way. That is exactly what we need now on a continued basis!

Some will convincingly argue that the State of Ohio already has grant programs, managed through the Ohio Public Works Commission and other groups. The truth is that they apply to either the poor or small applicants or not smaller cities. Even if one can obtain grant funding, the actual benefits are often small. Very small grants do very little to offset the cost of a large project and reduce costs to rate payers in a manner that makes a significant difference.

In a visit to western Pennsylvania on March 12, 2010, I read in the Sharon Herald, about Pennsylvania's program for infrastructure, called the H2O PA Plan. This plan provides $750 million in funding for critical water and sewer projects, storm water projects, flood control projects, and high-hazard dam repairs in the Commonwealth of Pennsylvania. The $750 million H2O PA bond issue – introduced as Senate Bill 2 – is funded with revenue from the Pennsylvania Gaming Economic Development and Tourism Fund. While it is recognized that critical needs in the Commonwealth of Pennsylvania are more than $11 billion, the H2O PA represents a good down payment toward meeting current needs. I was encouraged to read this, because I feel that this program has been consistent with my thinking all along.

Of course, I realize that there are currently significant financial problems in Ohio, and the next biennium budget will require significant cooperation from both major parties and Ohio's Governor as never before, and that plans for additional spending will be none or few. Those which are presented need to be accompanied by a thoughtful business case analysis to show that such a proposal would essentially "pay for itself." I agree with this method of decision making in matters of public policy. If I had one thing to say to our elected officials in our own Ohio General Assembly it would be to acknowledge the possibility that infrastructure funding does not have to always be synonymous with images of wasteful large government programs. Rather, I suggest that such a program be viewed in the context that it can have a restorative impact on our state; both in lower utility rates and the creation of jobs.

Support for Haiti

For those interested in contributing to the Haiti earthquake recovery, Water for People recommends several organizations that may be contacted:

- Catholic Relief Services - *www.crs.org*
- Mercy Corps - *www.mercycorps.org*
- CARE - *www.care.org*
- Clinton Bush Haiti Fund - *www.clintonbushhaitifund.org*

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NW SECTION

John Motycka, NW President

The Northwest Section Spring Meeting was hosted by the Village of Archbold on March 17, 2010. Registration was held at the Archbold Wastewater Treatment Plant and tours of the facility were given in the morning. Recent renovations to the plant were highlighted during the tours. Thank you to Frank D'Ambrosia and his staff for their hard work in preparing for the event. Tours of the ConAgra Foods Processing Facility were also given in the morning. Lunch, technical sessions, and the business meeting were held at Ruihley Park Pavilion. Mayor Jim Wyse gave the welcoming address and was presented a plaque in appreciation for hosting the meeting.

John Motycka (c) presenting Mayor Jim Wyse (r) and Frank D'Ambrosia (l) with a plaque for hosting the meeting.

Dail Hollopeter P.E. from Jones and Henry Engineers and Frank D'Ambrosia, Archbold Wastewater Superintendent, gave presentations on the performance of the Village of Archbold WWTP improvements. Becky Donald and Rick Allomong gave a presentation on the environmental enhancements at the ConAgra Food Processing Facility. Walter Ariss from the Northwest District OEPA gave a presentation on the upcoming changes for mercury monitoring and e-coli bacteria monitoring. During the business meeting, the draft proposed Rules and Regulations for governing the Northwest Section to replace the current constitution were available for attending members. Phil Anderson told the approximately 105 attendees why the change to Rules and Regulations is necessary.

Walter Ariss, Northwest Young Professionals Committee Chairperson, organized a Young Professionals Meeting that was held at the City of Findlay Wastewater Treatment Plant on March 5th. The group held a roundtable discussion with Randy Greeno, Superintendent. The topic of discussion was the City of Findlay's industrial pretreatment program. The group toured the wastewater treatment plant and the Ball Metal Group manufacturing facility. There was a social hour for networking following the tours. There were 14 Young Professionals in attendance for the training event.

The next Northwest Section Meeting will be held May 19 in Bowling Green at the Riverby Hills Golf Course. There will be technical sessions and a business meeting in the morning followed by tours of the Bowling Green Wastewater Treatment Plant and a golf outing in the afternoon. Proceeds from the golf outing will be donated to Water for People.

The Semiannual NWOWEA Operator Education Day is scheduled for May 7th at the Northwest District OEPA Office in Bowling Green. The review sessions are for wastewater treatment and collection system operators or trainees that are planning to take the certification exams. Check-in will begin at 8:15 AM with review sessions starting at 9:00. Lunch will be on your own. The sessions will end at 3:00 PM. There is a $ 20.00 registration fee to cover printing and materials. Registration information can be found at *www.ohiowea.org*.

The Northwest Annual Spouses and Friends Day will be held August 6th at Put-in-Bay.

John Motycka
johnmotycka@allencountyohio.com

SW SECTION

Carl Gatton, SW President

A Section meeting was held at the Greene County Media Center on March 18, 2010. The meeting included a tour of the recently upgraded Sugar Creek WRRF. The weather really cooperated for the plant tour this time. Young's Dairy did an excellent job of catering the meal and the dessert. We had great participation for the day's activities with 109 persons in attendance. Thanks to Jim Fox, Operations Manager, and Ron Volkerding, Director, for providing the Media Center facility and arranging the tour. Kudos to the SW Executive Committee for making this meeting a success.

Recebt and upcoming events in the SW Section include:

- April 9, Executive Committee Meeting at Hazen and Sawyer
- April 15, 2010, Laboratory Analyst Committee Meeting (LAC) at YSI in Yellow Springs
- April 30, 2010 Spring Operator Education Day at Montgomery County Environmental Services Building
- May 20, 2010, Section Meeting at Cincinnati, Mill Creek WWTP
- June 15-17, 2010, 84th Annual OWEA State Conference, Columbus
- July 15, 2010, LAC Meeting at Fairfield Wastewater Treatment Plant, Fairfield
- September 16, 2010, Section Meeting, TBA
- October 21, 2010, LAC Meeting at Greene County
- October 21, 2010, Fall Operator Education Day at Montgomery County Environmental Services Building

- November 18, 2010, 9th Annual O&M Seminar and Section Meeting, Crowne Plaza Hotel, Blue Ash

Nominations were announced at the March 18 Section Meeting for the 2010-2011 term:

Jeff Olsen, President

Todd Warrix, Vice President

Dan Martin, Treasurer

Barb Wagner, Secretary

Bob Beyer, 1st Year Director

Kelli Jamison, 2nd Year Director

Jamie Gellner, 3rd Year Director

Dan Sullivan will continue to serve out his term as Delegate and Carl Gatton will be the Past President.

Carl G. Gatton
Carl.Gatton@co.warren.oh.us

NE SECTION

Bob Hrusovsky, NE President

So far 2010 has been an unbelievable record setting year. It has fortified the section's resolve to provide cost-effective contact hour programs for plant operators.

It all started in January at the Operations Seminar attended by over 205 section members when operators received 6.5 contact hours at the all day event. The technical presentations were top notch and were well received by all in attendance.

Next was the Industrial Waste Seminar attended by over 245 section members. Operators received 5.75 contact hours and were able to listen to presentations and visit exhibits.

Then it was off to the March meeting at the Dover Ohio WWTP, which was a joint meeting with the Southeast Section. The OWEA president and vice president graced us with their presence. Over 180 were in attendance. They received 4.0 contact hours. The Dover plant was recently upgraded with membrane process treatment. This allowed our members to see the latest technology in membrane treatment and air blowers.

Our next meeting will be in Euclid, Ohio on May 27, 2010 when we will visit the plant and have our annual business meeting, which will include section awards, officer elections and college scholarship awards.

Our website is up and running and we are now registering for meetings electronically(*online via www.ohiowea.org*).

Our annual golf outing is July 16, 2010. Please join us in this day of fun, camaraderie, and great prizes where we raise money for the college scholarship fund and Water for People.

We would like to thank all of our SMECCO and website contributors for their support.

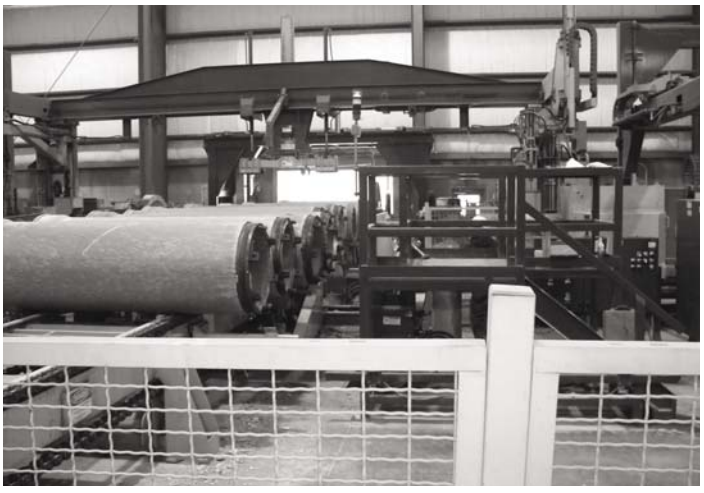
Bob Hruvosky
robert.r.hrusovsky@us.mwhglobal.com

SE SECTION

Greg Otey, SE President

As I write this article it appears that spring wants to come in like a lion, but Mr. Winter still wants to prove that Mr. Al "Global Warming" Gore is wrong. Anyway, no need to panic yet…flowers will be blooming and spring will be in the air very soon.

The Southeast Section has had two meetings since the last issue. Our February meeting was held in Columbus and started with a tour of Hanson Pipe. This was a very informative tour of the making of



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SE SECTION

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reinforced precast concrete pipe. Our technical sessions continued with this theme led by Mr. Don Lepley, P.E. of Hanson Pipe and highlighted the characteristics and applications of wet and dry cast pipe. Berwick Manor served a delicious meal and hosted the technical sessions for the 30+ members in attendance.

Our March meeting was "quite a contrast" to the February meeting. We teamed up with the Northeast Section for a joint meeting that attracted 185 people in Dover. Yes, Dover, Ohio is in the Southeast Section. We started with a tour of the Dover WWTP and had an excellent catered lunch and technical sessions at Memorial Hall in downtown Dover. Steve Elliott did another super job of lining up strong technical sessions which consisted of:

- Dover WWTP Plant: Past, Present and Future presented by Bill Craigo and Dennis Meek;
- Dover WWTP 3.0-MGD MBR Plant at year - Design and Operational Lessons Learned presented by Dennis Meek and Bob Schreiner;
- Fine Screens of Wastewater Treatment presented by Ed Pelton
- Tussing Road WRF NPDES Permit Appeal by Bradon Fox and Tony Vogel with Fairfield County Utilities.

Science fairs are currently underway at a total of six separate sites throughout our section. Fred Smith has taken the lead on this very geographically challenging endeavor and has done such a good job we are considering giving him a doctorate and this assignment for life!

Finally, please mark your calendars for May 27, 2010 for our next section meeting to be held in Marietta. Details regarding this meeting will be forthcoming. So until then, cross your fingers that we do not get as much rain this spring as we did snow this past winter. If so…does the word overflow mean anything to you?

Greg Otey
greg_otey@urscorp.com

YOUNG PROFESSIONALS COMMITTEE

by Dan Martin

The Young Professionals Committee had an excellent conference call on March 15th. The key discussion topic was "How do we enhance the value of the committee for YPs?" The committee is looking at extending a liaison to other committees within OWEA. One idea would be for the YP liaison on each committee to track new technologies or trends for the committee. Look for YPs to take on greater roles within OWEA in the coming years. We also continue to seek ways to attract operators to OWEA and the YP committee. Any suggestions or comments on these topics are appreciated.

Our conference call also included a discussion on the June OWEA State Conference. We will have events dedicated to Younger Members.

- We plan to have senior folks from Sewer Districts, Regulatory, Manufacturing, and Consulting backgrounds sit in a roundtable discussion and answer questions. This technical session worth 1 contact hour of credit was successful in Cleveland in 2008, so we have brought it back.
- We are also planning a session around professional development, time management, and organizational skills.
- We will cap off our sessions with a YP Committee Meeting.

Our hallmark event in 2010 will be a YP Summit planned to occur in Central Ohio. The event will be centered around a "green" activity such as the planting of a rain garden. Participants will learn key aspects of sustainable "green" design while earning contact hour credit as we literally roll up our sleeves and dig in to this seminar. Further updates to come.

Notable Happenings

- Southeast YPs are looking to organize a get-together in May. Last year the group toured a WWTP in the morning (earning two contact hours) and golfed in the afternoon. The committee is looking at making this a joint event with AWWA.

  Southeast is offering its third-annual YP/System Operator award. The State YP Committee is looking for opportunities to spread this to all four sections with the possibility of having a state YP/System Operator competition in the future.
- The Northeast section continues to grow and add more involvement as recent trips to local colleges and universities have shown promise for developing a young member base. A joint event with AWWA and ASCE is being planned for June – look for event details in an upcoming Sparkling Waters bulletin. If you are interested in sponsorship opportunities, contact Nick Bucurel.
- Southwest Section held a happy hour get together on April 1st. We discussed activities for 2010 including a study group for EITs preparing for the October PE exam. The Southwest Section is also offering a YP/Operator recognition which will be awarded at the May 20th Section Meeting. The winner will receive free admission to the OWEA State Conference.
- In the Northwest, 14 YPs attended an event which included a tour of the City of Findlay WPCC and discussion with the superintendent on the city Industrial Pretreatment Program. They then toured a very nice industrial wastewater pretreatment system at the Ball Metal container group facility in Findlay where aluminum beverage cans are made for Coke, Pepsi, etc.

Contact your Section YP representative to become more involved in the Young Professionals Committee:

- In the Southeast – Brandon Fox: *bfox@co.fairfield.oh.us.*
- Southwest representative – Dan Martin: *dmartin@raconsultantsllc.com.*
- In the Northwest – Walter Ariss: *Walter.Ariss@epa.state.oh.us.*
- Northeast representative – Nick Bucurel: *NBucurel@pirnie.com.*
- Our Ohio State University Student Chapter representative is Nick Elmasian. Please contact Nick if you or a Student/YP you know would be interested to develop a student chapter at a local university: *nelmasian@gmail.com.*

Special thanks to all the committee volunteers who make the YP committee vibrant! As always, if you have any suggestions or questions, please contact Dan Martin at: 513.469.6600 / *dmartin@raconsultantsllc.com.*

Don't Miss Out On Important News
Update Your Membership Profile

Maintain an accurate mail and email address so you receive timely communications from OWEA regarding upcoming events, important news affecting water environment issues, and your copy of the Buckeye Bulletin.

Please check your member profile at: www.wef.org by clicking on the Membership link. You can also make changes to your OWEA/WEF membership account by contacting WEF directly at 1.800.666.0206 or by email at *csc@wef.org*.

LAB ANALYST COMMITTEE

by Chairs Eva Hatvani and Nancy Taylor

Mark Your Calendar

- **Operations Challenge: May 18th**
  Operations Challenge is scheduled for May 18th at the Allen County Sanitary Engineering Department, 3230 N. Cole St. Lima, OH 45801. The LAC will again be organizing and running the lab portion of the Challenge. This event is set up not only as a competition, but as a hands-on learning opportunity as well. More information can be found at www.ohiowea.org, under the "Operations Challenge 2010" tab located on the left of the page.
- **Crystal Crucible Picnic August 14, 2010**
  The Crystal Crucible Picnic is scheduled for August 14th at the Delaware State Park. An email will be sent to members sometime in June or July for an update.
- **Operations/Lab Workshop - September 2nd**
  The Lab and the Operations Committees are having a joint meeting again this year. At the end of the session last year, we asked you for what you would like to hear at our next meeting. Your recommendations were: Proficiency Testing, Common Analyses like BOD, TSS, Ammonia, Microscopic Sludge Identification, Luminescent DO and you really liked the game show format. We will try to accommodate your recommendations. The date for the Workshop will be September 2, 2010.

Lab Certification News

1. Renewals for the certification program are completed.
2. Everyone is on a two-year renewal cycle.

If you did not renew, your certificate has expired and is no longer valid. If you have any questions, please contact Eva Hatvani at *hatvanie@neorsd.org* or 216.641.6000.

2010 Exam Dates

October 22, 2010
Cleveland and Columbus - Location TBD
Application Deadline: September 10, 2010

1. Lab Certification information is posted on the OWEA website *http://www.ohiowater.org/owea/For_the_Lab/*
2. Applications can be obtained by calling Eva Hatvani at 216.641.6000 or downloaded from the OWEA website.
3. Please see the ABC testing site link for the "Need-to-Know" criteria.
4. Please note new rules for certification section on WEB page. The test fee is $95.00.

Reinstatement of Certificate

1. If you did not renew your certification by Dec. 31, 2009, you are no longer certified. To be reinstated, you must provide proof of holding a certificate and submit a fee of $95.00. If you can not provide proof of certification, you must retake all tests in sequential order.

Northeast LAC- Kathy Richards

- **February 23, 2010**
  Akron WPCS was the site for a training event featuring Dr. Marc Silling, Testing Coordinator for the University of Akron, and Robin Halperin from the NEORSD. Dr. Silling is the learning specialist at NEOUCOM and his primary role is to teach medical students how to study for and pass board exams. His very interactive presentation covered Study Skills and Test Taking Tips. Anybody wishing to have a video CD of his presentation can contact me and I will try to find a way to get it to you. Robin Halperin is the current Manager of Environmental and Regulatory Support at NEORSD as well as the sitting Chair for the Ohio Water/Wastewater Agency Response Network (WARN). For anybody not familiar with this mutual aid community, I highly recommend checking it out: *www.ohwarn.org*. This session was approved for 2 contact hours.
- **March 26, 2010**
  Marc Morgan and the Mansfield Wastewater Treatment Plant hosted our annual Wastewater Analyst Certification review session. Many thanks to Denise Seman of Youngstown, Lisa Feigle of Geauga County Water Resources and Amy Starkey of Stark County Sanitary Engineers for their help and expertise during this very enjoyable and far ranging discussion. I know we all learned something. This session has been approved for 3 contact hours. If you were unable to attend the review but would like to purchase a review manual, order forms can be found online at the new NE Section website, *www.NESOWEA.org*.

