Pressures to reduce costs and turnaround time of capital improvement projects are great in every industry, especially in the water treatment sector. With process complexity and regulatory considerations at all time highs, utility managers find themselves more involved in faster and more predictable project deliveries. Alternative project delivery methods can provide solutions to these problems; this article provides an overview of a successful progressive design-build (PDB) project undertaken by the owner, AQUA, and the design-builder: Bowen as the contractor and HDR as the design engineer.
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Hello, living here in Ohio we get to experience the wonderful season of winter. The great thing about winter is that spring is just around the corner. Spring brings about new growth in plants and the opportunity to see new baby animals on the farm. Ohio AWWA also has new beginnings in the spring. We have our Spring District meetings and the Northern and Southern expos. All are great chances for learning, receiving CEU’s and networking with other water professionals. On March 9 we will be continuing our One Water training in collaboration with OWEA with a Government and Regulatory Affairs workshop at the Nationwide Conference Center.

The Southern expo will be held at the Robert’s Centre in Wilmington on April 20th and the Northern expo at the City of Akron Water Distribution facility on April 22nd. Come see the latest and the greatest. The expos also host the district level meter madness contests. The fast-paced Meter Madness competition pits competitors against the clock to assemble a water meter from a bucket of parts. The winners of the district competition get to move on to the state competition at our annual conference. One of the great things about this contest is that it is an individual contest. Any size utility can send someone to compete. Others contests which members are preparing for are the water main tapping, Top Op’s and the newest “Hydrant Hysteria” if you would like to volunteer to help with a contest or to be a participant contact Mike Gradoville MGradoville@aymcdonald.com for information.

One of the other activities that comes in the spring is the Washington D.C. fly-in. This year we will be represented by Dave Weihrauch; Mike Gradoville; Todd Danielson; Robin Rupe; Tyler Converse and Bob Davis. This event brings AWWA members from all over the country to be our voice for the important issues that affect the water community with our elected officials. The Water Utility Council has been very busy with issues that affect each of us. They are our advocates with the EPA and legislators here in Ohio. We are blessed to have hard working and informed people on that committee.

On the membership front we have met two goals that have been given to us. We have received recognition for securing renewals of over 61% of our first year members and have had an increase in membership as we now number over 2000 members. Let’s continue to get the message of AWWA out and reach out to others to become members. Our organization is operated and supported by wonderful volunteers. AWWA gives us an opportunity to expand our leadership and meet some of the greatest people in the world.

April 20 thru the 22nd we will be hosting the Region III meeting of section officers. There will be representatives from nine states and the providence of Ontario. We are looking forward to showing our great buckeye hospitality and interacting with national representatives, AWWA staff and other Section leaders. Coming up many of us will be Uniting the World of Water at ACE 17 June 11-14 in Philadelphia.

As we look forward at our calendars there will be workshops put on by the Customer Service, Distribution and Asset Management committees. Join us September 26-29 in Toledo for our annual conference. Doug Dunn and the rest of the local arrangements committee are planning an event that will be informative and fun. The theme is “The Focus of Water”.

Take some time, enjoy the new spring flowers and attend and participate at an AWWA event. See you there.
Another great year behind us, and an even better one is beginning! AWWA continues to move forward on all current initiatives and programs, making progress in leaps and bounds. During the most recent AWWA Board Meeting this past January we discussed the following:

- Community Engineers Corps
- Partnership for Clean Water
- Small Systems Training; grant award through USEPA
- Total Water Solutions
- The Water Equation
- 21st Century Membership Model
- AWWA2020

As expected, lead in drinking water also had a presence in our discussions. The Board discussed and approved the Lead Service Line Management Policy Statement, which addressed AWWA’s support of the National Drinking Water Advisory Council (NDWAC) recommendation to replace lead service lines. The policy statement is intended to support AWWA member utilities when addressing the need for full lead service line replacement with their public officials and customers. It was designed to provide broad guidance on the issue and focus on the high-level details with emphasis on protecting public health, public education and communication, maintaining optimal corrosion control measures, and developing a collaborative community-based approach. The policy statement is available upon request, and through the AWWA website.

One other item of potential interest that was discussed, and approved, was a change in the definition of the Retiree Member category. The new policy/language defines a Retiree Member as “one who is substantially retired from all gainful employment, who is 55 or more years of age, and who has been a member of the Association for at least 10 years.” This change benefits both the retiree, the Association and the Sections to retain retiree members for several reasons:

- The retiree member can stay up-to-date in the profession by accessing AWWA’s resources
- The retiree member can be better prepared to re-enter the job force
- The retiree member can contribute knowledge and efforts to volunteer roles
- The retiree can mentor new members of the profession
- The retiree can contribute financially through a modest dues payment

What’s new for ACE2017?

- NEW Attendee and Exhibitor Registration system launched January 2017.
- COMPLIMENTARY REGISTRATIONS
  - Complimentary student registrations are being offered; and
  - Unlimited complimentary exhibits-only registrations for Water and Wastewater Utilities who pre-register.
- REVISED Exhibit Hours
- NEW OPPORTUNITY for exhibitors to host private demos on Tuesday and Wednesday mornings
- EXPANDED LEAD RETRIEVAL OPTIONS for exhibitors
- NEW PROFESSIONAL TRACKS for the professional program
- Olympic gold medalist swimmer Amy Van Dyken will be keynote speaker of the Water Industry Luncheon.

For the retiree:

- The retiree member can stay up-to-date in the profession by accessing AWWA’s resources
- The retiree member can be better prepared to re-enter the job force

For the Association and the Sections:

- The retiree member can contribute knowledge and efforts to volunteer roles
- The retiree can mentor new members of the profession
- The retiree can contribute financially through a modest dues payment
One last bit of information from the Board of Directors… the following AWWA Officers were recently elected and will take office in June, at the close of ACE. One Director-at-Large and one Service Provider Director-at-Large Position was also elected.

**President-Elect**
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Stephen Blankenship (New Jersey Section)
Mark Coleman (Michigan Section)
Alan Forrest (Arizona Section)

To close my report for this quarter, I want to say that I’ve enjoyed my time on the AWWA Board, and proud to have represented the Ohio Section for the past several years. It’s my time to move to other tasks, but know there is no better place than Ohio!
AQUA Ohio owns and operates water treatment facilities in 19 counties serving over 150,000 people. In Marion, AQUA operates a conventional lime-soda ash softening water plant treating both surface water and groundwater sources with an average daily production of 6.8 MGD. Water treatment at this location goes back over 100 years. Prior to this project, two 1-MG in-ground basins were used for pre-sedimentation and equalization, followed by flocculation, softening, settling and recarbonation, then filtration and disinfection in clearwells. Surface water was pumped to the south basin for pre-sedimentation prior to overflowing into the adjacent north basin for equalization. Groundwater was aerated in order to oxidize iron, manganese, and hydrogen sulfide. Surface water and aerated groundwater are mixed in a sump located below the aerator prior to being withdrawn by the low service pump station.

