



Beaver Water District Receives AMWA Platinum Award:

Drinking Water Utilities Honored For Management Excellence

The Association of Metropolitan Water Agencies (AMWA) honored 20 public drinking water systems with its top utility management awards on Oct. 17 in Scottsdale, Ariz., during ceremonies at its 2016 Executive Management Conference in Scottsdale, Ariz. Five systems received the Sustainable Water Utility Management Award, 10 received the Platinum Award for Utility Excellence

– Beaver Water District being among these winners -- and five were presented the Gold Award for Exceptional Utility Performance. The Sustainable Water Utility Management Award recognizes water utilities that have made a commitment to management that achieves a balance of innovative and successful efforts in areas of economic, social and environmental

Continued on page 2



Shown receiving Beaver Water District's 2016 Platinum Award for Utility Excellence from the Association of Metropolitan Water Agencies on Oct. 17, 2016, in Scottsdale, Arizona, are (from left) Bill Watkins, President, Beaver Water District (BWD) Board of Directors; Larry Lloyd, BWD Chief Operating Officer; Alan Fortenberry, BWD Chief Executive Officer; Cathy Foraker, BWD Board Member; David Short, BWD Board Member; and Bill HagenBurger, BWD Plant Engineer.

BWD Receives Award continued from page 1

endeavors. The Platinum and Gold Awards recognize outstanding achievement in implementing the nationally recognized Attributes of Effective Utility Management.

Beaver Water District optimizes operations to produce a quality product by setting a goal of 100 percent compliance with the Safe Drinking Water Act, maintaining membership in the Partnership for Safe Water and ensuring that capital planning focuses on maintaining high quality water. The utility updated its asset management plan and used the information to establish funding requirements for its Replacement & Refurbishment Fund, which is integral to its 15-year financial plan update and associated recommended wholesale water rate increases. The District promotes customer satisfaction and stakeholder support to achieve community

sustainability through various outreach activities.

“AMWA awards spotlight the impressive advances and substantial achievements of public drinking water utilities that are leading the nation in their efforts toward sustainability through innovative management practices, executive leadership and employee engagement,” said AMWA President Scott Potter, Director of Nashville Metro Water Services. “Communities count on their drinking water systems for reliable and adequate supplies of clean, safe water, and those served by AMWA’s 2016 award winners can take pride in their outstanding accomplishments.”

The Association of Metropolitan Water Agencies is an organization of the largest publicly owned drinking water suppliers in the United States.

Foraker Elected, Watkins Re-Elected to BWD’s Board of Directors



The Beaver Water District Board of Directors, joined by Alan D. Fortenberry P.E., CEO, (front row, far left) includes (back, from left) Cathy Foraker, Woody Bassett, Mary Gardner, David Short, and (front, 2nd from left) Bill Watkins and Chris Weiser.

On Nov. 8, voters elected Cathy Foraker of Fayetteville and re-elected Bill Watkins of Rogers, both to six-year

terms on the Beaver Water District (BWD) Board of Directors. Their terms will end in 2022. Foraker first began her service to the board in 2011, when she was appointed to fill an unexpired term. Watkins began his first term on Jan. 1, 2004. BWD formed under Arkansas Act 114 of 1957. It is the oldest regional water district in the state of Arkansas. BWD is governed by a six-member elected board of directors, with three members from Washington County and three from Benton County. Board members serve six-year terms, staggered by two years in each county. The board meets monthly, on the third Thursday. For more information, visit bwdh2o.org.

Beaver Lake “Secchi Day” Data Reveal Water Quality Maintaining; EPA Approves Numeric Nutrient Standards for Beaver Lake

For the past 11 years, hundreds of citizen scientists and others have collected water quality data on Beaver Lake near Rogers in Northwest Arkansas during the annual Secchi Day event, typically held on the third Saturday each August. The big question on everyone’s minds is whether there are any trends that can be identified, now that there’s over a decade of data to consider. To put it simply, how is the water quality in Beaver Lake doing?

