

Case Study

AirJection[®] System Provides Reliable, Efficient and Quiet Aeration for a new Activated Sludge Waste Treatment Plant.

The Problem: A central California food processing facility faced costly initial hookup and monthly surcharges for disposal of untreated waste water into the municipal sewage system. On-site treatment to meet sewer authority discharge limits proved to be an economically viable alternative.

The Solution: The activated sludge process was chosen for BOD digestion and removal. A system consisting of a primary clarifier, 58,000 gallon aeration tank and secondary clarifier (for sludge removal) were installed.

The Mazzei AirJection[®] System was chosen for oxygen transfer over coarse bubble diffusion due to being very competitive in energy efficiency, lower capital and installation costs, smaller footprint and inherently quieter operation. A Mazzei AirJection[™] System consisting of two 15 horsepower pumps, each operating two injector-nozzle assemblies, was chosen in order to facilitate turn down capability and redundancy. The nozzle manifolds were installed in the 17' deep aeration tank in a double cross configuration to insure complete mixing and coverage with either or both aeration systems in operation.



Results: The AirJection[™] System equipped waste treatment facility is easily meeting the sewage authority mandated BOD₅ effluent of 200 mg/l or less with one of the aeration systems in operation. Plant throughput and influent BOD₅ have averaged 14-15,000 GPD and 10-14,000 mg/l respectively. 7-8,000 mg/l BOD are removed in the primary clarifier and 3-6,000 mg/l are digested in the aeration tank. O₂ residuals have been 2.5 mg/l at the bottom of the tank and 0.9 mg/l at the top with one system operating and 4.5 mg/l bottom and 2.5 mg/l top with both systems operating.