Both of the in-ground basins, constructed in the early 1900’s, and the 1950s-era tray aerator, had reached the end of their useful life. AQUA decided to replace these facilities to maintain reliable treatment and plan for the future. These improvements enhanced treatment redundancy and operational flexibility, reduced maintenance costs and enabled AQUA to continue providing reliable and cost-effective service to their customers. In addition, the new pretreatment facilities serve as the first phase of a long-term plan to systematically replace the existing plant with new facilities; for this reason, the new facilities were to be designed to allow for maximum flexibility in treatment and future plant improvements.
In August of 2015 AQUA set a goal to complete this project within a very short period of time, with the required in service date set for June 30, 2016. With Notice to Proceed given in early November 2015, the design, equipment procurement, construction and startup of these facilities was therefore required within only eight months. In addition, avoiding operational disruptions at the facility, maintaining both river and groundwater sources, and assuring reliable water delivery was critical throughout the entirety of the project.

To design and construct these improvements, AQUA selected the progressive design-build project delivery method. The PDB model was selected to accommodate an accelerated schedule and AQUA’s desire to remain involved throughout the project. Using a qualified, experienced, and transparent design-builder allowed AQUA’s engineering, operations and maintenance groups to provide input to the design as it progressed. Ultimately, the Bowen-HDR design-builder team was selected based on the experience of their proposed project team, technical approach, and experience as an integrated design-builder, having worked on over 20 projects together. This ensured the improvements met both short-term and long-term operational and budgetary objectives.

Progressive design-build differs from other alternative delivery methods. With PDB, the design-builder is selected using a QBS process prior to the development of the design work. Once the design-builder is selected, the owner and design-builder collaborate together to develop the concept design and, upon agreement, progress to detailed design. Throughout this process, the design-builder provides regularly updated construction cost estimates which allow the owner to make informed decisions regarding the overall scope and cost of the project. This collaborative approach enables the owner to have real input into the design and, at the right time in the project lifecycle, agree on a price with the design-

Figure 2: The previous groundwater aerator had reached the end of its useful life. In addition, not all groundwater wells were plumbed to be pumped to the aerator. That would be fixed as part of the improvements.

continued on page 8
builder to complete the design, obtain permits and complete construction. The price is based on a guaranteed maximum price (GMP) which is generally submitted at the 60% level of design completion. The PDB delivery method offers the owner substantial flexibility and involvement in the design process, allowing an accelerated project schedule, and incorporating cost saving decisions at the outset of the project.

An initial concept development workshop was scheduled in November 2015 which involved AQUA plant engineering, operations and maintenance personnel, and a team from Bowen-HDR. At this workshop, project objectives were confirmed, alternatives identified for consideration, and plant operational constraints presented. That session resulted in a phased design development schedule, with a number of focused options identified to meet the overall objectives. Weekly meetings facilitated the communication and decision-making process. A 30% design review meeting focused on confirming key scope decisions, and affirming design and construction details, which improved facility operations and maintenance and identified the budgeted costs. After this review and prior to a 60% design review, AQUA and Bowen-HDR evaluated and incorporated several revisions which reduced cost without compromising neither functionality nor reliability, and assured the project goals would be met. The design was completed using 3D CADD modeling to aid in visualizing the final outcome and to minimize coordination conflicts during design changes. This enabled the aggressive project schedule to be maintained, moving from the concept workshop to GMP in approximately 3 months.

It was imperative that the project address only what was necessary to successfully replace the aging infrastructure and optimize costs. Minimizing ratepayer burdens resulting from capital improvement projects is a principle of AQUA's operating philosophy. To accomplish this, Bowen-HDR worked to reduce cost by utilizing existing infrastructure such as pipes, valves and pumps wherever possible without compromising reliability or introducing an unnecessary risk of failure.

Situating the new facilities took this into consideration; by positioning the new basins close to the existing basins and at a slight angle, this shortened the required length of new piping, saving costs and reducing headlosses. Basin geometry was an iterative process as well; with the assistance of the 3D CADD model, the volume of the basins was decreased from a larger, more conservative sizing to yield additional cost savings. The decision to decrease the basins' footprint was not made without significant consideration to their future adaptability. The basins are able to be outfitted with lamella plate or tube settles to increase performance if future process needs warrant it. Construction cost updates were provided to AQUA for each iteration for budget management purposes. In early February 2016, a GMP was confirmed.
It was important that the facility maintain full operational capacity as the work progressed. This delicate balance was accomplished by detailed planning to properly sequence the work, and plan each tie point connection as a critical event. Within the short project timeframe, Bowen-HDR worked with AQUA to ensure that facility design maximized future operational flexibility, obtained regulatory approval with the OEPA, developed designs quickly for phased review, and issued documents to meet the construction schedule. Bowen provided constructability reviews and cost- ing coordination while simultaneously planning for field operations prior to completion of the final design.

Successfully obtaining regulatory approval while maintaining the project’s accelerated schedule presented several challenges. HDR and Bowen tailored their approach by engaging the OEPA early in the design process. This was done to establish an initial dialog and to communicate the big picture project scope and milestones. Failure to do so would put the project at risk for costly schedule overruns resulting from repeated regulatory reviews. Regulatory approval was achieved through early conceptual briefing with the agency, incorporating initial feedback from the agency for general plan submission, followed by detailed plan submission for final approval. Challenges encountered during construction were quickly addressed under the PDB delivery method. Notable challenges included shared use of a single lane plant access drive and low service pump rehabilitation with minimal disruption to the plant operation. The Marion WTP has a drive that is not large enough to accommodate both plant and construction traffic together. Given the number of chemicals utilized at an operating water treatment plant maintaining access was very important. To coordinate use of this drive, particularly when traffic was expected to be heavy (i.e. during concrete pours), AQUA and Bowen held weekly operation review meetings to clearly communicate and plan their needs.

Rehabilitation of the low service pumps was required due to the increased suction head provided by the new pretreatment basins. The higher suction head would cause the pumps to operate too far right on their curves. To prevent damage, pump rotating assemblies were replaced. An extended shutdown of the low service pump station was not possible. To accomplish this work, AQUA and Bowen-HDR communicated through specific workshops to finalize planning and

Figure 4 Positioning the new basins near the existing basins and orienting them at an angle reduced the length of new piping required, saving costs.
sequencing. With clear communication between the project team, rehabilitation of the pumps was completed successfully without disrupting the plant’s operation. The collaborative nature of PDB projects allowed for quick and efficient resolution of construction challenges.

Upon completion of construction, Bowen-HDR collaborated with AQUA to develop a plan that provided for orderly commissioning and start-up of the project. The HDR-Bowen team developed and implemented an acceptance testing protocol to verify that performance requirements were met. After commissioning and start-up, Bowen-HDR remained involved to provide AQUA assistance in facility operation, training, and other operations and maintenance items.