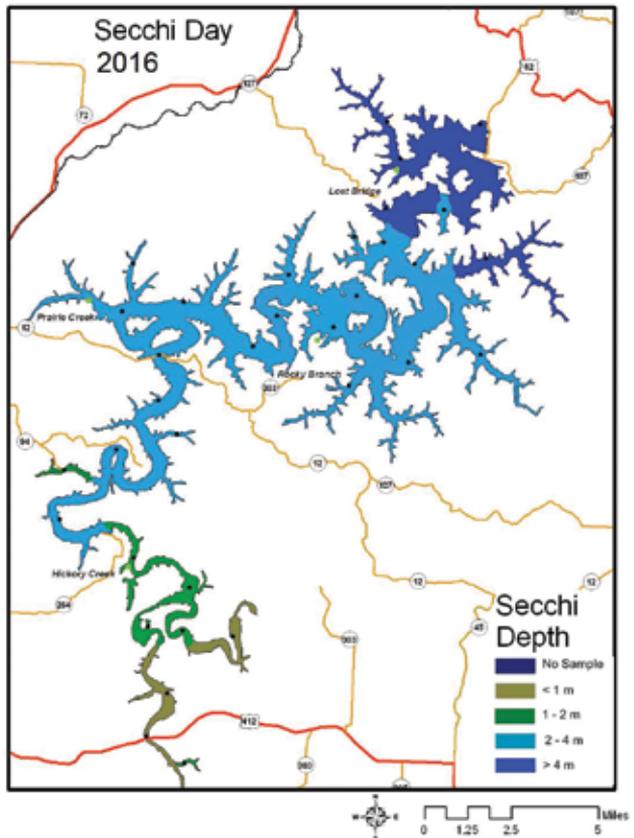
Dr. Bob Morgan, Manager of Environmental Quality for Beaver Water District (BWD), shared data and comments about Secchi Day with BWD Board members during their regularly scheduled meeting held at noon on Oct. 27. Data from this year’s event, held on Aug. 20, was included in that presentation.

“We have enough data after 11 years that we can identify some apparent trends,” Morgan said. “For example, the lake is getting clearer in the uppermost end and the mid-lake area, and the down-lake area is slightly cloudier. However, statistical analysis of these data gives little confidence that these apparent trends are real. Practically speaking, there is not a significant trend in late summer clarity over the 11 years of Secchi Day. That’s a good thing. That’s what we

want to see because it implies that the educational programs and the management practices implemented by concerned people in the Beaver Lake watershed are helping to maintain water quality.

“With the changes taking place in Northwest Arkansas, and specifically expansion of the urban area into the Beaver Lake watershed, science tells us that we will experience more stress on

Continued on page 4



“Secchi Day” Data Reveal continued from page 3

our natural resources. Secchi Day is but one day out of 365 each year. Beaver Water District, the United States Geological Survey, the Arkansas Department of Environmental Quality and the Arkansas Water Resources Center collect data on Beaver and in its tributaries year-round. These data give us concern that the phosphorus load to Beaver is gradually increasing over time. To continue to enjoy the high quality water we currently have, we, the Northwest Arkansas community, will have to maintain and even increase our efforts over time.”

During Secchi Day, sampling teams take Secchi disk readings to determine water clarity, and collect water samples which are tested for chlorophyll a, total phosphorus, and nitrate, to determine algal density and nutrient concentration. Secchi depth is a measure of water transparency that involves lowering a black and white disk into the water and recording the maximum depth in which the black and white pattern can be distinguished from above the water’s surface.

To read this year’s detailed Secchi report, link to BWD’s website at bwdh2o.org. Next year’s event will be held on Aug. 19, 2017. Secchi Day on Beaver Lake is made possible by 12 partners including BWD, the U.S. Army Corps of Engineers-Beaver

Lake, the U.S. Geological Survey, the University of Arkansas Cooperative Extension Service, Hobbs State Park, Northwest Arkansas Master Naturalists, the Association for Beaver Lake Environment, Beaver Watershed Alliance, Arkansas Game & Fish Commission, Ozarks Water Watch, One Community, and Girl Scouts Diamonds of Arkansas, Oklahoma and Texas. Secchi Day is one of the premiere water public awareness and education events in Arkansas.

“The good news is that the Environmental Protection Agency has approved parts of the Arkansas Pollution Control and Ecology Commission’s water quality regulations.

Among these are the first numeric nutrient standards for Beaver Lake,” said Dr. Morgan, Beaver Water District’s Manager of Environmental Quality. He added that the standards limit the amount of chlorophyll in the lake to 8 micrograms per liter. Additionally, the standards set Secchi transparency at 1.1 meters.

2016 “Record” Water Sales Year

For Beaver Water District’s (BWD) fiscal year (Oct. 1, 2015, through Sept. 30, 2016), monthly water sales set records for the six months of October, November, December, January, February, and March. These are the months that tend not to be impacted by weather with respect to water usage. BWD did not have record water sales for the months of April through

September, when weather is a factor.

“For the FY16 year to see total record water sales (17.6 billion gallons or 48 million gallons per day on average), while experiencing a ‘normal’ summer is indicative of the residential and commercial growth of the region,” said Larry Lloyd, BWD’s Chief Operating Officer.

Employee Profile: Adam Motherwell, Chief Financial Officer



Editor's Note: I hope you enjoy the Q & A below and learning more about Adam Motherwell of Fayetteville, one of our many outstanding Beaver Water District (BWD) employees. – Amy Wilson, BWD Director of Public Affairs.

Q: Tell us about where and how you grew up. Was it a strict upbringing? Are you a country boy or city boy?

