

IN THE PIPE

NEWSLETTER

Spring/Summer 2019



No. 26

WCSA and Town of Chilhowie Complete Mill Creek Water Treatment Plant Improvements Project

Upgrades, expansion ensure future operation of WCSA's second-largest water source

Earlier this year, WCSA completed a long-planned major upgrade and expansion of the Mill Creek Water Treatment Plant. Jointly owned by WCSA and the town of Chilhowie, the plant is the town's primary source of water and Washington County's second-largest water source. The Mill Creek facility also serves the Wideners Valley, Friendship, Glade Spring, Meadowview and Emory areas of Washington County.

Water is supplied to the plant from three springs located near the Washington County/Smyth County line. The water travels from the springs into a water storage tank for mixing and is then pumped into the treatment plant. Since conventional water treatment is not effective for the facility's sources, the water is sent through a pre-filtration process before it is again pumped into the headworks of the plant's membrane filtration system.

This membrane filtration system consists of thousands of tiny hollow fiber membranes bunched together in a cartridge. The cartridges are grouped together in a structure known as a skid. The Mill Creek plant operates with three skids, each containing 40 cartridges. Treatment is accomplished by forcing raw water through microscopic openings in the fiber membranes, which removes contaminants from the water.

Once water travels through the membrane filters, chlorine and fluoride are added, and the water is piped to two parallel water storage tanks located beside the water treatment plant. Water



Mill Creek Water Treatment Plant Improvements Project

remains in the tanks until it has met the required disinfection time. Water is then pumped into Chilhowie's and WCSA's distribution systems.

"Because the plant was built in 1999, Mill Creek's membrane filtration system was relying heavily on outdated instruments and equipment," says Robbie Cornett, general manager of WCSA. "A few years ago, Chilhowie and WCSA commissioned The Lane Group (architectural/engineering firm) to prepare

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WCSA Project Updates

To learn more about WCSA projects, visit www.wcsawater.com.

Recently Completed Projects:

The **Mill Creek Water Treatment Plant Improvements Project** provides a new membrane filtration system and additional repairs, replacements and upgrades to the water treatment plant. Construction is complete and water is being treated at the plant.



Mill Creek Water Treatment Plant Improvements Project

Ongoing Projects:

WCSA recently received Community Development Block Grant funding from the Virginia Department of Housing and Community Development for the **Rattle Creek Road Water Line Extension Project**, which will provide water service for 14 residences that currently rely on wells or springs for their drinking water. Construction began in April and is expected to be completed in September.

The **Rich Valley Road Water Line Extension Project** will increase WCSA's overall system reliability, and provide water service for residences that currently rely on private wells, cisterns and springs. Construction began in March and is expected to be completed by early 2020.



Rich Valley Road Water Line Extension Project

Upcoming Projects:

The **Galvanized Line Replacement — Phase 3 Project** is the final step in a three-phase project to replace all galvanized pipe in WCSA's distribution system over the next several years. The project is expected to begin in late spring of 2019.

The **Abingdon Water Storage Tank Improvements Project** will provide upgrades that will directly impact approximately 6,600 water connections. The project is expected to begin in late spring of 2019.

Construction is expected to begin in late spring of 2019 on the **Sugar Cove Road Water Line Extension Project**, which is currently in the final design stages.

The **Lee Highway Corridor Sewer Expansion Project** will extend public sewer service to residents and businesses along Lee Highway and Jonesboro Road between Exit 13 and the city of Bristol, Virginia. The project is currently in the planning stages and will be completed in a series of phases. 💧

Welcome, New Employees!

Eric Johnson joined WCSA's team at the Mill Creek Water Treatment Plant in January. He has several years of experience at a Class 2 water treatment plant, which included collecting water samples, performing laboratory tests, monitoring of the SCADA system, and preventive and emergency maintenance on plant equipment.

Colton Dickenson came on board WCSA's maintenance department in February as a crew member. Colton is skilled in heavy equipment operations.