The timeline below summarizes the project milestones accomplished in the pretreatment improvements project. As the project was being completed, the original in-service date was extended one month. This successful project highlights what owners can expect when selecting an experienced design-build team to translate their vision into maximizing flexibility, accomplishing schedule acceleration and providing cost savings.

As the pretreatment design-build project reached conclusion, AQUA Ohio requested the Bowen-HDR team provide an evaluation and implementation plan which would outline how the plant could be logically expanded over a ten to twenty year horizon to meet both current and future regulatory requirements while replacing aging infrastructure in a timely, staged fashion. That document includes construction costs and presents an implementable staged approach to maintain facility reliability, functionality and regulatory compliance.

The authors would like to add that Patrick Eiden, now with the City of Columbus, Department of Public Utilities, Division of Sewerage and Drainage, is recognized for his leadership on this project.
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gsentrey@envdesigngroup.com

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PRESENT AT RESEARCH WORKSHOP: See the next pages for Information on providing a Vendor Presentation at the Research Workshop on Tuesday, September 26.

EXHIBITOR FEES: $630 before June 30, 2017
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Includes booth plus exhibit day registrations, lunch and MAC mixer tickets for up to three (3) booth attendees. There are additional fees for electric, carpet, internet, phone, water, etc. More information & costs furnished in exhibitor’s packet sent prior to conference.

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Additional Booth Attendee Fees:
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DEADLINE for registration is August 31, 2017.

By signing below, I have read and accept the terms of the Exhibitor Agreement (view at www.oawwa.org/).

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On Wednesday, September 27, 2017, during the Ohio Section AWWA Annual Conference in Cincinnati, exhibitors will have a unique opportunity to showcase their products or services and help attendees, Ohio EPA Certified Operators, Registered Sanitarians and Professional Engineers, earn contact hours (subject to OEPA approval) or continuing education credits. Presenters are sought to cover highlights or products, services, or solutions that they provide. Each presenter will be allowed 15 minutes to speak at their booth. Guided groups of attendees will visit booths at scheduled intervals. In order to obtain approval from the OEPA, the presentation must be educational in nature. To participate, please complete and submit this form no later August 1, 2017. No submissions will be accepted after this date.

Note: You must be a paid exhibitor to participate.

Presentation summary and presenter bios MUST be submitted with this form.

Please check only one topic below to indicate the subject of your presentation:

- Distribution System
- Hydrants
- Labs
- Tanks
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Deadline is August 1, 2017.
On Tuesday, September 13, 2017, during the Ohio Section AWWA Research Committee Early Bird Workshop in Toledo, exhibitors will have an additional opportunity to showcase their products or services and help attendees, Ohio EPA Certified Operators, Registered Sanitarians and Professional Engineers, earn contact hours (subject to OEPA approval) or continuing education credits. Presenters in the areas of analytical instrumentation, monitoring equipment, corrosion control (Pb/Cu), Cyanobacteria, qPCR and ELISA are sought to cover products, services, or solutions that they provide. Each presenter will be given 15-30 minutes to present their product/s and answer questions. In order to obtain approval from the OEPA, the presentation must be educational in nature. To participate, please complete the online form at the link in box above no later than June 1, 2017. No submissions will be accepted after this date.

Please note: Submitting this form does not guarantee that your presentation will be accepted.

Note: You must be a paid exhibitor to participate.

Presentation summary and presenter bios MUST be submitted with this form.
2017 OHIO SECTION AWWA TAPPING CONTEST

The Ohio Section Tapping Committee would like to invite Ohio Water Utilities to send a tapping team to the Section Tapping Contest. This year’s contest will be held on Wednesday, September 27th in Toledo. The winner of our Section contest will be given the opportunity to represent the Ohio Section at the Annual Conference and Exposition (ACE) in Las Vegas, June 11-14, 2018.

To register your team for this event, please complete this form (one form per team) and submit to Mike Gradoville at mgradoville@aymcdonald.com by July 15, 2017.

Tapping Contest Entry Form:

___ Men’s Tapping Contest  ___ Women’s Tapping Contest

Utility Name: __________________________________________________________

Contact Name: _________________________________________________________

Address: ______________________________________________________________

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METER MADNESS – CALL FOR COMPETITORS

District Competition for Meter Madness will take place again this year in April. Anyone wanting to compete for the SE and SW Districts at the Southern Ohio Utilities EXPO at Roberts Center in Wilmington, OH on Tuesday, April 11, 2017 should sign up by emailing Mike Gradoville at mgradoville@aymcdonald.com. After signing up, Mike will give you instructions for obtaining your practice meter for the competition. Likewise, those from the NE and NW Districts who want to compete in Akron at the Northern Ohio Water & waste Water EXPO on Thursday, April 13 can also email Mike Gradoville to register and get your practice meter.

TOP OPS

Calling all District Teams! Do you have what it takes to be crowned the Ohio Section Top Ops champion for 2017 and go on to Las Vegas in 2018? The annual competition will be held on Wednesday, September 27, 2017 and will feature the winners of the summer District meeting competitions. Contact Mike Gradoville at mgradoville@aymcdonald.com or Kevin Gleich at kgleich@columbus.gov for more information.

HYDRANT HYSTERIA – CALL FOR TEAMS

Hydrant Hysteria will have it second competition this September in Toledo at the 2017 Ohio Section Conference. Any Utility wanting to enter a team, 2 participants and 1 coach, please email Mike Gradoville at mgradoville@aymcdonald.com. Four teams have voiced their interest: Cincinnati, Columbus, Toledo and Lima. Practice hydrants have to be ordered so do not hesitate. Deadline for registering will be June 15, 2017. Please list team members, titles, phone numbers and email addresses.
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<tr>
<th>Inspections</th>
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<td>Wet Dry ROV</td>
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</tr>
</tbody>
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Sustainable stormwater, wastewater and drinking water solutions all require more collaboration than ever.

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In many parts of the US, drinking water is extracted from rivers to be treated, stored and distributed. But few areas present greater challenges than South East Kentucky. Common practice for treatment plants, where there is room, is to use pre-sedimentation basins to allow sands and other sediments to settle out prior to the treatment process. If the pre-sedimentation area is not sufficient, the basins can bypass huge amounts of river sand during heavy rain periods. Once sand enters the process it wears out mechanical equipment and clogs downstream processes.

SOLUTIONS TO COST AND DAMAGE

As well as abrasion, accumulated sand and sediment can lead to reduced volumes in process tanks, higher volumes of sludge and high energy usage; each of these issues adds significantly to operational costs. With high sand and sediment content in river flow, pre-sedimentation basins rapidly fill up, making the sedimentation process less effective and allowing bypass; the accumulated sand and sediments have to be manually cleaned, a costly process that can take the basin out of the treatment process for significant time. The material removed must be further dewatered and disposed.

