

# CASE STUDY

EXTENDING CHLORAMINE RESIDUALS WHILE  
REDUCING FLUSHING USING CLEARITAS®

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## INTRODUCTION

Blue Earth Products is the leader in innovative approaches to water quality standards. Our suite of products removes disinfectant demand in water distribution systems by eliminating biofouling thereby enabling utilities to easily sustain disinfectant residuals system wide.

Out of a desire to manage their distribution system residuals more efficiently, the water district in Houma Louisiana used Clearitas on their difficult to maintain "Dularge" subsection. Clearitas reduces chloramine demand by removing biofouling from the system. Additional motivation was provided by a state-wide Emergency Rule which requires a 0.5 ppm minimum chloramine residual, in all parts of the system, to protect against the *Naegleria fowleri* amoeba.

The water treatment plant produces about 5 MGD sourced from a bayou fed by the Mississippi River. The source water has a high organic loading. TOC reduction is managed with coagulation, sedimentation, and granular activated carbon (GAC) filters. The Dularge subsection has approximately 252,000 ft of mixed material and mixed age pipes. Flow is variable depending on tank level and demand. The estimated water turn over is 90 hours. The water district began flushing this section 24/7 several months before starting the Clearitas treatment as an initial effort to improve residuals. Clearitas was later fed at 20 ppm (as product).

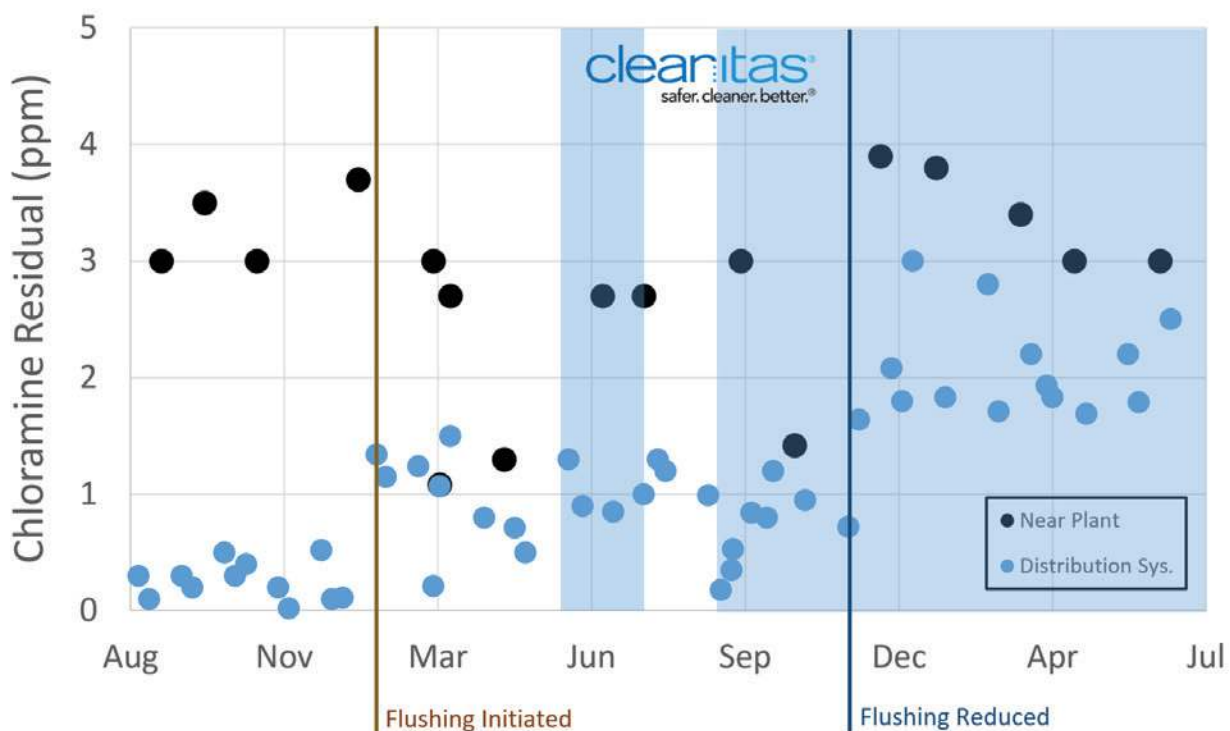


Figure 1 - Reduction in chlorine demand between the plant and distribution.

DC# 1802, v.1

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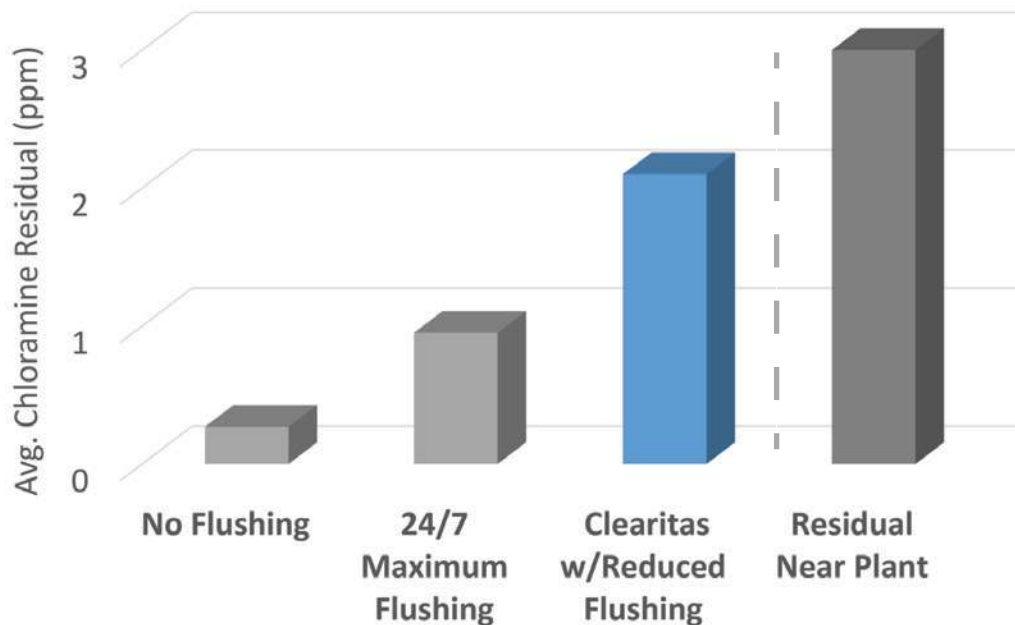


Figure 2 - Effects of flushing vs Clearitas on residuals.

## RESULTS

In figure 1 data from two points along the Dularge subsection are plotted: near the plant and farther down the line. As observed in Figure 1, implementing a continuous 24/7 high volume flush did assist in extending the Chloramine residuals deeper into the system as expected. However, significantly greater progress was made during the consistent Clearitas treatment where flushing rates were then cut almost in half and the resulting chloramine residuals were effectively doubled. Figure 2 more dramatically illustrates this point by averaging the chloramine residuals during the different treatment methods.

## DISCUSSION

The use of Clearitas to assist in the management of chlorine residuals in Houma LA has shown that flushing alone will unnecessarily waste enormous resources in comparison with a low flushing Clearitas treatment program. The use of Clearitas played a significant role in allowing the water district to remain compliant to the Louisiana state Emergency Rule as well as provide quality water to their customers at a reasonable cost. Clearitas is a powerful tool for improving water quality within distribution systems whether it is used continuously to maintain residuals or dosed in the months prior to planned flushing events in order to facilitate operations or improve flushing results.

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