

QUICK FACTS

- ◆ **INDUSTRY:** Municipal
- ◆ **PROCESS TYPE:** Activated Sludge
- ◆ **TECHNOLOGY:** Ideal IFAS™
- ◆ **DESIGN:** 69.5 mg/L TKN @ 15 MLD
- ◆ **STARTUP DATE:** September 2018

BACKGROUND

Bengaluru, known as the Silicon Valley of India, is in the Southern region of India. The local wastewater treatment plant, called Jakkur STP, was tasked with providing 15 MLD of cooling water, essentially plant effluent, to a local power plant. To prevent scaling, the cooling water needed to have a Biological Oxygen Demand (BOD) of less than 2 mg/L and a Total Nitrogen (TN) of less than 10 mg/L. To meet these demands, the first step included increasing the overall treatment capacity from 10 MLD to 15 MLD. The treatment process of conventional anaerobic + conventional activated sludge was redesigned to accommodate two (2) 7.5 MLD treatment trains.



SOLUTION

To meet the nutrient limits, World Water Works' Integrated Fixed Film Activated Sludge (IFAS) process was selected as the best solution. IFAS is a single tank reactor combining the conventional activated sludge process (CAS) and the Moving Bed Biofilm Reactor (MBBR) process.

Bio-media is added to portions of the existing aeration zone providing the ideal propagating surface for bacteria, especially slower growing bacteria such as nitrifiers. As other essential bacteria move through the CAS process, the nitrifiers remain affixed to the media consistently available to aid in the reduction of nitrogen.

PERFORMANCE

As with most upgrade and retrofit projects, it is imperative that the facility continue operation during the construction phase. World Water Works worked carefully with Jakkur to ensure minimal treatment interruption by modifying one process train at a time. Within 12 months, both trains were fully operational and treating the required 15 MLD.

CONCLUSION

IFAS was successful with both the capacity increase and nutrient removal requirements. This 15 MLD facility now generates effluent with below limit nutrient levels acceptable to the power plant cooling towers.