LOADED WATER

Sand, silt and coal accumulation is a common problem in the Appalachian rivers, as high density of industry and mining upstream creates a high concentration of sediment. The river is very turbid – especially when it rains.

“The Big Sandy River didn’t get that name accidentally,” said Ralph Varney the Plant Operations Manager for Pikeville Water Treatment Plant. “When there’s a lot of rain, the river gets atrocious. I mean, it’s awful.”

Described by locals as “the city that moves mountains”, Pikeville received national recognition for rerouting the Big Sandy River and the result, the Pikeville Cut-Through, enabled the construction of a new Water Treatment Plant in 1987.

However, shortly after the Pikeville plant began operating, the superintendent noticed that equipment was getting clogged with large amounts of river sand. As there was no pre-sedimentation tank the flocculation tanks would accumulate as much as six feet of river sand every three months and the city needed a better solution than manually removing it every quarter.

River sand often clogged the plant’s two flocculator basins so much that when they were turned off, they could not be turned back on. As a result, the basins needed to be checked regularly and monitored constantly. Cleaning the basins proved to be especially expensive and time-consuming.

“When we cleaned the basins ourselves, it was extremely costly,” Varney continues. “It usually took two or three of us about a week. We would have to spend $15,000 to $20,000 for an outside company to do the cleaning for us.” The basin's mixer paddles would also become worn and twisted, requiring constant replacement.

Treatment options included an infiltration well, but there was too much clay in the ground which would keep the water from percolating. A pre-sedimentation basin was also considered. However, at a treatment plant 20 miles upriver at Prestonsburg, Verner saw vortex separation technology being used effectively. By using dynamic energy found in pumped influent to separate solid from liquid, no moving parts were required and maintenance requirements were minimized.
SUCCESSFUL SEPARATION TECHNOLOGY

After looking at a couple of vortex separation models, Varney decided on the Eutek TeaCup® from Hy-dro International. The Eutek TeaCup® works with a combination of free vortex separation and a boundary layer to capture, classify, and remove river sand. It also requires no chemicals and produces a clean, low organic slurry. In Pikeville, this technology allowed separated sand to be directly re-turned to the river prior to the water treatment process.

Water flows through coarse screens in the river to an intake inside a wet well building. From the wet well water is pumped at 4,000 gpm to the Eutek TeaCup®. The Eutek TeaCup® uses centrifugal force to separate the sediment 106 micron and larger, achieving 95% removal.

The sediment settles to the bottom of the device where it is swept to a center collection cone via the boundary layer. The pretreated water then flows to the rest of the treatment process for further treatment.

SAVING ON OPERATION COSTS

The operators were able to retrofit the 96 in. Eutek TeaCup® system into the plant’s existing treatment process and, shortly after installation, the plant started realizing its benefits. “When we first started it up, we had all the basins clean and we went a year before having to worry about them,” said Varney. “Now the basins are cleaned annually and only around four inches of sand is removed, depending on how much rain the area received.”

BIG STUFF REMOVAL

The solution that Varney saw was at a plant owned and operated by City of Prestonsburg Utilities Commission. Here, a system was needed to remove sand from the pumped raw river water prior to its entering the plant for treatment to save maintenance time and money spent cleaning out the settling basins, minimize wear and tear on mechanical equipment, and reduce sediment volume.

By installing a Hydro Grit King® vortex separator unit before the water treatment process, the performance of the entire plant was improved, significantly reduced long-term maintenance costs in downstream equipment and reduced sludge volume.

The free-standing system was designed to remove 95% of sand particles greater than 150 microns (100 mesh) with specific gravity of 2.65 at flows up to 6 mgd. Headloss for the installed unit is less than 12 inches at peak flow. This objective was achieved with a 108 in. diameter unit constructed out of 304 stainless steel.

In both plants vortex separation technology is being used successfully to cope with high peak flows and low particle size in systems that require low power and maintenance requirements.

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Archbold Anion & Treatment Enhancements Proves Successful

Scott Schultz, Village of Archbold Water Superintendent

The Village of Archbold is located in northwest Ohio and has two up ground reservoirs, one holding 234 million gallons of water and the other holding 76 million gallons of water. The Tiffin River is the water source, and the water is pumped to the reservoirs through six miles of pre-stressed concrete pipe.

The treatment plant is a Class IV plant and has an Ohio EPA rated capacity of 7.6 MGD. Pretreatment for algae control is accomplished through the use of potassium permanganate (KmNo4). The treatment process is lime softening along with carbon for taste and odor control, ferric chloride for coagulation, caustic soda for alkalinity adjustment and carbon dioxide for pH adjustment. The treatment concludes with four dual media filters and the addition of fluoride and chlorine.

In the 2012 Winter Issue of this publication, the Village of Archbold had just concluded a pilot study using resins they felt would meet the Stage 2 Disinfectants/Disinfection Byproducts Rule (D/DBP). Now, over two full years after the addition of state of the art anion exchange equipment and treatment enhancements, the Village is successfully meeting Total Trihalomethanes (TTHM) limits.

BACKGROUND

In the pilot study Archbold tested four different types of resin, DOWEX TAN-1, DOWEX MARATHON 11, Tulsion A30MP and Tulsion A72MP. The pilot study showed that Archbold would achieve compliance with Stage 2 D/DBP using either A72MP or MARATHON 11. MARATHON11 gave a greater reduction in Trihalomethanes (THM), but the MARATHON11 had a significantly higher initial cost and a life span of 5 years versus a life span of 15 years with the A72MP. After considering the cost and the effectiveness, Archbold made the decision to install the A72MP resin.

A pilot study was conducted to determine the optimum amount of filtered water that should be cleaned through the anion exchange vessels and blended back with the filter effluent. The resin in the anion exchange vessels is designed to reduce the total organic compounds (TOC) in the water, which reduces the amount of chlorine needed and in turn reduces TTHM formation. During the Simulated Distribution System (SDS) portion of the pilot study, samples were prepared and stood for three days and six days to simulate the average and maximum residence times respectively. These samples were then analyzed to determine the THM concentration. To simulate the worst case scenario, the pilot study was conducted during Archbold’s peak historic month for TTHM formation. The pilot study determined that 60% of the filtered water should be sent through the anion exchange process.

The study also determined that after 5.7 million gallons of water had been treated through each anion vessel, the resin would need to be regenerated using a salt brine solution.
Archbold accepted bids and constructed an addition to its existing water plant to house three anion exchange vessels, transfer pumps for the brine solution and a PLC to allow for completely automated operation of the system or hand operation as required. A fiberglass storage tank for the brine solution was also installed outside the new building. Each anion exchange vessel was sized for a flow rate of 1 MGD. The 3 MGD flow rate was based on 60% of the plant's rated capacity at the time of the design which was 5 MGD. During the design provisions were made to allow for the addition of a fourth and fifth vessel. This was done with the knowledge that Archbold had applied to have the capacity of the plant upgraded to 7.6 MGD.

