

Automatic Flushing: The Cost Effective Way To Improve Water Quality

By Teri Orr and Robert Galvin

Consolidated Utility District (CUD), located in Murfreesboro, TN, is a large water system that encompasses over 13,000 miles of both urban and rural water lines throughout Rutherford County.

In early 2006, CUD received a notice of violation from the state of Tennessee for exceeding disinfection byproduct limits. At that time, their flushing program consisted of two employees that would address problem areas as needed. The process was time consuming and ineffective. When CUD began receiving customer inquiries because of the required public notice regarding the violation, Assistant General Manager Bill Dunnill contacted The Kupferle Foundry Company located in St. Louis, MO, to search for a solution. After consulting with CUD and assessing the problem, Kupferle suggested using the Eclipse model #9700 portable automatic flushing device. CUD ordered three units and began using them in the field.

Focusing on the most troublesome areas first, CUD began to test the effectiveness of the 9700s, which attach directly to any fire hydrant. Dunnill states that "CUD saw immediate water quality improvement" and subsequent testing proved that the units had a positive impact on disinfection byproducts.



CUD was able to greatly improve their flushing program with Kupferle's automatic flushing devices. They increased flushing frequency and reduced total flushing volumes and water usage, saving CUD both time and money. "They paid for themselves in no time at all." Dunnill states.

Chlorine residuals were staying at desired levels and customer complaints went down. "We actually had a few [water] customers request the automatic flushers," said Mark Lee with Water Quality. Customers understood that the unit provided them with quality water that was safe. Over a period of two years the Utility District has added Kupferle's #9400 permanent automatic flushing device to their district specifications and has acquired a total of over 30 automatic units that consist of a mix of both the portable and permanent flushing devices.

How They Do It

CUD currently ties the #9400 permanent automatic flusher to an AMR meter. This allows them to accurately account for flushing volumes to prevent water loss. It also provides flow data that aids CUD in setting the correct duration for flushing. Currently, most permanent #9400's are set to flush 15 to 30 minutes several times per week year round, as the unit's valve can be located below the freeze line of any region in the

United States or Canada. All flushing is conducted in the early morning hours during low demand to minimize the effect on the customer's water pressure.

The district also uses the portable #9700 when isolated water quality situations arise. These units are easily installed by one person to any existing fire hydrant. Once the area has been flushed and the water quality issue is solved, the unit is moved to another location or stored until needed again. Kupferle's automatic flushers can softly diffuse water atmospherically on the ground or through a direct discharge to a local sewer line, etc. All of Kupferle's units operate using a standard Smart Valve Controller (SVC) unit that offers a myriad of programming options and is easy to operate. The SVC operates on an ordinary 9-volt battery, which can last up to one year (depending on programmed flushing times). De-chlorination options are also available for all units.



Water Quality Now

The district has experienced significant reductions in TTHMs and HAA's in the areas that were previously some of the most troublesome. Regulations require water systems to keep their annual average TTHMs under .08 and annual average HAA's under .06. CUD has found more time to concentrate on other water quality issues since the automatics have been handling a significant portion of flushing. "The benefits far out-weigh the cost. We couldn't have hired enough people to do the same job these units have done" said Bill Dunnill, Assistant General Manager. Consolidated Utility District has found that they are saving time and money while improving water quality through Kupferle's reliable products.

About Kupferle Foundry

Kupferle Foundry has been serving the water works industry for over 150 years. It is well respected in the industry and has a strong partnership network with hundreds of water utility distributors across the United States and Canada. Kupferle prides itself on providing the highest quality products, as well as, the best in customer service and support. All of the Kupferle products comply with the *Buy American Act* as referenced in the American Recovery and Reinvestment Act of 2009. For more information you can contact Kupferle at 1-800-231-3990, mail to: info@hydrants.com or visit their website at www.hydrants.com.



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