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Natchez, MS Wastewater

10/31/2019

Abstract:

Bacteria is an important component in the process of treating wastewater, whether naturally or genetically modified. The lack of organic life in one's wastewater facility can cause an abundance of problems financially and environmentally. AO3 Solutions LLC conducted a case study for Natchez, MS to improve the quality of the water, reduce power, and reduce sludge loads by treating the wastewater facility with *SewperRx* (a genetically modified bacteria).

Observing Natchez Water Works Wastewater Facility before treatment allowed us to understand daily operations and procedures, the type of influent coming into the plant, the history of the plant, and the cost associated with sludge disposal and electricity. The plant was having weekly kills from high industrial C.O.D influent and high energy costs associated with excessive aeration time in their digesters to meet proper D.O levels. Not being able to digest properly caused Natchez Water Works to have high monthly prices in energy and sludge disposal.

SewperRx Bacteria was added weekly to the plant. One of the goals were to help with the harsh incoming water that SewperRx could withstand. This gave the plant an abundance of aggressive bacteria to digest sludge, and reduce blower time in the digesters due to the properties of SewperRx able to function at low levels of D.O (.5-2ppm). Once our goals were set and measurable, Natchez Water Works and AO3 Solutions were able to work together and track sludge disposal savings, electrical savings, and help treat the industrial water coming into the plant.

After 184 days of treatment Natchez Water Works Wastewater Facility went without generating sludge and no air to their digesters. Over the next year, Natchez was able to modify blower time to increase digestion while still saving money on electricity and reducing sludge. Natchez annual savings averaged to be \$75,000 in electricity and saved 187 tons of sludge from being disposed of.