Farren "A.C." Salyers II joined WCSA's maintenance department in March as an electrician. The owner of HonSal Services, Inc., A.C. has experience installing and maintaining industrial and commercial electrical systems. He holds a master's electrical license in both Virginia and West Virginia, along with a surface electrical license. He is skilled in PLC wiring, 4160vac MCC wiring and service, controls/device programming, troubleshooting, and heavy equipment operation.

Water Treatment Plant Improvements Project

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a report on the long-term operation of the plant. Their recommendation was to replace the plant's entire membrane filtration system and make various other improvements."

WCSA and Chilhowie were proceeding with the step-by-step course to prepare for this major project when, in March 2015, Mother Nature decided to interfere with the process. Heavy rains, combined with early spring snowmelt, suddenly rushed down from the highlands — with a devastating effect on the Mill Creek facility. Plant employees noticed an increase in sediment swirling in the lines, and discovered that a buildup of sand, dirt and other organic material had entered the system due to unusually high turbidity. As a result, the plant's three skids of membrane filters were being stretched to the point of rupture.

"That was a situation you never want to face," Cornett says. "The filtration membranes that protect potable water supplies are at the heart of any system. They require constant monitoring and care to operate properly. In this instance, because of the heavy burden of particulate that reached the

plant, all three skids of membranes were stretched and, in some cases, ruptured."

Quick action by employees enabled WCSA to avoid any further equipment damage, and also prevented contamination from entering Chilhowie's drinking water supply. However, it was determined that all three skids were beyond repair, and the Mill Creek facility had to be shut down until they could be replaced. Using the permanent interface system that links WCSA and the Mill Creek plant, flow from the Middle Fork Water Treatment Plant was diverted to replace Mill Creek's lost supply until equipment could be upgraded and new skids installed. The plant was restored to full capacity in August 2015, and the cost to replace the skids was reimbursed by the Virginia Municipal League Insurance Program.

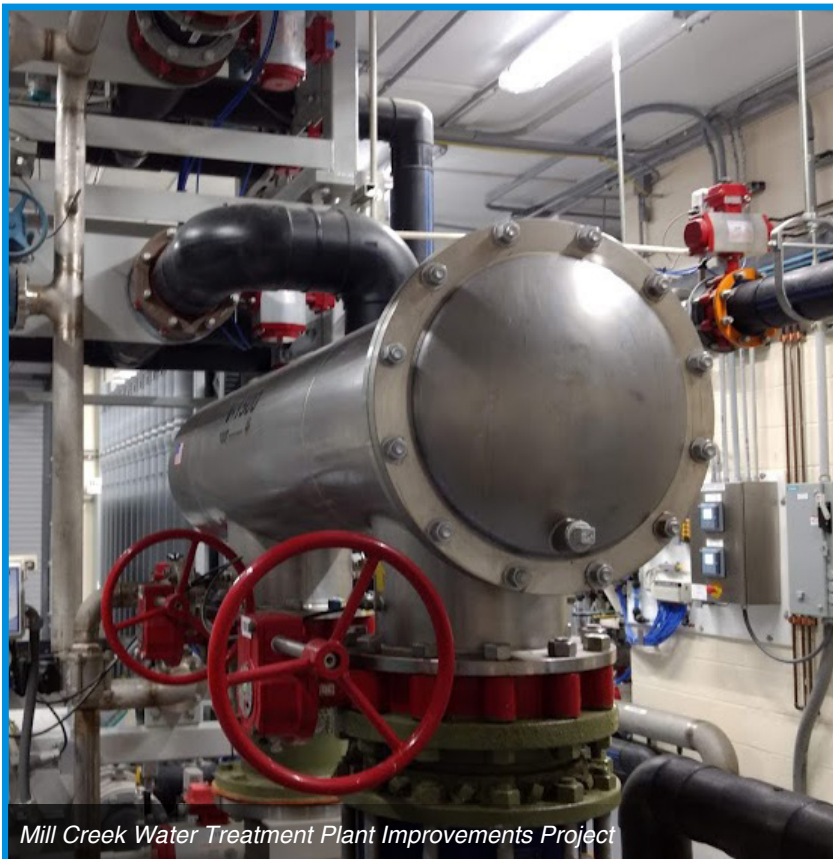
"This project will directly impact approximately 5,000 existing connections within WCSA's distribution system."