Under Stage 2 D/DBP rule Archbold has two sampling sites, a high TTHM site (DS201) and a high HAA5 site (DS202). The high HAA5 site (DS202) was used under Stage 1 rule so TTHM collection data was abundant for tracking purposes when the anion treatment went online. Both sites were determined by the Initial Distribution System Evaluation (IDSE) study.

The anion treatment process was put online Sept. 30th 2013, two weeks before third quarter sampling. The transfer pumps were set to pump 70 percent of the filter effluent through the anion vessels, hoping for better results than were achieved in the study. While 60 percent transfer through the anion exchange vessels was determined to be needed to achieve compliance, the team believed that if more filtered water could be transferred through the vessels, a higher percentage of TOC removal would be obtained, thus reducing TTHM's.
continued from page 29 - Archbold Enhancements

The plant operators considered routing more than 70 percent through the anion exchange vessels, but this was the maximum amount that the pumps could transfer.

Archbold did not meet the third quarter sampling because the high TTHM site (DS201) was not within the Ohio EPA limit of 80 ppb. TTHM results came in and DS202 was within the limit but Archbold’s Locational Annual Running Average (LRAA) at DS201 was over the limit. Because of the violation, Archbold had to issue Public Notice for the fourth quarter of 2013 and again in the first quarter of 2014.

The high TTHM levels in the first quarter of 2014 were caused at least in part by a filter control rebuild that was taking place at that time. When the new controls were put on line, the transfer pumps began to air lock on a regular basis. The air locking issue was solved by installing air relief valves after the transfer pumps and reprogramming the filter controls. The transfer pumps were designed to recognize flow through the filter effluent line and turn on immediately. As the transfer pumps drew water down, the filter effluent valves would try and compensate for the flow change and cycle open and close. The cycle of opening and closing by the effluent filter valves caused the transfer pumps to turn on and off and eventually become air locked.

During the filter control rebuild a water level set point on the filters was programmed into the controller so the filter effluent valve would not open until the level in the filter reached the set point. This would ensure that the filters would be full at all times. The transfer pumps were then set to run at a lower speed for 15 minutes after startup, ensuring the filter levels were stable and the air could be pushed out of the transfer pumps through the air reliefs.

2013/2014 ON LINE/2015 CHEMICAL CHANGES

After startup in 2013 and through 2014, the chemical treatment was not adjusted to aid the anion vessels and 70 percent of the filtered water was being treated through the anion exchange vessels.

In 2015 with the air locking issues resolved and a full year of standard and additional site testing results to analyze both TTHM and TOC, plant operators believed adjusting the chemical feeds in the treatment process along with the anion exchange process would yield better results. Testing was also conducted to find the point at which the anion vessels began to lose their efficiency.

Samples were taken at various stages through the run cycle of the anion exchange vessels, and
results showed that after a single vessel had treated over 3.7 million gallons of water, the TOC removal efficiency was greatly reduced. The pilot study had concluded that at 5.7 million gallons the vessels would need regenerated. In order to optimize the TOC removal the regeneration set point was changed to 3.7 million gallons.

Another goal was to find a way to lower TOC before the water entered the anion exchange vessels. A raw water sample was sent to a lab for performance testing, and it was determined that at carbon feed levels of 35mg/L and above the TOC removal was enhanced. Carbon feed levels prior to the performance testing were 13.2 mg/L and were increased to 35 mg/L after the testing. Prior to 2015 the feed rate for ferric chloride was 15.0 mg/L to 19.0 mg/L. However this rate was increased to 25 mg/L to help enhance coagulation. With an increased feed rate of ferric chloride, caustic soda was adjusted for alkalinity control as well as the lime feed rate. After the adjustment in the chemical feed rates, the TTHM results at all sites including the wholesale customer improved. Table F shows percentage of TOC Removal.

<table>
<thead>
<tr>
<th>Table F</th>
<th>TOC Removal %</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>2013</td>
</tr>
<tr>
<td>1st Qtr</td>
<td>January</td>
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<tr>
<td></td>
<td>February</td>
</tr>
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<td></td>
<td>March</td>
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<td>2nd Qtr</td>
<td>April</td>
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<td>May</td>
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<td></td>
<td>June</td>
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<td>3rd Qtr</td>
<td>July</td>
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<td>August</td>
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<td></td>
<td>September</td>
</tr>
<tr>
<td>4th Qtr</td>
<td>October</td>
</tr>
</tbody>
</table>

Archbold collects the initial sample for TOC removal at the raw water sample tap and the second sample at the combined filter effluent line. The samples have not gone through the anion exchange treatment process, so any changes in the TOC removal are due the changes in chemical feed rates.

Archbold is also a water wholesaler to a small community where water age has been tracked at 21-27 days. Water age at DS201 is seven days; DS202 has a four day water age. Water age was determined through a fluoride tracer study and line capacity along with total water usage. The table below shows TTHM results in parts per billion (ppb) for the wholesale water customer. The anion exchange treatment process went online Sept. 30 2013. The first set of special samples was taken Oct. 13 2013 with the TTHM results still being over 80 ppb but significantly lower than the third quarter testing results. After an additional three weeks TTHM results dropped below the 80 ppb limit. During compliance testing only two quarter results were over the limit for the wholesale customer, one in 2014 and one in 2015. It is believed that with the chemical feed rate adjustments made to carbon and ferric chloride in 2015 these test results will continue to improve.
The table below shows the TTHM results from Archbold's high TTHM site (DS201) using data from the IDSE study and the TTHM special samples. For these special samples, 70 percent of the filtered water was sent through the anion exchange process. The special sample results were below the 80 ppb limit, but results were during the colder months of the year when water temperature and raw water quality can help lower the results.

The next table shows compliance test results for the DS201 site. The 2013 and 2014 TTHM test results were similar to what the pilot study SDS had predicted for the LRAA at the DS201 site. Because of air locking issues, the village was in violation the fourth quarter of 2013 with an LRAA of 84 ppb and in the first quarter of 2014 with an LRAA of 82 ppb, both just above the 80 ppb limit. The air locking issue was resolved by the middle of 2014. In 2015 the chemical feed rates were adjusted, and the TTHM results improved dramatically.

<table>
<thead>
<tr>
<th>DS201</th>
<th>IDSE</th>
<th>Specials</th>
<th>No Treatment Changes</th>
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</thead>
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<tr>
<td></td>
<td>2009/10</td>
<td>2013/14</td>
<td></td>
</tr>
<tr>
<td>4/14/09</td>
<td>68.2</td>
<td>10/31/13</td>
<td>76.8</td>
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<td>7/14/09</td>
<td>89.2</td>
<td>11/14/13</td>
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<td>10/14/09</td>
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<td></td>
<td></td>
<td>12/5/13</td>
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<table>
<thead>
<tr>
<th>DS201 Results</th>
<th>DS201 Results</th>
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<td><strong>Compliance No Treatment Changes</strong></td>
<td><strong>Compliance Treatment Changes</strong></td>
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<td>119.0</td>
</tr>
<tr>
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<td>69.3</td>
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The DS202 site was Archbold’s Stage 1 site for TTHM sampling so years of data had been recorded with a water age of four days. Similar to the DS201 site, the TTHM results improved dramatically after chemical feed rate changes to carbon and ferric chloride were made in 2015.

