



Alyssa

Alyssa Ferri was hired in May of this year as the new Laboratory Technician. Alyssa is originally from Buffalo, NY, but has lived in Northwest Arkansas for the past 7 years. In 2019 she completed her bachelor's degree at the University of Arkansas in Environmental, Soil, and Water Science. Alyssa just finished her master's degree in Crop, Soil, and Environmental Science in May. In her free time, she likes to go hiking with her two dogs.



Meghan

Meghan Post took over in June as the new Education Coordinator. Meghan holds a Bachelor of Science in Wildlife Ecology Information & Education and a minor in Conservation Biology from the University of Wisconsin Stevens Point and comes to the District with over 8 years' experience in environmental education. When she is not working, Meghan enjoys gardening, crafting, hiking, and enjoying all The Natural State has to offer.



Nikki

Laboratory Supervisor Nicole Holloway and the other members of the American Water Works Association (AWWA) Water Quality Laboratory Committee have been working on a series of articles published in the AWWA's magazine *Opflow* entitled "Operators Need to Know". Having her name listed as an author is just one of the highlights for Nikki this summer; she also successfully defended her master's thesis in July and will receive her degree in Environmental Science from the University of Idaho.

The SOURCE

The Source is a quarterly publication of Beaver Water District

OBSERVING WATER QUALITY MONTH

August is National Water Quality Month, and we want Northwest Arkansas to know that Beaver Water District is passionate about the topic. National Water Quality Month was established by the U.S. Environmental Protection Agency (EPA) in 2005 to help promote and ensure access to safe, clean drinking water for generations to come.

For Beaver Water District, assessing the quality of water we use in our drinking water treatment plant starts in the watershed. Internally, we have sampled key points in Beaver Lake tributaries since the 90's to keep track of long-term changes in our source water and identify any areas for concern. We also sample at multiple points within Beaver Lake for similar reasons. We sample so frequently in the watershed and lake that state environmental agencies request our data annually in lieu of collecting it themselves. Finally, before treatment even begins, we sample the raw water that goes into our plant. We will let the District's Compliance Manager Mindi Dearing take it from here.

The raw water from Beaver Lake is tested for many general water parameters such as pH, alkalinity, turbidity (cloudiness), and hardness (to name a few) to best optimize the treatment process. Then, there are continuous online/automated meters installed throughout the plant that monitor for critical treatment parameters like pH, chlorine, and turbidity.

In addition to the continuous monitoring instrumentation, the District has two on-site laboratories. Plant operators use our Operations Lab to assess samples from various locations throughout the treatment process multiple times every day to determine the treatment needs of the water. Our main Laboratory, certified through the Department of Environmental Quality and the Arkansas Department of Health, is used to ana-

lyze samples taken from the lake and watershed as well as ensure we meet regulatory requirements for the finished drinking water.

The District tests beyond the minimum state and federal requirements because we take pride in serving the health of the public. For example, Total Coliform (a non-pathogenic type of bacteria) sampling is required four times per month, but the District tests for Total Coliform every day. The additional testing and analysis require our laboratory to operate 365 days a year, but we understand the significance of the public's health and trust and are committed to the effort.

By the time Beaver Lake water has made it through our treatment process and is made clean and safe to drink, it has been assessed at dozens of points for over ninety contaminants. It meets all the state and federal safety and quality regulations, while costing less than a penny a gallon. The mission of Beaver

Water District is "to sustainably provide our customers (Bentonville, Fayetteville, Rogers, and Springdale) with safe, economical drinking water." We want our customers to be at ease as the safety of our drinking water is always our top priority.

If you have never celebrated National Water Quality Month before, it is a good time to start. nationalwaterqualitymonth.org asks individuals to "try to imagine what life would be like without easy access to clean water. There would be no fountains to quench your thirst when you are out on a hot day. No more pools, and no more lakes and rivers clean enough for recreational activities. No more hour-long showers. No more drinking water straight from the tap, or even filtering it through your Brita. No more running water in your house, period. In short, our lives would be totally different, and not for the better." You can celebrate by just enjoying an ice-cold glass of water from the tap, we recommend it.



SECCHI DAY GETS A NEW 'COOLER' FEEL



Secchi Day on Beaver Lake, now in its eighteenth year, is named for the Secchi disk. This disk is a black and white device lowered into the water to measure water clarity. In the early part of the morning on August 20th, citizen science volunteers, using their own boats, will collect water samples and take Secchi disk readings. They will bring their samples and Secchi depth readings back to Beaver Water District staff members for analysis and comparison. Usually, thirty-five distinct locations are monitored and cross referenced for accuracy. That part will be the same, but not the rest of the day.

