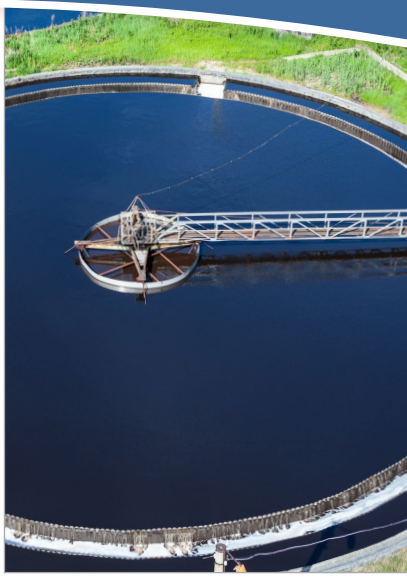
ChemTreat
Case History

Improving Phosphorus Removal from Food and Beverage Wastewater

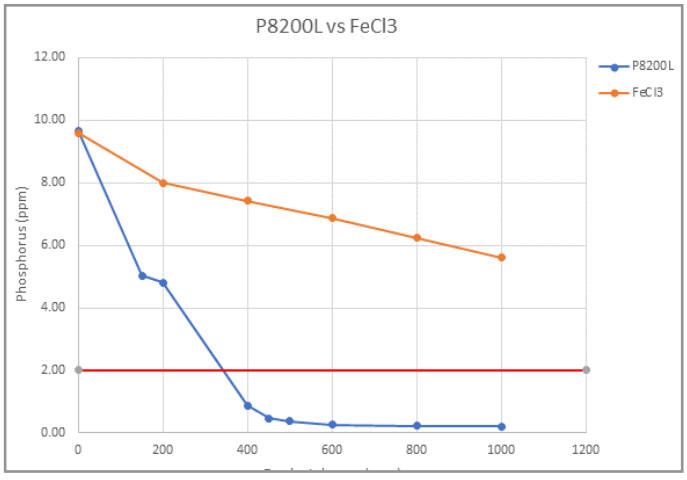


Background

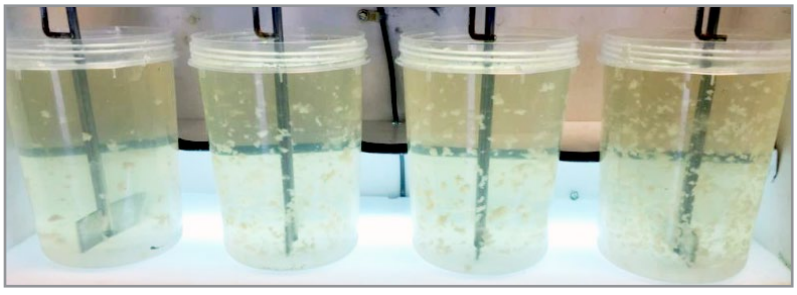
Water consumption is one of the most significant cost factors in the beverage industry. Large quantities of wastewater are generated because of high water consumption. A large western Mexico beverage bottling plant committed to safety, the environment, and continuously improving supplier performance standards, was faced with the challenge of decreasing the phosphorus levels (less than 2.0 ppm as P) discharged from their wastewater processing plant. Operational flow at the plant averaged 251,061 gallons per day, and the treatment included an aerobic reactor, MBBR, and clarifier. Previous customer attempts to control phosphorus levels using traditional inorganic salts were unsuccessful.

Solution

ChemTreat used a combination of historical effluent data, current water analyses, and a thorough plant survey to develop a treatment plan using our patent-pending P8200L product family to achieve phosphorus levels less than 2.0 ppm as P. The plan took process optimization, feed points, contact time, and flocculant selection into account. ChemTreat's new technology was put to test with a full-scale plant trial.



Results are examples only. They are not guaranteed. Actual results may vary.



Results

During the trial, ChemTreat's treatment program successfully controlled phosphorus levels below 2.0 ppm as P. Before treatment, phosphorus levels measured at the outlet of the biological reactor averaged 8.8 ppm P. After treatment, the effluent phosphorus levels averaged 0.72 ppm and never exceeded the 2.0 ppm P limit. Another benefit to ChemTreat's P8200 series treatment is a 30 percent decrease in sludge volume compared to traditional treatment. These results allowed the new technology to be put into service full-time, and has continued providing sustainable performance day in and day out.

CH10094 EN-FBWW
April 2018