

# QuatKill™ Wins At Food Processing Plant

## Background

A leading food processing plant in the southern US had a familiar food safety problem. Quaternary Amines (Quats) are the desired biocide for cleaning food processing equipment because they offer effective and long-lasting protection against bacteria. But when equipment is washed down after cleaning, un-neutralized quat enters the wastewater system and poisons aeration basin bacteria. Without the means to accurately measure free quat entering the wastewater system, plants cannot ensure quat neutralization before it reaches the bio system. The customer could not use the amount of quat desired for equipment sanitation because of the potential negative impacts on the wastewater bio system. Whenever the plant tried to increase the level of quat, problems arose with BOD conversion, sludge settleability, and aeration basin upsets. The plant needed a way to measure the levels of free quat in the wash water so they could neutralize it prior to the effluent entering the wastewater plant.



## Solution

ChemTreat offered the customer our QuatKill™ technology, which required no capital investment. QuatKill™ is a proprietary technology that provides an accurate quat test kit and a quat neutralizing formulation, QK1000. A key driver for the success of this technology is the colorimetric test kit that quickly and accurately measures free quat in the wastewater over a wide concentration range.

A competitive offer was a clay-based solution to neutralize the quat with a costly upgrade to the customer's feed equipment. The QuatKill™ solution proved much more cost-effective and did not limit the amount of quat the customer could use to ensure proper food safety. The customer conducted a trial with ChemTreat's QuatKill™.

# Results

During the QuatKill™ trial, the customer fed the desired quat amount for equipment sanitation. Quat levels entering the wastewater stream increased from 3 to 35 ppm, but dropped consistently to 0 ppm after the QK1000 neutralizer application point. The QuatKill™ test kit provided accurate measurement of the un-neutralized quat, while QK1000 provided rapid quat neutralization, preventing negative impact on wastewater system performance.

The benefits of the treatment program were compelling:

- BOD conversion rates were consistent.
- Sludge settleability dramatically improved, and the sludge bed was healthier.
- Aeration basins did not turn over during summer-to-fall temperature changes.
- Sanitation improved when the quat was no longer a limiting factor.

Upon completion of the QuatKill™ trial, the customer decided to eliminate the QK1000 neutralizer to validate the success of our solution. Within a week, the wastewater plant had to shut down due to bacteria loss in the aeration basins. The plant faced a potential production shutdown. The customer immediately restarted QK1000 treatment.

After validating the performance of the QuatKill™ technology, the customer signed a multiyear contract with ChemTreat to provide QuatKill™ and several other wastewater polymers to their wastewater plant. ChemTreat's products and services provided the performance and protection the customer needed to mitigate the risk of shutdowns.