  Additional training events will be announced in future Buckeye Bulletin articles as well as in Sparkling Waters, the NE Section's newsletter. Copies of our newsletters are available online at *www.ohiowea.org* and *www.nesowea.org*. While you are visiting these websites, consider responding to the NESOWEA LAC Questionnaire. The information we compile will go a long way towards building a networking database that will enable analysts to better connect with each other and share experiences and support. If you would like to be added to our NES membership directory (now numbering close to 200), please send your contact information to me at *NESOWEALAC@Gmail.com.*

Southwest LAC - Roger Rardain and Jim Davis

The SW Section Laboratory Analysis Committee held a meeting on November 5, 2009 at the Metropolitan Sewer District of Greater Cincinnati Laboratory, Division of Industrial Waste in Cincinnati,OH. Refreshments were provided by Metropolitan Sewer District of Greater Cincinnati.

Attendance was excellent, with 37 people from 10 organizations attending.

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Technical sessions included the following presentations:

- ”PeCOD (a new way to analyze COD)” by Aaron Gotway, ManSci, Inc. (1 contact hour was approved)
- “Automated BOD Analysis” by Aaron Gotway, ManSci, Inc. (1 contact hour was approved)
- Lab Tour - Highlighting Automated BOD, Low level Hg analysis, GCMS, and
- Sample Custody (0.75 contact hours were approved)

On January 21, 2010, the SW Section Laboratory Analysis Committee held a meeting at TestAmerica’s Dayton facility in Kettering OH. Attendance was outstanding, with 52 people from 18 organizations in attendance. Refreshments were provided by TestAmerica.

Technical sessions included the following presentations:

- pH analysis – Ron Paulick, TestAmerica Dayton Laboratory
- Low Level Hg sampling and analysis – Dr. Mark Bruce. TestAmerica North Canton Laboratory
- Laboratory Documentation – Violet Fanning, TestAmerica Dayton Laboratory
- Laboratory Tours were conducted by TestAmerica personnel.

3.0 contact hours have been submitted for approval.

Future meetings for the SW LAC are in the planning stages, but dates and locations have been determined.

- Spring LAC Meeting - April 15th, 10AM -3:45 PM - YSI, 1700/1725 Brannum Lane, Yellow Springs OH
  1. Advancements in DO technologies, electrochemistry vs. optical and review new BOD probe
  2. How to get the best DO data, calibration, maintenance and troubleshooting your DO Probe
  3. Facility Tour
  4. Lunch provided by YSI

  (4.25 contact hours have been submitted for approval.
- Summer LAC Meeting July 15th, 2010 - 12-4PM – Fairfield Wastewater Treatment Plant, Fairfield OH
- Fall LAC Meeting October 21st, 2010- 12-4 PM – Greene County

To inquire about being added to our e-mail list or to get information about attending, hosting, sponsoring, or presenting at a future LAC meeting please contact Roger Rardain or Jim Davis.

Southeast LAC-Diana Liston

Southeast Section of the Lab Analyst committee held a meeting on April 15, 2010 at the Jackson WWTP in the city of Jackson, OH. Scott Foster held a talk about lab audits. He covered Chapter 7 of the USEPA inspection manual as well as the OEPA DES forms for lab audits.

The session was followed by a tour of the Jackson WWTP is scheduled, including the plant’s new bio-reactor process. The meeting is approved for 2.5 contact hours.

If you have any topics you’d like more information and training on, please contact me!

STATE LAC COMMITTEE MEMBERS

State Chairs

Eva Hatvani, 216.641.6000, *hatvanie@neorsd.org*
Nancy Taylor, 740.349.6774 x205, *ntaylor@ci.newark.oh.us*

Northeast Chairs

Denise Seman, 330.742.8820, *dseman@cityofyoungstownoh.com*
Kathy Richards, 330.928.1164 x484, *NESOWEALAC@gmail.com*

Northwest Chair

Kevin Hughes, 419.488.5440, *watertreatment@tiffinohio.gov*

Southwest Chairs

Roger Rardain, 937.754.3075, *roger.rardain@ci.fairborn.oh.us*
Jim Davis, 937.496.7051, *davisji@mcohio.org*

Southeast Chair

Diana Liston, 614.864.3370, *dliston@co.fairfield.oh.us*

RESIDUALS MANAGEMENT COMMITTEE

by Dave Brewer and Jamie Gellner

The OWEA Residuals Management Committee continues to remain active in the monitoring of issues related to biosolids management and to seek opportunities to serve the membership of OWEA. Since our last update, we have focused on several main areas, including the following:

- Land Application Rules Revision –OEPA has finalized all changes and is currently preparing the rules for legal and JCARR review. They expect that the rules will be finalized by May 2010 and will define an effective date at that time.

- Farm Science Review – The 2010 Farm Science Review will be in September. The Residuals Committee provides manpower and educational materials on the benefits of biosolids land application at the OWEA sponsored booth. Small promotional handouts are normally also given to illustrate and reinforce the benefits of biosolids. This event is a great opportunity to provide information to the agricultural community on the benefits of Biosolids.

- Biosolids Workshop – We will be developing topics over the summer for the workshop to be held December 9, 2010. If you have any potential topics, please contact David Brewer or Jamie Gellner.

- Other Regulatory Topics – The Residuals Committee is also following the current debate about the reclassification of biosolids as a solid waste under RCRA. It is expected that this will be published in the Federal Register around April 15, 2010 for public comment. The Residuals Committee will be seeking input from others and experts in the field. Robert Dominak from NEORSD will be speaking at our April meeting on behalf of NACWA.

The Residuals Management Committee is focused on serving the OWEA membership through education, promotion of effective biosolids management, technical information on biosolids, and interface with OEPA on regulatory issues. We always welcome new membership and we would love to have you at our next meeting. If you are interested in getting involved or if you have any questions about the committee, please contact:

Dave Brewer
937.781.2561
(brewerd@mcohio.org)

Jamie Gellner
513.317.0337
(jgellner@hazenandsawyer.com)

GOVERNMENT AFFAIRS COMMITTEE

by Dale E. Kocarek, PE, BCEE, Chair

The GAC committee held its annual workshop on March 11, 2010 at the University Plaza Hotel. Approximately 125 persons attended the one day workshop. The workshop featured presentations on wide ranging topics including work force restructuring, satellite community management and compliance practices, discussions on future nutrient criteria, legality of addressing private property inflow and infiltration, and current research by WERF on emerging contaminants.

It should come as no surprise that a number of the topics are not mutually exclusive. A good case example is community efforts to meet limits for Total Phosphorus. Since all limits are ultimately technology or "loading based," through the formula: PPD Load = MGD x 8.34 x mg/l, one viable strategy to comply with a limit is to reduce extraneous inflow and infiltration. What this means is that strategies to comply with nutrient limits may actually be partially found by reducing inflow and infiltration. In terms of our workshop, we had presentations on both nutrient limits and private property inflow and infiltration. Both topics, while seemingly unrelated, are actually related through the loading formula!

I wish to thank the following individuals for serving as speakers for our workshop.

- George Elmarahy, Ohio EPA
- Mark Livengood, MCWS
- Alan Vicory, ORSANCO
- Eric Emory, ORSANCO
- Daniel Woltering, WERF
- Robert Hollis, Summit Co., DOES
- Guy Jamesson, Malcolm Pirnie, Inc.
- Laurie Chase, Blue Heron Eng.
- Rhonda O'Connell, OHM Inc.
- Vyto Kaunelis, OHM Inc.

I am proud of the development of our Technical Review Group and feel that they provide opportunities for our members to contribute in a meaningful way to our industry and take on a greater level of participating in the governance process. Also, our "Ask the Expert" column provides members to write in with questions and obtain responses on a wide array of problems and situations. OWEA is happy to share our knowledge as a value added service to our members.

If you have any topics that you wish to see us address in future workshops please let either me or John Owen know. I can be reached at *dale.kocarek@stantec.com* and John can be contacted at *john.owen@epa.state.oh.us*.

CAN YOU SEE ME NOW?

by Ed Nutter, Safety Committee Chair

Do you have employees who work outside your facility along city streets, roads, and highways? Do you receive any federal money to pay for sidewalks, curbs, pavement lighting, or construction of on any of those roadways? If so then you are required to protect your employees with high visibility apparel.

The Federal Highway Administration issued a rule, effective November 25, 2006, Part 634.3 in which states that "All workers within the right-of-way of a Federal-aid highway who are exposed either to traffic (vehicles using the highway for purposes of travel) or to construction equipment within the work area shall wear high-visibility safety apparel". This rule has been finally incorporated into the Manual on Uniform Traffic Control Devices that became effective on January 15, 2010.

How does the MUTCD effect water workers? The federal regulation describes workers as "Workers means people on foot whose duties place them within the right-of-way of a Federal-aid highway, such as highway construction and maintenance forces, survey crews, utility crews, responders to incidents within the highway right-of-way, and law enforcement personnel when directing traffic, investigating crashes, and handling lane closures, obstructed roadways, and disasters within the right-of-way of a Federal-aid highway". This includes not only distribution and sewer maintenance crews but also meter employees doing shut offs at curb stops.

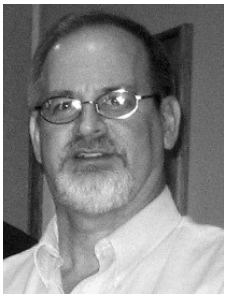
When the City of Newark started looking into what streets fell under the blanket of a Federal-aid highway, needless to say we were a little surprised by the area that it covered. Not only were the state routes that go through the city covered, but also roadways with bridges, and special lighting projects just to name a few. It came down to almost all streets in the city with the exception of individual neighborhoods.

Our crews do numerous jobs during their shift so our policy was set so that all employees were provided, trained, and required to wear the proper high visibility apparel that is required by the regulation at all times.

One of the most important parts of the MUTCD was the incorporation into the manual the new standard that provides service-life guidelines and test criteria and test requirements for garments marked as flame- or water-resistant. The American National Standard for High Visibility Safety Apparel and Headwear (ANSI/ISEA 107-2010) is the authoritative document for design and specifications. This standard contains the following statement about the expected life of high-visibility PPE garments:

> "The FHWA research into the service life of high-visibility garments that are currently in use indicates that the useful life of the vest depends greatly on the type of activities in which the workers are engaged while wearing the garments. The useful life of garments that are worn every day is approximately six months. Garments that are not worn every day should expect a useful life of up to three (3) years. Actual lifetimes in the field will vary depending on exposure and care conditions, and could range from weeks to years."

The key thing to remember is that just because your employee is wearing a vest that has stripes on it does not mean that you are providing the proper protection for your employee.



Ed Nutter has been employed by the City of Newark for 21 years, the last 5 serving as the Safety & Training Coordinator for the Division of Water and Wastewater. He has served as the OWEA Safety Committee chairman since 2002, and a member of the WEF Safety, Security, and Occupational Health Committee since 2006. He has judged the Operations Challenge Safety Event at WEFTEC the past 4 years. He holds an OEPA Class III Wastewater Operators license.

Ohio Water Environment Association
Preserving & Enhancing Ohio's Water Environment

OWEA's 2010 Workshop Schedule

Collections Systems May 13, 2010

Hands-On Operator Training Day Workshop at Operations Challenge **May 18, 2010**

Plant Operations and Laboratory Analysts September 1 - 2, 2010

Biosolids December 9, 2010

Visit *www.ohiowea.org* for more information and registration

PLANT OPERATIONS COMMITTEE

by Jim Borton and Kim Riddell

The Plant Operations Committee met at the OWEA offices on March 8th to discuss the 2010 Operations Challenge and Plant Operations Workshop. During the meeting the committee selected potential speakers and general topics for the September 1st and 2nd Plant Operations and Laboratory Workshop, as well as finalizing the Operations Challenge and concurrent Hands-On Operator Training Day.

Operations Challenge and Hands-On Operator Training Day

Operations Challenge exists to promote professionalism and recognition of Ohio's wastewater professionals. In addition, the contest promotes teamwork and camaraderie, not to mention earning team members up to 12 contact hours per participant. If you are a manager looking for innovative and very inexpensive contact hours, you have to come check this out! Want to give it a try? Contact Kim Riddell at (419) 234-4507 or Jim Borton at (330) 263-5293 to learn how being a team member can help advance your career. Ready to sign up? The team registration is still available on the OWEA website at *www.ohiowea.org*. As a reminder, entered teams compete for the opportunity to represent Ohio WEA at WEFTEC '10 and can receive up to $7000 to cover costs of travel to New Orleans.

As a reminder for the registered Operations Challenge teams, there will be practice time on the actual event equipment in the morning while the Hands-On Operator Training Day proceeds. Also, new this year, OWEA has purchased the WEFTEC Maintenance Event for all of Ohio's teams (new and old) to utilize for practice, competition, and for upcoming training events.

For those of you not ready yet to be part of a team, or you need up to 5 contact hours, come to the Hands-On Operator Training Day to watch and learn. Contact hours, good food at lunch, and the opportunity to network with other operations professionals - all for the low price of $50. The events will be held **May 18th** at the **Allen County Sanitary Engineer's Collection Systems Building** outside Lima.

Plant Operations & Laboratory Analysis Workshop

We know training budgets are tight. That is why the Plant Operations, Lab Analyst and Safety Committees have put together yet another top flight training event with state and nationally known speakers for **Wednesday and Thursday, September 1st and 2nd in Columbus at the University Plaza Hotel**. With up to 13 contact hours, two lunches, and a dinner included in the full workshop registration, you will be hard pressed to find a better deal for training dollars this year. Don't just take our word for it, here are some of the comments from last year's evaluations:

- Good technologies and concerns to bring into thought processes
- Excellent; offered a lot to think about for the future
- Very good speakers who offered some good information slanted towards the real world
- Very well pulled together!
- Really good presentations- show real life implications to what WW Operators do
- Very fun, rewarding, informational
- Quite knowledgeable and fleshed out well, presented with interest

If you have interest in putting an Operations Challenge Team together, judge the contest, join the committee, or present at one of the upcoming Plant Operations sessions, please contact:

Kim Riddell
kriddell@cityofdelphos.com
419.234.4507

Jim Borton
jborton@woosteroh.com
330.263.5293

Have you registered for the **May 18th Hands-On Operator Training Day?**

at the Allen County SED in conjunction with OWEA's 2010 Operations Challenge

- Earn up to 5 Contact Hours
- Network with other operations professionals
- Five morning training sessions (2.5 CH)
- Afternoon hands-on practice sessions (2.5 CH)
- Includes lunch and Operations Challenge Award Ceremony
- All for just $50.00

Register online at www.ohiowea.org

2010 Operations Challenge Sponsors *(as of April 26, 2010)*

360 Water | Allied Pump Rentals | Alloway | Black & Veatch | CT Consultants | NWOWEA

BUCKEYE STUDENT CHAPTER

by Nick Elmasian

WEF Wastewater Challenge

We all understand how challenging it can be to design and operate Wastewater Treatment plants. Now imagine doing this with only the materials in your garage, in one hour, and you have the student "WEF Wastewater Challenge". This contest is a new national competition for college students organized by the Water Environment Federation Student and Young Professional Committee (WEF SYPC). The competition will take place in Phoenix, Arizona, at the 2010 WEF Collection Systems Conference (June 13, 2010).

Representing Ohio, students from The Ohio State University (members of WEF Buckeye Student Chapter) are already at work developing a design to compete in the challenge. Under the leadership of Dr. Zuzana Bohrerova, students Mengling Yi Stuckman, Xuan (Shawn) Li, Gao Yuan (Clara), Xiao Jin, and Nick Elmasian are enrolled in an Environmental Engineering Technical Elective CE 694.05 and will receive college credit for their participation. Students wishing to participate in the challenge this Spring quarter may contact our instructor.

The Following is the Case Scenario for the Challenge:

A collection systems crew needs your help. There has been a sanitary sewer overflow due to a massive rain event. The treatment plant has reached its capacity, and the collection system is surcharged. The surcharge has caused numerous manhole covers to pop and wastewater is spilling into a neighborhood street, flooding the area, and threatening human health. The weather forecast is predicting heavy rain for several days. The challenge is to contain the spill and provide an emergency treatment system to treat the SSO and surcharged flows on site immediately.

Because of the extreme urgency of the situation, the crew has turned to you and your team, the local wastewater treatment experts, for some help. Unfortunately, it's the evening of Thanksgiving Day, and all the stores are closed. The only resources you have are the odds and ends in your garage. You quickly gather all the materials you can use and come up with a way to protect the town's drinking water supply from getting contaminated by this sanitary sewer overflow. Let's hope that you and your team can save the day!

Materials for competition

In addition to using materials only found in a garage to produce good quality effluent water (quality will be assessed based on conductivity, pH, Turbidity and Dissolved Organic Carbon), students are judged on Cost (material and operational), Design, Amount of Water Recovered, Speed and Efficiency, Presentation, and Safety.

If selected as one of the eight teams to participate in the national challenge, the Ohio State team will need your financial support. Please consider making a tax-exempt contribution to the team and make sure Ohio wins this year. For more information, or to provide financial support please contact Dr. Zuzana Bohrerova at *bohrerova.1@osu.edu* or Nick Elmasian, WEFBSC President, at *elmasian.1@osu.edu*.

Mengling Yi Stuckman and Shawn Li

Clockwise from left - Dr. Linda Weavers (Faculty Advisor), Nick Elmasian (President), Hooman Hooshiarnejad (Vice President), Alex Marras (Treasurer), Katie Kinstedt (Community Service Organizer), and Mengling Yi Stuckman (Secretary)

Nick Elmasian and Mengling Yi Stuckman

ON FINDING LEADERS

by Bill Bertera, WEF Executive Director

The great majority of not-for-profit organizations in North America are directed and managed by volunteers. Most associations do not have staff. In fact, most not-for-profit organizations are home grown organizations at the state and local level founded and managed to serve needs not addressed by the private sector or government; and they are run by "regular" people…people with other lives. Consequently, most associations look more like a typical WEF Member Association than they do like WEF itself.

Still, leading not for profit organizations is an increasingly difficult thing, even smaller, local organizations…and it is time consuming even if one has the interest. New and rapid communication devices require new skill sets in our leaders and place even more demands on them. Technology does not lessen workloads, it increases them. Not only do we expect our volunteer leaders to lead, we expect them to lead with some immediacy. Unreasonably, we expect them to put aside other professional and personal interests and deal with ours…NOW.

This is not a realistic expectation, and if pushed too hard, can result in discouraging otherwise willing and able volunteers. So we have to recruit and choose carefully and with the knowledge that few volunteers are without conflicts of time and interest. The constraints of diminished time and the need for new skill sets in association management make recruiting and choosing volunteer leadership an important mandate for our associations…and we have to plan for it.