A: I grew up in West Memphis, where I enjoyed the Boys Club and little league baseball, and moved to Berryville when I was 14 to take care of my 90-year-old grandmother. We still have the farm at Berryville, so I enjoy getting outside and spending time on the Kings River.

Q: Tell us a little about your family. Wife and children names, ages?

A: I've been married to my wife Kimberly for 24 years, and we have two children, Katie, who is 17 and a senior at Fayetteville High School, and Chase, who is 10 years old and in the 3rd grade.

Q: What do you like to do for family fun?

A: We enjoy following the Razorbacks in all sports, and visiting state and national parks as often as we can. On a normal weekend, if we aren't at a Hog game, we visit the farm at Berryville or Kim's family in Newton County, near the Buffalo River.

Q: What is your academic and work background?

A: I majored in accounting at the University of Arkansas and worked in Houston and Dallas as a corporate auditor, then worked for the University of Arkansas for 23 years. I was the internal auditor for eight of those years and an associate dean for finance for 15 years.

Q: So what do you most like about working at the District?

A: I started with BWD in September, 2014, and really appreciate our mission to provide drinking water that is both high-quality and economical. I like that the BWD staff care about each other, our customers, and protecting our natural resources.

Q: What inspired you to want to pursue education and a career focused on business and accounting?

A: I've always enjoyed being connected to the business community and the balancing nature of accurate accounting.

Q: Have you any hobbies or passions outside of work that you'd like to share with our readers?

A: Other than the Razorbacks, the Fayetteville Bulldogs, and the occasional game of golf, I'm most passionate about spending time with my kids and their friends.

Q: Are you active in any professional or civic organizations? Do you hold any licenses required for your job?

A: I'm a member of Springdale Kiwanis, and hold a CPA license for my job.

Q: Is there anything else you would like to add?

A: I'm proud of my Scottish ancestry, as the name Motherwell is a city in Scotland, and my mother was from Glasgow. My father was from Chicago and they moved to Arkansas in 1950.

Beaver Water District Team Takes 1st Place in “Top Ops” Challenge

Beaver Water District (BWD) placed 1st in the Southwest Section-American Water Works Association (AWWA) Top Ops Challenge on Oct. 25 in Rogers, Arkansas. The team members are (from left) Dustin Mayhew of Springdale, BWD Plant Operator; Frank Blowers of Pea Ridge, BWD Maintenance Supervisor; and Nikki Holloway of Springdale, BWD Laboratory Analyst. Combined, they bring together more than 30 years of experience in the water field to the Top Ops competition. Earlier this year, the team placed 5th in the AWWA 2016 Top Ops Challenge in Chicago.

Now the team will compete for the third time in the AWWA Top Ops Challenge in Philadelphia during AWWA’s 2017 Annual Conference & Exposition, which will be held June 11-14. This event gathers together more than 13,000 water professionals from around the world. Top Ops is the “College Bowl” or “Jeopardy!” of the water industry. The Top Ops



Challenge is designed to promote excellence and professionalism and provide an opportunity for water professionals to showcase their talents in all aspects of water operations. Established in 1881, AWWA is the largest nonprofit, scientific and educational association dedicated to managing and treating water, the world’s most important resource. For more information, visit awwa.org.

Plant Engineer Bill HagenBurger Chairs Successful, Three-State Water Conference

Water industry professionals from Arkansas, Louisiana and Oklahoma attended the 104th Annual Southwest Section of the American Water Works Association (SWAWWA) Conference held Oct. 23-25, 2016, at the Embassy Suites and John Q. Hammons Center in Rogers, Ark. Bill HagenBurger of Rogers, Chair of the 2016 SWAWWA and Plant Engineer for Beaver Water District (BWD), planned and presided over the event, which included a trade show, numerous technical sessions, a water taste contest, a “Top Ops” competition, as well as a tour BWD’s

facilities, where water from Beaver Lake is filtered and made clean for drinking, then sold to more than 300,000 people and industries through BWD’s four wholesale customers – Fayetteville, Springdale, Rogers and Bentonville. SWAWWA has a membership of 1,000-plus individuals and utilities. For more information, visit swawwa.org and bdwh2o.org.



Request a Beaver Lake Watershed Map

Request a Beaver Lake Watershed Map today! There's no fee for the map. Just email your name and mailing address to education@bwdh2o.org. The map, designed by Dot Neely, Education Coordinator for Beaver Water District (BWD), focuses on this important watershed "that supplies water to Beaver Lake -- the drinking water source for over 400,000 people in Northwest Arkansas."