People may remember 2019 when

a science festival, lunch, dancing, and door prizes all accompanied Secchi Day. It was always a fun time and the event had grown to see over six hundred people at Prairie Creek to learn about water. It however was hot, and while Secchi depths were announced from teams that were able to bring their results to Prairie Creek, the actual data from the volunteer scientists, was not completed that day. Because of the time it takes to run all the samples in the lab, analyze the data, and create the report with trends, the official results of Secchi Day on Beaver Lake are usually not ready until October.

Fast forward through two virtual Secchi Days to now.

This year, Secchi day data collection will happen on the third Saturday in August, but the science festival will be combined with the annual Beaver Lake Cleanup sponsored by the US Army Corps of Engineers. The cleanup has

been held differently over the last two years also, making 2022 an exciting time to regroup and plan for a "cooler" new feel for both events. Cooler because the new combined event will be taking place on Saturday, October 22, 2022. The October event will hopefully see significantly cooler temperatures, the full release of Secchi Day data, and give a new vibe to the merged event by bringing individuals out to take care of the precious resource, Beaver Lake.

Save the date and plan to attend the first Annual Beaver Lake Cleanup and Water Festival (working title so do not hold us to that)! Beaver Water District, the US Army Corps of Engineers, and numerous other partners look forward to seeing you at Prairie Creek. More details will be available via Beaver Water District's social media outlets. You can follow Beaver Water District on Twitter, Facebook, LinkedIn, and Instagram, or visit the website at bwdh2o.org.



THE CRISIS OF SUCCESS

By M. Lane Crider P.E., LEED AP

The Northwest Arkansas Council recently commissioned the Creative Class Group to publish the [Northwest Arkansas Regional Strategy 2022-2026](#). From the cover page, “Northwest Arkansas has reached a critical inflection point. The region should continue to press forward with economic growth and talent attraction for the benefit of all of its residents, but stakeholders and policymakers must act boldly to preserve its quality of life and affordable cost of living. The time to act is now.”

The first goal of the strategy is centered on developing, attracting, and retaining diverse talent. What might only strike



me as ironic of the picture that was included in the Goal 1 section is the iconic water tower in the background. The historical perspective and impact of the development of an adequate drinking water supply on the region’s success cannot be overstated. The current successes and future challenges of our region are due to the foresight, planning, and efforts of generations of leadership. Although I believe that infrastructure investment and the prioritization of protecting Northwest Arkansas’ greatest natural resource, Beaver Lake, should have been goal #1, drinking water was finally mentioned in Goal 3 of the Strategy – Addressing the Challenges of Growth. More specifically, the report states that “Where the principal challenge before was to promote the region and enable rapid growth, now

greater investments in infrastructure capacity – houses, roads, schools, hospitals and water systems – are urgently needed.”

As pointed out in the Regional Strategy, Northwest Arkansas (NWA) is suffering from a crisis of success, including dramatically increased housing costs, talent development and retention, and rapidly decreasing infrastructure capacity. Here at Beaver Water District, we are certainly dealing with the challenges of this crisis of success. For the 5-year period from June 2017 through June 2022, water sales have increased at an annualized rate of 5.5 percent. Of course, the hot, dry conditions of Arkansas summers create even higher demands for water, on top of the average day usage. So far, in the month of July, the District has set multiple records for water production to our customer cities, including the highest single day total of over 102 million gallons! The increased pace of growth in NWA will continue to tax our built infrastructure (water, sewer, transportation) and our service infrastructure (medical care, education, workforce), and it will continue to take concerted effort and a regional approach to overcome the challenges of such success.

The creation of the Beaver Lake reservoir assured the opportunity for success and growth of the surrounding communities and businesses. Since 1959, Beaver Water District has played a vital role in the development of NWA. As we focus on the future, we have to appreciate our past and never take it for granted. July is National Lakes Appreciation Month, and we will continue to remind everyone that the region’s crisis of success will impact Beaver Lake, the drinking water source for almost 1 out of every 5 Arkansans. Whether that impact will be positive or negative is up to us. All life needs water; let’s not take it for granted!

50 YEARS OF THE CLEAN WATER ACT

A look at how the landmark law changed the water industry



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<https://www.wwdmag.com/editorial-topical/regulations/clean-water-act/article/11004215/50-years-of-the-clean-water-act>

On October 18, 1972, Public Law 92-500, better known as the Clean Water Act (CWA), was approved and passed by the 92nd Congress.

The approval only occurred after bill S-2770 (Introduced by Senator Edmund Muskie) was vetoed by President Richard Nixon on October 17, 1972. The Senate then overrode the bill on the same day as the veto. The next day, the House of Representatives overrode the veto and approved the bill.

Nixon favored the bill as he had helped outline many aggressive programs to protect our Nation’s water and environment for the bill. It was the \$24 billion price tag that he did not approve.

What is the Federal Water Pollution Control Act of 1948

The Federal Water Pollution Control Act of 1948 that had been in place was the first major U.S. law to address water pollution issues. However, it was not providing the protection it should have due to a lack of enforcement. The Clean Water Act of 1972 was an amendment to the Federal Water Pollution Control Act of 1948.