The first step is to realize that not everyone with time and good intentions is automatically qualified to lead. Leadership requires skills that not all of us have…and most of us are not leaders. That is why it is important to know what we need in our leaders before we name them. These skills and talents are called "qualifications".

Qualifications are in the eye of the beholder. We all see someone different in the mirror in the morning than our good friends see when they bump into us on the street. Somehow that morning mirror vision tends to show someone younger, slimmer, and more intelligent. Perceptions, of course, are not realities…they are misguided observations. Increasingly, our organizations are less tolerant of misguided observations. We need to know what we want and we need a plan for getting it, or we will fail. Leadership is no exception.

Volunteers with the time and the desire to lead need to know this too. There is more to leading than just offering ourselves up and wielding a gavel. Leadership, even uncompensated leadership of a not-for-profit association, is an important job and not without its risks and obligations as well as rewards. Natural leaders are a rare blessing and the need for leadership is too important to leave to chance. One of the most effective strategies for addressing the leadership gap is to identify potential leaders early on and help educate them in the art of leadership itself.

Whether we find natural leaders or create our own, qualifications still matter, and topping the list are people skills…those that have to do with listening, mediating and empathizing. Volunteer organizations are just that and no one is there for much other than the satisfaction of serving. Serving should not be too much like real work. The leader's job is to make sure that it is not…to get the work done, but to make the experience rewarding.

Knowing your MA and how it works and what it needs is important. That means that service on the critical MA committees of membership, finance, and planning is important. It also helps to understand what boards do and how they are supposed to work. Setting direction and implementing are two different things. One is a board's job, the other falls to individual leaders and members. And finally, and perhaps most important of all, an open mind, an ability to work as part of a team, a willingness to make decisions… and oh, yes, a sense of humor is essential.

In most volunteer organizations the task of identifying, attracting and sometimes choosing leaders falls to a nominating committee of some sort. But nominating committees do more than just choose leaders. They also decide, implicitly or explicitly, what kind of leadership an organization needs or should have and advises the organization on how best to provide for that leadership over time. In this sense, the MA nominating committee may be the most important committee in the organization. Who sits on it, their values and their sense of the future for the organization are critical. It is not an honorary or unimportant job.

Ohio Water Environment Association
Preserving & Enhancing Ohio's Water Environment

2010 Collection Systems Workshop

Thursday, May 13, 2010

8:00-8:25	**Registration, Coffee, and Pastries**
8:25-8:30	Introductions/Opening Remarks
8:30-9:00	Odor Control in Large Diameter Sewers; City of Columbus, Ohio Downtown Area Odor Control
9:00-9:30	Odor Control in Collection Systems
9:30-10:00	Pumping Station Design: Not the Same Ball Game
10:00-10:15	**Break**
10:15-10:45	Alternate Collection Systems, Case Studies
10:45-11:15	Grinder or Step Pump Collection System Projects with Case Histories
11:15-11:45	Air Valve Basic Training
11:45-12:45	**Lunch (provided)**
12:45-1:15	Pump Station Manual Development: A System to Optimize Operations and Maintenance
1:15-1:45	Monitoring for Predictive Maintenance
1:45-2:15	Effective Process for Measuring Pump Station Flows
2:15-2:30	**Break**
2:30-3:00	Pump Station Emergency Power, Decisions, Decisions . . .
3:00-3:30	Dry Fork Sanitary Sewer and Pump Station
3:30-4:00	Valley Belt Gravity Sewer, Microtunneling Lessons Learned
4:00	**Closing Remarks**

OWEA Refund Policy

- Cancellations within 24 hours of the workshop, or no-shows the day of the workshop will still be billed in full and will NOT receive a refund.
- Any Cancellation 72-24 hours prior to the workshop will receive a 65% refund minus any credit card processing fees.
- Any Cancellation 72 hours or more prior to the workshop will receive a full refund minus any credit card processing fees.

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If unable to register online,
complete below and mail or fax to OWEA,
or register via telephone by calling 614.488.5800.

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Non-Member:	☐ $150
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Company:	
Address:	
Email:	
Phone:	
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If you select credit card, you will be emailed a secure link to enter your credit card payment. Be sure to enter a valid email address. Or you may call the OWEA office with your credit card number.

Submit completed registration form to:

Ohio Water Environment Association
1890 Northwest Blvd, Suite 210
Columbus, OH 43212

Phone: 614.488.5800 Fax: 614.488.5801
E-mail: info@ohiowea.org

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You will need to mention the "OWEA Specialty Workshop" .

WATER FOR PEOPLE

by Keith Riley

Water For People 2010 Fundraising

Water For People would like to share with you some of the great news about our work in 2009. In 2009, Water For People served 327,391 water and sanitation beneficiaries, an increase of 77% over the 184,705 water and sanitation beneficiaries served in 2008. We have seen significant growth in our established program countries, and 2009 also saw the opening of several new country programs. Water For People and partners successfully applied an approach centered on sustainable and innovative solutions, and encouraged the replication of the Water For People model in regions outside of its operation.

Anyone who would like to donate an item toward the **FUNdraising Raffle**, in part to benefit Water for People, at OWEA's June Annual Conference, please contact me at 330.963.1111 or email at *keith.riley@epa.state.oh.us,* or contact your Section Delegate.

SEOWEA has made a $150.00 donation to Water for People in honor of Danny Smith.

Thanks to OWEA's Water For People Guardians:

2010 Fund Raisers:

SWOWEA (Danny Smith)	$150

2009 Fund Raisers:

June 09	Annual Conf. Golf Event	$1,870
June 09	Annual Conf. Meet & Greet	$313
June 09	Annual Conf. Auction	$2,772
June 09	5S Donation	$500
Sterns & Wheler Donation		$75
July 09	NE Section Golf Event	$1,024
Sept 09	SE Section Event	$200
Oct 09	NW Section Event	$160
Oct 09	NE OEHA Donation	$275
2009	**Current Total**	**$7189**

Rosenthal Challenge Success

For the second year in a row, donors of Water For People partnered with philanthropists Stephen and Sandy Rosenthal with the goal to raise $1 million. This Fall, more than 800 supporters successfully matched the Rosenthals' $500,000 donation to Water For People and significantly surpassed the goal, raising almost $800,000. In combination, this totals $1.3 million that will go to help transform communities in Africa, Asia, Central America, and South America with safe drinking water and improved sanitation. We are deeply grateful to the Rosenthal family for giving Water For People supporters a rare opportunity to double their impact. On behalf of the communities we serve, thank you for making the Rosenthal Million Dollar Challenge a success!

WEFTEC Recap

Water For People participated in WEFTEC.09 in Orlando, Florida, the largest water quality event in North America, and the largest annual water quality exhibition in the world. WEFTEC drew more than 17,700 water professionals from around the world.

Water For People hosted a cocktail party to recognize outstanding supporters from the Water Environment Federation (WEF) network, including Robert E. Adamski, who was awarded the Robert W. Hite Award for outstanding volunteer leadership, and ITT Corporation, for their significant contributions to school water and sanitation. Local Water For People committees within member associations and World Water Corps volunteers were also recognized throughout the evening.

Two Water For People board members received individual service and contribution awards from WEF. Richard Kuchenrither received the Emerson Distinguished Service Medal, and James Clark was awarded the Engelbrecht International Achievement Award.

Water For People Celebrates Record Workplace Giving Fundraising Year

Amy Harvey, Water For People Staff

Despite tough economic times, people are finding a place in their hearts to donate to a cause in which they believe: safe drinking water and sanitation. Generous employees of several large corporations have supported Water For People in a record fundraising year.

Employees from CH2M HILL, a global full-service engineering, consulting, procurement, construction, and operations firm, raised more than $229,000 through online donations, personal checks, fundraising events, and payroll deductions. Elisa Speranza, a CH2M HILL executive who also is the president of Water For People's board of directors, said, "We are especially gratified by the participation from many in our offices outside of North America this year. Even in this economy, our people remain committed to bringing clean water and sanitation to those most in need, and are willing to open their hearts and their wallets."

American Water, the largest investor-owned U.S. water and wastewater utility company, also donated over $216,000 to Water For People through its company-wide 2009 fundraising campaign. More than $140,000 of that was raised from employee contributions through personal checks and payroll deductions. "I cannot understate Water For People's tremendous work throughout much of the developing world in securing quality water and health resources for those who strongly and urgently need it," said Ellen Wolf, senior vice president and chief financial officer of American Water, chair of the company's 2009 giving campaign, and a member of Water For People's board of directors. "Every year American Water employees proudly contribute to the important efforts of Water For People through creative fundraising campaigns and events."

"Water For People's roots are in the North American water and wastewater community, and they remain our core supporters every year," said Ned Breslin, chief executive officer of Water For People. "We are proud to be their charity of choice and are continually awed by their generosity and devotion to our mission. We wouldn't be where we are today if it wasn't for the employees of companies like CH2M HILL and American Water."

These companies aren't alone in their employees' support of Water For People. In fact, Water For People expects additional workplace

giving donations this year from groups across the country including Denver Water, CDM, Miami-Dade Water and Sewer Department, Brown and Caldwell, and Las Vegas Valley Water District. Their donations through personal checks, fundraising events, online donations, and payroll deductions will help support Water For People's work in 10 developing countries around the world. Ohio firms with active Work Place Giving Programs include: CH2MHill, Brown & Caldwell, Black & Veatch, URS, Malcolm Pirnie, Greeley & Hansen.

Fighting Disease with a Little Soap and Water

Eileen Lambert, Water For People Staff

We talk about the importance of safe water and adequate sanitation often, but neither of these goals is accomplished in a silo. Hygiene education is a vital part of the mission of Water For People and whenever possible, we incorporate it into country programs. We've discussed that 6,000 people die every day from water-related diseases, but did you know that within this disturbing statistic, 4,000 children under five die every year from diarrheal diseases due to poor hygiene and lack of access to sanitation?

Education about the importance of proper hand washing is helping to instill good habits throughout the world. In fact, hand washing with soap cuts the incidence of diarrhea by nearly half, according to the World Health Organization. But people all around the world fail to wash their hands after critical moments. (Use your imagination folks.). By focusing on children, kids help improve their families' health by bringing the good habits home and influencing their parents.

Take the "María Lopez" Elementary School in Villa Rivero, Bolivia for example . . . The following is a story by Veronica Pena, Water For People-South America regional reporter.

Many students at "Maria Lopez" Elementary School in Villa Rivero, Bolivia were constantly absent from classes, mostly because they had diarrhea. Children used the school bathroom and cleaned themselves with small rocks and returned to class without washing their hands. In 2008, when the hand washing program started, thanks to the agreement between Water For People and the German international aid agency GTZ that donated educational materials, two classes signed up and in little time the whole school took up the initiative. Professors attended training seminars held by Water For People in which they were shown which supplies were needed and the right way to teach children to wash their hands.

"The amazing thing was that stomach sicknesses began to decrease and students did not miss classes. All of the children made and decorated their own disposable bottles and had kits with soap, a towel and a brush. They took them home and used them, and they were the ones that taught their parents." ~ Professor Daysi Lara, Former Principal of "María Lopez" Elementary School in Villa Rivero, Bolivia.

The program provided schools with kits containing basic hygiene supplies including a fingernail brush, fingernnail clippers, a towel and soap. The implementation of the program in the school was very successful, and Professor Daysi Lara, the school's former principal, together with the other professors, has been invited by other municipalities to give talks about the process.

"Villa Rivero is proud to have been the first [within the area], and the program has become very large with the help of parents and the institutions. My school has been the example," says Lara.

See you at the sink, and don't forget the soap!

(Photos provided by Water for People)

LOW HEAD DAMS - A BOON OR BANE?

by Travis White, EI, SI and Anil Tangirala, PE

Introduction and Background

According to the Ohio Department of Natural Resources, there are 247 low head dams on rivers and streams throughout the State of Ohio. A low head dam, also known as a run-of-river dam, is a dam of low height, usually less than 15 feet (bed to crest), that spans the entire width of a channel with water continuously flowing over its crest. The low head dams throughout Ohio were constructed for a variety of reasons (e.g. water supply, energy generation, recreation, utility stream crossings, etc.) These dams block the movement of fish, degrade water quality, alter the flow of sediments and nutrients critical to stream health, and often create dangerous currents just downstream of the dam. These currents occur as the result of the energy dissipating functions of a hydraulic jump transitioning from the supercritical plunge over the low head dam to the subcritical open channel flow downstream of the structure. These currents can create hazardous, possibly fatal, conditions for both river traffic and the general public. In June 2008 a recreational boater drowned after his small vessel went over the low head dam on the Olentangy River near 5th Avenue in Columbus.

Many low head dams house functioning sanitary sewers and are unable to be removed; therefore, the purpose of this article is to explore a few possible improvements and modifications that can be implemented at existing low head dam structures, which would reduce or eliminate the dangerous downstream currents without disturbing any housed utilities. The ideal solution will result in safer conditions at the dams by eliminating the formation of the hydraulic jump while still providing the necessary energy dissipating functions and not causing any increases in downstream erosion.

Overview of Public Safety Risk

Hydraulic currents caused by low head dams are dangerous to both boaters and swimmers. The water flowing over the dam creates currents that can trap objects or people against the face of the dam. The force of the hazard is dependent upon a variety of factors, including, but not limited to, the height of the dam, the shape of the river bed and the volume and velocity of water flowing over the dam. This section provides an examination of the hydraulic characteristics associated with low head dams.

A river may experience several different types of flow due to changes in the characteristics of the river. Subcritical flow occurs when the average velocity of the stream is less than the velocity of a wave (wave velocity) traveling on the surface of the water. Subcritical flow typically corresponds to greater water depths and/or lower stream velocities. When the average velocity of the stream equals the wave velocity, the flow is said to be critical. Once the average stream velocity becomes greater than the wave velocity, the flow is considered to be supercritical. Supercritical flow is a characteristic of higher velocities and shallower depths when compared to subcritical flow.

Typically, low head dams create a unique situation where the flow over the crest of the dam is supercritical and the flow downstream of the dam is subcritical. Where these flows meet, a transition known as a hydraulic jump occurs. Hydraulic jumps are known as methods for dissipating excess kinetic energy.

As tailwater elevations downstream of the dam rise, the hydraulic jump becomes submerged. This flow generates a “roller” effect as its means for energy dissipation. The power of this roller can create an extremely hazardous situation for anyone or anything that becomes trapped in its current. Often, a scour hole will develop at the toe of a low head dam. The presence of this hole will cause the hydraulic jump to be submerged regardless of tailwater elevations. The roller generated in this circumstance creates extreme forces that have been responsible for many drowning deaths.

Improvements to Public Safety

Signage

Signage for both river traffic and shoreline users is an effective tool in the effort to increase public safety at low head dams. Signage for river traffic should be installed upstream and downstream of the dam, and be sized such that the text is readable from the center of the stream at a distance of 400 feet upstream or 150 feet downstream of the dam. Signage shall be placed at an angle to the riverbank such that river traffic in the center of the stream maintains a direct line-of-sight to the sign.

General warning signage should be present along the river banks to ensure that pedestrians are aware of the dam and the hazard posed by it. There should be a minimum of one sign on each bank upstream and downstream of the dam. Additional signage should be added for bank areas in excess of 100 feet in length where river access is possible.

Signage should be present at dam abutments to identify the dam crest and inform river traffic and pedestrians of the hazards posed by the dam. One warning sign should be installed at each abutment and directed toward upstream river traffic, angled and sized in the same method as outlined above, and one detailed warning sign should be installed at each dam abutment directed toward pedestrians.

Public Awareness Campaign

A public awareness campaign could be implemented to inform river users of the hazards posed by low head dams. The objective of the campaign would be to reach the people who most often frequent the river, thereby placing themselves at the greatest risk. This target audience includes boaters, fishermen, adjacent land owners and emergency responders.

continued on page 25

The campaign would explain the hidden dangers associated with low head dams, namely the dangerous currents associated with the hydraulic jump and the downstream "roller." The message must be clearly communicated: To ensure safety, avoid entering the water near a low head dam.

Visitors to the dam could be informed through the signage discussed previously, as well as through additional exhibits or kiosks located near the dam. Emergency responders must be directly provided with public awareness information in the form of pamphlets and brochures, and encouraged to share the information with the public. Additional educational materials can also be distributed to boating, fishing and other clubs that frequent the areas.

Dublin Road Low Head Dam - Sciota River

Structural Options

Temporary Rock Fill:

A temporary rock fill option consists of placing large rock on the downstream side of the low head dam face extending downstream at a mild slope. As the name indicates, temporary rock fill needs to be replaced occasionally as the fill will be eroded and carried downstream. The rock fill will reduce the hydraulic jump and the roller effect that occurs during high tailwater elevations. This option can be implemented more quickly, and often at a lower initial cost, than permanent structural options.

Stepped Spillway:

Much national attention has recently been focused on the use of stepped spillways. The dissipation of energy that occurs along the face of the structure limits the amount of energy remaining for the formation of a "roller" and the creation of bed scour.

During low flow events, flows over the structure are known as nappe flows. In a nappe flow regime, flow falls from one step to the next. During higher flows, a skimming flow regime develops where the water moves along the face of the steps as a coherent stream. The flow is cushioned by the circulating fluid that is trapped between the steps causing a shear stress that appears to cause the energy dissipation.

Permitting

According to federal law, anyone who wishes to dredge or place fill in waters of the United States must obtain a Section 10 Permit (Rivers & Harbors Act) and/or a Section 404 Permit (Clean Water Act) from the U.S. Army Corps of Engineers (USACE.)

The USACE will require that an applicant consult with the U.S. Fish and Wildlife Service (USFWS) regarding the presence of federally listed threatened and endangered plants and wildlife located in the project area (Endangered Species Act).

Since the project will involve work in a stream, a 401 Water Quality Certification from the Ohio Environmental Protection Agency (OEPA) may be required. When a Section 404 permit is required by USACE, a Section 401 water quality certification typically must be obtained from the OEPA.

If the proposed project may impact a public water supply through dewatering, the Ohio EPA's Division of Drinking and Ground Waters must also be contacted.

Pursuant to the National Historic Preservation Act of 1966, Public Law 89-665 as amended, the Ohio Historic Preservation Office, should be consulted on specific archaeological, prehistorical, or historical sites or structures which might be affected by any proposed projects.

