

WAUPUN UTILITIES SELECTS CLEARAS' ABNR TECHNOLOGY TO ADDRESS PERMIT LIMIT OF 0.035 mg/L PHOSPHORUS

WAUPUN, WISCONSIN



FACILITY DATA:

Location: Waupun, WI

Size: 2.14 MGD

Target constituents: Phosphorus and Nitrogen

Average Influent (phosphorus): 3.36 mg/L

Average Effluent (phosphorus): 0.035 mg/L

Average Influent (nitrogen): 23 mg/L

Average Effluent (nitrogen): 10 mg/L

OBJECTIVE

After careful evaluation and with the support of approximately \$30 million in funding from the United States Department of Agriculture (USDA) Rural Development, Waupun has selected the Advanced Biological Nutrient Recovery (ABNR™) system to meet their wastewater facility's upcoming total phosphorus limit of 0.035 mg/L. After comparing against alternatives evaluated, the ABNR process ranked the highest for a 20-year project life cycle cost analysis. Primarily, the lower total cost of ownership and the prospect of effectively meeting strict permit requirements motivated the USDA to fund the treatment system and motivated the city to select it as their preferred alternative.

RESULTS

The ABNR mobile pilot processed 12 batches of wastewater with an average feed phosphorus concentration of 3.6 mg/L. The ABNR process was able to effectively reduce the phosphorus effluent to less than 0.02 mg/L P. Success during the initial batch pilot prompted Waupun Utilities to initiate a continuous flow Commercial Demonstration at their facility in early 2019. The Commercial Demonstration treated approximately 10,000 gallons per day (GPD) for 60-days of operation. The Commercial Demonstration exhibited similar performance as the mobile pilot with the phosphorus feed into ABNR averaging 1.43 mg/L P and the process effectively reducing the effluent to 0.035 mg/L P.

ABNR PILOT SUCCESS

"The ABNR solution gives our plant the ability to significantly reduce the use of chemicals and sand filters for phosphorus removal as well as potentially reduce aeration. All of these, combined with the system's ability to integrate easily into our facility make it a very viable solution for addressing future regulations."

- Steve Schramm, Water & Sewer Treatment Supervisor, Waupun Utilities