Archbold has observed a drop in TTHM results because of chemical feed rate changes combined with the anion exchange treatment process. Archbold continues to do additional sampling for TOC removal along with fine tuning chemical feed rates and the operation of the anion exchange vessels. The 2015 treatment changes along with the anion exchange vessels have provided lower TTHM results for both Archbold and its wholesale customer.

### Table E

<table>
<thead>
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<th>DS202 Compliance Testing</th>
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<tr>
<td></td>
<td>2005</td>
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<td>35.6</td>
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<td>46.2</td>
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<table>
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<td>84.5</td>
<td>71.5</td>
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### PROJECT CONTRIBUTORS

Pilot Study: PMG consulting working as a sub-contractor for URS Engineering
Anion Design: Roger Baker URS Engineering
Anion Treatment: Tonka Water Minneapolis MN
Performance Testing: Engineering Performance Solutions LLC. Jacksonville FL.
Construction: Peterson Construction Wapakoneta Ohio
Archbold Engineering: Brad Meyer
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Manganese in Drinking Water

Soluble manganese is the second most abundant naturally occurring heavy metal in drinking water after iron, and is found in ground water, stagnant surface waters and eutrophic lakes or reservoirs. Manganese is an essential nutrient for humans and aids in bone mineralization, protein formation and metabolic regulation. A diet that lacks the needed amount of manganese can result in serious illness that can lead to blood clotting, skin and metabolic disorders as well as interfering with normal growth, bone formation and reproduction.1 While a daily intake of manganese is needed for growth and good health in children and adults, ingestion at higher levels has been associated with some health risks.

Currently, there are no health-based drinking water regulatory standards for manganese; however, U.S. EPA established secondary maximum contaminant levels (SMCLs) in 1986 for manganese at 0.050 mg/L. SMCLs are based on water quality aesthetics like taste, odor, color and clarity. U.S. EPA has also established a 10-day health advisory level (HAL) of 1.0 mg/L and a lifetime HAL of 0.3 mg/L for manganese. (HALs describe non-regulatory concentrations of the contaminant in water that are expected to be without adverse effects on both health and aesthetics.) U.S. EPA recommends using the lifetime HAL of 0.3 mg/L as the one-day HAL for infants six months or younger.

In Ohio, there are areas where ground water exceeds U.S. EPA’s SMCL for manganese. As a result, several public water systems have been required to install drinking water treatment in accordance with requirements in rule 3745-91-09 of the Ohio Administrative Code. Common treatment for manganese includes oxidation and filtration, oxidation and greensand filtration, ion exchange, lime softening and sequestering. Proper oxidation is critical to convert the soluble forms of manganese to an insoluble state where it can be removed by filtration. Without proper treatment facility operation, manganese concentrations can build up on filters and be released into the distribution system resulting in significant exceedances of the SMCL, lifetime HAL and, in some instances, the 10-day HAL. These exceedances may re-quire a drinking water advisory.

In 2017, Ohio EPA will be reviewing ground water public water systems with arsenic and iron removal treatment when they conduct their weekly iron monitoring at the entry point to the distribution system (in accordance with rule 3745-83-01 of the Ohio Administrative Code). In some instances, manganese analysis may be required. For questions about the upcoming monitoring, please contact your Ohio EPA district office inspector.

Capability and Asset Management

Asset management has many different definitions, but it comes down to getting the most out of assets at the lowest cost to the system. A water system with proper asset management should be servicing assets enough to keep them in good working order, without spending more time or money than is necessary to achieve those results.

Ohio EPA is moving forward with the development of rules that will require an asset management program for all public water systems. These rules will reflect the existing capability rules to address the managerial, technical and financial capability of water systems. These rules will require that all public water systems have a written asset management program available for on-site inspection. Some water systems may be asked for a demonstration of their asset management program in more detail.

To demonstrate managerial capability, the rules will call for the following information:

- A non-technical description of the water system, including major components, source, number of connections and other relevant information.
- Ownership accountability and an operating plan containing a table of organization.
- Documentation of operator attended training.
- A written operation and maintenance plan.
- A written demonstration of procedures for addressing complaints and violations.
- An inventory of contacts and purchasing procedures.

To demonstrate technical capability, the rules will call for a map of the water source, treatment, storage and distribution in the asset management program, as well as the following information:

- A map including location and name of major assets.
- An inventory of assets with an evaluation of each.
- Criteria and a timeline for the rehabilitation and replacement of assets.
- Capital improvement plan, including a project description, cost and funding sources.
- Approved capacity projections and emergency and contingency planning.

The third major component of the asset management program rules is financial capability. It is important that a water system can fund needed improvements. The rule will require establishment of a long-term funding plan as part of the asset management program. This will include setting aside the correct funds to maintain assets to provide the level of service desired by the public water system. This also means setting aside enough money for future water system needs, such as in a reserve fund and for the capital improvement plan.

An asset management program should be regularly used and referenced. Levels of service and metrics will be used to ensure that asset management programs are being implemented. Ohio EPA will review the water system's unique levels of service. At each review, the water systems will need to show progress toward their levels of service. All water systems would also be required to submit metrics—a set list of items that each must report. These items may differ depending on the type of water system. Water systems should be improving on their metrics each year.

The asset management program, which will be required for all public water systems, should decrease disruptions in service due to lack of maintenance and planning and improve the capability and quality of service for all of Ohio's water systems. For updates on rules covering asset management, visit epa.ohio.gov/ddagw/rules.aspx and sign up to receive electronic notifications. If you would like more information about asset management or the rule-making process, please contact Ohio RCAP or call (614) 644-2752 and ask for Emily Pohlmeier or Susan Schell.

continued on page 40
Agency Rule-Making and Early Stakeholder Outreach

Have you ever wondered what early stakeholder outreach (ESO) is and why the rule-making process requires it? The following information was adapted from the Agency's Guide to Rule-Making (a web link is provided at the end of this article).

ESO became part of Ohio EPA's rule-making process in 2012 in response to Executive Order 2011-01K. The intent of the ESO notification is to ensure stakeholders are brought into the rule-making process as early as possible. It includes a request for feedback before the Agency develops rule language. ESO notifications may vary depending on the type of rule changes necessary. At minimum, ESO notifications will identify the rule and provide information on what changes, if any, are being considered and what they may include.

ESO notification is not an action of the director and therefore, is not public noticed. It is considered an early courtesy to those interested parties that have received rule notifications. The notice will include a deadline for submitting comments and request feedback to develop the Business Impact Analysis (BIA).