If a local municipality participates in the National Flood Insurance Program, they thereby agree to review all development, structural and nonstructural, proposed in a federally identified special flood hazard area (SFHA). Any proposed action in a floodway must be supported by hydrologic and hydraulic analyses to demonstrate that there will be no impact on water surface elevations during the discharge of a 1-percent-annual-chance flood.

References

1. *Capital Development Board of Illinois, Evaluation of Public Safety at Run-of-River Dams, July 20, 2007.*
2. *Illinois Department of Natural Resources, Office of Water Resources, Hydraulic Model Study for the Drown Proofing of Yorkville Dam, Illinois, by Freeman, Jeffrey W. and Garcia, Marcelo H., May 1996.*
3. *Rajaratnam, N., Skimming Flow in Stepped Spillways, Journal of Hydraulic Engineering, ASCE, Vol. 116, No. 4, pg. 587-591, 1990.*

For more info contact: Travis White, EI, SI (travis.white@stantec.com) and Anil Tangirala, PE (anil.tangirala@stantec.com)


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The members of the Executive Committee of the Ohio Water Environment Association work many long hours on behalf of the organization. OWEA would like to thank their employers for their support of their service and the mission of preserving and enhancing Ohio's water environment.

Mark Livengood, President *Manager Water Reclamation Service Group - Montgomery County*	Phil Anderson, WEF Delegate *Senior Operations Specialist, ARCADIS U.S., Inc.*
Dale Kocarek P.E., President-Elect *Stantec Consulting Services, Inc.*	Tom Angelo, NE Delegate *Director Water Pollution Control, City of Warren Ohio*
Douglas Clark, Vice President *WPC Superintendent, City of Bowling Green Ohio*	Dan Sullivan, SW Delegate *President, Sullivan Environmental Technologies, Inc.*
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Steve Morrison, WEF Delegate *Project Manager, Infrastructure Management Services, Woolpert*	The Ohio Water Environment Association is a volunteer-based organization and is very appreciative of the companies who encourage their employees to participate on OWEA Committees, Sections, Workgroups, and at OWEA Events with the goal of preserving and enhancing Ohio's water quality environment.

Ohio Water Environment Association

Preserving & Enhancing Ohio's Water Environment

presents the

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Clean Water Columbus

The Renaissance Columbus Downtown Hotel

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614-228-5050

June 14 - 17, 2010

Golf Outing - Monday at Foxfire Golf Club

OWEA Awards Breakfast - Tuesday Morning

Technical Sessions - Tuesday, Wednesday, & Thursday

Earn up to 12 Contact Hours - Choose from 50+ Technical Sessions

Exhibitor Expo - Tuesday, 60 Exhibitors

"Changes in Attitudes" Meet & Greet - Tuesday Night

Bring your beach attire, flip flops, and shades. Network on the Cityview Terrace while enjoying beach tunes and the lights of Columbus.

Annual Banquet - Wednesday Night

Unique **FUN**draising Raffle - Outstanding Prizes!!

Plant Tour - Thursday, City of Marysville WRF


photo by B. Cirker

Hosted by the Southeast Section. For information contact:

Mike Frommer
614.419.0598
mike_frommer@urscorp.com

Cindy Jacobsen
614.402.2802
cjacobsen@pirnie.com

Ohio Water Environment Association
614.488.5800
info@ohiowea.org

Welcome

Dear Colleagues:

Please plan on attending the 2010 OWEA Annual Conference in Columbus at the Renaissance Hotel, June 14-17, 2010. The Southeast Section of OWEA, headed by the planning committee's Co-chairs Michael Frommer and Cindy Jacobsen, has planned another outstanding event. Judy Jones, WEF Board of Trustee member from Georgia, will be attending this year's conference.

On Monday, June 14, the annual golf outing will take place at Foxfire Golf Club just south of Columbus. If you have not already signed up you or your team, please consider doing so. The outing is funded by player fees and hole sponsors. Please thank all hole sponsors when you see them during the week.

On Tuesday, June 15, conference activities will start with our annual Awards Breakfast where OWEA awards will be presented, as well as this year's 5S inductees will be announced. Tuesday's schedule will include the Exhibit Expo, featuring 60+ exhibitors, the annual OWEA business meeting, and an afternoon of technical sessions. Dale Kocarek, OWEA President-Elect, has scheduled well-balanced and high-quality technical sessions this year. The day's event will conclude with the always-welcomed Meet & Greet on the Renaissance's Cityview Terrace.

On Wednesday, June 16, the technical program will continue all day. Ahead of the evening's Annual Banquet (where WEF Awards will be presented), the inspiring 5S Induction Ceremony will take place.

The Conference will wrap-up on Thursday morning with a half-day of technical sessions, followed by a tour of the City of Marysville Water Reclamation Facility.

OWEA appreciates its members and guests for their support, as well as the support from our sponsors and exhibitors. Every Conference would not be possible and be a success without your continued financial support and volunteer support. The OWEA Executive Committee thanks each and every one of you.

Sincerely,

Mark J. Livengood

Mark J. Livengood
OWEA President

For conference information contact Conference Co-Chairs or the OWEA Office:
Mike Frommer, 614.419.0598, *mike_frommer@urscorp.com*
Cindy Jacobsen, 614.402.2802, *cjacobsen@pirnie.com*
OWEA Office, 614.488.5800, *info@ohiowea.org*
or visit ***www.ohiowea.org***

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Wednesday/Thursday Breakfast Sponsor

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Sponsor List as of April 26, 2010

The Ohio Water Environment Association is very grateful to the generous sponsors who make our Annual Conference possible. Additional Sponsorships available. **Register online** at ***www.ohiowea.org,*** complete the Sponsor Registration Form on page 52, or contact OWEA at 614.488.5800/*info@ohiowea.org* for more information.

Conference Schedule

2010 OWEA ANNUAL CONFERENCE SCHEDULE

MONDAY, JUNE 14

8:30 am	to	5:30 pm	Golf Outing - Firefox Golf Club
4:00 pm	to	6:00 pm	Registration - Renaissance Columbus Downtown Hotel
6:00 pm	to	10:00 pm	Exhibitor Setup
7:30 pm	to	9:00 pm	Executive Committee Meeting

TUESDAY, JUNE 15

7:30 am	to	5:00 pm	Registration - Renaissance Columbus Downtown Hotel
8:00 am	to	10:00 am	Exhibitor Setup
8:00 am	to	10:30 am	Awards Breakfast
10:30 am	to	5:00 pm	Exhibit Expo Open
11:00 am	to	4:30 pm	Spouse/Guest Program
11:00 am	to	12:00 pm	OWEA Annual Business Meeting
12:00 pm	to	1:00 pm	Lunch in Exhibit Area
12:00 pm	to	1:30 pm	Young Professional Roundtable
1:30 pm	to	4:15 pm	Technical Sessions (2 Concurrent Sessions)
4:00 pm	to	5:00 pm	Afternoon Social in the Exhibit Expo Area
6:00 pm	to	10:00 pm	Meet & Greet on the Cityview Terrace

WEDNESDAY, JUNE 16

7:30 am	to	5:00 pm	Registration - Renaissance Columbus Downtown Hotel
7:30 am	to	9:00 am	Continental Breakfast hosted by **Stantec**
8:30 am	to	11:45 am	Technical Sessions (3 Concurrent Sessions)
9:00 am	to	4:30 pm	Spouse/Guest Program
11:45 am	to	1:30 pm	Lunch Break - On Your Own
12:00 pm	to	1:30 pm	President's Luncheon (by invitation)
1:30 pm	to	4:15 pm	Technical Sessions (3 Concurrent Sessions)
6:00 pm	to	7:00 pm	Social Reception – 5S Induction
7:00 pm	to	10:00 pm	Annual Banquet & FUNdraising Raffle

THURSDAY, JUNE 17

7:00 am	to	11:00 am	Registration - Renaissance Columbus Downtown Hotel
7:30 am	to	9:00 am	Continental Breakfast hosted by **Stantec**
7:30 am	to	8:30 am	5S Breakfast by hosted by **Jones & Henry Engineers, Inc**.
8:30 am	to	11:15 am	Technical Sessions (2 Concurrent Sessions)
1:00 pm	to	2:30 pm	Plant Tour - City of Marysville WRF *(transportation on your own)*

Awards Breakfast

Tuesday, June 15th 8:00 am to 10:30 am

The 2010 Ohio Water Environment Association Awards Breakfast will be held on Tuesday, June 15 at 8:00 am in the Woody Hayes Ballroom A-B. Breakfast will be followed by the presentation of OWEA's State Awards. The festivities will kick off our 2010 Annual OWEA Conference.

WEF Representative

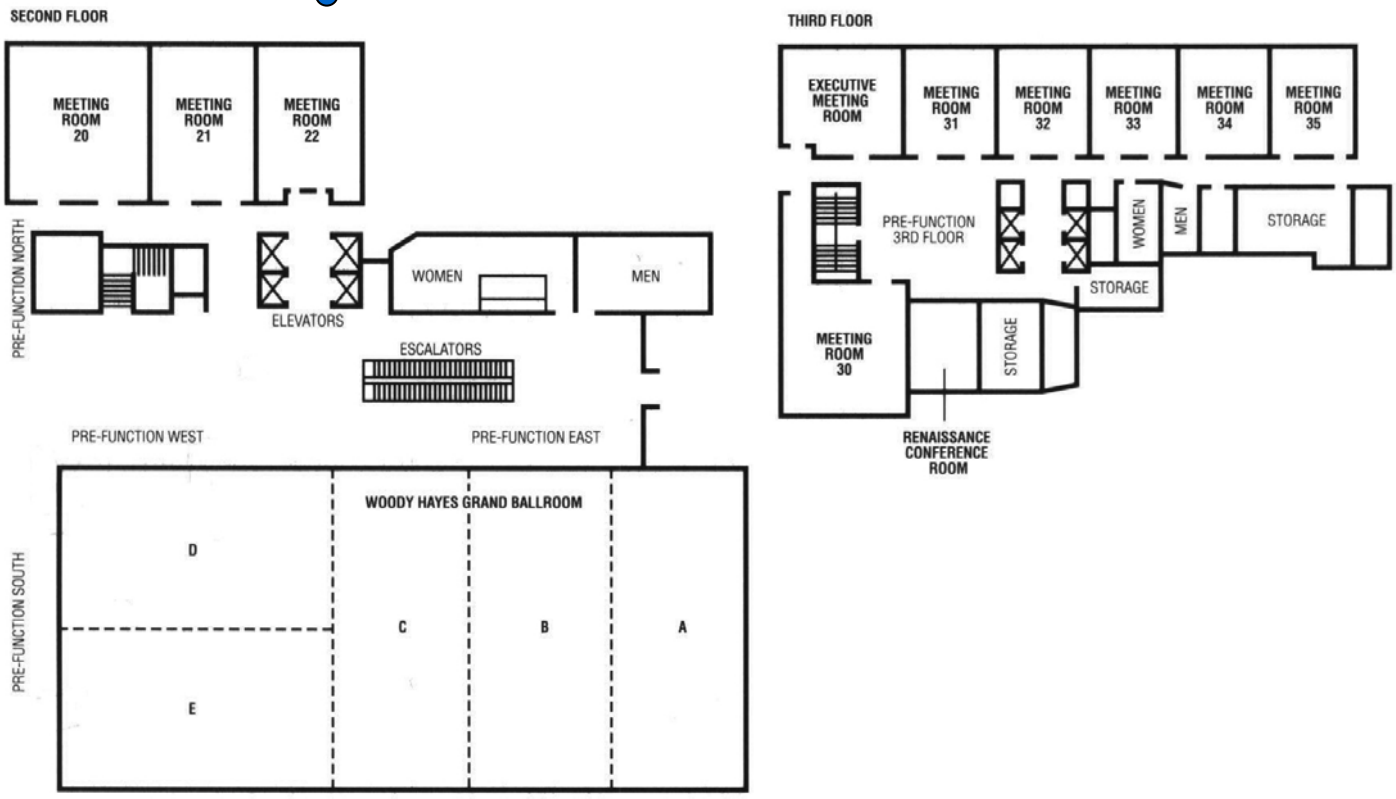
Judy Jones is a member of the 2009-2010 Board of Trustees for the Water Environment Federation (WEF).

She is currently the Engineering & Records Division Manager for the Cobb County Water System (CCWS) in Marietta, Ga.

Judy has been a WEF member since 1997 and served on WEF's House of Delegates from 2005 to 2007. Judy has also been an active member of the Georgia Association of Water Professionals (GAWP) and GWEF (Member Association of WEF – A Section of GAWP). She served on GAWP's Executive Committee (2002 - 2007) and Board of Directors (2000-2007) and has chaired and co-chaired several committees.

Renaissance

Conference Area Layout



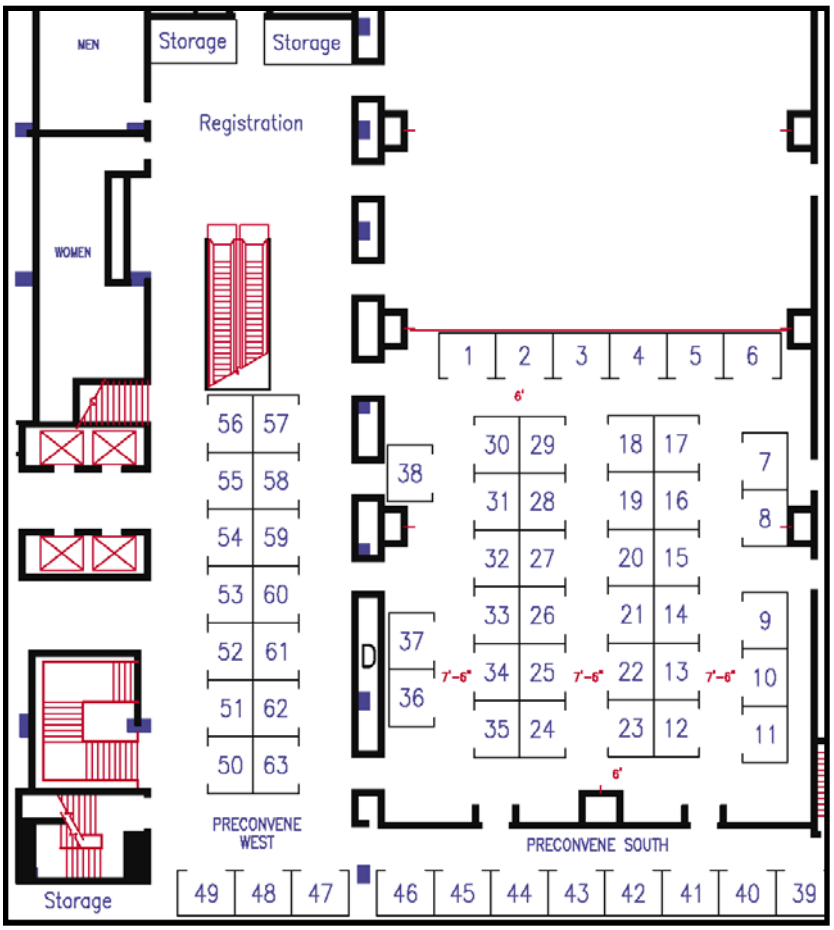
2010 Exhibit Expo

Tuesday, June 15th 10:30 am - 5:00 pm

Exhibit Hall

The Exhibit Hall will be held on Level Two at the Renaissance Columbus Downtown Hotel. **Exhibitor spaces are limited so reserve yours now!** The Exhibit Hall will be open Tuesday with a box lunch provided.

Register online at ***www.ohiowea.org,*** complete the Exhibitor Registration Form on pages 50 or contact OWEA at 614.488.5800/ *info@ohiowea.org* for more information.



Afternoon Social in the Exhibit Expo

Join the 60+ Exhibitors in the Exhibit Expo Tuesday afternoon from 4 - 5 p.m. for a light afternoon social as you take advantage of the last hour to stroll the exhibit aisles. Enjoy a refreshment and see the new offerings by the 2010 Annual Conference Exhibitors.

EXHIBITORS

(as of April 26, 2010)

Alloway
American Academy of Environmental Engineers
ArchaeaSolutions, Inc.
ASA Analytics
BissNuss, Inc.
Boerger, LLC
Brown Bear Corporation
Chesley Associates, Inc.
Duke's Root Control, Inc.
E & I Corporation
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Lakewood Automation 1
Lakewood Automation 2
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NETZSCH Pumps North America, LLC
Odle, Inc.
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OTT Oxygen Transfer Technology by Hydro-Logic
Parkson Corporation
Pelton Environmental Products
Process Control Services
Resource International, Inc.
Smith Environmental
Sullivan Environmental Tech. Inc.
The Henry P. Thompson Company 1
The Henry P. Thompson Company 2
Thermal Process Systems
Trojan Technologies
Vogelsang USA
W.E. Stilson Consulting Group, LLC
Weatherford Engineered Chemistry
YSI, Inc.