Why the Clean Water Act Was Created

The nation was demanding change due to negative environmental events

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that had been occurring. In 1969, Ohio’s Cuyahoga River caught on fire due to the large amounts of industrial pollution. President Johnson labeled the Potomac River a “national disgrace” and claimed that if you fell into the river, you may need to receive a tetanus shot. An oil spill off the California coast in 1969 coated 400 square miles with slime and killed hundreds of birds.

The public outcry over water pollution spurred Congress to pass the landmark bill in 1972. The historic law served to protect all U.S. waters – from the meekest streams to the mightiest rivers – from pollution and destruction. It also served by:

- Establishing the basic structure for regulating pollutant discharges into U.S. waters.
- Providing the U.S. Environmental Protection Agency (EPA) the authority to implement pollution control programs and establish wastewater standards for the industry.
- Maintaining current requirements to set water quality standards for all surface water contaminants.
- Making it unlawful for persons to discharge pollutants from a point source into navigable waters unless a permit is obtained under its provisions.
- Funding construction of sewage treatment plants.
- Recognizing the need to address critical problems posed by non-point source pollution.

Historic Water Pollution Control Entities

The previous agencies in charge of water pollution controls laws were not accomplishing the task of keeping our Nation’s waters clean. They were:

- The Public Health Service (PHS)
- Division of Water Supply and Pollution Control of 1949-65
- Federal Water Pollution Control Administration of 1965-66

How the U.S. Environmental Protection Agency Was Established

There needed to be a better way to control water pollution and any new passed laws. As such, President Nixon signed an executive order to establish the EPA, which began operation on December 2, 1970. The House and Senate ratified the order via committee hearings, and William D. Ruckelshaus became the first EPA administrator on December 4, 1970. The EPA had many

goals and duties concerning the environment. The CWA was just one part. However, it was a crucial part.

Goals of the Clean Water Act

The primary goal of the CWA was to govern the restoration and maintenance of the chemical, physical, and biological integrity of the Nation’s waters. One principal objective was to prohibit the discharge of pollutants into waters of the U.S., except in compliance with a permit. The goal was to protect all water sources, making them fishable or swimmable.

One of the many impacts of the CWA was the creation of the National Pollutant Discharge Elimination System (NPDES), a permit system for regulating point sources of pollution. Point sources include industrial facilities, municipal wastewater plants and other government and non-government facilities (such as military bases), and some agricultural facilities such as animal feed-lots, to name a few.

Clean Water Act Amendments

The Clean Water Act has had two major amendments and some court challenges in the past 50 years.

- Clean Water Act of 1977- Public law 95-217, December 27, 1977
- Water Quality Act of 1987- Public law 100-4, February 4, 1987
- There have been 17 court cases brought before the US Court system involving the CWA over the last 50 years for various reasons.

Clean Water Act & Safe Drinking Water Act

The CWA was the cornerstone for the Safe Drinking Water Act of 1974 and other changes to our water environment and industry. It helped pave the way for new technology, science, engineering, treatment, and many other things. The CWA also helped establish a new occupation of certified environmental operators. There have been many positive changes and improvements over the last 50 years.

The industries still have many challenges ahead such as aging systems, retiring workforce, need for new technology for the industry such as wastewater reuse, virus detection and many other aspects. The point remains in 50 years a lot has been done and the next 50 years will require more to be done and will be a wild wave to ride.



Lane with Dot

DOT NEELY RECEIVES CAREER SERVICE AWARD

Dot Neely retired at the end of June.

During their annual conference on July 27th at DeGray Lake Resort State Park, the Arkansas Environmental Education Association (AEEA) recognized Dot Neely with the Robert McAfee Environmental Education Service Award. Named after the organization’s founder and first volunteer director Robert McAfee, the award is given to an Arkansan “who has exhibited personal and professional commitment to environmental education, service, awareness, knowledge, and action throughout their career and life.” The award is equivalent to a lifetime achievement recognition in environmental education.

Dot began working with Beaver Water District in 2010, but officially joined on as staff in 2013. Prior to her District employment, she worked as Consultant Education Coordinator with Springline Group of Fayetteville, UA Biology Department Laboratory Coordinator, UA Geosciences Department Teaching Assistant, and UA Environmental Dynamics Graduate Research Assistant in a Beaver Lake Sedimentation study. Neely has a Bachelor of Science and a Master of Science, both in Geology, from the University of Arkansas (UA).

“Dot always makes education fun, exciting, and has an innovative twist no matter where she is presenting,” said Becky Roark with the Beaver Watershed Alliance. “Dot has been a great partner and volunteer with the Alliance, so we were determined to nominate Dot for the Robert McAfee Award once she announced her retirement.”

Beaver Water District is proud to see Dot Neely recognized for her education outreach effects to thousands of youths and adults of Northwest Arkansas and beyond. It is an award well deserved.