The Beaver Lake Watershed Map includes information about Beaver Lake, its tributaries, how the lake was constructed, the management of the lake, how to care for the lake and the watershed (best management practices), and information about organizations that work to preserve and protect the lake. Do you want to know about macroinvertebrates and other lifeforms that are indicators of water quality? Are you curi-



ous to know how many miles of shoreline make up Beaver Lake? All those questions and more are answered with this one map. In addition to creating and distributing high quality educational materials, BWD provides tours of the Water Education Center and the drinking water utility for the public, as well as hands-on education. For more information, visit bwdh2o.org.

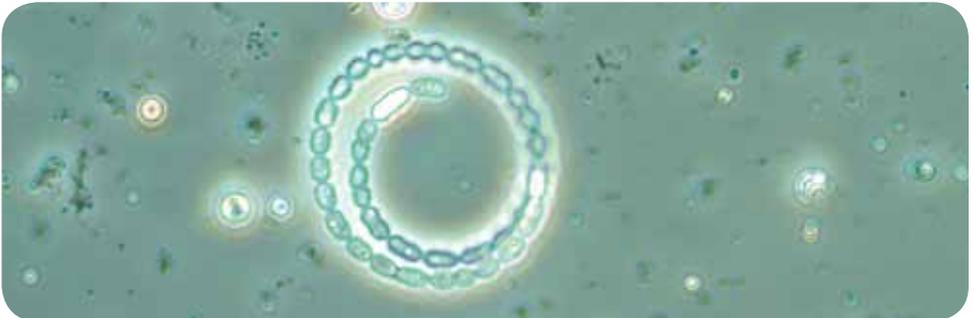
Beaver Water District Proactive in Response to Cyanotoxins

By Bob Morgan, PE, PhD and Nicole Holloway

On Aug. 2, 2014, the citizens of Toledo, Ohio, were issued a do-not-drink or bathe order by the local water department. Blue-green algae, or more appropriately cyanobacteria, in Lake Erie caused microcystin to concentrate in the water at a level above the state's guidelines.

Microcystin is one of several toxic substances that may be produced by cyanobacteria. Another cyanotoxin that is occasionally present in water sources is cylindrospermopsin. When toxins are present in an algae or cyanobacteria bloom, the bloom is referred to as a

Continued on page 8



Anabaena is a type of cyanobacteria or blue-green algae.

“harmful algae bloom” or HAB. HABs are not a new phenomenon. The “Crimson Tide” that is the name of the University of Alabama’s football team is in fact a reference to a harmful algae bloom that occurs occasionally in the Gulf of Mexico. Sometimes, it is referred to as the “red tide.”

The experience in Toledo and other places around North America prompted the U.S. Environmental Protection Agency (EPA) to issue a health advisory for cyanotoxins. A health advisory is not a regulation and does not require mandatory compliance. However, for a water utility like Beaver Water District (BWD), due diligence implies that BWD should be prepared to respond in case such an event happens locally.

While cyanobacteria are at times present in Beaver Lake, BWD has not in the past experienced conditions that lead to the type of bloom that was experienced by Toledo. Nevertheless, BWD is proactively responding to the possibility. During the summer and fall of 2015, BWD retained Dr. Steve Patterson, an ecologist at BioXDesign from Poteau, Okla., to do an assessment of Beaver Lake with respect to potential for HABs. Dr. Patterson’s assessment indicated a small but finite probability that HABs may occur in Beaver, and that the probability was slowly increasing over time. He also found that the potential concentration of cyanotoxins should be within the capacity of BWD’s treatment plant to remove with only slight operational modifications.

BWD’s response to the health advisory and Dr. Patterson’s assessment of the lake is to sample the lake for cy-

notoxins. This sampling program is designed to inform BWD’s operators of the presence of cyanotoxins in raw water (lake water that is not yet treated) so that they can take steps necessary in the remote possibility that a HAB occurs that impacts BWD’s intake. BWD does not anticipate finding significant HABs in the near future but will be ready if they do occur.

Cyanotoxin Sampling and Assessment Protocol

Throughout the year, technicians and specialists at BWD collect water samples for cyanotoxin analysis at various locations on Beaver Lake. Some of these samples are taken at locations that have high levels of chlorophyll, which is an indicator of increased algae concentrations. Sampling locations also include the influents, or entry points into Beaver Lake, of the White River and the War Eagle as well as the BWD water intake structure. The samples are taken from what is called the photic zone which is the area in the water column that receives sunlight and is most likely to contain algae and cyanobacteria. During the summer months, when the water is warmer and cyanobacteria are generally more likely to be growing and thriving, samples are taken as often as once per week. During the winter months this sampling schedule slows down. Samples are analyzed for both microcystin and cylindrospermopsin.

If results for either cylindrospermopsin or microcystin are above the action level in the untreated water at the intake, BWD will analyze the water in-house and will also send a sample from our treated water to an outside laboratory for analysis and verification. BWD will collect samples and run analysis daily until the cyanotoxin concentrations in the raw water have decreased below the action level.