Technical Program

50+ Sessions - Earn up to 11.5 Contact Hours

Tuesday Afternoon, June 15, 2010

Session 1: Management

#	Time	Primary Speaker	Title
1	1:30 – 2:00	Dax Blake	City of Columbus Wet Weather Management Plan
2	2:00 – 2:30	Mark Livengood	MCWS Position Consolidation
Break	2:30 – 2:45		
3	2:45 – 3:15	Michael Sweeney	Take Time to Gauge Your Performance
4	3:15 – 3:45	Roberta Acosta	Introduction to RCAP - Part 1
5	3:45 – 4:15	Roberta Acosta	Introduction to RCAP - Part 2

Session 2: Potpourri

#	Time	Primary Speaker	
1	1:30 – 2:00	Kris Ruggles	Young Professionals: Ideas and Opportunities for Career Development
2	2:00 – 2:30	John Krinks	Digester Gas Recovery Alternatives at the SWWTP and the JPWWTP
Break	2:30 – 2:45		
3	2:45 – 3:15	Sridar Vedachalam	Student Perceptions on Water Resources and Re-Use at a Large University in Ohio
4	3:15 – 3:45	Brandon Fox	Tussing Road WRF NPDES Permit Appeal
5	3:45 – 4:15	Seth Bradley	Options for Solids and Floatables Control

Wednesday Morning, June 16, 2010

Session 3: Wet Weather Issues

#	Time	Primary Speaker	Title
1	8:30 – 9:00	Leslie Schehl	CSO 419 Green Infrastructure Master Planning
2	9:00 – 9:30	Adam Hoff	Napoleon LTCP: A Story of Success
3	9:30 – 10:00	David Shank	Evaluation of Chemically Enhanced High Rate Treatment of SSO 700
Break	10:00 – 10:15		
3	10:15 – 10:45	John Barton	Flow Monitoring Basics
4	10:45 – 11:15	Sandra Doyle-Ahern	Green Infrastructure Stormwater Management Options in an Ultra-Urban Redevelopment
6	11:15 – 11:45	Rhonda O'Connell	A Tale of Two Storms – How Understanding Your Collection System's Wet Weather Flows Affects Capital Upgrade Costs

Session 4: Process Design

#	Time	Primary Speaker	Title
1	8:30 – 9:00	Earnest Childs	Archaea: Essential Microbial Domain for Wastewater Breakdown
2	9:00 – 9:30	Ed Greenwood	Solving Industrial Water Resource Challenges with MBR Technology
3	9:30 – 10:00	Steven Reese	Dewatering Technology: Traditional Versus New
Break	10:00 – 10:15		
3	10:15 – 10:45	Michael McGehee	An Overview of Tertiary Filtration Using Cloth Media Filtration Technology
4	10:45 – 11:15	Randall Wirtz	Sustainable WWTP Design Opportunities: A Case Study
6	11:15 – 11:45	Anthony Farina	It is Hot Air of the Next Breakthrough? Evaluation of High Speed Direct Drive Blowers

Session 5: Capital Projects and Initiatives

#	Time	Primary Speaker	Title
1	8:30 – 9:00	Michael Hall	Managing Complicated Tunnel Projects – Lessons Learned
2	9:00 – 9:30	Chad Dunn	Columbus Southerly WWTP New Headworks
3	9:30 – 10:00	Bill Johngrass	Concrete Restoration at the Southerly WWTP
Break	10:00 – 10:15		
3	10:15 – 10:45	James Ward	Field Testing of Pump Stations
4	10:45 – 11:15	Stuart Browns	A Dangerous Situation Exposed with Private Property Laterals
6	11:15 – 11:45	Daniel Miller	City of Jackson, Ohio Blending Conventional Treatment and Membranes

Wednesday Afternoon, June 16, 2010

Session 6: Phosphorus and Long Term Planning Initiatives

#	Time	Primary Speaker	Title
1	1:30 – 2:00	Samuel Jeyanayagam	A Review of the Current State of Knowledge on Phosphorus Removal
2	2:00 – 2:30	Samuel Jeyanayagam	The Other Phosphorus Predicament
3	2:30 – 3:00	Robert Smith	To Everything there is a Season – Lessons Learned from Two Seasons of Phosphorus Removal at the Greene County Sugarcreek WRRF
Break	3:00 – 3:15		
4	3:15 – 3:45	Randall Wirtz	In the Billions: The Capital and Long-Term Costs of Complying with Proposed Phosphorus Criteria
5	3:45 – 4:15	Kathleen Smith	Bio-Solids Management Optimization and Alternatives Analysis Based on Greenhouse Gas Emissions

Session 7: Laboratory

#	Time	Primary Speaker	Title
1	1:30 – 2:00	Amy Hurley	The Way We Do the Things We Do
2	2:00 – 2:30	Denise Seman	What Happens to a Sample After It Reaches the Lab?
3	2:30 – 3:00	Denise Seman	Control Charts and How to Use Them
Break	3:00 – 3:15		
4	3:15 – 3:45	Martyn Burt	Red Flag Program
5	3:45 – 4:15	Gary Yakub	QA/QA of Fecal Coliforms by MF:SM9222D

Session 8: Sustainability

#	Time	Primary Speaker	Title
1	1:30 – 2:00	Joe Robinson	Water Supply and Reuse Strategies in the Southeastern U.S.
2	2:00 – 2:30	Kevin Rhodes	Exploring the Feasibility of Sludge to Energy
3	2:30 – 3:00	Phil Anderson	Carbon Footprint and Cost Effective Operation of a Sludge Thermal Dryer
Break	3:00 – 3:15		
4	3:15 – 3:45	Thomas Angelo	Sustainability in Human Resource Planning
5	3:45 – 4:15	Steven Shulze	Cultivating Authentic Relationships

Thursday Morning, June 17, 2010

Session 9: Optimizations

#	Time	Primary Speaker	Title
1	8:30 – 9:00	Jeff Hersha	When is Green Green
2	9:00 – 9:30	Michael Welke	Polymer Testing: The Forgotten Cost
3	9:30 – 10:00	Samuel Jeyanayagam	Low Cost Optimization of Final Clarifiers – The Value of Knowledge Based Tools
Break	10:00 – 10:15		
4	10:15 – 10:45	Shawna Gill	Algae Control Methods Compared: The Importance of Successful Algae Control for Facilities with UV Disinfection.
5	10:45 – 11:15	John Barszewski	TIN Removal for an Oxidation Ditch with a Groundwater Discharge

Session 10: Regulatory

#	Time	Primary Speaker	Title
1	8:30 – 9:00	George Elmaraghy	Ohio EPA Update
2	9:00 – 9:30	Elizabeth Wick	Tales for the Dark Side…What Ohio EPA is Looking For During a Compliance Inspection
3	9:30 – 10:00	William Zawiski	Stressor Identification Project in the Tinker's Creek Watershed
Break	10:00 – 10:15		
4	10:15 – 10:45	Robin Halperin	Ohio WARN - What Can It Do For You?
5	10:45 – 11:15	Dale Kocarek	Proposed Rules and Regulations – A Look into the Future and the Role that OWEA Wishes to Play

Thursday Afternoon, June 17, 2010

#	Time	Primary Speaker	Title
1	1:00 – 2:30	Rick Varner	Tour of City of Marysville WRF

YP Roundtable

Tuesday, June 15th 12:00 - 1:30 pm

Please join the Young Professionals (YP) Committee for a fun and informative session from 12:00 - 1:30 p.m. Tuesday, June 15th as the YP's and OP's hold a Roundtable discussion. *(Submitting for Contact Hour Approval)*

We are excited to offer Young Professionals the opportunity to attend the Roundtable Discussion, 5 Technical Sessions, and the Afternoon Break on Tuesday afternoon, June 15, 2010 at a reduced charge of $25. Please contact Dan Martin for additional information: 513.469.6600, *dmartin@raconsultantsllc.com*.

If you would like to support the conference in an even more visible way, YPs will have an opportunity to act as moderators and room monitors during the conference. Please contact Dan Martin (e-mail above) if interested.

Meet & Greet

Tuesday, June 15th 6:00 pm - 10:00 pm

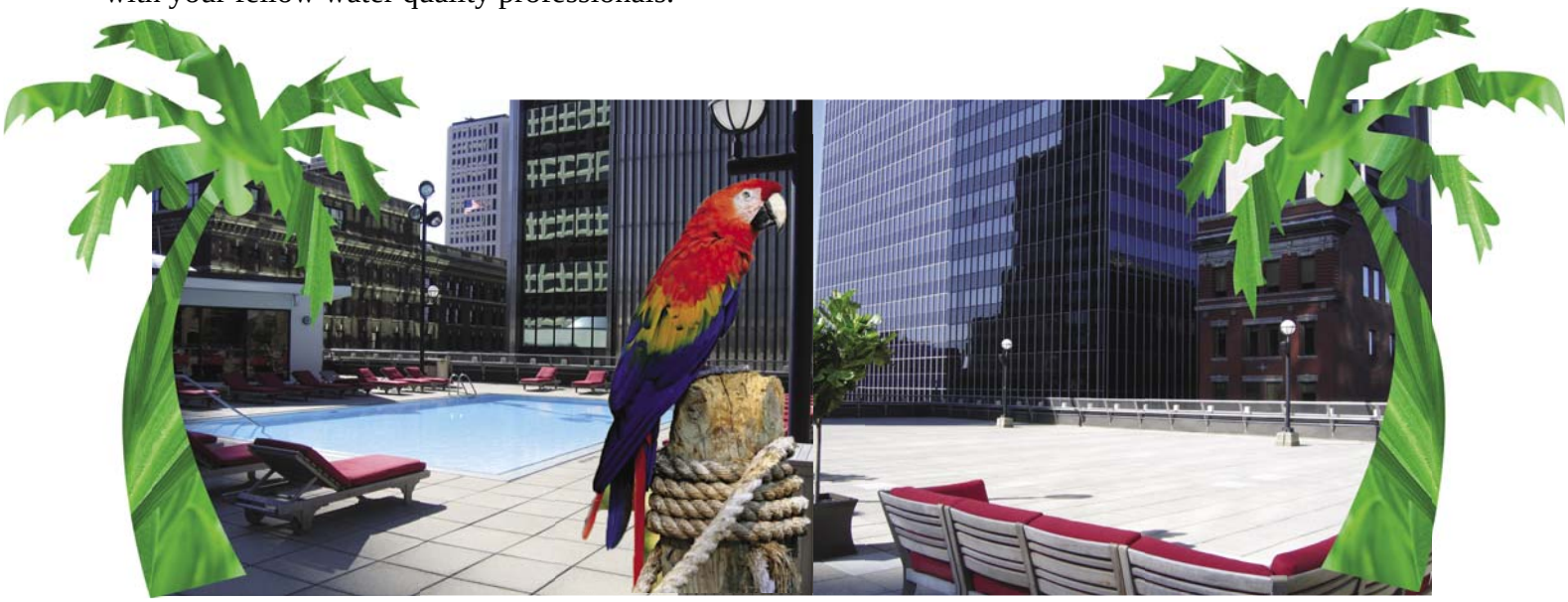
"Changes in Attitudes"

on the Cityview Terrace at the Renaissance

The 2010 Conference Committee, with the help of EventCo Productions, will transform the Cityview Terrace at the Renaissance into a 'Floribbean Island', so make sure your attitude is ready for adjustment!

Bring your favorite Beach Wear, Sunglasses, and Flip Flops!

You'll dine on island fare, with a little Jamaican flair, sip drinks served from Tiki Huts, stroll among the palm trees and Tiki torches, or just relax by the fire pit in a beach chair. Visit with the tropical animals. Dance to beach tunes and do the limbo with music by Tom Angelo's ***"Music Machine"*** while networking with your fellow water quality professionals.



Reception & Banquet

Wednesday, June 16th 6:00 pm - 10:00 pm

The Banquet will be held on Wednesday, June 16, 2010. The activities will include a Social Reception beginning at 6:00 p.m. The ceremonious 5S Induction will take place during the Social Reception.

The banquet will start at 7:00 p.m. This year's banquet program will honor those receiving WEF Awards, presented by WEF Board Member Judy Jones. Next will be the passing of the Ohio Water Environment Association gavel from outgoing President Mark Livengood to the incoming President, Dale Kocarek.

Enjoy a delectable dinner (*a Dinner Duet of Petit Filet/Grilled Seasoned Chicken, Yukon Gold Mashed Potatoes, Asparagus with Creme Brulee Cheesecake for Dessert)* prepared by the excellent chefs at the The Renaissance Columbus Downtown Hotel.

"FUNdraising Raffle"

Vie for fabulous prizes . . . .

8 GB IPod Touch with Wireless Multi-room Music System
HP Mini Notebook PC
32" LCD TV with DVD
Longaberger Basket Accessories
Margaritaville Frozen Concoction Machine
Garmin Nuvi GPS Navigator
Anti-gravity Chaise Lounger
Jewelry and much, much more

at OWEA's 2010 FUNdraising Raffle, with proceeds to benefit OWEA Scholarships, Ohio Science Day Awards, Ohio Stockholm Junior Water Prize Winner, and Water for People. Compete with your colleagues and keep your eye on your favorite prize! Each banquet attendee will receive one raffle entry ticket. Additional raffle tickets, to increase your chances of winning one prize or more, may be purchased during the Social Reception and Banquet.

Ohio Water Environment Association
Preserving & Enhancing Ohio's Water Environment

Ohio Academy of Science State Science Day

Stockholm Junior Water Prize

Water For People

Spouse/Guest Program

Tuesday - Wedneday, June 15th - 16th

Tantalize Your Senses as You Experience Columbus!

Join us for two days of teasing your taste, smell, sight and touch. We are not going to just visit Columbus; we are going to **Experience Columbus**. We will be having daily prizes and giveaways. All attending will receive a gift bag packed with special treats and goodies. The Spouse/Guest Program includes tickets to the **OWEA Awards Breakfast**, **Meet & Greet**, and **Annual Banquet**. Our adventures will include:

Tuesday – Smell, taste (departing after the Awards Breakfast)

- **The Candle Lab** - We are visiting The Candle Lab where we will create our own individual soy candles from over 120 different scents. You will blend, mix and design your own unique candle. *www.thecandlelab.com*
- **Worthington Inn** - We have a private dining room at the historic and renowned Worthington Inn. Our menu selections are sure to awaken your taste buds! *www.worthingtoninn.com*
- **Shopping at historic Worthington** - We will also have time to stroll and experience Old Worthington's eclectic shops and stores. *www.visitworthingtonohio.com*

Wednesday – Taste, touch, sight and smell

- **Sher-Bliss** - We all know that chocolate fixes everything! We are going to learning about chocolates and even be hands-on making our own chocolate. We are having a unique and amazing lunch in the private dining/wine room at Sher-Bliss. A meal and experience you will not soon forget! *www.sherbliss.com*
- **The Ohio Herb Education Center** - We will visit the stunning gardens and have a special class on herbs and teas. We will learn use of herbs for, but not limited to, culinary, decorative, garden, medicinal and home applications. Then we will also have a private afternoon tea with special yummy treats! *www.gahanna.gov/departments/parks/Herbcenter.asp*

Did you think we wouldn't cover the sense of sound? Well for 2 days you will hear – laughter, giggles, wows and yummmms! See you there!

If you have any questions – please don't hesitate to call Jenny Kutcher, Spouse/Guest Program Chair, at 513.505.7694 or drop a note to: *jkutcher@fuse.net*

Golf

Monday, June 14th

Where:	Foxfire Golf Club 10799 Ste Rt 104 Lockbourne, OH 43137 513.425.7886	Format:	256 Golfers (32 Teams Per Course) Four Person Scramble
Times:	8:30 a.m. Registration 8:30 a.m. Driving Range Open 10:00 a.m. Shotgun Start	Prizes:	Prizes for Long Drive, Pin Shots, and Long Putts Raffle/Door Prizes *(Must be present to win)*

$300 per Foursome includes:
Golf Cart, Range, Lunch, Dinner, Beverages, Prizes, and Events.

Register online at ***www.ohiowea.org***
or complete the registration form on page 54.
Hole Sponsorships; Breakfast, Lunch, and Dinner Sponsorships; and Beverage Sponsorships Available.

Firefox Golf Club

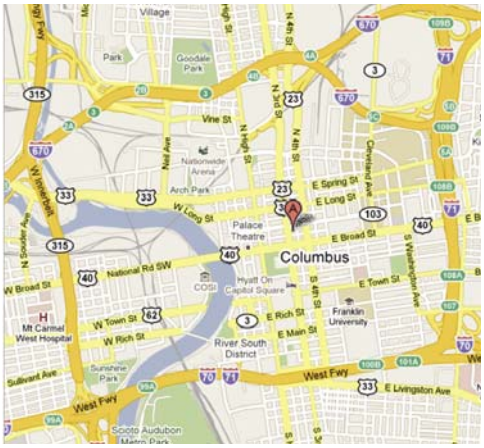
A 36-hole public golf course in Lockbourne, Ohio, built in 1993, Foxfire Golf Club has two outstanding eighteen hole courses. On Players, the fairways are narrow and tree lined, and water hazards come into play on six holes. The signature hole is #16, a 434-yard, par 4, which plays through trees uphill to a green that is surrounded by five bunkers. The Foxfire Course is also demanding. It features water hazards coming into play on six of the back nine holes. The fairways are more forgiving on this course. The signature hole is #17, a 629-yard, par 5, requiring a tee shot over a creek. For more info on the courses call 740.983.2801 or visit *www.foxfiregolfclub.com*.

Hotel Information

The Renaissance Columbus Hotel Downtown
50 North Third St, Columbus, OH 43215 614.228.5050

Single $130 Double $130
On Site Parking Garage: Special Group Rate of $12 (one car per room) for overnight guests

Hotel Reservations are not included in the OWEA conference registration. You must make reservations by calling the Renaissance Columbus Hotel Downtown Group Reservations at 506.474.2009 or 800.266.9432 and mention you will be attending the OWEA Conference. You may also reserve online via the hotel link at *www.ohiowea.org.* **This special lodging rate is available until May 24, 2010.**



Plant Tour - Marysville WRF

Thursday, June 17th 1:00 pm to 2:30 pm

CITY OF marysville
where the grass is greener

The City of Marysville, Ohio owns and operates their wastewater collection and treatment system. The wastewater system serves the City's population of approximately 19,000 people, several major industries within the City's corporation limits, including The Scotts Miracle-Gro Company, Nestle Corporation, Goodyear Tire and Rubber Co., Parker Hannifin Hydraulics, Univenture, and the Ohio Reformatory for Women (ORW), as well as several other outlying businesses and communities, including Honda of America Manufacturing, the Village of Milford Center, and flows from surrounding areas of Union County.

In 2004, the City completed a Wastewater Master Study. The Master Study recommended that a new Water Reclamation Facility be constructed to replace the existing facility, which was nearing the end of its useful life, and was in dire need of upgrade/expansion. The new facility was strategically located on Beecher Gamble Road so that it could serve existing customers as well as potential future high growth areas. The wastewater conveyance system was designed to eliminate numerous lift stations throughout the existing collection system and minimize the number of future pump stations in order to increase reliability and reduce maintenance costs.

Join Superintendent Rick Varner for an informative tour of this 21.5 mgd capacity facility. Refreshments will be provided. *Transportation on your own.*

Ohio Water Environment Association
1890 Northwest Blvd • Suite 210 • Columbus, Ohio 43212
T: 614.488.5800 F: 614.488.5801 E: info@ohiowea.org
www.ohiowea.org

2010 Attendee Registration - *Register online at ohiowea.org*

Please check appropriate box for events you wish to attend for meal count purposes.

- **Full Conference** includes: events listed in box, scheduled conference meals, technical sessions, and exhibit hall entrance**.**
- **One Day** includes scheduled conference meals, plus technical sessions and exhibits held that day.
- **One Day only applies if you are attending one day**. If you attend Tuesday and Wednesday, **Full Conference** is required.
- Tickets will be collected at the door for each event and meal.