Ohio EPA will consider comments when drafting the rule changes, but will not create an official response for these comments. If Ohio EPA believes additional outreach is necessary, the Agency may hold stakeholder meetings, send out additional questions to stakeholders or create external advisory groups.

For more information about Ohio EPA's rule-making process, visit the Guide to Rule-Making fact sheet (epa.ohio.gov/portals/33/rules/guide.pdf) or the Agency's main rules website at epa.ohio.gov/rules.aspx.

Update on the Lead and Copper Rule in Ohio

Since the new lead and copper monitoring and notification requirements in Ohio Revised Code (ORC) Section 6109.121 became effective, Ohio EPA has been implementing the effective requirements in the ORC, drafting revisions to rules in Ohio Administrative Code and developing guidance. In early January, the Agency finalized guidelines for lead mapping in distribution systems and guidelines for mapping lead plumbing and fixtures for individual buildings. Copies of these guidelines were mailed to all community and nontransient noncommunity water systems impacted by the mapping and report requirements in ORC Section 6109.121 (F). If your community or nontransient noncommunity water system did not submit a map and report by the March 9, 2017 deadline, your system should complete these requirements and submit both immediately. For copies of the guidelines and more information related to Ohio's lead and copper rule requirements, please visit Ohio EPA's website at epa.ohio.gov/ddagw/pws/leadandcopper.aspx.
Southwest District Fall Meeting Held in Fairfield – October 28

The fall meeting of the Southwest District was held at the Fairfield Banquet & Conference Center at Tori's Station in Fairfield, Ohio on October 28th. Technical sessions were held in the morning on topics including the Hamilton to New Baltimore Groundwater Consortium's emergency response to a fuel island explosion (Tim McLelland); the Benefits of CIPP (Cured In Place Pipe) Water Main Rehabilitation (Chris VanWormer, Fer-Pal Construction); and Greater Cincinnati Water Works' Charles M. Bolton Water Treatment Plant Laboratory Renovation Project (Kyle Buckley & Renea Lohmann). The officers would like to thank the speakers for their interesting and informative presentations. Following the technical sessions, the Southwest District conducted a business lunch which featured the election of new District officers. Outgoing Chair, Nichole Sajdak, passed the gavel to incoming Chair, Nicole Diak. Brandon Turner of the City of Dayton was elected Second Vice-Chair. At the conclusion of the business meeting, attendees toured the Charles M. Bolton Water Treatment Plant's laboratory and well field with Haishan Piao & Rich Stuck, GCWW, to see the completed renovations and learn more about the plant's operations.
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34th Annual OAWWA Northern Expo

Where: City of Akron
Water Distribution Complex
1460 Triplett Boulevard
Akron, Ohio

When: Thursday, April 13th, 2017

Time: Registration begins at 8:30am

For more info: Kevin Givins, Expo Chair
City of Wooster
1123 Old Columbus Road
Wooster, Ohio 44691
Phone # 330-263-5285
Fax # 330-263-5209
expo@woosteroh.com

FREE CONTACT HOURS
for pre-registered attendees only

Pre-registration is available online at www.oawwa.org

30th Annual Southern Ohio Utility Expo for Water & Wastewater Professionals

Sponsored by the Ohio Southwest District, AWWA

Tuesday, April 11th, 2017

Exposition from 8am—3pm
• $30 includes OEPA Hours and Lunch
• Free Coffee and Popcorn
• Door Prizes
• Competitions

Pre-Registration will be available online at www.oawwa.org in early 2017.
For more information, contact Marcus Lehotay, 1st Vice Chair: 937.754.3097 or marcus.lehotay@ci.fairborn.oh.us
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Jenkins David Williams – Passed December 6, 2016

A son of the late C. “Bucky” and Ruth (Hildebrand) Williams, Shink was born on April 16, 1937 at Gnadenhutten. He was a 1955 graduate of the former Gnadenhutten High School and entered into the United States Navy where he honorably served his country for three years.

Shink began his career in water and sewer treatment at Gnadenhutten and retired as the Water Department Superintendent for the City of Canton following 48 years of service in his field. He attended Fellowship House at Gnadenhutten, was a member of the New Philadelphia Elks Lodge BPOE 510 and in his younger years enjoyed golfing, hunting and trap shooting.

Shink will be sadly missed by his devoted wife of 60 years, Nancy Kohl Williams; a daughter, Mandy (Brian) Mihalcin; grandchildren, Austin, Quinne and Grant all of North Canton, Shannon (Seth) Abbuhl; a great-grandson Meyer Abbuhl; a sister, Delores (Mel) Cox; a brother, Clayton (Chris) Williams all of Gnadenhutten; his sister-in-law, Joyce (Phil) Garrett of Columbus and a brother-in-law, Mike (Pat) Kohl of New Philadelphia. Completing his family are several nieces and nephews and his very special furry friend, Bucky.

In addition to his parents, Shink was preceded by a son David “Frank” Williams.

In keeping with his wishes, there was no public visitation or services.

Phil Van Atta Retired from City of Dayton

Philip Van Atta retired from the City of Dayton Water Department on January 31, 2017. Phil started with the Division of Water Supply and Treatment as a Water Bacteriologist-Chemist on November 22, 1982. He became Manager of the Division at the end of February 2012. He is a former Ohio AWWA SW District Chairperson, and a former OTCO board President. Phil will miss the dedicated, hard working water professionals in his division. He and his wife Teresa plan to spend more time with the grandchildren. At other times Phil will travel to the mountains to climb, ski, hike, and fish (and consume stout, grain based beverages).

Steve Tiefert Retired from City of Dayton

Steve Tiefert retired from the City of Dayton after a career spanning 25 years, most recently as Water Supply and Treatment Engineer.
Ohio Water Experts Elected as New Owners at Burgess & Niple

COLUMBUS, Ohio – Burgess & Niple (B&N) is pleased to announce the election of three new Owners who are leaders in the water, wastewater and stormwater industry across Ohio. These appointments, effective January 3, 2017, expand our leadership team and reflect the firm's continued growth.

The newly elected Owners are:

Vui Chung, PE
Vui is the Director of the Treatment Plant Design Section in Columbus, Ohio. During her 29-year tenure with B&N, Vui has led the design of a wide range of water and wastewater treatment plant improvements. She excels at diagnosing and solving treatment plant problems using her assessment, planning and rehab expertise. Vui earned a Bachelor of Science in Civil Engineering from The Ohio State University.

Mark Hutson, PE
Mark is the Great Lakes Division Director based in B&N's Painesville, Ohio office. He joined B&N in 1998 and has led numerous wastewater treatment, wastewater collection, water distribution, and water treatment projects on behalf of the firm. Mark attended the University of Akron where he earned a Bachelor of Science in Civil Engineering.