— Robbie Cornett,
WCSA General Manager

The process to replace Mill Creek's skids accelerated the implementation of the remaining planned upgrades. By early 2017, all preparations for the plant improvements project were complete, including approximately \$3.8 million in funding to pay for the project, provided by USDA Rural Development. Construction began in February 2017 and was completed in early 2019.

Improvements include a 1,200-square-foot addition to the existing building to house the new ultrafiltration water treatment system, an upgraded laboratory, and room for spare parts inventory and maintenance activities. Other improvements include associated upgrades to existing equipment, replacement of water pumps, air compressors and other plant components, and a space for a septic tank drain-field system.

"With these upgrades, Mill Creek's functional capacity was expanded from 2.5 million gallons per day (MGD) to 3.1 MGD," Cornett says. "This project will directly impact approximately 5,000 existing connections within WCSA's distribution system, which include two industrial parks, one college and five county schools, in addition to many residents. These long-awaited improvements and the expansion will ensure Mill Creek's continued operation, and provide a safe, reliable source of treated water for WCSA customers and the town of Chilhowie for many years to come."



Mill Creek Water Treatment Plant Improvements Project

WCSA Earns Top Ranking in Operations, Performance for Ninth Consecutive Year



For the ninth consecutive year, WCSA has been awarded the highest possible ranking in operations and performance excellence for water utilities by the Virginia Department of Health (VDH).

WCSA received a 2018 Excellence in Waterworks/Operations Performance Award following a 12-month analysis of data by the VDH Office of Drinking Water.

Each year, through Virginia's Optimization Program, the VDH recognizes drinking water plants that perform above and beyond minimum standards by optimizing and running their treatment process efficiently and effectively. The primary purpose of the program is to reduce risks to public health associated with drinking water.

"It is a great honor to receive this top-level performance score nine years in a row," says Robbie Cornett, general manager of WCSA. "This award demonstrates WCSA's long-standing commitment to providing safe, potable water for our customers that meets or

exceeds the standards set forth by the VDH."

Of the 131 conventional surface water treatment plants evaluated by the VDH during 2018, WCSA was among 15 that received a gold award, while 50 received either silver or bronze awards.

"WCSA has the largest permitted capacity and serves the largest number of service connections in the Mount Rogers Planning District, and has consistently been a top performer in the Virginia Optimization Program," says Eric R. Herold, PE, VDH district engineer for the Mount Rogers Planning District. "Of the 10 conventional surface water plants in our district, WCSA's Middle Fork Drinking Water Plant was one of four to receive a gold award."

The mission of Virginia's Optimization Program is "to encourage waterworks to provide water with a quality that exceeds minimum regulatory standards (i.e., as perfect as possible) and to operate water systems in an exemplary manner (i.e., as effective and functional as possible)."



WCSA Calendar

WCSA offices will be closed on the following holidays:

Memorial Day May 27
Independence Day July 4



Board Meetings

UPCOMING BOARD MEETING DATES

May 20, 2019
June 24, 2019
July 22, 2019

Board meetings are held at WCSA in the E.W. Potts Board Room at 6 p.m. The public is welcome to attend.

Actual dates may vary. Please contact our office to confirm meeting schedule.

Customer Contact Information

Should WCSA need to contact you regarding your water service, we generally do so via text message, email or telephone call. If you prefer not to be contacted by one or more of these methods, please contact our office at 276-628-7151. If you would like to be contacted but are not sure we have your information, please contact us at 276-628-7151 or inquiry@wcsa-water.com with that information.

E-CHECK PAYMENTS

WCSA NOW OFFERS A 24/7 E-CHECK METHOD FOR PHONE AND ONLINE PAYMENTS. YOU MAY PAY BY CALLING 276-628-7151 AND CHOOSING OPTION 2, OR BY ACCESSING YOUR ONLINE ACCOUNT. CALL CUSTOMER SERVICE AT 276-628-7151 FOR DETAILS.

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