First Name	M.I.	Last Name	
Badge Name		OWEA/WEF Member #	
Company Name		Title	
Address			
City		State	Zip
Email		Spouse/Guest (if attending)	
Tel #	Fax #	☐ Ck if 1st Time Attendee	

MEMBER	By May 21	After May 21	NON-MEMBER	By May 21	After May 21
Full Conference ☐ Awards Breakfast ☐ Annual Banquet ☐ Exhibitor Lunch ☐ Plant Tour ☐ Meet & Greet	$275	$325	**Full Conference** ☐ Awards Breakfast ☐ Annual Banquet ☐ Exhibitor Lunch ☐ Plant Tour ☐ Meet & Greet	$375	$425
Tuesday-One Day Only ☐ Awards Breakfast ☐ Exhibitor Lunch ☐ Meet & Greet	$145	$170	**Tuesday-One Day Only** ☐ Awards Breakfast ☐ Exhibitor Lunch ☐ Meet & Greet	$195	$220
Wednesday-One Day Only ☐ Annual Banquet	$145	$170	**Wednesday-One Day Only** ☐ Annual Banquet	$195	$220
Retired Member ☐ Awards Breakfast ☐ Annual Banquet ☐ Exhibitor Lunch ☐ Plant Tour ☐ Meet & Greet	$120	$170	**Student** Member/NonMember ☐ Awards Breakfast ☐ Annual Banquet ☐ Exhibitor Lunch ☐ Plant Tour ☐ Meet & Greet	$50	$75
Spouse/Guest ☐ Awards Breakfast ☐ Annual Banquet ☐ Tue Spouse Event ☐ Meet & Greet ☐ Wed Spouse Event	$160	$210	**Extra Tickets**		
			☐ Awards Breakfast	$25	$30
			☐ Exhibitor Lunch	$30	$35
			☐ Meet & Greet	$65	$75
			☐ Annual Banquet	$80	$90
			Conference Registration Total	$	

☐ P. O. #	☐ Ck #	☐ Pay by Credit Card
Make checks payable to OWEA and mail to: Ohio Water Environment Association 1890 Northwest Blvd, Suite 210 Columbus, OH 43212		If you select credit card, you will be emailed a secure link to enter your credit card payment. Be sure to enter a valid email address. Or call the OWEA office with your Credit Card #.
Or fax to: 614.488.5801		

Registrations will be confirmed via email.

2010 Conference Co-Chairs

Mike Frommer, 614.419.0598, *mike_frommer@urscorp.com* ; Cindy Jacobsen, 614.402.2802, *cjacobsen@pirnie.com*

Ohio Water Environment Association
1890 Northwest Blvd • Suite 210 • Columbus, Ohio 43212
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2010 Exhibitor Registration - *Register online at ohiowea.org*

Company Name		
Address		
City	State	Zip
Individual Responsible for Exhibit:		
X_____Date:_____ Signature *(I have read and agree to Exhibitor Contract Terms)*		
Tel #	Fax #	
Email		
Company Website		

Exhibitor Pricing *(includes full conference registration for Individual Responsible for Exhibit)*		
OWEA Member *(# Required)*	$700	$
OWEA/WEF #:		
Non-member Rate	$850	$
Please indicate which events you will attend: ☐ Awards Breakfast ☐ Exhibitor Lunch ☐ Meet & Greet ☐ Annual Banquet ☐ Plant Tour *(Thursday)*		
Booth Location # Request *(Subject to availability)* 1st _____ 2nd _____ 3rd _____		
Additional Booth Attendant(s) - *Includes lunch on 6/15 and exhibit hall pass*		
Name 1:	$35	$
Name 2:	$35	$
Name 3:	$35	$
Name 4:	$35	$
Total Exhibitor Amount	**$**	

☐ **P. O. #**	☐ **Ck #**	☐ **Pay by Credit Card**
Make checks payable to OWEA and mail to: Ohio Water Environment Association 1890 Northwest Blvd, Suite 210 Columbus, OH 43212 Or fax to: 614.488.5801		If you select credit card, you will be emailed a secure link to enter your credit card payment. Be sure to enter a valid email address. Or you may call the OWEA office with your credit card number.

Registration will be confirmed by email.

Exhibit Expo - June 15, 2010
Tuesday, 10:30 a.m. - 5:00 p.m.
Box Lunch in Exhibit Area
PM Reception in Exhibit Area
*Listed in May Buckeye Bulletin**
Company Link on www.ohiowea.org

** if registered by April 1st*

2010 Exhibitor Chair
Jennifer Emerick, 614.471.7310, jemerick@ggceng.com

Ohio Water Environment Association
1890 Northwest Blvd · Suite 210 · Columbus, Ohio 43212
T: 614.488.5800 F: 614.488.5801 E: info@ohiowea.org
www.ohiowea.org

2010 ANNUAL CONFERENCE EXHIBITOR CONTRACT - Page 2

TERMS AND CONDITIONS

1. We hereby contract to participate in the Exhibit Expo on Tuesday, June 15, 2010, at the Ohio Water Environment Association's (hereinafter referred to as "OWEA") Annual Conference and agree to pay the designated registration of $700.00 for OWEA members ($850 for non-members) for an 8' deep x 10' wide booth, with a 6' draped and skirted table and two chairs. The registration fee includes one full conference registration and admission to all conference activities for the responsible person.

2. Additional personnel participating in the exhibit will be charged $35 (which includes lunch on June 15, 2010 and complimentary exhibit hall admission) and must register as additional exhibit booth attendants prior to the conference so name badges are available. Additional personnel interested in attending the social events and/or meals other than lunch on June 15, 2010 must purchase tickets at the registration desk. To preregister additional personnel for the full conference, use an "Attendee Registration Form", available at www.ohiowea.org or by emailing info@ohiowea.org .

3. We agree to all the terms of the "Liability & Responsibility Clause", which is part of this contract.

LIABILITY AND RESPONSIBILITY CLAUSE

1. In signing this Exhibitor's Contract, the exhibitor agrees to assume the entire responsibility and liability for losses, damages, and claims arising out of loss or damage to the exhibitor's displays, equipment and all other property brought upon the premises of and shall indemnify and hold harmless the OWEA, The Columbus – A Renaissance Hotel, the agents, servants, and employees of each organization for any and all such losses, damages, and claims.

2. The exhibitor also agrees that the OWEA, and/or The Columbus – A Renaissance Hotel will not be responsible for any injury, loss or damage that may occur to the exhibitor, the exhibitor's employees or property, or to any other person prior, during, and subsequent to the period covered by the Exhibitor Contract; provided said injury, loss or damage is not caused by the willful negligence or wrongful act of an employee of the The Columbus – A Renaissance Hotel and agrees to expressly release the OWEA, The Columbus – A Renaissance Hotel of such liabilities and to indemnify the OWEA, and/or the The Columbus – A Renaissance Hotel against any and all claims for such injury, loss or damage.

3. It is mutually agreed that it is the duty of each exhibitor to install his/her exhibit in the assigned exhibit booth prior to 10:00 AM on Tuesday, June 15, 2010; and to dismantle the exhibit before Tuesday, 6:00 PM, June 15, 2010.

4. By signing Page 1 of the Exhibitor Contract, I agree to above Terms and Conditions and Liability and Responsibility Clause.

Ohio Water Environment Association
1890 Northwest Blvd • Suite 210 • Columbus, Ohio 43212
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2010 Sponsor Registration - *Register online at ohiowea.org*

Company Name		
Address		
City	State	Zip
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Overall Conference Sponsorships			
A	Titanium	$3,000 and higher	$
B	Platinum	$2,000	$
C	Gold	$1,000	$
D	Silver	$500	$
E	Bronze	$250	$
Please contact me regarding unique sponsorship opportunities ☐			
		Total Sponsor Amount	**$**

☐ **P. O. #**	☐ **Ck #**	☐ **Pay by Credit Card**
Make checks payable to OWEA and mail to:		If you select credit card, you will be emailed a secure link to enter your credit card payment. Be sure to enter a valid email address. Or you may call the OWEA office with your credit card number.
Ohio Water Environment Association 1890 Northwest Blvd, Suite 210 Columbus, OH 43212		
Or fax to: 614.488.5801		

Thank you
for your support!

Sponsor Recognition:
- Conference Signage
- Conference Program
- OWEA Buckeye Bulletin
- OWEA Website
- Unique Sponsorship Recognition
- Distinctive name tags

2010 Sponsor Co-Chair	Greg Otey, 614.464.4500, greg_otey@urscorp.com
2010 Sponsor Co-Chair	Sandra Doyle-Ahern, 614.775.4510, sdoyleahern@emht.com
2010 Conference Co-Chair	Mike Frommer, 614.419.0598, mike_frommer@urscorp.com
2010 Conference Co-Chair	Cindy Jacobsen, 614.402.2802, cjacobsen@pirnie.com

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Dear Friends of OWEA:

We are planning the 2010 Annual Conference and need your continued support. The success of the Ohio Water Environment Association (OWEA) has always been and always will be accomplished with the tremendous support we receive each year from each of you - our sponsors. You are a valued friend of this organization and we are once again respectfully asking for your support.

The Ohio Water Environment Association continues to provide value to our nearly 2000 members, as well as nonmember water quality professionals, by offering an annual three day conference designed to provide professional development, contact hours, and technical information regarding the preservation and enhancement of our most precious natural resource...WATER.

The **84th Annual Conference** will be held **June 15-17, 2010** at The Renaissance Columbus Downtown Hotel. Sponsorship of the conference by consultants, equipment suppliers, contractors, and manufacturers' representatives will help OWEA develop quality educational programs, recognize excellence in the wastewater field, and provide a relaxed, informal atmosphere to facilitate peer-to-peer networking.

What recognition do sponsors receive?

- Your company will be listed in OWEA's 2010 Conference printed material
- Your company will be listed on OWEA's 2010 Conference web page
- Your company will be posted on signage at OWEA's 2010 Conference
- Your company will be listed in the OWEA Buckeye Bulletin publication
- Distinctive name badges recognizing your contribution

Sponsorship Levels are listed on the enclosed form. Each sponsor will be individually recognized at events throughout the conference. Depending on the type of sponsorship, each sponsor will be recognized in ways that allow conference attendees to recognize and appreciate your generous sponsorship.

Thank you for your time and generosity. We invite you to sign up for a sponsorship online at www.ohiowea.org. If you are unable or prefer not to register online, please see the enclosed sponsorship form. Your donation and support will be greatly appreciated.

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The Ohio Water Environment Association is a not-for-profit *501(c)(3)* association that provides technical education and training for Ohio water quality professionals who clean water and return it safely to the environment.

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2010 Golf Registration - *Register online at ohiowea.org*

Where: Foxfire Golf Club
10799 Ste Rt 104
Lockbourne, OH 43137
614.224.3694

When: Monday, June 14, 2010
Registration 8:30 a.m.
Driving Range Open 8:30 a.m.
Shotgun Start 10:00 a.m.

Format: 256 Golfers
32 Teams per Course
Four Person Scramble

Food/Prizes: Lunch and Dinner included
Prizes for Long Drives, Pin Shots, and Long Putts
All players eligible for Raffle/Door Prizes

Company Name		
Address		
City	State	Zip
Contact Name	Email	
Tel #	Fax #	

Foursome Pricing - *print foursome names below*	$300	$
1. 2.		
3. 4.		
Individual Pricing - *print name(s) below, will be assigned to a team*		
1.	$75	$
2.	$75	$
Course Preference *(subject to availability)* : ☐ Players Club ☐ Foxfire ☐ No Preference		
Golf Sponsorships *(multiple sponsorships per event)*		
Hole Sponsor *(2 signs - one on each course)*	$300	$
Breakfast Sponsor	$200	$
Lunch Sponsor	$500	$
Dinner Sponsor	$750	$
On-Course Keg Sponsor	$200	$
	Total Golf Amount	**$**

☐ **P. O. #**	☐ **Ck #**	☐ **Pay by Credit Card**
Make checks payable to OWEA and mail to:		If you select credit card, you will be emailed a secure link to enter your credit card payment.
Ohio Water Environment Association 1890 Northwest Blvd, Suite 210 Columbus, OH 43212		Be sure to enter a valid email address.
Or fax to: 614.488.5801		Or you may call the OWEA office with your credit card number.

Sign up soon!
Limited to 64 teams
*visit **www.foxfiregolfclub.com** for course details*

2010 Golf Co-Chair Roger Jacobsen, 614.486.4383, roger.jacobsen@stantec.com
2010 Golf Co-Chair Bill Hyland, 330.565.2115, bill.hyland@weatherford.com

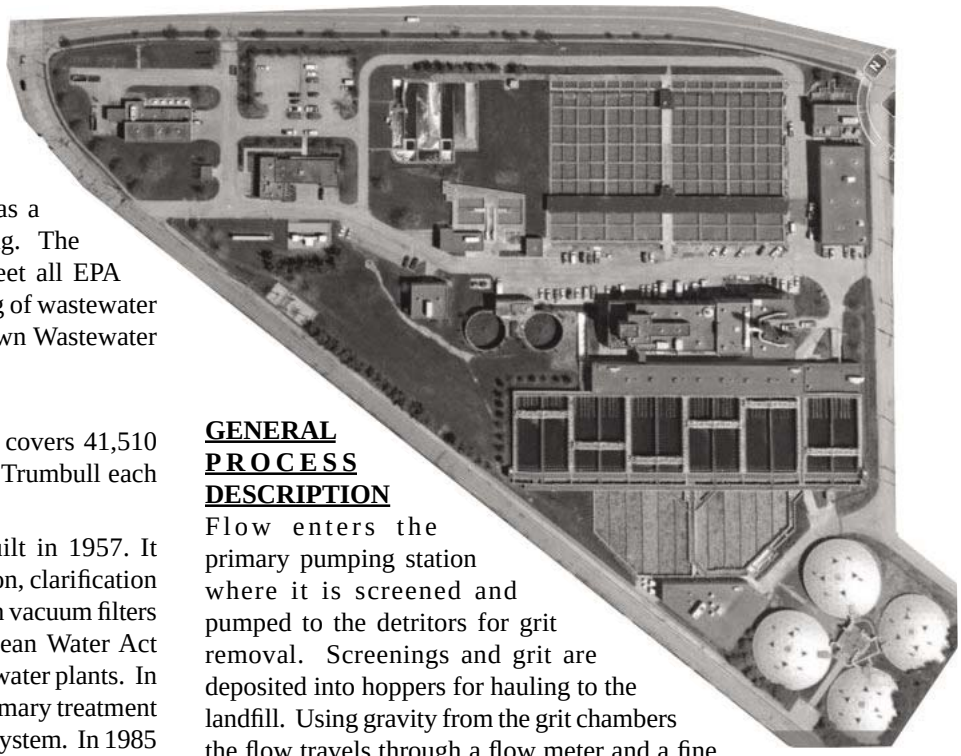
EFFLUENT REMAINS OUR TOP PRIORITY

CITY OF YOUNGSOWN WASTEWATER TREATMENT PLANT

by James Webber - Shift Manager Class IV
Denise Seman - Lab Supervisor

Plant Superintendent: Thomas Mirante

The Youngstown Wastewater Treatment Plant consists of 89 employees and is dedicated to the citizens of the Mahoning Valley. MS Consultants, the principal engineering firm responsible for the expansion project, has ranked the Youngstown plant as one of the most modern in the country as a result of the innovative design for sludge handling. The capital investment made enables this plant to meet all EPA standards. This assures a clean, efficient processing of wastewater for the customers that are served by the Youngstown Wastewater Treatment Plant.



HISTORY

The total area served by the Youngstown WWTP covers 41,510 acres. The surrounding counties of Mahoning and Trumbull each contribute 14,480 and 7,465 acres respectively.

The original wastewater treatment plant was built in 1957. It provided preliminary treatment, primary flocculation, clarification and disinfection. Sludge was digested, dewatered on vacuum filters and incinerated. In 1977 Congress passed the Clean Water Act requiring a more efficient effluent quality for wastewater plants. In 1984 construction began on modifications to the primary treatment system and a total rebuilding of the sludge disposal system. In 1985 construction began on the secondary treatment facilities which included a secondary pump station, trickling filters, activated sludge aeration system, and microscreens.

- Construction Cost - $50,000,000
- Federal and State EPA – 80%
- Local Funding – 20%
- Residents Pay - $39.87 per 1000 cu/ft

DESIGN CRITERIA

Average flow	35 MGD
Peak flow	90 MGD
TSS	20 mg/l
BOD	15 mg/l

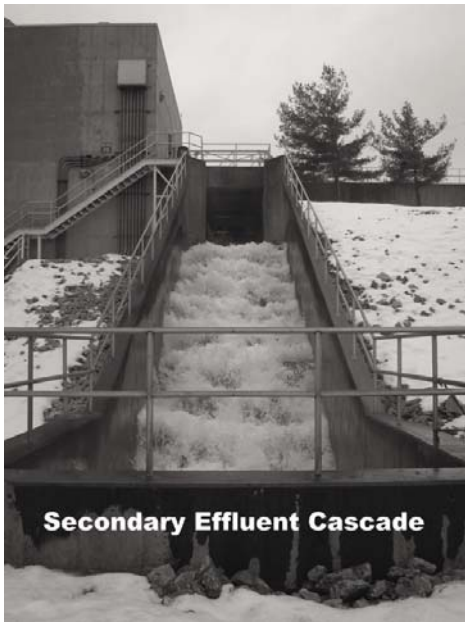
SOLIDS HANDLING

Grease (dry)	2760 lb/day
Grit	47 cu. ft/day
Screenings	52 cu. ft/day
Primary Sludge	23,300 lb/day
Secondary Sludge	21,724 lb/day
Population Served	158,749
Commercial	69,151
Industrial	26,459

GENERAL PROCESS DESCRIPTION

Flow enters the primary pumping station where it is screened and pumped to the detritors for grit removal. Screenings and grit are deposited into hoppers for hauling to the landfill. Using gravity from the grit chambers the flow travels through a flow meter and a fine bar screen on its way to the primary clarifiers where sludge and grease are removed. The flow then enters the primary effluent pump station.

The primary effluent is pumped to the secondary treatment system which consists of trickling filters followed by the aeration system for removal of biochemical oxygen demand (BOD) and ammonia. Flow in excess of 35 MGD by-passes the aeration system and travels through the microscreens where it is blended with the effluent from the secondary clarifiers.



