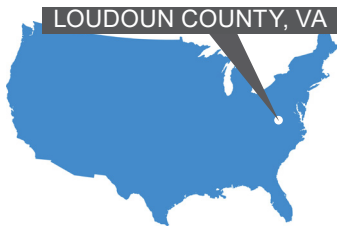




USG WATER
— SOLUTIONS —



Solving a nitrification problem in distribution system in Loudoun County, VA



LOUDOUN COUNTY, VA

Project Summary

Customer:

Loudoun Water, VA

Type of Project:

Monoclor® RCS chloramine management system

Results:

- Utility solved a recurrent nitrification problem in its distribution system

Loudoun County is a rapidly growing jurisdiction located in the northern tip of the Commonwealth of Virginia approximately 25 miles northwest of Washington, D.C. Loudoun County is one of the largest counties in the region and one of the fastest growing counties in the country. Loudoun Water gets its source water from the Potomac River and Goose Creek and provides chloraminated drinking water to over 65,000 households through a network of over 1,200 miles of transmission and distribution pipes and seven storage tanks.

Nitrification became a persistent and recurring problem in the far end of the Loudoun Water distribution system, especially during warm summer months. In water systems where chloramines are used as the secondary disinfectant, the presence of free ammonia can act as a substrate for ammonia-oxidizing microorganisms. The associated reactions can lead to the depletion of the disinfectant residual in the system.

Utility staff frequently deep-cycled and flushed the Dulles South tanks located in the southern area of the Loudoun Water distribution system to try and maintain minimum levels of residuals to comply with the Safe Drinking Water Act. The process was time consuming and costly as well.

“USG staff frequently deep-cycled and flushed tanks to try and stay ahead of summer nitrification in the far end of the distribution system.”

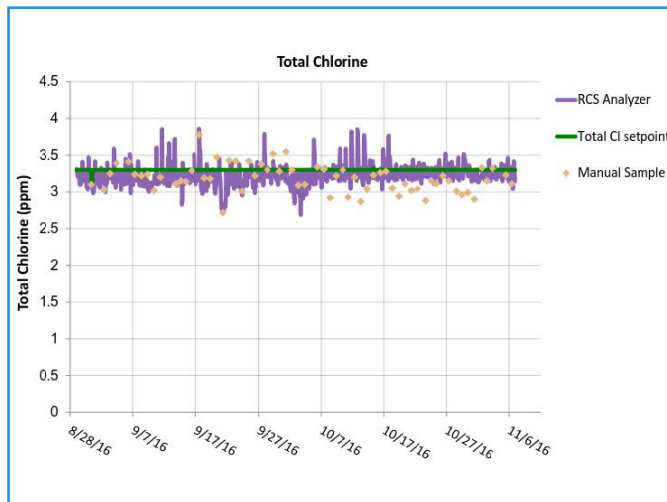
“We used to struggle with water age in part of our system, but the Monoclor® RCS has made our water age problems essentially go bye-bye. It’s like a little treatment plant. We’re controlling the water.”

— Tom Barrack, Water Plant Superintendent Loudoun Water, Virginia

In 2016, Loudoun County decided to try a new approach by installing the innovative Monoclor® RCS chloramine management system. The Monoclor® RCS utilizes advanced water quality sensors, powerful active mixing, an automated chemical feed system and advanced control algorithm to set and maintain residual levels in water storage tanks and distribution systems.

This intelligent and automated disinfectant boosting system takes all guess work out of residual control simplifying utility operations and reducing costs. The first Monoclor® RCS system was installed in a 2.5 MG elevated storage tank during a brief window during the utility’s annual disinfectant switch and operators were trained on how to run the system.

After system start-up, consistent high-residual levels leaving the tank allowed the utility to eliminate the flushing program and begin utilizing additional tanks. Two additional Monoclor® RCS chloramine management systems were installed in the Loudoun Water distribution system between 2016 and 2018.



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