Brian Tornes, PE
As the Environmental Services Group Director, Brian is responsible for assisting our clients with achieving environmental compliance for a variety of projects. These include the design of wastewater treatment systems for industrial facilities, industrial development and regulatory compliance, green infrastructure, environmental remediation, and recreational facilities. Brian joined B&N in 1990.

For more than 100 years, Burgess & Niple has led the development of infrastructure in rural and urban regions. Our success is driven by a passion for advancing the built environment with exceptional concern for quality of life, safety and sustainability. Our work spans the world and ranges from complex, urban renewal projects to finding potable water for rural, arid villages.
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Gender □ Male □ Female (Optional)
Birth Year (Optional)

Is your company a member of AWWA? □ Yes □ No

Company Member Number (if known)

Were you referred by an AWWA member □ Yes □ No

Referring Member Name Email

Annual Dues (A1)
□ Individual $187
An individual, such as a water utility employee, municipal official, public health professional, engineer, scientist, educator, consultant, or other person interested in or serving in the field of water supply. (02)

□ Young Professional $99
An individual age 35 or younger who is interested in or serving in the field of water supply. This rate applies to the first year of membership only. (YP2017)

Section Dues (A2)
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Tell Us About Yourself All applicants must complete this section.

What one business activity best describes your company? (Please check only one)
- A Public Water Supply Utility—Municipally Owned
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- D Consulting Firm
- E Contractor
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- I Educational Institutions (faculty & students), Libraries and other related organizations
- J Fully Retired
- K Research Lab
- L Other allied to the field (please specify) __________________________

What one category best describes your company’s field served/principal activity? (Please check only one)
- 9 Both Water Supply & Wastewater
- 5 Water Supply Only
- 7 Wastewater Only
- 3 Other

What areas of the water and wastewater industry are of current interest to you? (Please check all that apply)
- Asset Management
- Backflow/Cross Connection
- Climate Change
- Conservation/Efficiency
- Customer Service
- Desalination
- Design/Construction
- Distribution/Plant Ops.
- Drought
- Emergency Preparedness/Security
- Groundwater
- Laboratory
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- Small Systems
- Stormwater
- Training/Career Development
- Utility Management
- Wastewater
- Water Loss
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- Water Research
- Water Resources/Planning
- Workforce Strategies
- Young Professionals

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Modern Marvels

Major Chad Roby, PE, BCEE
322nd Forward Engineering Support Team (FEST) / CH2M

“This is like being on an episode of History Channel’s Modern Marvels!” This is a quote from Captain Jason Carney during a tour of a water treatment plant. This very comment spurred me to write this article. It is easy for professionals in our industry to forget the small feats accomplished every day that results in delivery of safe drinking water and reliable wastewater treatment that protects public health and safety. Our engineering team leveraged those very modern marvels and professionals to train for our unit’s mission.

So, what does a Forward Engineering Support Team (FEST) do? The FEST is an asset of the US Army Corps of Engineers (USACE) and consists of eight uniformed Soldiers. There are also civilian USACE FESTs but that’s a story for another day. The mission of the FEST is to provide mobile, rapid response to Department of Defense assets to solve technical engineering problems within the United States and abroad. Our mission includes infrastructure assessment, planning, and design.

The team is always looking for quality training with real world applications. The team is based out of Columbus, Ohio and did not have to go far to get value training. Our FEST conducted a tour of the Parson Water Treatment Plant and Southerly Wastewater Treatment Plant. To say the team was impressed is an understatement. Adding to the events, each plant was under construction that allowed another layer of development and training to the team. You could write a full story each of the marvels of the two plants. We stood in the empty 60’ diameter clarifiers of Parsons and walked the tunnels of Southerly. The team was divided on which was more impressive. Captain Carney elaborated on his statement mentioned above during an after action review of our training. “The scale of the treatment plants is pro-
found. It's simply not something the public thinks about. We turn on the tap and flush the toilet and trust that it all works. The knowledge of the operators of the plants and their ability to operate the complex systems is impressive.”

You might be wondering how the team will use this knowledge. Our team deploys in support of contingency operations to support an array of engineering missions. A key component is to evaluate and provide recommendations to the commander as to what it will take to restore and improve vital infrastructure. This is critical to winning the hearts and minds of our allies.

The team is fortunate to have participated in this unique training opportunity and brought to light, at least to my small team, that our water professionals rise to meet the challenge every day. The modern marvels that stood before us were built by an army of professionals and this Army team is better prepared because of it.
# 2017 Advertiser’s Directory

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**2017 National Conferences**

- **Mar 19-22**  
  New Orleans, LA - Sustainable Water Management
- **Mar 21-22**  
  Detroit, MI - International Symposium on Inorganics
- **June 11-14**  
  Philadelphia, PA - Annual Conference and Exposition

**2017 State Water Tests**

- **May 3**  
  Water I/II/III, Water Distribution I/II  
  - Deadline for application February 4
- **Nov 9**  
  Water I/II/III, Water Distribution I/II  
  - Deadline for application August 11

**2017 Section Events**

- **May 4**  
  Small Systems Training, ODOT Headquarters, Columbus
- **July 13**  
  Water Distribution Workshop

**2017 Review Sessions**

- **Northeast District**  
  Apr 29 & Nov 4
- **Northwest District**  
  Apr 13 & Nov 4
- **Southeast District**  
  Apr 17 & Oct 31
- **Southwest District**  
  Apr 28

**2017 Ohio Section AWWA Conference and Exposition**

*September 26-29, Toledo, Ohio*

**District Events**

### Northwest District Meetings

- **Mar 23**  
  Del-Co Water Company
- **Apr 13**  
  Northern Expo / Meter Madness
- **Jul 20**  
  Ottawa
- **Oct 19**  
  Archbold

### Southwest District Meetings

- **Apr 11**  
  Southern Expo / Meter Madness
- **Apr 27**  
  Joint SE/SW Expo - Deer Creek
- **Jul 28**  
  Cincinnati Zoo
- **Oct 13**  
  TBD

### Northeast District Meetings

- **Apr 13**  
  Northern Expo / Meter Madness
- **May 11**  
  Twin Cities Water
- **Aug 17**  
  Canton Football Hall of Fame
- **Oct 26**  
  Lake County

### Southeast District Meetings

- **Apr 11**  
  Southern Expo / Meter Madness
- **Apr 27**  
  Joint SE/SW Expo - Deer Creek
- **Aug 4**  
  Buckeye Lake
- **Aug 27**  
  TBD

The Ohio Section Newsletter is the newsletter of the Ohio AWWA, published three times a year. Send comments, news notes, glossy / digital photos, and articles to:

LARRY VALENTINE, P. E.  
2144 Buckeye Street NE  
New Philadelphia, OH 44663  
330-328-2137  
lvalentine@neo.rr.com

**Deadline for material to be in the 2017 newsletters are:**

- Summer Issue - May 12 - Target mailing week of June 12
- Winter Issue - October 6 - Target mailing week of December 4

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