Secondary Effluent Cascade

The blended effluent is chlorinated before passing over a cascade aerator on the way to the chlorine contact tanks. The effluent from the contact tanks is metered before being discharged to the Mahoning River.

Primary sludge is pumped to a sludge holding tank and then dewatered by belt filter presses.

Waste activated sludge from the secondary aeration tanks and clarifiers is thickened using a belt thickener where polyelectrolyte is then added. The thickened sludge is then pumped into a dedicated holding tank and dewatered again with polyelectrolyte on one of three 2 meter belt presses.

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The dewatered secondary (pressed sludge) is then split into two streams; one is directly fed into the incinerator with the primary sludge. The second stream is sent into a steam heated paddle dryer. With the addition of the dryer system, this allows further drying of the secondary sludge prior to incineration The dryer utilizes excess steam from the boiler as heat which saves on overall gas usage. The dried sludge is then sent into the incinerator by high pressure forced air. Grease and scum collected from the surface of the primary and secondary clarifiers are concentrated in the concentrator and then pumped into the incinerator. Ash from the incinerator is hauled to the landfill.

The exhaust gases from the incinerator pass through a waste heat recovery boiler and are scrubbed before discharge into the atmosphere. The steam generated from the boiler is used to supply heat to the paddle dryer and to heat trace grease lines.

INNOVATIVE / ALTERNATIVE TECHNOLOGY (I/A)

Additional funding was acquired from the EPA for implementation of I/A technology for two processes in the treatment facility; the sludge handling system and the microscreens.

Based upon present worth cost analyses for 20 years, the savings for the systems totaled $20,000,000 over conventional methods of treatment. The sludge handling process includes a dryer system that utilizes excess steam from the combustion process to dry the sludge before incineration. This eliminates the need for natural gas for burning sludge during optimum sludge flow conditions. Excess steam is also used to heat portions of the plant. The microscreens provide final clarification of the trickling filter effluent without large land requirements, (i.e. land application). This was a huge advantage for the Youngstown Treatment Plant considering that our total property consist of only 15 acres.

WASTEWATER COLLECTIONS

The city of Youngstown's sanitary collection system consists of approximately 700 miles of sewer lines, ranging in size from 8" up to 84" in diameter. The sewer system consists of combined and sanitary sewers. The combined sewers account for excessive storm flows received at the treatment plant. The treatment plant maintains 12 pump stations throughout the city.

INDUSTRIAL PRETREATMENT DEPARTMENT

The city's Industrial Pretreatment Department, under the direction of Thad Suchy, oversees the process discharges of 20 permitted industrial users. Of these, eleven are categorical in nature.

The frequency of monitoring is determined by the particular industry's average daily flow. The majority of our testing is completed in house by the WWTP's laboratory. The city surcharges its industrial users for higher than normal loadings of CBOD, TSS and O&G. In addition to inspecting the city's 12 pumping stations on a daily basis, pretreatment personnel also inspect the city's many combined sewer overflows and regulating chambers bi-weekly.

LABORATORY

The laboratory staff monitors process control, NPDES parameters, biosolids analysis and industrial pretreatment discharge on a daily basis. The lab is currently staffed by two OWEA Class IV certified analysts with a combined total of over 40 years of experience. Some of the equipment utilized by the laboratory staff includes a discrete analyzer for most colorimetric analysis, ICP for metals analysis, automated SPE for oil and grease, autotitrator for low level ammonia analysis and a cold vapor mercury analyzer.

ARRA IMPROVEMENTS

As a result of the creation of the American Recovery and Reinvestment Act (ARRA) of 2009, the City of Youngstown was provided an array of unique funding avenues to facilitate upgrades to both the collection system and the WWTP. Through an aggressive pursuit of federal monies, funneled through the Ohio EPA, Youngstown was able to secure funding assistance for four projects utilizing a combination of the Ohio Water Pollution Control Loan Fund (WPCLF) and direct ARRA assistance.

Consequently, as a result of the outside funds the city was able to expedite a roof repair project at the WWTP. This project includes the repair and replacement of the roofing materials on several structures at the WWTP. The existing roof systems were substantially deteriorated and a failure to make these repairs would have resulted in damage to electronic monitoring and pumping equipment. The city awarded Roth Brothers, Inc. of Youngstown, Ohio, the low bidder, the contract for the project in the amount of $1,214,700. Of that amount, $568,630 was provided through

ARRA funding while the remaining $646,070 was financed over 20 years at 3.25% utilizing the WPCLF.

Also, as a result of the federal funding the city was able to advance with the replacement of the floating digester covers on the WWTP sludge storage tanks. This project encompassed the replacement of two substantially deteriorated covers that were beginning to lose functionality and effectiveness. The contract for the necessary work was awarded to A.P. O'Horo Company, Inc. of Youngstown, Ohio in the amount of $1,191,194. The bid price was divided equally between ARRA funding and a WPCLF loan at $595,597 per source.

Lastly, through ARRA funding, Youngstown was able to commence construction on two sewer separation projects designed to remove clean storm water from the combined system and mitigate the frequency of combined sewer overflow events. The Woodland Avenue sewer separation project encompassed work from Market Street to Gibson Street and received funding from the Ohio Public Works Commission, ARRA, WPCLF and local funding sources. This project includes the full rehabilitation of the roadway within the limits and the construction of a new dedicated storm sewer system. The contract was awarded to Parella-Pannunzio, Inc. of Youngstown, Ohio in the amount of $1,573,020.75.

The Andrews Avenue sewer separation project was designed to address the long-standing flooding issues that have been present between Valley Street and Rayen Avenue. This project encompassed the construction of a dedicated storm sewer system and eliminated a combined sewer overflow from the sewer system. The contract for construction was awarded to Utility Contracting, Inc. of Youngstown, Ohio in the amount of $662,244. The ARRA assistance for the Woodland Avenue and Andrews Avenue sewer separations were combined into a single WPCLF loan agreement where ARRA funding provided $1,163,741 to the projects and Youngstown borrowed $386,574 through the WPCLF.

Through the assertive pursuit of outside funding sources the City of Youngstown has alleviated a great deal of the strain these capital improvements would have placed on the local budget. As a result of these projects the city will continue to provide a high level of essential services to residents and stakeholders in the community.

Jim Webber has been employed at the Youngstown WWP for 21 years. Starting out as an operator, then to the computer room and presently he is one of four shift managers. He obtained his Class IV Wastewater License in 2008. He is a member of NESOWEA.

Jim and his wife Renee have been married for 17 years and have 2 children. In his spare time he enjoys spending time with his family, Disney, reading, camping, photography, traveling, and of course the Browns.

Denise Seman has been employed at the Youngstown WWP for 20 years, all of them in the lab. Denise is currently the lab supervisor, a position she has held for the last 5 years. She holds a Class III Wastewater Operators License, and a Class IV OWEA Lab Certification. She is a member of WEF, and received the WEF Laboratory Analyst Award at the OWEA conference in June 2009. Denise has 2 children and enjoys spending time with her family whenever she can.

ROLL CALL

Mark George, PE, has joined the Cincinnati office of URS as water Resources Program Manager. Mr. George has managed projects for villages, cities, counties and water and sewer districts in Ohio. He will manage client services and projects for URS municipal clients in southwest Ohio and norther Kentucky, focusing on infrastructure improvements.

OWEA Members may submit brief announcements with photo to **info@ohiowea.org** *for publication in the Buckeye Bulletin. Please include your OWEA/WEF Member number. All requests subject to editorial review.*

Career Opportunities

Does your organization have a position to fill?

Are you looking for a position?

Take advantage of the Ohio Water Environment Association's Career Opportunities Web Page.

Visit *www.ohiowea.org*
and select Career Opportunities.

Or contact OWEA:
614.488.5800
info@ohiowea.org

Ohio Water Environment Association
Preserving & Enhancing Ohio's Water Environment

Plant Profile Selection

The ***Buckeye Bulletin*** features a Plant Profile article in each of its four issues annually. If you have a suggestion for a Plant Profile article, contact a member of your section's Executive Committee.

The Plant Profile article schedule:

Fall Issue 2010	Southwest Section
Winter Issue 2010	Southeast Section
Spring Issue 2011	Northwest Section
Summer Issue 2011	Northeast Section

ESSENTIAL LABORATORY MATH REVIEW

by Denise Seman, City of Youngstown WWTP

Math is a subject most people prefer to avoid. However, math is an integral part of the job, especially for those of us performing laboratory analysis. There are several reference sources for math rules, and how they apply to wastewater. This is a compilation of the rules, and an explanation of how to apply them to your job.

In order to better understand how the math equations work, we are going to start with the basics and work our way up. Dimensional analysis is one of the basic rules for performing wastewater calculations. Dimensional analysis is also called factor labeling. It is a method that is very direct and allows one to set up a complex math problem as a series of factors in order to be able to easily follow the steps to get to your final answer.

Dimensional analysis is based on the concept that multiplying a term by one (1) will not change the value of that term. In dimensional analysis, a factor is selected that is the scientific equivalent of one (1). This means that the numerator and denominator of a fraction will be the same value, just expressed in different units.

Some examples of common factors are:

1 foot/12 inches

1 inch/2.54 cm

1000 mL/ 1L

7.48 gal/ 1 cu. ft.

8.34 lbs/ 1 gal.

Fractions can be written as shown or they can be inverted, depending on the equation you are using, and the data you have to work with. The exact numerator and denominator will be determined by the other terms present in the equation. Ultimately, all but one of the units, in all of the factors, will need to cancel out. The only unit surviving will be the one needed for the answer.

Example:

Using one conversion factor:

A flask holds 12,500 mL. What is the volume in liters?

To solve:

1. Write down the units you are looking for, followed by an equal sign.

   L =

2. Write down the volume and units you were given in the problem.

   L = 12500 mL

3. Put a multiplication sign after the number and units, and draw a line for the factor.

   L = 12500 mL x _____

4. Write the conversion factor for mL to Liters in such a way that the mL will cancel out.

$$L = \frac{12500\ mL}{1} \times \frac{1\ liter}{1000\ mL}$$

5. Do the math and cancel out the factors

   12500/1000 = 12.5 the mL units cancel each other out

   L = 12.5 L

Using two or more Conversion Factors:

Many times we find there isn't a direct relationship between the units we are given, and the units we want for the answer. In those instances, you will have to set up a series of factors.

Example:

Convert 1,500,000 cu. ft. to MG

1. Determine which factors you will need to get from cubic feet to million gallons,

   7.48 cu. ft/ 1 gal and 1,000,000 gal/ 1 MG

2. Set up the equation using the factors in series,

$$MG = \frac{1{,}500{,}000\ cu.\ ft.}{1} \times \frac{1\ gal}{7.48\ cu.\ ft} \times \frac{1\ MG}{1000000\ gal}$$

3. Cancel out the factors, and do the math,

   1500000/7.48 = 200534.7594

   200534.7594/1000000 = .2005

The cubic feet cancel each other out, and the gallons cancel each other out, leaving you with MG, so the answer is 0.2 MG.

Once you can do dimensional analysis, the set up for the equations will become easier.

Linear Equations

A linear equation is an algebraic equation where the terms are either a constant or a product of a constant. When plotted on a graph, they will produce a straight line.

Most of the general wastewater equations are linear equations.

Rules for Rounding

The "typical" rule for rounding is that you round up for 5 or more and round down for 4 or less. For statistical purposes (and wastewater analytical calculations) that rule is WRONG! Any time you round a number, you are changing the true value of that number, unless the number "being dropped" is a zero.

If you have a large amount of data to round, you would be rounding down 4/9 of the time and rounding up 5/9 of the time, using the "typical" rule. Following this method will yield results higher than would be accurate if no rounding had been done.

When rounding, look at the number to the right of what will be the last place of the number being rounded. This number will be the beginning of what will be dropped. If this number is LESS than 5, drop it and all numbers to the right of it, making no changes to the last place being rounded. If this number is MORE than 5, increase the number in the last place being rounded by 1, then drop the numbers to the right. If this number IS 5, look at the number in

the spot being rounded. If the number being rounded is an even number, leave it alone and drop the numbers to the left. If the number in the spot being rounded is an odd number, increase it by 1 to an even number, then drop the numbers to the right.

Examples:

- Round 76.3475 to the hundredths position. Following the above rules, this rounds to 76.35.
- Round 4.8728 to the hundredths position. Again, following the rules, this rounds to 4.87
- Round 21.3659 to the hundredths position. Follow the rules and you get 21.36.
- Finally, round 3.4757 to the hundredths position. Follow the above rules and you get 3.48

Scientific Notation

Scientific notation is shorthand for very large and very small numbers. Scientific notation expresses these numbers as a power of 10. Any number (X) can be written as the product of another number (N) and a power of 10. When setting up scientific notation, remember the number (N) must be at least 1, but always less than 10. The basic format will be: N x 10power. N is referred to as the mantissa.

Examples:

21 is written as 2.1 x 101

(2.1 x 10)

4700 is written as 4.7 x 103

(4.7 x 1000)

0.0078 is written as 7.8 x 10-3

(7.8 x .001)

Significant Figures

All non-zero numbers are considered to be significant. Any zeros between 2 non-zero numbers are considered significant. Zeros at the beginning of a number are NEVER considered significant, they are merely place holders. Zeros at the end of a number are not considered significant unless they are preceeded by a decimal point somewhere in the number. To determine number of significant figures for a number expressed in scientific notation, apply the rules to the mantissa only, ignore the exponent.

Examples:

6.24 has 3 significant figures
100.03 has 5 significant figures
0.0504 has 3 significant figures
0.0070 has 2 significant figures
360,000 has 2 significant figures

Significant Figures and Rounding

When you are adding or subtracting numbers, locate the number with the fewest decimal places and round the result to that number of decimal places.

Example:

17.695 + 123 – 9.3 = 131

Since 123 has no decimal values, the answer must also have no decimal values.

When you are multiplying or dividing numbers, find the number with the fewest significant figures and round the result to that many significant figures

Example:

0.089643 x 45.0/346.2 = 0.0117

45.0 has the least number of significant figures (3), so the answer may only have 3 significant figures as well.

When multiplying or dividing: if either the unrounded result or the result as rounded in the above rule has a number 1 as the leading digit, and none of the operands has a 1 as it's leading digit, you should keep an extra significant figure in the result, while maintaining the leading digit as a 1.

Examples:

2.8 x 3.7 = 10.4

According the second rule, the answer should be 10. This is only precise to 1 significant figure, so it is better to err on the side of more precision, not less.

2.8x 3.7 x 1.6 = 17

Since there is an operand with a 1 as the leading digit (1.6), the answer can be rounded to 2 significant figures, as the first rule states.

When you are raising a number to some power which isn't very large or very small, or when taking the square root of a number, count the original number's significant figures, then round the result to that many significant figures.

Mathematically exact numbers like ½ and pi are infinitely precise, so they don't influence the precision (or lack of precision) of any computation. Because of this, do NOT use them to determine the number of significant figures to use in the result.

In order to avoid "round-off error" during multi-step calculations, keep an extra significant figure in place during all intermediate steps. Finish the rounding to the proper number of significant figures only after steps have been completed.

Next we'll move on to the **mole**. One mole of molecules has the mass equal to the molecular weight in grams. One mole of particles equals 6.02214 x 1023 particles for ANY substance, regardless of the mass. This number is called Avogadro's number. Avogadro's number is an arbitrarily assigned value, based on carbon 12 evaluations and the kilogram. The mole is used a standard form of reference for determining concentrations.

Molar mass is one form of measurement based on the mole. The molar mass of a compound tells you the mass present in 1 mole of the substance. Molar mass uses relates to grams and moles, so it can be used as a conversion factor. To find the molar mass of a compound, use the chemical formula to determine the number of each type of atom present in the compound. Multiply the atomic weight of each element by the number of atoms of that element present in the compound. Add the values together and put units of grams/mole after it.

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Molarity is a common term used in chemistry to determine the concentration of solutions. Molarity is the number of moles of a solute dissolved in a liter of solution.

To calculate molarity, first determine the number of moles of solute present. Calculate the number of liters of solution present, then divide the number of moles of solute by the number of liters of solution.

Normality is another common term used in chemistry to determine the concentration of solutions. A normal solution is one gram equivalent of a solute per liter of solution. The definition of a gram equivalent varies depending on the type of chemical reaction that is discussed: acids, bases, redox species and ions that will precipitate. The equation used for titrations is NaVa = NbVb, where Na is the normality of solution a, Va is the volume of solution a, Nb is the normality of solution b, and Vb is the volume of solution b.

Equivalent weight is equal to the molar mass per hydrogen (or hydroxide) ion per mole. An equivalent is equal to the mass of a compound divided by the equivalent weight of the compound. Normality is equal to the equivalents of compound per liter of solution.

Molality is a term that is not used frequently in chemistry, but can show up in some of the "older" instructions. A molality is the number of moles of solute dissolved in one kilogram of solvent. Molality is expressed by the lower case m, while molarity is expressed by the upper case M. The solvent being used must be weighed, unless you are using water. One liter of water = one kilogram.

Percent weight/weight is a way to calculate the concentration of a substance. Determine the percentage desired and the total quantity desired. Multiply the percent (as a decimal) by the quantity desired to determine the amount of solute needed.

Percent volume/volume is another way to calculate the concentration of a substance. Determine the percentage desired and total quantity desired. Multiply the percent (as a decimal) by the quantity desired to determine the amount of solute needed.

Percent weight/volume is commonly used for laboratory preparations. Percent weight/volume is the (mass of the solute, in grams, divided by the volume of solution, in ml) times 100.

Concentration in ppb and ppm are common forms used to relay the mass of a substance present in a sample. These units are convenient when the concentration is very small. PPM is parts per million, and can be found by dividing the mass of the solute by the mass of the solution, then multiplying by 1,000,000. PPB is parts per trillion, and can be found by dividing the mass of the solute by the mass of the solution, then multiplying by 1,000,000,000. Becoming slightly more frequent in use now, we have ppt. PPT is parts per trillion, shows up regularly in mercury regulations. Parts per trillion is found by dividing mass of solute by mass of solution, then multiplying by 1,000,000,000,000. Someone once told me that a part per trillion is easy to visualize in terms of half dollars. Paint one red, cover the state of Rhode Island in half dollars, and try to find that one red one.

