

Medora Corporation

Wastewater Treatment Plant

USCAWW-LOC465.001

Topics: wastewater ,industrial, complete mix, odor control, sludge reduction, energy savings



SolarBees deployed in wastewater cell.

Contact: Information is available upon request from Medora Corporation. 866-437-8076 info@medoraco.com

Overview: This wastewater treatment plant (WWTP) consists of two separate treatment avenues for residential and industrial wastewater flows. The industrial waste stream varies seasonally, and comes from food processing wastes from poultry processing, baby food processing, and winery waste. Average influent ranges are 0.2 -0.4 MGD for flow, 600-2,300 mg/L BOD, and 87-148 mg/L ammonia. Following pre-treatment (grit removal, primary clarifier and trickling filter), the effluent flows into a five-pond lagoon system. Pond 1 is split into 3 cells, each with a volume of 1.46 MG, surface area of 0.69 acres, and a mean depth of 6-7 ft. This is a complete mix system, with four 60-hp surface aerators in Cell 1, four 40-hp surface aerators in Cell 2, and four 30-hp surface aerators in Cell 3. Pond 2 is a 2.8-acre polishing pond with an average depth of 5-6 ft, and contains six 20-hp aerators. Ponds 3-5 are without aeration, and store treated industrial effluent prior to off-site agricultural re-use.

Conditions / Objectives: The primary objective for SolarBees is to provide better distribution of dissolved oxygen throughout each treated pond in order to: 1) reduce aeration energy usage/costs in Pond 1 through solar-

powered mixing, utilizing aeration only for BOD reduction, and 2) provide odor control in Pond 2. A secondary objective is to enhance organic sludge digestion.

Solution: Five (5) SB10000v12 units: two in Cell 1, one in Cell 2, one in Cell 1C, and one in Pond 2. Deployment Date: November 2008

Results: Since the SolarBees were installed, the WWTP has been able to reduce aeration runtime by about 50% while still maintaining adequate dissolved oxygen concentrations. This has resulted in electrical savings of up to \$15,000 per month, as well as extended the operational life of the aerators. And, as electricity rates increase, reducing aeration runtime with solar-powered circulation has become even more economically beneficial. Because of the switch to solar-powered circulation, Pacific Gas & Electric awarded the WWTP a \$53,000 rebate towards the purchase of the SolarBees. The WWTP also reports significant odor reductions and no permit violations since the units were installed. The amount of sludge reduction will be determined when the ponds are next drained. The WWTP is very pleased with the economic and water quality benefits achieved with the SolarBees, and very much appreciates the ongoing customer service that they describe as "A-1".

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