Dilutions are often necessary when preparing solutions for laboratory analysis. Although the actual concentration of the final solution changes, the number of solute molecules does not change. The number of moles of solute is the same before and after the dilution.

Moles = molarity x volume

Moles = M x V

Mi x Vi = Mf x Vf

Where i = initial and f = final

These are the basics for good laboratory math. With a little practice they can become easier to use and understand.

For more information contact author Denise Seman: DSeman@CityofYoungstownOH.com, 330.742.88202

OWEA ASSOCIATION NEWS

OWEA Approved as an OSU Work Study Partner

The Ohio Water Environment Association has applied for and been approved as a not-for-profit Federal Work Study partner. Ohio State University students who have qualified for the Federal Work Study Program will be eligible to work at OWEA, concentrating on duties that serve the greater good of improving the water environment. Work Study students will be eligible for the 2010-2011 academic year.

Proper Disposal of PPCP's

OWEA hosted a public information booth at the Medication-Assisted Treatment Conference held by the Ohio Association of County Behavorial Health Authorities. Flyers, brochures, and Ohio EPA literature with information on proper disposal of pharmaceuticals and personal care products (PPCP's) were handed out. Dan Sowry and Deb Hoffman from the Ohio Environmental Protection Agency, intern Julie Steffen, and Judi Henrich, OWEA Executive Administrator, manned the booth.

John Motyka, NW Section President and Doug Clark, OWEA Vice President, manned a similar booth at the Allen County Correctional Institution Employee Wellness Day on April 21st.

Sections Use Online Registration

All four of OWEA's sections have used the online registration option for section meetings and workshops. This saves time for the registrants and for the volunteers who handle registration duties for the sections. Check OWEA's online calendar or Featured Events for online registration links to your section's upcoming events.

Government Affairs Workshop Presentations Available

The presentations from the 2010 Government Affairs Workshop technical sessions are now available online as PDF files. Visit *www.ohiowea.org* and click on Presentations (left margin list).

OWEA Spring Term Intern

Julie Steffen, a MBA Student at Ohio Dominican, is serving an internship at the Columbus OWEA office. Julie has a BA from Ohio Wesleyan in Geography and GIS Systems and hopes to focus her career in the not-for-profit organizational field.

TROUBLESHOOTING AMMONIA VIOLATIONS IN SMALL EXTENDED AERATION PACKAGE TREATMENT PLANTS

By: Elizabeth Wick, P.E.
Ohio EPA, Division of Surface Water Northwest District Office

Many operators of small extended aeration package wastewater treatment plants face operational challenges in meeting the ammonia limits in National Pollutant Discharge Elimination System (NPDES) permits. Typically, these plants have NPDES permit limits for ammonia as shown in the table below.

	7 day average (mg/L)	30 day average (mg/L)
Summer	1.5	1.0
Winter	4.5	3.0

These plants are designed to treat an influent ammonia level in the range of 20-40mg/L. However, some have influent levels as high as 100mg/L.

Even a small package plant can be in significant noncompliance with its NPDES permit and draw the attention of citizens, environmental groups and U.S. EPA. Ohio EPA is under increased pressure from U.S. EPA to improve our state's compliance rates. As a result, the owners/operators receive violation letters from Ohio EPA and face escalated enforcement actions that can include large penalties.

Every package plant and waste stream coming into it is unique, which makes it difficult to describe a troubleshooting method that will work for all plants. As all operators know, nitrifiers are finicky bacteria. Does the problem with meeting the ammonia limits lie in the design limitations of the plant, is it related to the use of cleaning chemicals, sanitizers or low flow water fixtures and toilets? Many of these plants serve schools, campgrounds, mobile home parks, RV parks, and marinas. The seasonal nature of some of these facilities compounds the challenge of operation.

One theory of troubleshooting nitrification in a package plant is discussed below. It involves the use of a typical process control kit which contains an ammonia test kit, a centrifuge, a dissolved oxygen (DO) probe, a core sampler, and a settleometer. The ammonia test kit can be a simple colorimeter. Since most colorimeters have a limited range, sample dilutions will most likely need to be prepared. This is the method used by Ohio EPA's Compliance Assistance Unit when they go to a treatment plant with effluent ammonia issues.

First, operational data must be collected. The process control decisions to remedy the problem will be made based on that data. The process for troubleshooting ammonia problems begins with an ammonia profile of the system. An ammonia profile is simply measuring the concentration of ammonia across each treatment unit. The ammonia concentration should diminish across the aeration tank, from influent to effluent, and then should remain low across other units. If the concentration rises across any of the units, then that is the unit that is not performing as designed. Focus attention on that treatment unit. Once the unit that is failing is identified, other process control tools are used to determine why it is failing and correct the situation.

Sampling

1. Sample the raw wastewater. Sample either the influent sewer or the equalization (EQ) basin splitter box.
2. Sample the mixed liquor in the aeration tank(s). Use a centrifuge to spin down the mixed liquor and perform the ammonia test on the clear centrate (liquid above the solids).
3. Sample clarifier effluent from the effluent weir.
4. Sample the return activated sludge (RAS). Spin down the sample with a centrifuge and run the ammonia test on the clear centrate.
5. Sample the sand filter influent from the sand filter dosing box.
6. Sample the sand filter effluent prior to disinfection.

Analysis:

By analyzing the ammonia of the above samples, the problem can be isolated to one of the units

1. Check the influent ammonia. Is it outside of the design parameters of the treatment plant? If so, additional treatment units may be necessary. If there are significant solids in the bottom of the trash trap or the scum layer is very heavy, have a septic hauler pump out the trash trap, then retest the influent.

2. Check the aeration tank ammonia. If the aeration tank ammonia is greater than 1 mg/L then the problem is probably in the aeration tank.

   a) Check the solids in the aeration tank. If the treatment plant was recently washed out, there may not be sufficient mass in the tank to have enough nitrifiers to do the job. To determine if there is sufficient mass in the aeration tank, use a centrifuge. If the spin is at least a 2 spin, then usually there is sufficient mass in the system. Note: at higher spins (greater than maybe 3.5 or so) there may be too much mass and settling will be impacted (check settleometer and waste, if appropriate).

   b) Check the water temperature. If it is winter and the water temperature is less than approximately 6°C, it is likely that temperature is limiting nitrification. Provide insulation over the aeration tanks (foam insulation inserted in grating, insulating blankets [like those used for curing concrete in cold weather], or plywood), and/or cycle flow equalization tank air on and off to keep from exposing the raw wastewater to the cold atmospheric air and lowering the water temperature.

   c) Check the alkalinity in the aeration tank to rule out low alkalinity. Nitrification consumes 7.1 parts of alkalinity

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for each part of ammonia that is converted to one part of nitrate. There should be an alkalinity residual of at least 60-80 mg/L of bicarbonate alkalinity available in the aeration tank when the ammonia is less than 1 mg/L to accommodate peak ammonia loadings. If the ammonia concentration in the aeration tank is high, multiply the ammonia concentration by 7 to estimate the alkalinity deficiency and begin adding sodium bicarbonate to the aeration tank (make a slurry from the powder and add to the aeration tank) or cycling blowers to denitrify and recover alkalinity biologically. Cycling blowers alone can help if the alkalinity deficiency is not too large. Once alkalinity is used up in an aeration tank, the pH drops. Below a pH of 6.5 nitrification slows down.

d) Check the DO in the aeration tank. With warm water temperatures in the summer, DO will be less soluble than in cold water. Low DO can also be caused by organic overload. If this is the case, add an additional blower or an additional aeration tank. Low DO can also be caused by clogged diffusers which should be cleaned. Inefficient aeration causes low DO and can be attributed to loss of airflow due to loose belts, dirty filters, bad check valves, leaking pipes, or a low water level in the digesters (less head over diffusers could cause more air to go that direction).

3. Check clarifier effluent ammonia. If the clarifier effluent ammonia is greater than the aeration tank ammonia, then the problem is probably in the clarifier.

   a) Core sample both hoppers of the clarifier. If the clarifier is more than half full of sludge, then it is possible that the sludge is breaking down in the clarifier and could be releasing ammonia. Check a settleometer to see if the high sludge blanket is due to poor settling. If so, the diluted settleometer test can help determine whether poor settling is due to filaments or just too high of a mixed liquor concentration. If the mixed liquor settles well in the settleometer, check return rates and increase the return rate. Another good practice is to scrape the hopper walls. Solids will build up on the hopper walls and break down, releasing ammonia.

4. Check the ammonia in the RAS. If the ammonia in the RAS is higher than the aeration tank, then sludge is probably breaking down in the bottom of the clarifier. See item 3.

5. Check the ammonia in the sand filter influent. If the sand filter influent is higher in ammonia than the clarifier effluent, then check to see if the dosing tank is full of solids. They could be breaking down and releasing ammonia. Clean out the dosing tank and properly dispose of the solids.

6. Check the ammonia in the sand filter effluent. If the sand filter is clogged and full of solids, it is likely that the solids are breaking down and releasing ammonia. Clean the sand filter and properly dispose of the solids.

If it is determined that everything is operating within the design parameters and the effluent ammonia is still high from the aeration tank on, then toxicity might be an issue. Usually toxicity is indicated when the aeration tank DO is high and the aeration tank ammonia is high. The most common cause of toxicity is low aeration tank alkalinity resulting in a low pH in the aeration tank that stops nitrification. In this situation, adding sodium bicarbonate to the aeration tank or cycling blowers to denitrify and recover alkalinity biologically should help.

In conclusion, the operation of small extended aeration package treatment plants can be a challenging task when it comes to ammonia compliance. Troubleshooting nitrification issues can be a time consuming process and requires that the operator collect enough good and appropriate data to make the correct process control decision. However, once the cause of the ammonia violations is found, practical steps can be taken to maintain compliance with the NPDES permit limits. In addition, increased scrutiny of minor compliance rates by U.S. EPA is causing Ohio EPA to make minor compliance a priority. Aggressively addressing ammonia violations (and other noncompliance issues) is a better use of an owner's money than penalties. Operators should keep their district office representatives informed of the steps being taken to return to consistent compliance.

WELCOME

new members who joined OWEA in January, February, and March.

Carolyn Frankell	Linda Mayer-Mack
Ryan Gierhart	Tim Murphy
Christopher Gilcher	Steve Owens
Dan Havalo	Tony Parrott
Brad Hitts	Catherine Perciado
Beverly Hoffman	Alan Pettigrew
John Hredzak	Thomas Poffenbarger
James Jones	Neil Pry
Matt Kiefer	Gregory Roberts
Justin Kuhbander	Kevin Roff
Dennis Long	Kristopher Ruggles
Charles Luecke	Jeff Sheehan
John Lund	Mark Strotman
Keith Manning	Dwight Thompson
Tony Maples	Dennis Zentarski

BREEDING BIRDS OF WESTERN REGIONAL WWTP

By John Habig, City of Lebanon

In June of 2009 I approached Mark Livengood, Manager of the two Montgomery County Regional WWTPs, about permission to do some bird watching at the Western Regional WWTP. There was an ulterior motive to my request and Mark astutely detected it and asked me why I wanted to specifically bird watch at Western Regional. I explained that the second Ohio Breeding Bird Atlas was being conducted statewide and that Western Regional was in a priority block.

About the Breeding Bird Atlas

The Breeding Bird Atlas is a scientific study conducted mainly by volunteers. Breeding bird atlases have been around for some time and are conducted primarily by volunteers and result in distribution maps for each breeding bird species. The first atlas was originally conducted in the United Kingdom in the 1960's. It proved very popular and atlases have been conducted around the world since then. The United Kingdom is undergoing their third national atlas now. It has been 25 years since the first Ohio Breeding Bird Atlas, with fieldwork beginning in Spring 2006 on the second Ohio Atlas. The State of Ohio is divided into Regions (based on pages of the DeLorme Gazetteer) and further divided into grids or "blocks". Each block is approximately nine square miles in area. Volunteers spend on average 20-25 hours of birdwatching in one or more blocks. In the first atlas over 750 blocks were randomly created throughout the State. In this second atlas the entire state has been broken into over 4400 blocks to get a better idea of the distribution of breeding birds. The Ohio Breeding Bird Atlas II is a joint project of The Ohio State University and the ODNR Division of Wildlife.

The main goal of the atlas is to document the current distribution and abundance of breeding birds in Ohio and their preferred habitat. Another goal is to assess changes in statewide distribution of breeding birds over the last 20 years. Surveying a Breeding Bird Atlas block involves documenting the bird species present and recording any evidence of breeding or behaviors that suggest an individual is breeding. A series of codes is used to assign each observation to one of three breeding categories: possible, probable, and confirmed.

Wastewater plants and biosolids disposal sites provide good habitat for Ohio's breeding bird population. Wastewater treatment plant buildings and grounds usually contain some landscaping that attracts birds. Some WWTPs have woodlots and all of them have riparian areas that they discharge their effluent into. Biosolids disposal sites are grassland or agricultural by nature. Each of these different types of habitats attracts different species of breeding birds. The more varied the habitat, the more species of breeding birds that will be able to be supported. Western Regional has a very good mix of habitat including the buildings, landscaping, the Great Miami River, and a woodlot growing between the river and a dedicated biosolids disposal site adjacent to the treatment plant. The biosolids disposal site was planted with soy beans last year and has grassy areas around the margins.

Blue Grosbeak
(Passerina caerulea)

Eastern Phoebe
(Sayornis phoebe)

In only a few short hours on the morning of July 3, 2009 and a quick follow up on July 11, Rick Asamoto, one of the hundreds of volunteers and on his first trip to a WWTP, and I were able to find 50 species of birds. As soon as we registered with the on-duty operations staff they told us about a nest that a bird had built on a support beam in the chlorine building. We determined that it was the nest of an Eastern Phoebe, an insectivore that loves to eat mosquitoes and other smaller insects. We were able to code 33 species as possible, seven as probable and confirmed 10 breeding bird species. One of the more interesting species that we observed was a female Blue Grosbeak in a brush thicket. In the first Ohio Atlas this species was confirmed in only one block. Data gathered so far in the second atlas has shown that this species has expanded its range (26 confirmations and over 100 other observations so far). It now can be found in several counties with the northern boundary running, approximately, along I-70.

While walking around the WWTP we also noticed signs of deer, coyote, red fox and many other smaller mammals. Butterflies and dragonflies were also numerous.

The one thing that wastewater operators can be proud of is our environmental stewardship. We usually associate this only with our effluent and its impact on the receiving water. We often don't think about the positive impact that we also have on our feathered friends and other wildlife. One thing that I have noticed while taking plant tours during section meetings is that every facility that I have been to supports birds and their young. Some WWTPs may have more species than others because of available habitat but you can be assured that your facility will have some breeding birds.

Western Regional WWTP is located in one of the 750-plus blocks of the first atlas (a priority block for the current atlas). It could be that your plant is also. The Ohio Breeding Bird Atlas can use your assistance and your inquiries concerning the OBBA II are always welcome. Please contact the Atlas office or a Regional Coordinator to find out how you can help make Ohio's second atlas project a great success. To get more information on the atlas you can go to *http://www.ohiobirds.org/obba2/index.php*. Every record counts, and the OBBA II Coordinators want to hear about records from your treatment facility! If you want to speak to a regional coordinator click on the Regional Coordinator tab in the upper right hand corner and follow the directions to determine which region you are in and who you should contact.

WEF Membership Application 2010

Ohio Water Environment Association

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Signature *Required for all new memberships*		Date	

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WEF Sponsor Name (optional)	Sponsor I.D. Number	**ACQ. Code for WEF use only** | WEF08

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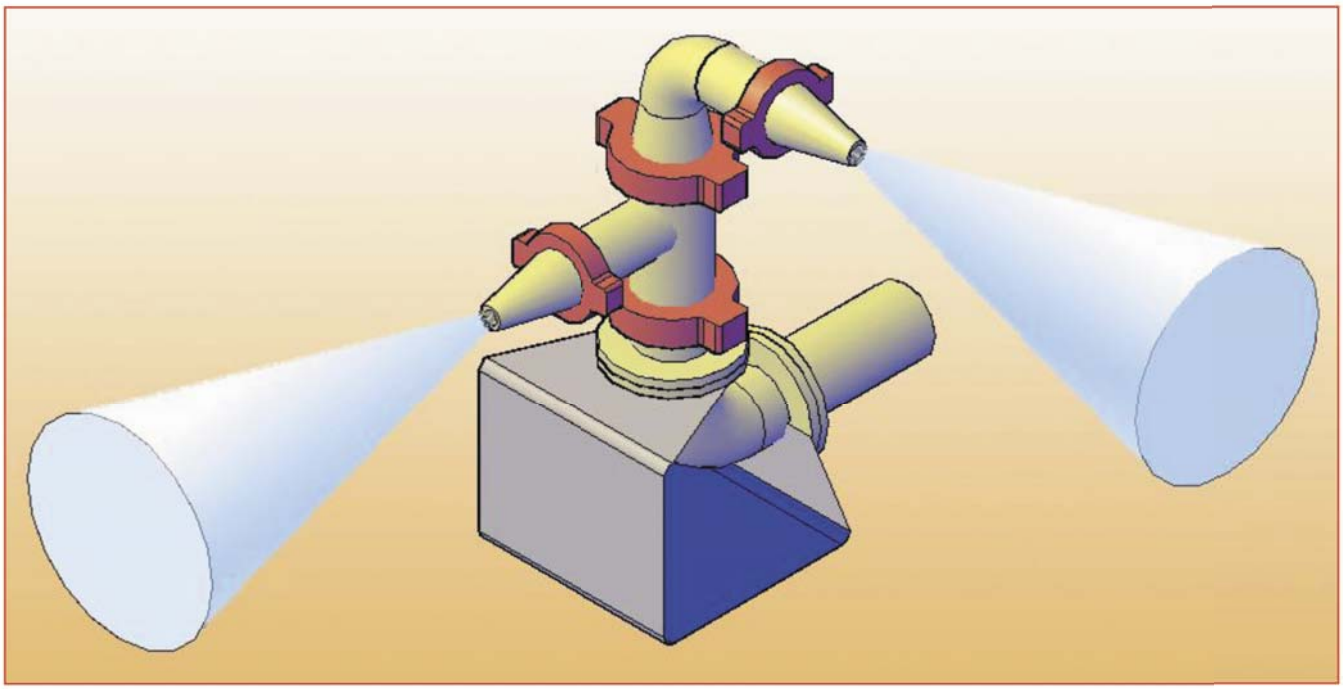

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